## Appendix B. Reports on States That Were Telephoned

### MINNESOTA

#### Population

Minnesota is the twenty-first most populous state in the nation, with an estimated population of 4.3 million in 1988.[1] The state has a population density of 52.5 persons per square mile, with 66.9 percent of the population residing in urban areas. State population decreased by 12,800 people from 1980 to 1982. The state's major metropolitan areas are Minneapolis/St. Paul, Duluth, St. Cloud, and Rochester.[2]

#### Geographic Area and Topography

Minnesota has 58,216 square miles of land area, making it the twenty-third largest state. It has a central hill and lake region covering about half of the land area. To the northeast are rocky ridges and deep lakes; to the northwest, flat plains; and to the south, rolling hills and deep river valleys.[3]

#### Transportation Statistics

Minnesota's transportation infrastructure is composed of 2,805 and 1,416 miles of rural and urban highways, respectively. There are 9,867 miles classified as principal arterials, 14,522 miles classified as minor arterials, and 61,108 miles categorized as minor and major collectors.

Minnesota has four large ports on Lake Superior, of which Duluth is the largest. It is the nation's eleventh largest port and the largest grain shipper on the Great Lakes. There are 183.8 miles of navigable channel on the Mississippi River, 24.5 miles on the St. Croix River, and 21.8 miles on the Minnesota River. There are also 60 river terminals, 51 of which are on the Mississippi River in four major port areas. As the largest river port, St. Paul handles about one-half of the entire river tonnage in Minnesota. Grain and other dry bulk commodities are most likely to be transported by water.

In 1987, there were 5,226 miles of active railroad track in Minnesota. Three major class I carriers (Burlington Northern, Chicago and Northwestern, and Soo Line) own 4,021 miles of track collectively. AMTRAK operates two intercity rail passenger routes: one runs from Minneapolis/St. Paul to Duluth, and the other passes through Minneapolis/St. Paul on its Chicago to Seattle route.

Thirteen intercity bus companies serve approximately 550 communities within the state. Minnesota has 141 publicly owned and 14 privately owned airports. Eleven airports have scheduled air passenger service provided by ten certified air carriers. The Minneapolis-St. Paul Airport is the only international airport in the state.

**Economy**

The economy of Minnesota is dominated by agri-business, forest products, mining, manufacturing and tourism. More than 60 percent of the nation's iron ore is produced in Minnesota. Corn, wheat, and sugar beets are among the state's principal farm products. St. Paul is the nation's biggest publisher of law books and calendars, while Minneapolis is the trade center of the Northwest.[4]

**ECONOMIC DEVELOPMENT**

Minnesota's economic development activity is carried out by the Minnesota Department of Trade and Economic Development (MTED). This organization consists of two separate departments: the business promotion section and community development section. The former is responsible for attracting new industries, as well as maintaining contact and rapport with existing businesses, while the latter works directly with communities in an effort to target businesses that contribute to its economic base.

In meeting its goal of improving the economic base of communities throughout Minnesota, MTED is involved with small-city, block-grant programs, which enable the organization to administer money to qualified communities that are interested in attracting new industries. The communities, in turn, are empowered to use these funds to provide an incentive to businesses to locate within their boundaries. In dealing with existing businesses, this organization relies on visitation and enterprise zone programs. Currently, the department's primary emphasis is on attracting manufacturing and industrial development.

Minnesota does not produce a specific economic development plan; however, it does submit annual reports to the governor, as well as produces a document entitled Compare Minnesota, which relies on statistics in charting the economic growth of the state. As the name of the report suggests, the only mechanism for evaluating the success of implemented programs is to compare the economic growth of a given year with that of previous years.[5]

The Minnesota Rural Development Board (MRDB), a branch of the Department of Trade and Economic Development, is concerned with the assessment and promotion of economic activity within the

rural regions of the state. This department is involved with making grants available to regional organizations. These grants are awarded contingent upon the regional organization's ability to produce matching funds, which often come in the form of private foundation grants. MRDB is currently in the process of preparing a Rural Investment Guide, which is designed to aid the state's legislature in establishing comprehensive guidelines and policies for the development of rural areas. This document will contain a section entirely devoted to transportation issues.[6]

Locally, the Minneapolis Economic Development Agency (MEDA) is responsible for providing financial resources for public housing projects, as well as granting loans to small businesses. MEDA conducts a variety of studies which range from assessing the impact of truck traffic on various neighborhoods to making recommendations for the provision of trollies to service river front developments.[7]

## STATE AGENCIES INVOLVED IN TRANSPORTATION

All of Minnesota's transportation activities are carried out internally within the Minnesota Department of Transportation (MNDOT).

### Minnesota Department of Transportation (MNDOT)

Organization. Created by the legislature in 1976, MNDOT is the state's primary transportation agency. Minnesota Statute 174.01 has empowered MNDOT to plan, construct, and operate highways, as well as to provide planning and development funding for airports and railroads. As MNDOT is charged with the responsibility of planning in a multimodal fashion, the department contains the Office of Highway Programs, the Office of Railroads and Waterways, the Office of Aeronautics, the Office of Transportation Data, Research, and Analysis, and the Office of Transit.

MNDOT has organized the state into thirteen regional areas, ten of which are equipped with regional development commissions (RDC) which are funded by MNDOT monies. In some cases (such as in Minneapolis-St. Paul), the MPO doubles as the RDC for the area. The membership of the RDCs is composed of city council members, mayors, school board members, and county board members. In terms of transportation planning, the regional development commissions rely on transportation advisory committees, which are composed of county engineers.[8]

In its 1988 session, the legislature created a Transportation Study Board composed of the chairs of the senate and house transportation committees, a citizen's committee as selected by the governor, and various other legislative members

who are charged with the task of studying a broad spectrum of transportation-related issues. However, the board is currently limiting itself to highway issues by assessing the existing road system of the state, studying highway needs, examining various funding mechanisms, and inspecting roadway jurisdictional issues.

Programs and Projects. The Minnesota Department of Transportation's primary responsibility is to locate, improve, and construct a sound network of trunk highways and interstate routes. To this end, several projects are currently underway. In an attempt to integrate elements of transportation with continued economic growth, the regional development commissions have conducted a series of Market Artery Studies with the objective of establishing a statewide roadway system that facilitates the movement of commodities (grain) in an efficient manner. Additionally, in an attempt to delineate the jurisdictional boundaries of roadways, MNDOT has undertaken various studies.

As Minnesota relies heavily on commercial navigation, the department has been involved in studies that assess the impact of user fees on the economic structure of the state. In its analyses, MNDOT provides congress with information and examines all legislative proposals concerning user fees. The proper maintenance of channels, expansion of harbor facilities and terminals, and augmentation of fleeting areas are also prominent issues that are monitored and studied by the department.[9]

In terms of rail, emphasis is placed upon analyzing various branch lines to assess any need for rehabilitation and examine the profitability of various lines. Certain rail lines that are found to be unprofitable and obsolete are abandoned, while others may be acquired and placed in the State Rail Bank Program in the hopes of replenishing them for future commercial or public purposes.[10]

Funding. Minnesota relies on a constitutionally established dedicated fund for highway revenues. Consequently, the 20-cent-per-gallon motor fuel tax and motor vehicle registration tax revenues can only be used for the purpose of maintaining and improving the state's roadway network. Federal-aid highway program funds account for approximately one-third of highway revenues. Approximately 30 percent of the 6 percent sales tax on motor vehicle sales supplements funding for highways. The department hopes to increase this amount to 40 percent beginning next year.

Public transportation revenues come from UMTA, fareboxes, general property taxes, the state's general fund, and transit district property tax monies.

The Office of Aeronautics has a $30 million per year funded program, $12 million of which comes from Flight Property Taxes (tax on assets of airlines that are based in Minnesota) and aviation fuel tax sources. The remainder of the funding is supplemented through federal sources. Municipal and airport authorities have direct control over any money raised from parking revenues.[11]

Reports and Plans. A comprehensive transportation plan entitled the Minnesota Department of Transportation Plan was developed in 1978. The fact that the plan is outdated and no steps have been taken to either update it or to develop a new plan, suggests that transportation planning in Minnesota is not carried out in a holistic and comprehensive fashion. The various offices within MNDOT are charged with the task of planning on a unimodal basis and producing plans and documents which chart their objectives in terms of the development of the various modes.

While there is no single highway plan that guides the development of roadways within the Minnesota area, the department has developed a Highway Jurisdiction Report which provides a historical overview of highway jurisdictional issues in the state. The report additionally assesses the success of previous programs aimed at categorizing and delineating the jurisdiction of highways within the state.[12]

The Office of Transit has prepared a Transit Report which provides a one-page synopsis for each of the transit operators who qualify for the Minnesota Public Transit Assistance Program. The report also assesses the financial status of each of the providers by outlining their operating costs.[13]

The Office of Aeronautics has prepared an Airport Development Guide, which is designed to serve as an update to the 1974 Minnesota Aviation System Plan. This document charts aviation activity in the state and elaborates on regional transportation plans. The guide is project oriented and is intended to give direction to local aviation actors concerning the timing and nature of viable projects.[14]

In 1988, the department produced a document entitled River Transportation in Minnesota, which outlines prominent issues in commercial river navigation. The plan is a general statement that emphasizes the importance of commercial river navigation to the continued economic health of the region. It elaborates on those aspects of river navigation which must be improved and presents a summary of activities in which MNDOT is currently involved.

The 1986 addendum to the Minnesota State Rail Plan voices a commitment to intermodal planning. However, beyond providing a

blanket statement about the importance of intermodality, it specifically concentrates on outlining the department's efforts at conducting commodity movement studies and providing a transportation network that is responsive to citizen needs.

## MPOs AND LOCALITIES INVOLVED IN TRANSPORTATION

There are seven metropolitan planning organizations (MPOs) in Minnesota. The largest MPO is the Metropolitan Council which represents the Minneapolis-St. Paul region. The second largest is the Metropolitan Interstate Committee and is staffed by the Arrowhead Regional Development Commission. The Fargo-Moorehead Metropolitan Council of Governments and the East Grand Forks MPO are bistate MPOs, whose jurisdiction crosses the North Dakota state boundary. A third bistate MPO, the La Crosse-La Crescent Metropolitan Planning Organization, represents portions of Wisconsin as well as Minnesota. The Rochester-Olmstead Council of Governments and the St. Cloud Area Planning Organization act as MPOs for the southeastern and central portions of Minnesota respectively.

Minnesota's metropolitan planning organizations act as powerful liaisons between the state and the regions they represent. However, there are other regional governmental agencies within Minnesota which are more directly involved with both multimodal and intermodal transportation issues.

The following section will concentrate on a more detailed analysis of two specific MPOs within Minnesota, as well as provide a synopsis of the various tasks performed by other key local agencies.

### The Metropolitan Council

Created in 1967 by the legislature, the Metropolitan Council is a 17-member group appointed by the governor, with the advice and consent of the Minnesota Senate. The council is responsible for overseeing development within a 3,000-mile, seven-county region encompassing the Minneapolis-St. Paul region.

The council relies on the transportation advisory board (TAB) for the compilation of the transportation improvement program (TIP). TAB is a 30-member organization composed of private citizens, local elected officials, and state and regional officials who aid the council in making long-range transportation policy for the region.[15]

In meeting its obligations as a metropolitan planning organization, the council has produced a document entitled the Transportation Development Guide/Policy Plan that outlines its long-range plans for highway and transit development within the

metropolitan area. The plan acknowledges the fact that there is a need for increased reliance on transit as a means of alleviating freeway and highway congestion caused by an increase in commuter traffic. Other strategies to reduce the stress on the highway network include the addition of high-occupancy-vehicle (HOV) lanes, expansion of the park-and-ride system, and management of highway demand at peak periods.[16]

As the twin cities constitute the nation's third largest trucking center, and as the economy of the state relies heavily on "farm-to-market" movement of goods, the council recognizes the fact that the economy of the state is dependent on a sound network of highways that facilitate the movement of goods. Consequently, there is an emphasis on implementing projects and policies that are designed to construct and upgrade highways.

