

**ASSESSING INTERMODAL TRANSPORTATION PLANNING AT STATE
DEPARTMENTS OF TRANSPORTATION**

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Chapter 1

HISTORICAL BACKGROUND AND LITERATURE REVIEW

Introduction

This project represents a focused effort to evaluate the progress that state Departments of Transportation (state DOTs) have made in implementing the intermodal planning initiatives called for in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the Transportation Equity Act for the 21st Century (TEA-21) of 1998. The ISTEA legislation in particular signaled the beginning of a new era in transportation policy and planning through its explicit use of the word “intermodal” in the title. This usage was intended to “bring the need for intermodalism to the forefront of the nation’s transportation and economic debate” (ISTEA 1991). More specifically, ISTEA introduced several innovations into transportation planning practices including: increasing flexibility for state and local governments to redirect highway funds to accommodate other modes and modal connections; directly linking transportation planning with air quality planning; enhancing the role of metropolitan planning organizations in regional transportation planning; broadening the goals for transportation planning; and increasing the number and variety of stakeholders that should be involved in the transportation planning process. ISTEA also specifically called for state DOTs to adopt an intermodal approach to transportation planning, as reflected by their long-range and short-range plans, their resource allocations, and the characteristics of their planning processes. This report is an effort to identify the degree to which intermodal planning has been implemented at the state level through an in-depth analysis of intermodal planning at three state DOTs in the western US - Arizona, Colorado, and Texas – and four southeastern states – Alabama, Florida, Louisiana, and Mississippi.

This report builds upon a previous Congressional study, “Metropolitan Planning Organizations: An Assessment of the Transportation Planning Process,” conducted by the University of Denver Intermodal Transportation Institute (ITI) and National Center for Intermodal Transportation (NCIT) that examined transportation planning processes in Denver, Dallas, and Phoenix¹. That study identified significant differences in those processes owing in part to the role that state DOTs play. Accordingly, in order to understand the degree to which intermodalism is being achieved, it is essential to consider the ways in which the state DOTs are developing plans, allocating resources, and working with stakeholders. Thus, this project shifts the level of analysis to the state, by specifically examining transportation planning processes in Arizona, Colorado, and Texas, as well as four southeastern states.

¹ Paul Stephen Dempsey, Andrew R. Goetz, and Carl Larson, Metropolitan Planning Organizations: An Assessment of the Transportation Planning Process, A Report to Congress (Denver, Colorado: University of Denver Intermodal Transportation Institute and the National Center for Intermodal Transportation, March 2000), Volumes 1, 2, and 3. The full study can be accessed via the web at www.du.edu/transportation.

In the ten years since ISTEA went into effect, states have had an opportunity to begin implementing the intermodal provisions called for in the legislation. It has become evident that some states have more fully embraced the intermodal initiatives and have developed exemplary plans and programs. Others have lagged in adopting an intermodal approach to planning.

State DOTs are expected to develop and implement an intermodal transportation system that should be reflected in their 20-year long-range transportation plans. Short-range (3-5 year) Statewide Transportation Improvement Programs (STIPs) identify specific programmed projects that are direct indicators of the level of intermodal planning activity that should be ongoing. Overall awareness of and attention to intermodal aspects of transportation planning should be a good indicator of the quality of the statewide transportation planning process, in addition to such goals as need satisfaction, efficiency, equity, productivity, and technology adoption. It is the intention of this research to identify and analyze best practices of statewide intermodal transportation planning for the purpose of education and dissemination of innovations in planning practice.

This research effort involved the collection of data from each of the state DOTs in the form of long-range plans and short-range programs. Additional data were obtained via personal and telephone interviews with leading experts in each state as well as e-mail questionnaires regarding the degree to which intermodal issues are being adequately addressed in statewide transportation planning processes. Further insight was gained from reviewing the literature on statewide multimodal and intermodal transportation planning. From analyzing all of this information, it was possible to identify how the goals of ISTEA and TEA-21 were being met and to specify examples of best practices in implementing intermodal transportation planning activities among a representative group of state DOTs. This study provides a baseline for analyses of these and other state DOTs in future research.

History of State DOTs

The Early Years

Every state DOT started as a Department of Highways, typically in the late 1800s/early 1900s. Prior to that time and throughout much of United States history, the private sector was largely responsible for transportation provision. Private shipping lines, railroads, canal and riverboat operators, and electric streetcar companies met much of the nation's early transportation needs until the beginning of the 20th century. Local roads for walking and horse-drawn carriages were the responsibility of towns and cities. The federal government or state governments were involved in transportation provision only on certain large-scale projects such as the National Road, the Erie Canal, or the land grants to railroads to encourage westward settlement. But there was no organized federal or state department of transportation until the 20th century.

Federal and state government involvement in transportation was instigated by the need for more and better roads. The "good roads movement" began in the late 1800s,

initially spurred by three major constituencies: bicyclists (who started the movement), railroads, and farmers (Sampson, Farris, and Shrock 1990; AASHTO 1991). Both railroads and farmers desired better rural roads to facilitate agricultural goods movement to railheads, while bicyclists wanted better roads for bicycling. It is somewhat ironic that railroads and bicyclists would champion better roads, given that automobiles and trucks would quickly come to dominate the new roads and ground transportation overall to the detriment of both the railroads and bicyclists. Yet, because of this early impetus, states began to develop road networks in the 1890s, including the establishment of state aid systems and state highway departments. New Jersey was the first to establish a state highway department (in 1892), and in 1893, the federal government established the Office of Public Road Inquiry (renamed the Bureau of Public Roads [BPR] in 1918) within the Department of Agriculture. Logan Waller Page, the first director of the Office of Public Roads, drafted a model bill for creating state highway departments that many state legislatures subsequently adopted. One of its features was the promotion of an administrative structure that emphasized scientific rationality and Progressive-era technical expertise, thus rebuking machine-style politics that were rife with graft and corruption. Accordingly, Page felt that highway engineers, not politicians, should run the state highway departments (AASHTO 1991), a practice that has persisted throughout much of the 20th century.

The newly emerging automobile and truck industry began to provide an increasing impetus for the good roads movement by the early 1900s, and the states and federal government responded to the growing need to develop better roads. In fact, by 1915, 45 states had established state aid systems for highway development and 40 states had created state highway departments (Sampson, Farris, and Shrock 1990). The first Federal Highway Aid Act was promulgated in 1916, providing \$75 million based on a 50% federal matching formula to plan, build, and maintain highways under the direction of the state highway departments. In order to qualify to receive federal funds, states were required to create highway departments run by engineers approved by the federal BPR. The American Association of State Highway Officials (AASHO) [later renamed the American Association of State Highway and Transportation Officials (AASHTO)] was started in 1914, and became an important conduit in facilitating information exchange between the fledgling state highway departments and the BPR (AASHTO 1991). In 1922, the Highway Research Board (HRB) [later to be renamed the Transportation Research Board (TRB)] of the National Research Council was also created to encourage highway engineering research and technical information exchange.

State highway departments expanded road-building throughout the 1920s, spurred by another federal highway act and by the adoption of state gasoline taxes to help fund state highway expansion programs. The Federal Highway Aid Act of 1921 focused federal funds on a designated system of primary highways not to exceed 7 percent (later changed to 8 percent) of all state highway mileage (Sampson, Farris, and Shrock 1990). In 1919, Oregon, Colorado, and New Mexico became the first states to impose a state gasoline tax for the purpose of highway building and maintenance (AASHTO 1991). Other states quickly followed, setting a pattern of highway funding that has proven to be highly successful in generating large revenues without widespread public consternation.

Despite some initial resistance from the oil companies, the state gasoline tax was politically palatable as most constituencies supported its use in road building and improvement efforts. Because of the rapidly increasing use of automobiles and trucks, the tax raised such substantial revenues that some political leaders began to divert some of these funds to non-highway purposes. In response, state road engineers launched vigorous campaigns to enact laws and amend state constitutions restricting the use of gasoline taxes to highway-only purposes (AASHTO 1991), a legacy that continues to the present day.

Extensive road-building continued in the 1930s due largely to federal New Deal funding that targeted road construction as one of numerous public works projects to provide employment for workers during the Great Depression. Decisions to build highways were increasingly based on larger social and economic considerations, as opposed to being solely traffic-based. To some degree, the federal funding from New Deal agencies such as the Public Works Administration and the Works Progress Administration to build new highways bypassed the BPR and state highway departments, much to their chagrin. Some of the funds were transferred directly to cities and towns where employment needs were the greatest, thus circumventing the federal-state process that had been established in 1916. Consequently, state highway departments reluctantly began to take more interest in urban highway projects, deviating from their previously rural orientation. In response to a request from President Roosevelt to report on the feasibility of transcontinental toll road proposals, the BPR, under the leadership of chief Thomas MacDonald, issued a study *Toll Roads and Free Roads* in 1939 that became the basis for the concept of the Interstate Highway System, and emphasized a more prominent role for state highway departments (AASHTO 1991).

Attention to highway building had to be postponed for several years due to the onset of World War II, with its attendant gas rationing and travel restrictions. But the need for an upgraded national system of highways was underscored by the demands that the military placed on road transport to move personnel and equipment to coastal embarkation points. In 1944, some transportation specialists proposed that a new highway system could be built as part of a balanced transport network directed by a new national agency in which rail, water, air carriers, and truckers would be equally represented (AASHTO 1991). But powerful trucking and farming interests preferred traditional road-building arrangements, thus precluding attempts to create an intermodal transportation agency at that time.

The Interstate Era

After the war, as business demand increased and automobile use skyrocketed, there was widespread public support to upgrade the nation's highway system. Existing roads and highways were inadequate to meet the demands of an expanding and suburbanizing population that was becoming increasingly reliant on automobiles and trucks. In the Federal-Aid Highway Act of 1944, Congress approved the concept of an Interstate Highway System based on the 1939 BPR study, but it took another 12 years before a workable financing plan could be agreed upon. The Federal-Aid Highway Act

of 1956 authorized \$25 billion over 12 years to begin building a 41,000-mile National System of Interstate and Defense Highways in accord with high design standards—all roads had to be multi-lane, limited-access highways for high-speed travel. The Act raised federal taxes on gasoline to create the Highway Trust Fund, and increased the federal share of highway expenditures to 90% of allowable costs. It also reasserted the federal-state highway partnership, thus providing state highway departments with a new *raison d'être*: building the Interstate Highway System.

For the foreseeable future, the central mission of state highway departments would be the planning, design, and construction of Interstate highways based on traffic needs and traditional highway engineering practices. The 1956 Act emphasized highway construction above all, and did not require consideration of “non-highway” issues, such as effects on land use, social regeneration, environmental impacts, or broader transportation objectives. State highway departments were deliberately insulated from these broader concerns by federal and state highway department leaders, as well as by the trucking and road-building industries (AASHTO 1991).

Admittedly, the construction of the Interstate Highway System was a massive undertaking, and has been described as “the most ambitious public works program since the Roman Empire” (AASHTO 1991). Although state highway departments had been building roads for decades, the scale and magnitude of the Interstate system dwarfed everything that had come before. Thus, it was incumbent upon state highway departments to mobilize quickly and focus their efforts on this enormous challenge. Many state highway departments in the East and Midwest were more developed and thus better prepared for the onset of the Interstate program, while some in the South and West took longer to ramp up (AASHTO 1991). Yet all the state highway departments were very enthusiastic about the opportunity to build highways during the Interstate era, sharing the widespread public support for highways that existed at that time.

This enthusiasm began to wane during the 1960s, as a trickle of public opposition to highway building began to grow into a flood of outrage, triggering the “freeway revolt” era. Much of the early construction of the Interstate system occurred in rural areas, where land-use conflicts were confined to access issues for farmers or businesses. When construction began to intensify in urban areas, many residents were displaced, homes were demolished, neighborhoods were split, and public opposition to highways began to grow. The 1960s also marked the beginning of a major environmental movement that led to the promulgation of the National Environmental Policy Act of 1969 that required Environmental Impact Statements for all federal projects, including highways. Environmentalists increasingly began to see automobiles and highways as major contributors to air, noise, and water pollution, as well as voracious consumers of petroleum. Highway building began to change our landscapes, contributing to urban sprawl, consumption of open space, and encroachment into wildlife habitats. Furthermore, the highways themselves, which were supposed to relieve traffic congestion, generated additional demand that resulted in even higher levels of congestion well in excess of what state highway engineers had predicted. Many urban highways, built to accommodate traffic for a 20-year period, became congested soon after they were

completed. Even by the early 1960s, there was a growing realization that highways would not be able to solve all transportation problems.

The 1962 Highway Act was the first to acknowledge that changes in standard highway operating procedures were necessary. State highway departments were required to involve local officials in a broader-based planning process that should be “continuing, cooperative, and comprehensive” (the 3-C process). Federal mandates also required that urban transportation planning should involve metropolitan planning organizations (MPOs)—voluntary associations of local governments focused on regional concerns including land use, transportation, housing, and urban development. Recognizing that a more comprehensive approach to urban transportation was necessary, federal funding for transit began with the Urban Mass Transportation Act of 1964.

Also by 1964, AASHO began to recognize that state highway departments might need to expand beyond highways and to embrace other modes of transportation, as reflected in the following passage (AASHO 1964, p. 66):

The Association can neither close its eyes to other forms of transportation nor say smugly that it is concerned only with highways, for in some limited areas, transportation needs will require other modes, in addition to highways, and they must be planned to complement each other.

The distinct possibility exists that, in the foreseeable future, some State highway departments may have their authority expanded to include other modes of transportation, in addition to highways.

Indeed, these changes were already occurring at the federal level, as the Bureau of Public Roads was merged into a newly created Federal Highway Administration (FHWA), which in turn became part of a new cabinet-level Department of Transportation (DOT) in 1966. This Department included the Federal Railroad Administration, Federal Aviation Administration, the Coast Guard, the St. Lawrence Seaway Development Corporation, the Urban Mass Transportation Administration (which joined DOT in 1968), and several other modal offices. Most of these administrations had already existed in different departments, so the Department of Transportation Act of 1966 sought to bring these modal administrations together under a one-department umbrella.

After the federal government created the DOT, several states changed the names of their highway departments to transportation departments. New Jersey, the first state to create a highway department, also became the first state to change to a department of transportation, in 1967. New York followed shortly thereafter, and by 1973, 20 states had made the change. In 1973, AASHO decided to change its name to the American Association of State Highway and Transportation Officials (AASHTO) to reflect the changing role that many, but not all, of its member departments began to adopt. Many highway departments did not immediately change their names, and a few never did. The Colorado Department of Highways did not become a department of transportation until 1991, while New Mexico became the State Highway and Transportation Department in 1987 thus keeping ‘highway’ in its name. Today, only 3 states: New Mexico,

Massachusetts (which has two relevant agencies, the Massachusetts Highway Department and the Massachusetts Executive Office of Transportation and Construction), and Nebraska (Nebraska Department of Roads) retain the term ‘highway’ or ‘roads’ in their official names.

Just from this discussion of official names, it is obvious that the transition to becoming a department of transportation has been a slow process. Some state departments have been very active in expanding their involvement to include other modes of transportation. AASHTO expanded its focus by creating several standing modal committees in 1976, and by seeking broader involvement with other modal agencies and private sector organizations (AASHTO 1990). Yet, just because department names were changed, this did not mean these state departments necessarily embraced the wider implications of becoming a true department of transportation. It was difficult for many highway departments to change their emphasis, given that much of the organizational structure that had developed to meet the demands of roads and the Interstate Highway System was still in place

In fact, Interstate highway construction continued to dominate state DOT activities through the 1970s and 1980s. By 1965, just nine years after its start, the Interstate Highway System was halfway completed, with over 21,000 miles constructed. The second half of the System’s construction would prove to be slower-paced and much more difficult than the first, as environmental and social concerns began to erode public support that had existed previously. State departments still saw their primary mission as completion of the Interstate program, but they encountered a tremendous amount of public and local political resistance particularly on many segments of urban highways. To many highway engineers struggling to complete the Interstate system, the change from being a highway department to a department of transportation could have been perceived as a symbolic sign of capitulation. Yet throughout the late 1960s, 1970s, and 1980s, state highway departments/DOTs continued to work to finish the Interstate system, reaching over 42,000 miles completed by 1989. In addition, these departments were responsible for numerous state roads and highways outside of the Interstate system. As new construction was being completed by the end of this period, attention was turned toward rehabilitation and maintenance of existing roads and highways, and increasingly toward other modes and ‘non-highway’ activities.

By 1990, state DOTs as a whole were starting to become more involved in aviation, public transportation, rail, water, and intermodal transportation (AASHTO 1990). After airline deregulation in 1978, state DOTs were increasingly drawn into helping local authorities provide more airport capacity and air service to smaller communities. State aviation funding doubled from approximately \$300 million in the late 1970s to over \$600 million by 1988. Likewise, state DOTs became more involved in public transportation planning, funding, technical assistance, and in a few states, even operation of mass transit systems. As federal funding for transit declined during the 1980s, state funding increased from \$1.8 billion in 1981 to \$4.2 billion by 1989. The Multi-State Technical Assistance Project (MTAP) was created by 15 states and AASHTO

in the late 1980s to fund technical assistance and networking among state transit managers. By 1989, 28 states had joined the project.

Many state DOTs created rail divisions during the 1970s and 1980s to coordinate state involvement in both freight and passenger rail transportation. As the freight rail industry restructured and consolidated during this time, many rail lines were abandoned. In order to provide continued rail access to many small communities, states created and funded rail service programs. Augmented by the federal Local Rail Service Assistance (LRSA) program, states acquired 9,600 miles of rail lines and rehabilitated 13,000 miles of track that would have been abandoned. With the demise of private sector passenger rail service and the difficulties that Amtrak has faced, states have become more involved in passenger rail. States began providing financial assistance to Amtrak to operate service in those states under the “403(b) program”, while a few state DOTs (e.g., California, Maryland) actually began to operate rail services directly. Furthermore, interest in high-speed rail systems prompted several states to undertake feasibility studies, though no new lines were ever built.

Economic globalization, characterized by increasing trade and passenger volumes, has placed more pressure on transportation systems to keep goods and people moving. These trends have been most evident in the maritime industry, as shipping lines and ports have struggled to keep up with ever-increasing demand. States have begun to help local coastal communities expand and improve harbor facilities to accommodate the larger post-Panamax ships and technological innovations in port operations. Perhaps the most important of these innovations has been the containerization revolution and the rise of intermodal freight movement. Increasing emphasis is being placed on the seamless transfer of containers from ships to trains to trucks, relying on an unprecedented level of coordination and cooperation among previously separate and highly competitive transportation industries. By 1990, state DOTs were just beginning to realize the implications of this revolution in transportation, but it was becoming clear that the 1990s and beyond would be greatly influenced by the intermodal concept.

The Intermodal Era

The key event that signaled the beginning of a new era in transportation was the promulgation of the landmark *Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991*. It was the first major piece of federal transportation legislation that used the term ‘intermodal’ instead of ‘highway’. Congress sought to change the direction of transportation policy and planning by expanding the scope beyond highways to include more attention to other modes and broader concerns such as economic progress, a cleaner environment, energy conservation, and social equity. ISTEA discouraged continued reliance on highways intended largely for single-occupancy vehicles, while encouraging the seamless movement of goods and people between modes of transportation. The legislation reflected a growing concern with sustainable development, i.e. development that meets the needs of the current generation without jeopardizing the ability of future generations to meet their needs. More emphasis was placed on developing transportation

systems that would be economically and energy efficient, environmentally sound, and safe and secure.

In order to achieve these goals, Congress authorized \$156 billion for the development of a comprehensive intermodal system involving highways, transit, railroads, and water transportation. It designated a 161,000-mile National Highway System (composed of Interstate and other important highways) serving major population centers, border crossings, military bases, ports, airports, and other major travel destinations as the primary network of federally-aided highways (Meyer and Miller 2001). It created the Surface Transportation Program (STP) to provide more flexibility to states and local governments in using highway funds for ‘non-highway’ purposes, including public transit, bicycle and pedestrian facilities, car-pool programs, and historic preservation. It explicitly tied the availability of transportation funding to environmental goals by requiring that proposed transportation projects be in conformity with air quality standards as set forth in the *Clean Air Act Amendments of 1990*. ISTEA also strengthened the influence of the larger Metropolitan Planning Organizations (MPOs) by expanding their funding and project selection authority for certain categories of federal funds². Furthermore, these MPOs were given responsibility for developing long-range regional transportation plans and short-range regional transportation improvement programs in cooperation with state DOTs, regional transit agencies, and local governments.

For state DOTs, ISTEA required the planning process to focus on the development and implementation of the *intermodal* transportation system of the state, and attempted to mandate much greater cooperation with MPOs and other local planning organizations in the process of transportation planning. States were required to have a statewide transportation plan that was coordinated with the transportation plans of their metropolitan areas. Under ISTEA, the Federal Highway Administration and Federal Transit Administration issued statewide transportation planning rules that identified twenty-three factors that state plans had to consider, grouped into four major categories (Federal Highway Administration/Federal Transit Administration 1995, 1996):

I. System Performance and Preservation

1. Transportation needs (strategies and other results) identified through six management systems (pavement, bridges, safety, congestion, public transportation, and intermodal)
2. Transportation system management and investment strategies designed to make the most efficient use of existing transportation facilities (including consideration of all transportation modes);
3. Methods to reduce traffic congestion and to prevent traffic congestion from developing in areas where it does not yet occur, including methods which reduce motor vehicle travel, particularly single-occupant motor vehicle travel;

² Large MPOs (representing metropolitan areas with populations greater than 200,000) were given authority to allocate Surface Transportation Program-Metro (STP-Metro) funds, and in some states, Congestion Mitigation and Air Quality (CMAQ) and Transportation Enhancement funds in “consultation” with the state DOT (Goetz, Dempsey, and Larson 2002).

4. Preservation of rights-of-way for construction of future transportation projects;
5. Identification of corridors for which action is most needed to prevent destruction or loss (including strategies for preventing loss of rights-of-way);
6. Methods to enhance the efficient movement of commercial motor vehicles;
7. The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavements;

II. Coordination and Collaboration Among Stakeholders

8. The coordination of transportation plans and programs developed for metropolitan planning areas of the State with the statewide transportation plans and programs and the reconciliation of such plans and programs as necessary to ensure connectivity within transportation systems;
9. Connectivity between metropolitan planning areas within the State and with metropolitan planning areas in other States;
10. The use of innovative mechanisms for financing projects, including value capture pricing, tolls, and congestion pricing;
11. The transportation needs of non-metropolitan areas (areas outside of MPO planning boundaries) through a process that includes consultation with elected officials with jurisdiction over transportation;
12. Investment strategies to improve adjoining State and local roads that support rural economic growth and tourism development, Federal agency renewable resources management, and multipurpose land management practices, including recreation development;
13. The concerns of Indian tribal governments having jurisdiction over lands within the boundaries of the State;

III. Mobility and Access for People and Goods

14. International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation and scenic areas, monuments and historic sites, and military installations;
15. Long-range needs of the State transportation system for movement of persons and goods;
16. Methods to expand and enhance appropriate transit services and to increase the use of such services (including commuter rail);

IV. Environment and Quality of Life

17. Federal, State, or local energy use goals, objectives, programs, or requirements;
18. Strategies for incorporating bicycle transportation facilities and pedestrian walkways in appropriate projects throughout the State;
19. Recreational travel and tourism;
20. State plans developed pursuant to the Federal Water Pollution Control Act and the Coastal Zone Management Act;
21. The overall, social, economic, energy, and environmental effects of transportation decisions (including housing and community development effects on the human, natural, and man-made environments);

22. The effect of transportation decisions on land use and land development, including the need for consistency between transportation decision-making and the provisions of all applicable short-range and long-range land use and development plans (analyses should include projections of economic, demographic, environmental protection, growth management, and land use activities consistent with development goals and transportation demand projections);
23. Strategies for identifying and implementing transportation enhancements where appropriate throughout the State;

The first factor required state DOTs to develop, establish, and implement six management systems for the purpose of providing planners with systemwide data and information to improve planning and decision-making. This systematic approach contrasted with the project-by-project approach traditionally used within state DOTs (Lindquist 1998). One of the requirements was a management system for intermodal transportation facilities and systems. According to ISTEA, a State's intermodal management system "shall provide for improvement and integration of all of a State's transportation systems and shall include methods of achieving the optimum yield from such systems, methods for increasing productivity in the State, methods for increasing the use of advanced technologies, and methods to encourage the use of innovative marketing techniques, such as just-in-time deliveries" (Dempsey 2000). In response to slow adoption and confusion over the delineation of the management systems, Congress decided as part of the National Highway System Designation Act of 1995 to make the management systems optional, with the exception of the congestion management system for some metropolitan areas.

In 1998, Congress promulgated the *Transportation Equity Act for the 21st Century (TEA-21)*, which continued the intermodal philosophy of ISTEA. TEA-21 authorized \$217 billion for the nation's intermodal surface transportation system, including significant increases in funding for the Congestion Mitigation and Air Quality (CMAQ) program (35% increase) and transit (50% increase) (Dempsey, Goetz, and Larson 2000). TEA-21 tried to simplify the planning process by replacing ISTEA's twenty-three planning factors with the following seven:

- 1) Support economic vitality by enabling global competitiveness, productivity, and efficiency;
- 2) Increase the safety and security of the transportation system for motorized and nonmotorized users;
- 3) Increase the accessibility and mobility options available to people and freight;
- 4) Protect and enhance the environment, promote energy conservation, and improve air quality;
- 5) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- 6) Promote efficient system management and operation; and
- 7) Emphasize the preservation of the existing transportation system.

TEA-21 also continued the public involvement emphasis of ISTEA by requiring that transit operators and freight suppliers have an explicit role in the transportation planning process, and that opportunities for involvement by the general public (especially minority and low-income populations) should be improved and expanded (Meyer and Miller 2001).

Federal Requirements for Intermodal Transportation Planning³

As a result of both ISTEA and TEA-21, Congress has declared that one of the transportation policies of the United States is "to encourage and promote development of a national intermodal transportation system . . . to move people and goods in an energy-efficient manner, provide the foundation for improved productivity growth, strengthen the Nation's ability to compete in the global economy, and obtain the optimum yield from the Nation's transportation resources." Congress had earlier created the U.S. Department of Transportation in 1966 to "make easier the development and improvement of coordinated transportation service"

Congress has declared that, "A national intermodal transportation system is a coordinated, flexible network of diverse but complimentary forms of transportation that transports passengers and property in the most efficient manner. By reducing transportation costs, these intermodal systems will enhance the ability of the industry of the United States to compete in the global marketplace." Congress also has decided that the U.S. "must make a national commitment to rebuild its infrastructure through development of a national intermodal transportation system."

In ISTEA, Congress set forth a detailed national policy to establish a National Intermodal Transportation System "that is economically efficient and environmentally sound, provides the foundation for the United States to compete in the global economy, and will move individuals and property in an energy efficient way." The National Intermodal Transportation System shall:

- "consist of all forms of transportation in a unified, interconnected manner . . . to reduce energy consumption and air pollution while promoting economic development and supporting the United States' preeminent position in international commerce";
- include the Interstate highway system and the principal arterial roads;
- include public transportation;
- provide improved access to seaports and airports;
- give special emphasis to the role of transportation in increasing productivity growth;
- give "increased attention to the concepts of innovation, competition, energy efficiency, productivity, growth and accountability";
- be adapted to new technologies wherever feasible and economical,

³ This section is based on material from Paul Dempsey, The Law of Intermodal Transportation: What It Was, What It Is, and What It Should Be, *Transportation Law Journal*, Vol. 27, No. 3 (Summer 2000), pp. 367-417.

giving special emphasis to safety considerations; and

- be the centerpiece of a national investment commitment to create new national wealth.

All DOT employees are required to be given a copy of the National Intermodal Transportation System Policy, which must be posted prominently in all offices of the Department.

State plans and programs are required to develop systems and facilities “that will function as an intermodal transportation system for the metropolitan area and as an integral part of the intermodal transportation system for the state and the United States”.⁴ The states' long-range 20-year transportation plans must provide for the development and implementation of the intermodal transportation system of each state. The Secretary of Transportation was authorized to make grants to the states to develop model state intermodal transportation plans, which should include systems for collecting data related to intermodal transportation. States were required to devote 2% of federal highway appropriations to planning and research of "highway, public transportation, and intermodal transportation systems." Emphasizing the importance of highway, public transport and intermodal systems, Congress mandated that not less than 25% of such funds expended by the state shall be devoted to research and development of these systems.

Recent Research on Intermodal Transportation Planning at State DOTs

Changes in federal legislation, adoption of new planning approaches, and increasing demands on transportation systems nationwide, have together resulted in greater research on the practice of statewide and metropolitan transportation planning. Shortly after ISTEA was promulgated, several conferences and workshops were held that set out to decipher the meaning and implications of the new legislation for the U.S. DOT, state DOTs, MPOs, transit agencies, local governments, and the private sector.

Conference Workshop Reports

The first of several workshops was the 1992 *ISTEA and Intermodal Planning* conference held in Irvine, California (Transportation Research Board 1993). Attendees at this conference grappled with the meaning of intermodalism through various efforts to define the term. They differentiated multimodal planning as focused on system choices, while intermodal planning emphasized the most efficient way of moving from point-to-point within the system. Multimodal planning involves adopting a generic, non-mode-specific approach to problem definition and problem solving. In intermodal planning, key interactions between modes, including transfers but also policy and service interactions, are paramount. Robert Martinez of the U.S. DOT Office of Intermodalism introduced a three-part definition of intermodalism based on the concepts of connections, choice, and coordination/cooperation. Attendees also identified partnerships, study of freight

⁴ 23 U.S.C. 134 (a) (3); 23 U.S.C. 135 (a) (3); 49 U.S.C. 5303(a)(2) (2000).

movements, performance improvement, and development of intermodal management systems as important elements within an intermodal planning process.

The 1994 *National Conference on Intermodalism: Making the Case, Making It Happen* in New Orleans (Transportation Research Board 1996) was a follow-up to the 1992 conference and focused on early examples of intermodal projects and success stories. Intermodalism was viewed as an evolutionary process whereby planners and other transportation professionals were engaged in learning-by-doing, thus exploring how to make intermodalism happen through innovative financing, successful partnerships, a greater understanding of the broader societal benefits of intermodalism, and a better appreciation of technological advances. Specific projects such as the Alameda freight corridor project in Southern California, the Union Station case study in Washington, DC, and the New York/New Jersey airport regional access study were cited as good examples of an intermodal approach to planning because of their economic, environmental, and safety benefits. For state DOTs, one of the biggest challenges was the ISTEA mandate to prepare statewide intermodal transportation plans. Representatives from Louisiana, Wisconsin, New York, Florida, Washington, Pennsylvania, and Maryland discussed various intermodal planning initiatives within their state DOTs. In both Louisiana and Wisconsin, extensive outreach efforts (interviews and surveys) were important in developing a customer-based focus to help guide investments and enhance intermodal system performance as part of their statewide intermodal planning process. Wisconsin's Translinks 21 plan, New York's full freight access study for Lower Manhattan, the Eastern Washington Intermodal Transportation Study, and Pennsylvania's Double Stack Clearance project were all cited as examples of the importance of intermodal freight planning to economic development. In Florida, the East-West Multimodal Corridor Study, the Miami Intermodal Center (MIC) study, and the Interstate 4 Multimodal Master Plan were identified as integral examples of their statewide intermodal plan, while Maryland's ongoing experience in intermodalism has yielded effective planning and funding strategies that encouraged an intermodal perspective.

The 1996 *Statewide Transportation Planning* conference in Coeur d'Alene, Idaho (Transportation Research Board 1997) examined the way states were adapting to ISTEA requirements for statewide transportation planning, and what changes might be needed for the upcoming ISTEA reauthorization. It was generally felt that ISTEA had been a good first step in improving statewide planning, and that the next reauthorization should only fine tune the existing approach. Sessions focused on topics such as linkages between statewide planning, programming, and financing; performance-based planning; linking planning and operations; incorporating freight concerns into planning; and developing effective analysis tools.

Finally, a *Conference on Refocusing Statewide Transportation Planning for the 21st Century* (Transportation Research Board 2000) was held in Girdwood, Alaska in July 1999. This meeting featured discussions related to the recently-promulgated Transportation Equity Act for the 21st Century (TEA-21). Gloria Jeff, Deputy Administrator at FHWA and former state planner at Michigan DOT, presented the "Top

10 Issues” facing statewide planning in the 21st century as part of her keynote address, as follows:

10. Planning will be multimodal and intermodal.
9. This is not your father’s state DOT.
8. Planning will be outcome-driven.
7. Partnerships.
6. Technology.
5. The sphere of influence will expand.
4. Changing skills.
3. Transportation planning at the statewide level is more than a preconstruction activity.
2. Planning will be involved in politics.
1. Leadership in leading change.

While many of these issues have been identified previously, an indication of a major paradigm-shift in statewide planning is suggested by Issues #10 and #9. These clearly denote the permanence of the shift from the Interstate era to the Intermodal era. Baseline findings reported at this conference also included:

- TEA-21 continues the best of ISTEA and provides additional flexibility to the states.
- The context of planning has greatly expanded to include land-use planning coordination, economic development, sustainability, and social equity.
- Partnerships are becoming routine, but the scale of planning has expanded to include rural areas, substate areas, multistate initiatives, international corridors, and multipurpose planning activities such as access to parks and federal lands.
- Public involvement has evolved to emphasize methods of determining and dealing with customer or user needs.
- Systems preservation issues have expanded to systems management and operations.
- The consideration of multimodal and intermodal concerns has greatly increased in state DOTs.
- State planning processes are becoming more diverse, recognizing the different conditions in each state.

It is clear from these lists that statewide planning overall was engaged in an evolutionary process of transition as the dawn of the 21st century approached

NCHRP, TCRP, and Other Reports

In addition to the conference proceedings, researchers in programs such as the National Cooperative Highway Research Program (NCHRP) and the Transit Cooperative Research Program (TCRP) have conducted a number of studies on statewide multimodal/intermodal transportation planning. Major transportation organizations such as the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the American Association of State Highway and Transportation Officials

(AASHTO), some state DOTs, university research centers, and other groups have also sponsored research on statewide intermodal planning.

