

GEORGIA DOT RESEARCH PROJECT 1104

FINAL REPORT

**MULTIMODAL NEEDS, CONSTRAINTS, AND  
OPPORTUNITIES: OBSERVATIONS AND LESSONS  
LEARNED FOR GEORGIA AND GDOT**



OFFICE OF RESEARCH

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# *Final Report*

GDOT Research Project RP 11-04

## **Multimodal Needs, Constraints, and Opportunities: Observations and Lessons Learned for Georgia and GDOT**

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## List of Abbreviations Used in This Report

AASHO	American Association of State Highway Officials (now AASHTO)
AASHTO	American Association of State Highway and Transportation Officials
ACT	Area Commission on Transportation
ADA	Americans with Disabilities Act
ADOT	Arizona Department of Transportation
ARC	Atlanta Regional Commission
CAA	Clean Air Act
CDOT	Colorado Department of Transportation
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CPI	Consumer Price Index
CSD/CSS	Context Sensitive Design/Solutions
CSI	Cambridge Systematics Inc.
CTF	Commonwealth Trust Fund
CTP	Comprehensive Transportation Plan
DBPT	Division of Bicycle and Pedestrian Transportation
DLCD	Department of Land Conservation and Development
DMV	Department of Motor Vehicles
DOAV	Department of Aviation
DOT	Department of Transportation
DRI	Development of Regional Impact
DRPT	Department of Rail and Public Transportation
EIS	Environmental Impact Statement
EMO	Environmental Management Office
EOT	Executive Office of Transportation and Public Works

EST	Environmental Screening Tool
ETDM	Efficient Transportation Decision Making
FDOT	Florida Department of Transportation
FTA	Federal Transit Administration
fte	Full-Time Equivalent
FTP	Florida Transportation Plan
GDEcD	Georgia Department of Economic Development
GDOT	Georgia Department of Transportation
GRIP	Governor's Road Improvement Program
GRTA	Georgia Regional Transportation Authority
HMOF	Highway Maintenance and Operating Fund
HOT	High-Occupancy Toll
HOV	High-Occupancy Vehicle
ICIP	Infrastructure Capital Improvements Plan
ILC	Intermodal Logistics Centers
IM	Interstate Maintenance
IMS	Intermodal Management System
ISD	Intermodal Systems Development
ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	Intelligent Transportation System
LOS	Level of Service
L RTP	Long-Range Transportation Plan
MAC	Massachusetts Aeronautics Commission
MAC	Metro Atlanta Chamber of Commerce
MaineDOT	Maine Department of Transportation
MAP-21	Moving Ahead for Progress in the 21st Century Act
MARTA	Metropolitan Atlanta Rapid Transit Authority
MassDOT	Massachusetts Department of Transportation
MBTA	Massachusetts Bay Transportation Authority
MDDOT	Maryland Department of Transportation
MDOT	Michigan Department of Transportation
MHD	Massachusetts Highway Department
MIA	Miami International Airport
MIC	Miami Intermodal Center
MICA	Multimodal Investment Choice Analysis
MMPT	Multimodal Passenger Terminal
MMTD	Multimodal Transportation District
MnDOT	Minnesota Department of Transportation
MPA	Massachusetts Port Authority

MPO	Metropolitan Planning Organization
MTA	Massachusetts Turnpike Authority
MTIP	Metropolitan Transportation Improvement Program
MUMPO	Mecklenburg-Union Metropolitan Planning Organization
MVDB	Motor Vehicle Dealer Board
NCDOT	North Carolina Department of Transportation
NCHRP	National Cooperative Highway Research Program
NCMIN	North Carolina Multimodal Investment Network
NJDOT	New Jersey Department of Transportation
NMDOT	New Mexico Department of Transportation
NS	Norfolk Southern
ODOT	Oregon Department of Transportation
OPP	Office of Policy Planning
OTC	Oregon Transportation Commission
OTP	Oregon Transportation Plan
PARC	Participating Agency Representative Committee
PTF	Priority Trust Fund
RMV	Registry of Motor Vehicles
RPC	Regional Planning Commission
RTA	Regional Transit Authority
RTP	Regional Transportation Plan
RTPO	Regional Transportation Planning Organization
	Safe, Accountable, Flexible, Efficient Transportation Equity Act:
SAFETEA-LU	A Legacy for Users
SCETS	State Comprehensive Enhanced Transportation System Tax
SEHSR	Southeast High-Speed Rail
SIS	Strategic Intermodal System
SIT	Strategic Investment Tool
SRTA	State Road and Tollway Authority
STIP	State Transportation Improvement Plan
STP	Surface Transportation Program
TCRP	Transit Cooperative Research Report
TDM	Travel Demand Management
TEA-21	Transportation Equity Act for the 21st Century
TEU	Twenty-Foot Equivalent Unit
TIGER	Transportation Investment Generating Economic Recovery
TIP	Transportation Improvement Program
TranStat	Transportation Statistics Office
TSP	Transportation System Plan

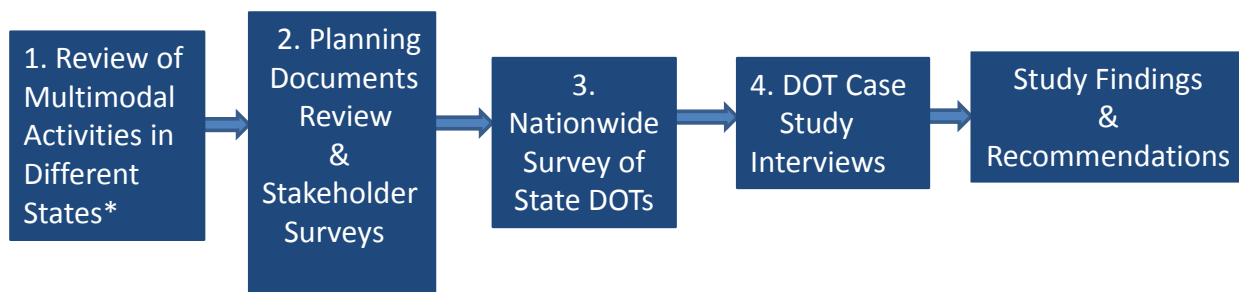
TTF	Transportation Trust Fund
VDOT	Virginia Department of Transportation
VMT	Vehicle Miles Traveled
VPA	Virginia Port Authority
WES	Westside Express Service
WSDOT	Washington State Department of Transportation

## Executive Summary

This report provides an assessment of the needs for, constraints upon, and opportunities available for developing a more broadly encompassing and truly multimodal approach to moving people and goods within the state of Georgia. The study comes at a time when significant funding constraints are likely to continue to hamper the ability of state and regional transportation agencies to plan for steadily growing demands for safe, on-time, and also environmentally acceptable forms of both passenger and freight transportation. Within Georgia, how GDOT helps the state to meet these demands for travel will be a critical part of Georgia's ability to support, compete for, and sustain both its future economic growth and its quality of life. In doing so, an effective and well maintained highway system that connects places both within and outside the state is of necessity a core component of such plans. However, for some time now many transportation professionals have recognized that fiscal limitations on the amount of public funds that can be dedicated to new road building warrants a broader view of how other modes of transportation might also play key roles going forward, in the form of both alternatives and complements to highway travel. The report also comes at a time when significant changes in federal transportation legislation have just occurred, in the form of the Moving Ahead for Progress in the 21st Century Act of July 6<sup>th</sup> 2012 ('MAP-21').

### Information Gathering Exercises

The project was organized as a two phase effort. The first phase involved a variety of data collection efforts focused on how Georgia, as well as other States, have been developing their multimodal transportation plans and investment programs over the past two decades, the obstacles they have had to overcome, and their assessments of both progress to date and needs going forward. To this end, an approach to information gathering was developed around the following four complementary data collection efforts:



\*state transportation governance structures; scope of DOT responsibilities and organizational strategies; legal, cultural and financial constraints

**Figure ES-1. Study Approach**

- ❖ 1: A literature review focusing on state transportation agency governance structures, scope of responsibilities, and organizational strategies, as well as factors likely to influence future multimodal, including intermodal operations (e.g., legal authorizations, political limitations, funding constraints).
- ❖ 2: An assessment of the multimodal transportation needs of Georgia, covering both passenger and freight movements, accomplished in two stages:
  - 2.1 first by reviewing the transportation needs, trends, and also the consequences of inaction identified in numerous transportation planning documents produced by GDOT and other important stakeholder groups over the past decade; and
  - 2.2 second, through personal and telephone interviews with key stakeholders in both public agencies and the business community within the state.
- ❖ 3: Insights from the literature review and in-state needs assessments were used to develop an on-line survey instrument consisting of a mix of 18 directed and open-ended questions. This questionnaire was e-mailed to selected representatives of all 50 State Departments of Transportation (DOTs) and a handful of other transportation planning agencies, with 40 responses received in all.
- ❖ 4: A number of more in-depth literature searches, on-site and/or telephone interviews with planning staffs at selected DOTs and at other planning agencies involved in multimodal planning within the same state, organized around an initial set of open-ended pre-interview questions.

The results of these data gathering efforts are reported in Chapters 2 through 5 of the report.

### **Study Findings and Recommendations**

Chapter 6 of this report summarizes the findings from Chapters 1 through 5 and organizes them into 28 topic areas, each of which is presented in the form of a recommended action item for GDOT consideration. These action items are organized around the following four themes, based on the frequency with which such topics came up as part of the information gathering process:

- Policy/Legislative/Funding Issues
- Multimodal Planning and Program Activities within GDOT
- Inter-Organizational Activities (for GDOT vis-a-vis Other State Organizations)
- Multimodal Performance Measures, Planning Tools and Data Needs.