**Arrowhead Regional Development Commission**

The Arrowhead Regional Development Commission (ARDC), together with the Metropolitan Interstate Committee, serves as the MPO for the Duluth (Minnesota)-Superior (Wisconsin) region. ARDC operates in a "staffing" capacity for the Metropolitan Interstate Committee. This MPO is currently involved with a transportation systems management plan which focuses on highway/transit issues. Additionally, the MPO is engaged in a commodity movement study which focuses on the current movement of goods as it relates to the truck routing system.

Since the Duluth-Superior harbor is located within the jurisdiction of this MPO, there is a considerable amount of barge activity for which ARDC must plan. One of the major intermodal activities that takes place on the Duluth-Superior harbor is the transportation of newsprint from Thunderbay, Ontario. Rail cars carrying the newsprint are placed on barges on Lake Superior. Once the barges reach the Duluth harbor, the cars are offloaded and placed on railroads, which carry the newsprint to destinations within the United States. Another means of transporting this newsprint is via trucks on Highway 61, which is overly congested at the present time. Currently, the MPO is considering other alternatives, such as loading truck trailers on barges, in an effort to devise a more efficient means of transporting the goods, while reducing congestion on Highway 61.[17]

**Metropolitan Airports Commission**

Established in 1943, the Metropolitan Airport Commission (MAC) has the authority to plan, acquire, and operate airports within an area approximately the size of the seven-county metropolitan region. The commission is responsible for preparing master plans which guide the construction and operation of each of its facilities. MAC has the authority to raise revenues for

financing its facilities and owns and operates seven airports, including the Minneapolis-St. Paul International Airport.

The status of MAC as an independent agency requires the commission to seek the Metropolitan Council's approval for projects whose capital funding exceeds $5 million for the Minneapolis-St. Paul International Airport, and $2 million at the other airports. Moreover, MAC must ensure that its long-range plans are in accordance with the policies and plans of the Metropolitan Council.[18]

**Regional Transit Board**

Created by the legislature in 1984, the Regional Transit Board (RTB) is a unique, nine-member organization whose primary function is to undertake mid-range transit planning and transit coordination for the metropolitan area. The Metropolitan Council is responsible for appointing eight members to the RTB, while the governor selects the chairperson for the organization. In terms of its relationship to the Metropolitan Transit Commission (MTC), RTB is responsible for handling its funding and financial plans, as well as appointing members to the MTC. As such, RTB has the authority to levy property taxes and review general fund appropriations. While RTB is eligible to receive section 8 grants directly from the Urban Mass Transit Administration, it relies on funding apportioned through the state budgetary process. As budgetary funding for RTB has been discontinued, the organization currently runs the risk of being dissolved altogether.[19]

**Metropolitan Transit Commission**

The Metropolitan Transit Commission (MTC) was created by the legislature in 1967 to act as the transit operator for the region. As the metropolitan transit authority for the twin cities' region, MTC is responsible for both the short-range planning portion and the actual operation and delivery of transit within the seven-county (Hennipin, Ramsey, Scott, Carver, Dakota, Washington and Anoka) region. MTC relies on its taxing authority (property taxes), as well as farebox revenues, which account for 37 percent of total cost, and sections 3 and 9 UMTA grants. Additionally, a portion of the state budget, which comes through the Regional Transit Board, is set aside for MTC.[20]

There is some degree of private-sector involvement in the delivery of transit in the metropolitan area as three private companies--Medicine Lake Lines, North Suburban Lines, and Southwest Metro Transit--operate buses within the Minneapolis-St. Paul region. The private providers have an agreement with MTC to operate within the service area of the metropolitan transit authority.

## Regional Railroad Authorities

There are three regional railroad authorities in operation in the metropolitan area. They are the Hennepin County, Ramsey County, and Anoka County regional railroad authorities. These organizations are autonomous agencies, empowered by the legislature to levy taxes with the objective of planning and implementing a light-rail transit system for the entire metropolitan area. Pending the outcome of the legislature's decision concerning RTB, a reorganization of the RTB to head the light-rail transit project could render the regional railroad authorities obsolete.[21]

## INTERMODAL PLANS, PROGRAMS, AND PROJECTS

While Minnesota has a limited number of intermodal programs, which are either currently in the implementation or planning stages, the nature of the existing projects and programs renders them innovative and unique given the population size and urban/rural structure of the state. The following section provides a synopsis of each of the four intermodal projects.

Minnesota can be dubbed the skywalk state. A network of skywalks dominates the downtown areas of Minneapolis and St. Paul. By linking office buildings and parking garages, skywalks act as connectors, which serve to mitigate pedestrian traffic at the street level. The city of St. Paul owns its central-business-district skywalks and has the authority to exact fees for their construction and maintenance. Building owners, whose properties are adjacent to the skywalk, pay for one-quarter of the cost of construction, while the city pays for the remainder.[22] The skywalks in Minneapolis are strictly funded by private-sector monies.[23]

One interesting example of the use of skywalks for intermodal purposes is a project in the completion stage in Rochester. A terminal transfer point for buses has been created in Rochester where, upon descending from buses, transit riders ascend escalators which connect the street level to a skywalk which, in turn, connects one transfer point to another on the opposite side of the street. Approximately one-half of the funding for this project comes from UMTA's discretionary funds. City taxes and taxes levied on adjacent property owners comprise the remainder of the funding for this project.[24]

Through the efforts of the Metropolitan Council, the construction of a high-occupancy-vehicle lane is underway on Interstate 394. It is hoped that encouraging such ride-sharing programs will ultimately help alleviate highway congestion caused by home-to-work commuters.[25]

The light-rail project, currently in the preliminary design phase, will link the region delineated by Ramsey, Hennepin, and Anoka counties. However, as was previously discussed, the fate of the light-rail project is in jeopardy as the legislature has yet to decide what agency will ultimately be selected to spearhead the project.[26]

Finally, the Duluth harbor acts as a terminal transfer point for the distribution of newsprint from Canada to the United States. By utilizing barges for transporting rail cars which contain the newsprint, ARDC has been able to reduce truck activity within the Duluth region.[27]

**SUMMARY**

Transportation planning in Minnesota is somewhat fragmented, and efforts at creating an integrated organizational structure at the state level can be characterized as piecemeal. The absence of an updated, comprehensive transportation plan at the state level has meant that various regional and local authorities have become the primary transportation planning agencies. The transportation framework of the state is currently undergoing some restructuring as the legislature debates issues that revolve around restructuring the Regional Transit Boards.

Currently, there is no specific economic development plan that orchestrates economic activity within the state. However, some steps, such as conducting market artery studies, are being taken to create a more formalized linkage between economic development and transportation issues. It is hoped that efforts at integrating transportation and economic development will provide for a more efficient and sound economic base for the state.

## NEW JERSEY

### Population

New Jersey is the ninth most populous state in the nation, with an estimated population of 7.7 million in 1988.[28] New Jersey has the highest population density in the country, with 999.2 persons per square mile. The state is highly urbanized, with 89 percent of the population living in urban areas. State population increased by 7,000 people between 1980 and 1983. Major urban areas include Newark, Trenton, Camden, and Atlantic City.[29]

### Geographic Area and Topography

New Jersey has a total area of 7,836 square miles, making it the 46th largest state. The state's topography is marked by low mountains in the northwest, a central plateau, and a southern coastal plain.

### Transportation Statistics

The state's highway system consists of 2,200 miles of state-controlled roads, and 31,000 miles of county and municipal roads. The state has 6,000 bridges, 2,200 of which are under state-government jurisdiction. The freight railway system has 1,548 miles of track. The state airport system consists of 64 public-use airports, 86 private-use airports, and 336 heliports. Major water ports include the Newark, Elizabeth, and Hoboken, which are operated by the Port Authority of New York and New Jersey. The port authority also operates the Lincoln and Holland tunnels, which connect New Jersey with New York and carry commuters under the Hudson River to Manhattan.

The automobile is the major means of transportation within New Jersey, with 82.7 percent of all trips taken by automobile. Bus travel accounts for 6.1 percent of trips and passenger rail for 3 percent. Other forms of transportation account for the remaining 8 percent. For trips across the Hudson River into New York, 69.1 percent of commuters take public transportation, and 30.7 percent use private automobiles.

New Jersey's bus system consists of 475 companies operating 6,000 buses over 300 routes. New Jersey Transit Corporation, a semi-autonomous arm of the New Jersey Department of Transportation, operates 150 of these routes and has 67 percent of total bus ridership. Total bus ridership stands at 670,000 trips per day, and nearly 200,000 of these trips represent commuter trips across the Hudson into Manhattan. Most bus

service in the Atlantic City area is provided by private companies that operate 90 routes and 1,000 trips daily.

Passenger rail services are operated primarily by New Jersey Transit, which has 450 trains, 380 miles of track, and 10 separate lines. This system carries over 130,000 trips daily.

In the area of freight, 36.3 percent of all intercity freight is transported by rail, 22.7 percent by truck, 24 percent by pipeline, 16.8 percent by waterway, and 0.22 percent by domestic aircraft. Most freight moved by rail is carried by the Consolidated Rail Corporation (CONRAIL). This line accounts for 88 percent of rail freight, while nine other smaller rail lines account for the remaining 12 percent.

New Jersey's largest airport, Newark International, handles 900 flights per day and is a regional distribution center for the overnight package industry. The state is a home base for 4,500 aircraft and has 15,000 registered pilots.

**Economy**

The economy of New Jersey is dominated by manufacturing industries, service-oriented organizations, and wholesale/retail trade companies. The state's employment composition shows that 23 percent of all workers are employed in manufacturing, 22 percent in service organizations, 23 percent in trade, 17 percent in government, 6 percent in transportation, 5 percent in finance, insurance, and real estate, and 4 percent in construction and mining.

New Jersey's economy has improved dramatically in recent years, with most growth occurring in commercial and residential developments. New Jersey's proximity to New York has made the state a highly desirable location for corporate headquarters and persons who work in New York but prefer to live in suburban areas. Consequently, most new construction has been for office buildings, retail establishments, and housing.

Growth in New Jersey has not been confined to northern suburbs; rather, much growth has originated in southern New Jersey cities like Camden and Atlantic City. While most growth has occurred in suburban areas, older inner cities throughout the state have experienced a continual decline that started in the 1950s.

Rapid growth in suburban and rural areas has not occurred without serious problems, though. Traffic congestion and environmental degradation in these areas have prompted the state to consider a statewide land-use plan. New Jersey is experiencing rapid growth, but this growth is often uncontrolled and neglects older urban areas that could benefit most from new

development. The next section discusses economic development in New Jersey, which can be viewed more as growth management.

**STATE ECONOMIC DEVELOPMENT**

Responsibility for economic development in New Jersey is shared among several state agencies, such as the Department of Commerce and Economic Development, the New Jersey Economic Development Authority, and the New Jersey Planning Commission. Recent growth and numerous problems associated with that growth have placed the Planning Commission in the lead role in economic development, or growth management, as is the case in New Jersey. The commission has also had to assume this role because growth was not being adequately controlled at the local level.[30]

The Planning Commission was created in 1986 by the New Jersey state legislature in response to environmental and congestion problems resulting from rapid growth. The commission is composed of 17 representatives from state, county, and local government. Seven representatives come from state agencies such as the New Jersey Department of Transportation, the Department of Environmental Protection, the Department of Commerce and Economic Development, and the Department of Energy. Of the local representatives, two are from county governments, two are from city governments, and six are private citizens. All representatives are appointed by the governor with the approval of the New Jersey senate. Local representatives were purposefully given a majority on the commission in order to confer "home rule" control over the land-use planning functions of the commission.[31]

The commission was given the task of creating the State Development and Redevelopment Plan. A preliminary document was published in early 1989 and is now being reviewed by the state's metropolitan planning organizations and other local planning bodies. Organizations reviewing the preliminary plan have the opportunity to suggest changes if elements of the plan are inconsistent with local plans.