Balloffet and Associates (1995) conducted *Examples of Statewide Transportation Planning Practices* in conjunction with FHWA and FTA. The intent of the study was to disseminate information about innovative approaches and practices in response to ISTEA statewide planning requirements. With recommendations from FHWA staff, 24 state DOTs were identified and contacted via phone interviews to determine which states' approaches and practices merited further investigation. A review panel of state DOT representatives, FHWA staff, and FTA staff identified those states engaging in best practices within each of eight categories, as follows:

1. Coordination of statewide and metropolitan planning
 - Florida
 - Iowa
2. Form and content of statewide transportation plans and improvement programs
 - Florida
 - Texas
3. Comprehensive transportation planning
 - Washington
 - Wisconsin
4. Management systems
 - California
 - Colorado
 - Missouri
 - New Jersey
5. Public involvement
 - Idaho
 - Iowa
 - Wisconsin
6. Social, economic, and environmental issues
 - Oregon
 - Washington
 - Wisconsin
7. Transportation system management and operations
 - Arkansas
 - Washington
 - Wisconsin
8. Investment and finance issues
 - Colorado
 - Wisconsin

Among the states that were the focus of this study, Colorado and Florida were identified twice for best practices, and Texas once. A modular, proof-of-concept approach to management systems development was highlighted for Colorado, in addition to its

flexible and pragmatic investment strategy. Florida was recognized for its approach to cooperative planning through developing appropriate planning tools and by recognizing the contribution of interest groups to the planning process, as well as developing an approach that is explicitly intermodal. Texas was recognized for its success in integrating long-range planning with short-term programming.

Another FHWA/FTA study, *Statewide Transportation Planning Under ISTEA: A New Framework for Decisionmaking*, prepared by Siwek and Associates (1996), was a guidebook intended principally for elected officials and policy makers. Examples of best practices were provided throughout the book in sidebar formats. Among the states recognized were Maine and Ohio for new freight intermodal facilities; Wisconsin for its public involvement program; Colorado for integrating its management systems into the planning process; Washington for integrating environmental concerns into the planning process; and Ohio, California, Oregon, and New Jersey for specific innovative transportation projects. New Jersey, Florida, and Pennsylvania were commended for communication tools that explained to the general public the intent of their transportation plans.

A very extensive TCRP report, *Institutional Barriers to Intermodal Policies and Planning in Metropolitan Areas* was conducted by Crain and Associates (1996). They utilized a definition of intermodalism developed by a working group at the U.S. Department of Transportation first presented by Robert Martinez (1993) at the 1992 *ISTEA and Intermodal Planning* conference already reviewed. This definition identified the following as key elements of the intermodal approach:

- **Choice** among transportation options provided by competing modes, independently or in combination. (Choice also means that decision makers need to consider alternative systems to address transportation needs before investing in infrastructure.)
- **Connections** that provide convenient, rapid, efficient, and safe transfer of people or goods from one mode to another (including end point, pickup, and delivery) during a single journey to provide the highest quality and most comprehensive transportation service for cost.
- **Coordination and cooperation** among transportation organizations to improve transportation service, quality, safety, and efficiency across all modes or combinations of modes in an environmentally sound manner.

The actual research involved four distinct phases: 1) identification of barriers, 2) prioritization of improvement opportunities, 3) implementation forums, and 4) identification of strategies. Structured interviews were held with 41 representatives of transit agencies, metropolitan planning organizations, state DOTs, industry associations, and the U.S. DOT to identify institutional barriers to intermodal planning. They were eventually organized into three categories: 1) organizational barriers (modal separation, regulatory and legal restrictions, organizational culture and modal orientation), 2) interjurisdictional barriers (different views about authority and responsibility, reluctance to form partnerships, insufficient track record in forging relationships, pre-determined

solutions overshadowing needs assessments, poorly integrated land use and transportation policies), and 3) resource barriers (significant funding shortfalls, insufficient information, insufficient staff resources, inadequate tools for comparing mobility projects).

Improvement opportunities were identified through a mail-back survey of 421 individuals responsible for intermodal planning at state, regional, and local levels (60 from state DOTs; 181 from MPOs; 160 from transit agencies; and 20 from cities, counties, or Indian reservations). The top priorities identified in the survey for improving intermodal planning were: 1) building a constituency for the intermodal planning concept, 2) improved federal funding (particularly from the transit agency perspective), 3) educating key parties, 4) visible leadership support, 5) inviting citizen input, and 6) mobilizing business leadership. Survey respondents also provided examples of successful intermodal planning; development of intermodal transfer facilities and intermodal elements of long-range plans were the most frequently mentioned items.

Three 2-day implementation forums were held in Albuquerque, New Mexico; the Austin-San Antonio corridor in Texas, and Queens, New York to discuss in more depth the barriers to intermodal planning and strategies to overcome these barriers. Ten strategies were identified in three categories as the most promising to overcome the barriers:

1) Structural Strategies

1. Increase the modal integration of state and federal agencies to be consistent with the policies and programs contained in ISTEA.
2. Transportation agencies—particularly state DOTs, highway agencies and transit authorities—should embrace intermodal planning in their vision or mission.
3. MPOs should establish or strengthen partnerships with agencies, local officials, businesses, and community leaders to strengthen support from their regional constituencies.

2) Procedural Strategies

4. Review and streamline procedures and regulations among the surface transportation agencies of the U.S. DOT and other federal agencies. This review should also simplify the regulations and address inconsistencies in order to reduce the MPO and state DOT administrative burden and clarify responsibilities.
5. Consider funding incentives that promote intermodal planning to enhance the willingness with which state, regional, and local transportation agencies view and pursue intermodal approaches to mobility improvements.
6. State, MPO, and transit agencies should define “mobility” and develop measures that reflect mobility in their long-range transportation plans based upon the needs of the jurisdiction.
7. MPOs and state DOTs should develop project selection criteria and procedures that reflect state and community goals.

3) Leadership Development Strategies

8. Inform elected officials of the benefits and dividends of intermodal planning.

9. Communicate success stories to staff, elected officials, and community organizations.
10. Broaden the selection criteria for hiring senior transportation officials.

In conclusion, this study found that most decision makers were pleased with ISTEA policies but frustrated by many of the implementing regulations. The ISTEA philosophies of decentralized decision making, strengthened connections to environmental policy, and the economically efficient movement of people and goods were widely supported and should be continued. Greater leadership commitment, new regional constituencies, increased funding, and additional information on intermodal choices were the primary means by which barriers to intermodal planning can be overcome.

The National Cooperative Highway Research Program initiated a series of projects in the mid-1990s to address various topics involving multimodal transportation planning:

- Project 8-32(1) *Innovative Practices for Multimodal Transportation Planning for Freight and Passengers*
- Project 8-32(2) and (2a) *Multimodal Transportation: Development of a Performance-Based Planning Process*
- Project 8-32(3) *Integration of Land Use Planning with Multimodal Transportation Planning*
- Project 8-32(4) *Developing and Maintaining Partnerships for Multimodal Transportation Planning*
- Project 8-32(5) *Multimodal Transportation Planning Data: Guidance Manual for Managing Transportation Planning Data*

The first project, *Innovative Practices for Multimodal Transportation Planning for Freight and Passengers*, resulted in a comprehensive report conducted by TransManagement, Inc. (1998) in association with Matthew Coogan and Michael Meyer that represented a broad range of multimodal planning considerations. Based on numerous interviews and an extensive bibliographic database, innovative intermodal practices by state DOTs, MPOs, and one airport were identified in each of six categories, as follows:

- 1) Organizing to promote multimodal decisionmaking
 - Washington State DOT (WsDOT)
 - Maryland DOT
 - Minnesota DOT
- 2) Innovative methods in multimodal planning and programming
 - Wisconsin DOT *TransLinks 21* statewide planning process
 - Portland MPO
 - Washington DOT *Eastern Washington Intermodal Transportation Study*
 - Puget Sound Regional Council (Seattle MPO) *Freight and Goods Mobility Study*
- 3) Management systems and the development of measures for the monitoring of performance

- Florida DOT
 - Oregon DOT
 - Boston Logan International Airport
- 4) Innovative methods of public involvement
- East-West Gateway Coordinating Council (St. Louis MPO)
 - Maine DOT
 - Ada County, Idaho Planning Association (Boise MPO)
- 5) Approaches to multimodal planning affecting rural areas
- Colorado DOT
 - Vermont Agency of Transportation
 - Minnesota DOT
- 6) Approaches to Financial Constraint in Planning and Programming
- Southeastern Pennsylvania Regional Planning Commission (Philadelphia MPO)
 - Minnesota DOT
 - Wisconsin DOT

Among the state DOTs that are the focus of this study, Colorado DOT's explicit inclusion of rural regions in the statewide planning process was identified as an innovative practice. Shortly after the Colorado Department of Highways became the Department of Transportation, the newly created Division of Transportation Development created 15 transportation planning regions throughout the state: 5 in MPO-designated areas, and 10 in mostly rural areas. Colorado DOT staff surveyed all counties and municipalities to incorporate local perspectives in delimiting the planning regions. Rural regions received additional funding and technical guidance (including development of a guidebook) to assist their transportation planning efforts. Additionally, Florida DOT was recognized for its innovative performance monitoring and evaluation. In particular, distinctions were made between the *output* of an agency (e.g., number of lane-miles resurfaced), *efficiency* of an agency (e.g., cost per lane-mile resurfaced), and *outcome* experienced by the end user (e.g., increased mobility). Florida illustrated a commitment to tying performance monitoring to achievement of goals in its statewide plan.

Kimley-Horn and Associates (1999) produced another relevant NCHRP report, *Guidelines for Developing and Maintaining Successful Partnerships for Multimodal Transportation Projects*. This report discusses issues of importance to practitioners such as: (1) what partnerships are, why they are important, and how they can be used in the context of multimodal transportation planning and development; (2) what tools are available to transportation professionals in developing partnerships; (3) how partnerships can be maintained over time to support and sustain progress; and (4) summary information on case studies that were investigated during the research project. Two highlighted case studies of particular interest are the Summit Stage Intermodal Transfer Center in Summit County, Colorado and the TransGuide ITS Project in San Antonio, Texas. The Summit Stage project benefited from development of a public-private partnership supported strongly by the Colorado DOT. Texas DOT spearheaded the effort to build a Traffic Operations Center in San Antonio and develop a start-of-the-art Traffic

Management System in partnership with the City of San Antonio, the VIA metropolitan transit system, Allied Signal Technical Services Corporation, and approximately 70 subcontractors involved in the project.

Boske (1998, 1999) directed two reports for the LBJ School of Public Affairs and Center for Transportation Research at the University of Texas—Austin: *Multimodal/Intermodal Transportation in the United States, Western Europe, and Latin America* and *Case Studies of Multimodal/Intermodal Transportation Planning Methods, Funding Programs, and Projects*. The case studies identified were divided into three categories, as follows, although the methodology by which these case studies were selected was not explicitly stated (U.S. case studies listed only):

1) Best practices in multimodal/intermodal planning methods

- Florida intermodal planning process
- Miami-Dade County planning process
- Oregon corridor planning process
- Pennsylvania policy plan
- Washington State freight planning process
- Washington State regional planning process
- Wisconsin statewide multimodal and intermodal plan

2) Selected multimodal/intermodal funding programs

- Florida Intermodal Development program
- Florida Seaport Transportation and Economic Development program
- Tennessee Transportation Equity Fund
- Wisconsin Freight Railroad Infrastructure Improvement Program
- Wisconsin Transportation Economic Assistance Program

3) Selected multimodal/intermodal projects

- Florida Trade Data Center
- Fort Worth Alliance International Trade and Logistics Center
- Philadelphia Metropolitan Area Intermodal Coordination
- Washington State's FAST Corridor Project

Of the states that are the primary interest in this study, Florida DOT was found to have exemplary practices in its comprehensive, integrated, and ongoing planning process, including its cooperation with Miami-Dade County on intermodal planning. Innovative financing programs have been developed specifically for intermodal projects in Florida, and numerous partnerships typify their intermodal activities. Also, Texas (Fort Worth) was singled out due to the Fort Worth Alliance International Trade and Logistics Center being recognized as one of the finest examples of a private-public partnership in the history of the Texas DOT.

Two reports about changing state DOTs were produced recently. AASHTO (1998) sponsored a study, *The Changing State DOT* while a series of NCHRP (2000) reports were produced under the heading of *Managing Change in State Departments of Transportation*. The major thrust of these studies is that public-sector agencies, such as state DOTs, need to adapt to changing practices by incorporating private-sector strategic planning principles, organizational restructuring, performance measurement, process engineering, and outsourcing as part of their ongoing activities. The era of stagnant, stand-alone, behemoth organizations has passed; public agencies need to be as nimble and flexible as their private sector counterparts. Various initiatives were identified by AASHTO in categories such as customer-driven, partner-driven, workforce-driven, and activity-driven. The NCHRP studies identified innovations in: strategic leadership and measurement; private involvement in project delivery; institutionalization of operations; communications, image, and positioning; work force strategies; organization development as a result of information technology; public-private partnering and relationship building; and project financing.

Lipsman and Walter (1998) surveyed state DOTs to assess how planning programs have changed to reflect the direction set by ISTEA. A questionnaire was sent to each of the 50 state DOTs; 46 responded. The purpose of the questionnaire was threefold: 1) to identify states' multimodal perspectives and barriers encountered in developing multimodal plans, 2) to determine resources and skills needed for multimodal planning; and 3) to identify preferences for future ISTEA-type legislation. Only 63 percent of the states surveyed had an intermodal management system either completed or in process, the lowest percentage for any of the six management systems identified in ISTEA. Just over half of the states' plans included passenger and/or freight intermodal projects. Rail-highway conflicts and intercity bus/rail terminal joint location were the intermodal issues mentioned most frequently. In states larger in area and lower in population density, intercity bus/air terminal joint location was also mentioned frequently. States identified the need for additional training in specific areas such as geographic information systems, transportation economics, transport network development and modeling, benefit-cost analysis, and financial analysis for the purpose of more effective intermodal planning.

Arnold, Weichmann, and Capizzano (1999) conducted a survey of transportation planning practices in state departments of transportation for the Virginia DOT. The purpose of the project was to identify practices that Virginia DOT might consider adopting. Topics included organization and management of transportation planning, coordination between the DOT and MPOs, public involvement procedures, intermodal

planning and congestion management procedures, and use of consultants for transportation planning activities. Surveys were sent to 50 members of AASHTO's Standing Committee on Planning representing each state DOT; 38 responded. As regards intermodal planning, at least 30 of the 38 responding state DOTs include air, transit/public transportation, trucking, passenger and freight rail, bicycles, and pedestrians in their planning efforts. Exactly half of the respondents had or were in the process of completing an Intermodal Management System. Coordination between modes is generally considered to be the most effective aspect of intermodal planning. A problem with private sector cooperation was identified because the state DOT lacks jurisdiction over these modes, lacks contacts with the private sector, and has difficulty obtaining data and other information. Private sector firms often lack the time and/or inclination to be involved in the statewide intermodal planning process on an on-going basis, but they tend to be more involved on a project-specific basis. It was recommended that Virginia DOT should include air, water, trucking, and freight rail in their planning activities, and should develop an IMS on the basis of the benefits cited by other state DOTs that engage in these planning activities.

In a follow-up survey conducted for the Virginia Transportation Research Council, Fontaine and Miller (2002) interviewed representatives from a small group of state DOTs identifying innovative techniques in statewide multimodal planning. Based on recommendations from experts at FHWA and the TRB Committee on Statewide Multimodal Planning, ten states that were most often mentioned as having exemplary programs for multimodal planning were selected for this study, as follows: Florida, Maine, Maryland, Michigan, Minnesota, New Jersey, North Carolina, Oregon, Washington, and Wisconsin. Innovative techniques in state DOT organization included the creation and integration of new modal units responsible for planning for a specific mode, as well as increased levels of cooperation between these units and sharing of modal-specific information. Innovations in multimodal practices included the use of modally-blind performance measures and the creation of special offices to coordinate with MPOs and other urban transportation agencies in multimodal planning. Public outreach tactics included the use of 800 numbers for comments, the creation of freight advisory committees, and the development of workshops and charettes to train staff members in facilitating community consensus.

In an NCHRP synthesis report, Peyrebrune (2000) examined *Multimodal Aspects of Statewide Transportation Planning*. This synthesis consisted of a broad review of literature on statewide multimodal planning, a survey of current practices at state DOTs, and examination of several specific case studies of good practices. The survey questionnaire sought to determine whether multimodal aspects of alternatives, modal mix, and integration were being used in state transportation plans; corridor studies; and financing, budgeting, and programming. The survey also was used to identify potential case studies. Surveys were sent to each of the 50 state DOTs; 38 responses were received. Survey results indicated that almost all respondent states actually consider multimodal aspects in their state transportation plans and corridor studies, while slightly fewer consider these aspects in their finance, budgeting, and programming. The state of the practice was found to be fairly advanced regarding multimodal aspects in plans, policies, programs, and projects. Several states have integrated and institutionalized

multimodal aspects into the agency culture whereby “the theoretical view of multimodalism (a ‘modally-blind’ analysis process) is practiced in one or more statewide processes.” Instead of repeating case studies cited in previous research, this study focused on practices in four states—New York, Delaware, Iowa, and New Hampshire—that previously had not received as much attention, in addition to revisiting Wisconsin’s TransLinks 21 multimodal plan. Some insightful conclusions from this synthesis report are that:

- Consideration of multimodal aspects is a policy decision. The decision to enter the world of assessing transportation programs multimodally needs to be made at the highest decision level in the state and involves changing the mindset of an organization from modal facility planning to a customer/performance-based process that considers the movement of people and goods.
- Successful multimodal planning processes operate best under the umbrella of some higher state or regional vision, land-use and/or economic development policy, or sustainability consideration. These broader policy objectives tend to drive the transportation planning process toward a more multimodal focus.
- The multimodal planning process should be appropriate to the conditions and issues of each state, but there is a minimum level of multimodal planning and consideration of multimodal aspects appropriate for each state. The state DOT may be the appropriate agency for this process, or it may occur at some other administrative level, such as the governor’s office or state transportation commission, if the state DOT is not chartered to take the lead in multimodal issues.
- To increase effectiveness, the consideration of multimodal aspects could be institutionalized throughout the state DOT. Institutionalization means that the multimodal considerations are part of the daily business of all the functional areas, including design, construction, maintenance, operations, and modal divisions in both headquarters and field offices. To be effective, consideration of multimodal aspects needs to be more than just a planning responsibility.
- The impediments to effective multimodal planning most often cited—funding restrictions, organizational and institutional fragmentation, and the lack of technical tools—are real, but they have been successfully overcome in some states. The consideration of multimodal aspects is a policy decision, first and foremost.
- The initial step for the successful consideration of multimodal aspects is not data collection and the development of technical processes; rather it is the creation of a dialogue with the customers and stakeholders of the transportation system. Technical tools and data requirements will follow.
- Data collection and the application of technical processes should be appropriate to the scale of the multimodal considerations. If multimodal concerns are at the margin, that is, plus or minus 1 to 2 percent of travel, it does not make sense to

invest in detailed technical processes. Sketch planning tools and focus groups may be more appropriate initially.

- The focus of statewide multimodal planning activities has shifted from meeting federal requirements under ISTEA to developing processes that are appropriate to the conditions within the state, while still meeting requirements.
- States are struggling with the notion of whether to provide a choice of modes when they look at a mix of different modes in a planning process. Providing a choice has fiscal implications that can affect the entire transportation program and budget. More information and analysis is needed in this area.

The January-February 2001 issue of TR News (2001) presented results of field visits with state DOTs and other transportation experts on statewide planning. This resulted in the identification of 9 trends in statewide transportation planning:

1. Land-use considerations—increasing dialogue among transportation agencies, land-use agencies at the state and local level, and the private sector.
2. Integrating environmental concerns into the planning process.
3. Goods movement and intermodal issues—there needs to be a better understanding of freight movements and more cooperation/coordination with the private sector.
4. Planning at different jurisdictional levels—rural areas, integration with metropolitan planning organizations, substate planning in MPO areas, tribal national planning, multistate planning, international border and corridor planning, and access to parks and public lands.
5. Integration of management and operations into statewide planning—institutional issues are the most difficult to reconcile.
6. Performance-based planning—outputs versus outcomes, measuring multimodal outputs, and outcomes for facilities not responsible to the DOT.
7. Safety issues—new concepts, such as inherent safety, sustainable safety, and safety-conscious planning, are emerging.
8. Environmental justice and related issues—the distribution of costs and benefits over states and metropolitan areas that may impact certain population groups to a greater degree are increasingly being scrutinized.
9. Measuring the impacts of changing demographics—immigration, aging of the population, leisure travel, and temporal distribution.

Finally, a study conducted for the FHWA (Noerager and Lyons 2002) evaluated statewide long-range plans. Noteworthy practices by state DOTs were identified in several topic areas: financial planning (Iowa, Idaho, Ohio, Washington), freight transportation and integration with passenger needs (Missouri, Colorado), goals and

performance measures (Pennsylvania, Nevada), identification of major issues and challenges⁵ (Arizona, Pennsylvania, Oregon), public involvement (Pennsylvania, New Mexico, Missouri, Florida), relationships between state DOTs and other governmental agencies (Ohio, Nebraska), and safety (North Carolina, Maine, Louisiana).

This review has highlighted the major studies conducted over the last ten years on statewide intermodal transportation planning. One additional study that has a direct bearing on this research was a project commissioned by the U.S. Congress to investigate transportation planning processes for the Denver metropolitan planning organization that was conducted by researchers from the University of Denver Intermodal Transportation Institute and the National Center for Intermodal Transportation.

Denver MPO Study

Metropolitan Planning Organizations: An Assessment of the Transportation Planning Process (Dempsey, Goetz, and Larson 2000) examined transportation planning processes at the Denver MPO, focusing on such issues as need satisfaction, project prioritization, fiscal allocation, and equity and fairness of the decisional process. In order to provide a more meaningful perspective, the analysis was expanded to include other rapidly-growing metropolitan areas in Dallas, Phoenix, and Seattle. Several hundred individuals who participate in or observe the MPO process were interviewed, including the public, transportation providers, staff, engineers, planners, and federal, state, and local government (elected and non-elected) officials. Among the items reviewed were federal and state statutory and regulatory foundations for MPOs, long-range regional transportation plans (RTPs), transportation improvement programs (TIPs), state fiscal allocations to metropolitan areas, federal certification reviews of MPOs, and recent literature on MPO transportation planning.

The overall pattern of survey responses indicated a moderately positive assessment of the MPOs by their participants. There was, however, a broad range of responses across the four MPOs. Dallas-Ft. Worth and Seattle ranked significantly higher than Denver or Phoenix. The Dallas-Ft. Worth MPO, in particular, was substantially and significantly higher in its rated effectiveness, across a wide range of criteria, and was considered as engaging in “best practices” among this sample of MPOs. Factors that characterized successful MPOs included effective leadership, staff competence and credibility, development of a regional ethos, meaningful public involvement, a cooperative relationship with the state DOT, streamlined and efficient processes, integrated land-use planning, and accountability. The research illustrated that: (1) MPOs can be successful in forging collaborative relationships among key actors that result in what respondents perceive as effective regional transportation planning, but that (2) MPOs vary considerably in their ability to coordinate regional transportation planning. Some MPOs were much further along in developing the skills and characteristics necessary for successful processes (Goetz, Dempsey, and Larson 2002).

A particularly relevant outcome of this research was how important the state DOT-MPO relationship was to the overall success of metropolitan transportation planning. In

⁵11 plans identified intermodalism as a major issue or challenge.

fact, the nature of this relationship made a dramatic difference in whether the overall planning process was perceived positively or negatively. Furthermore, even though MPOs had attained some measure of fiscal independence in selecting projects as a result of ISTEA and TEA-21, they still were heavily dependent on funding controlled by state DOTs. So, the role of state DOTs remains critically important to the success of both statewide and metropolitan planning.

Conclusion

This chapter of the research report has provided the necessary background for an examination of intermodal planning practices at state DOTs. It highlighted some of the most important historical events of state DOTs particularly in regard to intermodalism. It provided a summary of the intermodal planning requirements that state DOTs now confront as a result of ISTEA and TEA-21. And, this chapter also reviewed the relevant literature on statewide multimodal/intermodal planning, highlighting the references to Alabama, Arizona, Colorado, Florida, Louisiana, Mississippi, and Texas in regards to “best practices.” In the next chapter we analyze, in detail, intermodal planning practices in those states.

References

- American Association of State Highway Officials (AASHO). 1964. *AASHO, The First Fifty Years, 1914-1964*. Washington, DC: American Association of State Highway Officials.
- American Association of State Highway and Transportation Officials (AASHTO). 1990. *Moving America Into the Future: AASHTO 1914-1989*. Washington, DC: American Association of State Highway and Transportation Officials.
- American Association of State Highway and Transportation Officials (AASHTO). 1991. *The States and the Interstates: Research on the Planning, Design and Construction of the Interstate and Defense Highway System*. Washington, DC: The American Association of State Highway and Transportation Officials.
- American Association of State Highway and Transportation Officials (AASHTO). 1998. *The Changing State DOT*. Washington, DC: The American Association of State Highway and Transportation Officials.
- Arnold, Eugene D., Jr.; Weichmann, Patricia A.; and Capizzano, Jeffrey A. 1999. *A Survey of Transportation Planning Practices in State Departments of Transportation*. Charlottesville, Virginia: Virginia Transportation Research Council.
- Balloffet and Associates, Inc. 1995. *Examples of Statewide Transportation Planning Practices*. Prepared for Federal Highway Administration/Federal Transit Administration. Publication No. FHWA-PD-95-018. Conducted by Washington, DC: Federal Highway Administration.

Boske, Leigh B. 1998. Multimodal/Intermodal Transportation in the United States, Western Europe, and Latin America: Government Policies, Plans, and Programs. Lyndon B. Johnson School of Public Affairs, Policy Research Project Report 130. Austin, TX: University of Texas.

Boske, Leigh B. 1999. Case Studies of Multimodal/Intermodal Transportation Planning Methods, Funding Programs, and Projects. Lyndon B. Johnson School of Public Affairs, Policy Research Project Report 132. Austin, TX: University of Texas.

Crain and Associates, Inc. with Pacific Consulting Group. 1996. Institutional Barriers to Intermodal Transportation Policies and Planning in Metropolitan Areas. Transit Cooperative Research Program Report 14. Transportation Research Board, National Research Council. Washington, DC: National Academy Press.

Dempsey, Paul Stephen. 2000. The Law of Intermodal Transportation: What It Was, What It Is, and What It Should Be. *Transportation Law Journal* Vol. 27, No. 3 (Summer): 367-417.

Dempsey, Paul Stephen; Andrew R. Goetz, and Carl Larson. 2000. *Metropolitan Planning Organizations: An Assessment of the Transportation Planning Process*, A Report to Congress, Volumes 1, 2, and 3. Denver, CO: University of Denver Intermodal Transportation Institute and National Center for Intermodal Transportation.

Fontaine, Michael D. and Miller, John S. 2002. *Survey of Statewide Multimodal Transportation Planning Practices*. Charlottesville, Virginia: Virginia Transportation Research Council.

Goetz, Andrew R.; Paul Stephen Dempsey, and Carl Larson. 2002. Metropolitan Planning Organizations: Findings and Recommendations for Improving Transportation Planning. *Publius: The Journal of Federalism* 32:1 (Winter): 87-105.

ISTEA (Intermodal Surface Transportation Efficiency Act) of 1991, Conference Report, H.R. No. 102-404, 102nd Congress (Nov. 27, 1991).

Lindquist, Eric. 1998. Unintended Consequences of Policy Decisions: Whatever Happened with the Intermodal Surface Transportation Efficiency Act Management Systems? *Transportation Research Record 1617*, Paper No. 98-0470, pp. 112-117.

Lipsman, Michael A. and Walter, Clyde Kenneth. 1998. Response of State Transportation Planning Programs to the Intermodal Surface Transportation Efficiency Act of 1991. 1998 Transportation Conference Proceedings.

Martinez, Robert. 1993. 'Perspective from the Office of Intermodalism,' in *ISTEA and Intermodal Planning: Concept, Practice, Vision*. Special Report 240, pp. 47-54. Transportation Research Board. Washington, DC: National Academy Press.

Meyer, Michael D. 1999. "Statewide Multimodal Transportation Planning," pp. 339-368 in *Transportation Planning Handbook*, 2nd edition, John D. Edwards, Jr. (ed). Washington, DC: Institute of Transportation Engineers.

Meyer, Michael D. and Eric J. Miller. 2001. *Urban Transportation Planning*, 2nd edition. Boston: McGraw Hill.

National Cooperative Highway Research Program (NCHRP). 2001. *Managing Change in State Departments of Transportation*. NCHRP Web Document 39 (Project SP20-24[14]). Washington, DC: Transportation Research Board, National Research Council.

Noerager, Kimberly and Lyons, William. 2002. *Evaluation of Statewide Long-Range Transportation Plans*. Prepared for: Office of Intermodal and Statewide Planning, Federal Highway Administration, US Department of Transportation. Washington, DC, April.

Peyrebrune, Henry L. 2000. Multimodal Aspects of Statewide Transportation Planning. National Cooperative Highway Research Program, Synthesis of Highway Practice 286. Transportation Research Board, National Research Council. Washington, DC: National Academy Press.

Sampson, Roy J.; Martin T. Farris; and David L. Shrock. 1990. *Domestic Transportation: Practice, Theory, and Policy*, 6th Edition. Boston: Houghton Mifflin Company.

Siwek, Sarah J. and Associates. 1996. *Statewide Transportation Planning Under ISTEA: A New Framework for Decisionmaking*. Prepared for Federal Highway Administration/Federal Transit Administration. Washington, DC: Federal Highway Administration.

Surface Transportation Policy Project. 1998. *TEA-21 User's Guide: Making the Most of the New Transportation Bill*. Washington, DC: Surface Transportation Policy Project.

TransManagement, Inc. 1998. *Innovative Practices for Multimodal Transportation Planning for Freight and Passengers*. National Cooperative Highway Research Program Report 404. Transportation Research Board, National Research Council. Washington, DC: National Academy Press.

Transportation Research Board. 1993. *ISTEA and Intermodal Planning: Concept, Practice, Vision*. Special Report 240. Washington, DC: National Academy Press.

Transportation Research Board. 1996. *National Conference on Intermodalism: Making the Case, Making It Happen*, New Orleans, Louisiana, December 7-9, 1994. Conference Proceedings 11. Washington, DC: National Academy Press.

Transportation Research Board. 1997. *Statewide Transportation Planning*, Transportation Research Circular Number 471, June. Washington, DC: National Academy Press.

Transportation Research Board. 2000. *Statewide Transportation Planning*, Transportation Research E-Circular Number E-C015, April. Washington, DC: Transportation Research Board, National Research Council.

Weiner, Edward. 1999. *Urban Transportation Planning in the United States: An Historical Overview*. Westport, Connecticut: Praeger.

Zoller, Ted. D. and Jeffrey A. Capizzano. 1997. *Evolution and Devolution: A National Perspective on the Changing Role of Metropolitan Planning Organizations in Areawide Intermodal Planning*. Report No. VTRC 97-R19, Virginia Transportation Research Council.

Chapter 2

EVALUATION OF STATE DOT INTERMODAL PLANNING

Outline

1. Data and Methods
2. Background and Assessment of Intermodal Planning at State DOTs
 - A. Arizona
 - B. Colorado
 - C. Texas
 - D. Alabama
 - E. Florida
 - F. Louisiana
 - G. Mississippi
3. Comparative Analysis
4. Conclusions

1. DATA AND METHODS

This study analyzes the intermodal transportation planning effectiveness of state DOTs in three relatively large, fast-growing western states—Arizona, Colorado, and Texas – and four states in the southeast – Alabama, Florida, Louisiana, and Mississippi. The study addresses issues such as leadership support for intermodalism, effectiveness of planning processes and implementation capabilities, adequacy of funding for intermodalism, coordination and communication between and among relevant organizations, and provision of a range of transportation mode choices. Additional information about the best intermodal projects in each state was also obtained.

In gathering material for this study, 325 individuals were surveyed (personally, by telephone, written survey, or by e-mail). These individuals were participating in or observing the state DOT planning process from different perspectives. The personal interviews were conducted with transportation leaders at state DOTs, state transportation commissions, state legislatures, MPOs, and transit agencies. The questionnaires were distributed to additional individuals who were quite knowledgeable about statewide transportation planning, including transportation providers, engineers, planners, advocacy groups, and federal, state, and local government (elected and unelected) officials. Research findings were also based on background and organizational information relevant to each state DOT, as well as recent plans produced by the state DOTs.

Questions on planning effectiveness that reflected specific intermodal transportation concerns were asked. Using the definition of intermodalism developed by US DOT (TRB 1993) that has been used in subsequent studies (Crain and Associates 1996;

Dempsey, Goetz, and Larson 2000), the survey instrument sought to assess intermodal planning by collecting information on:

1. To what degree the state DOT leadership:
 - a. Espouses an intermodal vision
 - b. Supports projects that promote intermodalism
 - c. Provides effective support for intermodal planning.
2. To what degree does the state DOT's planning process:
 - a. Give equal consideration to the full range of transportation alternatives
 - b. Use adequate planning and analysis tools to make intermodal decisions
 - c. Effectively incorporate public involvement in the planning process
 - d. Effectively incorporate an intermodal approach to planning in general
3. To what degree the state DOT provides:
 - a. Training for the staff regarding an intermodal approach to planning
 - b. Sufficient resources available for intermodal planning
4. To what degree do the various aspects of ISTEA/TEA-21 funding and related regulations facilitate intermodalism by:
 - a. Ensuring adequate state funding to support intermodal projects
 - b. Providing sufficient federal funding to support intermodal projects
 - c. Encouraging state DOT support in guiding the use of flexible funds for intermodal planning and projects
 - d. Ensuring that the state DOT meets the legislative intent of ISTEA/TEA-21 regarding intermodalism.
5. Regarding communication and coordination in support of intermodalism, to what degree is there:
 - a. Good communication within the state DOT
 - b. Coordination between the state DOT and metropolitan planning organizations (MPOs)
 - c. Coordination between the state DOT and rural planning organizations
 - d. Coordination between the state DOT and regional transit agencies
 - e. Coordination between the state DOT and freight transportation organizations (maritime, trucking, rail, air cargo, etc.)
 - f. Effective state DOT coordination and communication regarding intermodal planning in an overall sense.
6. How well does the state DOT satisfy transportation needs in terms of investment in:
 - a. Roadway construction
 - b. Operational/safety improvements
 - c. Investment in transit and bus service
 - d. Investment in bicycle and pedestrian facilities
 - e. Intermodal connecting facilities.

Additional survey questions were focused on the identification and effectiveness of the best intermodal projects in each state.