Summarized here, these recommendations cover the following topics:

Under Policy/Legislative/Funding Issues -

1. Seek Top Down Support for Multimodal, Multiagency Planning
2. Maximize Use of Existing Funds
3. Encourage Bottom-Up Funding Initiatives
4. Focus Initially on Potentially High Payoff Multimodal Policies in the areas of:
  - i. Statewide Planning for Multimodal Corridors
  - ii. Intermodal Connectivity Issues at Ports and Other Hubs
  - iii. Ensuring System Robustness in Times of Stress
  - iv. Integrated Urban Land-Use/Transportation Solutions

Under Multimodal/Intermodal Planning and Program Activities within GDOT -

5. Promote Pro-Active Multimodal Planning
6. Choose Projects then Find Funding
7. Expand the Role of Multimodal Planning and Project Development  
Based on MAP-21 Legislation
8. Intermodal Division: Improve Staffing Resources
9. Across Department Training in Multimodal Planning and Program Development

Under Inter-Organizational Activities (for GDOT vis-a-vis Other State Organizations) -

10. Collaborate with Land-Use and Economic Development Organizations
11. Develop Tools or Techniques to Improve Interagency Coordination in Project Development
12. Prepare a Multimodal Planning Guidebook
13. Hold a Statewide Multimodal Planning Expo
14. Create Interagency Committees for Multimodal Studies
15. Clearly Delineate (Different Agency) Roles
16. Investigate Bottom-Up, Stakeholder Proposed Approaches
17. Coordinate with MPOs, Airport and Seaport Authorities
18. Engage Local Officials From Rural Counties
19. Use Advisory Committees
20. Get Input for Project Prioritization

Under Multimodal Performance Measures, Planning Tools and Data Needs -

21. Use Tools to Inform Policy Decisions



22. Identify a Network of Important Multimodal Transportation Facilities for Dedicated Investment
23. Establish Data-Sharing Relationships with Other State Agencies and Businesses Responsible for Transportation Facilities
24. Include Performance Measures which Account for the Performance of Non-Highway Modes into its Performance Dashboard - currently none exist
25. Make Use of Existing Tools to Prioritize Projects within Modes and Programs.
26. Develop a Methodology for Comparing Investment Scenarios across Programs and Modes (Multimodal Tradeoff Analysis)
27. Develop LOS Methodologies for All Modes
28. Create Literature that Reports on System and Agency Performance and Trends to Inform the Public and Key Decision Makers

## Chapter 1. Introduction

### 1.1 Study Background and Purpose

Ever since the early 1960's when the federal government first required a "balanced" approach to transportation planning (the so-called "3C" continuing, comprehensive and cooperative planning process), many people have pointed to the way in which transportation agencies organize themselves as being a major impediment to providing a truly multimodal approach to transportation investment. This criticism refers not only of the internal structure of transportation organizations, but also to the institutional structure within which these different transportation agencies operate. Most state transportation agencies are organized around the different modes of transportation, with the highway or road focus dominating funding and the resulting planning and operating issues. While this modal focus is understandable given the different characteristics, different types of mobility benefits, and also the historically different funding mechanisms used to support each mode of transport, this organizational structure has also made it difficult to develop and compare alternative investment strategies and operating policies across the various modes available. In doing so, planning for future transportation system improvements has often missed the opportunity to assess the most beneficial modal investment mix, as well as get the most out of movement options that combine two or more modes of travel. The terms "stove-piping" and "modal silos" have often been used to express this weakness in terms of both how funding is allocated and how it is subsequently used to maintain and improve a state's transportation system.

It is important here to define what is meant by the term "multimodal," especially in comparison to frequently used term "intermodal" transportation, which has also received a good deal of attention since the early 1990s. Multimodal transportation is an approach to planning, organizational structure and investment decision making that views the transportation system as a whole, with different parts relating to individual modes, but with these different parts integrated and connected into one system. Thus, for example, a multimodal transportation fund, which some states have, combines revenues from all modal sources into one fund and then disperses funds based on the greatest need to the system. Strictly speaking, *intermodal* transportation focuses on the interconnection between individual modes. Thus, an intermodal terminal is one where two or more modes connect, while in the freight sector, intermodal transportation often refers to the movement of containers on rail car, in essence, the connection of two modes to accomplish the trip purpose. As one can see from these definitions, there is a strong relationship between the two and a good deal of the literature on the topic uses the two terms interchangeably. An effective multimodal transportation system, for example, will depend on the ability of passenger and goods to transfer without great difficulty from one mode to another. In other words, efficient intermodal transportation is a mainstay of an effective

multimodal transportation system, and both modal competition and cooperation are important aspects of best practice.

The need for a broader look at how different modes of transport might collectively better serve our nation's and each state's various mobility needs became a major theme at the fully federal level with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. Soon after, a US Working Group identified the following key elements of an intermodal (read multimodal) approach (from Martinez, 1993):

- **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; and
- **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. Goetz and Vowles (2003, page 13) express these ideas succinctly as follows:

*“An intermodal approach sees the whole process of moving people and goods as a connected intermodal system working together as opposed to separate modal systems working Independently.”*

Since ISTEA, this multimodal/intermodal theme has continued to play an important role in transportation legislation at the federal level, via Transportation Equity Act for the 21st Century (TEA-21) of 1998; via the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005; and most recently via the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012. Also since the passage of ISTEA, a steadily growing literature indicates that numerous intermodal projects have been realized across the nation. In doing so, state DOTs in particular have had to adapt their planning procedures to accommodate the increasingly important roles being played in this process by their Metropolitan Planning Organizations (MPOs), as well as by their regional planning commissions, rural counties, public transit agencies, and a variety private sector stakeholders that include shippers, receivers, brokers and modal carriers involved in moving freight. Add to these, the growing involvement of public interest groups, as well as the public at large, and the number of potential stakeholders that may bring influence to bear on the planning process has expanded considerably over the past two decades. While these developments should be welcomed for their contributions

to a better informed planning process, they also present a significant challenge to statewide agencies such as the Georgia DOT, which is often faced with a variety of competing stakeholder priorities. The results of both a literature search and nationwide survey of state DOTs presented in this report confirm a gradual movement towards a more inclusive, multi-stakeholder, multimodal planning perspective. However, it also confirms the continued presence of a number of barriers to more complete implementation of the multimodal planning process as envisioned by many transportation professionals, and not just the seemingly inevitable restrictions imposed on progress by tightly constrained and increasingly stressed state and federal funding instruments. This is a situation affecting not just Georgia, of course, but all fifty states and the metropolitan as well as rural areas contained within them.

## **1.2 The Intermodal Division within the Georgia DOT**

This study was carried out for the Georgia Department of Transportation's Intermodal Division, which is one of nine divisions reporting to the GDOT Commissioner, and one of five Divisions doing so via the Chief Engineer at GDOT. (The Commissioner in turn reports to a 13-member State Transportation Board, which reports to the Governor of Georgia). As noted on GDOT's website (GDOT, 2012), the Intermodal Division is responsible for "*setting policies, formulating, organizing and administering all major statewide non-highway programs for the development of a comprehensive transportation system*": while the Intermodal Office under it "*manages Georgia's planning and operations programs in support of the transit, rail, port, waterway and aviation systems.*"

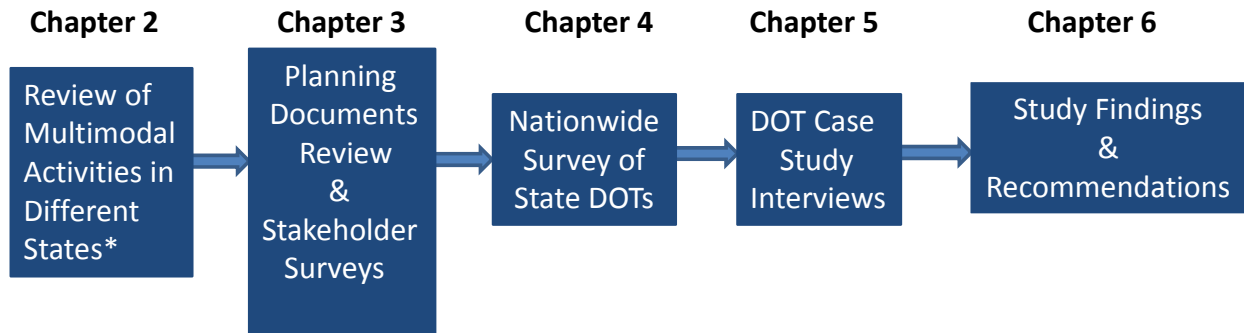
In fulfilling the above responsibilities, the Intermodal Division at GDOT oversees activities in the following programmatic areas:

- Aviation
- Rail
- Commuter Rail
- Freight Rail
- Passenger Rail
- Transit
- Waterways

## **1.3 Study Approach**

In addressing these planning issues, this present study provides an assessment of the needs for, the principal constraints preventing, and the sort of planning and implementation strategies available to GDOT for developing a more broadly encompassing and truly multimodal approach

to moving people and goods within the state. To this end, an approach to information gathering was developed around the following four complementary data collection efforts:



\*state transportation governance structures; scope of DOT responsibilities and organizational strategies; legal, cultural and financial constraints

**Figure 1.1: Study Approach and Chapter Outline**

- ❖ 1: A literature review focusing on state transportation agency governance structures, scope of responsibilities, and organizational strategies, as well as factors likely to influence future multimodal, including intermodal operations (e.g., legal authorizations, political limitations, funding constraints). Chapter 2 describes the results of this activity.
- ❖ 2: An assessment of the multimodal transportation needs of Georgia, covering both passenger and freight movements, accomplished in two stages:
  - 2.1 first by reviewing the transportation needs, trends, and also the consequences of inaction identified in numerous transportation planning documents produced by GDOT and other important stakeholder groups over the past decade; and
  - 2.2 second, through personal and telephone interviews with key stakeholders in both public agencies and the business community within the state.

Chapter 3 of this report describes the results of this data collection activity.

- ❖ 3: Insights from the literature review and in-state needs assessments were used to develop an on-line survey instrument consisting of a mix of 18 directed and open-ended questions. This questionnaire was e-mailed to selected representatives of all 50 State Departments of Transportation (DOTs) and a handful of other transportation planning agencies, with 40 responses received in all.

Chapter 4 of this report describes and discusses these state DOT survey results. Appendix A contains the survey instrument used.

- ❖ 4: A number of in-depth literature searches, on-site and/or telephone interviews with planning staffs at selected DOTs and at other planning agencies involved in multimodal planning within the same state, organized around an initial set of open-ended pre-interview questions.

Chapter 5 of the report summarizes the major findings from these more in depth assessments interviews for four selected State DOTs (Florida, North Carolina, Oregon and Virginia), including a description of how a number of successful intermodal projects originated.

Finally, Chapter 6 of the report uses the most important findings from these various information gathering efforts to provide a number of recommendations for how the Georgia DOT might proceed on the basis of lessons learned. The reader should note that the responses and comments received throughout this research project are from the perspectives of the individuals that were interviewed and do not necessarily represent the views of the agencies they work for.