When this plan is finalized, the commission will act in an advisory role to its member agencies on land-use decisions.[32] While the commission has no regulatory authority, it can influence land-use decisions through the member agencies. One major focus of the commission will be to direct state resources towards older urban areas, while managing growth in suburban areas so that environmental damage and traffic congestion can be minimized.[33]

The state planning concept has widespread support, especially in suburban and older urban areas where rapid growth has led to pressing concerns over quality-of-life issues and

incompatible land uses.[34] Opposition to the plan has come primarily from rural areas where it is viewed by some as an effort to institute state control over zoning. The commission has no authority over zoning, but its influence over the allocation of state resources can play a significant role in future land-use decisions.[35]

## STATE AGENCIES INVOLVED IN TRANSPORTATION

The responsibilities of managing New Jersey's transportation system are shared among several state, regional, and local agencies. The New Jersey Department of Transportation (NJDOT) is the primary state transportation agency and deals mostly with highway construction and maintenance, regulation of motor carrier sizes and weights, and developing smaller airports. As mentioned earlier, the Port Authority of New York and New Jersey operates water ports in the Newark/New York City area. The port authority also operates rail lines in New Jersey that carry commuters across the Hudson into Manhattan. Several major tunnels and bridges connecting New Jersey and Manhattan are also operated by the port authority, while most public transportation in New Jersey is operated by New Jersey Transit.

Control over different segments of the transportation system in New Jersey is divided among various agencies, and transportation planning in the state shares the same characteristic. The NJDOT coordinates overall planning for the state and works closely with numerous other regional authorities and commissions on specific projects. NJDOT also coordinates activities among the state's six metropolitan planning organizations.

### New Jersey Department of Transportation

Organization. A recent reorganization of NJDOT created a agency that can be seen as functional rather than modal. Directly under the commissioner of transportation are four assistant commissioners, who head the primary functional departments. These departments are Policy and Planning, Design and Rights of Way, Construction and Maintenance, and Finance and Administration. The department also has four regional offices.

Projects and Programs. Such an organizational structure may suggest that NJDOT activities cover a wide range of areas, but as is the case with many state DOTs, most efforts at NJDOT are directed at highway construction and maintenance. The department is not involved in intermodal planning or projects in any significant way at present. Intermodal activity in New Jersey is primarily the domain of the private sector or other agencies, such as the Port Authority of New York and New Jersey and New Jersey Transit.

The 1984 New Jersey Transportation Plan, prepared by NJDOT, outlines six major activities considered most important by the agency in terms of highway construction and maintenance. In order of importance, these activities are completion of the interstate highway system; major construction of noninterstate highways; major reconstruction of existing facilities; minor reconstruction and improvements to safety; resurfacing; and miscellaneous projects such as noise barriers, rest areas, and park-and-ride lots.[36]

As mentioned earlier, most rail freight in New Jersey is carried by CONRAIL. In the effort to make CONRAIL an economically viable operation, unprofitable segments of the system have been eliminated. NJDOT has been given the authority by the New Jersey state legislature to acquire these abandoned lines and lease them to private rail lines in an effort to maintain rail service to areas of the state that were facing the loss of rail service. So far, the state has purchased one short-line railroad. State activity in the area of truck freight involves mostly regulation of weights and trailer lengths and widths.

Aviation assistance by the state is mostly in the form of financial aid for runway construction, maintenance, and resurfacing. The state also supplies engineering and other technical assistance to the state's smaller airports.

Funding. State funding of transportation prior to 1984 was limited because the state had no funds dedicated solely to transportation. The state could issue general obligation bonds, provided the voters approved of such a bond issue. Evidence of widespread decay in the state's transportation system led to the passage of a bill in the state legislature in 1984 creating the New Jersey Transportation Fund. Under provisions of the bill, $88 million of general revenue funds are channeled into the Transportation Fund, and additional funds are supplied by increased truck fees and revenues from the state's toll authorities. The state law also created a Trust Fund Authority which can issue debt through the sale of bonds. Together, with federal funding, these sources produced $3.3 billion for transportation projects during the fund's first four years.

In 1983, New Jersey voters approved a referendum that addressed the serious problem of bridge decay in the state. The New Jersey Bridge Rehabilitation and Improvement Act provided $377 million for bridge improvements and repairs.

State funds for aviation are supplied by the Airport Safety Fund, which is supported by a two-cent-per-gallon tax on aviation fuel, and aviation license fees. This fund generates between

$800,000 and $1 million annually and is used for runway construction and improvements.

Authorities and commissions throughout the state are authorized by the state legislature to issue their own bonds and collect revenue from tolls and other user fees.

Plans and Reports. The Policy and Planning Department within NJDOT is the central planning office for the agency and prepares the New Jersey Transportation Plan every five years. Most planning is devoted to highway and bridge projects in high-growth corridor areas. Major transportation corridors being studied now are the Hudson riverfront area and the Route One corridor between Trenton and New Brunswick. Both of these areas are recognized as having a high potential for rapid growth in the near future, and NJDOT, in cooperation with other regional transportation agencies, is now studying how future infrastructure needs can be met.

Planning in the freight area continues to focus on the acquisition of abandoned short-line railroads. The NJDOT recently conducted an intermodal facilities study that focused on rail/truck transfer facilities. The objectives of this study, according to the 1984 transportation plan, were to inventory existing intermodal facilities; examine those facilities to define capacity restraints; and recommend short- and long-term improvements to these facilities.[37] To date, the study has inventoried core truck routes throughout the state and the proximity of intermodal facilities to these routes.[38] Data from the study will be used to plan future highway rehabilitation projects.

Other planning efforts by NJDOT include studies on future sites for helicopter landing pads. Helicopter use has grown dramatically in the region, and the demand for landing sites has also grown. NJDOT is studying ways in which helicopter-landing facilities can be compatible with existing land uses.

**Other State Agencies**

New Jersey Transit Corporation. New Jersey Transit was formed in 1979, when the state acquired the state's largest private bus company and commuter rail lines owned by CONRAIL. Currently, New Jersey Transit operates 10 commuter rail lines, 150 bus routes, and the Newark subway system. This also includes numerous bus and train terminals, as well as 40 rail and 17 bus park-and-ride facilities.

While New Jersey Transit operates a statewide system, most of its efforts have been directed at the highly urbanized areas in the northern part of the state. Faced with serious automobile congestion in this area, the agency has undertaken significant

projects to improve services and attract more commuters to public transportation. These improvements have been funded by New Jersey Transit's share of the state Transportation Fund and from user fees.

Recent joint NJDOT/New Jersey Transit projects have involved efforts by NJDOT to reduce competition between New Jersey Transit bus lines and private bus lines. A task force established by NJDOT concluded that competition was not in the public's best interest. The task force made specific recommendations intended to reduce competition, and NJDOT and New Jersey Transit are now working together to implement these recommendations. In the regulatory area, New Jersey Transit has authority to set fares and service levels, but NJDOT regulates safety and maintenance of New Jersey Transit's bus fleet and commuter rail lines.

The highest level of cooperation between the state and the Port Authority of New York and New Jersey exists in the area of public transportation. Here, New Jersey Transit works closely with the port authority in those New Jersey counties over which the port authority has jurisdiction. In an agreement between the port authority and the state of New Jersey, the port authority provides New Jersey Transit with its bus fleet.

The Port Authority of New York and New Jersey. The port authority was created in 1921 by a compact between the states of New York and New Jersey to construct and operate port facilities in a region that includes nine counties in northern New Jersey. In addition to the ports of Elizabeth and Newark in New Jersey, the port authority operates commuter rail service between New Jersey and New York. The port authority also operates Newark International Airport and Teeterboro Airport, a general aviation facility. The port authority is covered in detail in appendix C.

Cooperation between NJDOT and the port authority has centered on truck weights and sizes. NJDOT has recently embarked on a project to increase bridge clearances to accommodate double-stacked container trains originating from port authority terminals. Another general area of cooperation involves ongoing efforts by NJDOT to maintain highway access points to port authority facilities. These efforts will ensure that the transportation system leading to and from the ports will be sufficient to support current and future volumes of freight.[39]

Other Authorities and Commissions. Other smaller authorities and commissions have responsibilities for various turnpikes and bridges throughout the state. The New Jersey Turnpike Authority operates a 118-mile turnpike running from the state's border with Delaware to New York. The New Jersey Highway Authority constructed and operates the Garden State Parkway. The Atlantic City Expressway, a 44-mile highway connecting Atlantic City and Camden, is controlled by the New Jersey Expressway

Authority. In the Delaware River valley area, the state of New Jersey has entered into agreements with both Delaware and Pennsylvania to jointly construct and operate bridges linking these states. The Delaware River and Bay Authority, an organization created in 1961 by New Jersey and Delaware, operates bridges and ferry services between the two states. A joint New Jersey/Philadelphia organization, the Delaware River Port Authority, operates four bridges in the Camden/Philadelphia area, as well as Lindenwold-Philadelphia Rapid Transit Line. Another joint organization, the Delaware River Joint Toll Bridge Commission, was formed by New Jersey and Pennsylvania in 1934 and currently operates 18 toll and free bridges in the northwestern New Jersey counties bordering Pennsylvania.

## MPOs AND LOCALITIES INVOLVED IN TRANSPORTATION

Two metropolitan planning organizations have been surveyed for this project, the North Jersey Transportation Coordinating Council (NJTCC) and the Delaware Valley Regional Planning Commission (DVRPC). These MPOs offer contrasting examples of MPO organizations and the extent of planning responsibilities. The NJTCC covers 11 counties in northern New Jersey and conducts mostly transportation planning, whereas the DVRPC is a bistate organization, covering counties in New Jersey and Pennsylvania. The DVRPC is much larger than the NJTCC and is involved in a wide range of planning efforts.

### North Jersey Transportation Coordinating Council

The NJTCC was formed in 1982 to replace the former bistate MPO that was disbanded by New York and New Jersey. The bistate agency was abolished because of numerous financial and managerial problems and, most notably, because it often pursued plans that were inconsistent with the plans of both states. NJTCC was created to solve these problems, and to help prevent a return to inconsistent planning and financial mismanagement, NJTCC was made a part of the New Jersey Department of Transportation.[40] NJDOT provides the MPO with technical support because NJTCC is not allowed to have a technical staff.

NJTCC's primary function is to coordinate transportation planning in the region and serve as a forum for discussing regional transportation issues.[41] NJTCC's membership includes representatives from federal and state government, the Port Authority of New York and New Jersey, New Jersey Transit, the cities of Newark and Trenton, and 11 counties. NJTCC also serves as a conduit for federal funding to member agencies for transportation studies.

The council, like most MPOs, is heavily funded by the federal government. Annual budgets for the council have averaged

$3.4 to $3.5 million, with 82 percent of the total being supplied by the federal government. The remaining 18 percent is supplied by the State of New Jersey and local member agencies. Over 60 percent of the 1988 budget was allocated to transportation studies, most of which were conducted by member agencies, while 19 percent was devoted to NJTCC administrative staff. This staff prepares NJTCC's Transportation Improvement Program and other federally required documents.