To collect data on the effectiveness of state DOT intermodal planning processes, three measurement strategies were followed: (1) paper questionnaires to collect effectiveness ratings across a wide range of participants and observers accompanied by self-addressed postage-paid envelopes, (2) electronic version of the paper survey distributed by e-mail, and (3) face-to-face and phone interviews to collect more in-depth responses from a more selective group of experts most knowledgeable about state DOT planning processes. The primary data for this research were collected from respondents in the seven aforementioned states: Arizona (27 respondents), Colorado (40 respondents), Texas (41 respondents), Alabama (24 respondents), Florida (133 respondents), Louisiana (23 respondents), and Mississippi (30 respondents). All these respondents were individuals involved in or affected by the state DOT transportation planning process. A stratified random-sampling approach was used to create comparable samples across the four states for the in-depth interviews, based on the following categories of participants:

1. State DOT executive directors and planning directors
2. MPO executive directors and transportation planning directors
3. Transit agency executive directors and planning directors
4. Port authority executive directors and planning directors
5. Rural transportation planning officials
6. Statewide transportation commission members
7. State legislators—transportation committee chairs

The selected individuals were all interviewed directly, while the remaining individuals from the relevant populations each received either a paper-and-pencil version or electronic version of the questionnaire. Responses obtained to the open-ended questions about the overall quality of intermodal planning in the face-to-face interviews with current transportation leaders are emphasized in the qualitative analysis.

On the basis of the results from the interviews and questionnaires, as well as assessments of plans and planning practices, each state DOT was evaluated regarding intermodal planning. This material is the subject of the next section.

2. BACKGROUND AND ASSESSMENT OF INTERMODAL PLANNING AT STATE DOTs

Each state Department of Transportation under analysis in this study has certain organizational and transportation characteristics specific to the state that it represents, depending on history, geography, legislation, and other circumstances. Also, each state DOT has responded to the call for a more intermodal approach to planning in different ways, as exemplified by differences in planning procedures, institutional structures, long-range plans, and specific plans geared to intermodal initiatives. All of this background information is important when assessing the survey results that indicate how each state DOT has performed regarding intermodal planning.

A. ARIZONA

Introduction

The historic Route 66 once crossed northern Arizona bringing people from Chicago to Los Angeles and back again. Today, that route has been supplanted by twenty-two ports of entry and 55,000 miles of roads, highways, and freeways that link all parts of Arizona together and beyond. It has over 1300 miles of Class I railroad lines and 14 airports certified for air carriers.⁶ This complex of roads, highways and freeways dates back to the mid-1800's when prospectors in search of gold and hunters, trappers, and the military began to travel across the territory. The former used a rough road that cut across the southern part of the territory, the latter favored one that that crossed the northern part. In 1864, the first Territorial Legislature sought to promote the development of a road system by permitting the establishment of toll roads, though some existing roads were exempt from tolls. In later decades, counties were permitted to charge a road tax that could be used for the construction of new roads. Although a Territorial Engineer was appointed in 1909 and an Office of State Engineer established in 1912, the year that Arizona attained statehood, primary responsibility with road construction remained with the counties for many years.⁷ Fifteen years after Arizona achieved statehood in 1912, the legislature replaced the office of State Engineer with a State Highway Department and the Arizona State Highway Commission. This department was combined with the Department of Aeronautics in 1974 to form the Arizona Department of Transportation (ADOT).

Several factors have influenced the development of Arizona's transportation infrastructure. One of the most important has been its rapidly growing population for Arizona has proven to be a desirable location that has attracted persons from across the country. Its population has rocketed 20 fold in half a century -- from 250,000 to 5 million and is expected to increase by another 50% to 7.5 million in 2020. That growth has not, however, been distributed evenly, most has been experienced by Arizona's four major metropolitan areas: Phoenix, Tucson, Yuma, and Flagstaff, and especially Phoenix whose population has exploded from 1 million in 1970 to 3 million today. Overall, these four areas comprise 88% of the state's population, making Arizona one of the most urbanized states in the country and creates particular problems since rural and urban transportation needs are very different. Arizona's population growth is also characterized by a large number of seniors as it has proven an attractive location for retirees. It is also an attractive destination for immigrants from Latin America who tend to be young and less educated.⁸

Remarkably, Arizona's economy has kept pace with its rapidly expanding population. Over 70 percent of Arizona's economy is focused on the Phoenix area and 15

⁶ Arizona: Transportation Profile (Washington, DC: Bureau of Transportation Statistics, 2002)
Moving America (Washington, DC: AASHTO, 1990)

⁷ Idem.

⁸ Move AZ, Phase 1 Report, (Cambridge Systematics, August 2002) 2.2.1

percent on Tucson. Together with Flagstaff, these cities comprise the state's manufacturing centers for they have succeeded in attracting high-tech knowledge-intensive businesses. The other parts of the state, on the other hand, are heavily dependent on the tourist trade and upon providing services to the large number of retirees who have settled in their communities. Of lesser though important significance in the state's economy are the traditional sectors -- agriculture and mining. The state has energetically pursued an economic development strategy to link enterprises which share technologies, infrastructural requirements, and labor force skills. In conjunction with this strategy, the Arizona Department of Commerce has actively sought to develop cross-border relationships and supply chains.

Although Latin America would seem to be Arizona's logical trade partner, in actuality, Asia plays the greater role in its trading economy. This is due to a significant degree to the nature of the transportation network which provides easy access to the major ports on the west coast. I-10, for example, the major interstate highway that stretches from Florida to California is one of many routes that link Arizona to significant trade gateways. This highway also runs through the Phoenix metropolitan area. Dealing with increasing freight traffic and integrating this with passenger requirements creates numerous difficulties, including urban congestion, which is a major challenge for Arizona as it is for many other states.

Obviously such factors as population growth, including a sharp increase in the number of seniors, rapid economic development, and accelerating urbanization have profoundly affected Arizona's environment and natural resources and pose new challenges for transportation. Air quality, especially in the Phoenix area, has become a major concern and in recent years various plans have been advanced to improve the quality of the environment. Similarly, increased attention has been paid to land use; land conservation has become a major issue as Arizona's cities sprawl at an alarming rate. In 1996, the Arizona Preservation Initiative established a fund to be used for the creation of urban public spaces. More recently, the state has adopted such plans as Growing Smarter (1998) and Growing Smarter Plus (2000) in an effort to limit urban sprawl and to improve land use patterns through improved coordination of local and state land use plans. Limits have been placed on the ability of municipalities to carry out annexations, and efforts have been made to rationalize infrastructural boundaries. Water resource management measures are also frequently included in these plans. As a result, metro Phoenix actually increased in density from 1990 to 2000.

The state of Arizona's transportation system and some of the key issues are as follows:

Highways

The automobile continues to be the dominant means of transportation in Arizona. And, of all the modes, the road system which totals more than 58,000 miles of roadway is by far the most developed. Despite heavy usage, it is considered to be in good to excellent condition. However, pressures on this mode continue to increase as travel on the state's roads and highways are already extremely heavy and represent the fastest growing area.

Over the past 10 years, the daily vehicle miles of travel (DVMT) has nearly doubled. Although only 12 percent of the total highway miles are owned by the Arizona Department of Transportation, nearly 57 percent of the DVMT occurs on these roads; 28% of the DVMT takes place on the interstate highways. Travel in urban areas is particularly troublesome, especially in Phoenix where congestion and air quality are important concerns. The road system is also used extensively to move freight. Twelve percent of the DVMT is highway freight with approximately 96 million tons of cargo being transported by truck in 1997 – 79% of Arizona’s production. This places further heavy strains upon Arizona’s highways.⁹ Intercity bus service by Greyhound and by some rural operators, which run along highway interstate corridors, are available to more than 48 communities, with the Phoenix-Tucson-Nogales route enjoying high service frequency.

Railroads

Arizona’s total track mileage amounts to 2,654 with two major railroads (Union Pacific and the Burlington Northern Santa Fe) owning and/or operating 738 miles and 595 miles of railroad track respectively. Various local, switching, and terminal companies account for the remainder. Passenger service is provided by Amtrak which links various cities daily to Chicago and Los Angeles and three times weekly to Orlando and Los Angeles. In 2000 more than 66,000 persons took advantage of this service. At present there is no rail passenger service available in the Phoenix metropolitan area though it is served by “branch” lines of both UP and BNSF. The possibility of building a high speed rail connection between Phoenix and Tucson has been studied for several years. The railroads are even more important as freight carriers – in 2000, 103 million tons of cargo was shipped from Arizona by rail.¹⁰

Aviation

Arizona currently has 83 public-use airports and 236 private facilities. Phoenix Sky Harbor International Airport, one of 11 certified for scheduled service, was ranked as the fifth busiest airport in terms of passenger air travel in the nation. Tucson International Airport (ranked 45th) and Yuma International Airport also see considerable traffic. Phoenix Sky Harbor and Tucson International Airport are also equipped to handle cargo planes, with an estimated 1.8 billion pounds of cargo landing at Sky Harbor and 285 million pounds at Tucson International Airport.¹¹

The Structure of Transportation Planning

The Arizona Department of Transportation is the agency charged with planning, developing and maintaining Arizona's transportation network. It is governed by a seven member Transportation Board which ultimately approves the plans and monitors their

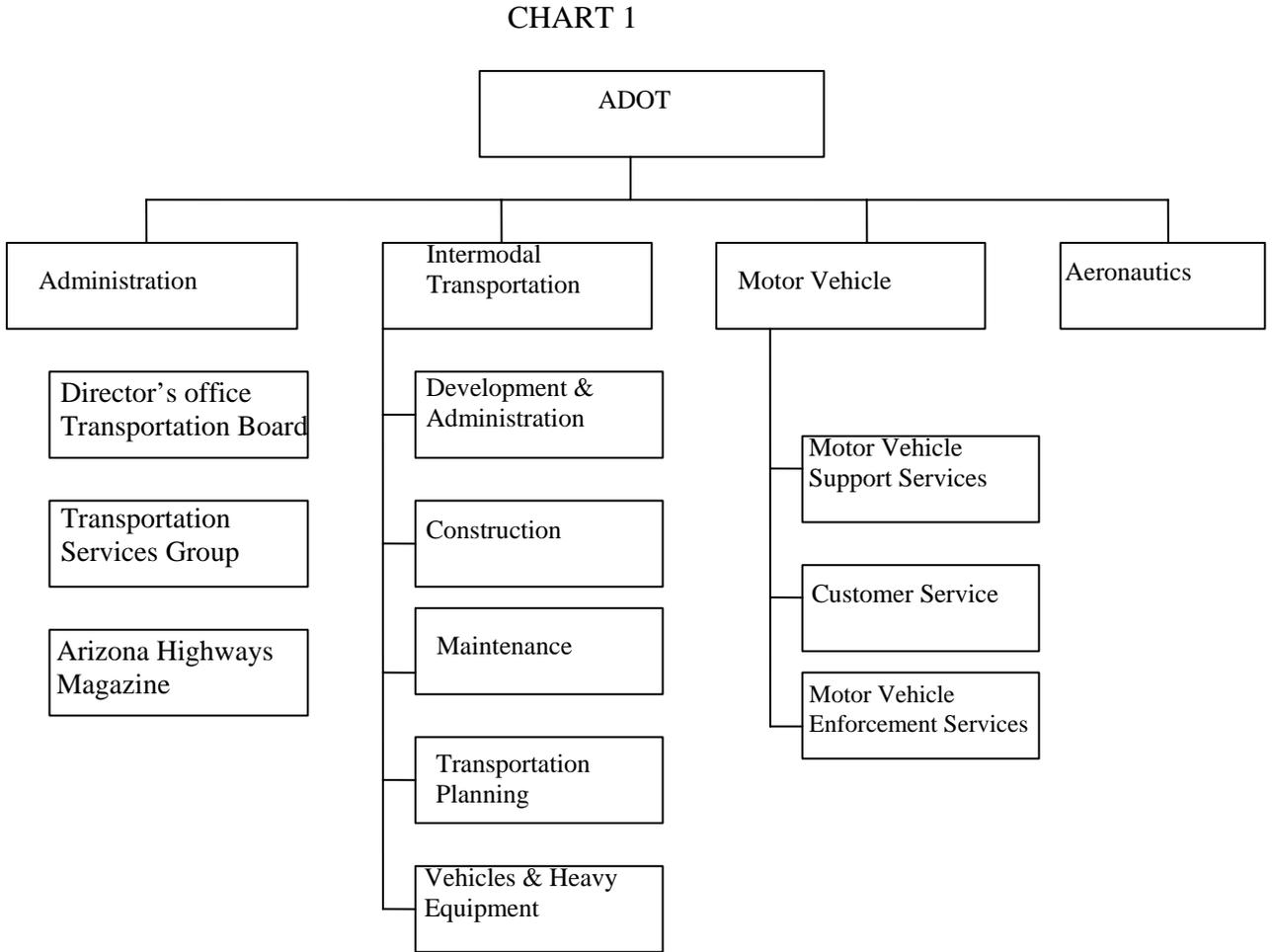
⁹Ibid., 3.1.1, 3.1.2

¹⁰ Ibid., 3.1.3

¹¹ Ibid., 3.1.4

progress as well as awarding all contracts. The Transportation Board also develops guidelines for the development of the Five-Year Transportation Facilities Construction Program which federal and state legislation requires ADOT to produce. There are however, other important actors who influence the development of Arizona's intermodal transportation system including regional governmental organizations, metropolitan planning agencies, consulting and development firms, and Native American plans. Thus, achieving cooperation among these various organizations and agencies has become a major element in the development and implementation of transportation plans in Arizona.

ADOT's basic organization (until December 2003) is depicted in the following chart:



Source: ADOT Five-Year Strategic Plan FY 2004-2008

In December 2003, two new units were created within ADOT in an effort to give a greater emphasis to transit issues and to make it more responsive to the public – a Public Transit Division with three groups (Rail and Safety, Rural Transit, and Special Needs Transit) and a new group, called Communication and Community Partnerships which combined several non-engineering functions in the organization. This group is expected to serve as the lead for ADOT in its efforts at coordinating public involvement activities as well as communication efforts to the general public, media and elected officials. This group also works with the all of ADOT's Divisions to coordinate transportation planning and projects with COGs, MPOs, Native American communities, county governments, local government agencies and other interested stakeholders. This group also administers ADOT's partnering program to build relationships in the construction and engineering community, monitors communication efforts and resolves issues that arise on construction projects. How these units fit into ADOT's organization is depicted in the following detailed chart:



Arizona Department of Transportation Organization Chart

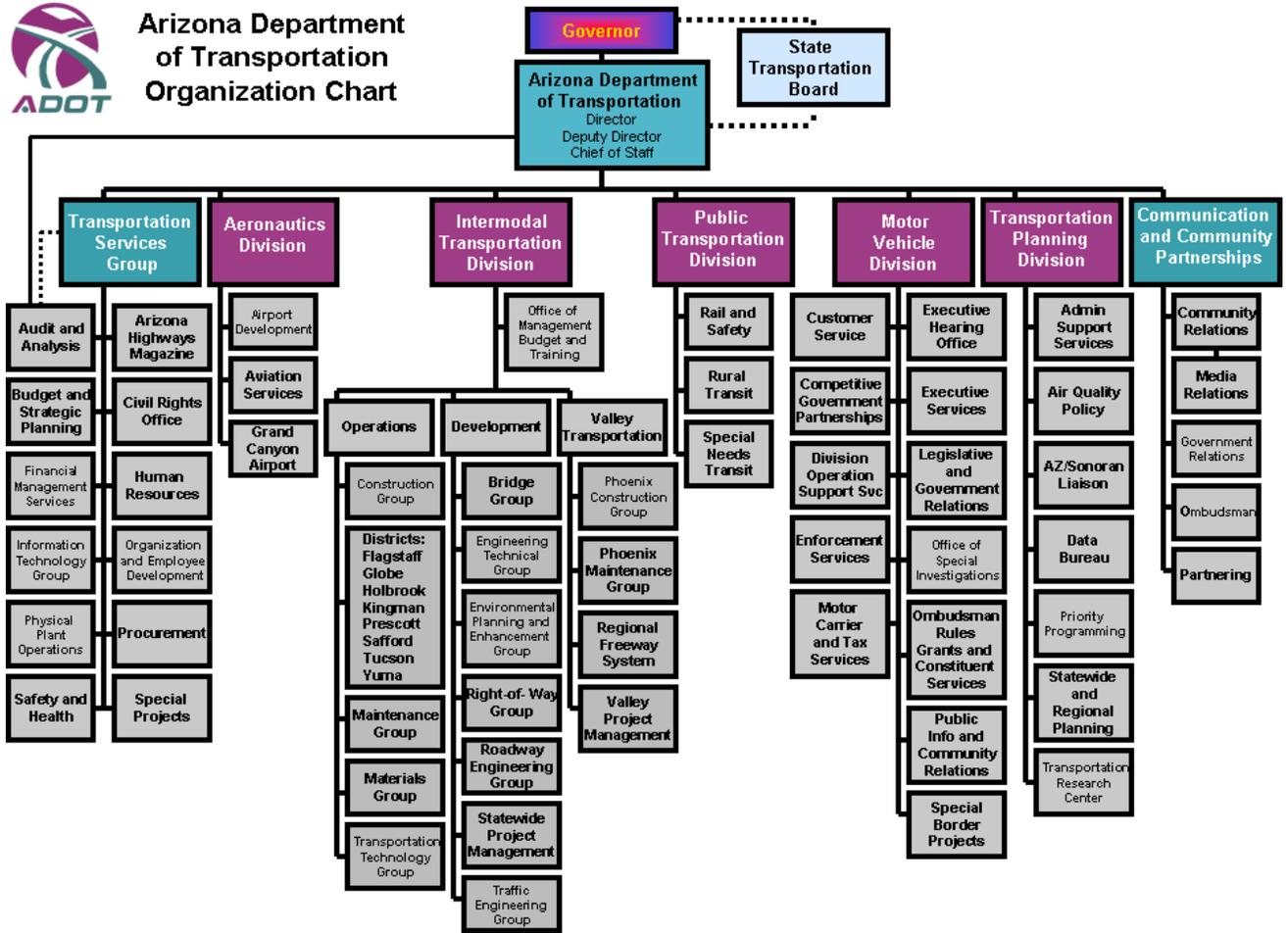


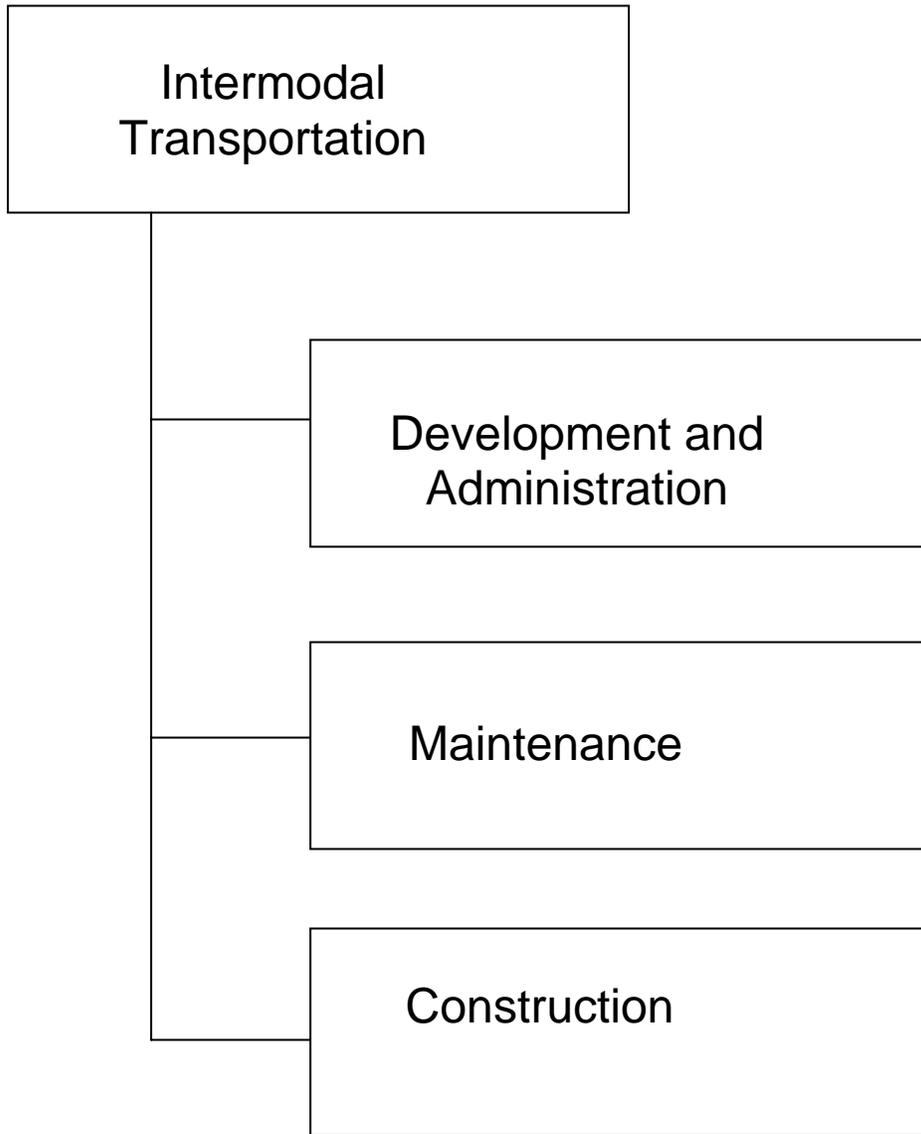
CHART 2

<http://www.dot.state.az.us/cdfs/OrgChart.htm>

As is evident from the above chart, the Intermodal Transportation Division – a relatively new unit established only in 1995—incorporates various groups that are not really focused on intermodalism. It should be noted that by state statute the Intermodal Transportation Division is officially classified as the "Highways Division." However, within ADOT it is referred to as the "Intermodal Transportation Division" in an effort to provide a broader perspective on transportation issues.

Hence, the Intermodal Transportation Program Strategic Plan is organized into three subgroups – Development and Administration, Maintenance, and Construction – as is evident from the following chart:

CHART 3



Source: Intermodal Transportation Program Strategic Plan
<http://www.dot.state.az.us/ABOUT/fms/itd.htm>

As the above chart indicates, ADOT's Intermodal Transportation Program is organized around three major subprograms. Altogether it possesses 11 groups and is organized into ten regional districts. It is headed by the state engineer assisted by three deputies. It is charged, according to state law, with "constructing and maintaining all interstate and state highways in Arizona and providing financial assistance to public airports for airport development projects."¹² It does so through a technical evaluation effort known as the priority programming process which produces the Five-Year Transportation Facilities Construction Program for Highways and Airports. It emphasizes meeting pavement preservation needs on the interstate and non-interstate highway systems and continuing funding for projects in corridors that were started in previous five-year programs. It involves an extensive public participation process and the ADOT program for the Maricopa Association of Governments [MAG] (metro Phoenix) and Pima Association of Governments [PAG] (metro Tucson) areas are prepared in cooperation with the MPO and transit operator. Hence, all three parties, ADOT, MAG, and Valley Metro must agree on the elements in the Five-year program for the Phoenix metro region. This process has been used since the adoption of the Casa Grande Resolves in 1999 (which are discussed below) and results in the alignment of ADOT and MAG priorities for the region.

The construction program is revised each year to reflect changes in the project mix as some are completed, others are added, and the schedule for others is altered to fit new circumstances. A tentative program is announced in March; public hearings are held in April; the program is finalized in May and published in June.

The funding that the ITD and the other units within ADOT receive is shown in the following table:

¹² http://www.dot.state.az.us/ROADS/itd/about_itd.htm

Table A-1: ADOT Funding by Program and Subprogram

PROGRAM TOTAL (estimated for FY 2003) in thousands

Administration	\$66,785.8
Director's Office	\$2,718.4
Transportation Services Groups	\$52,917.1
Arizona Highways Magazine	\$11,396.3
Intermodal Transportation	\$1,759.5
Development and Administration	\$42,980.5
Maintenance	\$97,962.0
Construction	\$1,574,777.5
Transportation Planning	\$10,103.5
Vehicle and Heavy Equipment	\$33,648.3
Motor Vehicle	\$96,525.8
Motor Vehicle Support Services	\$20,290.3
Customer Services	\$54,183.4
Motor Vehicle Enforcement Services	\$22

The available funds fall short of Arizona's projected needs over the next twenty years. The available revenues till 2020 are projected to total \$41 billion of which highways generate \$34 billion, transit \$4 billion, and aviation \$3 billion. However, there is a projected shortfall of \$20.3 billion -- \$16.6 billion for highways, \$2.7 billion for transit, and \$950 million for aviation. Various ways of raising the additional revenue, especially through an increase in the sales tax, have been proposed for consideration.¹³

The ways in which funds are allocated will be discussed below in the section dealing with cooperation in planning.

¹³ Revenue Consultant Report to Task Force, Vision 21 Task Force (Wilbur Smith Associates, November 2001), pp A-2-2; A-2-3.

Other Transportation Organizations

In addition to the Arizona Department of Transportation, other organizations -- Council of Governments (COG) play an active role in transportation planning. These organizations which link state and local governments are regionally based and, consisting of various governments, represent the public stakeholders within a region. Arizona contains four rural COGs and two urban COGs. These are: 1) South Eastern Arizona Association of Governments (SEAGO), 2) the Northern Arizona Council of Government (NACOG), 3) the Central Arizona Association of Governments (CAAG), 4) the Western Arizona Council of Governments (WACOG), 5) Maricopa Association of Governments (MAG) and 6) Pima Association of Governments (PAG).

The two urban COGs are also identified as Metropolitan Planning Organizations (MPOs), of which there are now five in the state. In addition to MAG (Phoenix metropolitan area) and PAG (Tucson metropolitan area), there are also the Yuma MPO, the Flagstaff MPO, and the Central Yavapai Association of Governments Metropolitan Planning Organization which was established in 2003. Each MPO is responsible for managing various aspects of the state's major metropolitan areas (populations of 50,000 or more), including transportation. In addition, MAG and PAG are recognized by the federal government as Transportation Management Areas (TMAs) because their populations exceed 200,000. Federal law assigns additional specific responsibilities to TMAs, including, for example, ensuring that the area complies with federal air quality and other environmental standards.

Transportation Planning

The Transportation Equity Act for the 21st Century (TEA-21), enacted in June 1998, mandates each state to "develop a long-range transportation plan, within a minimum 20-year forecast period, for all areas of the State, that provides for the development and implementation of the intermodal transportation system of the State." The Long-Range Transportation Plan forms the foundation of the transportation planning process for the State of Arizona. Other plans, such as the federally mandated State Transportation Improvement Plan (STIP), the Arizona Department of Transportation Five Year Plan, and other regional transportation plans must be compatible with this plan.

ADOT's latest five year strategic plan includes the following five long-range goals¹⁴:

1. **Economic Vitality:** A multimodal transportation system that improves Arizona's economic competitiveness and provides access to economic opportunities for all Arizonans.
2. **Stewardship:** A balanced, cost-effective approach that combines preservation with necessary expansion and coordinates with regional, tribal and local transportation and land use planning.

¹⁴ Five Year Strategic Plan, Fiscal Years 2004-2008, Arizona Department of Transportation, 2002

3. Environmental Sensitivity: A transportation system that enhances Arizona's natural and cultural environment.
4. Access and Mobility: A reliable and accessible multi modal transportation system that provides for the efficient mobility of people and goods throughout the state.
5. Provide safe transportation for people and goods.

Preparation of the Long-Range Transportation Plan consists of three phases. The first involves developing a mission statement and identifying key goals and objectives to guide the formation of the Long-Range Transportation Plan. This is accomplished by reviewing existing plans and policies, documents and reports, and analyzing the transportation system in other states.

This phase was completed in October 2000. The Report identifies two long range goals -- access and mobility -- as well as the following performance factors: mobility, reliability, accessibility, safety, economic competitiveness, accessibility, preservation, mobility, resource conservation, environmental protection, context sensitive solutions, and connectivity.

The last of these relates directly to intermodalism. Here the relevant objectives are to “maintain and enhance intermodal passenger connections between air and surface (highway and transit) transportation modes, maintain and enhance intermodal freight linkages for truck-rail and truck-air transfers, continue necessary expansion and connection of Arizona’s metropolitan highways and HOV lanes, and ensure the connection of rural communities to the state highway network.”¹⁵ In the accompanying data, ten highway-rail nodes are identified, seven of which are located in the Phoenix region.

This stated concern with intermodalism is apparently not new. According to the Report, a review of previous ADOT and other planning efforts revealed that the importance of developing a balanced/multimodal system was often discussed. In addition to this being the first goal of the 1994 State Transportation Plan, it was cited in several small area plans. The plans drawn up by COGs all envisioned a multimodal system. However, the Report noted that “with the vast majority of state residents concentrated in just a handful of cities, building a balanced, multimodal transportation plan will apply better to these few urban areas than the large rural areas of the state. While building a multimodal system plan clearly affects the majority of the population, statewide transportation planning efforts will necessarily face different challenges in different regions of the state.”¹⁶

¹⁵ Phase 1 Report, (Cambridge Systematics, August 2002) 1.3-1.6

¹⁶ Ibid, A.1-A.2

The second phase involves engaging stakeholders and the public on transportation planning issues. This phase necessarily overlaps the other. The initial stage, held in February 2002, involved 9 focus groups and 8 regional forums. Its goal was to provide the public with an opportunity to influence the strategy and shape the priorities identified in Phase 1. Subsequently, an intermediate stage, in spring 2003, involved three additional stakeholder groups that dealt with native Americans, transit, and trucking and aviation. Another nine regional forums were also held. The goal of these activities was to determine the degree to which the public approved of the decisions that had emerged as a result of the previous round of public participation and subsequent research and to identify possible projects and policies for the state and its regions. A third stage is planned.¹⁷

Phase 3 requires the evaluation of current transportation programs and policies, and the analysis of transportation weaknesses. It possesses a technical orientation and involves the establishment of evaluation criteria and performance measures that will guide the selection of potential solutions. This phase too is underway.

Arizona's approach in developing its plan has been listed as one of the "Noteworthy Practices" identified by the FHWA in its "Evaluation of Statewide Long-Range Transportation Plans"¹⁸. It was praised for its integration of the key socio-economic issues and variables that will influence the mobility needs of the state and have to be taken into account when planning the future transportation system. These factors – the pattern of population and economic growth – are assessed over three time periods. The Plan was also praised for its analysis of the role of technology, especially telecommunications, on transportation, for its discussion of energy futures and for its realistic appraisal of growing congestion owing to the continuing domination of the automobile and trucks. It concludes: "The discussion of these issues and challenges in the different time periods and with the differing probability levels, contribute to a plan that appears to incorporate consideration of these issues throughout the planning process."¹⁹

Developing the Long-Range Transportation Plan is no simple matter since all the organizations cited above have to be involved -- ADOT, the various metropolitan planning organizations (MPOs) and Councils of Government (COGs). In this area, Arizona has emerged as a model that is deemed, by the USDOT to represent "best practices of planning partnerships and worthy of emulation by other states."²⁰

Cooperation and Coordination in Intermodal Planning

For decades, inadequate communications and cooperation between the various agencies concerned with transportation severely hampered the development of effective and

¹⁷ MoveAZ-Intermediate Partnering Phase of Public Involvement, (Cambridge Systematics, August 2003)

¹⁸ K. Noerager and W. Lyons, Evaluation of Statewide Long Range Transportation Plans (Volpe National Transportation Systems Center, Final Report, April 2002) pp. 21-22.

¹⁹ Ibid., p. 22.

²⁰ Best Practices of Planning Partnerships, Peer Exchange Report (USDOT: Transportation Planning Capacity Building Program, Denver, CO, December 9-11, 2003)

efficient transportation programs and projects. To deal with this problem a number of forums involving transportation officials from ADOT, the MPOs, and the COGs were initiated in 1993. These gatherings produced limited results but three factors created a need for significant action. First, MAG's triennial certification review by FHWA and FTA in 1998 concluded that MAG and ADOT needed to work together to produce a "funding estimate" for this region. Second, the passage of TEA-21 resulted in substantially higher funding for Arizona – a windfall that ADOT immediately programmed without any discussion with any local governments. Third, MAG conducted research that demonstrated that the region was not receiving its "fair share" of ADOT funds. Hence, a meeting was organized in Casa Grande April 29 – 30, 1999, to resolve these issues and agreement was reached on a set of principles to enhance interagency interactions and to guide cooperative future planning and programming. The Casa Grande Resolves, as they were later called, produced seven principles. These are, officially, listed as follows (*italics in the original*)²¹:

1. There will be *one* multimodal transportation planning process for each region that is *seamless to the public* which includes *early and regular dialogue and interaction* at the state and regional level and recognizes the needs of state, local and tribal governments and regional organizations.
2. It will be a process that encourages *early and frequent public participation and stakeholder involvement* and that meets the requirements of the Transportation Equity Act for the 21st Century (TEA-21) and other state and federal planning requirements.
3. The policy and transportation objectives of the state, regional and local plans will form the foundation for the statewide Long-Range Transportation Plan (20 years).
4. The statewide Five- Year Transportation Plan and Programs will be based in clearly defined and agreed to information and assumptions including the resources available, performance measures, and other technical information.
5. Each project programmed (within the Five-Year Plan) *shall be linked to the statewide Long-Range Transportation Plan* with each project selected to achieve one or more of the Plan objectives. The program will represent an equitable allocation of resources.
6. Implementation of the Plan and Program shall be monitored using a common database of regularly updated program information and allocations.
7. There will be shared responsibility by state, local and tribal governments and regional organizations to ensure that Plan and Program implementation meets the transportation needs of the people of Arizona.

To ensure that these principles would be implemented, a Resource Allocation Advisory Committee (RAAC) was subsequently established and charged with developing

²¹ The Casa Grand Resolves: State and Local Cooperation in Transportation Planning (ADOT Backgrounder, 1 July 1999) pp. 1-2

funding forecasts and recommending allocations to the urban and rural areas and major programs. Its membership consists of four ADOT members, the Executive Directors of the Maricopa and Pima County TMAs, one member from a rural COG, one from a non-TMA MPO and one major urban transit operator. Some funds are allocated to counties and metropolitan areas according to a formula (major projects), other funds to pay for maintenance (subprograms), are distributed according to need. The amount that a community or a project receives is based on the following principles: 1) all the available financial resources are pooled; 2) the RAAC formula determines how much a county or region receives; 3) a sum is then withdrawn for the subprograms; 4) the remainder is allocated into major projects.²² Despite the often contentious nature of many of the issues such as determining allocation formulas, the group has been operating successfully, though it took time for trust to be established. Its success has been attributed to the fact that it meets regularly and operates on the basis of a consensus that is then presented to the members' policy boards. Among the many benefits of the RAAC process has been the transparency that has resulted from the open sharing of information and a common set of data.