## 1.4 References

GDOT, 2012, Georgia Department of Transportation Website. Offices and Divisions.  
<http://www.dot.state.ga.us/aboutGeorgiadot/dotoffices/Pages/default.aspx>

Goetz, A.R. and Vowles, T.M. 2003. Progress in Intermodal Passenger Transportation: Private Sector Initiatives. National Center for Intermodal Transportation. *NCIT Final Report*. University of Denver, CO. [http://ncit.msstate.edu/publications/publications\\_01.html](http://ncit.msstate.edu/publications/publications_01.html)

## **Chapter 2. Statewide Multimodal Transportation: A Literature Review of Organizational Structures (And How They Are Changing)**

### **2.1 Introduction**

This chapter provides a literature review focusing on state transportation agency governance structures, scope of responsibilities, and organizational strategies for becoming more broadly multimodal in their planning and programming functions. It begins with a summary of what the published literature sees as the principal barriers to organizational change, followed by a review of how previous authors see the opportunities to overcome these constraints. With these discussions as background, a third section summarizes the results of a limited number of post-ISTEA surveys of how different state DOTs and regional transportation planning agencies across the U.S. have attempted to introduce a multimodal perspective into their planning and programming functions. A final section summarizes the insights gained from the literature review.

### **2.2 Barriers to Change**

In the 1950s and 1960s state transportation agencies were formed principally to plan for and implement development of the highway system. Goetz et al (2004) provide a brief history. State legislatures provided legislative mandates for such agencies to develop and maintain what today has become each state's highway system. Influenced strongly by federal policy directions since the 1960s (the U.S DOT as a multimodal agency was formed in 1966), and notably by the 1991 Intermodal Surface Transportation Efficiency Act, or "ISTEA" legislation, these highway agencies have been evolving into more broadly based, multimodal *transportation* agencies. This includes both State Departments of Transportation (DOTs) as well as the Metropolitan Planning Organizations (MPOs) and Regional Planning Commissions (RPCs) located within their territories. However, while it is clear that progress towards a more comprehensive and modal approach to planning has been real, writing almost a decade on it from ISTEA, Pedersen (2000) reported that:

*“transportation planning still takes place mostly at the modal level, and statewide plans often are a compilation of modal plans rather than a series of multimodal and intermodal solutions to identified needs. Planning occurs in this manner in part because responsibility for planning, programming, design, implementation, and operations is fragmented at the modal levels among different agencies. State departments of transportation find it difficult to plan and to make recommendations for modes not under their control.”*

Many of the difficulties of transitioning to a broader and more modally neutral approach to planning were well documented in the 1996 Transit Cooperative Research Report (*TCRP 14*) by Crain and Associates. The focus here was on metropolitan area planning, but many of the findings are equally relevant to statewide planning. In particular, some 41 structured interviews with representatives of transit agencies, metropolitan planning organizations, industry associations, and both federal and state DOTs identified three sets of institutional barriers to intermodal planning:

**Organizational barriers** – notably modal separation, regulatory and legal restrictions, organizational culture and modal orientation;

**Inter-jurisdictional barriers** - notably different views about authority and responsibility, reluctance to form partnerships, insufficient track record in forging relationships, pre-determined solutions overshadowing needs assessments, and poorly integrated land use and transportation policies; and

**Resource barriers** - including significant funding shortfalls, insufficient information or staff resources, and inadequate tools for comparing different projects.

Under *organizational barriers*, two key constraints on intermodal planning were identified as the legacy of years of both thinking and also funding along modal lines, with many states, including Georgia, restricting funding for key funding sources such as motor fuels taxes to the maintenance and improvement of highways and bridges. Attempts to become more multimodal in outlook, and in particular to create a more level playing field from which to consider the best transportation investment solutions, face their greatest challenge from the modal silos into which most transportation funding is placed: silos which in turn are to a large extent beyond the ability of a state DOT such as GDOT to alter in the near term. In particular, highway (mainly state and federal fuel tax derived) funds must go to highways – and increasingly to the maintenance and rehabilitation of the state’s existing road system. In times of fiscal stress, it is difficult to argue for change when a state’s residents as well as businesses are so heavily dependent on the upkeep of what is an essential public infrastructure.

Proponents of public transit solutions to mobility, as well as to energy security and air quality problems, have often pointed to this *funding inflexibility* as a major limitation on multimodal, including transit-inclusive intermodal solutions. An example of this sort of funding barrier to intermodal planning is shown in Table 2.1, involving state funding for public transit within Georgia (GDOT, 2011, page 7). No state matching funds are allocated to transit operating costs, while tight limits (expressed as low percentage allocations) exist on other forms of transit system investment. This state funding match is also subject to availability (with funding for capital projects through bond revenues, and for transit operating funds through general revenues).



**Table 2.1 Local and State Matching Fund Requirements  
For FTA Supported Public Transit in Georgia**

Project Type	Federal Share	StateShare*	Local Share
Operating	Up to 50%	-	50% or more
Capital	80%	10%	10%
ADA Capital	90%	5%	5%
CAA Capital	90%	5%	5%
Bicycle Facilities	90%	5%	5%
Planning	80%	10%	10%

\* This funding is based on availability. If the Department cannot find the match, it is the subrecipient's responsibility to pay the State share percentage.

**Notes:** FTA= Federal Transit Administration, ADA = Americans with Disabilities Act; CAA = Clean Air Act.

Under *inter-jurisdictional barriers* the topic of “predetermined solutions overshadowing needs assessments”, if expressed a little differently, also came up in a number of conversations during the present study's interview process (see Chapter 5). This barrier also ties directly into another issue of some importance to the past as well as present DOT survey: the linkage between transportation projects and economic development. The “barrier” referred to here is one of transportation project promotion as a means of engendering economic development per se, without regard to the available, and potentially more cost effective mobility options. As Crain et al, 1996, page 6, point out:

*“During the research, numerous examples were provided of how a transportation solution or project drove the entire planning process. [For example] The major who pursues the building of light rail without understanding the prerequisites is as much a barrier to sound intermodal planning as the highway engineer who focuses entirely on a highway solution.”*

A second topic under inter-jurisdictional barriers that also led to some discussions during the case study phase of the present project (see Chapter 5) was that of poorly integrated land-use and transport policies. With little (if any) direct influence on local or regional land use plans, and no statewide land use planning agency in Georgia (as in most other states) coordination of action is typically difficult and also subject to planning objectives that compete in part because they are not enacted, and may not provide economic or other benefits, at the same geographic scale. Specifically, transportation benefits which often require across-jurisdictional implementation to have the desired mobility or other impact are often difficult to “sell” to local officials whose constituents may not get as much out of a project as constituents in another adjacent or non-adjacent district.

In contrast, both the post-2000 literature and our own survey results (see Chapter 4) suggest that some of the early post-ISTEA difficulties in defining the roles and responsibilities of DOTs versus MPOs and other regional planning bodies have become less problematic, if not entirely resolved, in recent years.

Under *resource barriers*, the lack of flexible funding mechanisms, coupled with the limited funding available for transportation system improvements in general since the post-2007 economic recession, means that getting funds into non-highway operating and maintenance categories is going to be a challenge for all state DOTs, Georgia's included.

The literature, supported by our nationwide survey of state DOTs described in Chapter 4 of this report, also identifies concerns over not only limited staffing resources for multimodal planning, but also insufficient data sources and limited analytic tools with which such staff can evaluate projects on a suitably comparable mode neutral basis. There is also the issue of just how to go about carrying out a multimodal analysis that, to be most useful for planning purposes, allows comparisons to be drawn between different modal (including inter-modal) alternatives. Miller (2005) points out that state planning agencies are far from certain about how to compare the performance of different modes of transportation, and that "statewide multimodal planning requires substantially more effort than a comparison of common performance characteristics of different modes. (For example, although the cost per passenger mile can be computed for automobile and bus modes, such a measure does not fully explain why some passengers choose the bus over the automobile)". As pointed out in the first of a series of National Cooperative Highway Research Program reports in the mid-1990s, commissioned to address various topics involving multimodal transportation planning (NCHRP 8-32): "Multimodal planning is not best seen as the number of separate modal analyses ultimately assembled into a final plan; rather, it is best carried out when all modes are analyzed simultaneously and interactions among the modes are specifically accounted for" (Transmanagement, Inc. 1998).

## 2.3 Factors in Organizational Change

How then can a state such as Georgia, with its DOT, its MPOs, airport and seaport authorities, and other regional planning agencies, overcome the barriers to multimodalism described above? And how can these agencies best work together to get the most from taxpayer dollars?

Following the identification of the organizational, inter-jurisdictional and resource barriers described above, Crain and Associates (1996) used a mail-back survey of 421 individuals responsible for intermodal planning at state, regional, and local levels (including 60 from state DOTs) to identify opportunities for improving the multimodal planning process. The top priorities identified in the survey were:

- building a constituency for the intermodal planning concept,
- improved federal funding (particularly from the transit agency perspective),
- educating key parties,
- visible leadership support,
- inviting citizen input, and
- mobilizing business leadership.

Based on three 2-day implementation forums held in Albuquerque, NM, Austin-San Antonio TX, and Queens, NY, the following ten strategies were identified in three categories as the most promising means of overcoming the barriers to multimodal planning:

### **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.

### **Procedural Strategies**

4. Review and streamline procedures and regulations among the surface transportation agencies of the U.S. DOT and other federal agencies.
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.

### **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.

Moving forward from these rather broad recommendations, an important agency restructuring topic is that of centralizing investment planning and other activities within a single organization, such as a state DOT, as a means of bringing about greater visibility as well as

coordination between modal plans and programs. In looking into both the extent and also the potential benefits of coordinating multimodal planning through a single, centralized office, Miller (2005) received survey responses from 41 of the 50 state DOTs, finding that while some states did coordinate their statewide multimodal planning efforts through a single office, and usually within the state's DOT, other states employed a much less centralized approach. In summarizing the results of the survey responses, the study identifies six advantages of a centralized planning approach:

*“consistency of plans, coordination of modes given that modal staff are in the same office, an unbiased study of the entire transportation network, a greater emphasis on smaller modes (by aggregating them), better training and development for planners (by exposing them to multiple modes), and a guarantee that planning will not be forgotten”.*

The following four advantages were also ascribed to a more decentralized approach:

*“greater ease of obtaining modal support for the long-range plan since the planners and implementers are in the same functional unit, greater ease of tapping modal-specific expertise, an ability to focus on the most critical mode if one such mode is predominant, and organizational alignment with mode-specific state and federal funding requirements”*

However, Miller also concluded that the decision whether to centralize or decentralized statewide planning activities may have limited influence on how multimodal is accomplished because of external factors, notably federal or state regulations or processes that tie some funding pots to specific modes. Among other conclusions of note:

1. Having persons in the same functional unit does not guarantee multimodal coordination.
2. MPOs, localities, or districts also influence multimodal planning, especially through a public involvement process.
3. Multimodal considerations, such as mode-neutral performance measures, do not guarantee that a “multimodal” solution will always be chosen: there may be cases where the recommended solution is comparable to the solution that would have been obtained under traditional planning.