**Delaware Valley Regional Planning Commission**

Project members studying Pennsylvania made personal visits to the DVRPC; therefore, this discussion will cover the DVRPC in brief. Readers should refer to the Pennsylvania report for a more detailed account of the DVRPC.

The DVRPC was formed in 1965 by Pennsylvania and New Jersey to plan and coordinate growth in the Philadelphia area and nine surrounding counties in Pennsylvania and New Jersey. The states do not provide the commission with funding; rather, funding is supplied by member agencies and the federal government. The states provide coordination and review commission plans for consistency with state plans, but do not provide the commission with technical support.

Unlike the NJTCC, the DVRPC is involved in economic development planning in addition to its transportation responsibilities. The commission studies growth patterns in the region and prepares an overall growth plan. This regional growth strategy allows the commission to control growth and change patterns if changes are necessary.

**INTERMODAL PLANS, PROGRAMS, AND PROJECTS**

The discussion of NJDOT activities reveals that this agency is not heavily involved in the intermodal aspect of transportation planning. This is in part because most intermodal facilities in the state are operated by other agencies. Ports, major airports, and intermodal public transportation facilities are under the jurisdiction of either the Port Authority of New York and New Jersey or New Jersey Transit.

The transportation system in New Jersey suffered from severe funding shortages prior to the institution of the state Transportation Fund in 1984, and most efforts since that time have been directed at rebuilding the state's basic infrastructure. Consequently, intermodal planning has been given a low priority. This position is quite clear when considering public transportation. New Jersey Transit has focused most attention on improving existing stations, acquiring new buses, and expanding services in high growth areas. New Jersey Transit

has been involved in the intermodal aspect in its increased efforts to construct additional park-and-ride facilities. This is one part of New Jersey Transit's overall plan to attract commuters away from personal automobiles and onto public transportation.

**SUMMARY**

New Jersey has experienced rapid economic growth in recent years, especially in suburban and rural areas. Commercial and residential development has often been uncontrolled and lacking in any systematic plan; consequently, the state is now faced with many of the problems associated with rapid, unplanned growth. Environmental damage and traffic congestion have been the major drawbacks associated with this growth.

The state appears to have no difficulty in attracting development, which is due largely to the state's proximity to New York. The challenge now facing the state is to manage growth so that environmental damage and traffic congestion can be minimized. The New Jersey Planning Commission is leading this effort and will soon publish a final State Development and Redevelopment Plan, which will serve as a guide for land use throughout the state. Through its review powers, the commission will guide the investment of state resources to the state's older urban areas in an effort to reverse long-running decay.

A review of intermodal planning shows that the state supports the activities of private intermodal operations but does not play an active role. State planning currently is devoted towards rehabilitating an older transportation system that has suffered from years of neglect due to insufficient state funding.[42] In highways and rail, this is especially clear. Most state funding for highways is devoted to repairs and maintenance projects, while rail funds are set aside for the acquisition of abandoned lines so that freight service to smaller communities can be maintained. In public transit, New Jersey Transit has devoted more attention recently to park-and-ride facilities, but most funding is directed towards rehabilitation projects.

## OREGON

### Population

Oregon is the 30th most populous state in the nation, with an estimated population of 2.7 million in 1988.[43] The state has a population density of 27.8 persons per square mile, with 67.9 percent of the population concentrated in urban areas. State population increased by 568,467 people from 1970 to 1983. The state's major cities are Portland, Salem, and Eugene.[44]

### Geographic Area and Topography

The total state land area is 96,981 square miles, which ranks tenth in the nation. The Coast Range of mountains along the Pacific Coast is separated from the Cascade Mountain Range to the east by the Willamette River Valley. Further east of the Cascade Range, the remaining two-thirds of the state is a semi-arid plateau region. The Columbia River is the state's northern boundary and affords access to the Pacific Ocean.

### Transportation Statistics

The primary port is Portland, approximately 60 miles up the Columbia River from the Pacific Ocean. Astoria, Newport, and Coos Bay are also major Oregon Pacific ports. Oregon's ports imported 2.4 million and exported 14 million tons of cargo in 1985. Primary exports are wheat, logs, and woodchips. There are 453 miles of commercial navigable waterways used by barges, log tows, and fishing vessels.

The inland transportation infrastructure consists of 34,300 paved miles of highways (4,597 federal, 7,484 state, 22,219 local) utilized by 2.6 million registered vehicles as of December, 1986. The major rail lines are the Burlington Northern, Union Pacific, and Southern Pacific. There are 2,639 miles of rail lines in operation. The Burlington Northern connects Astoria to Portland, Eugene, and Seattle, with a secondary line extending south to Klamath Falls through Bend. The Union Pacific connects Portland with Seattle, Omaha, and New Orleans to the south and east. The Southern Pacific comes north from Los Angeles and points east to Eugene and then north to Albany and Portland, all with connecting lines to the coast at Eugene, Albany, and Portland. The western half of the state has a far denser rail network, which reflects population concentration and general economic development.

Crossing two mountain ranges and extensive river systems, 2,560 state and 4,200 local, city, and county bridges are included in the road network. There are 14,217 contract and

common motor carriers operating in Oregon. Air transportation in Oregon is served by 113 public airports, with interstate connections principally at Portland and Eugene.[45]

**Economy**

Oregon's principal industries include manufacturing, agriculture, forestry, and tourism. Principal manufactured goods are predominately forest products (lumber and pulp), but also include food, machinery, fabricated metals, printing and publishing, and primary metals. The three main agricultural crops are wheat, hay, and potatoes. Livestock and commercial fishing add to Oregon's broadening economic base.

Statewide unemployment in Oregon has declined from 9.4 percent in 1984 to a current estimated level of less than 6 percent. Although new jobs are often service oriented, with a subsequent limited growth impact on the industrial and manufacturing sectors of the state's economy, Oregon has managed to improve its prospective economic conditions by emphasizing its healthy economic attitude and by allowing the fullest utilization of available resources consistent with strict environmental standards.

**STATE ECONOMIC DEVELOPMENT**

The first of Oregon's two economic development agencies is the Land Conservation and Development Commission (LCDC). It has seven volunteer members appointed by the governor and confirmed by the state senate. The LCDC's administrative functions are handled by the Department of Land Conservation and Development (DLCD) in Salem. In order to develop a framework for a statewide program of land-use planning, the LCDC through the DLCD forms a partnership with local city and county governments, which are required to plan, set standards, and administer most of the land-use regulations. This cooperative quilt of overlapping geographic areas of responsibility covers the state.

Using mandatory goals and suggested guidelines, Oregon's Statewide Planning Program Goals: 1985 document begins with an emphasis on citizen involvement at the local level and then concentrates on land-use planning in economic development. Concerns over conservation of farm and forest lands and natural and coastal resources are balanced with the development of housing, transportation, public facilities, and services. There is no comprehensive plan at the state level, but there are statewide comprehensive local plans at the city and county level to zone land, administer permits, issue variances, and require environmental impact statements.

Each local comprehensive plan deals with land use, economic development, and resource management through a two-part approach. First, the plan compiles background information then sets a policy for long-range objectives. The policy element of the statewide goals incorporated into local comprehensive plans has the force of law. Through periodic amendment and review, adjustments can be made to portions of the plan, while overall reevaluation occurs every three-to-five years. Plan policy is implemented by zoning and land division ordinances which control economic development in Oregon for the benefit of each local planning area. The Land Use Board of Appeals (LUBA), a three-member special court, arbitrates land-use planning disputes.

The second economic development agency is the Oregon Economic Development Department (OEDD). The OEDD helps to coordinate planning and research of economic policies and initiatives at the federal, state, and local levels. One example is the OEDD's involvement in the Oregon Coastal Ports Study, prepared in conjunction with the Oregon Department of Transportation (ODOT). The study analyzed the extent to which land-side transportation improvements could influence economic development on the Oregon coast. The study focused on Astoria, Coos Bay, and Newport. Improved highway routings and rail services and rates were examined. While some of the highway routings were found to be viable in terms of increased area business sales, the rail portion showed only Astoria to have the attributes necessary to become a load-center port for containerized cargoes. The general economic development of the 23 port districts is reviewed in the ODOT's Transportation Overview, which covers import and export tonnages and revenues.

Section 9 of the Oregon Statewide Planning Goals is entitled Economy. The goal of section 9 is to diversify and improve the economy by increasing the "variety, type, scale and location of business, industrial and commercial activities." Section 9 seeks to make a "beneficial change in those business, industrial and commercial activities which generate employment, products and services consistent with the availability of long term human and natural resources." Local comprehensive plans in Oregon benefit from the framework of goals and guidelines which give initial direction and impetus toward constructive economic development.[46]

**STATE AGENCIES INVOLVED IN TRANSPORTATION**

The primary state agency involved in transportation is the Oregon Department of Transportation (ODOT). Although less singularly involved, the Oregon Economic Development Department also plays a substantial role in transportation.

**Oregon Department of Transportation**

Organization. The Oregon Department of Transportation consists of five departments: Aeronautics, Highways, Motor Vehicle Registration, Public Transit, Parks and Recreation, and Central Services. These five departments handle mass transit, barge, air, water, pipeline, rail, highway, bicycle, and pedestrian modes based upon local, regional, and state transportation needs without over reliance on a single mode.[47] The ODOT attempts to minimize adverse social, economic, and environmental impacts and costs, conserve energy, and meet the needs of the transportation disadvantaged--those with limited transportation services. ODOT also facilitates the flow of goods and services in conformity with local and regional comprehensive land-use plans.

The Oregon Department of Transportation is headed by a five-member Transportation Commission. An executive staff headed by a director coordinates the administration of the various component modal branches.

Programs and Projects. The hallmark of multimodal planning at the ODOT is the coordination in economic development with local and regional comprehensive plans. These plans are subject to review and approval by local and regional planning agencies. Planning flows from the local Citizen Involvement Advisory Committee (CIAC) through the administrative Department of Land Conservation and Development, and into the Land Conservation and Development Commission. However, the principle of using mass transit only in high-density developments and the highway mode for all other developments results in the continued reliance predominantly on the highway travel mode.[48] Several intermodal projects center on Portland, either as a port or because of its innovative light-rail program.

Funding. The ODOT provides financial and technical assistance for transportation projects, depending on the mode and the respective modal funding source. The department submits grant proposals and programs for mass transit and transportation for the disadvantaged. These requests are made through the Urban Mass Transit Administration (UMTA) and Federal Highway Administration (FHWA). Funding from UMTA and the FHWA is coordinated with various local private- and public-sector entities. The majority of funding for the ODOT is by mode with state road user registration fees, fuel taxes, and trucking weight fees funding the highway fund, while aviation fuel taxes pay for the aeronautics operations. Although there is one ODOT budget, it is often allocated by modal purpose through specific funding sources for each modal type.

Reports and Plans. Section 12 of Oregon's Statewide Planning Goals addresses transportation. The goal of providing

and encouraging a safe, convenient, and economic transportation system which considers "all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian" was adopted in December 1974 to give a broad scope to multimodal planning in Oregon. However, each mode within the Oregon Department of Transportation plans for its own specific scope of activities. An example is the 1984 Oregon Highway Plan, prepared by the highway division in order to clarify maintenance and construction decisions. The plan provides guidelines for developing a six-year Highway Improvement Program and for allocation of resources in the highway division's biennial budget. The plan attempts to be multimodal, dynamic, flexible, and integral to the overall Oregon Transportation Plan. Aimed at meeting demands on the highway system caused by increasing population growth and economic development, the plan specifically states that its success is dependent on the ability of the highway fund revenues to keep pace with inflation through an additional one-cent fuel tax and equivalent weight mile fee each year. In 1989 and 1990, Oregon received a two-cent increase in its fuel taxes and is scheduled for another two-cent increase and equivalent increase in weight distance fees in 1990.