Another outcome of the "Resolves" was a legislative change that converted one of the seven Transportation Board members from an "at large" seat to a Maricopa County seat so that MAG now has two representatives on the seven member board.

ADOT and Intermodalism

According to the latest Strategic Plan, the ITD "considers all transportation modes in its planning process for building and maintaining a seamless transportation system of modal interlinks. The focus is to move intrastate, interstate and international passengers or products on an economically efficient and environmentally sound transportation system".²³ Its subprograms are 1) Construction, 2) Maintenance, and 3) Development and Administration. The mission of the construction sub-program is defined as "To develop and construct the highest quality multi-modal state transportation system in America" but its specific objectives are almost completely highway centered involving increasing total center line miles, total lane miles, securing adequate financing for such projects, and ensuring high quality. Its other sub-program goals involve improved incident management, and workforce issues.²⁴

In the latest Five Year Program, FY 2004-2008, its role is explicitly described as serving "as the state's public entity to construct and maintain a quality highway system" and its mission is defined as "To continually improve the safety, efficiency and quality of Arizona's highway system and its intermodal connectors". Its five subprograms include development and administration, maintenance, construction, equipment services and

²² Ibid., pp. 6-7

²³ Intermodal Transportation Program Strategic Plan, <http://www.dot.state.az.us/ABOUT/fms/itd.htm>

²⁴ Loc. Cit.

Intermodal Transportation Planning (a distinct unit reporting to the ADOT director).²⁵ Four issues are seen as critical to that unit's work – 1) development of a long range multi-modal plan and programming process that leads to the creation of an integrated transportation system, 2) creation of a data bureau, 3) asset management, and 4) workforce development.²⁶ What is striking, of course, is the dissonance between the mission statement and the issues and goals that are specified which reflect a strong bias towards road construction and maintenance. It is noteworthy that the Vision 21 Task Force listed congestion first in its list of strategic challenges:²⁷ The problem was to be alleviated through “market based solutions” though “Additional options that could be considered (emphasis added) include enhanced multi-modal alternatives, better incident management and the use of technology.”

The need for a greater emphasis on intermodalism was officially recognized by the Vision 21 Task force. It found that Arizona lacked an integrated long term transportation plan that incorporated all the modes. Accordingly, one of its major recommendations was that state law should be amended to require the State Transportation Board to adopt “multi-modal transportation policies to be known as the Statewide Transportation Policy...to assure the development and maintenance of a comprehensive, modally integrated and balanced statewide transportation system.”²⁸

Survey Results

The respondents to our questionnaire shared the view that much remained to be done in the area of intermodalism and did not rate ADOT particularly highly in regards to its commitment to intermodalism. Altogether 27 Arizona officials closely involved with the planning and implementation of transportation projects provided responses to the survey. They were a diverse group, representing not only the Arizona Department of Transportation but also transit agencies, the State Transportation Board, state legislators, and rural and metropolitan planning organizations. Some respondents answered only some of the questions – only nine completed the section that dealt with the best intermodal project. Perhaps the poor response was due to the fact that there do not appear to be many intermodal projects in Arizona. Two respondents, for example, explained the reasons for their selection with the following comments: “That’s all there is” and “it’s the best because there aren’t that many”.

Despite these shortcomings, an analysis of the survey responses provides important and interesting insights into the state of intermodal planning in Arizona. Table A-2 provides the numerical average of the responses for the questions dealing with ADOT's performance in intermodal planning. The average responses range from a low of 2.10 – its overall rating – to a high of 3.86 for increased environmental benefits (1=

²⁵ Five Year Strategic Plan –FY 2004-08, Arizona Department of Transportation, December 2002, pp. 11-12

²⁶ Ibid., p. 17.

²⁷ <http://www.dot.state.az.us/ABOUT/fms/strapIn.htm>

²⁸ Alternative Transportation Governance Structure, Prepared for the Governance Committee of the Transportation Vision 21 Task Force; Vision 21, Key Task Force Findings and Recommendations.

not at all, 5= to a very great degree). Most responses fell in the low to middle range (2-3) reflecting the limited degree to which the respondents considered ADOT to be engaged in efficient and effective intermodal planning. Such low rankings should not be surprising since, as noted above, its overall rating was only 2.10.

Its leadership receives 2.85 for its intermodal vision, 2.78 for its support of intermodal projects, and only 2.56 for its support of intermodal planning. Nor did it receive high marks for the quality of its planning processes. It was rated 2.63 in terms of considering all options, 2.52 in regards to the use of tools and processes and 2.63 in terms of the degree to which it incorporated an intermodal approach. It did, however, get higher marks for the level of public involvement in the planning process (3.15).

One reason for this low ranking may have been due to the fact that ADOT apparently does not pay adequate attention to staff training for intermodalism (2.44) or allocate adequate resources for intermodal planning (2.30). Nor was it a powerful advocate in obtaining state funds for intermodal projects (2.23) though it apparently was more effective at the federal level (2.63) and did strive to get flexible funds allocated to intermodal projects (3.00). However, the respondents did not rank ADOT highly in terms of its efforts to meet the ISTEA/TEA-21 intent in regards to intermodalism – 2.74.

In one area, however, ADOT has apparently been very successful – in communication and coordinating with other organizations in Arizona involved with intermodal transportation. It ranked highly in terms of coordination with MPOs and rural transportation agencies (3.52 and 3.54) though its links with transit agencies were not as strong – 3.0.

That transit specifically and intermodalism generally were not valued highly is also reflected in the assessment that the respondents made in regards to how effectively ADOT satisfied transportation needs of various kinds. Roadway construction and operational and safety improvements ranked very high, 3.67 and 3.73 respectively but transit services fell to 2.37, intermodal connecting facilities to 2.44, and bicycle and pedestrian facilities to 2.44 as well.

Table A-2

	AZ	AZResponses
1. Espouse an intermodal vision	2.85	27
2. Support intermodal projects	2.78	27
3. Provide support for planning	2.56	27
4. Consider all alternatives	2.63	27
5. Use planning analysis	2.52	27
6. Public involvement	3.15	27
7. Intermodal Planning	2.62	26
8. Staff Training	2.44	27
9. Sufficient Resources for planning	2.30	27
10. Ensure adequate state funding	2.23	26
11. Ensure adequate fed funding	2.63	27

12. Flexible use of funds	3.00	9
13. Ensure state meets legis intent	2.74	27
14. Good Communication in State	2.96	27
15. Coord between state and MPOs	3.52	25
16. Coord between state and Rural	3.54	26
17. Coord between state and transit	3.00	27
18. Coord between state and freight	2.92	26
19. Coord between state and intermodal	2.84	25
20. investment in Road Construction	3.67	27
21. investment in Safety improvements	3.73	26
22. investment in Bus & Transit	2.37	27
23. investment in Pedestrian	2.44	27
24. investment in Intermodal	2.44	27
28. More Choice	3.80	20
29. Increased Mobility	3.84	19
30. More connectivity	3.81	21
31. Increased Energy Efficiency	3.67	21
32. Increased Environmental Benefits	3.86	21
33. Reduced Congestion	3.24	21
35. USDOT	3.00	8
36. State DOT	2.68	19
37. MPO	3.11	18
38. Rural planning agency	2.89	18
39. Transit Agency	3.18	17
40. City or county govt	3.50	18
41. Private Sector	3.21	19
42. Advocacy Group	3.06	17
43. Other	3.31	13
44. Provided funding	3.18	11
45. Provided leadership	2.72	18
46. Contributed planning	2.20	25
47. Contributed involvement	2.67	18
48. Overall rating	2.10	20

A significant part of the survey took the part of open-ended questions that provided the respondents with the opportunity to comment in their own words on the state of intermodal planning. These written responses were supplemented with some interviews with officials and other transportation experts. These comments and responses tend to confirm the degree to which ADOT remains a traditional organization that has not yet made the transition to becoming an intermodal agency. Here are some typical comments:

ADOT is still a highway department dominated by rural interests. To ADOT intermodalism means HOV lanes and Park and Rides – concrete and roads – not light rail, only buses and it views transit as a local matter. It is quite parochial and has few contacts with other states. The legislature is highway oriented and term limits prevent the emergence of expertise.

ADOT has a highway mentality, and overlooks transit as a factor. Rather it sees public transit merely as a social service program.” The official then noted that one of the performance objectives in regards to access and mobility goals listed in a working draft of the State Transportation Board’s Statewide Transportation Policy Statement included the following: Encourage the development of transit options for economically disadvantaged populations (his emphasis) and asked “why only ‘economically disadvantaged populations?’ This underscores the point that ADOT views transit as the poor people’s mode of transport, a social service program of sorts.

Even in regards to highways, one official criticized the narrow approach of ADOT:

Road planning (which includes cars, trucks, and buses) should be considered more broadly in such areas as 1) congestion, 2) noise control, 3) partial access, 4) safety, 5) lower emission vehicles, and 6) land use controls.

Inadequate funding for intermodal projects was often cited as a major barrier. Limited resources are available from state funding for intermodal projects and many respondents focused on this factor as a major roadblock to the development and implementation of more intermodal projects.

Some held more positive views: one official noted that “they’re doing the best they can”. Several praised the process by which the new State Modal Long Range Transportation Plan was designed, particularly the ways in which all the stakeholders, including the public were involved. One respondent described it in the following words:

Many focus groups have met, a thorough public involvement activity is underway around Arizona with the various publics, economic sectors, governments, educational interests, transportation modes, etc. involved....The ADOT planning professionals involve other knowledgeable people, many experienced in their respective transportation fields, including the consultation, cooperation, and coordination necessary to bring forward mutually agreed-upon or consensus-driven resolutions to the challenges of more than plenty needs to be met by the too few funds and funding sources. Subsequently, the planning, programming and project development tracks are inseparably linked for continuity of thoughtful policy implementation. The public input is encouraged and sought through outreach and education, particularly through proactive participation, to facilitate understanding of the several issues, including air quality considerations.

Yet, despite the high level of cooperation that has been established among the various transportation agencies, one legislator suggested the following: “Starting with urban areas (major) establish regional transportation governance with umbrella responsibility for all modes of transportation – air, transit, roads, etc.”

And, despite the positive features, one official noted: “ADOT has been heading in the direction of a more multi-modal approach but recent events tilted back to a highway emphasis. i.e. ADOT Road Plan with limited transit just published.”

What was without a doubt the most negative comment came from one official who, when answering the question as to how to improve the state intermodal planning process, responded: “Almost non-existent”.

One knowledgeable and insightful person, however, astutely summarized the present situation and the difficulties that ADOT, confronts in bringing about organizational change, even though a willingness to change apparently exists within the agency. In his words:

...I believe that ADOT wants to be viewed as truly multimodal but faces many challenges in achieving this. First, the institutional memory of the organization is clearly highway related. In particular, prior to 1985, when Maricopa County passed the ½ cent sales tax to fund new freeway construction, ADOT was clearly focused on the rural highway system and ADOT had little experience and perhaps interest in building urban freeways let alone being involved in non-highway modes... (As late as 2001) the ADOT thinking was that they don't have enough resources to take care of the highway needs....In other words, highway needs first then other modes. Another complication is the lack of a dedicated statewide funding source for non-highway projects.... Hence, the MoveAZ plan, despite the great efforts that went into its preparation does not lay the foundation for a transportation system in Arizona that provides choices. The bottom line to me is that ADOT will continue to fight the image that it is a highway department until the words that are mentioned in mission statements and policy statements are converted to tangible action. The creation of the Public Transit Division is one small but important step in this process. The next step will be to identify and reserve funding for non-highway modes that can enhance the state's transportation system.

Best Intermodal Projects

Of the three projects that were identified as the “best” intermodal project, the HOV system with its lanes, ramps, and “park and ride” facilities was selected by two thirds of those who responded to this section of the questionnaire. This was selected, by several, because of the limited number of such projects from which to choose. One respondent, however, had a more positive view — though the implications for other ADOT projects are rather negative. In his words: “It conveys the right message, that it represents a plan that was thought through. Notably, there are some freeway intersections, where HOV connectors were not planned for, including the most recent freeway addition in the PHX (Phoenix) area... Why? Oversight? Incomplete Planning? No need foreseen? Funding?”

The second most highly ranked project (selected by most of the other respondents) was the transit system in the Phoenix metropolitan area which has apparently been upgraded in recent years with the addition of more buses, better bus schedules and connections, and a new bus terminal. One person identified, in addition to the transit facilities, rail container facilities that the BNSF has recently upgraded in the region.

Conclusion

That highway related projects were overwhelmingly selected as the best intermodal project in the state reflects the degree to which the Arizona Department of Transportation remains a traditional highway organization with a heavy rural emphasis, as do the quantitative responses to the survey. ADOT has clearly made some progress in its intermodal planning efforts and seems to be committed to moving towards becoming a true Department of Transportation that accords all the modes adequate attention and integrates them into an effective, efficient, and sustainable system. However, it is also clear that much more remains to be done before ADOT fully achieves a genuine intermodal orientation in all its activities. Yet, one must also note that it has established some sound bases that will facilitate such a development – its concern with public participation and widespread system of public involvement, its ability to develop noteworthy long range plans, the recent administrative and other changes that have enhanced its transit orientation and, especially, its justly praised mechanism for inter-agency cooperation.

B. COLORADO

Introduction

In 1991, the same year that the Intermodal Surface Transportation Efficiency Act (ISTEA) was promulgated, the Colorado Department of Highways (CDOH) officially became the Colorado Department of Transportation (CDOT). In the intervening years of CDOT's existence, it has endeavored to transform itself from a highway department into a multimodal/intermodal agency. The challenges that CDOT faces are significant in that Colorado has been one of the fastest growing states during the 1990s, resulting in increased levels of traffic congestion and land use change, particularly in and near metropolitan areas. Typical of many high-growth areas, transportation capacity and maintenance needs have outpaced infrastructure and service provision, as additional financial resources to meet the growing demands have been difficult to obtain. Still, a number of large projects, most notably the Transportation Expansion (T-REX) project on Interstate 25 in southeast Denver, involving both highway widening and a new light rail line, have been started in recent years to begin to address some of these pressing needs.

Background, History, and Geography²⁹

Colorado became a state in 1876, after an influx of population due to the discovery of gold and other minerals starting in 1859 led to a major mining boom. Most early transportation was provided by the private sector. Early roads were built and maintained by stagecoach lines or mining companies, while private railroads provided rail transportation. It was not until the early 1900s that pressure was placed upon the state to begin building public roads and highways.

The nationwide Good Roads Movement began to have an effect in Colorado as organizations such as the Colorado Automobile Club (1902) and the Colorado Good Roads Association (1905) began campaigning for better roads. In 1909, a three-member Highway Commission was formed to oversee highway construction and allocate state funds for that purpose. The Highway Commission was expanded to five members in 1917, when the State Highway Fund was created. Shortly thereafter, in 1921, the Colorado Department of Highways (CDOH) was formed, together with a seven-member advisory Commission.

From the early 1920s to the early 1990s, CDOH was responsible for constructing and maintaining federal and state highways in Colorado. The post-war interstate highway era was an especially busy time, with construction of major interstates I-25 (north-south) and I-70 (east-west) crossing the state, I-76 in northeast Colorado, plus beltways such as I-225, I-270, and C-470 in the Denver area. The construction of I-70 through Glenwood Canyon in western Colorado took nearly 20 years to complete and

²⁹ Some of the material in this section is from Colorado Department of Transportation, *Annual Report 2001*.

was a product of a painstaking effort to preserve the natural beauty of the canyon while providing mobility along a major national interstate highway³⁰.

As of the 2000 census, the state of Colorado had a population of 4.3 million, experiencing a rapid growth rate of 30.6% since 1990. The state's population is projected to grow by 2.7% per year through 2020.³¹ Over 80% of Colorado's population can be found in the Front Range urban corridor, including the urbanized areas of Ft. Collins, Greeley, Longmont, Boulder, Lafayette-Louisville, Denver-Aurora, Colorado Springs, and Pueblo. The Denver-Aurora Metropolitan Statistical Area alone accounted for 2.2 million in 2000, just over half of the state's population. This region has experienced much of the state's growth since 1990, and is expected to grow at a rate of 2.6% per year through 2020. In contrast, the mountainous Western Slope and agricultural Eastern Plains regions of the state are much more sparsely populated, though they encompass most of the state's land area. The Western Slope contains the Grand Junction urbanized area, while the Eastern Plains has no urbanized areas. The Western Slope is projected to grow by 3.5% per year through 2020, which is faster than the state average, while the Eastern Plains growth is projected to be slower at 2.2% per year.³²

Institutional Structure

Several months prior to the enactment of ISTEPA, the Colorado State Legislature promulgated House Bill (HB) 91-1198 that created the Colorado Department of Transportation. It also mandated development of a multimodal statewide transportation plan, individual mode-specific plans, and the creation of transportation planning regions to facilitate coordination with local governments. Prior to this legislation, Colorado had no statewide transportation planning requirement, no specific planning requirements for non-highway modes, and no long-range planning requirements beyond the short-range (5-6 years) time frame³³.

The creation of 15 new transportation planning regions by the newly formed Division of Transportation Development has been cited as an innovative practice in multimodal planning involving rural areas³⁴. In addition to the five already-designated MPO planning areas (Denver, North Front Range, Pikes Peak, Pueblo, and Grand Junction), CDOT staff surveyed all counties and municipalities to create ten rural regions

³⁰ American Association of State Highway and Transportation Officials (AASHTO). 1990. *Moving America Into the Future: AASHTO 1914-1989*. Washington, DC: American Association of State Highway and Transportation Officials.

³¹ Colorado Department of Transportation. Investing in Colorado's Future: The 2020 Statewide Transportation Plan. November 2000.

³² Colorado Department of Transportation. Investing in Colorado's Future: The 2020 Statewide Transportation Plan. November 2000.

³³ Balloffet and Associates, Inc. 1995. *Examples of Statewide Transportation Planning Practices*. Prepared for Federal Highway Administration/Federal Transit Administration. Publication No. FHWA-PD-95-018. Conducted by Washington, DC: Federal Highway Administration.

³⁴ TransManagement, Inc. 1998. *Innovative Practices for Multimodal Transportation Planning for Freight and Passengers*. National Cooperative Highway Research Program Report 404. Transportation Research Board, National Research Council. Washington, DC: National Academy Press.

based on local views of how the regions should be delimited. As a result, nearly all local governments in the state signed memorandums of understanding (MOUs) to participate as members of regional planning commissions within the framework of transportation planning regions. This new structure replaced past practices in which county officials typically met with CDOT staff in annual meetings. To coordinate interaction with each of the regional planning commissions (RPCs), CDOT established a Statewide Transportation Advisory Committee (STAC) composed of representatives from each of the 15 RPCs. CDOT allocated \$30,000 to \$50,000 to each of the RPCs to assist with regional transportation planning and assigned 20 headquarters staff members to support this effort. A guidebook intended especially to assist rural areas with intermodal planning was also produced.

The Division of Transportation Development (DTD) at CDOT is responsible for statewide/regional transportation planning including development of the long-range (20-year) statewide transportation plan and the short-range (5-6 years) Statewide Transportation Improvement Program (STIP). DTD was created as a Division of Planning and Research as early as the 1960s. It started with a small staff, but with its increasing role in Department affairs it has now grown to over 90 FTE. Its branches include environmental programs, intermodal planning, information management, and research. Within the intermodal branch, there is a modal programs section, an investment analysis unit, and a statewide & regional planning & policy section. In the modal programs section, there is a transit unit, a bicycle/pedestrian unit, and a TDM unit. There are planners working on freight issues within both the intermodal planning and information management branches. Aviation planning is handled within the Division of Aeronautics³⁵.

In conjunction with the Colorado Transportation Commission, CDOT adopted a set of statewide transportation policies on April 21, 1994 regarding elements such as customer focus, leadership, management of the transportation system, intermodalism, partnership, integrating regional and statewide priorities, finance, safety, balancing quality of life factors, environment, accessibility, and social responsibility. The policy for intermodalism stated that,

CDOT will develop a balanced intermodal transportation system that provides the most appropriate transportation options, and takes advantage of the inherent efficiencies of each mode. CDOT will go beyond the traditional single-occupancy vehicle highway improvements by emphasizing a multimodal and intermodal approach to transportation planning, development, and maintenance. Such an approach is necessary to respond to the diverse needs of both urban and rural customers, to preserve and improve the environment, and to ensure the connectivity and interaction of modes.³⁶

³⁵ Colorado Department of Transportation, Division of Transportation Development Organizational Chart, August 2004.

³⁶ Colorado Department of Transportation. Colorado's 20 Year Transportation Plan. January 1996.

The policy for intermodalism and the other elements was reaffirmed in November 1996, March 1998, and February 2000³⁷ and has been revised as part of the 2030 Statewide Plan Update.

Statewide Transportation Plans

With this statewide policy direction, regional planning commissions prepare regional transportation plans identifying and prioritizing their long-range transportation needs for all modes. These regional plans and priorities are integrated and consolidated into the state's 20-year transportation plan, which serves as the blueprint for how transportation resources are invested and projects are selected for implementation.³⁸

Since its inception, Colorado DOT has produced two long-range (20-year) plans, one in 1996 and the other in 2000. Both of these plans incorporated intermodal considerations, following regulations and guidelines put forth in ISTEA and TEA-21. *Colorado's 20 Year Transportation Plan* (1996) identified financial needs across a range of modes based on both a Preferred Plan and a Priority Plan. Highways (51% of Priority Plan funds), transit (27%), and undetermined congestion improvement (16%) accounted for the largest shares, with aviation, rail, intelligent transportation systems, bike/ped/enhancements, intermodal facilities, and travel management accounting for the remainder. Specific project development recommendations included:

- Statewide studies regarding transit needs, passenger rail feasibility, freight needs, and passenger origin and destination studies in the urbanized areas;
- Major investment studies (MIS), including one along the I-70 corridor from the Denver region to Glenwood Springs, assessing the feasibility of multi-modal and intermodal investments in this corridor; and,
- Coordination of the multiple planning activities in the I-25 corridor including a follow-up corridor evaluation study.

Specifically regarding the intermodal element, 24 intermodal projects emerged from the 15 regional transportation plans, all of which were passenger transfer centers. CDOT further included the Denver Union Terminal and the Denver West Multi-Modal Transfer Centers as two other significant intermodal projects in the plan. It was also acknowledged that a lack of comprehensive data on freight movements and needs was a major gap, and needed to be filled, perhaps as part of a major freight study and/or completion of an Intermodal Management System (IMS).

The other long-range plan, *Investing in Colorado's Future: The 2020 Statewide Transportation Plan* (2000), reports on significant progress in recognizing the importance of intermodalism in statewide planning. In 1998, the Colorado Transportation Commission adopted an explicit "intermodal vision" to guide development of mobility strategies on the state transportation system:

³⁷ Colorado Department of Transportation. Investing in Colorado's Future: The 2020 Statewide Transportation Plan. November 2000.

³⁸ Colorado Department of Transportation website (www.dot.state.co.us).

CDOT will plan for and develop a transportation system that integrates all modes of transportation including automobile, transit, aviation, rail, truck, bicycle, pedestrian, and travel demand management (TDM) to effectively and safely move people, goods and information to meet Colorado's mobility needs in a manner that is environmentally, economically, and socially responsible.³⁹

Furthermore, a statewide passenger rail feasibility study was completed in 1998, a statewide transit needs and benefits study was completed in 1999, while a freight infrastructure study was completed in 2000.

The organization of the 2020 plan emphasized intermodal aspects to a greater degree than the 2015 plan. An entire chapter was dedicated to passenger mobility, including sections on rail, transit, bicycle/pedestrian, transportation demand management, aviation, intelligent transportation systems, telecommunications, and roadway assessment. Another chapter was devoted to freight, including background on the role of freight in Colorado's economy and a freight needs assessment.

In a recent evaluation of statewide plans conducted for FHWA, Noerager and Lyons singled out Colorado's 2020 plan for certain examples of noteworthy practices⁴⁰. They acknowledged Colorado's explicit recognition of freight as a driving force in the state economy, and the more extensive freight planning efforts in the 2020 plan than in the previous plan. Several freight-oriented studies, including the Western Transportation Trade Study, the draft Colorado Rail Needs Study, and the draft Freight Infrastructure Study, were identified as indicators of this recognition. Colorado's 2020 plan was also singled out for how it portrayed its transportation needs within a broader economic and environmental context, including the decline of mining and the rise of service and retail trade as well as the impacts from development and increased mobility on the natural environment, particularly habitats for threatened and endangered species. Finally, an emphasis upon safety in Colorado's 2020 plan was identified, particularly its inclusion as one of five investment categories in a performance-based transportation investment strategy.

Since the 2020 plan was completed, CDOT has continued to focus upon intermodal freight issues. In 2002, work was completed on the *Eastern Colorado Mobility Study* that evaluated the feasibility of improving transportation corridors and intermodal facilities to enhance the mobility of freight services in and through eastern Colorado. The study recommended numerous improvements to the intermodal freight infrastructure in eastern Colorado, thus facilitating future goods movement as part of the Ports-to-Plains Corridor from Texas to Colorado. CDOT has been working with the DOTs from Texas, Oklahoma, and New Mexico on the Ports-to-Plains Corridor study,

³⁹ Colorado Department of Transportation. Investing in Colorado's Future: The 2020 Statewide Transportation Plan. November 2000.

⁴⁰ Noerager, Kimberly and Lyons, William. 2002. *Evaluation of Statewide Long-Range Transportation Plans*. Prepared for: Office of Intermodal and Statewide Planning, Federal Highway Administration, US Department of Transportation. Washington, DC, April.

and has worked with the DOTs from Nebraska and South Dakota on the Heartland Express corridor. Even more recently, CDOT, in conjunction with the Burlington Northern-Santa Fe Railroad and the Union Pacific Railroad, is conducting a Public Benefits and Costs study to determine the feasibility of relocating some freight rail infrastructure to locations east of the Denver metro area, thereby relieving congestion on rail lines through Denver. One potential side benefit of this proposal includes the possibility of developing commuter rail services within existing freight rail rights of way in the Denver metro area. Underscoring increasing interest in freight intermodalism, CDOT created a Statewide Freight Advisory Council in 2003, composed of freight industry representatives—carriers, shippers, terminal directors, transportation officials, and other experts in freight transportation—to provide advice on freight issues in Colorado. Much of the impetus for this freight initiative comes from the current executive director, Tom Norton, who also serves as chairman of the Freight and Economic Development committee of AASHTO.

Survey Results

A total of 40 Colorado respondents provided answers to the questions posed in the survey. The respondents represented various groups and organizations involved in or affected by transportation planning throughout the state, including the Colorado Department of Transportation, several transit agencies, metropolitan and rural planning organizations, transportation consultants, elected officials, business advocacy organizations, public interest groups, as well as interested citizenry. Not all respondents answered every question; only 33 respondents answered questions in the second part of the survey about best intermodal projects.

Nevertheless, it is possible to gain insight about the status of intermodal transportation planning from an analysis of these survey responses. Table B-1 provides the numerical averages for 25 questions that dealt with how the state DOT has performed in intermodal planning. Overall, the average responses range from a high of 3.65 for investment in road construction to a low of 1.90 for investment in bus and transit (5=to a very great degree; 1=not at all). Most responses were in the 2 to 3 range, meaning that most respondents felt that the state DOT was engaged in intermodal planning to a little or to some degree. The score that measures how respondents rated the state intermodal transportation planning process overall was 2.53.

Besides investment in road construction, the state DOT received relatively high marks for investment in safety improvements (3.38) and incorporating public involvement in the planning process (3.10). Besides investment in bus and transit, lowest scores were recorded for investment in bicycle and pedestrian facilities (2.13), ensuring adequate state funding to support intermodal projects (2.20), and investment in intermodal connecting facilities (2.29).

Table B-1: Survey Results for Intermodal Planning Assessment from Colorado Respondents

	CO	# Responses
1. Espouse an intermodal vision	2.85	40
2. Support intermodal projects	2.79	39
3. Provide support for planning	2.64	39
4. Consider all alternatives	2.60	40
5. Use planning analysis	2.64	39
6. Public involvement	3.10	40
7. Intermodal Planning	2.60	40
8. Staff Training	2.47	34
9. Sufficient Resources for planning	2.39	36
10. Ensure adequate state funding	2.20	40
11. Ensure adequate fed funding	2.40	40
12. Flexible use of funds	2.54	13
13. Ensure state meets legis intent	2.63	38
14. Good Communication in State	2.68	37
15. Coord between state and MPOs	2.76	38
16. Coord between state and Rural	2.71	34
17. Coord between state and transit	2.89	37
18. Coord between state and freight	2.71	28
19. Coord between state and intermodal	2.55	40
20. investment in Road Construction	3.65	40
21. investment in Safety improvements	3.38	39
22. investment in Bus & Transit	1.90	39
23. investment in Bicycle and Pedestrian	2.13	40
24. investment in Intermodal	2.29	38
48. Overall rating	2.53	32

Part of the survey instrument also included open-ended questions that allowed respondents to provide additional perspectives regarding intermodal planning at their state DOT. Responses obtained in face-to-face interviews with current transportation leaders at state DOTs, state transportation commissions, state legislatures, MPOs, and transit agencies are emphasized in this analysis. In response to the questions that asked for additional insights concerning the state intermodal transportation planning process, most of the comments could be grouped into one of three categories: 1) funding, 2) cooperation and collaboration among agencies, and 3) attitudes toward intermodalism. Each of these categories will be discussed as follows:

Funding

Numerous comments lamented the small amount of state funding dedicated to intermodal transportation. Respondents mentioned a recent change in the state legislature that earmarked 10% of Senate Bill 1 funds for transit as a positive development, but they also

noted that these funds might not always be available for transit, given other state budget priorities. Some respondents suggested that the Colorado Constitution should be changed to allow the Highway Users Trust Fund (HUTF) to be used for other modes rather than for highways only. The following is a sample of some of the comments that touched on funding issues:

1) This state provides no funding to support transit (transit providers are limited to Federal and local funds -- and user fees). Perhaps if the State had more commitment to transit, transit would be more integrated into the planning process.

2) There is a lot of interest and enthusiasm among the state intermodal transportation planners, but very few assets with which to execute any of the plans. Our MPO receives about \$1M a year for TEA-21 enhancement grants for transit, bike and ped projects, hardly a blip on the radar screen compared to roadway projects. If we are serious about the importance of intermodalism, we have to back it up with a higher percentage of the overall state transportation dollars. Transit must have a higher priority to begin attracting choice riders.

3) There needs to be recognition by policy makers that transportation funds can/should be used for more than roadway construction/operations/maintenance.

4) Colorado has lagged behind on funding for transportation across the board; can only maintain facilities.

5) In the rural parts of Colorado, the transportation planning process is a roundtable of CDOT staffers and local public works officials. The main premise is that (1) there are insufficient funds to properly maintain the existing roads and (2) proper road maintenance must precede any intermodal projects.

6) Funding for intermodalism is caught in the ideology of fiscally conservative purse-string holders; people who want to constrain government from having too much authority.

Inter-agency Cooperation

Another topic that was mentioned quite frequently was the level of cooperation and collaboration between the state DOT and MPOs, rural planning organizations, and transit agencies. Several respondents commented that the relationship among CDOT, the Denver Regional Council of Governments (DRCOG), and the Denver Regional Transportation District (RTD) needs to be improved and/or the organizational structures/relationships need to be altered. Others stated that antagonistic relationships between CDOT and the Denver area agencies spilled over to smaller MPOs and transit agencies throughout the state, thus negatively impacting relationships with CDOT. Along these lines, some felt that a more formalistic relationship between CDOT, rural planning organizations, and communities was needed including a larger role for the Colorado Municipal League (CML) and Colorado Counties Inc. (CCI). And others felt that CDOT should have a more direct role in transit planning, bringing cohesion and a

statewide focus to what is now a balkanized local and regional transit landscape. Specific comments are as follows:

- 1) Restructure the formalistic relationship among CDOT, DRCOG, and RTD.
- 2) Eliminate DRCOG. It is too parochial; they represent their own jurisdictions only without thinking regionally.
- 3) Change the structure of RTD. RTD has a political structure based on elected board members that is parochial and does not enhance cooperation. The structure does not contribute towards a greater understanding of the relationship between the state and the district; it does not allow people to think how the transportation system will be complementary and work within the larger system.
- 4) Improve communication at the highest levels; outside of Denver, there is very little interaction between CDOT and other MPOs and TPRs (Transportation Planning Regions).
- 5) Rural and TPR participation process takes too long; 2-5 year lag time. Small MPOs do not have any direct programming; state determines funding for all projects.
- 6) There is a greater need to understand and accept the role of MPOs in the planning process.
- 7) State's position is that alternative transportation is the responsibility of local governments, not the state's responsibility. But the state does not support local agencies to go out and develop alternative mode plans.
- 8) Encourage coordination between state highway planning and local and regional transit services to provide for bus stops on highways where appropriate, park and ride facility development where appropriate and HOV priority lanes where appropriate. Encourage regional airports to plan for ground transportation that includes transit services of rail and/or bus. Require that planning regions include discussion of and consideration for funding of transit services, even if it is only for elderly and handicapped services. Get state DOT leadership to realize that transit (local or regional) is an asset to the state's transportation network, and that transit is not some alien program that is trying to steal funding from necessary capital projects.
- 9) Assist in rational business decisions driving intermodal facilities rather than jurisdictional fiefdoms. The state does not take advantage of the private sector in any great degree. It ought to partner better.

Attitudes Toward Intermodalism

There were also quite a number of comments concerning the state DOT's attitudes and commitment toward intermodalism. A number of respondents questioned whether the state DOT was truly committed to intermodalism, and in fact still considered itself a highway department. Some respondents ascribed these attitudes to the staff, while a larger number of others said that the staff was doing the best they could given constraints of funding, limited training, and the perspectives of other decision-makers such as state DOT management, the State Transportation Commission, and/or the state legislature. Specific comments include:

- 1) State DOT's sense of intermodal planning is nearly non-existent. There is a little rhetoric on aviation and bicycle, but behaviorally, it is nearly non-existent. There is a highway bias among the staff.
- 2) DOT does not seem to have the experience to do intermodal planning.
- 3) Our state DOT should devote sufficient staff resources to development of alternative modes, i.e., freight & passenger rail, trucking and intercity buses, bikes, and pedestrians. Staff who are assigned to these various modes need to have the necessary expertise so that intelligent discussion, planning, and decision-making with other governmental entities and with the private sector can take place.
- 4) Develop criteria to better measure the effectiveness of multimodal projects vs. non-multimodal projects. This would allow a greater prioritization of those projects.
- 5) There should be more staff education on intermodal options; awareness of intermodal practices in other countries, particularly in Europe.
- 6) State DOT is still overly focused on road-building as their only solution to problems. There is a good group of people (staff) that is supposed to be doing intermodal planning, but funding impediments get in the way.
- 7) Staff is interested in intermodalism and forward-thinking; management wants to maintain highway system and nothing more.
- 8) Our DOT has an enduring cultural bias against considering anything other than highway construction and maintenance. Any effort by staff to look beyond highway solutions to transportation problems is squelched by management. There are close ties between the DOT and the automobile, trucking, and road construction industry which create serious conflict of interest problems. Though our DOT has a mission statement which commits the organization to an intermodal approach to transportation, in practice little is actually done in this regard.