The study also suggests that multimodal solutions are more easily developed as part of an agency's long-range planning efforts, while the pressure on coming up with shorter term solutions is often more readily dealt with by mode specific plans. Cambridge Systematics (2000: NCHRP Project 8-36A, Task 3: *Management of Institutional Change in State Transportation Planning Processes and Programs*) found the following factors to be important components of successful organizational change within state transportation agencies:

**Accountability and Communication**

- Statewide planning ultimately must be responsive and accountable to elected officials. The stronger and the more direct the linkage is to elected officials, the easier it will be to establish accountability.
- Policy planning must explicitly provide the linkage between the policy agenda of elected officials and the other aspects of the DOT's business including the long-range plan, program, operational strategies, and the budget and project delivery.
- Changes in executive leadership, Commission or in the legislative branch require effective two-way communication. New leaders are likely to have new policy agendas and the statewide planning process needs to have the flexibility to respond to these agendas as they develop. In addition, making the case for the "value added" provided by statewide planning needs to be an explicit part of a transition strategy with new leaders.
- Establishing performance measures relating to key initiatives can be an effective tool to demonstrate accountability, especially as it relates to organizational change that is fundamentally changing the organization's focus.

**Partnership and Teamwork**

- Trust and credibility with external partners and customers is an essential ingredient for effective and sustainable statewide multimodal planning. It is probably also the single most important factor in establishing and maintaining trust with elected officials at the statewide level. Strong relationships with external partners take time to develop and require consistency in the approach used to involve them in the process and in communication. Good communication alone is not enough. Commitments need to be met and partners need to hear whether and how their concerns are going to be addressed.
- Within the DOT, the statewide multimodal planning function must be integrated into other aspects of the DOT's business including engineering, operations and delivery.

**Decision Support**

- Effective statewide planning must be directly connected to agency decision-making and be perceived as informing and influencing key decisions. Most importantly, statewide multimodal planning needs to be linked clearly to programming and project selection. Without this connection, it is unlikely that statewide multimodal planning will have any significant influence and will be at risk. If the connection between planning and programming is strong, then planning must also be linked to program delivery to maintain credibility and accountability. Again, performance measures may be an effective tool to establish the linkage.
- Statewide multimodal planning must also support a wide range of different policy issues that elected officials and the DOT are interested in. Furthermore, due to changes in leadership and other factors, the statewide planning process must be prepared to deal with a range of different and emerging policy issues at any point in time. The ability to assess

policy choices and define the consequences of these choices is a key opportunity for statewide planning to demonstrate value.

### **Reliable Information**

- Effective statewide planning requires reliable data and strong analytic capabilities and an ability to inform policy choices and decisions with effective decision support. In general, this requires that the data and analysis reflect the nature of the decisions being made and be as transparent (i.e., understandable) to decision-makers as possible.

A more recent examination of how state governments address the issue of institutional change, including how to better coordinate planning across modes, was completed by the American Association of State Highway and Transportation Officials' report (AASHTO, 2009). This study notes that while most State DOTs have organized themselves around very similar (design, engineering, construction, maintenance, rehabilitation and operational) functions where highways are concerned, they vary a good deal in both the nature and scope of their non-highway functions and organizational structures. Noting that many state DOTs were or had recently undergone restructuring to better serve their customers, the report also points to the past efforts of a few DOTs to establish a greater degree of modal neutrality by establishing a "functional" rather than "modal" organizational structure: While some states have experimented with putting other modes at the same level on their organization charts as its Highway Office, Department or Division. A scan of State DOT websites carried out as part of the present study suggests that many DOTs now combine elements of both functional and modal organization, but in a variety of different ways. (And as our more in-depth interviews suggest, organization charts alone rarely tell the full story, especially where changes in state Administrations occur that cause some programs to be elevated at the expense of others, perhaps causing a disconnect with the latest organization chart).

This same 2009 AASHTO publication, titled '*Alternative Organizational Processes in State Department of Transportation*', provides a resource for "DOT management on organizational designs and design processes to improve their responses to various external and internal forces of change". The report indicates several significant organizational issues that DOTs have faced over the last decade, including:

- Changing from a modal to a functional multimodal structure.
- The nature and extent of the planning function.
- Finding a "home" for the non-highway modes.
- The inclusion of the maritime/port functions.
- The location and prominence of the programming function.
- The relationship between central office and the districts.

- Adjusting the organization in response to strategic plan implementation.
- Organization for effective and efficient program delivery.
- Leadership changes and turnover.
- Focusing on becoming more customer-centric.
- The changing face of operations.
- An increased emphasis on performance measures in the decision-making and resources allocation processes.

The report provides 10 specific recommendations, organized into 5 groups, based on several case studies. The recommendations aim to help DOTs successfully deal with external and internal change through a carefully planned and executed organizational restructuring. The recommendations are repeated here because of their importance in thinking about a transition to a more multimodal transportation system perspective.

#### **Adapt Organization Designs to Fit Particular Needs and Circumstances.**

- *Look first for ideas, not ready-made solutions.* While the core functions among state DOTs are essentially the same, especially in the highway mode, there are large variations in how a DOT accomplishes its work. Thus, designing the structure and leadership and processes to fit the particular state DOT is paramount.
- *Consider organization design solutions without regard to individuals.* First, look at organizational solutions without regard to specific individuals, and then consider specific personnel on the preferred alternative to see if it still seems plausible. The idea is that organizational structure should be made to work with existing (or improved) management systems, policies, procedures, and personnel, if possible.
- *Evaluate other tools before making wholesale organizational changes.* Do not overuse organization design changes to attempt to fix other endemic problems. Instead, look first at other “fixes” before making wholesale organizational changes, e.g., improve procedures, reengineer processes, change priorities, change leadership, create strategic plans, install performance measurement and/or other management systems, and so forth.

#### **Develop Alternatives and Evaluate Strengths and Weaknesses.**

- *Examine organizational theory first.* There is much to be gained from a review of organizational models and their relevant strengths and weaknesses, or at least a review of “practices, context, and performance” from other state DOTs or similar agencies. It is clear that organizational designs do vary in their application, and state DOT executives would do well to consider them before adopting a solution for a particular situation.
- *Determine criteria for success.* Executives and senior managers who anticipate making organizational changes should, a) clearly determine what is being sought in terms of

outcome, b) evaluate the strengths and weaknesses of each option, and c) forecast how the agency will have fared when the change has been made. Physical, locational, and emotional fall-out on individuals may be worse than expected and deserves to be considered early on.

#### **Involve Managers and Employees as Appropriate.**

- *Build a leadership team.* Success of a major organizational design change is never assured, but it is more likely to be implemented with favor if others are involved from the beginning. Linking organizational change to a strategic planning process, for example, where executives and senior managers (and in many cases, representatives of all employee levels and categories) have been involved, may do much to explain and solidify the rationale for and benefits of the proposed change.

#### **Build Ownership and Provide Support as Needed.**

- *Focus on communication.* Following closely in terms of time and sequence, an implementation plan should be developed for organizational design changes, and it should be disseminated throughout the organization. It need not be elaborate, but it should contain what is to happen, why it is to happen, what goals and benefits are being sought, in what timeframe, and who is responsible for overseeing it.
- *Follow-up during implementation.* Implementation of organizational design changes does not stop when a new organization chart is issued. If it is important enough to create the disruption and challenges that often coincide with a structural change, it should be important enough to plan and carry out the execution so that it has the best chance of success. Such an approach will help to build ownership for the change among the employees, and it will help to ensure that other unit leaders understand how their mission, roles, and responsibilities interact with the new structure.

#### **Assess the Experience and the Performance Results and Modify Designs as Needed.**

- *Use an evaluative, qualitative approach.* Very few state DOTs have used any approaches for isolating the impact and determining the success or failure of an organizational design change, especially through the use of quantitative methods. The evaluative experience is highly reliant on anecdotal considerations and/or assumptions derived from “before” and “after” measures. This area is one in which the report argued additional research was needed, that is, to develop a methodology to measure the direct impact of organizational design changes. The performance measurement field has not yet addressed this type of application within state DOTs.
- *Do not make major organizational changes often.* Many institutional leaders—private and public-sector alike—seem to use organizational changes as an automatic response to “fix” organizational problems. This is very unsettling to the employees and can be disruptive to the DOT’s mission. Organizational changes should be given adequate time



to succeed or fail and for management systems critical to the operation of the unit to be altered, tested, and ultimately working.

AASHTO's report also provided an Action Plan to help guide DOT management "*through the process of considering organizational design as a problem-solving technique, planning for it, and executing it for a successful conclusion.*"

Getting much closer to the issue of multimodal planning needs and solutions, Grant et al (2010) provide a reference manual designed to assist transportation professionals in taking action to integrate operational and safety considerations with multimodal planning on a statewide basis. The authors (page 2) claim that "When operations and safety issues and strategies are considered comprehensively along with capacity additions, the mobility, security, safety, and reliability of the multimodal transportation system can be enhanced more quickly and cost-effectively".

## **2.4 Post-ISTEA Surveys of Multimodal Planning at State DOTs**

In this section, we looked at the published evidence for multimodal planning within and across the fifty state DOTs. This evidence is based on a series of personal interviews, written survey responses and/or telephone interviews with state DOT and other regional planning agency staffs from around the country, supplemented by some Internet searches of state DOT and other websites and the publications they contain. Less than a decade into the post-ISTEA era, the National Cooperative Highway Research Program (NCHRP) funded two studies to analyze statewide multimodal planning practices: NCHRP *Report 404* (Transmanagement, 1998) and NCHRP *Synthesis 286* (Peyrebrune, 2000).