The highway plan is not project specific. Instead, it concentrates on establishing policies and guidelines to be followed in selection of projects and levels of service. The main priority seems to be the preservation of the existing road system. The plan covers questions of maintenance, preservation, modernization, classification, and the impact of inflation. The highway plan is guardedly optimistic while emphasizing the need for an inflation-sensitive highway revenues program.

Plans for rail, air, and mass transit are all similarly unimodal. Rather than have an established project-level procedure for multimodal planning, the ODOT has instead relied on a more traditional approach of utilizing unimodal planning with occasional specific project level multimodal plans.

The ODOT published three reports on transportation in 1988, which are of particular interest in light of the multimodal concepts in section 12 of the Oregon Statewide Planning Goals. Development of the Strategic Management Process at the Oregon Department of Transportation deals with strategic planning and stresses flexibility and innovation while simultaneously trying to define related words and phrases used in outlining values, missions, and approaches. Despite its aims, the report tends to concentrate on management, rather than on how transportation is affected.

In Transportation Strategies for Oregon 1988-89, major trends and broad strategies for multimodal planning are briefly, but adequately, sketched in a draft document which has, as yet, no conclusion. The broad scope of subjects covered by the report

in only a few pages make it a valuable handbook of multimodal planning in Oregon.

The brief synopsis of presentations, Moving Oregon Into the 21st Century: A Futures Forum, was part of an effort to develop Oregon's statewide transportation strategy. From global perspective to state perspective, the report examines the future of transportation of both passenger and freight in light of new or emerging technology. The report views politics and opportunities in transportation from both economic and social perspectives.

Oregon's reports on planning all share a common grounding in the statewide planning goals. Not just the specific goals and guidelines of section 12 on transportation, but also the entire document is an integral part of local municipal and county comprehensive planning. Even so, in a maze of multimodal choices, local planners are still reminded in the section 12 guidelines that in most instances the highway mode will dominate in determining mode choice for person trips except in those few areas of "high density development". Section 12 guideline number five specifically notes that "low-density developments with dispersed origins and destinations should be principally served by the auto."[49]

**Other State Agencies**

The Oregon Economic Development Department (OEDD) has four divisions: Ports, International Trade, Business Resources (job training and small businesses), and Business Development (recruiting businesses). State funding for the OEDD is supplemented by state lottery monies which are, in part, pledged to economic development projects. The OEDD is also involved in transportation. As noted above, the Oregon Coastal Ports Study is an example of the OEDD's involvement in economic development through improved transportation facilities. The Ports Division of OEDD cooperated with the Highway Division of the ODOT through two private consultants to provide an analytical basis for future state policy regarding economic development of several coastal ports. This is an example of multimodal planning on an intermodal project level.

**MPOs AND LOCALITIES INVOLVED IN TRANSPORTATION**

Oregon has five major metropolitan planning organizations (MPOs). Each MPO is involved in the economic development of its area through local citizen involvement advisory committees (CIAC), which contribute to the statewide planning goals via the Land Conservation and Development Commission and Department of Land Conservation and Development, as described above under state economic development. There are four MPOs in which the local

Council of Government (COG) acts as the MPO. These include Eugene, Longview, Medford, and Salem. The MPO for Portland is the Metropolitan Service District. As urban planning units, MPOs tend to concentrate on urban activities. Funding is often split between federal, ODOT, and COG members or--in the case of Portland--by federal, ODOT, municipal, and county sources.

**Portland Metropolitan Service District**

The Portland Metropolitan Service District is the MPO for Multnomah, Washington, and Clackamas counties. The Portland MPO works closely with Clark County across the Columbia River in Washington state. Funding for the Portland MPO is from federal, state, and local sources. The MPO produces transportation plans and documents including a Unified Planning Work Program (UPWP), Transportation Improvement Program (TIP), and a general transportation plan for the Portland region. The MPO also prepares demographic studies.

Unlike any other MPO in Oregon, the Portland MPO has dropped its COG status and increased its effectiveness by becoming an elected body directly responsible to its regional constituents. This status gives the Portland MPO greater strength in coordinating regional planning and leaves no doubt as to the lead agency in planning in the area. The mass transit organization in the Portland area is the Tri-County Metropolitan District. A concrete example of the Portland areas public interest in transportation is the MAX--Metropolitan Area Express. MAX is a light-rail connection between downtown Portland and a corridor of development to the east. The system is working sufficiently well to dispel doubts about the efficiency of mass transit in the Portland area transportation plan. Park-and-ride projects connect MAX to residential areas to increase adequate ridership levels.

**Lane Council of Governments**

The Lane Council of Governments is both the COG and MPO for Eugene, Oregon. Funding comes from federal, state, municipal, and county sources. The Eugene MPO is more traditional in form and function than the Portland MPO. In Eugene, the MPO produces the required transportation plans and reports but has not taken the same degree of leadership in its regional planning role. To a large degree, this difference in MPO roles is one of demographics. The Portland area has a greater population base than Eugene. However, there is also a difference in style between Portland's innovative political and economic functions and Eugene's more traditional approach of the local COG as MPO with divided responsibilities between several different city, county, and state partners.

## INTERMODAL PLANS, PROGRAMS, AND PROJECTS

Oregon maintains a comprehensive, integrated, multimodal planning procedure on a local level in the form of statewide planning goals. Completed in 1985 by the Land Conservation and Development Commission, Oregon's statewide planning goals were in the process of being updated in 1988. Based on citizen participation and extensive land-use planning, the LCDC's planning goals allow a framework upon which to plan transportation needs in general and intermodal projects in particular.

Oregon's semi-autonomous ports are the best example of intermodal projects. Combining sea, air, highway,and rail modes, the ports function as intermodal points of exchange, especially in Oregon's increasing container market. There are also mass transit projects and programs which the LCDC attempts to integrate with ports where possible.

In part because Oregon's exports (and to a lesser extent imports) are predominately bulk commodities unsuited to containerization, the state only receives about 3 percent of the West Coast container trade. Another reason for Oregon's small share of the container trade is the head start held by places like the Port of Long Beach at Los Angeles, California, which has 40 percent of the Pacific Coast container trade. Late entry, a small hinterland market, and limited funds have allowed the container trade to go to Long Beach and the Seattle-Tacoma area in Washington state. Should container gridlock overtake the larger West Coast ports, however, Portland would qualify as both a container ship-through point for land bridge freight with the East Coast, and as a convenient container transhipment point for markets elsewhere in the United States.

State assistance in intermodal projects--in Oregon this largely means port projects--is limited in monetary scope. However, rather than simply providing funds, Oregon's greatest state contribution to intermodal projects may well be a statewide public and private awareness of intermodal connections. There is a willingness in Oregon to coordinate central policy formulation with local planning and implementation through a cooperative effort with the semi-autonomous public ports largely owned by private steamship and railroad companies. This ideal of public planning and private ownership has worked in western Europe and Japan and may be applicable to multimodal planning on specific intermodal projects in the United States. Oregon's intermodal port projects center on the ports which exist as semi-autonomous local government entities. Each of the 23 port districts is somewhat like a municipality in its legal rights and prerogatives such as zoning and land-use planning.

The port authorities are largely private enterprise oriented and less concerned with planning than with their operation as intermodal points. Container revenue tonnage on the Pacific Coast has increased almost nine fold from 1970 to 1987, from 8.8 to 75.7 million tons--nearly one-half of Pacific Coast revenue tons. Oregon exports 18.5 percent and imports 4.5 percent of total mainland West Coast foreign tonnage. Although low in the percentage of container trade, each port entity nevertheless functions as an intermodal point for ship, barge, rail, and truck operations.

Future intermodal port plans are concentrated on Astoria, which because of its river location and potential main line rail terminal, has the "potential to become a load center for containerized cargoes, and terminal for rail and riverborne bulk cargoes such as grain, coal and ores."[50] To achieve this goal, the land-side transportation infrastructure of road and rail would require costly improvements in excess of $30 million for rail rehabilitation alone. Despite high costs, the long-run advantages in terms of development and jobs are a strong case in favor of the project.

Although the bulk of Oregon's intermodal projects are port related, there are other nonport projects. The Portland area's Metropolitan Area Express--MAX for short--is an electric-powered, passenger-moving light-rail system between Portland and its satellite Gresham, approximately 20 miles east. MAX is a successful operation due to the leadership of the Portland MPO, the progressive attitude and transportation awareness of the regional population, and, lastly, a system of park-and-ride lots along the fixed route. There are not many park-and-ride projects elsewhere in Oregon due to complications in funding requirements. What makes MAX unique is that the Portland MPO traded part of a freeway right of way for the light-rail project, one of the few instances of multimodal planning on an intermodal project at the project level.

Another type of intermodal project is the system of three Willamette River ferries serving local roads where low traffic volumes preclude the construction of permanent bridges. A ferry on the Columbia River operates from the Washington side of the river.

**SUMMARY**

Multimodal planning and intermodal projects are accepted concepts and practices in Oregon--at least on a procedural or planning level. They are less utilized on the project level. Although the Oregon Statewide Planning Goals for 1985 call for a multimodal approach to providing and encouraging "a safe, convenient and economic transportation system,"[51] the reality is

a more practical compromise with vested interests, unimodal funding sources, and preconceived perspectives on mode choice. Section 12 on transportation of the Oregon Statewide Planning Goals specifically calls for consideration of "the differences in social consequences that would result from utilizing differing combinations of transportation modes" and "avoid principal reliance on any one mode of transportation."[52] The reality is that there remains room for improvement between land-use planning and transportation. Such improvement can come through more project-level multimodal planning, especially on intermodal projects.

The linkages among economic development, transportation, and land-use planning are on a local, comprehensive level in Oregon. The state planning goals provide a framework for municipal, county, and regional planners to base their land-use plans and--at least in theory--analytically examine the impact of various transportation projects. Most transportation plans or projects are not intermodal. They are, rather, the continuation of traditional highway, rail, air, and mass transit planning processes.

Occasionally, a cooperative report between different modes or even different state agencies will appear, like the Oregon Coastal Ports Study, in which the OEDD ports division, the ODOT highway division, and two private consultants produced an intermodal study on a project level. As good as the result may have been, this process is not the norm. When local planners receive state plans, the unimodal nature of the project is often already contained within the project. In effect, the local planners' option to choose among alternative modes is limited not just by economic factors, but by a unimodal perspective which is revealed in planning procedures. In part, this unimodal perspective breaks down in intermodal port projects due to the necessity to address several modes of transportation. In the inland transportation infrastructure, however, unimodal planning is predominant.

The public versus private aspect of intermodal projects in Oregon is similar to other states. Passenger projects are largely public, whereas freight intermodal projects are, for the most part, private. Note that Oregon's ports are public in the sense of being port districts and involved in land-use planning. However, they are largely reactive in their response to private-sector requests. The business-oriented port districts are more involved in attempts to attract private investment rather than regulate it and thus drive new business away.

The intrastate trucking industry is an example of a private industry involved in transportation in Oregon which wants to keep state regulation. Most of the trucking industry prefers continued state regulation as protection from what is perceived

as unfair competition from small operators with low overhead expenses. Only a few trucking firms are willing to risk the change. However, most of the private-sector interests involved in general transportation in Oregon prefer government assistance rather than regulation. Therefore, intermodal freight projects in Oregon's ports are largely a matter of private interests pursuing profitable container or load port facilities and seeking cooperation from the OEDD and the ODOT on inland rail and road infrastructure.