9) Need more emphasis at higher levels of CDOT to broaden the perspective on transportation.

10) Staff has been trying to do more intermodal; commission (rural-based) has not been as interested.

11) Philosophy of commission has been highway-oriented. They need to have a better appreciation of other modes. Major metro areas need other forms of transportation.

12) Aviation is still underutilized as a major intermodal transportation player. This is not so much because of DOT's perspective but because of the State legislature's perspective.

Additional Comments

In addition to these three categories, there were other comments that reflected different perspectives. Some respondents mentioned issues related to the relatively low population overall and relatively low population densities in Colorado as reasons why intermodalism has not been embraced to a larger degree. Several of these same respondents also pointed out that intermodalism is important for long-range (20-30 years) planning, but that short-term (2-3 years) needs always get more immediate attention. Other respondents felt that intermodal planning in the state was much improved, citing the T-REX project in Denver, the NAFTA corridor in eastern Colorado, and the proposal to relocate freight railroad lines out of Denver as good examples of recent intermodal activities. One respondent mentioned that, "bicycle and pedestrian planning is very good, among the top tier of states for this type of planning, while freight is good to some degree, but that transit was more hit-or-miss." Another respondent stated that, "The state DOT accurately perceives the will of the majority of people who think about this. They use an appropriate amount of energy and resources to plan for the future of intermodal when the time is right."

A few other responses touched on the need for greater public involvement in transportation planning and better infrastructure overall. One respondent was decidedly anti-intermodal:

Give up on this intermodal, social engineering folly so we can build the roads that 90% of us have chosen as our preferred mode of transportation. Intermodal needs no more than 10% of the funding ever spent on it, and only then if it can justify its costs and pay for itself. Or better yet, that the users of intermodal financially support it.

Still, the majority of views were reflected in this statement that touched on several of the themes already identified:

Colorado, like most western states, has begun to notice the impacts for the rapid growth over the last decade on the transportation network. The ability to fund highway capital projects to keep pace with the demands from development is becoming difficult. Quality of life and environmental issues cannot be ignored. Rail and bus alternatives are being looked at on a local level even by traditional rural communities. The aging of the population in general will necessitate a harder look at alternative modes of transportation. A significant component of regional master plans needs to be the coordination of mobility between different modes of transportation of people and goods.

Best Intermodal Projects

As for the best intermodal projects in the state, half of the respondents (18/36) felt that the **TRansportation EXpansion (T-REX) project** in Denver was the best example (See Table B-2). The T-REX Project is a massive redevelopment of the 15-mile Interstate-25 corridor southeast of downtown from Broadway to Lincoln Ave. in Douglas County as well as a 4-mile stretch of I-225 to Parker Rd. in Aurora. The project calls for widening the highway by one to two lanes in each direction and constructing a new light rail line, among other improvements. Its scope and \$1.67 billion price tag make it one of the largest transportation projects currently being built in the U.S. It also is an example of a successful partnership involving the Colorado Department of Transportation, the Regional Transportation District, the Denver Regional Council of Governments, the city of Denver, other local governments, FHWA, FTA, and Southeast Corridor Constructors (Kiewit-Parsons team) as design-build contractors. By combining highway widening with a new light rail line, it is a major intermodal project that required extensive collaboration and cooperation. Started in 2001, its projected date of completion is 2006.

Table B-2: Best Intermodal Projects in Colorado

	# Responses
T-REX Southeast Corridor I-25 Highway Widening and Light Rail Construction Project	18
Denver RTD Current and Future Light Rail Projects	7
Denver Union Station Redevelopment	5
Transportation Development in Metro Denver	1
Summit Co. Intermodal Transportation Center	1
Steamboat Springs Intermodal Transportation Center	1
TransPort/Front Range Airport/Union Pacific Intermodal Facility	1
Highway 82 Corridor Bus, HOV, and Trail Elements	1
Entrance to Aspen EIS	1

Many respondents indicated that T-REX was by far the biggest intermodal project in the state. They commented on the importance of the partnerships, especially the cooperative agreement between CDOT and RTD to include both highway widening and light rail construction in the plan. The partnership was, to a certain extent, forced by political circumstances; in fact, one respondent called it a “shotgun wedding.” A 1997 Southeast Corridor MIS had called for light rail only as the preferred alternative, and

CDOT, at that time, was supportive of the choice. In 1998, however, Colorado elected a new governor who insisted on a highway widening option, thus CDOT changed its position. In order to break the logjam and raise the needed funds, both CDOT and RTD eventually backed an alternative that would include both elements. With both highway widening and light rail included, most political constituencies supported the new alternative. It came before the public in two separate referenda in November 1999, and they both passed by comfortable margins.

Since the referenda, the project has proceeded fairly well, characterized by a high degree of coordination among the participants. A key feature recognized by a number of respondents was the decision to adopt a design-build approach that has been credited with considerably shortening the length of the project from a traditional approach that would have taken 12-15 years down to 5 years currently. Design-build has also been credited for its flexibility, providing the option to change certain elements of the design while the project is underway to incorporate the needs and desires of nearby neighborhoods and users. Good public involvement is another item that several respondents mentioned as a success of the T-REX project. Overall, CDOT, along with RTD, was credited with spearheading the project and creating an organizational structure that has allowed the implementation process to proceed relatively smoothly.

Denver current and future light rail projects were selected by 7 respondents as the best intermodal project in the state. There is undoubtedly some overlap between this selection and the T-REX project just mentioned, as light rail is a prominent feature in T-REX. Still, this choice casts a spotlight on the other light rail lines that have already been built in Denver, as well as others that may yet be built in the near future. In 1994, Denver RTD opened a 5.3-mile Metro Area Connector that later became its Central Corridor light rail line. In 2000, an 8.7-mile line opened in Denver's Southwest Corridor that was built on-time, was under budget, and substantially exceeded ridership projections. A 1.8-mile spur line in the Central Platte Valley was added in 2002, connecting the major sports venues with the rest of the system. And, in 2006, the 19.6-mile Southeast Corridor in the T-REX project will be opened for service. Furthermore, there is an RTD program called "FasTracks" that calls for adding 119 miles of light rail and commuter rail throughout the metropolitan area, among other transit improvements. The program calls for raising the regionwide sales tax from 0.6% to 1.0% to fund the expansion; this measure was approved by Denver area voters in a referendum in November 2004. It will take 12 years for the entire rail system to be built.

Respondent comments were quite favorable to light rail. They commented that light rail has the capacity to absorb increasing traffic demand, and to get more cars off the highways. One respondent mentioned that, "Denver light rail is the first step away from the Los Angeles model of building your way out of congestion." Respondents also commented that CDOT has had very little, if anything, to do with these light rail projects; they have all been the province of RTD.

Denver Union Station Redevelopment received five votes for best intermodal project in the state. Denver Union Station has been the main railroad station since the

1880s, located near downtown Denver. At one time, it was a major hub of both freight and passenger rail activity, the center of a thriving warehouse and hotel district, and the major portal of entry into the city. After the decline of the railroad industry in the postwar era and the decentralization of most freight and passenger activity, Union Station lost much of its importance. It continues to serve as a stop for Amtrak's California Zephyr between Chicago and San Francisco, and also for the Winter Park Ski Train during the winter months. Most recently, however, Union Station has emerged as the potential focal point of an expanded regional light and commuter rail system that will be implemented as part of RTD's FasTracks rail expansion. A consortium, comprised of RTD, the City and County of Denver, DRCOG, and CDOT purchased Union Station in 2002 and is developing a master plan for the site. The current Denver Union Station Vision Plan calls for a substantial refurbishing of the station, including construction of light rail, commuter rail, intercity rail, and regional bus access below grade, as well as commercial bus access at grade. The Denver Union Station Master Plan also outlines opportunities for major transit-oriented development on the 19.5-acre parcel situated in the now-gentrified Lower Downtown (LoDo) area.

Respondents felt that Denver Union Station Redevelopment had the potential to be the most important intermodal project in the state, even surpassing T-REX. It would certainly be the major focal point for RTD's rail transit system, but could also become a hub of statewide significance if future plans include an east-west passenger rail line from Denver International Airport to the Vail/Eagle area in the mountains, as well as a north-south passenger rail line from Fort Collins to Pueblo. Respondents indicated that the planning process has reflected this larger statewide vision by explicitly including representatives from throughout the state. Respondents also mentioned that CDOT has been less involved than their other partners in the Union Station consortium, but that their involvement may grow in the future as the statewide component becomes more realistic.

Conclusion

The Colorado Department of Transportation is evolving into a more intermodally-oriented agency, although many of the survey respondents would like this process to move faster. It is clear that CDOT has made a substantial amount of progress on integrating freight considerations into its intermodal transportation planning, but that more improvement remains on the passenger side.

TEXAS

Introduction

Texas, the second largest state in the United States in terms of geographic size, has the largest state highway system in the nation. The state boasts nearly 80,000 centerline miles or 188,000 lane miles that are operated and maintained by the state.⁴¹ The highway network and local roads carry Texans an estimated 215 billion vehicle miles (VMT) annually, second only to California and the public transportation system provides approximately 285 million trips annually.⁴² VMT in the state has increased 4.1 percent annually in the last eight years, 16 times the number of new lane miles added to the system.⁴³ This increase led to dramatic increases in congestion in the state's metropolitan areas during the 1990's.

Along with this increased congestion air quality issues have become a concern. The state has four metropolitan areas; Houston/Galveston, Dallas-Fort Worth, El Paso, and Beaumont/Port Arthur, classified as non-attainment areas for air quality because of failure to meet the United States Environmental Protection Agency's one hour national air quality standard. In addition to these four areas an additional four areas; San Antonio, Austin, Corpus Christi, and Longview/Tyler/Marshall are in danger of joining the previous metropolitan areas in non-compliance.⁴⁴

Investment in the Texas transportation system is an important component of the state's transportation plan. The state receives a large portion of its transportation funds from the Federal Government, however the state is still a donor state, receiving 90.5 cents for every dollar the state contributes into the Federal Highway Trust Fund (less overhead, administration, and federal land costs).⁴⁵ Texas reports that it has the fourth lowest spending per capita on highways in the nation and the third highest reallocation of the state highway tax.⁴⁶ The Texas Department of Transportation (TX DOT) reports that nearly two-thirds of its budget (63 percent) is spent on the designing and building of the state's highway system, 18 percent on maintenance, 11 percent on other modes of transportation, and eight percent on public safety.⁴⁷ TX DOT reports that only 36 percent of its needed projects will be funded in the upcoming decade, stressing the state's need for a stricter transportation investment design.

Institutional Structure

TX DOT's organizational structure for development of the state's transportation plan has five components. At the top of the structure is the Texas Transportation

⁴¹ Texas State Department of transportation, Transportation Planning and Programming Standard Reports-TT Table I, December 2000

⁴² Texas Department of Transportation Pocket Facts, June 2002

⁴³ Texas Department of Transportation Strategic Plan FY 2003-2007

⁴⁴ The Texas Transportation Plan Update, August 2002

⁴⁵ Texas Department of Transportation Strategic Plan FY 2001-2005

⁴⁶ The Texas Transportation Plan Update, August 2002

⁴⁷ The Texas Transportation Plan Update, August 2002

Commission. The Commission is comprised of three members who are appointed by the governor. The role of the Commission is to develop policy and oversee TX DOT.

The Executive Director of the Commission is in charge of the day to day operations of the agency.⁴⁸ The Policy Committee coordinated the transportation planning process and consisted of the Executive Director of TX DOT, a second member of the Transportation Commission, the Deputy Executive Director for Transportation Planning and Development, and the chairs of all the Issue Committees. The task of the Policy Committee is to review and coordinate the work of the Issues Committee, address conflicting issues, and make sure that the most important transportation issues in Texas were addressed.⁴⁹

The Issues Committees form the third part of the hierarchy. The goals of the Issues Committees are to identify the transportation issues and develop transportation policies. Members of the committee come from both the private and public sectors. Six committees were created to address specific areas.

- Economic Development
- Finance
- Interjurisdictional Coordination and Cooperation
- International trade
- Mobility and Accessibility
- Corridor Preservation

The TX DOT Multimodal Planning team, the fourth member of the hierarchy, provided the role of providing technical guidance and departmental transportation expertise. This level of the organization consists of TX DOT staff drawn from the agency's divisions and district offices.

A consulting team and other members of the TX DOT staff provided the final piece of the organization make up. The functions of these groups were to provide support services for the other levels of the organization when necessary.

The mandate to produce the Plan was provided from two legislative sources. At the state level the legislative mandate was provided by the Texas legislature which provided TX DOT the guidance to encompass all modes of transportation along with the inclusion of technology and communications in the plan.⁵⁰ The statute (V.A.C.S. 6663, Section f (1)) also stated that the Plan was to be a coordinated approach that also sought the involvement of agencies and groups outside of TX DOT.⁵¹

The federal mandate for the Plan was provided for in the Intermodal Surface Transportation Efficiency Act (ISTEA). The Act designated that TX DOT must create

⁴⁸ Examples of Statewide Transportation Planning Practices, January 1995

⁴⁹ The Texas Transportation Plan, 1994 Edition

⁵⁰ The Texas Transportation Plan, 1994 Edition

⁵¹ The Texas Transportation Plan, 1994 Edition

and implement a plan encompassing the whole state for multimodal surface transportation. Other federal Acts that needed to be addressed included but were not limited to the Federal Clean Air Act, Clean Water Act, the National Environmental Policy Act, the National Energy Policy Act, and the Americans with Disabilities Act.⁵²

Transportation Planning

Texas recognizes the importance of multimodal transportation in the state's overall transportation plan. TX DOT identifies five primary issue areas when measuring the performance of their multimodal system.

- Mobility
- Cost
- Safety
- Infrastructure Conditions
- Environment⁵³

TX DOT has combined the performance measures of their multimodal analysis with the provisions put forth by the federal government in the Transportation Equity Act for the 21st Century (TEA-21) and the Intermodal Surface Transportation Efficiency Act (ISTEA).

The planning process for the state plan consists of five inter-connected processes:

- Policy development
- Technical analysis
- Public involvement
- Implementation
- Ongoing planning

The policy development part of the process focused on determining the various problems and transportation issues facing Texas. Policies and strategies were developed through the interaction of this section and the technical analysis part of the process. Public involvement also played a significant role in the determination of problems and issues but also in the development of transportation solutions. Four general goals are the result of this process:

- Operation of the transportation system
- Plan an investment strategy for systems operation, improvements, and additions
- Measurement of system progress
- Meeting federal planning requirements⁵⁴

⁵² The Texas Transportation Plan, 1994 Edition

⁵³ The Texas Transportation Plan Update, August 2002

⁵⁴ The Texas Transportation Plan Update, August 2002

The technical analysis process concentrated on developing criteria for the facilities and services that were to be covered by the Plan. The staffs concerned with analysis were also put in charge of identifying the various needs of the various modes of transportation covered by the plan and comparing those needs with the expected revenue.⁵⁵ A wide range of data and sources are canvassed to gain the necessary information needed for the analysis.

One of the provisions put forth by TEA-21 is the involvement of the public in transportation planning projects. TX DOT has offered a number of opportunities for stakeholders in the transportation system to make their voices heard. Participation projects include:

- Public meetings
- Texas Transportation Plan (TTP) Update newsletters
- A presentation to the Texas MPOs
- TTP update information posted on the TX DOT web site
- Individual stakeholder interviews
- Electronic draft plan transmittal to select Texas stakeholders
- A TTP stakeholder working group
- The TTP Update final public hearing⁵⁶

Implementation is the last step in the planning process and result of the three previous processes. In some instances policies, legislation, and other actions may require new legislation or changes in the regulatory environment.⁵⁷ Some of the projects designated for implementation needed to be funded either through the State Transportation Improvement Program or through the TX DOT budget.⁵⁸

The Texas Transportation Plan states:

“The Plan cannot equally apply to all transportation facilities and services. It designates a statewide system with different components reflecting the role that individual facilities or services play within the overall system. It is needed for a Plan that develops different strategies and, potentially, different standards for different functions.”⁵⁹

It is with this statement in mind that the Texas Multimodal Transportation System designates three components of statewide importance:

- Corridors
- Intermodal/transfer facilities
- Connectors

⁵⁵ The Texas Transportation Plan, 1994 Edition

⁵⁶ The Texas Transportation Plan Update, August 2002

⁵⁷ The Texas Transportation Plan, 1994 Edition

⁵⁸ The Texas Transportation Plan, 1994 Edition

⁵⁹ The Texas Transportation Plan, 1994 Edition

The system is also broken down into various modes:

- Bus Transit and Intercity bus
- Aviation
- Freight and Passenger Rail
- Marine
- Nonmotorized
- Pipelines
- Telecommunications and Information Technology

The Texas Transportation Plan lists four separate case studies, in which intermodal transportation success cases are presented, showing the state's commitment to intermodal transportation.

- TransGuide Transportation Guidance System
- Barbours Cut
- Cross Border Transportation Planning in El Paso
- Texas State Highway 170

TransGuide Transportation Guidance System

The goal of San Antonio's TransGuide Transportation Guidance System is to improve the city's transportation system's safety and efficiency through a combination of electronic sensors, video cameras, and electronic signs. The system has been programmed to respond to over 64,000 solution scenarios to designate the proper course of action needed to remedy a particular situation. At the Operation Control Center, 52 cameras along with computerized maps allow workers to monitor the highway system and respond to emergencies accordingly. Within two minutes and 15 seconds the center can respond to a situation by altering traffic signal cycles, dispatching emergency response teams, and rerouting transit and private vehicles to avoid the situation. By 2003 the system is expected to cover 191 miles of highway in the San Antonio metropolitan area with the ultimate goal of the system to reduce traffic congestion, improve air quality, and increase transportation system efficiency.⁶⁰

Barbours Cut

Barbours Cut is the Port of Houston Authority's container terminal linking trucks, trains, and cargo ships. The terminal was opened in 1977 and since its opening has become one of the nation's premier port facilities servicing over 500 ships annually. A majority of the freight that the port handles is moved between container ships and over 1,000 trucks daily. The highlight of the facility however is its rail connection that is located on the terminal property. This rail connection allows for freight to be moved between ship and rail without the inclusion of truck. This connection allows shippers to save money, time,

⁶⁰ The Texas Transportation Plan, 1994 Edition

and reduce congestion and air pollution in the area by dramatically decreasing the number of trucks on roads in the area.⁶¹

Cross-Border Transportation Planning

Interjurisdictional planning is at the forefront of El Paso's transportation planning program. Through the cooperation with another state, New Mexico, and another country, Mexico, the El Paso MPO Transportation Advisory Board has been able to plan and implement a number of intermodal projects. These projects include:

- 1 A new international port of entry and the reconstruction of an existing port of entry between the United States and Mexico
- 2 A cooperative international transit system connecting El Paso and Juarez
- 3 The creation of the Northeast Parkway, designed to alleviate congestion on I-10 in El Paso.
- 4 The design of a highway for commercial traffic that will allow for the easing of congestion and speed travel between I-10 and Santa Teresa, New Mexico. On the Mexican side of the border a new highway is being constructed to connect to this addition at the border.⁶²

Highway 170

Texas State Highway 170 is touted by the Texas State Department of Transportation as an excellent example of the state's intermodal planning. The highway connects three different modes of transportation, truck, rail, and air cargo. The project is considered a success not only for the different modes that it connects but also for the speed in which it was designed and completed, the long range planning focus, and the cooperation that occurred among the large number of jurisdictions involved. Jurisdictions that worked on the project include state, regional, and local governments along with public and private concerns.⁶³

Trans Texas Corridor Plan

One of the most ambitious intermodal projects on the drawing board is the Trans Texas Corridor Plan (TTCP). Developed after the original Plan was created, the TTCP are up to 1,200-foot wide corridors that would provide separate toll ways for a wide number of users. The plan calls for up to 4,000 miles of corridor throughout the state when completed. Among those users planned for are passengers vehicles and trucks, high speed rail, freight rail and commuter rail and a corridor for utilities such as pipelines and communications. The TTCP looks at four measures when determining priority segments. These include:

- Congestion relief for metropolitan areas

⁶¹ The Texas Transportation Plan, 1994 Edition

⁶² The Texas Transportation Plan, 1994 Edition

⁶³ The Texas Transportation Plan, 1994 Edition

- Existing hazardous material routes
- Corridors most likely to generate toll revenue
- Opportunities for economic development⁶⁴

Using the above criteria, four corridors have been targeted as the first for more in depth study and planning. These corridors are:

- I-10 from Orange to El Paso
- I-45 from Dallas-Fort Worth to Houston
- I-69 (proposed) from Texarkana to Houston to Laredo
- I-35, I-37, and I-69 (proposed) from Denison to the Rio Grande Valley⁶⁵

While the TTCP is still in its infancy, TX DOT has already begun reaching out to the public and stakeholders through meetings, information campaigns, and various other methods to keep the various participants informed of the plan's progress.

TX DOT estimates that total cost for TTCP will be between \$145 billion and \$184 billion when completed.⁶⁶ A number of different financing proposals are being investigated to help fund the plan. The 77th Legislature provided a number of different funding packages including toll equity, regional mobility authorities, and the Texas Mobility Fund. Other proposed financial tools include concessions, the leasing of right of way, and the federal Transportation Infrastructure Finance and Innovation Act of 1998.⁶⁷

Survey Results

Forty-one respondents were surveyed concerning the intermodal transportation planning effectiveness of the Texas DOT. The survey addressed issues such as leadership support for intermodalism, effectiveness of planning processes and implementation capabilities, adequacy of funding for intermodalism, coordination and communication between and among relevant organizations, and provision of a range of transportation mode choices. Additional information about the best intermodal projects in Texas was also obtained.

Table C-1 shows the overall results of the survey. In general, respondents felt the Texas DOT was *to some degree* meeting and following the key elements of an intermodal approach to planning. Areas respondents believed that Texas DOT contributed to the intermodal approach to transportation planning *to a great degree* included the department's investment in road construction (3.83) and safety improvements (3.67). Respondents also felt that the department did a good job with communication within the State DOT (3.11) and with communication between the department and Metropolitan Planning Organizations. The final area in which respondents gave the DOT higher than

⁶⁴ Crossroads of the Americas: Trans Texas Corridor Plan, June 2002

⁶⁵ Crossroads of the Americas: Trans Texas Corridor Plan, June 2002

⁶⁶ Crossroads of the Americas: Trans Texas Corridor Plan, June 2002

⁶⁷ Crossroads of the Americas: Trans Texas Corridor Plan, June 2002

average marks was the department's ability to incorporate public involvement in the planning process (3.17).

Table C-1

	TX	TXResponses
1. Espouse an intermodal vision	2.83	41
2. Support intermodal projects	2.80	41
3. Provide support for planning	2.76	41
4. Consider all alternatives	2.70	40
5. Use planning analysis	2.54	41
6. Public involvement	3.17	41
7. Intermodal Planning	2.59	41
8. Staff Training	2.40	35
9. Suff Resources for planning	2.55	38
10. Ensure adequate state funding	2.41	40
11. Ensure adequate fed funding	2.64	40
12. Flexible use of funds	2.91	11
13. Ensure state meets legis intent	2.70	40
14. Good Communication in State	3.11	38
15. Coord between state and MPOs	3.35	41
16. Coord between state and Rural	2.68	34
17. Coord between state and transit	2.98	40
18. Coord between state and freight	2.38	33
19. Coord between state and intermodal	2.70	40
20. investment in Road Construction	3.83	41
21. investment in Safety improvements	3.67	39
22. investment in Bus & Transit	2.40	39
23. investment in Pedestrian	2.35	41
24. investment in Intermodal	2.32	41
28. More Choice	3.81	27
29. Increased Mobility	4.00	28
30. More connectivity	3.90	30
31. Increased Energy Efficiency	3.76	29
32. Increased Environmental Benefits	3.74	29
33. Reduced Congestion	3.59	29
35. USDOT	4.20	5
36. State DOT	3.27	22
37. MPO	3.33	24
38. Rural planning agency	3.81	21
39. Transit Agency	2.42	24
40. City or county govt	3.32	28
41. Private Sector	3.50	28
42. Advocacy Group	3.39	23
43. Other	3.78	23
44. Provided funding	3.64	11
45. Provided leadership	3.44	25
46. Contributed planning	2.51	35
47. Contibuted involvement	3.00	25
48. Overall rating	2.56	25

Those who replied to the survey thought the DOT contributed *to a little degree* in a small number of areas. The department's investment in Bus & Transit Services (2.40), Pedestrian & Bicycle Facilities (2.35), and Intermodal Connecting Facilities (2.32) could be improved. Two other subjects in need of more DOT involvement are, staff training (2.40) and coordination between the state DOT and freight interests (2.38).

Overall, the respondents seemed to indicate that the Texas DOT was *to some degree* meeting the four key elements put forth by the United States Department of Transportation. The only real topic to be of concern to the respondents was the department's investment in areas outside the traditional modes of automobile and truck and staff training in intermodal transportation planning. The DOT scored very well in coordination between larger planning organizations and communication between the department and other interested organizations within the state.

Participants in the personal interview portion of the survey mentioned a number of different projects around the state they felt were the best examples of intermodal transportation projects either in use or being developed within the state. The two most mentioned projects were the Trans-Texas Corridor Project, which is in the planning and development stage, and numerous passenger projects in the Dallas/Fort Worth Metroplex. Another project considered as being one of the best examples of intermodal projects is the previously described Barbours Cut project.

The projects in the Dallas/Fort Worth Metroplex focus around DART's light rail system through Dallas and the Trinity Railway Express connecting Fort Worth and Dallas. Participants who chose these projects pointed out that at the time the project was the only true transit intermodal project in the state. The projects' true intermodal character is seen at the various stations where a number of different modes; rail (both light and heavy), bus, and private automobile converge and allowing users numerous transportation choices. Respondents believed the biggest actor in championing both projects were the various transit agencies involved in them. The role of the state DOT in these projects was also seen as favorable when the agency was directly involved in certain aspects of individual projects. The following are some comments concerning projects in the Dallas/Fort Worth Metroplex:

- 1) There is an acknowledgement that rail is the mode of the future for urban transit.
- 2) The project is leading to quality economic development while contributing to the reduction of congestion and increasing air quality.
- 3) Multimodal options at the stations increase options and participation.

As mentioned previously, the Trans-Texas Corridor Project is focused on creating various multimodal transport corridors throughout the state. Respondents who chose this project made the following comments:

- 1) The corridors avoid urban centers, routing heavy truck traffic out of urban areas.
- 2) The creation of the TTCP (Trans-Texas Corridor Project) shows a recognition of the under capacity present in some Trans-Texas corridors.

Respondents, however, did not see the state DOT in such a favorable light when it came to rating the state's overall intermodal transportation planning process. Those interviewed, including those within the DOT, rated the process a 2.56 on a scale of 1-5 with the biggest complaint being that of the budget process. Adequate funding for intermodal projects along with the inclusion of more alternatives is the most popular ways in which those interviewed would improve the intermodal transportation planning process in Texas. Comments from respondents included:

- 1) They seem to work pretty well. They solicit and use inputs from MPO's and don't operate in a vacuum. Creative solutions are present at the DOT there is just a need for more money to implement them
- 2) Requirements need to be changed to focus on more multi-modal projects; the focus is still on roads.**
- 3) Restrictions need to be placed on how certain monies can be spent.
- 4) There needs to be an increased maturity in engineering outside of highway engineering.
- 5) An increase in funds and dedicated funds toward multi-modal projects will make the planning process better.
- 6) An earlier inclusion of all parties involved and an inclusion of all alternatives will better the process.

Other suggestions for improving the process included a shift in thinking towards other modes of transport including a dedicated focus on rail, earlier inclusion of the various actors involved in projects and committed funds for intermodal projects. Some respondents recommended that the education of engineers and planners at the academic level needs to include an intermodal focus in addition to the already strong emphasis on highway planning and infrastructure. One respondent felt that the State DOT planning process would benefit not so much by a change in personnel but instead a shift towards better allocation in resources.

Respondents to both the questionnaire and the personal interview seemed satisfied with the role and position the Texas Department of Transportation has in intermodal transportation planning. There appears to be a strong consensus that the department does

an excellent job concerning the highway portion of the transportation equation, whether it is development or maintenance of the existing system. Respondents also seemed satisfied with the role the state DOT had in some of the more successful intermodal projects throughout Texas. The Trans Texas Corridor Plan is regarded as the first statewide large scale attempt of intermodal planning and appears to be an attempt at addressing some of the issues voiced by those interacting with the DOT and its intermodal planning processes.

Conclusion

The Texas Department of Transportation is embracing intermodal planning throughout many of the projects with which they are involved. Although there were times when the respondents felt that the department was too highway-focused the general feeling towards the intermodal planning process was quite good, with the department getting high marks for its communication and coordination between the various other transportation planning agencies throughout the state. The wide spectrum of intermodal projects considered the best in the state shows the wide range of projects and modes that the Texas Department of Transportation is involved. As with many state DOTs the Texas DOT has the ability and desire to increase the number of intermodal projects constructed within Texas but the major hurdle seems to be obtaining funding for the projects whether it be obtaining new funds or shifting funds from highway projects to intermodal projects.

D. ALABAMA

Introduction

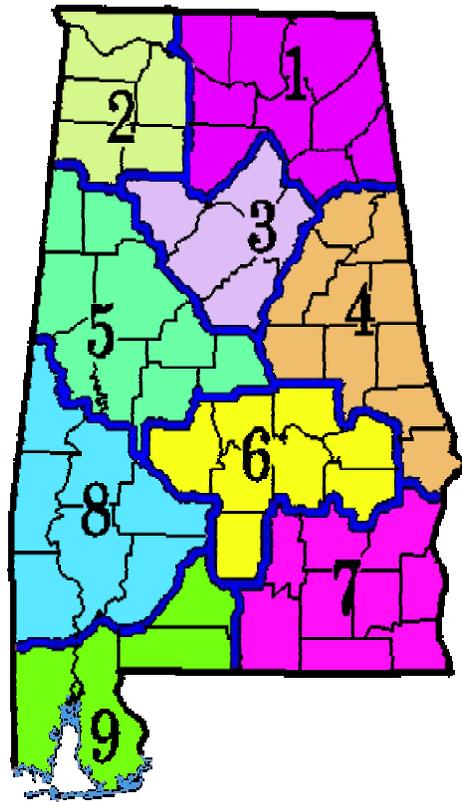
According to its mission statement, the Alabama Department of Transportation (ALDOT) exists in order to provide a safe, efficient, environmentally sound intermodal transportation system for all users, especially the taxpayers of Alabama. ALDOT's role also is to facilitate economic and social development and prosperity through the efficient movement of people and goods and to facilitate intermodal connections within Alabama. ALDOT must also demand excellence in transportation and to be involved in promoting adequate funding to promote and maintain Alabama's transportation infrastructure.

Organization

The Department is organized into nine geographic regions called Divisions, with a Central Office located in Montgomery. The Central Office is organized into the Office of the Transportation Director and the Office of the Chief Engineer with Bureaus and Divisions reporting to the Chief Engineer. Additionally, the department has several other boards and committees that operate either within a bureau or as a cooperative effort among several bureaus and/or divisions (see Figure D.1).⁶⁸

Figure D.1: Diagram of Division Structure

⁶⁸ <http://www.dot.state.al.us/docs/Divisions>



Along with the 9 divisions, ALDOT is made up of 22 bureaus:

- Administrative
- Aeronautics
- Air Transportation
- Bridge
- Computer Services
- Construction
- County Transportation
- Design
- Equipment Procurement and Services
- Finance and Audits
- Human Resources
- Maintenance
- Materials and Tests
- Multi Modal
- Office Engineer
- Personnel
- Public Affairs
- Research and Development
- Right of Way
- Training
- Transportation Planning
- Legal⁶⁹

Note there is a bureau devoted to Multimodal Transportation. This bureau is responsible for the management and oversight of multimodal transportation programs. The Bureau is also responsible for administering both rural and urban public transportation programs in addition to the elderly and persons with disabilities capital assistance program.

The Multimodal Transportation bureau is organized into seven sections with each section addressing a separate functional area:

- Administration
- Special Programs
- Public Transportation
- Rail Programs
- Safety Programs
- Financial Management
- Intelligent Transportation Systems⁷⁰

⁶⁹ <http://www.dot.state.al.us/docs/Bureaus>

⁷⁰ Ninety-Second Annual Report of the Alabama Department of Transportation, March 11, 2004

Leadership Structure

The Chief Executive Officer of the Alabama Department of Transportation is the Transportation Director and is appointed by the Governor. Some of the Director's specific functions include:

- Prescribe rules and regulations governing road construction, maintenance, and the placement of utilities along public highways
- Manage organization structure, including executives, managers, staff, policy, mission, and objectives of Department
- Determine the best method of road building for various geographical areas of Alabama
- Designate the roads to be constructed, repaired, and maintained
- Provide financial assistance to individuals or businesses displaced by certain highway projects, as specified in the Federal-Aid Highway Act.

The assistant Transportation director assists the Transportation Director in performing the duties of his office. The specific responsibilities of the Assistant Transportation Director are assigned by the Transportation Director. Current specific assigned responsibilities include oversight management of compliance Degree in the Reynolds vs. McInnes Lawsuit and supervisor of the offices of Legal counsel and Executive Assistant Transportation director.