NCHRP Report 404 (Transmanagement. 1998) reported the results of a nation-wide survey among 90 planning officials that analyzed best practices in multimodal planning. Since most state DOTs were created to build, operate, and maintain highways, this report was interested in how state transportation agencies had institutionalized organizational changes to accommodate multimodal issues, if at all. The report first looked at key factors underlying DOT and MPO change and concluded that change agents played a significant role in promoting new transportation policies. These agents included "state legislatures and governors, state-appointed transportation commissions ..., DOT leadership, large and well established regional planning organizations, and local and special interest groups." The report found four common themes among DOTs that had successfully institutionalized multimodal planning:

- Many DOTs have attempted to address the special needs of large urban centers through structured partnerships with MPOs.
- The development of modal expertise and advocacy in the DOT appears to be an important early step in the creation of an effective multimodal planning and programming process.

- In DOTs that are decentralizing planning and programming to the district or regional offices, changing the culture and processes of these offices is important.
- The flexibility of transportation program funding appears to be an important factor in promoting multimodal planning and programming.

The surveys showed that many states were developing separate modal plans, whereas others integrated the different modes into a single plan. “The approach taken often depended on whether highway funds could be used for different modes. States, where funding is allocated to individual modes or there is little flexibility in spending highway trust fund dollars, tended to develop separate modal plans” (Transmanagement, Inc., 1998).

NCHRP Synthesis 286 (Peyrebrune, 2000) contains a literature review, the results of a national survey of DOTs conducted in 1999, and five case studies. The report draws the following conclusions from the information gathered and analyzed:

- The (policy) decision to embrace multimodal planning has to come from the highest decision level and includes changing mindsets and organizations from modal facility planning to the movement of people and goods based on a customer/performance-based process.
- Successful multimodal planning is best undertaken with a state or regional vision umbrella, economic development policy, or sustainability considerations.
- The multimodal planning process should be appropriate for each state, but there is a minimum multimodal level that is appropriate for each.
- To increase effectiveness, multimodal planning should be institutionalized throughout the agency; consideration of multimodal aspects should not just be a planning task, but should be part of design, construction, maintenance, operations and modal divisions as well.
- The biggest challenges to effective multimodal planning – funding, organization and institutional challenges, and the lack of technical tools – can be overcome.
- The first step towards multimodal planning is not data collection and the development of technical processes. It is starting the dialogue with stakeholders and customers of the transportation system.
- Data collection and technical processes should be appropriate to the multimodal planning scale.
- The focus of statewide multimodal planning activities has moved from meeting ISTEA requirements to the development of appropriate processes for a given state.
- States are struggling with how to provide a choice of modes, which has significant fiscal implications.

Only 13 percent of the respondents of the survey (5 out of 38 DOTs that responded) indicated that the DOT was solely responsible for the transportation system, which shows the importance of a cooperative institutional structure.

Fontaine and Miller, in a report to the Virginia Transportation Research Council (2002), also conducted a survey among states to assess statewide multimodal planning practices. The survey indicated that 10 states were considered to have strong statewide multimodal planning programs: Florida, Maine, Maryland, Michigan, Minnesota, New Jersey, North Carolina, Oregon, Washington, and Wisconsin. Representatives from 9 states were successfully interviewed. A summary of their findings is given below for each state.

### **Florida (FDOT)**

- FDOT's central and district offices are involved with multimodal planning. FDOT is moving toward an organizational structure with less separation between the modal and planning offices.
- Florida has 25 MPOs, so the regional planning structure is much more established than in many other states. The MPOs generally have developed good planning methods and techniques for multimodal planning.
- Florida developed the Strategic Intermodal System (SIS) to integrate highway planning with planning for other modes. The central office is responsible for planning the Intra-State Highway System. The feeling among Florida DOT officials is that the identification of an SIS has caused this system to be integrated with planning for other modes.
- FDOT attempts to recognize all modes of transportation in their planning process, but they note that there are limitations because they do not control all the modes. For example, although FDOT includes representatives from the rail industry in the planning process, the rail mode is owned and operated by private firms.

*(Note: A more in-depth update for FDOT multimodal activities is provided as one of the Case Studies in Chapter 5 of this report.)*

### **Maine (MaineDOT)**

- In 1992, Maine voters passed the Sensible Transportation Act, which emphasized road repair over new construction and mandated multimodal planning at the state level. This referendum had the following requirements:
  - The Maine DOT must evaluate a full range of alternatives to highway construction and reconstruction.

- A public participation process must be established to seek public and local government input into transportation planning.
- Energy-efficient modes should be emphasized, and modes that increase reliance on foreign oil should be avoided.
- The Maine DOT concentrates all multimodal planning activities at the central office. Multimodal planning responsibilities are divided among three offices: the Bureau of Planning, the Office of Freight Transportation, and the Office of Passenger Transportation. Highway planning activities are performed by the Bureau of Planning and coordinated with the other two offices. The Office of Passenger Transportation is responsible for planning for rail, transit, ferry, port, aviation, bicycle, pedestrian, and intermodal facilities.
- Multimodal planning activities in the DOT are coordinated with local governments through direct contact during projects and on-going advisory committees.
- The commissioner of the Maine DOT was very interested in multimodal planning and had embarked on a major reorganization to eliminate turf issues. The commissioner eliminated the offices for different modes and concentrated all passenger transportation planning in one office. Having different modal experts in close proximity generated a great deal of interaction and state officials believed it helped to produce greater consideration of multimodal projects.
- Maine DOT officials noted that they initially encountered resistance to multimodal planning. The resistance dissipated however; probably because no highway funding was diverted for multimodal planning and projects. The DOT was using funds from the Federal Transit Administration and the Congestion Mitigation Air Quality (CMAQ) program as well as bonds to fund multimodal activities.

### **Maryland (MDDOT)**

- The Maryland DOT consists of five modal administrations and a semi-independent transportation authority. The DOT's organization had the following characteristics:
  - Strong modal units. Modal units in the DOT have a high degree of autonomy, and all have some planning functions for their particular mode. The central office of the modal units retains the planning role, with little planning responsibility delegated to the districts.
  - Multimodal decision making. The Maryland DOT has developed multimodal planning teams for corridor projects, bringing together planners from the separate modal administrations. These teams also include staff from local governments and MPOs.

- Flexible funding source. Maryland has a flexible transportation trust fund that may be used to fund all modes. The only restriction on multimodal use of these funds is that fare box revenues must cover at least 50 percent of transit operating expenses.
- The statewide transportation plan is coordinated with local plans in several ways. Regional planning organizations are used to provide input to the plan, and representatives of the five modal administrations serve on a variety of regional standing committees. Local governments also directly review planning documents, and the DOT makes an annual tour around the state to present statewide plans.
- Maryland faced the challenge of trying to integrate several distinct modal administrations with distinct identities to achieve a multimodal planning process. The flexible transportation fund has helped ease the competition among modal administrations since funding is available for all modes.

### **Michigan (MDOT)**

- In the Michigan DOT, the central office is responsible for all multimodal planning and policy. The DOT is developing a plan to allow the regional offices to perform urban planning work, but this had not yet been implemented at the time of the report.
- The DOT's role in coordinating the planning process with local governments varies, depending on the mode being considered. If the DOT has direct responsibility in owning or operating a particular mode, it takes a more active role.
- Although DOT officials feel constrained in planning for modes they do not own, they try to develop objectives for these modes. Rail planning provides a good example. Because railroad companies are so competitive, the DOT gets them involved in planning and makes them partners in the planning from the outset.
- Michigan developed an Intermodal Management System (IMS) to help integrate the management of air, rail, marine, and non-motorized transportation with the traditional highway mode. This system was developed as a result of the requirements of ISTEA and was retained after the requirements were removed. The IMS is used to analyze data and identify deficiencies in non-highway facilities.

### **Minnesota (MnDOT)**

- Prior to the passage of ISTEA, the Minnesota DOT's planning and programming functions were located in the central office and construction and maintenance activities were located in the district. Units dealing with other modes were also located in the central office, but they were small. After the passage of ISTEA, the DOT began to restructure the agency from being principally concerned with the highway mode to considering all modes. Some of the key changes included:

- Formation of a Metro Division to represent the Minneapolis/St. Paul area. This agency was to work as a partner with the MPO to oversee planning, programming, design, and construction in the Twin Cities area. The MPO's long-range plan is coordinated with the TIP and the state plan in the Metro Division, resulting in a much smoother decision-making process in the area.
- Grouping of modal units. The transit, railway, waterway, aeronautics, and highway modes were grouped together under a new division. This brought Minnesota DOT's various modal planning functions under the same administrative group and moved the more highway-centered operations and maintenance functions under the umbrella of the district offices. This reorganization has made it easier for planners to consider other modes in the planning process since there was more direct contact between modal specialists.
- Multimodal transportation planning activities are performed in the central office. Coordination between state and regional/local governments is accomplished through participation in state MPO and Regional Development Commission committees.
- The Minnesota DOT noted some resistance to moving toward a multimodal planning approach. For the most part, resistance has come from suburban and rural areas that are more familiar with and perceive more need for a traditional highway planning process.

### **New Jersey (NJDOT)**

- NJDOT performs multimodal planning in three contexts:
  - Statewide transportation plan. The statewide transportation plan examined the impact of different multimodal alternatives on the number of congested vehicle miles traveled (VMT) and vehicle hours of travel. The alternatives examined included investments in highway capacity, transit, and travel demand management (TDM) measures.
  - Regional transportation plans. Three MPOs in New Jersey cover the entire state. All regional transportation plans developed by the MPOs have a multimodal element.
  - Project plans. Transit, pedestrian, and bicycle alternatives are examined at the project level when conditions are favorable for applying these modes.
- NJDOT is using context sensitive design/solutions (CSD/CSS) to increase the consideration of pedestrian and bicycle modes on highway projects.

### **North Carolina (NCDOT)**

- Transportation planning activities in North Carolina are concentrated at NCDOT's central office, which provides technical support and resources to the district offices upon request. NCDOT performs modeling for 15 of 17 MPOs in North Carolina.