There is competition in Oregon at the state, city, and county levels for funding. A successful appeal to Oregon voters for a fuel tax increase of two cents per gallon of gasoline and equivalent weight distance fees has kept the overall budget in line with inflation but left the distribution of funding up to the politicians. Currently, Oregon does not have the financial uncertainty that Washington state has, but the two neighboring states trade off periods of financial anxiety over state funding. If Washington is currently unsure of finding new tax dollars (its fuel tax is higher than Oregon's, but the state must maintain a large ferry system in addition to other transportation needs), in a few years it may be Oregon's turn to search the horizon for some tax increase to finance transportation needs. Although competition among Oregon's state, county, and city levels is keen, there does not seem to be the same degree of fractious infighting between them as in other states.

One reason is that Oregon has a tradition of cooperation in transportation, especially in the Portland area. The state's local comprehensive planning goals and citizen involvement at municipal and county levels ensure a basis of agreement at regional and state levels. While Oregonians may see room for improvement in coordinating land-use planning and transportation plans, the state appears further along than many others in addressing the problems of multimodal planning. The problem of unimodal plans in a multimodal department of transportation extends from the federal level all the way to states that have not as yet even attempted to form an overall multimodal department. Approaching intermodal projects on a project-specific level, rather than as modifications to one particular transportation mode, appears to be a valuable frame of reference in which Oregon has made initial progress.

## VIRGINIA

### Population

Virginia is the twelfth most populous state in the nation, with an estimated population of 5.9 million in 1988.[53] The state has a population density of 141.7 persons per square mile, with 66 percent of the population residing in urban areas. State population increased by 81,000 people between 1980 and 1983.[54]

Virginia consists of 40,817 square miles, ranking thirty-sixth in the nation. Virginia Beach and the state capital of Richmond, with populations of 282,000 and 218,000 respectively, are Virginia's two largest cities. Traditionally, Virginia has been a mostly rural state, with strong, stable agriculture and manufacturing industries. Over the last 20 years, the state's population has risen rapidly, but within the state, a shift in population has taken place to the eastern urban corridor in northern, central, and southern Virginia.

Richmond and surrounding areas, with a population over 800,000, dominates the central eastern corridor area. The northern section of the corridor is part of the rapidly growing Washington, D.C., metropolitan area.[55]

### Geography and Topography

The topography of the state is varied, with a mountain and valley area in the west and coastal plains in the east. Virginia borders on the Atlantic Ocean to the east, North Carolina to the south, Tennessee and Kentucky to the west, West Virginia to the north and west, and Maryland and Washington, D.C., to the north.

The eastern tip of Virginia is prosperous by U.S. standards, with low unemployment rates, while the southwestern part of the state is characterized by a relatively low standard of living and high unemployment.

### Transportation Statistics

The transportation infrastructure in Virginia is quite varied, due to the seacoast and Chesapeake Bay, which stretches along the entire eastern part of the state, and the Blue Ridge Mountains to the west. The state of Virginia is responsible for 54,000 miles of roads, the third largest state system in the country. Virginia is one of only four states responsible for local roads.

Over 29 million passengers enplaned at Virginia's commercial airports in 1986, an increase of 14 percent over 1985, and a

four-fold increase over 1960. International airports are located at Dulles, Norfolk, Newport News, and Richmond. Norfolk Southern and the CSX rail lines are the major railroads operating in the state. Rail abandonment is a major problem in Virginia. Virginia possesses five major seaports, known collectively as Hampton Roads.[56]

**Economy**

Wholesale and retail trade, services, government, and manufacturing, in that order, are the dominant industries in Virginia. The overall state economy has boomed in the 1980s, with only one employment sector, mining, showing a net decrease in employment. About 137,000 people are employed in the transportation sector in Virginia, making it the fifth largest sector for jobs.

## STATE ECONOMIC DEVELOPMENT

The Virginia Department of Economic Development (VDED) is now housed within the Virginia Industrial Development Department (VIDD), formed in 1982. VIDD promotes Virginia to current and perspective businesses, and works with other state agencies on matters affecting economic development.

It is in this latter function that VIDD and transportation intersect. A $5 million industrial development project to build roadways to facilitate business start-ups and expansions is primarily handled by the Virginia Department of Transportation (VDOT). However, the VIDD works with the VDOT in deciding which projects are approved and the importance of the approved projects. Businesses may be awarded up to 10 percent of the funds business spends to build or expand facilities.

A similar program for railroad projects is the other major transportation project with intermodal implications. This project is described in greater detail in the section on VDOT.

## STATE AGENCIES INVOLVED IN TRANSPORTATION

The major state agencies in transportation are the Virginia Department of Transportation (VDOT), the Virginia Port Authority, and 18 MPOs, and other transportation systems. The VDOT dominates transportation planning and project implementation in the state, with highways receiving the most emphasis, although mass transit and railroads receive some attention.

Virginia began placing greater emphasis on transportation beginning in 1986. Governor Baliles promoted transportation funding and planning needs as critical issues. The Virginia

Legislature responded with $422 million in additional annual funding. Because of this financial support, transportation activity has greatly expanded.

Multimodal planning does not take place to a significant extent. The state Commission on Transportation in the Twenty-First Century separated its recommendations for meeting Virginia's transportation needs by individual mode. Needs were generally divided into separate projects and no mention of multimodal planning can be found in the phase I report of the commission.[57]

**Virginia Department of Transportation**

Organization. Virginia established a Department of Transportation in 1987. Before that time, the state's transportation agency was called the Virginia Department of Highways and Transportation. Its organizational structure has not changed significantly, however. The director of planning and programming is not a coordinator for all modes of transportation, as rail and public transportation are handled separately.

VDOT has authority over state highways and other roads, bridges, public transportation, and railroads. VDOT divides the state into 12 transportation districts. These districts administer the transportation projects and policies decided on in Richmond. The districts are given a fair amount of leeway in deciding how best to implement projects.[58]

Programs and Projects. The major activities of VDOT include highway system acquisition and construction, highway system maintenance, financial assistance to localities, toll-facility operations, support to various state agencies, and mass transit construction and operation. Highway system activities dwarf all other activity costs combined.

Funding. The VDOT funds its activities from a variety of state, federal, and local sources. The most important state sources of funding are the motor vehicle fuel tax; motor vehicle sales, use, and license taxes; an excise tax on petroleum; and the newly created Transportation Trust Fund. The Transportation Trust Fund was created in September 1986 to provide additional monies for construction, public transportation, ports, and aviation programs. The trust fund is expected to add $420 million annually to state transportation funds.

Reports and Plans. The VDOT assists other agencies in planning projects. Localities also receive cooperation from the state. Mass transportation, especially in Northern Virginia, is an area where much cooperation occurs.

### Virginia Port Authority

The Virginia Port Authority (VPA) is an independent state agency that operates five state-owned general cargo facilities. Collectively, these ports are known as the Ports of Virginia. Until 1970, the VPA was known as the Virginia State Ports Authority. The year 1970 also brought an increase in the number of commissioners on the Board of Commissioners from seven to eleven. Moreover, the governor's Management Study recommended that the port authority should operate autonomously and as a successful business enterprise. Wider operational and financial initiative powers were given to the port authority by the legislature following the study containing these recommendations.

Until 1970, the major maritime towns in the Hampton Roads area had their own port authorities. The Virginia General Assembly had created these individual authorities over the years and provided substantial funding to them. The 1970 legislation gave the VPA the power to acquire port facilities from local governments. In addition, the legislature granted the VPA more power to regulate and enforce vehicular traffic in and around its facilities. Most importantly, the VPA was urged to consolidate the port facilities and their administration. Adequate monies were appropriated by the General Assembly to carry out the unification of the ports.

The present ports under VPA administration are the Norfolk International Terminals, Newport News Marine Terminal, Portsmouth Marine Terminal, Lambert's Point Docks, and Sewell's Point Docks. The VPA will begin operations at an inland truck-rail port in early 1989. The VPA also has interest in the river ports of Alexandria and Richmond, but little potential is seen for these facilities. For 1986, the ports reached the five-million-ton general cargo mark, of which 80 percent was container cargo. Total cargo amounted to 58.4 million tons. Revenue for 1986 was $1.435 billion.[59]

## MPOs AND LOCALITIES INVOLVED IN TRANSPORTATION

There are 20 planning district commissions in Virginia. These districts possess a great range of functions. In northern Virginia, highway, subway, and urban transit issues must be addressed. In rural portions of the state, no significant public transportation exists, and almost all emphasis is on building and maintaining roadways.

### Richmond Planning District Commission

The Richmond Planning District Commission performs a variety of planning functions. Currently, the commission is developing, in conjunction with the VDOT, a 20-year plan for Richmond and the

five counties within the district's boundaries. Although scheduled for release in December of 1989, the plan will likely be delayed until the middle of 1990, as state input into the plan is behind schedule.

For the long-range plan and other planning issues, the commission focuses on new route and facility needs, rather than on the engineering aspects of transportation planning. This is especially true of the 1995 plan, which, in addition to concern about road expansion and improvement, focuses on new routes and service in the transit arena.

In addition to working with the state, the commission coordinates with local policymaking actors, such as the city of Richmond and the Greater Richmond Transit Company (GRTC), a city-owned transit company. GRTC performs mass transit (mostly bus) and ride-sharing tasks.

Another project the GRTC is conducting evaluates the ability of GRTC to make all bus stops and buses fully accessible to the handicapped. The impetus for this study is the 1989 ruling that all systems receiving federal money must work to develop fully accessible transit for the handicapped.[60]

**Southeastern Virginia Planning District**

Southeastern Virginia Planning District (SVPD) includes the cities of Chesapeake, Portsmouth, and Norfolk. The major tasks SVPD performs are specific, small-scale planning and other technical assistance to localities. Such assistance includes automobile intersection studies. A larger project completed in 1988 by SVPD detailed ways in which transportation funding could be obtained by local governments. The SVPD currently is devising an overall transportation plan for the year 2010. The bulk of the plan examines major thoroughfare and highway needs for the next 20 years.[61]

**Other MPOs**

The effectiveness of Virginia MPOs varies considerably. The most important variable influencing effectiveness is the degree to which the local governments cooperate with the MPO in reaching consensus decisions. Without local government cooperation, MPOs are restricted in implementing transportation programs. Where conflict abounds, the Virginia MPOs are used mostly as technical consultants, rather than planners.

**INTERMODAL PLANS, PROGRAMS, AND PROJECTS**

Virginia is a traditional state in terms of transportation planning. There is talk of intermodal planning, but little

serious intermodal or multimodal planning is done. Most of the intermodal planning that is done at the state level by the VDOT is in northern Virginia, involving passenger movements in cars, buses, trains, and subways.

Major intermodal efforts in sprawling, congested northern Virginia include numerous park-and-ride and kiss-and-ride (passengers dropped off by cars) facilities. In 1987, $3.2 million was appropriated for the purchase of equipment, design of parking lots, and administrative costs for a commuter rail service that will begin in 1989 or 1990.

One major multimodal effort of the VDOT is the industrial rail fund. The fund provides funds to build rail spurs to industrial businesses in the Eastern Shore area. The goal of the fund is to induce industrial concerns to locate in the state. The fund of $800,000 for 1986 is seen as one item in a total package aimed at luring industry to the state. The fund is administered by the rail and transportation division of VDOT.

The Virginia Port Authority, however, is involved in several multimodal activities that merit attention. These projects are the Virginia Inland Port and three state-of-the-art dual hoist cranes. The Virginia Inland Port is an effort to increase Virginia's share of the import-export shipment market by establishing a facility that transfers goods from trucks to trains and vice-versa.

The Virginia Inland Port (VIP) is located 220 miles northeast of the Ports of Virginia. The idea behind it is that shippers can save money and time by trucking containerized goods to the inland port at Front Royal, rather than taking the additional time and incurring the additional expenses of trucking to Baltimore or Philadelphia.