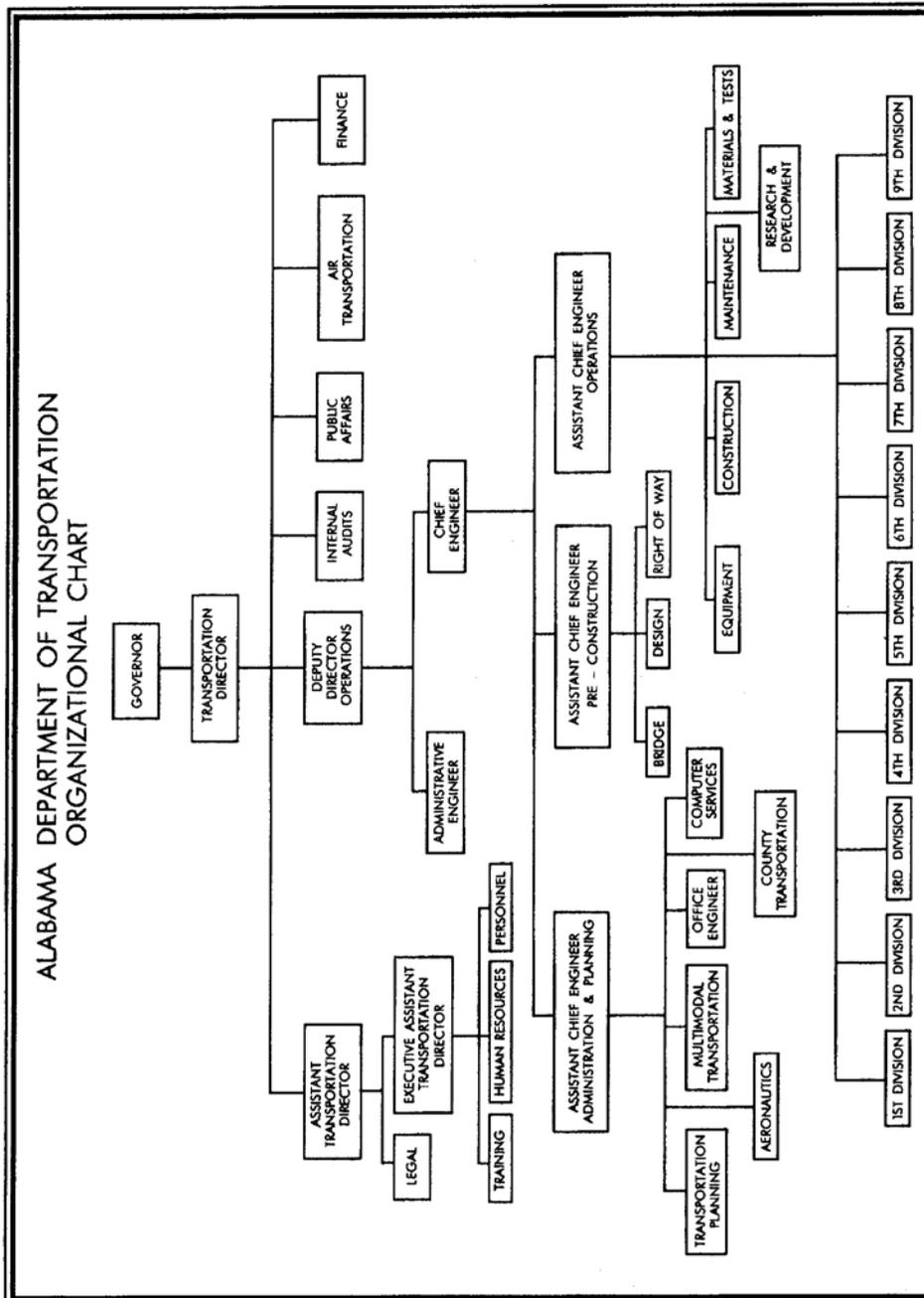
The Deputy Director oversees all technical and most administrative activities of the Department of Transportation. This is highly responsible professional engineering work with responsibility for the overall coordination of the highway, transit, and aeronautics programs. The duties of the Deputy Director are directed by and under the supervision of the Transportation Director.

The position of Chief Engineer is filled by appointment of the Transportation Director with the approval of the Governor. Duties of this position include the administration of the technical phases of the organization and coordination of the total highway program⁷¹

Figure D.2 shows the formal structure of the ALDOT.

⁷¹ Ninety-Second Annual Report of the Alabama Department of Transportation, March 11, 2004.

Figure D.2: Formal Organizational Structure of the Alabama Department of Transportation



Survey Results

Forty-one (41) respondents completed and returned a questionnaire. All returns were useable for analytical purposes. As true of the other states examined here, the survey instrument asked about the effectiveness of the Alabama DOT. The survey addressed issues such as leadership support for intermodalism, effectiveness of planning processes and implementation capabilities, adequacy of funding for intermodalism, coordination and communication between and among relevant organizations, and provision of a range of transportation mode choices. Additional information about the best intermodal projects in the state was also obtained. Table D.1 shows the summary responses to these items.

As can be seen from responses to Items 1-3, Alabama respondents do not strongly feel the state DOT is providing sufficient leadership for intermodalism. The responses to these items were measured along a 5-point response scale in which a score of “2” corresponds to the response of “to a little degree” and “3” is “to some degree.” Study participants also have reservations about the adequacy of ALDOT’s planning processes (Items 4-7). Note the lowest score (2.33; item 7) is on the item asking specifically about intermodal concerns being incorporated into planning in general. Consistent with these attitudes, respondents also question whether their state DOT provides training for staff in regards to an intermodal approach to planning, or sufficient resources for this type of planning.

The funding provisions and regulations associated with ISTEA/TEA-21 are called into question by these respondents (Items 8-13). There is clear concern about the various aspects of ISTEA/TEA-21 funding and related regulations. For example, note the low score on item 10 (2.22), which pertains to whether these regulations are ensuring adequate state funding for intermodal projects.

Those taking part in this study are somewhat more favorable towards the coordination and communication efforts they see in support of intermodalism (Items 14-19). This is particularly true in regards to coordination between the state and MPOs (Item 15; 3.22). The lowest approval rating, however, is in response to the question of whether there is effective state DOT coordination and communication regarding intermodal planning: 2.36 (Item 19).

Finally, respondents are in considerable agreement that the Alabama DOT does a good job of satisfying transportation needs in terms of investment in roadway construction (Item 20; 4.12) and operational and safety improvements (Item 21; 3.61). Attitudes are considerably less positive when asked about choice in regards to investment in transit and bus services, bicycle and pedestrian facilities, and intermodal facilities.

TABLE D.1

Summary of Alabama Responses

	Mean	AL Responses
1. Espouse an intermodal vision	2.25	24
2. Support intermodal projects	2.58	24
3. Provide support for planning	2.50	24
4. Consider all alternatives	2.37	24
5. Use planning analysis	2.48	23
6. Public involvement	3.04	23
7. Intermodal Planning	2.33	24
8. Staff Training	2.59	22
9. Sufficient Resources for planning	2.35	23
10. Ensure adequate state funding	2.22	23
11. Ensure adequate fed funding	2.58	23
12. Flexible use of funds	2.48	23
13. Ensure state meets legis intent	2.52	23
14. Good Communication in State	2.74	23
15. Coord between state and MPOs	3.22	23
16. Coord between state and Rural	2.48	21
17. Coord between state and transit	2.48	21
18. Coord between state and freight	2.56	16
19. Coord between state and intermodal	2.36	22
20. investment in Road Construction	4.12	24
21. investment in Safety improvements	3.61	23
22. investment in Bus & Transit	1.91	23
23. investment in Pedestrian	2.29	24
24. investment in Intermodal	2.21	24
28. More Choice	2.77	13
29. Increased Mobility	2.85	13
30. More connectivity	3.08	12
31. Increased Energy Efficiency	2.31	13
32. Increased Environmental Benefits	2.00	13
33. Reduced Congestion	2.54	13
35. USDOT	3.17	12
36. State DOT	3.08	12
37. MPO	2.50	8
38. Rural planning agency	1.78	9
39. Transit Agency	2.40	10
40. City or county govt	3.45	11
41. Private Sector	2.36	11
42. Advocacy Group	2.27	11
43. Other	3.80	5
44. Provided funding	2.73	11
45. Provided leadership	2.64	11
46. Contributed planning	2.73	11
47. Contributed involvement	2.27	11
48. Overall rating	2.63	18

Open-Ended Survey Items

Along with closed-end items, the survey also contained open-ended statements. The first such item to be considered stated the following:

“If you could, what one thing would you change to make your state intermodal transportation planning process better?” The following comments were provided to this question:

1. Elect a governor who will appoint a DOT director at least willing to consider intermodal.
2. Educate state DOT's about importance of improving infrastructure of state rail systems that can be utilized for commuter service. Maintain and utilize, not abandon.
3. Create a true DOT and not a roads and bridges agency.
4. An Alabama statute says fuel tax revenue can only be spent on “highway” projects. This statute should be modified.
5. Make investment in passenger rail. How can you have true intermodal without rail?
6. There would be some
7. Implement an effective methodology whereby all modes of transportation are integrated (recognized) in the planning and funding process.
8. State is not involved in mass transit in any significant way.
9. Make DOT aware of/answer to alternative mode users
10. Provide more places for the public to board and de-board Amtrak
11. Hire people with experience in intermodal transportation
12. Negate thinly concealed bias for auto's against transit and bike/pedestrians
13. Additional training
14. Better intra-office cooperation
15. More funds for our area

The next item asked: “Are there any other comments you have about your state DOT's intermodal transportation planning process?” Responses were:

1. Could be better with improved priority.
2. Alabama's DOT is only interested in building roads and bridges. Correct this and then we can pursue true “intermodalism.”
3. They have a “multimodal,” not an “intermodal” group. So, actually, multimodal gets little funding and intermodal isn't emphasized.
4. The word “transportation” should read “highway.”
5. It is one dimensional
6. Effectively only highways are represented.
7. I am not aware of a significant intermodal planning process that involves moving people, that is carried out by the DOT.
8. Public involvement is nil – needs improvement. Remove politics from decision making (i.e., Road builders lobby money)
9. It is difficult for most Alabamians to have access to Amtrak

10. My state's DOT is involved almost exclusively for the purpose of highway construction
11. Very helpful

Best Intermodal Project

The final section of the survey asked respondents to comment on a specific intermodal project that had been undertaken in their state.:

“Please identify the best intermodal project that has been or is being implemented in your state over the last ten years.”

- A. Are there any other reasons why you consider this to be the best intermodal project in your state?
 - B. Were there any other ways that the state DOT contributed to this project?
 - C. What were the key factors that influenced the decision to implement this project (e.g., political factors, economic considerations, planning process, public demand, etc.
1. They have never implemented an intermodal project.
 2. Highway systems improved – lanes on interstate extended to 6.
 - A. Yes, it saves time and energy.
 - B. public demand and planning process
 3. Work on the Alabama state docks in Mobile (being planned)
 - A. It will be intermodal. It has promise to help the state economy. And...I understand there are few such programs going in the state.
 4. Don't know of any
 5. Not aware of a air/rail/road project
 6. Ongoing expansion of multimodal capabilities at the Port of Mobile.
 - A. Improved foreign and domestic trade opportunities to the state. Has attracted/supported major (new) individual development for the state.
 - B. No
 - C. Economic, job growth, private sector investment.
 7. Birmingham bus and Amtrak station
 8. Development of new container cargo facility in cooperation with state Port Authority.
 - A. Economic and political factors from the perspective of declining port revenues and market share.
 - B. GM&O restoration/creation of intermodal facility
 - C. Transit received federal funding for restoration of historic building, to serve as interface between transit and rail. Politics
 9. Alabama state docks or GMO in Mobile or Chief Ladiga Trail.
 10. Combining several agencies into AL Dept. of Transportation
 - A. Political and planning
 11. Mobile train station redevelopment as an intermodal center
 - A. Political and economic
 12. Huntsville intermodal center
 - A. Local economic benefits

- B. economic considerations, public demand
13. Pedestrian overpass city of Muscle Shoals
- A. Safety for school children
 - B. Safety

Respondents then were asked about the extent to which the project named provided more choice (Item 28), increased mobility (Item 29), more connectivity (Item 30), increased energy efficiency (Item 31), increased environmental benefits (Item 32), and/or reduced congestion (Item 32). While none of these scores are particularly favorable, there was some agreement that the project enhanced mobility and connectivity.

As for the agency/group that championed this best intermodal project, city or county governments receive the greatest credit (Item 40; 3.45) while rural planning agencies receive the least (Item 38; 1.78). (Although the Other category – Item 43 – was given the highest mean score, only 5 individuals responded to this item.)

Finally, survey participants were asked about the manner in which ALDOT contributed to this best project. This agency receives relatively favorable marks for the funding, planning, and leadership it provided (Items 44, 46, and 45, respectively). The lowest mark by far is for ALDOT's facilitation of public involvement.

E. FLORIDA

Introduction

The Florida Department of Transportation (FDOT) is responsible for the planning, design, construction, maintenance, and operation of all roads, bridges and transportation system within the state-maintained transportation network, as well as a sizable network of seaports, airports, railroads and public transit. The Department is also accountable for local systems and for interfacing with local government on growth management or local transportation system issues.⁷²

FDOT is headed by a Secretary, appointed by the Governor, and supported by three Assistant Secretaries. The FDOT is organized into the Central Office and seven district offices⁷³. The Central Office in Tallahassee is responsible for policy, procedure, standards, training, and quality assurance functions, while the district offices are responsible for planning, engineering, constructing, and maintaining fundamental commitments to rail, aviation, seaports, and public transportation. Figure 3 shows the organizational structure of FDOT, while Figure 4 shows the districts in the state.

The mission of FDOT is to provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment. According to the FDOT, the values of the department are:

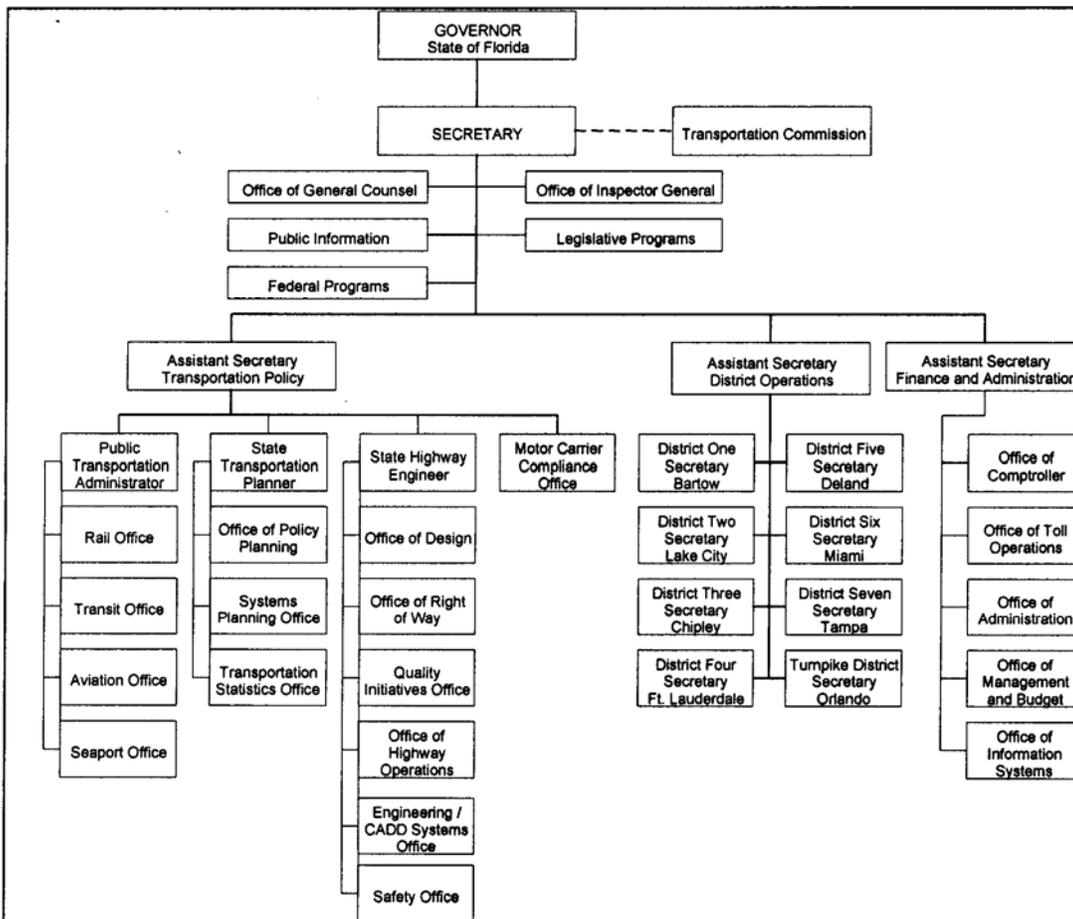
- ❖ Integrity
 - We are committed to honesty, loyalty and a high standard of ethical conduct
- ❖ Respect
 - We value diversity, talent and ideas. We believe every individual should contribute and have the opportunity to be heard.
- ❖ Excellence
 - We achieve performance excellence through hard work, innovation, creativity and prudent risk taking.
- ❖ Teamwork
 - We accomplish our goals by working together and relying on each other.⁷⁴

⁷² KPMG Final Report, Florida Department of Transportation

⁷³ There are eight Districts if the Turnpike Enterprise is counted

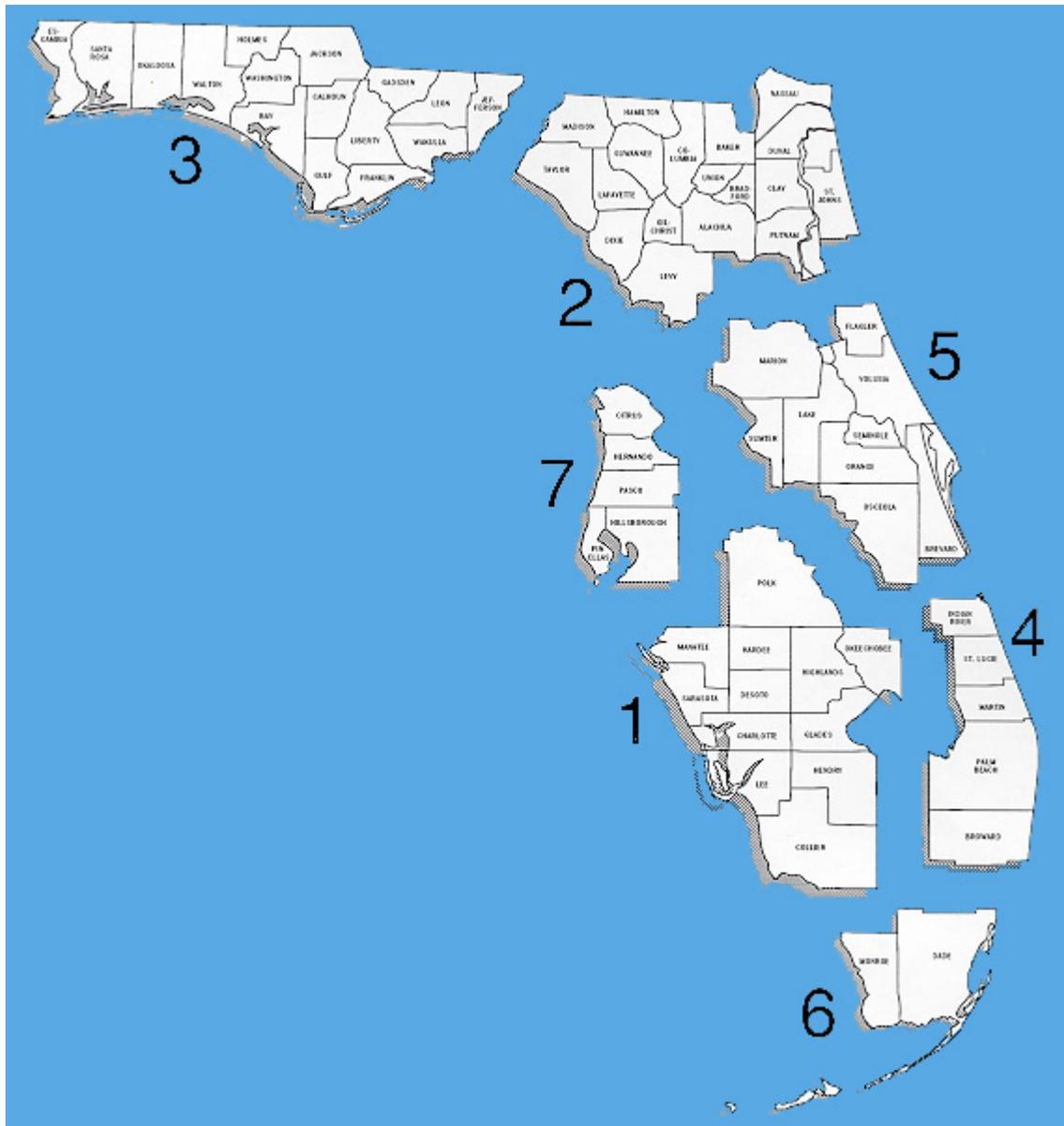
⁷⁴ <http://www.dot.state.fl.us/publicinformationoffice/moreDOT/mvv.htm>

Figure 3



Source: FDOT

Figure 4



District Structure

Following is a brief summary of the roles and responsibilities for major functional units. These, too, may vary from district to district⁷⁵:

BUDGET oversees the operating budget and Legislative Budget Request.

CONSTRUCTION administers contracts for roadway and bridge construction through local construction offices.

CONSULTANT MANAGEMENT is responsible for the selection and monitoring of consultant engineering services for project development studies, roadways and bridge structure designs.

CONTRACTUAL/PROFESSIONAL SERVICES directs District Contract and purchasing functions, and acquires consulting engineering and other non-professional services to support production and administrative units. (Learn more about Contractual Services and Professional Services.)

DESIGN is responsible for the preparation of the plans to build and repair the roadway and bridge system. (Learn more about Roadway Design and Structures Design.)

ENVIRONMENTAL MANAGEMENT performs the project development and environmental studies necessary to determine improvements to the state highway system, obtains environmental permits and conducts the public involvement meetings/hearings required in the early phases of a project.

FACILITIES MANAGEMENT/OFFICE SERVICES operates the office buildings and provides for building leasing, property and facility insurance, utility services, printing and mail services.

FINANCIAL SERVICES processes payment for purchases and oversees payroll.

GENERAL COUNSEL renders legal opinions, provides general legal information, and represents the department in legal affairs.

HUMAN SERVICES provides support for personnel, insurance, benefits and training.

INFORMATION SYSTEMS is responsible for the operation of the computer/data center.

MAINTENANCE is responsible for maintaining the State Highway System and mobile equipment fleet in the districts. Local maintenance offices are responsible for minor bridge and roadway repairs, mowing, pavement upkeep, roadway signs and rest area maintenance, inspection and operation of movable bridges and issuance of permits for lane closures, driveways and special uses.

⁷⁵ <http://www.dot.state.fl.us/publicinformationoffice/moreDOT/mission.htm#district>

MATERIALS TESTING LABS inspect, sample and test the materials used in the construction of projects, and conduct tests to determine the wear and tear on the state's roadways and bridges.

PLANNING provides policy direction and local government coordination for short- and long-range transportation project planning.

PRODUCTION MANAGEMENT schedules projects and district contracts in accordance with budget instructions and restrictions.

THE OFFICE OF WORK PROGRAM develops the Five Year Work Program and Program and Resource Plan, and monitors management of funds and annual budgets and schedules.

PUBLIC INFORMATION provides information to legislators, public officials, department employees, and the media about the department's operations and programs.

PUBLIC TRANSPORTATION manages department involvement in multi-modal transportation including air, waterway, rail, transit, bicycle and pedestrian travel. (Learn more about aviation, transit, rail, and seaports.)

PROCUREMENT oversees the purchasing of goods and services necessary for department operation.

RIGHT-OF-WAY ADMINISTRATION provides services related to appraisal and acquisition of property needed for department projects, relocation of tenants and the management and/or demolition of structures from those properties prior to road or bridge construction.

SAFETY plans, develops and implements an employee safety program pertaining to vehicle accidents and personal injuries, education and training, and monitoring of contractor's operations for compliance with safety regulations.

SURVEYING AND MAPPING prepares right-of-way maps and deeds used in the acquisition of property needed for department projects.

TRAFFIC OPERATIONS oversees studies and projects related to roadway signs, traffic signals, pavement markings, speed limits, school zones, and improved highway safety.

Florida Transportation Commission

The Florida Transportation Commission was created by the 1987 Legislature to serve as a citizen's oversight board for the Florida Department of Transportation. The Commission is independent of the Department. Composed of nine Commissioners appointed by the Governor and confirmed by the Florida Senate for four-year terms, the Commission meets monthly. While the usual meeting location is Tallahassee, the Commission meets two or three times a year in the Districts to receive local input.

The law requires that membership "equitably represent all geographic areas." Historical precedent is one commissioner from each FDOT district and two "at large" commissioners; one with rail and one with ports expertise. The Commissioners must represent transportation needs of the state as a whole and may not subordinate state needs to those of any particular area. The Commission is prohibited from involvement in day-to-day operations of the Department (e.g., consultant or contractor selection, specific projects, personnel matters). Periodically, the Auditor General is directed to review commission compliance with the law.

The Commission's primary functions are to:

1. Review major transportation policy initiatives or revisions submitted by the department pursuant to law.
2. Recommend major transportation policy to the Governor and Legislature (Commission has recommended policies related to public transit, funding, road jurisdiction, truck weights, and penalties, etc.).
3. Serve as an oversight body for the FDOT (Commission assesses performance, monitors financial status, and reviews work program, budget requests and long-range plan).
4. Serve as nominating commission in the selection of the Secretary of Transportation (Governor appoints secretary from among three candidates nominated by the commission).⁷⁶

Strategic Intermodal System

A product of the 2003 Florida Legislature, The SIS, or Strategic Intermodal System, is a statewide system of high-priority transportation facilities. It includes the state's largest and most significant commercial service airports, spaceports, deepwater seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways and highways. These facilities carry more than 99 percent of all enplaned commercial air passengers in the state, virtually 100 percent of all waterborne freight tonnage, almost 100 percent of all freight moving on the rail system, and more than 68 percent of all truck traffic and 54 percent of total traffic on the State Highway System. Virtually every freight shipment in the state, as well as every visitor and business traveler, uses the SIS at some point in its journey.

⁷⁶ http://www.ftc.state.fl.us/about_the_commission.htm

The SIS is envisioned as representing a fundamental shift in the way Florida develops – and makes investments in – its transportation system. This system is intended to focus attention on those transportation facilities that support large numbers of international, interstate and interregional trips and give priority to transportation investments anticipated to have the greatest impact on the state’s economy and quality of life. This emphasis will require a new approach to how FDOT and other partners assess the performance of the transportation system, identify potential investments and select projects for funding.⁷⁷

Survey Results

One hundred thirty-three (133) completed questionnaires were returned by Florida stakeholders. Table E.1 summarizes the responses of these citizens.

As can be seen in E.1, respondents feel relatively positively about FDOT’s ability to provide leadership on intermodal issues (Items 1-3). Similar attitudes are held in regards to the adequacy of the department’s planning process (Items 4-7). Note, however, that the least favorable score is on Item 7, which deals specifically with the intermodal planning process.

There is less satisfaction, however, with the funding provisions and regulations of IS/TEA-21 (Items 8-13). While there is general agreement there is sufficient funding to ensure the state meets the legislative intent (Item 13), respondents question whether there is funding to support adequate staff training (Item 8) or sufficient resources for planning activities (Item 9).

Those taking part in this study basically approve of FDOT’s coordination and communication efforts in support of intermodalism (Items 14-19). This is especially true in regards to coordination between the Department and the MPOs (Item 15). Although not as great, Florida experts also express approval of the way FDOT coordinates and communicates with transit groups (Item 17) and with the state in general (Item 14). The least favorable scores are assigned to the coordination between the state and freight entities (Item 18), and the rural planning districts agencies (Item 16).

The greatest differences in evaluations made by these respondents are in response to the survey items asking about FDOT’s ability to satisfy different transportation needs in the state (Items 20-24). The Florida Department of Transportation is perceived to make adequate investment in road construction (Item 20) and in safety improvements (Item 21). The Department’s performance relative to the other modes, however, is not viewed as positively. Respondents feel improvements are needed in terms of the state’s investment in bus and transit facilities, pedestrian concerns, and in intermodal activities (Items 22, 23, and 24, respectively).

⁷⁷ Florida’s Strategic Intermodal System Plan, October 15, 2004 (draft).

Table E.1

Summary of Florida Responses

	Mean	FL Responses
1. Espouse an intermodal vision	3.39	133
2. Support intermodal projects	3.25	133
3. Provide support for planning	3.19	133
4. Consider all alternatives	3.07	134
5. Use planning analysis	3.15	131
6. Public involvement	3.33	134
7. Intermodal Planning	2.99	133
8. Staff Training	2.71	126
9. Sufficient Resources for planning	2.74	133
10. Ensure adequate state funding	2.91	131
11. Ensure adequate fed funding	2.79	132
12. Flexible use of funds	2.87	128
13. Ensure state meets legis intent	3.12	129
14. Good Communication in State	3.30	132
15. Coord between state and MPOs	3.66	133
16. Coord between state and Rural	3.01	111
17. Coord between state and transit	3.31	124
18. Coord between state and freight	3.03	115
19. Coord between state and intermodal	3.12	125
20. investment in Road Construction	3.53	131
21. investment in Safety improvements	3.44	130
22. investment in Bus & Transit	2.72	130
23. investment in Pedestrian	2.80	129
24. investment in Intermodal	2.69	129
28. More Choice	3.54	103
29. Increased Mobility	3.76	103
30. More connectivity	3.87	102
31. Increased Energy Efficiency	3.51	100
32. Increased Environmental Benefits	3.50	100
33. Reduced Congestion	3.49	101
35. USDOT	3.05	96
36. State DOT	3.78	97
37. MPO	3.59	95
38. Rural planning agency	1.87	83
39. Transit Agency	3.10	93
40. City or county govt	3.69	97
41. Private Sector	3.04	93
42. Advocacy Group	3.02	86
43. Other	3.42	26
44. Provided funding	3.72	94
45. Provided leadership	3.48	94
46. Contributed planning	3.53	93
47. Contributed involvement	3.29	93
48. Overall rating	3.22	113

Open-Ended Survey Items

Along with closed-end items, the survey also contained open-ended statements. The first such item to be considered stated the following:

“If you could, what one thing would you change to make your state intermodal transportation planning process better?” The following comments were provided:

1. They appear to be on the right track
2. Earmark intermodal funds so that they do not become diluted by bike path and similar misc. projects.
3. Less bureaucratic levels
4. Find adequate funding
5. Eliminate MPO process for counties with Planning and Road departments
6. I would stop funding intrastate roadway widening and de-emphasize other urban roadway projects. I would divert these monies into bus rapid transit and intracity rail service – passenger and freight
7. Work with individual transit authorities to build regional intermodal facilities, so that a person could go from one county to another county
8. More consideration of MPO long range plans when developing projects
9. Educate the DOT as to the elements of intermodal planning and the advantages
10. Better communication to the business and residents of the states intentions
11. Get more community involvement
12. Intermodal should be more than just highways
13. More money
14. The decision makers need to work closer together (county and state) for the needs of the state of Florida. There is in many opinions that the red tape is consuming too much time and efforts
15. Establish an intermodal plan and reorganize to implement
16. Better definition of intermodal priorities
17. Understand the relationships between building new roads and increasing congestion. Focus more on moving people and not cars
18. Give more monies to transit and bus services
19. I think there should be more of an emphasis on moving people in the design process rather moving vehicles
20. Lead time on project submittal requirements
21. More interest in commuter rail
22. Allocate 40% of all state DOT spending to intermodal transit for the next 25 years. It is not possible to meet the demand for roads, so alternatives must be the focus of new capital investments
23. Stronger support for pedestrian facilities
24. The state communicates well about the planning for intermodal facilities. However the actual funding of facilities and infrastructure is lagging greatly.
25. Less political
26. More funds. Communicate simple and clear plan for local communities
27. Have involvement between government agencies

28. More meetings with local communities
29. I would include transit in transportation engineering classes, especially operations engineering. I would include operations and maintenance in every plan scenario.
30. Keep various transportation providers involved in the entire process
31. Fully involve transit and other intermodal operators in roadway design to ensure all needs of various modes are met, not just single-occupant vehicles.
32. Make intermodal grants on an allocation basis versus a competitive basis with a 50% local match. One cannot budget the 50% this way.
33. Public e-mail addresses of state employees with titles
34. Integrate it with the metropolitan planning process
35. Raise fuel tax
36. Improve leadership for intermodal planning at local level. More state contact with local decision makers (boards and commissions)
37. Provide additional funding for implementation. There are adequate planning processes in place
38. Implementation of purchasing required R/O/W. Design and engineering need to be outsourced to private sector to escalate project completions. Need additional funding.
39. Provide training to district offices and other transportation agencies.
40. Educate, if possible, the executive and legislative branches of state government
41. DOT should assign a single point of contact for coordinating with seaports, who is a senior member of DOT staff that can bypass much of their bureaucratic process when communicating seaport transportation needs/issues
42. Improve planning for people who cannot drive or choose not to drive.
43. Less emphasis on roadway service levels.
44. Accountability by DOT staff.
45. Let counties spend the funds – not DOT, not MPO
46. More influence by citizens, not developers or industry
47. Return more gas tax dollars from federal government “submitted by the state of Florida” to the state of Florida.
48. Provide an awareness of European transportation modes and service.
49. Provide a larger pot of funds to assist the local governments in planning and implementing intermodal projects.
50. Have a clear statement on type of intermodal projects that have priority.
51. Incorporate land use decisions better.
52. Talk with the people at the local level.
53. Better federal legislation.
54. Ask if the federal government would earmark more money for needs locally instead of pushing rail systems are not needed.
55. More money now.
56. Fund transit projects in the same way major highway projects are funded. Specifically, no local funding is required.
57. Additional funding
58. More metropolitan organizations.
59. Cut back on process and give more authority to local communities
60. Fund the implementation phase of the various projects.
61. Have the state focus on alternatives to automobile transportation.