- Most multimodal planning is done in the different modal divisions of NCDOT. There is discussion of centralizing the pure planning aspects of the transit, bicycle, and pedestrian modes within the NCDOT Statewide Planning Branch, with ferry, aviation, and rail planning continuing to reside within those modal divisions.
- Incorporation of mode choice into planning models. Mode choice has been included in the regional models for the Triangle, Triad, and Metrolina areas. For example, in the Triangle area, logit models are used for the mode choice element to account for pedestrian and transit trips. NCDOT has provided support for the development of these models.
- Better coordination among planning entities. The statewide multimodal plan was being updated at the time of the report. NCDOT hopes that the new plan will define its future role in transportation planning, project development, and construction. It is also expected that the responsibilities of MPOs, the Public Transportation Division, the Rail Division, and the three regional transit authorities will be better delineated.
- North Carolina developed a tool, the North Carolina Multimodal Investment Network (NCMIN) that may help to allocate responsibilities and resources for transportation improvements between the state and the MPOs. It is a goal of NCMIN to identify which infrastructure elements are the responsibility of the state and which are the responsibility of the MPO.

*(Note: A more in-depth update of NCDOT multimodal activities provided as one of the Case Studies in Chapter 5 of this report.)*

### **Oregon (ODOT)**

- ODOT multimodal planning activities are performed primarily at the central office. Some planning activities are performed at the five regional offices.
- Many of the more rural jurisdictions have little multimodal traffic, so their level of multimodal planning is consistent with their volume of multimodal traffic. ODOT regional staff assists local governments and MPOs with their multimodal planning (and in some cases, vice versa). ODOT has prepared a guidebook to help local jurisdictions with developing TSPs. Plans must be adopted by local governments or county commissions. These plans are then reviewed and approved by the state Land Conservation and Development Commission.
- ODOT feels that high-level public- and private-sector commitment to multimodal planning and commitment by the citizenry to a diversified transportation system are important to the success of a multimodal planning system. Other important factors identified by ODOT are funding and transportation management/staff expertise.

*(Note: A more in-depth update for ODOT multimodal activities is provided as one of the Case Studies in Chapter 5 of this report.)*

### **Washington (WSDOT)**

- In 1993, the Washington legislature passed an act that required WSDOT to prepare a policy plan, a statewide multimodal transportation plan, and mode-specific plans. These policy changes caused several changes to the structure of WSDOT:
  - Creation of the Office of Urban Mobility. The purpose of this office was to increase coordination between WSDOT and the Puget Sound Regional Planning Body. The Office of Urban Mobility was also responsible for coordinating the regional long-range plan and TIP with WSDOT's modal offices.
  - Creation of Public Transportation and Rail Division and Freight Mobility and Economic Partnerships Division. Historically, WSDOT was responsible for highways, ferries, and small airports. The creation of these two divisions within WSDOT enhanced their role in the planning process. These divisions served as modal advocates within WSDOT and provided a valuable educational resource for personnel.
  - Expansion of the role of regional offices. Prior to 1991, no planning was done at the regional level. Regional offices are now required to produce a multimodal regional transportation plan in conjunction with the MPO and RTPOs. The level of planning expertise has been growing at the regional level, but rural districts still rely on expertise from the central office.
- There have been several difficulties in accommodating the change to a multimodal agency. The legislature mandated that change occur in a rapid time frame, which created internal confusion within WSDOT as to the roles of the various branches. Many of the channels for coordination were also not firmly established.

### **Wisconsin (WisDOT)**

- The WisDOT central office is responsible for performing multimodal planning activities. WisDOT has established a series of advisory committees to help coordinate the DOT's plans with plans developed by local and regional planning groups. One-on-one meetings are also used to coordinate with these groups.

In addition to the above mentioned states, a number of other states also appear to be actively involved in a multimodal transition to some degree:

### **Massachusetts (MassDOT)**

- The Massachusetts Department of Transportation is a recent merger of the previous Executive Office of Transportation and Public Works (EOT), the Massachusetts Turnpike



Authority (MTA), the Massachusetts Highway Department (MHD), the Registry of Motor Vehicles (RMV), the Massachusetts Aeronautics Commission (MAC), and the Tobin Bridge, which was owned and operated by the Massachusetts Port Authority (MPA). In addition, the Massachusetts Bay Transportation Authority (MBTA) and Regional Transit Authorities (RTA) are subject to oversight by the new organization.

- The intent of the new organizational structure was to foster *a better multimodal perspective on transportation decision making and planning* in Massachusetts, and to provide an organizational structure more conducive to integrated transportation investment decision making.
- MassDOT has been organized into four divisions: the highway division, rail & transit division, aeronautics division and the Registry of Motor Vehicles (excerpted from MassDOT, 2011).
- The Highway Division is responsible for the design, construction and maintenance of state highways and bridges, as well as overseeing traffic safety and engineering activities including the Highway Operations Control Center to ensure safe road and travel conditions.
- The Rail & Transit Division is responsible for all transit initiatives and oversees the Massachusetts Bay Transportation Authority (MBTA), the transit agency for the Boston metropolitan area, and all regional transit agencies in the state.
- The Aeronautics Division is responsible for public use airports in the state. It is responsible for airport development and improvements, aviation safety, aircraft accident investigation, navigational aids, and statewide aviation planning.
- The Registry of Motor Vehicles Division is similar to Georgia's Department of Motor Vehicles, with responsibility for vehicle licensing and registration. It also has responsibility for vehicle inspection stations.

### **New Mexico (NMDOT)**

A case study prepared by the Alliance for Transportation Research Institute (University of New Mexico) for the New Mexico Department of Transportation in 2003 analyzed how NMDOT made the organizational change to become a true department of transportation rather than a highway only agency. NMDOT took several actions to initiate the transition, including (Alliance for Transportation Research Institute, 2003):

- Obtaining leadership and vision from the Governor and Cabinet Secretary;
- Forming an internal NMDOT Multimodal Steering Committee with representatives from each Bureau and Division;
- Obtaining the support and involvement of the state legislature and Congressional delegation;
- Holding a Multimodal Workshop that featured a wide range of modal constituencies to provide input for long-range transportation planning from Tribal, statewide, local, and

private sector modal constituencies as well as providing training and planning activities for Steering Committee members;

- Creating and formally adopting a new vision statement for NMDOT;
- Creating important policy guidance documents, i.e., the NMDOT *Guiding Principles and the NMDOT Commitment to Environmental and Energy Action* and to develop recommendations for NMDOT consideration and action;
- Holding a Statewide Multimodal Summit with modal experts from around the country for training of the NMDOT staff and stimulating the creative flow of ideas among Summit participants who were drawn from NMDOT personnel and balanced with representatives from Tribal, state, local, and private sector modal constituencies;
- Establishment of a Multimodal Summit Website that contained resources from the Summit, slide presentation from the speakers, copies of letters of support and speeches;
- Coding and analysis of data obtained by Summit participants on the Regional Corridor Priority Initiatives Input Sheet and the Multimodal Connectivity Worksheet; and
- Recommendations of the NMDOT personnel and the national, Tribal, state, local, and private sector modal experts and partners who participated in the Multimodal Workshop and Statewide Multimodal Summit for use in the State Transportation Improvement Plan (STIP), the State Long-Range Transportation Plan, the State Infrastructure Capital Improvements Plan (ICIP), NMDOT Policies, State Roadway Design Criteria and the NMDOT Compass of Quarterly Performance and Accountability Measures.

### **Virginia DOT (VDOT)**

- Virginia has established a transportation “secretariat” that includes several transportation agencies, including the Department of Transportation, the Department of Rail and Public Transportation, the Department of Aviation and the Port of Virginia. A 17-member Transportation Board is responsible for creating the overall transportation policy for the state and allocates funding to projects. The Secretary of Transportation, the Commissioner of VDOT, and the Director of the Department of Rail and Public Transportation are members of the Board.
- The Board has adopted a statewide multimodal transportation plan, VTrans2035, that provides overall guidance to the state transportation agencies. In addition, a strategic plan provides performance measures, data, and strategies to assess the policies of the transportation agencies.
- An *Office of Intermodal Planning and Investment* coordinates the multimodal and intermodal planning for transportation modes in the state. The stated goals of this Office are to (VDOT, 2011):
  - Link existing systems
  - Reduce congestion
  - Improve safety, mobility, and accessibility

- Provide for greater travel options

Major accomplishments of the Office of Intermodal Planning and Investment listed on the VDOT website include:

- Coordination of development of a Statewide Multimodal Freight Study
- Coordination of the Multimodal Grant Program (ongoing)
- Coordination of the Governor’s Transportation Accountability Commission
- Coordination with the Freight Advisory Committee
- Development of the Virginia’s Transportation Performance Report
- Development of the VTrans2035 Action Plan
- Coordination of development of VTrans2035, Virginia’s long-range multimodal transportation plan.

*(Note: A more in-depth update for VDOT multimodal activities is provided as one of the Case Studies in Chapter 5 of this report.)*

Goetz et al (2004) also collected data on how different State DOTs were progressing towards a more multimodal form of planning and project implementation. They provided new evidence on the topic by carrying out interviews of planners and others in seven different states, including three at that time rapidly growing states - Arizona, Colorado and Texas – and four states in the southeastern United States – Alabama, Florida, Louisiana and Mississippi. In gathering information, they surveyed 325 individuals either by telephone, personally, by e-mail or by written survey, eliciting responses to questions addressing issues of funding adequacy, leadership support for intermodalism, effectiveness of the planning and implementation process, including the level of communication and coordination between relevant organizations, as well as asking for best intermodal project examples within each state.

In summarizing their findings, these authors conclude that all seven states surveyed made some significant strides towards adopting a multimodal planning approach, each altering their institutional structures to better incorporate a multimodal approach that is reflected in their agency organization charts. This included the creation of an Intermodal Transportation Division by Arizona DOT that can still be found on the current organization chart ([http://www.azdot.gov/Org\\_Charts/ADOT/ADOT\\_OrgChart.asp](http://www.azdot.gov/Org_Charts/ADOT/ADOT_OrgChart.asp)), or in the case of Colorado DOT, an Intermodal Planning Branch within its Division of Transportation Development that is also still reflected in the latest CDOT organization chart (<http://www.coloradodot.info/about/CDOT-org-chart/view>). Specifically “A review ... revealed that each of these states produced long-range, short-range and specialized plans that increasingly reflected an intermodal orientation. There is more of a focus on and discussion of broader economic, environmental and equity concerns within the later long range plans than ever before”, also noting that “An increasing number of more specialized plans focusing on intermodal issues and projects is also

evident.” (Goetz et al, 2004, page 133). Based on the 2012 nationwide survey of state DOTs described in Chapter 4 of this present report, this conclusion seems well founded. But Goetz et al also go on to report on the same page that “However, despite these efforts, the results of the survey of knowledgeable respondents rates these state DOTs from a score of 2 (“to a little degree”) to slightly above 3 (“to some degree”) in meeting intermodal planning objectives.” The survey results reported in Chapter 4 of this report, while admittedly not directly comparable on the basis of the list of respondents covered, suggests that this opinion remains generally valid, perhaps with some evidence of continued progress towards greater multimodality in the planning process.