Competitive advantage is the key to the success of the inland port. The Virginia Port Authority is aggressive and the inland port fits in well with the image of customer responsiveness that VPA wishes to promote. Operation is scheduled to begin in early 1989. The land on which the inland port is built cost the VPA $41 million. Initial construction on the site will cost $2.5 million. Up to $30 million in additional funding may be used for facility construction.

The dual hoist cranes at the Ports of Virginia also fit in well with the modern, efficient image VPA strives for. The four dual hoist cranes, installed in 1987, are high-capacity machines. Three of the cranes operate at Norfolk International Terminals and one at the Portsmouth Marine Terminal. The cranes are rated at 50 to 55 boxes per hour. The cranes cost a total of $19 million. The cranes stand 220 feet high and 88 feet long. Lift speed is 170 feet per minute. Each crane has a capacity of 40

long tons and can handle 16 containers wide on a deck. The cranes are touted by the VPA as a new generation of dual hoist cranes that are compatible with cranes at Rotterdam, the world's busiest and perhaps most efficient port.[62]

**SUMMARY**

Virginia, while heavily involved in many aspects of transportation planning, does not participate in statewide multimodal planning. Several interesting intermodal projects, the Virginia Inland Port and the dual hoist cranes, make Virginia unique in the area of multimodal transportation.

## WISCONSIN

### Population

Wisconsin is the seventeenth most populous state in the nation, with an estimated population of 4.9 million in 1988.[63] The state has a population density of 87.5 persons per square mile, with 64.2 percent of the population residing in urban areas. State population increased by 9,000 people between 1970 and 1980.[64]

### Geographic Area and Topography

Wisconsin consists of 56,154 square miles, ranking twenty-sixth in the nation. It is bounded on the north by Lake Superior, on the west by the Mississippi River, and on the east by Lake Michigan. The central plain region is bordered on the southwest by Western Upland.[65] The location of the state is such that highway transportation from the northwest coast to the northeast passes through the state.

### Transportation Statistics

Wisconsin has approximately 108,000 miles of public streets and highways. Of these, 70 percent are town, village, or city roads, 18 percent are county highways, and 11 percent are state highways. The state highways, however, account for 60 percent of total vehicle miles travelled in the state, carrying an average of 59 million vehicle miles of travel on any given day. There are nearly 4,300 bridges located on these state highways.[66] The state also has 4,800 miles of rail line, 14 recognized commercial harbors, 23 barge terminals, and 143 public airports.[67] Of these airports, 36 have runways 4,000 feet in length or longer.[68] Mass transit operations exist in 41 localities across Wisconsin.

### Economy

The principal industries in Wisconsin are trade, service, government, transportation equipment, agriculture, and manufacturing. Manufacturing, mainly of durable goods, makes up over 25 percent of the jobs in the state, accounting for 35 percent of the salaries paid. Due to the weak dollar, manufacturing has grown significantly in the late 1980s providing Wisconsin with a steady period of growth over the last three years.[69] The unemployment rate for January 1989 was 4.2 percent and the nonfarm wage and salary employment growth rate was 3.1 percent.[70] The greatest increase in employment growth was in the manufacturing area. New techniques in storage and manufacturing, such as just-in-time (JIT) inventory control, are very dependent on good transportation and are being integrated into all phases

of industry. JIT simply means having the right product in the right condition at the right place at the right time. Primarily using trucking, companies deliver parts just prior to their use, thereby eliminating expensive storage and inventory control.[71]

## STATE ECONOMIC DEVELOPMENT

The Wisconsin Department of Development has been actively involved in several programs aimed at improving economic conditions in the state. Working with local utilities, the Department of Development offers numerous financing options to localities for the purpose of attracting new industries. The state uses its skilled labor force, favorable climate, and transportation infrastructure as enticements to draw in new industry. Because the primary industry, manufacturing of durable goods, depends on access to large markets, transportation is seen as an integral part of the state's marketing strategy. This is especially true in light of the widespread use of JIT.[72] Some of the major economic growth programs administered by the Wisconsin Department of Transportation (WISDOT) are described below.

### Corridors 2020

On August 3, 1988, Governor Tommy G. Thompson introduced a long-range highway/economic development plan entitled Corridors 2020. The program is designed to improve the state's access to other markets by connecting the state highways to the national highway network. The plan evolved over a year-long series of forums held with both business and civic leaders throughout the state. The tie between economic growth and quality transportation systems was a primary conclusion. The plan consists of two elements, the backbone system and the connector system.[73]

The backbone system is a series of multilane, divided highways connecting all regions and major economic centers in the state and tying them in with the national transportation network. When fully completed, it will consist of 1,650 miles of interconnected freeways and expressways. While commercial access will be available through all of the intersecting public roads, bypasses of communities are planned, where necessary, to maintain constant highway speeds. Sections of the corridor system may be upgraded to limited-access highways as traffic needs warrant.[74]

The connector system will link the backbone system to other significant economic and tourist centers within the state. When completed, it will consist of 1,100 miles of high-quality, two-lane roadway. It is hoped that these roads will promote regional economic growth through greater tourism and service industries. In the future, sections of the connector system will be expanded to four-lane, divided backbone highways as needed.[75]

Routing for Corridors 2020 was determined with the following criteria in mind: capacity needs; efficient capacity; service to population centers; service to trade centers; truck volume; service to manufacturing centers; and service to tourism and recreation counties. It is hoped that Corridors 2020 will promote economic development through improved transportation routes. The plan deals solely with highways, since the national multilane highway network is considered the key ingredient to the manufacturing industry. Good roadways are also considered crucial in industry location, expansion, and retention decisions.[76]

A follow-up of this plan is the recently unveiled Metro 2020. This second phase of Corridors 2020 concentrates on the economic and transportation development problems unique to large-scale metropolitan areas such as Madison and Milwaukee.[77] It focuses on how goods and, more importantly, people move within urban areas.

Essentially, the backbone system provides access into and through the state for raw materials and finished goods. The connector system provides access to the urban, tourist, and service areas within the state. Metro 2020 provides work force access to jobs. These systems all tie together as a total transportation and economic growth package.

**Transportation Economic Assistance**

Another transportation-related program is the Transportation Economic Assistance (TEA) program. Established in July 1987 (Wisconsin State Statute 84.185), TEA is a more robust version of the "A Highways Economic Assistance and Development" (AHEAD) program. While AHEAD dealt only with highways, TEA funds are open to all modes. TEA is intended to help secure new business development in Wisconsin, create new jobs, and increase state revenues by providing transportation improvement funds to municipalities.[78] In order to be eligible for these funds, applicants must identify a business with "definite plans" to either locate in Wisconsin or expand its in-state operations. Applicants can be businesses, consortium groups, governing bodies or any combination thereof. The state provides a quick (usually within three weeks) response and, if approved, will provide up to 50 percent of the required transportation funding.

WISDOT initially screens all requests to ensure that the economic development project secures new employment and does not simply compete with already existing job markets. The screening also checks the facility to ensure it is open to, or substantially benefits, the public. After this initial screening, WISDOT evaluates the proposal along seven criteria. The major criteria are the ratio of cost of transportation

improvement to each job created, the start time of both the transportation improvement and economic development project, and the overall soundness of the business enterprise. The acceptable ratio of state dollars spent per job is $5,000, and the time-to-start date must be under three years. Retail businesses are not eligible for TEA funding, since they generally compete with existing markets.[79]

In 1988, 17 applicants were considered for TEA funds. Of these, 14 were granted funding. The average time between application and a decision was three to four weeks. The average funding ratio was approximately $2,500, with the high being $5,000. Over 2,600 new jobs were created in 1988, with an estimated additional 2,600 indirect or service-related jobs also created. Due to the success of the program, the original $3 million per year allocation was supplemented with an additional $3 million.[80] For the next state budget, TEA is requesting $12 million, or $6 million a year.[81] The program clearly exceeded its goals of increasing the number of jobs in the state.

Even though TEA funds are open to all modes, only one of the 14 projects was not highway related.[82] This ties in with Wisconsin's view of roadways being integral to its key industry, manufacturing. Examples include $375,000 awarded to Outagamie County for airport improvements, which drew in an airline maintenance operation resulting in 645 new jobs and generating $8 million in tax revenues over 10 years; a $265,000 grant to a small town to improve street access of a local furniture manufacturer, which will enable it to complete a $2 million expansion and add 125 new workers; and $2.5 million to Kenosha County and WisPark Corporation to help extend a county highway to link the Lake View Corporate Park to Interstate 94, creating an initial 550 jobs and an estimated 1,003 jobs indirectly.[83] While some funds were used for airport improvements, no funds were used for rail, harbor, or waterway improvements. Harbor improvements usually require large initial investments and tend to grow too slowly to be justified using the TEA funding ratio.[84]

## STATE AGENCIES INVOLVED IN TRANSPORTATION

Transportation planning and implementation in Wisconsin is performed by the Wisconsin Department of Transportation (WISDOT). WISDOT works in conjunction with other state and local departments and agencies for combined programs, such as economic development programs.

### Wisconsin Department of Transportation

While WISDOT is responsible for all modes of transportation within the state, the vast majority of effort is geared toward the highway systems. This is evident in its organization.

Organization. WISDOT is organized functionally, with divisions for Planning and Budget, Business Management, Highways and Transportation Services, Motor Vehicles, State Highway Patrol, and Transportation Assistance. While the highways are represented in their own division, the remainder of the modes are represented under the Division of Transportation Assistance, which consists of the bureaus of Transit, Railroads and Harbors, Aeronautics, and Local Highway Aids.

Programs and Projects. The majority of the transportation programs in the state are highway related, and tie in with the state's economic development programs. The main programs are Corridors 2020, Metro 2020, and the Transportation Economic Assistance program. These were discussed previously in the state economic development section.

The Rail Facilities Acquisition and Rehabilitation program provides funding for the acquisition and rehabilitation of abandoned rail lines. WISDOT has spent $23 million since 1980 to purchase 818 miles of abandoned rail lines, and $27 million to upgrade 560 miles of track in poor condition.[85] The program also provides capital funds to class I railroads for the rehabilitation of lines that have not been abandoned. Eligible activities under this program have been recently expanded to include construction of new railroad spurs, which provide businesses with access to rail lines. An example is a $180,000 grant provided to the Badger Mining Corporation in Green Lake County. The grant paid for 80 percent of the costs needed to build a one mile loop connecting it to a main line.[86]

Under the Harbor Assistance Program, WISDOT provides between 50 percent and 80 percent of required funding to local port commissions for maintenance or improvement of harbor facilities. Preference is given to maintenance projects and to harbors that handle freight. Since 1980, WISDOT has awarded 18 grants, worth $6.6 million, to ports for dredging, dockwall construction, and repair. The Port of Superior received a $1.7-million grant to reconstruct a general cargo dock, effectively doubling the port's loading/unloading capabilities. Recent expansions of the program now allow for grants to acquire ferry vessels on rivers within or bounding the state.[87]

The Airport Development Assistance Program is responsible for the supervision, promotion, and development of a statewide airport system. Local governments receive both financial and technical assistance for development and maintenance of public airport authorities. Close to $25 million was spent in 1987 on improvements to 25 airports.[88] Public-use airports, not owned by local governments, are also eligible for these funds if they meet minimum passenger requirements.[89]

Funding. The WISDOT budget for the 1987-1989 biennium totals approximately $2.1 billion. State funds, consisting of user fees and taxes, make up over 71 percent of total revenues. Federal funds make up 21.5 percent of projected revenues. While the federal funds are received for the support of specific programs, namely state and local highway programs, the state funds are deposited in the Transportation Fund.[90] The Transportation Fund, also known as the Unified Transportation Fund (Wisconsin State Statute 25.40), is open to all modes. A line-item budget is prepared biennially by WISDOT with appropriations for all modes.