62. Reduce the bureaucracy.
63. Increase dollars to local government.
64. More money for transit, high speed rail.
65. Make them understand the intermodal transportation needs to be better communicated to the public.
66. Influence decision makers to give a higher priority to intermodal planning, funding, and support of public transportation and alternatives to autos
67. Change the matching formulas. Local government perception is that roads are free but intermodal requires a match.
68. Put transit/bike/pedestrian modes on equal footing (for funding and prioritization) with roads.
69. Requiring a great percent of funds to be spent on mass transit.
70. Coordination of DOT and transportation organizations
71. Transportation investment decisions rewarded areas that conducted sustainable land uses which resulted in reduction in vehicle miles of travel by land use.
72. Florida doesn't adequately fund any services. Forget intermodal! It doesn't fund transportation.
73. Too much money is sent on planning and duplicate planning and that more of this money should go directly to projects. Outside engineering studies are required for almost everything when bottom line common sense from locals could give the save answer.
74. More funding
75. Prioritize intermodal planning as an approach to solutions rather than as an option to solving transportation problems.
76. Rely more heavily on public and unbiased planning engineers to set priorities of road construction and improvements. Make state priorities formula not a politically based agenda.
77. Provide incentives to local government to provide fixed guideway transit solutions and intermodal connections where justified by ridership potential.
78. Earlier designation of a strategic intermodal system in our state
79. Do a better job of identifying potential projects
80. Figure out some way to analyze investments in roads vs. investments in "other modes" – to be able to have a good tool to demonstrate the trade offs and make better decisions on where limited funds should go.
81. State of Florida is trying very hard to establish a high speed ground transportation system within the state. Currently studying best routes between largest cities. Phase I covers Tampa/St. Pete. Next phase will extend routes from Orlando to Miami. As routes are determined, locations and systems for intermodal connections will be address. But our state, as are many others within the U.S. are way behind in the needed development. This complicates the progress and greatly increases costs as accommodations are made to satisfy existing conditions and agencies.
82. Take their plans and ideas to the people affected!
83. Better coordination at county lines and district lines.
84. Greater interface of all modes of transportation towards intermodalism.
85. Need a better process to dedicate funding for intermodal projects and to develop clear criteria for project selection.

86. Better communication with general population. Once that is accomplished, establish choices to put before the people as “referendums.” Miami Intermodal Center
87. More transportation projects other than highway
88. The planning process is fine. More resources are needed to implement the plan.
89. More overall funding so that more funds are available for intermodal projects.
90. Entire decision making body needs to “get real” about transportation planning and growth management failures.
91. Communication!! Coordination across the state.

The next item asked: “Are there any other comments you have about your state DOT’s intermodal transportation planning process?” Responses were:

1. Should get the citizens in Florida to think in this direction
2. Get better with “demand”
3. I would freeze projects that enhance movement of containers from port facilities by trucks and refocus movement of freight containers by rail
4. More money for transit to get cars off the roadway
5. Heavily politicized by the Governor and legislature
6. Millions or perhaps billions, of dollars are available to build roads but all they do is add lanes, which fill up with cars, so they ask for more money to add more lanes. It seems to be their only approach, and they are always way underestimating the need. So we always way behind in meeting the need.
7. Too much focus is centered on the highways and railway systems. Florida is surrounded by water yet very little focus is centered on the rivers, sounds, and intracoastal waterways. Intermodal transportation could be more efficiently and environmentally approaches if more attention is focused on marine needs.
8. There is too much emphasis on highway improvements. The DOT is building massive roads while public transportation gets crumbs
9. Too often our DOT is concerned only with traffic flow and not how their decisions to increase flow negatively impact our communities
10. Rail systems will provide better service and unclog roads – educate the public
11. The process is only a means to an end. Its efficacy must be measured by its results. Our state DOT has failed miserably in achieving any meaningful development of intermodal transportation. This may be due, in part, to failures of the Legislature, but one does not get the sense that intermodal transit is a high priority in a DOT populated mainly by road builders.
12. It’s without depth
13. Extremely difficult to keep up with changing times
14. Needs to change to include all aspects, including design. The DOT still greatly separates highway from other modes
15. The pedestrian/bicycle coordination is stronger than the rail contingency
16. Extend and reach out to local level. More funding commitments to bicycle, pedestrian, and intermodal projects in general (without decreasing roadway funding). DOT should recognize the effect of land use on intermodal use, and encourage support such land uses.

17. They just kick-started an intermodal program with representation from various modes and secured a consultant.
18. The state, as is most of the country, is too heavily invested in automobile travel and accommodations. Where the DOT wants to be more multimodal, it is hampered by the state executive and legislative branches.
19. Not very good
20. Florida does not have safe, reliable public transportation. With increasing costs and decreasing services, the bus system is considered a joke. DOT only listens to developers' wants.
21. FDOT works closely with all MPO boards and staff in various sub-committees, to enhance intermodal efforts.
22. We need to look more to rail for solutions to reducing traffic and transporting people.
23. They make an effort to promote an intermodal transportation planning process.
24. We have found it difficult in the planning of road projects to incorporate things such as bus lanes or even areas where buses could pull over when loading and alighting occurs. Simple pullovers for buses would be a big help.
25. Too bureaucratic.
26. Grant block money to local community.
27. No political commitment.
28. The orientation is very traditional road building from an engineering standpoint, and the roads are designed for cars, not bikes, pedestrians, buses, freight trucks.
29. Failure to obtain consensus early on from local governments.
30. Leadership is highway oriented with little vision toward true intermodalism. Tunnel vision.
31. Forget intermodal. We don't plan adequately for anything.
32. Smaller communities are dealt with under metropolitan needs – very heavy handed – take it or leave it.
33. Our state puts a high priority on moving freight and goods to and from ports, airports and rail terminals, less so on moving people between modes, unless you count people in autos traveling to airports and ports. The former are valued as economic development projects, but the latter (e.g., public transportation projects) are seen as social service projects.
34. Process is very good, but insufficient funds to implement.
35. Light rail is too expensive for state funding. The federal priority should fund sites of development based on local crowding or traffic.
36. Support seaport rationalization; take a leadership role in intermodal systems ITS; increase transit and intermodal security; incentive funding based on technical criteria.
37. Lack of consensus on priority funding for H.S. rail and other similar modes of transportation.
38. The issue of the sincerity of efforts occasionally comes up. Occasionally folks feel FDOT talk the talk but don't necessarily follow up with money. On the other hand, the auto mode is very dominant and diversions of resources to other modes can have a negative consequence if the demand for other modes does not materialize.
39. It's like a crap shoot
40. The Florida DOT is taking a positive step in developing a strategic intermodal system to supplement the Florida intrastate highway system.

41. Because of old and vested interests, the planners are way behind the current needs.
42. Need better communication with public; more public input – especially advocacy groups; more responsiveness from public input.
43. The process has improved dramatically in the last 10 years.
44. To the average road and public transit user, it is nonexistent.
45. Improve planning process – i.e., funding, time line for projects, status of projects.

Best Intermodal Project

The final section of the survey asked respondents to comment on a specific intermodal project that had been undertaken in their state.:

“Please identify the best intermodal project that has been or is being implemented in your state over the last ten years.”

- A. Are there any other reasons why you consider this to be the best intermodal project in your state?
 - B. Were there any other ways that the state DOT contributed to this project?
 - C. What were the key factors that influenced the decision to implement this project (e.g., political factors, economic considerations, planning process, public demand, etc.)
1. Palm Bay Parkway/Beltway
 - A. It would relieve traffic congestion on I95
 2. South Dade busway
 - A. Provided express bus transit service to South Dade area at a much lower capital cost than rail
 - B. Planning, project development, right-of-way acquisition, and construction.
 - C. Political pressure
 3. Railpack development at Harvarnas County Airport
 - A. Provides connectivity between major modes of shipping and enhances the movement of goods and services on a local and regional basis
 - B. Advocates of economic development and intermodalism
 - C. Economic development benefits to state, county, and airport entities
 4. I-95/HOV/P&R system/MIC-Miami/Tri Rail commuter Rail
 - A. DOT full member of Board for Tri Rail Commuter Rail Authority. Manages state-owned rail right of way
 - B. TR-Maintenance of traffic for I-95 construction/widening
 5. Miami bus rapid transit and Lynx Limmo
 - A. It is the only one that connects bus with rail passenger service.
 - B. Congestion on roadways. High speed rail between Tampa-Orlando needs to happen ASAP
 6. Trail projects
 - A. Compatibility with the Livable Community policy of FDOT
 - B. public demand
 7. Development of the Miami-Dade busway using CMAQ funds

- A. Very successful. Uses old railroad line right of way for exclusive use of buses connecting with southern terminal of metrorail
- B. Programmed the funding. Changed and coordinated traffic operations at all intersections. Provided planning and engineering support.
- C. Availability of the corridor, need for transit capacity,
- 8. Improved bridge repair and replacement
 - A. There was an immediate need
- 9. The Sun Coast Parkway
 - A. political factor
- 10. Florida bullet train
- 11. Retrofitting transit vehicles with bicycle racks
 - A. Federal transit requirements. State planning requirements. Public demand
- 12. Bike paths in Indian River County
 - A. Well received by public
- 13. Miami light rail and Disney World
- 14. Disney's transportation system
 - A. It works well – customers use it and come back.
 - B. Economics of course coupled with master planning
- 15. Disney World transportation system
 - A. Provides alternatives to auto use.
 - B. Private interest to maximize profit.
- 16. Rail ramps containers/trailers at or close to water carrier facilities
- 17. Tampa Union Station
 - A. Public demand
- 18. New road to airport
- 19. Development of recreational path ways
 - A. Public demand and development pressures
- 20. Rails to trails
 - A. Provides recreation and an alternative mode of transportation
 - B. Financially and land acquisition
 - C. Political and public demand
- 21. Light rail trolley to tie downtown port Tampa with nightlife area connecting CBE with OBD via rail with access to train depot, port terminals, and typical CBD parking area
 - A. It is the first rail project in Tampa/St. Pete area.
 - B. I think MPO saw this 1-M opportunity, given a couple of activist groups, etc., and the growth of Ybor City as a “night life” area with possible attraction of riding instead of driving there.
- 22. Implementation of intelligent transportation systems
 - A. When fully implemented it has the potential to increase modal choice, disseminate on-time transportation information, help manage limited highway capacity and increased travel demand for passengers and cargo
 - B. Implemented test/pilot programs
- 23. Great Florida Greenway Land Bridge
 - A. No automobiles allowed on the bridge and it is a “critter” crossing.
 - B. Partnered with other state agencies, Department of Environmental Protection

- C. Availability of federal transportation enhancement funds
- 24. I-595 connector to Port Everglades in Ft. Lauderdale
 - A. Provides improved safety by keeping trucks off of city streets.
 - B. Planning process recognized need for east-west connector to airport, seaport and other main interstate highways and Florida turnpike.
- 25. Ybor City Tampa street trolley
 - A. Improves livability
 - B. Public participation in the planning process and the will of the MPO Director.
- 26. New LYNX station in downtown Orlando
- 27. Bike paths
 - A. public demand
- 28. Miami's dedicated busway.
- 29. Electric buses in Miami Beach
 - A. It is utilized
- 30. Inter-County bus connections
 - A. Economic considerations, public demand, environmental [emissions]
- 31. System in Jacksonville
 - A. Feedback
 - B. Public demand
- 32. Intercoastal waterway improvements
 - A. It is a great alternative to roads to move goods and services.
 - B. Ongoing maintenance and management of an existing waterway.
- 33. Miami Metro
 - A. It actually got built and is operating.
 - B. Public demand and economic development.
- 34. LYNX
 - A. It's the most efficient use of federal and private funding.
 - B. Continuing support
 - C. Public demand and local politics played a large role. Federal funds were relied on heavily, especially with no state income tax.
- 35. Duval Road/I-295 interchange
 - A. Interchange project was paired with another improvement – the “south access road” which created a complete new intermodal access corridor serving Jacksonville International Airport and improved mobility for both air passengers and freight carriers alike. Its completion relieved congestion along the primary airport road access and improved air quality as a result.
 - B. Interchange project was identified as a congressional demonstration project in the Surface Transportation Act. The “south access road” connector was a Florida Fast Track project that gained funding when the FL high speed rail was struck initially from the state budget.
- 36. Florida intrastate highway system
 - A. well planned and priority funded
 - B. Appointed FIHS coordinator in each district – held regular meetings – statewide and local
 - C. Economic development for state, movement of freight and goods through out state.

37. I-75 improvements
38. Major widening of large portion of the interstate system
39. US 1 six lane improvements
40. Four laning 2-lane highways
 - A. Paid attention to MPO
 - B. Public demand
 - C. Planning process
 - D. Economic considerations
 - E. Political factors
41. LYMMO
42. Extension of Amtrak service down east coast of Florida
 - A. State DOT personnel attended several meetings regarding the extension of service
 - B. Nine cities were affected the mayors or representatives met with Governor Jeb Bush who approved the necessary funding to initiate service.
43. Intermodal trade corridors to interface seaports with highways
 - A. Project enhances close coordination and working relationship between public/private sectors on an ongoing basis.
 - B. Ongoing leadership to keep project moving; funding for initial capital improvements and public/private implementing operation.
 - C. Economic consideration and overall demand for fluidity of people and freight movement to meet needs of a global economy and growing population in Florida.
44. Channel improvements at Port Everglades in conjunction with I-595 expansion and Ft. Lauderdale/Hollywood airport expansion
 - A. The channel improvements correctly anticipated the trend toward deeper-draft vessels. Airport growth mirrored increased travel demand and cruise industry growth. I-595 provides a seamless sea-lane to interstate highway freight connection and the shortest airport to cruise terminal connections in the U.S.
 - B. Maintenance of port and airport traffic during I-595 construction.
 - C. Statewide systems planning
45. The Links project in Hillsborough County
 - A. Maybe not the best, but at least I'm familiar with the project – it links several major intercounty corridors with Tampa International Airport.
 - B. Provided a good interface between state officials and local planning/political groups.
 - C. Economic and political support for enhanced intercounty connections that access a major international airport. Public support has also been strong.
46. High speed rail initiative
 - A. The citizens passed a constitutional amendment, I believe because they are tired of us policy makers not dealing with the transportation deficiencies in the state.
47. Tri Rail
 - A. Efficient alternative to traffic gridlock
 - B. I-95 congestion
48. High speed rail from Miami to Orlando
 - A. On state-wide ballot
49. High speed rail
 - A. Politics

50. Relocation of Panama City-Bay County International airport
 - A. Involves a private partner
 - B. Environmental factors and political factors, and public demand
51. Miami Intermodal Center
 - A. Innovative funding; public-private partnership; innovative contracting
 - B. Staffing
 - C. Critical need to make airport competitive; congestion relieve
52. Miami Intermodal Center
53. Miami Intermodal Center
54. Miami Intermodal Center
 - A. Commitment from elected officials.
 - B. Leadership
55. Miami Intermodal Center
56. Miami Intermodal Center
57. Miami Intermodal Center
 - A. Economic and public demand
58. Miami Intermodal Center
 - A. Federal highway and transit has identified the MIC as a project of national significance.
 - B. Provided the leadership
 - C. The adoption of ISTEA in 1991 provided the funding flexibility for the FDOT to take the lead, completed the NEPA process and move into implementing the project.
59. Miami Intermodal Center.
60. Miami Intermodal Center
 - A. Economic and international trade
61. Miami Intermodal Center
62. Miami Intermodal Center
63. Miami Intermodal Center
64. Miami Intermodal Center
 - A. Congestion, proximity of several means of transportation
65. Orlando airport development
 - A. Provided new airport option to growing international passenger traffic at Orlando.
 - B. Public necessity and convenience
66. Orlando International Airport
67. Orlando International Airport
 - A. Serves as a gateway to the world and once complete will provide hub for several forms of transportation.
68. Orland International Airport
 - A. There are very many tourists/business people entering this region daily. The aforementioned airport is one of the most efficient airports in the country
 - B. A number of grant opportunities
 - C. Economic consideration/public demand

Respondents next were asked a series of questions about the “best project” selected. Items 28-33 ask about the extent to which this project led to several desirable

outcomes. The greatest agreement is that the named project led to more connectivity (Item 30), followed closely by a perceived increase in mobility (Item 29). Although not as strong, respondents also agree that the project they identified led to more choice (Item 28), increased energy efficiency (Item 31) and other environmental benefits (Item 32), and reduced congestion (Item 33).

Next, there were a series of items asking about “champions” of this “best project.” Three entities stand out as being particularly supportive: the Florida Department of Transportation (Item 36), the city or county government (Item 40), and the MPO (Item 37). The U.S. DOT (Item 35), transit agencies (Item 39), and the private sector (Item 41) receive neutral evaluations. It should be noted that the “Other” category (Item 43) was rated rather favorably, but only 26 individuals responded to this item.

The last section of the questionnaire asked specifically about the state DOT’s contribution to this project. There is agreement that FDOT’s most significant act was in providing funding (Item 44). The Department also assisted in project planning (Item 46) and was willing to take on a leadership role (Item 45). FDOT receives its lowest rating for the role it played in getting public involvement (Item 47).

F. LOUISIANA

Introduction

The Louisiana Department of Transportation and Development (LDOTD) describes its role as being to develop, implement, and administer programs and projects that impact the state's highways, bridges, airports, waterways, rail and public transportation systems. Its vision is to be the leader in transportation and water resources by exceeding customer expectations. The organizational mission is to enhance quality of life and foster economic growth in an environmentally-sensitive manner by managing resources, planning effectively, improving safety, preserving and operating infrastructure, and advancing mobility and access.

The department's strategic plan established six overall, lasting goals, known as the "simple six," that guide its work activities:

- Plan effectively
 - Provide strategic direction for a seamless, multimodal transportation system and for the state's water resources
- Manage resources
 - Foster institutional change for the efficient and effective management of people, programs, and operations
- Improve safety
 - Provide a safe transportation and flood control system to protect lives and property
- Preserve the system
 - Preserve the state transportation and water resources infrastructure
- Operate the system efficiently
 - Provide for the effective and efficient operation of the transportation network and water resources systems
- Advance mobility and access
 - Improve transportation mobility and access⁷⁸

LDOTD has seven stated goals for 2005-10. These are:

1. Foster institutional change for the efficient and effective management of people, programs, and operations through innovation and deployment of applicable technologies
2. Provide a save and efficient transportation and flood control infrastructure to protect lives and property
3. Improve the quality, efficiency and appearance of the state highway system
4. Preserve the state transportation and water resources infrastructure
5. Enhance and implement integrated financial and project management systems

⁷⁸ LA DOTD Annual Report, July 2002-July 2003.

6. Improve and expand the multi-modal transportation system in Louisiana
7. Provide the highest level of customer service.⁷⁹

Organizational Structure

LDOTD's Secretary and chief executive officer is appointed by and report directly to the Governor. The Secretary is assisted by the Deputy Secretary, the Undersecretary for the Office of Management and Finance, the Chief Engineer for the Office of Highways, the Assistant Secretary for the Office of Planning and Programming, the Assistant Secretary for the Office of Operations, and the Assistant Secretary for the Office of Public Work and Intermodal Transportation⁸⁰. Figure 5 shows the formal structure of this department.

LDOTD consists of nine districts:

- New Orleans (District 02)
- Lafayette (District 03)
- Shreveport (District 04)
- Monroe (District 05)
- Lake Charles (District 07)
- Alexandria (District 08)
- Chase (District 58)
- Baton Rouge (District 61)
- Hammond (District 62).⁸¹

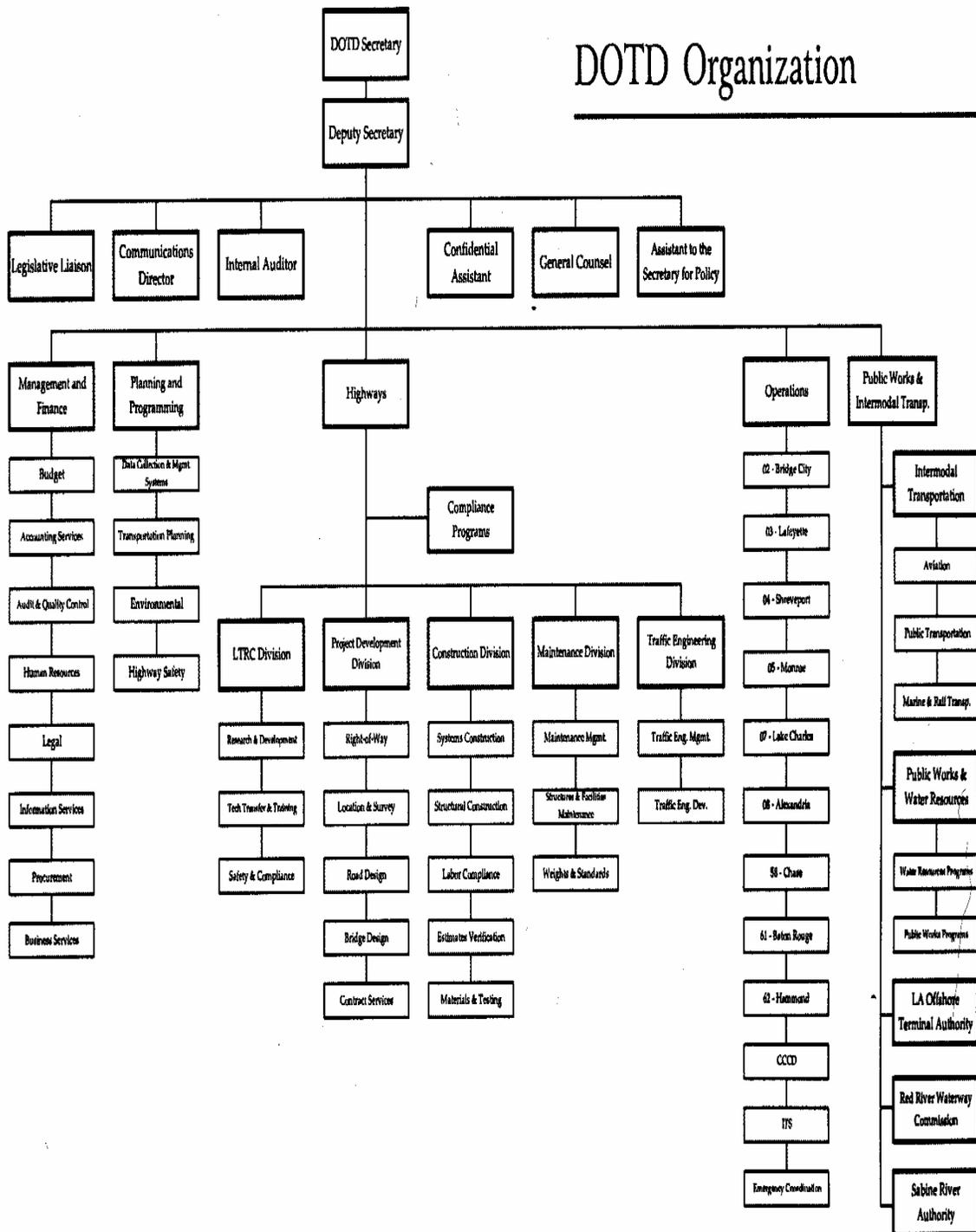
⁷⁹ Louisiana Department of Transportation and Development Five Year Strategic Plan, November 15, 2004.

⁸⁰ LA DOTD Annual Report, July 2002-July 2003.

⁸¹ Ibid.

Figure 5

DOTD Organization



Transportation Infrastructure Model for Economic Development

The TIMED (Transportation Infrastructure Model for Economic Development), originally established in 1989 by Act 16 of the Louisiana Legislature and endorsed by a vote of the people, this program is the single largest transportation program in state history. The \$3.8 billion improvement program includes widening 500 miles of state highways to four lanes on 11 project corridors, widening and/or new construction on three major bridges and improvements to both the Port of New Orleans and Louis Armstrong International Airport. The program is designed to enhance economic development in Louisiana through an investment in transportation projects. The TIMED Program mission is to foster economic development throughout the state of Louisiana and enhance the quality of life for its residents through an investment in transportation projects.

To fund the program through 2005, the legislation authorized a four cent-per-gallon tax to be levied on all gasoline, motor and special fuels. Additional legislation was passed in 1998 to extend the tax until all TIMED projects are complete.

The TIMED Program will widen nearly 500 miles of two-lane highways to four lanes. These roads include LA 15, LA 3241, U.S. 61, U.S. 90, U.S. 165, U.S. 167, U.S. 171, Earhart Boulevard in Orleans Parish, West Napoleon in Jefferson Parish, Tchoupitoulas Street in New Orleans and WestBank Expressway in Jefferson Parish. The construction on all of these corridors is scheduled to be complete or underway by 2010⁸².

Although not part of the LDOTD, the Louisiana TIMED Managers (TLM) does partner with this Department.

Survey Results

Table F.1 shows that 23 individuals from Louisiana chose to participate in this project.

For the most part, these respondents approve of the leadership role LDOTD is assuming in intermodalism. This is particularly true in regards to the department espousing an intermodal vision (Item 1). Although not as great, survey participants also approve of the Department's support for intermodal projects (Item 2). There are less positive findings, however, for the way LDOTD provides support for intermodal planning (Item 3).

Given the response to the third item, it is not overly surprising that Louisiana respondents are rather ambivalent about the adequacy of the Department's planning process. There are concerns about the use of planning analysis (Item 5) and the extent to which the Department solicits public involvement (Item 10). There are slightly greater doubts about whether LDOTD's planning process considers all alternatives (Item 4) and sufficiently incorporates intermodal issues (Item 7).

⁸² <http://www.timedla.com/programoverview/default.asp>

Study participants from Louisiana express concern about the funding processes and regulations of IS/TEA-21. Respondents are uncertain whether IS/TEA-21 ensures that the state meets the legislative intent of this act (Item 13), whether it provides for the flexible use of funds (Item 12), and whether it ensures adequate federal funding (Item 11). They are less likely to say these processes and regulations ensure adequate state funding (Item 10). There is fairly strong agreement that IS/TEA-21 does provide sufficient funds for staff training (Item 8) and for adequate resources for planning (Item 9).

The Louisiana Department of Transportation and Development receives mixed reviews on its ability to meet the needs of different stakeholders. For instance, there is considerable agreement that it does a good job investing in road construction (Item 20) and a fairly good job investing in things that will improve public safety (Item 21). Evaluations are considerably less favorable when the focus is on investments in intermodal projects (Item 24), bus and transit (Item 22), and in pedestrian-related projects (Item 23).

Figure F.1

Table 1: Summary of Louisiana Responses

	Mean	LA Responses
1. Espouse an intermodal vision	3.30	23
2. Support intermodal projects	3.17	23
3. Provide support for planning	2.91	23
4. Consider all alternatives	2.91	23
5. Use planning analysis	3.00	23
6. Public involvement	3.09	23
7. Intermodal Planning	2.91	23
8. Staff Training	2.59	22
9. Sufficient Resources for planning	2.64	22
10. Ensure adequate state funding	2.83	23
11. Ensure adequate fed funding	3.04	23
12. Flexible use of funds	3.00	23
13. Ensure state meets legis intent	3.00	23
14. Good Communication in State	3.26	23
15. Coord between state and MPOs	3.35	23
16. Coord between state and Rural	2.86	22
17. Coord between state and transit	3.09	23
18. Coord between state and freight	3.00	23
19. Coord between state and intermodal	2.91	23
20. investment in Road Construction	3.48	23
21. investment in Safety improvements	3.17	23
22. investment in Bus & Transit	2.39	23
23. investment in Pedestrian	2.14	22
24. investment in Intermodal	2.48	23
28. More Choice	3.25	16
29. Increased Mobility	3.69	16
30. More connectivity	3.75	16
31. Increased Energy Efficiency	3.25	16
32. Increased Environmental Benefits	2.81	16
33. Reduced Congestion	3.38	16
35. USDOT	3.08	13
36. State DOT	4.08	13
37. MPO	3.20	10
38. Rural planning agency	2.00	11
39. Transit Agency	2.27	11
40. City or county govt	3.38	11
41. Private Sector	3.15	13
42. Advocacy Group	3.00	13
43. Other	4.33	3
44. Provided funding	3.92	13
45. Provided leadership	4.00	13
46. Contributed planning	3.77	13
47. Contributed involvement	3.23	13
48. Overall rating	3.12	19

The questionnaire used in this study included several open-ended questions in addition to the closed-end items. The first such item to be considered stated the following:

“If you could, what one thing would you change to make your state intermodal transportation planning process better?” The following comments were provided to this item:

1. Improve inter-agency communication
2. Increase trained, experienced staff.
3. Replace “highway” engineers with planners
4. Apply more funding towards it
5. Funding
6. Better supervision by state personnel over private contractors doing state jobs on highways and bridges.
7. Require more attention to transit. Last budget cut transit – took most of it. We still build roads, but when transit is cut people lose jobs.
8. Closer coordination with the MPO
9. Relocating various railroad yards and tracks.
10. Increased funding.
11. Have a committed, aggressive person designated to pursue intermodal transportation.
12. Get them trained and focused beyond highways.

The next item asked: “Are there any other comments you have about your state DOT’s intermodal transportation planning process?” Responses were:

1. From my vantage point, it doesn’t exist.
2. Quality assurance
3. This is a bit issue, but transit is left out. We clog roads with single-occupant cars and wonder why our roads will not hold the traffic.
4. Put more money in planning and construction on priority projects.
5. Tie implementation to planning
6. Keep up the good work.
7. The state’s focus is roads only – they are not doing a good job at that.

Best Intermodal Project

The final section of the survey asked respondents to comment on a specific intermodal project that had been undertaken in their state.:

“Please identify the best intermodal project that has been or is being implemented in your state over the last ten years.”

- A. Are there any other reasons why you consider this to be the best intermodal project in your state?
- B. Were there any other ways that the state DOT contributed to this project?))

- C. What were the key factors that influenced the decision to implement this project (e.g., political factors, economic considerations, planning process, public demand, etc).
1. Port of New Orleans containerization shipment project
 - A. Enhancements to general economic development)
 - C. Political and economic factors were mainly responsible for this development.
 2. New Orleans-Napoleon Avenue wharfs and roads
 - A. Adaptive re-use
 - C. Economic – the changing world of intermodal container transit.
 3. Tchoupitoulas Street corridor, New Orleans
 - A. A major intermodal access improvement to key New Orleans port terminal.
 - C. This project included in statewide economic development transportation program funded by a special dedicated fuel tax.
 4. Port improvements
 - A. Long-term benefits
 5. Making U.S. 90 from Lafayette to New Orleans a part of I-49.
 - C. The voices of the general public and the Governor.
 6. CTC (Baton Rouge) congestion management plan
 - A. It expanded transit services for the first time in over 20 years. For the first time the bus ran after 7 p.m. and on Sunday. Funding cuts and fuel costs have caused it to be cut back some in 2001 and 2002.
 - B. Only through the MPO, not directly
 - C. A lot of public pressure from advocacy groups. EPA pressure on air quality and CMAQ fund availability put local government on the spot. They would have rather built more roads.
 7. Airbase reuse
 - A. Because it is in a central location! Central Louisiana no more than 3.5 hours from any metropolitan area.
 8. Port construction and development priority program
 - B. Implemented the project once approved by the voters.
 - C. State passed a fuel tax for a transportation fund, a portion funding different modes: highway, rural transportation fund and port funding.
 9. Development of the statewide intermodal plan
 10. New Orleans
 11. Improving the Port of New Orleans uptown facilities.
 - A. There was a need for the improvements because of problems at [uninterruptible] Road and MGO
 - C. Economic considerations
 12. I-510
 13. New Orleans RTA intermodal facility.
 14. Expanding Napoleon Avenue wharf facilities

Respondents were given a series of statements asking about the project they identified as “best.” By far, the most outcomes of these best projects were greater connectivity (Item 30) and increased mobility (Item 29). There also was a reduction in

congestion (Item 33), greater choice was made available (Item 28), and energy efficiency increased (Item 31). Note that few of these projects were said to lead to increased environmental benefits (Item 32).

The next items asked about the “champion” of these best projects. The Louisiana respondents clearly feel their state DOTD was the leading advocate (Item 36). A distant second was city or county government (Item 40). By far, the groups identified as least likely to have advocated this project were transit agencies (Item 39) and rural planning agencies (Item 38).

The last closed-end survey items asked specifically about the state DOT’s contribution to the project. Apparently the LDOTD did well in all aspects. Respondents describe this Department as providing leadership (Item 45), funding (Item 44), and planning (Item 46).

G. MISSISSIPPI

Introduction

The Mississippi Department of Transportation (MDOT) is overseen by the Mississippi Transportation Commission which consists of three elected members, one from each of the three Supreme Court districts of the state.

MDOT is responsible for providing a safe intermodal transportation network that is planned, designed, constructed and maintained in an effective, cost efficient, and environmentally sensitive manner. The Department has developed a set of seven goals. These goals are multimodal and comprehensive in scope. The order of the goals does not represent priority. They are all important and interdependent.

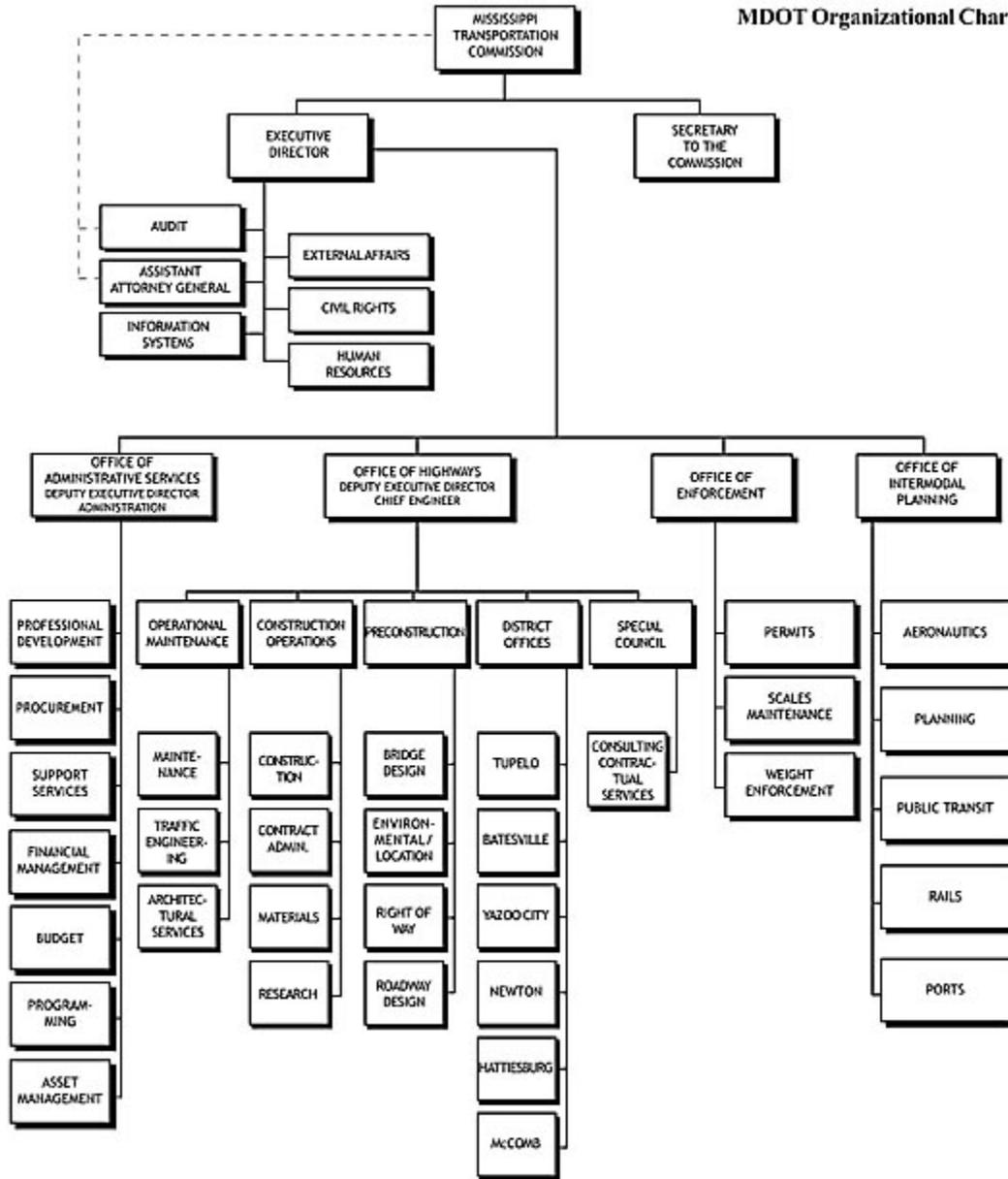
- Goal 1: Accessibility and Mobility
 - Improve Accessibility and Mobility for Mississippi's People, Commerce and Industry.
- Goal 2: Safety
 - Ensure High Standards of Safety in the Transportation System.
- Goal 3: Maintenance and Preservation
 - Maintain and Preserve Mississippi's Transportation System.
- Goal 4: Environmental Stewardship
 - Ensure that Transportation System Development is Sensitive to Human and Natural Environment Concerns.
- Goal 5: Economic Development
 - Provide a Transportation System that Encourages and Supports Mississippi's Economic Development.
- Goal 6: Awareness, Education and Cooperative Processes
 - Create Effective Transportation Partnerships and Cooperative Processes that Enhance Awareness of the Needs and Benefits of an Intermodal System.
- Goal 7: Finance
 - Provide a Sound Financial Basis for the Transportation System.