## 2.5 Summary of Insights from Literature Review

While the literature since the 1991 ISTEA legislation is quite sparse on multimodal structures and institutional frameworks, with limited coverage of State DOT practices post-2005, it does provide a consistent view of both multimodal needs and barriers to progress, and also provides growing evidence from a significant number of state DOTs of real progress away from a purely highways-centric approach to system planning. Organizationally, states can be said to have tried two different approaches to creating some form of a multimodal approach to transportation decision making. The first approach creates separate agencies having different modal mandates and then establishing a coordinating mechanism among them. The second, and much most common approach, is to integrate all (or nearly all) multimodal decision making and functional activities into a state DOT that is usually structured along modal lines.

The first case is best illustrated by the transportation institutional structure in Virginia. Separate agencies have been created with very focused mandates on some element of the state’s transportation system, e.g., the Virginia DOT, the Department of Rail and Public Transportation, the Department of Aviation, etc. This *secretariat* then has an Office of Intermodal Planning and Investment that coordinates the activities of these different agencies, primarily through the Board’s adoption of policies and plans, as well as the allocation of funding. The key benefit of such an arrangement is that each mode of transportation receives its share of attention in the decision making process, rather than being overshadowed by emphasis on one mode versus the other. The major challenge for such a structure is providing a strong and effective institutional mechanism that connects the different agency investment decisions in the context of a true multimodal transportation system.

It is much more common in the United States to include all or most modes of transportation within one agency, the state DOT, and efforts are then made to ensure an integrated, multimodal perspective on planning and decision making within this agency structure. The most recent example of reorganization to this model of operation at the time of writing is in Massachusetts, where a number of different agencies have been incorporated into one state DOT. The primary

stated motivation for this reorganization was to provide a more effective approach to achieving a multimodal decision making structure. The advantage of this approach is that all of the necessary functions—planning, programming, design, construction, and operations—are under the management control of one agency head, thus providing the ability to direct agency activities in a way that provides a more integrated multimodal approach. The major disadvantage is that some modal efforts can become overwhelmed by the activities of an agency that is primarily funded, and therefore primarily focused on highway concerns. This, in fact, has been a major criticism of many state DOTs around the country in the past. And even within multimodal state DOTs there remains a good deal of modal “stovepiping” when it comes to planning future transportation system improvements, that precludes mode neutral project development and selection, due in large part to funding restrictions on a DOTs major pot of money: its highway trust funds. Placing non-highway modes within the same Division or Department of a DOT may help with the coordination of cross-modal activities: but flexibility in funding will need to accompany this in order to be most effective, including most likely the use of some traditionally highway assigned funds. Efforts to replace modal divisions or offices with more functionally oriented ones have also seen limited success, although (and as our state DOT interviews described in Chapter 5 of this study brought out) agency organization charts often fail to reflect the true nature and extent of cross-office as well as cross-agency coordination and cooperation.

The documents reviewed suggest that the principal barriers to or constraints on multimodalism within State DOTs are in the form of funding shortfalls (both limited absolute levels and flexibility to use across modes), organization inertia (legacy of a highway-centric planning and operating culture), institutional commitment (the need for a top-down and agency-wide commitment to multimodalism in not just program and plan development, but also in project design and operations management), and a lack of technical tools, data, and staff training in cross-modal analysis, both within a DOT’s central and district offices. This limited supply of established analytic tools also represents a concern given the growing interest in performance based planning and its associated measurement and reporting requirements. It also creates additional challenges for multimodal analysis which requires not only quantifiable and regularly updated within-mode performance measures but ultimately also a means of comparing performance across modes (or across different modal combinations).

Multimodal corridor planning has offered opportunities to involve a variety of public and private sector stakeholders as well as modal experts, as should intermodal facility planning in conjunction with one or more of a state’s MPOs. Outside DOT stakeholder input seems to be increasingly important to such efforts, especially in the early stages of plan development. Freight intermodal planning also seems to offer good opportunities to bring together a variety of stakeholders, including in some cases representatives from rural parts of a state (e.g. investors in shortline railroads) that might otherwise focus their concerns on local highway issues.

## 2.6 References

AASHTO. 2009. *Alternative Organizational Processes in State Department of Transportation*. Washington D.C.: AASHTO, web document, accessed 7/30/2011.

([ftp://ftp.mdt.mt.gov/research/LIBRARY/AODP-1-ALTERNATIVE\\_ORGANIZATIONAL\\_PROCESSES-AASHTO.PDF](ftp://ftp.mdt.mt.gov/research/LIBRARY/AODP-1-ALTERNATIVE_ORGANIZATIONAL_PROCESSES-AASHTO.PDF))

Alliance for Transportation Research Institute. 2003. *How Does A Traditional State Highway Department Become A True Department Of Transportation: A Case Study In State DOT Organizational Change*. New Mexico Department of Transportation Research Bureau, web document, accessed 8/15/2011.

(<http://nmshtd.state.nm.us/upload/images/Research/NM03MMT03HowDoesTradHwDeptBecomDOT.pdf> )

Cambridge Systematics, Inc. 2000. *Management of Institutional Change in State Transportation Planning Processes and Programs*. Report for NCHRP Project 8-36A, Task 3. Transportation Research Board, Washington, D.C. web document, accessed 7/27/2011.

[http://www.statewideplanning.org/resources/57\\_NCHRP8-36-3.pdf](http://www.statewideplanning.org/resources/57_NCHRP8-36-3.pdf))

Crain and Associates, Inc. with Pacific Consulting Group, 1996. *Institutional Barriers to Intermodal Policies and Planning in Metropolitan Areas*. TCRP Report 14. Transportation Research Board, Washington, D.C.

Fontaine, M.D. and Miller, J.S. 2002. *Technical Assistance Report – Survey of Statewide Multimodal Transportation Planning Practices*. Virginia Transportation Research Council, web document, accessed 8/15/2011. ([www.virginiadot.org/vtrc/main/online\\_reports/pdf/03-tar9.pdf](http://www.virginiadot.org/vtrc/main/online_reports/pdf/03-tar9.pdf))

GDOT, 2011. *State Management Plan and General Program Management Manual*. Division of Intermodal Programs. Georgia Department of Transportation, Atlanta, GA.

<http://www.dot.ga.gov/aboutGeorgiadot/dotoffices/Pages/default.aspx>

Goetz, A.R, Sziliowicz, J.S., Vowles, T.M. and Taylor, G.S. (2004) *Assessing Intermodal Transportation Planning at State Departments of Transportation*. The Intermodal Transportation Institute at the University of Denver, Colorado. <http://www.du.edu/transportation>

Grant, M. Bowen, B, Jasper, K., Maggiore, M. and Wallis, E. 2010. *Statewide Opportunities for Integrating Operations, Safety and Multimodal Planning: A Reference Manual*. Report # FHWA-HOP-10-028. Prepared by ICF International, Inc. and Delcan, Inc. for the Federal Highway Administration, Washington, D.C.

Miller, J.S., 2005. *Multimodal Statewide Transportation Planning. A Survey of State Practices*. Virginia Transportation Research Council. Report No FHWA/VTRC 06-R13.

<http://vtrc.virginiadot.org/PubDetails.aspx?id=296524>

Martinez, R. 1993. Perspective from the Office of Intermodalism. In *ISTEA and Intermodal Planning: Concept, Practice, Vision*. TRB Special Report240. Transportation Research Board, Washington, D.C

Noerager, K. and Lyon, W. 2002. *Evaluation of Statewide Long-Range Transportation Plans*. Report to the Office of Intermodal and Statewide Planning, Federal Highway Administration, Washington, D.C.

MassDOT, 2011, Massachusetts Department of Transportation, website, accessed August 1, 2011. <http://www.massdot.state.ma.us/main/MassDOTAboutUs.aspx>

New Mexico Department of Transportation, website, accessed October 23, 2012.  
<http://dot.state.nm.us/en/Planning.html>

Pedersen, N.J. 2000. *Multimodal Transportation Planning at the State Level - State of the Practice and Future Issues*. Transportation Research Board, A1D01: Committee on Statewide Multimodal Transportation Planning, web document, accessed 8/15/2011.  
([www.trb.org/publications/millennium/00076.pdf](http://www.trb.org/publications/millennium/00076.pdf) )

Peyrebrune, H.L. 2000. *Multimodal Aspects of Statewide Transportation Planning*. NCHRP Synthesis of Highway Practice 286. Transportation Research Board, Washington, D.C., web document, accessed 8/15/2011. ([pubsindex.trb.org/view.aspx?id=667816](http://pubsindex.trb.org/view.aspx?id=667816) )

Transmanagement, Inc. 1998. *Innovative Practices for Multimodal Transportation Planning for Freight and Passengers*. NCHRP Report 404. Transportation Research Board, Washington, D.C., web document, accessed 8/15/2011.  
([http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_404.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_404.pdf))

VDOT, 2011. Virginia Department of Transportation, website, accessed August 1, 2011.  
[http://www.vtrans.org/about\\_us.asp](http://www.vtrans.org/about_us.asp)

## Chapter 3. An Assessment of Multimodal Transportation Needs in Georgia

### 3.1 Introduction

The efficient day-to-day operation of Georgia's many businesses depends heavily on the state's multimodal transportation infrastructure, and on the many different types of passenger and freight services this infrastructure supports. As Table 3.1 below shows, population, employment and associated transportation activity projections for the state indicate the need for *significant* future investment in both system preservation and also expansion. This chapter provides an assessment of what these different transportation needs are for Georgia, and goes on to examine the needs for, and potential consequences of, not taking a truly multimodal approach to such transportation investments. The assessment was carried out in two stages, first by reviewing the transportation needs, trends, and also the consequences of inaction identified in numerous recent transportation planning documents (Section 3.2 below), and second through interviews with key stakeholders within both public agencies and the Georgia business community (Section 3.3). Section 3.4 summarizes the findings from these two lines of inquiry.