During the drafting process, it is common for special-interest groups, such as the aviation industry, to lobby for airport-related funding in the amount equal to that collected from the general aviation fuel tax. Although air-related revenues are typically returned to fund aviation expenditures, transportation officials are not statutorily mandated to do so. In a similar vein, highway groups lobby for motor vehicle fuel tax revenues. Motor vehicle revenues, however, are usually distributed to cover rail, harbor, transit, and highways. For the 1987-89 budget, over 90 percent of all state transportation revenues were from highway-related sources, such as motor fuel taxes and registration fees.

For the same budget, general highway aids will account for over one-half of all projected aids and assistance funding. Transit aids will receive 13.4 percent of the $727 million allocated, while rail, harbor, and air will split 9.4 percent. So, while not bound by statute to distribute funds according to specific modes, the vast majority of all funding goes to the mode receiving the highest revenues. Essentially, then, highways fiscally carry all of the other modes of transportation.[91]

Funding for mass transit deserves special note. The state provides 37.5 percent of operating costs to each of the 41 local mass transit systems operating in the state but does not provide start-up capital. To receive state funding, a community must have a population of 5,000 or more and be served by a transit system incurring an operating deficit. A recent proposal to raise the state's share to 39 percent was vetoed by Governor Thompson, who instead directed that a study be undertaken on the state's role in urban mass transit.[92] This study will be incorporated into the Metro 2020 program.

Reports and Plans. Wisconsin's transportation plans for the past two years have dealt heavily with economic development. The Corridors 2020 and Metro 2020 programs are all realizations of plans studying the relationships between transportation and economic development.

A major study recently completed is the Highway 29/45 Corridor Study. It evaluated the need for an expansion of an existing roadway to a full four-lane highway across the state. The current roadway has a high volume of truck traffic serving the state's industry, business, and agriculture. WISDOT is using a new means of evaluating the need to upgrade this project. While it was acknowledged that the corridor is vital for connecting two cities, the commission emphasized that its significance to the state's economic well-being cannot be ignored. This called for a joint effort on the part of WISDOT and the Department of Development (DOD). The year-long study found that every dollar the state would spend in the upgrade to four lanes would reap $2.20 in benefits. It was estimated that it would create 2,500 jobs by 2020 and over one billion dollars in personal income for state residents.[93]

The state's Highway Plan 2000 is a long-range, system-level plan of highway and bridge improvements. It is the primary planning tool to be used by WISDOT in its yearly highway improvement decisions.[94]

## MPO's AND LOCALITIES INVOLVED IN TRANSPORTATION

Wisconsin has 10 regional planning commissions and 14 MPOs. The 2 MPOs studied in this report are the Southeastern Wisconsin Regional Planning Commission and the Dane County Regional Planning Commission.

### Southeastern Wisconsin Regional Planning Commission

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) was formally created in August 1960 by then-governor Gaylord Nelson. Its purpose is to coordinate the application of state programs and policies with the region, articulate regional and development goals, coordinate the activities of the individual municipalities, and provide planning assistance to them. SEWRPC serves as the MPO for the area, which encompasses 2,689 square miles made up of Kenosha, Racine, Milwaukee, Walworth, Ozaukee, Washington, and Waukesha counties. The commission consists of 21 members, 3 from each of the 7 member counties.[95] The commission has 4 standing committees: Executive, Administrative, Planning and Research, and Public Relations. A 97-person staff essentially carries out the commission's programs within 5 major divisions: Transportation Planning, Environmental Planning, Land-Use Planning, Community Assistance, and three support divisions.[96]

SEWRPC recently completed an updated 5-year Transportation Improvement Program (TIP). It deals with the Kenosha, Milwaukee, and Racine urbanized areas. The TIP was adopted in December 1987, and authorizes funding for several projects that maintain

the existing highway system and key transit maintenance projects. Over 456 projects were addressed, representing $825 million of potential investment. Of this, 44 percent will come from federal funds, 31 percent from state funds, and the remaining 25 percent from local funds.[97]

SEWRPC participates in railway planning mainly by monitoring the status of railway services within the region, proposals for service abandonments, and providing technical assistance to local communities.[98] Airport transportation planning has continued with the completion of SEWRPC Planning Report No 38, A Regional Airport System Plan for Southeastern Wisconsin. The report recommends coordination of plans for air transportation needs in the seven-county region through the year 2010.[99]

**Dane County Regional Planning Commission.**

The Dane County Regional Planning Commission (DCRPC) is a single-county planning organization. It serves as the MPO for Madison, which is located within Dane County. The DCRPC is made up of an 11-member commission and a supporting staff working within the Transportation Planning, Environmental Resource Planning, and Community and Regional Development divisions. All planning for the region is contained in the Overall Program Design report, which comprises the Unified Planning Work Program for projects to be completed in a 2-year period.[100]

The majority of transportation planning in the region concerns mass transit, since Madison, the state capital, is the primary focus of the region. Subjects of recent transportation studies include park-and-ride, intercity transit terminals, parking utilization, private-sector participation, and transit development. Ridership of Madison Metro in the 1980s has continually changed and is presently declining in use due to many factors, including the lower cost of gasoline, shifting urban patterns, and fare increases.[101] DCRPC has also studied rail corridors and air transportation within the county. A master plan update for Dane County Airport, presently being proposed, would take approximately 2 years to complete and would aid in future decisions on improvements to any of the 7 airports within the region.[102] Very little planning is devoted to goods movement, since Madison's economy is based primarily on services such as state government, a large university, and retail operations.

DCRPC is also studying corridor preservation strategies. The commission is encouraging local governments to closely monitor street and roadway access to preserve travel capacity along major routes. This includes saving adjacent lands that may be needed for possible future transportation facilities.[103]

## INTERMODAL PLANS, PROGRAMS, AND PROJECTS

As was stated earlier in the report, the majority of Wisconsin's transportation energies have been directed to highways. However, Wisconsin's prime location within the nation, as well as its access to the Great Lakes and the Mississippi River, have created great opportunities for intermodal movement of goods. The Port of Milwaukee has been using this geographic advantage to develop its own intermodal operations. Milwaukee is served by two regional railroads, including the Soo Line, which recently chose Milwaukee as its intermodal hub for southeast Wisconsin. The port also has direct highway access. Within the port area are three container-storage facilities and 150,000 square feet of open area for roll-on/roll-off storage.[104]

Recent deregulation of the transportation industry has caused the Port of Milwaukee to redefine its mission from being just a port to being a transportation distribution center. Because it has access to all modes of transportation, the port can essentially control the flow of goods among the different modes. This provides it with a great amount of flexibility and competitive leverage when marketing to new industries. Because the Great Lakes are limited in some transportation aspects, the port is able to offer a large amount of land-based transportation options, such as truck and rail.[105]

The transformation of the Port of Milwaukee into a distribution center was compelled by market considerations. Using slogans such as "Your needs are our obligations," "We mean business," and "The market is always right," the port aggressively sought out industries and sold the merits of the port system for transportation. Operating essentially as a private business, the port broke even over the past three years. Port tonnage is up 56 percent from 1986 to 3,116,290 net tons moved by the harbor. This was made up of 62 percent dry bulk, 23 percent liquid bulk, 9 percent general cargo, and 6 percent containers. An economic impact study conducted by the Port of Milwaukee reported that over 900 direct and 400 indirect jobs have been created by the port since 1987. These accounted for $48 million in personal income and $5.1 million in state and local taxes. Industries recently wooed to the port range from petroleum distributors to bulk transfer corporations to steel importers. All were drawn to the port because of greater flexibility, lower transportation costs, and less congestion than neighboring ports.[106]

Another area in which Wisconsin is utilizing intermodalism is mass transit. The two main urbanized areas in the state, Milwaukee and Madison, are actively planning for the needs of urban transport. Milwaukee's modified rapid or "Freeway Flier" program has been in effect since the mid-1960s. With 19 outlying parking terminals, the program provides publicly supported,

fixed-route bus service to the central business district. Ridership in both areas has fluctuated throughout the 1980s, with the most recent trend being a reduction in use.

**SUMMARY**

The thrust of transportation planning in Wisconsin today is closely related to economic development. Governor Thompson has recognized the link between transportation and a strong economy and has placed programs that deal with and utilize this relationship high on his agenda. With his political clout behind the plans, they are quickly coming to fruition.

The majority of the plans deal with improving goods movement in the state. Because present businesses and industries depend on highways as a backbone for their goods movement, the majority of the funding and planning has gone to highways. Corridors 2020 essentially caters to these industries. The widespread use of JIT inventory control requires very reliable and predictable transportation. The infrastructure that Corridors 2020 will create will be free flowing and controlled access, ideal for these purposes. The routes chosen for the program connect major manufacturing areas with either raw material producers or distant markets.

Local initiatives can be funnelled through the TEA program. This improves municipal support, and takes some of the burden off of the state. The use of mass transit as a marketing tool is only recently being explored with the newly announced Metro 2020 program. It will essentially address the problems of ensuring availability of workers in urban areas.

Intermodal planning is being conducted in both goods movement and mass transit. Both are being explored due to their strong economic benefits. The nature of ports makes intermodal planning almost a necessity. The quicker a port can unload/load a vessel, the more business it can attract. By offering choices in intermodal transport of goods, the Port of Milwaukee has introduced a greater degree of flexibility to its operations. This will only add to the port's marketability. Mass transit is coming along at a slower pace. The increase in manufacturing industries will call for an increase in workers. Mass transit will be needed for this work force mobility.

## Notes

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2. The World Almanac and Book of Facts (New York: Newspaper Enterprise Association, Inc., 1989), p. 642.

3. Ibid.

4. Ibid.

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6. Telephone interview by Shahrzad Amiri with Mark Lofthus, Director, Minnesota Rural Development Board, St. Paul, March 17, 1989.

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8. Telephone interview by Shahrzad Amiri with Katherine Briscoe, Program Manager, Greater Minnesota Planning, Minnesota Department of Transportation, Duluth, March 6, 1989.

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19. Telephone interview by Shahrzad Amiri with Katie Turnbull, Planning Manager, Regional Transit Board, St. Paul, March 20, 1989.

20. Telephone interview by Shahrzad Amiri with Karen Underwood, Transit Planner, Metropolitan Transit Commission, Minneapolis, March 20, 1989.

21. Telephone interview by Shahrzad Amiri with Ken Stevens, Director of Light-Rail Transit, Hennepin County Regional Railroad Authority, St. Paul, March 21, 1989.

22. Telephone interview by Shahrzad Amiri with Alan Lovejoy, Principle Planner, St. Paul Planning Department, St. Paul, March 22, 1989.

23. Telephone interview by Shahrzad Amiri with Jim Daire, Principle Transportation Planner, Minneapolis Planning Department, Minneapolis, March 22, 1989.

24. Telephone interview by Shahrzad Amiri with Dave Rossman, Traffic Engineer, City of Rochester, April 13, 1989.

25. Telephone interview by Shahrzad Amiri with Natalio Diaz, Manager of Transportation Division, Metropolitan Council, St. Paul, March 22, 1989.

26. Telephone interview with Ken Stevens, March 21, 1989.

27. Telephone interview with Gary Tonkin, March 24, 1989.

28. "The Fifty States: 4th Annual State Financial Report," p. 28.

29. The World Almanac and Book of Facts, p. 646.

30. Telephone interview by Monty Headley with Eli Cooper, Area Planning Manager, New Jersey Planning Commission, Trenton, N.J., March, 16, 1989.

31. Telephone interview with Eli Cooper, March 16, 1989.

32. Telephone interview with Eli Cooper, March 16, 1989.

33. Interview by Monty Headley with William S. Beetle, Manager, Bureau of Local Transportation Planning, New Jersey Department of Transportation, Trenton, N.J., March 3, 1989.

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