Organizational Structure

Figure 6 shows the formal structure of this Department.

Figure 6

MDOT Organizational Chart

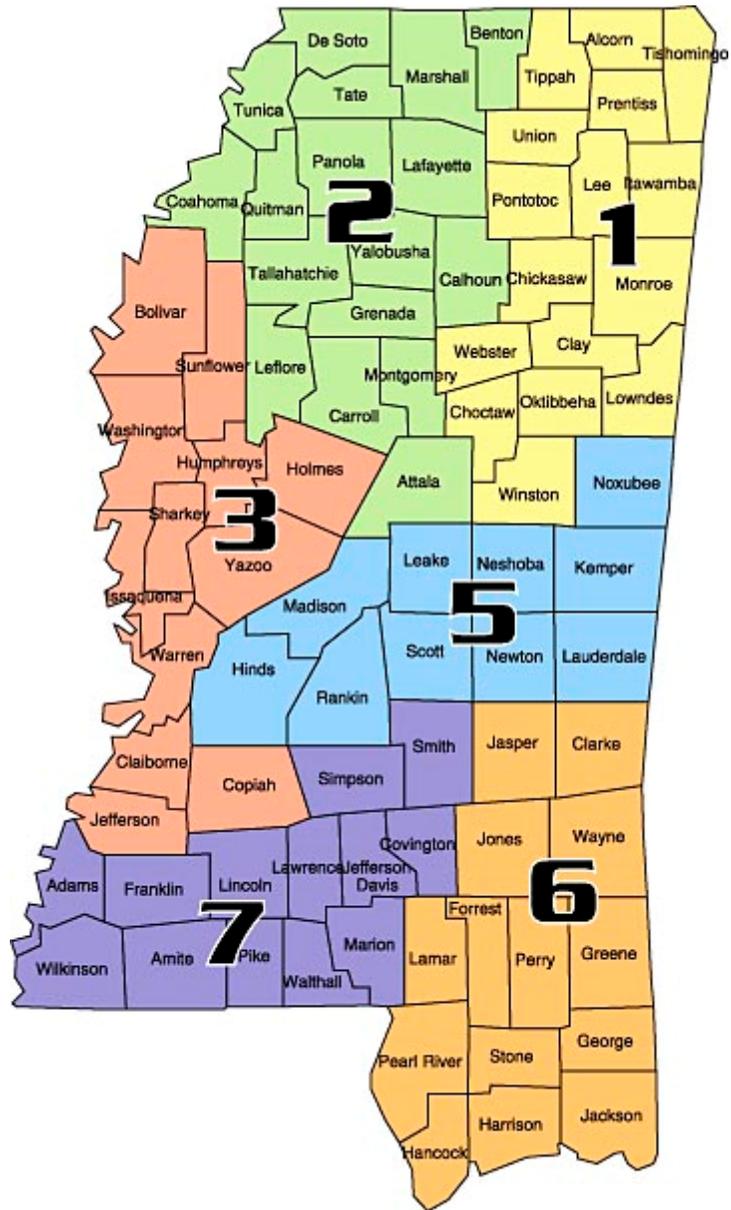


MDOT consists of the following divisions:

- Administration
- Aeronautics
- Appeals
- Asset Management
- Audit
- Bridge
- Budget
- Civil Rights
- Commission
- Construction
- Consultant Services
- Contract Administration
- Environmental
- Financial Management
- Human Resources
- Information Systems
- Law Enforcement
- Legal
- Maintenance
- Materials
- Permits
- Planning
- Ports and Waterways
- Procurement
- Professional Development
- External Affairs
- Public Transit
- Rails
- Research
- Right of Way
- Roadway Design
- Support Services
- Traffic Engineering

The state is divided into six districts (see Figure 7). Each district contains a District Engineer who is responsible for coordinating, planning, design, construction and maintenance of the intermodal transportation network within the counties making up that district.

Figure 7



Office of Intermodal Planning

As shown in Figure 6, MDOT has an office of Intermodal Planning. The Director of this office is responsible for multimodal activities of the Department. The modes consist of air, rail, public transit and highways. The divisions under this office are Aeronautics, Public Transit, Rails and Planning.

- Aeronautics
 - The Aeronautics Division is responsible for establishing programs to improve the services of the 76 airports owned by the public. These services are provided through funds from both federal and state sources. The division also produces Mississippi Aeronautical charts.
- Public Transit
 - The Public Transit Division administers grants to develop, implement and manage general public and specialized transportation programs. These programs include general transportation projects in areas with a population less than 50,000; transportation for the elderly and/or disabled; allocation and replacement of vehicles used in public transit service; and training, technical assistance and research support for rural transit programs.
- Rails
 - The Rails Division is responsible for programming rail/highway safety projects; resolving rail/highway congestion problems; inspection of tracks, signals and crossings; and administering state and federal grant funds.
- Planning
 - The Planning Division provides the Transportation Commission, MDOT management, the Mississippi Legislature and the United States Department of Transportation with transportation planning data and studies to aid in the decision making process. This is done by providing special feasibility studies, transportation management systems and specialized reports. The division collects traffic and roadway characteristics inventories, as well as financial and other data to support the process. Data is made available through reports, databases, maps, etc. Other responsibilities include conducting noise studies; coordinating the Transportation Enhancement program, the MDOT metric conversion, and the bicycle programs; and providing public transit technical and planning support.
- Ports and Waterways
 - The Ports and Waterways Division develops, promotes, and protects the commercially navigable waterways, ports and harbors for economic development and job creation for the general welfare and benefit of the

people in the State of Mississippi. Its primary responsibilities include: studying and coordinating efforts designed to promote the development of the navigable waters in the State of Mississippi for water transportation, encourage and coordinate the development of both new and existing river and deep-sea ports and harbor facilities, and to recommend to the proper officials recreational restrictions in critical commercial navigation areas in order to promote public safety and expedite water transportation

Survey Results

As can be seen in Table G.1, 30 stakeholders in Mississippi elected to participate in this study.

Mississippi's Department of Transportation generally is seen as providing a degree of leadership for intermodalism. For instance, the department is seen as espousing an intermodal vision (Item 1), as providing support for projects of this type (Item 2), and for its planning efforts in intermodalism (Item 3).

In regards to the adequacy of its planning process, MDOT is seen as having some room for improvement. The department does a fairly good job of using formal planning analyses (Item 5) and considering all alternatives (Item 4). The evaluations of its incorporation of public involvement into the planning process (Item 6) and its use of intermodal planning (Item 7) are less favorable.

Respondents are somewhat less positive toward the funding provisions and regulations of IS/TEA-21. They question whether these are sufficient to ensure adequate staff training (Item 8), to provide sufficient resources for planning (Item 9), or to ensure adequate federal (Item 11) or state funding (Item 12). Study participants are slightly more likely to feel IS/TEA-21 provides for the flexible use of funds (Item 12) and that it ensures the state meets the legislative intent (Item 13).

Those taking part in this study seem feel the state DOT does a fairly good job of coordinating and communicating efforts in support of intermodalism. The greatest degree of cooperation is said to be between the state and transit entities (Item 17). The MPOs (Item 15) and freight entities (Item 18) are believed to work relatively well with MDOT. There are some concerns, however, about the degree of coordination between the state and intermodal concerns (Item 19). But the least coordination is said to be between the state DOT and the rural planning agencies (Item 16).

As far meeting different transportation needs, there is a clear "break" between highway related activities and all others. Note that MDOT is seen as making considerable investments in road construction (Item 20) and in safety improvements (Item 21). Quite different attitudes are expressed, however, when the subject deals with state investments in bus and transit (Item 22) and in intermodal needs (Item 24). By far,

the least favorable attitudes are toward the state’s investment in pedestrian needs (Item 23).

Table G.1

Table 1: Summary of Mississippi Responses

	Mean	MS Responses
1. Espouse an intermodal vision	2.97	30
2. Support intermodal projects	3.07	30
3. Provide support for planning	3.00	29
4. Consider all alternatives	2.83	30
5. Use planning analysis	2.86	29
6. Public involvement	2.73	30
7. Intermodal Planning	2.73	30
8. Staff Training	2.46	28
9. Sufficient Resources for planning	2.43	30
10. Ensure adequate state funding	2.57	30
11. Ensure adequate fed funding	2.59	29
12. Flexible use of funds	2.62	29
13. Ensure state meets legis intent	2.79	29
14. Good Communication in State	2.83	30
15. Coord between state and MPOs	2.84	25
16. Coord between state and Rural	2.44	25
17. Coord between state and transit	2.93	27
18. Coord between state and freight	2.82	28
19. Coord between state and intermodal	2.76	29
20. investment in Road Construction	3.63	30
21. investment in Safety improvements	3.20	30
22. investment in Bus & Transit	2.38	29
23. investment in Pedestrian	2.10	29
24. investment in Intermodal	2.23	30
28. More Choice	3.35	20
29. Increased Mobility	3.75	20
30. More connectivity	3.85	20
31. Increased Energy Efficiency	3.11	18
32. Increased Environmental Benefits	3.11	19
33. Reduced Congestion	3.47	19
35. USDOT	3.18	22
36. State DOT	3.27	22
37. MPO	2.53	19
38. Rural planning agency	1.85	20
39. Transit Agency	2.55	20
40. City or county govt	3.52	21
41. Private Sector	2.35	20
42. Advocacy Group	2.40	20
43. Other	3.11	9
44. Provided funding	3.10	20
45. Provided leadership	3.19	21
46. Contributed planning	3.19	21
47. Contributed involvement	2.67	21
48. Overall rating	2.87	25

The questionnaire used in this study included several open-ended questions in addition to the closed-end items. The first such item to be considered stated the following:

“If you could, what one thing would you change to make your state intermodal transportation planning process better?” The following comments were provided to this item:

1. Include more bicycle and pedestrian facilities.
2. Provide specific funding for intermodal projects and activities in a significant manner.
3. Have the DOT work effectively with local governments on the front end of projects, listening to a broader range of potential projects, activities, and solutions, and collaborating toward consensus building.
4. Fire the whole bunch – vote out the commissioners and start over!
5. Educate individuals involved.
6. Funding for transit – there is none
7. That they would have a vision, a plan, and take action.
8. Better road/rail/air coordination.
9. Use of (of the incentive to use) available technology to “track” intermodal transportation – GPS, transponders, etc.
10. Appoint the commissioners
11. Include more private sector participants (logistics, shipping and other freight professionals).
12. More intermodal communication with local agencies. We communicate well with the airport side of DOT. However, the DOT has not done anything to educate us how to grow and fund intermodalism at our facility.
13. Although progress has been made, MDOT needs to move farther from “highway” mentality toward a “transportation” mentality.
14. Re-prioritize the role of intermodalism.
15. To have funds to increase staffing in the various “other modes” departments.
16. Better cooperation and help for local government.
17. Have MDOT seriously sit down with local government and plan projects that would promote better transportation routes within a region.
18. State DOT remains primarily geared to roads and is heavily comprised of former “highway department” personnel in supervisory positions. As positions open, strong consideration should be given to candidates with port, airport, urban planning and/or regional transit background and experience.

The next item asked: “Are there any other comments you have about your state DOT’s intermodal transportation planning process?” Responses were:

1. Little consideration for non-motorized transportation.
2. Efforts made in this arena are typically viewed as half-hearted. A good front is put on with regard to support for studies, minimal project funding, etc., but any real commitment to support for non-highway modes is relatively non-existent.
3. The DOT needs better communication among its various divisions and departments.

4. DOT and legislature only think there is a state of Mississippi North of I-20 – the South part is actually Cuba.
5. They make an effort to try and institute intermodal transit; having only lip service because there is no funding allocated to transit in MS.
6. It seems the DOT is in “get by” mode. I wish they would push for some sort of overall plan.
7. Planning coordinator is good at working with entities, but overall a greater education is needed.
8. State DOT conducted ports impact and needs study to promote multimodal funding program
9. The state, through federal funds, has a program for intermodal connectors - \$2.5 million is made available each year for the infrastructure improvements of the qualified connector roads. 80% grant, 20% local.
10. Let local governments be a part of the planning.
11. I have personally been in meetings where MDOT officials refused to listen to local governmental boards. To be totally honest, they left the meetings.

Best Intermodal Project

The final section of the survey asked respondents to comment on a specific intermodal project that had been undertaken in their state.:

“Please identify the best intermodal project that has been or is being implemented in your state over the last ten years.”

- A. Are there any other reasons why you consider this to be the best intermodal project in your state?
 - B. Were there any other ways that the state DOT contributed to this project?
 - C. What were the key factors that influenced the decision to implement this project (e.g., political factors, economic considerations, planning process, public demand, etc.)
1. Meridian
 2. Railroad depot restoration in Jackson and Meridian
 - A. They were developed as multimodal projects [facilities] to connect rail, bus, and taxi services.
 - B. The state helped guide the local government through the project development and construction process.
 - C. Cities took advantage of available federal funds to restore dilapidated buildings.
 3. Opening of the KCS ramp in Richland, MS
 4. Union Station
 5. Highway 84 and Highway 98
 - A. Planning process by MPOs
 6. Meridian, Ms, Ms Gold Coast, Jackson
 - A. Project on MS Coast/CTA – using alternative fuel vehicles – hybrid/electric

- B. Only by developing multi-plan expounding the need for multi-modal transit.
MDOT says we need it but won't assist in funding.
- C. Economic considerations, public demand, air quality issues and traffic congestion.
- 7. Refurbishing Gulfport harbor and port
 - A. It's the only one that comes to mind – and it is big.
- 8. City of Meridian train station.
- 9. Use of technology in tracking of trucking goods
- 10. MDOT's provision of NHS funds to the designated intermodal connectors
 - A. Political, economic
- 11. The Port Connector road
- 12. The DOT finally recognizes the ports
- 13. Intermodal connector improvement program
 - A. This is the only MDOT program with funds available for port projects.
- 14. Intermodal Connector Improvement Program – This program is for the purpose of improving the connectors, usually roadways, between the different modes of transportation from including maritime, air, and transit.
 - A. Foreign trade study indicating the freight increase in the near future.
- 15. Union Station Center – Jackson
- 16. The best projects are the present 5 year – 2.5 million yearly program. We are in the fourth year 2002. The selection committee will meet April 17, 2002 at MDOT headquarters in Jackson to award up to \$2.5 to allow infrastructure improvements.
 - A. Many of these projects would not be done if the 80% grant funds were not available.
 - B. I think it was due to two factors – the executive director at the time the funds were made available by the Feds and the attitude of 2 of the 3 MDOT Commissioners and hopefully the third Commissioner now has a better understanding of intermodalism in our state.
- 17. Four land highway system
 - A. Encourages economic development.
 - B. Economic considerations, political factors.

Study participants were asked a series of questions about the project they identified as “best.” One set of items pertained to the benefits of this project. The most commonly identified benefits were more connectivity (Item 30) and increased mobility (Item 29). Reduced congestion (Item 33) and greater choice (Item 28) also were commonly cited positive outcomes of this project. Respondents were much less likely to believe these projects led to increased energy efficiency (Item 31) or directly benefited the environment (Item 32).

Potential “champions” of this project fall into two broad groups. One group consists of city or county governments (Item 40), U.S. DOT (Item 35) and the Mississippi DOT (Item 36). All of these groups were credited with being effective advocates of this “best” intermodal project. The second group – transit agencies (Item 39), MPOs (Item 37), advocacy groups (Item 42), and especially rural planning agencies (Item 38) – were not viewed as championing this project.

The last items asked about MDOT's contribution to this project. The two most cited contributions were leadership (Item 45) and planning (Item 46). The department receives some credit for its financial support (Item 44). By far, the least favorably rated contribution was the degree to which the Department was involved in this project (Item 47).

3. COMPARATIVE ANALYSIS

This section compares the results obtained from analyses of the Arizona, Colorado, Texas, Alabama, Florida, Louisiana, and Mississippi DOTs. From an analysis of statewide comprehensive plans, it is clear that each state is beginning to pay much more attention to intermodal issues. Later plans especially tend to devote more discussion to considering a variety of modes, rather than just focusing on highways. There are an increasing number of intermodal projects identified in comprehensive plans, and an increasing number of specific plans being produced on intermodal aspects of transportation.

When comparing the results from the surveys and interviews, there is a certain degree of similarity across the states (see Table 3.1). There is not a huge range in the quantitative results as respondents tended to rate most state DOT efforts in intermodal planning from 2 (to a little degree) to just over 3 (to some degree). The ratings for assessing the overall performance in intermodal planning ranged from a high of 3.22 for Florida to a low of 2.10 in Arizona.

Table 3.1
Survey Results for Intermodal Planning Assessment

	AZ	CO	TX	AL	FL	LA	MS
1. Espouse an intermodal vision	2.85	2.85	2.83	2.25	3.39	3.30	2.97
2. Support intermodal projects	2.78	2.79	2.80	2.58	3.25	3.17	3.07
3. Provide support for planning	2.56	2.64	2.76	2.50	3.19	2.91	3.00
4. Consider all alternatives	2.63	2.60	2.70	2.37	3.07	2.91	2.83
5. Use planning analysis	2.52	2.64	2.54	2.48	3.15	3.00	2.86
6. Public involvement	3.15	3.10	3.17	3.04	3.33	3.09	2.73
7. Intermodal Planning	2.62	2.60	2.59	2.33	2.99	2.91	2.73
8. Staff Training	2.44	2.47	2.40	2.59	2.71	2.59	2.46
9. Sufficient Resources for planning	2.30	2.39	2.55	2.35	2.74	2.64	2.43
10. Ensure adequate state funding	2.23	2.20	2.41	2.22	2.91	2.83	2.57
11. Ensure adequate fed funding	2.63	2.40	2.64	2.58	2.79	3.04	2.59
12. Flexible use of funds	3.00	2.54	2.91	2.48	2.87	3.00	2.62
13. Ensure state meets legis intent	2.74	2.63	2.70	2.52	3.12	3.00	2.79
14. Good Communication in State	2.96	2.68	3.11	2.74	3.30	3.26	2.83
15. Coordination between state and MPOs	3.52	2.76	3.35	3.22	3.66	3.35	2.84
16. Coordination between state and Rural	3.54	2.71	2.68	2.48	3.01	2.86	2.44
17. Coordination between state and transit	3.00	2.89	2.98	2.48	3.31	3.09	2.93
18. Coordination between state and freight	2.92	2.71	2.38	2.56	3.03	3.00	2.82
19. Coordination between state and intermodal	2.84	2.55	2.70	2.36	3.12	2.91	2.76
20. investment in Road Construction	3.67	3.65	3.83	4.12	3.53	3.48	3.63
21. investment in Safety improvements	3.73	3.38	3.67	3.61	3.44	3.17	3.20
22. investment in Bus & Transit	2.37	1.90	2.40	1.91	2.72	2.39	2.38
23. investment in Pedestrian	2.44	2.13	2.35	2.29	2.80	2.14	2.10
24. investment in Intermodal	2.44	2.29	2.32	2.21	2.69	2.48	2.23
25. Overall rating	2.10	2.53	2.56	2.63	3.22	3.12	2.87

Ratings Key

1=not at all
2=to a little degree
3=to some degree
4=to a great degree
5=to a very great degree

Those categories for which all state DOTs received relatively high scores between 3 (to some degree) and 4 (to a great degree) were: public involvement (except Mississippi with a score of 2.73 in this category) investment in roadway construction (Alabama received a very high score of 4.12 in this category), and investment in safety improvements. Likewise, the lowest rated categories across the seven states were: state DOT support for staff training, adequate state funding for intermodal projects, investment in transit and bus service, investment in bicycle and pedestrian facilities, and investment in intermodal connecting facilities.

Among this sample of seven state DOTs, results indicated that Florida and Louisiana generally received higher ratings across the board than the others. Florida received scores over 3.0 in 16 of the 25 categories, while Louisiana had scores over 3.0 in 4 of the 25 categories (including a score of 3.12 in its overall rating. In 20 of the 25 categories, Florida had the highest score among the seven states, while Alabama had the lowest score in 12 categories. There were a few categories in which some notable differences were apparent. Florida received a score of 3.39 in espousing an intermodal vision, while Alabama's score was only 2.25. Concerning coordination between the state DOT and MPOs, Colorado (2.76) and Mississippi (2.84) had lower scores than the other states, especially Florida (3.66) and Arizona (3.52) which scored highest on this dimension. This result was corroborated by some of the qualitative comments, especially from Colorado and Arizona. Regarding coordination between the state DOT and rural planning organizations, Alabama (2.48) and Mississippi (2.44) were by far the lowest rated states, with Arizona receiving a high score of 3.54.

With regard to the best intermodal projects in each state, respondents tended to rate these quite high (See Table 3.2). Respondents felt that the intermodal projects increased mobility and provided more connectivity. Note that the Western states were much more likely to say these projects increased energy efficiency and increased environmental benefits to a fairly great degree (all scores between 3.5 and 4.0), than were the Southeastern states. Alabama scored particularly low on these issues. Respondents generally felt that these projects helped to reduce congestion to a slightly lesser degree. The only major differences in responses across the states were that respondents in Colorado (3.48) and Texas (3.27) felt that the state DOT championed the best intermodal projects to a higher degree than did the respondents in Arizona (2.68). However, two Southeastern states – Florida (3.78) and Louisiana (4.08) – most strongly felt their state DOTs to be the leading advocates of these projects. Also, the state DOTs in Colorado (3.57), Texas (3.44), and by far Louisiana (4.00) were judged to have provided more leadership on intermodal projects than for the other states. In most of the other categories, the results were relatively similar across the states, although Alabama tended to be lowest in general.

**Table 3.2
Survey Results for Best Intermodal Projects**

	AZ	CO	TX	AL	FL	LA	MS
To what extent does the best intermodal project provide:							
29. Increased Mobility	3.84	3.93	4.00	2.85	3.76	3.69	3.75
30. More connectivity	3.81	3.73	3.90	3.08	3.87	3.75	3.85
31. Increased Energy Efficiency	3.67	3.61	3.76	2.31	3.51	3.25	3.11
32. Increased Environmental Benefits	3.86	3.73	3.74	2.00	3.50	2.81	3.11
33. Reduced Congestion	3.24	3.27	3.59	2.54	3.49	3.38	3.47
To what extent were the following actors involved in championing the project:							
35. USDOT	3.00	3.54	4.20	3.17	3.05	3.08	3.18
36. State DOT	2.68	3.48	3.27	3.08	3.78	4.08	3.27
37. MPO	3.11	3.39	3.33	2.50	3.59	3.20	2.53
38. Rural planning agency	2.89	2.46	3.81	1.78	1.87	2.00	1.85
39. Transit Agency	3.18	2.93	2.42	2.40	3.10	2.27	2.55
40. City or county govt	3.50	3.91	3.32	3.45	3.69	3.38	3.52
41. Private Sector	3.21	3.43	3.50	2.36	3.04	3.15	2.35
42. Advocacy Group	3.06	3.24	3.39	2.27	3.02	3.00	2.40
43. Other	3.31	3.60	3.78	3.80	3.42	4.33	3.11
In what manner did the state DOT contribute to the project:							
44. Provided funding	3.18	3.39	3.64	2.73	3.72	3.92	3.10
45. Provided leadership	2.72	3.57	3.44	2.64	3.48	4.00	3.19
46. Contributed planning	2.20	2.85	2.51	2.73	3.53	3.77	3.19
47. Contributed involvement	2.67	3.03	3.00	2.27	3.29	3.23	2.67

Ratings Key

- 1=not at all
- 2=to a little degree
- 3=to some degree
- 4=to a great degree
- 5=to a very great degree

In assessing the qualitative comments, several themes are consistent across the state DOTs. A large number of respondents bemoaned the lack of funding for intermodal projects. Some expanded this concern to mention there was insufficient funding across the board for transportation. Many respondents claimed that the state DOTs are still largely focused on roads, and that there is much less investment in transit, bicycle, pedestrian, and intermodal connectors. The comprehensive plans for these states are decidedly intermodal in approach and include a fair degree of material about all of the modes. These states have also conducted a number of specialized intermodal studies. But despite these intermodal visions and plans, the mindset is still largely road-oriented. If state DOTs are to become true Departments of Transportation, then they will also have to cooperate and coordinate with a variety of stakeholders, especially MPOs. In this regard there were mixed responses across the states. In Colorado and Mississippi, there were a number of comments about the lack of coordination and cooperation between the state DOT and the MPOs/rural planning groups. In Arizona and Florida, by contrast, cooperation among these groups was cited as a strength.

4. CONCLUSIONS

In drawing together the major conclusions from this study, it is important to consider the results of our analyses in light of the discussion in Chapter 1 of this report on the early history and background of state DOTs and, especially, the findings from our review of the literature on statewide multimodal/intermodal planning.

As we noted in Chapter 1, all state DOTs were originally started as departments of highways in the late 1800s/early 1900s period. These departments grew most rapidly during the early phases of the Interstate Highway era in the 1950s and 1960s, thus becoming infused with the mission of building the Interstate Highway System. By the 1970s, however, there was growing recognition that highway construction was only a part of the universe of functions that were involved in the movement of people and freight. Accordingly, these agencies began to move beyond highways and started to consider the full range of transportation modes in their planning. Virtually all state departments of highways changed their names to state departments of transportation during the 1970-1990 period though their primary mission remained focused on completing the interstate system. By the 1990s, however, not only had the interstate era come to a close but a new transportation vision had emerged, one based on intermodalism. This vision was formally enshrined with the promulgation of the groundbreaking ISTEA legislation which explicitly mandated the adoption of new approaches that have been fundamentally transforming statewide transportation planning.

Since ISTEA, state DOTs have had to expand their horizons and more fully incorporate aviation and airports, bicycle and pedestrian transportation, maritime transportation and seaports, public transportation (including buses, rail transit, ferries, and other transit modes), railroads, and trucking into their long-range and short-range statewide transportation plans. Research has shown that state DOTs have made significant progress in becoming more intermodal agencies, and many have been cited for developing best practices in various categories of planning activities. Institutional structures have changed to reflect this expanding role though organizational cultures have not always kept pace with these changes. An increasing number of intermodal projects have been built in virtually every state. State DOTs are adjusting to the increased role that MPOs, rural planning commissions, transit agencies, the freight industry, business interests, environmental organizations, public interest groups, and the public at-large are now playing in transportation planning as the role of transportation, broadly defined, to the economy, environment, and national security becomes more fully recognized.

Yet, research has also shown that the shift to this broader intermodal approach has not been universally embraced. Many state DOTs are still largely highway-focused since a major responsibility continues to be highway maintenance and operations. Many state DOTs remain staffed with a large cadre of highway engineers, and most funding is still directed to the highway mode. As a result, not all state DOTs have embraced an intermodal philosophy to the same degree or adopted policies that promote intermodalism; indeed, some state DOTs have lagged behind others and much remains to be done before all embrace the commitment to intermodalism that some states have already made.

This report was designed to contribute to ongoing research on statewide intermodal planning by examining in detail the situation in several important states in two different regions of the country. We have focused on the efforts of three U.S. western state DOTs—Arizona, Colorado, and Texas—and four southeastern states—Alabama, Florida, Louisiana, and Mississippi—to embrace the changes called for in ISTEA and TEA-21 through analyses of statewide plans, institutional structures, and interviews/surveys culled from knowledgeable observers of the transportation planning processes in these seven states.

Results indicate that these states have made some significant strides in adopting an intermodal approach to planning. All seven have altered their institutional structures to reflect the changes. Arizona DOT has completely revamped its institutional structure and now has an Intermodal Transportation Division that is responsible for its long-range and short-range plans. In 2004, it created new divisions to provide a greater emphasis on public transit and public involvement. Colorado DOT's Division of Transportation Development has grown considerably and now contains an intermodal planning branch that includes transit, bike/pedestrian, and Transportation Demand Management (TDM) units. Greatly expanded freight planning activities are conducted within both the intermodal planning and information management branches while aviation planning is handled within the Division of Aeronautics. Texas DOT has five components contributing to the development of its statewide intermodal plan, including a Multimodal Planning team that provides technical guidance and departmental expertise. Florida, Louisiana, and Mississippi have incorporated intermodal planning as official components of their formal organizational structure.

A review of statewide plans reveals that each of these state DOTs has produced long-range, short-range, and specialized plans that increasingly reflect an intermodal orientation. There is much more focus on alternative modes and discussion of broader economic, environmental, and equity concerns within the later long-range plans than ever before. Elements of many of these long-range plans have been cited by a FHWA study⁸³ as denoting best practices. An increasing number of more specialized plans focusing on intermodal issues and projects is also evident.

However, despite these efforts, the results of the survey show that knowledgeable respondents rated these state DOTs from a score of 2 (“to a little degree”) to slightly above 3 (“to some degree”) in meeting intermodal planning objectives. Even though intermodal objectives are reflected in institutional structures and long-range plans, most respondents generally felt that more could and should be done to improve intermodal planning. Perhaps predictably, a major concern focused on the lack of funding for intermodal projects, especially the degree to which ISTEA and TEA-21 ensure adequate state funding. Respondents rated investments for roads and safety fairly high (between “to some degree” and “to a great degree”) but rated investment for transit, bicycle/pedestrian, and intermodal connectors much lower. Leadership support for

⁸³ Noerager, Kimberly and Lyons, William. 2002. *Evaluation of Statewide Long-Range Transportation Plans*. Prepared for Office of Intermodal and Statewide Planning, Federal Highway Administration, US Department of Transportation. Washington, DC, April.

intermodalism and staff training were generally not rated very high, except for Florida and Louisiana. Some qualitative responses suggested that highway interests still remain dominant and that an intermodal mindset has not permeated throughout the entire transportation policy community—state transportation commission, state legislature, state DOT leadership, state DOT staff—charged with transportation decision-making and planning. Intermodal planning processes generally received only average scores, except for public involvement which was rated more highly. Responses to questions about cooperation and coordination among agencies varied across the states. Arizona generally received higher marks in these categories, as a result of their Casa Grande accords of 1999 which created an effective framework. Respondents also identified the best intermodal projects in each state and were generally quite complimentary toward these – though it must be noted that in some cases there were few to choose from and many involved highway construction in some way or other. Nevertheless, the respondents felt that these projects increased mobility, provided more connectivity, increased energy efficiency, and increased environmental benefits to a fairly great degree.

Given these results, it is important to consider more broadly why respondents from most of these states rated their DOTs as just average when it comes to intermodal planning. It should be said at the outset that geography and settlement history play a large role in explaining the differences in the extent to which states have embraced intermodalism. Most of the states that have been cited by previous research as examples of best practices in intermodal planning tend to have larger populations with relatively high population densities and a large number of metropolitan areas. Many of them also have seaports or major freight activity. Geographically large, mostly rural states with low population densities do not generally rate as high when it comes to intermodalism. These are natural conditions that tend to predispose some states over others when it comes to a broad transportation perspective.

The geography and settlement history of Arizona, Colorado, and Texas reflect some of these points. Even though each has experienced very rapid population and economic growth in recent decades, and their populations are concentrated largely in the major metropolitan areas, they are all large states in geographic area, and thus have large rural areas whose inhabitants are often a powerful political force. Thus, inevitably, there is a fundamental tension between the major metropolitan centers that cry out for more intermodal solutions, and the rural areas throughout the state which demand improved transportation coverage. Hence a large component of funding is necessarily tied to roads and highways. Such decisions regarding geographic resource allocations are central to the issue of the degree of progress in intermodal planning at state DOTs such as those in Arizona, Colorado, and Texas. Similar comments can be made about the southeastern states. Florida, for example, has experienced very rapid population growth, has high population density, a large number of metropolitan areas, and several ports, which seem to be natural preconditions for a more intermodal orientation. Respondents from Alabama, on the other hand, view their state DOT in quite different ways.

Nevertheless, despite geographic diversity and particular local conditions, there is no doubt that the era of intermodalism has arrived. Transportation is no longer viewed

by planners and the public as a question of road building and maintenance. There is a broad understanding and acceptance of the need to consider environmental and social equity issues, of the difficulties in greatly expanding the existing highway system and thus, of the need to utilize the existing infrastructure more efficiently and effectively. Technology will obviously play an important role in this regard but technology will have to be harnessed to a specific vision, one that recognizes the need to use each mode to the fullest possible extent for those functions which it performs best. Thus, these and all other state DOTs must continue to strive to develop an intermodal approach to planning. Although significant progress has been made across the states, more needs to be accomplished before each state has created the kind of transportation system that fully meets the needs of all its citizens.