### 3.2 Plan Synthesis

Twelve documents dealing with transportation trends and associated investment needs within the state were reviewed for their collective insights into the planning process. As a set, the needs they identify cover a wide range of topics, with some addressed in more detail than others. For each document reviewed, a bullet list of principal needs is provided below, taking GDOT's Statewide Strategic Transportation Plan for 2010-2030 as a starting point.

#### 3.2.1 Statewide Strategic Transportation Plan, 2010-2030 (April 2010) (GDOT)

**Purpose:** "to describe a transportation investment strategy to create up to 425,000 jobs over the next 20 years and \$480 billion in GDP growth over the next 30 years."

According to the Strategic Plan, the state's transportation infrastructure is coming under considerable stress due to sustained, long term traffic growth (and corresponding needs for capacity expansion) and to the associated and increasing costs of system maintenance. In particular:

- Georgia's population is expected to grow by 4.6 million, or 1.9 percent per year, over the next twenty years, leading to increased demands for automobile travel;
- "Everywhere-to-everywhere commute patterns" also foresee an increasingly dispersed set of personal travel activity patterns;



**Table 3.1 Population and Transportation Projections from Selected Plans**

Plan	Projections	Source
<b>GDOT Statewide Strategic Transportation Plan 2010-2030</b>	Population is expected to grow by 4.6 million people (1.9% a year) by 2030.	US Census Bureau (forecast from 2010 to 2030)
	2.2 million additional jobs (2.1% a year).	US Census Bureau (forecast from 2010 to 2030)
<b>Georgia Aviation System Plan</b>	Based aircraft at Georgia's public airports predicted to increase from 5,209 to 6,571 by 2021.	Activity levels reported by system airports
	General aviation operations projected to increase from 2.3 million to 2.9 million by 2021.	Activity levels reported by system airports
	Commercial enplanements at commercial airports (excluding Hartsfield) is predicted to increase from 1.3 million to 2.4 million by 2021.	Activity levels reported by system airports
	Operations by commercial carriers (excluding Hartsfield) are predicted to increase from 73,266 to 101,250 by 2021.	Activity levels reported by system airports
<b>Georgia Statewide Freight &amp; Logistics Plan, 2010-2050</b>	If new investment strategy is implemented, \$480 billion in GDP growth and 425,000 new jobs by 2040.	multiple sources
	Panama Canal will add 1.8 million and up to 3 million containers to its current volume by 2015.	Panama Canal Authority, Drewery consultants
<b>ARC Plan 2040 Regional Transportation Plan</b>	The 20 county Atlanta region is projected to add 2.8 million residents (total population 8.3 million) between 2010 and 2040 (annual growth of 1.69%).	multiple sources
<b>GDOT State Rail Plan</b>	Between 2010 and 2027, rail tonnage in GA is projected to grow by 30%.	multiple sources
	2.1 million passengers are projected to ride intercity passenger rail by 2030.	multiple sources
	Population projected to grow from 9,363,941 to 12,017,838, difference of 2,653,897 people(no time frame given).	2006 reports
	Between 2010 and 2027, truck tonnage in GA is projected to grow by 260 million tons (50% increase).	2009 Georgia Annual Logistics Report

- An aging of the state’s population suggests more non-work trips and more demand for alternatives to automobile travel;
- We can expect an increase in the public’s concern for the environmental impacts of different transportation solutions;
- International freight trends will favor Georgia and the Southeast region in the coming decades. Significant investments in the freight transportation network will be needed if the state is to stay competitive with its neighbors. According to the Georgia Department of Economic Development’s (GDEcD) Center of Innovation for Logistics (“Georgia Market Snapshot”), this includes increased demands for intermodal truck, rail and waterborne freight transport, including the movement of goods into and out of the seaports of Savannah and Brunswick:
  - Intermodal rail traffic loadings have experienced gains for 17 straight months,
  - In April 2011, containerized freight traffic was up 8.5% year-over-year, totaling 260,035 TEUs (twenty-foot equivalent units)
  - In April 2011, the Port of Brunswick posted a 12.4% increase year-over-year in Ro-Ro volumes (automobile and machinery units), moving 38,010 units.

In light of such trends and projections, the Strategic Plan identifies the following transportation needs and their estimated costs to deliver:

**Existing Infrastructure Needs:**

- Improvement of roads and bridges and infrastructure components ( i.e. signs, signals, drainage structures, roadway markings, and 540 miles of state owned rail)
- Maintenance, operational, and safety needs estimated at \$16-19 billion
- An expanded managed toll-lane program for metro Atlanta that combines 770 miles of new capacity with traffic demand management
- Continued investment in the state’s Intelligent Transportation System (ITS) infrastructure
- Development of a transportation network of primary bicycle routes throughout the state, providing connectivity for both intrastate and interstate bicycle travel

**New Capacity Investment Needs:**

- Better, more direct connectivity for Georgia shippers between the Interstate Highways system and seaports
- Interstate widening (\$2,400 M), new limited-access facilities (\$17,700 M), interchange improvements (\$330 M), railway capability improvements (\$340 M), and first- and last-mile connectivity to the Interstate system (\$180 M)
- Proposed northwest bypass around metro Atlanta as an alternative path to I-75 between Macon and the Tennessee border to the north (\$7,300 M)
- New rail lines (\$9,500 M).

### 3.2.2 Georgia Statewide Freight & Logistics Plan, 2010-2050 (December 2010) (GDOT)

**Purpose:** “to describe the competitive position of Georgia’s freight and logistics sector relative to other regions in the country, and to build a case for increased investment in Georgia’s freight-related assets.”

**Needs:**

- Introduce new security requirements for air cargo. A 100 percent inspection of air cargo is required by a congressional mandate, which will increase time and cost for shipping.
- Strengthened support for growth in marine cargo trade with Asia occasioned by the deepening of the Panama Canal. This includes securing funding for the deepening of the Savannah port to at least 48 feet by 2015.
- Support for the Norfolk Southern Crescent Corridor, considered the most significant rail corridor in the Southeast. “The project, estimated at \$2.5 billion, will create a direct intermodal rail route between the Northeast and the South. It entails the construction of 300 miles of new passing track and double track, the addition or expansion of 11 rail intermodal terminals, the expansion and upgrade of existing rail lines along the corridor, the purchase of new locomotives and freight cars, and the construction of new terminals.” Improvements in Tennessee and Alabama are covered under a federally supported TIGER grant, but for Georgia to see the benefits “a public-private partnership that includes the Federal government, the State of Georgia, other states along the Crescent Corridor, and Norfolk Southern” is needed.
- At some point in the future, “a need to create a faster connection for rail traffic between the Southeast and the Southwest, specifically Atlanta to Dallas.”
- Locally, improvement of intra-urban traffic, passenger car traffic, and the movement of goods by increasing the efficiency of trucks movements within the state.

### 3.2.3 Georgia Aviation System Plan (Last Updated Summer 2003) (GDOT)

**Purpose:** “to provide Aviation Programs with a key decision making document and guidance. [...] To identify the development needs of Georgia Airports, to determine how the airport system is currently performing, to set objectives for its future performance, and to determine the actions necessary to direct the airport system toward established goals.”

**Needs:**

- Capacity expansion through a combination of expanding and maximizing capacity at existing facilities and new airports (Forsyth/Dawson County, Paulding County, and also Effingham County to the north of Savannah).

- Greater flexibility in airport master plans and “airports and their host and surrounding communities should take steps to identify and adopt zoning and land use activities compatible with airport operations”.
- “Significant investment on the local, state, and federal levels; (an) estimated \$313 million to satisfy the System Plan’s performance objectives over the next 20 years; \$27 million will be needed annually to improve and maintain the airport system”.

### **3.2.4 Georgia State Rail Plan (2009) (GDOT)**

**Purpose:** “to combine the state’s planning for freight and passenger rail into one single coordinated effort.”

#### **Freight Rail Needs:**

- Rail safety needs of \$13.8 billion for additional warning systems, highway-rail grade crossing needs, grade separations and track relocation.
- Class 1 infrastructure repair and maintenance needs of \$4-\$5 billion annually.
- Class 1 infrastructure improvements needs of \$3.5 billion annually.
- Short line improvements needed in the order of \$11.8 billion for upgrading track for heavier railcars, for safety and speed improvements, and for deferred maintenance.
- An estimated \$69.4 million is needed for shortline capital projects.
- The total estimated cost is \$175 to \$195 billion over 20 years for the “base case scenario”.

#### **Passenger Rail Needs:**

- Several intercity passenger lines and estimated cost and operating figures for a statewide intercity and commuter service (identified by the Georgia Rail Passenger Program) . Lines include, among others, Macon-Atlanta, Albany – Macon, Savannah – Macon, Atlanta – Athens – Augusta, and Columbus – Atlanta, at a total cost of over \$1.5 billion by 2030.
- South East High-Speed Rail (SEHSR) project.

### **3.2.5 Plan 2040 Regional Transportation Plan (RTP) (2011) (Atlanta Regional Commission)**

**Purpose:** “to examine the region’s transportation needs through 2040 and to provide a framework to address anticipated growth through systems and policies.”

#### **General Needs:**

- Adequate densities and a supportive mix of uses or fixed-guideway transit expansions
- Coordinated economic development and transportation agendas

- A congestion relief strategy that can be implemented within expected funding levels
- Increased need for transit and human services
- Need for more pedestrian-friendly communities
- A balanced approach to land use development and future transportation infrastructure
- Increased reliance on the use of public-private partnerships to implement transportation projects

**Specific Needs:**

- \$61 billion for the overall cost for the financially constrained RTP (available funding).
- The Plan 2040 transportation vision = \$126 billion.
- \$42.8 billion needed for infrastructure maintenance, operation, improvement and modernization of existing facilities, including highway, transit, passenger and freight, and safety concerns.
- \$16 billion needed for system expansion, including roadway widening, managed lanes, and transit (e.g. multimodal passenger terminal).
- \$2.1 billion for demand management: i.e. bicycle and pedestrian facilities, employer services, ridesharing, and special studies.
- Lifting of the existing 50-50 restriction on the use of MARTA sales tax receipts for operating versus capital expenses (to ensure coverage of operating costs).

**3.2.6 Georgia Logistics Report 2010: Fueling Logistics Competitiveness (The Georgia Center of Innovation for Logistics)**

**Purpose:** This report provides an in depth analysis of the state of logistics in Georgia and explores the future growth of the industry in the state, and seeks to provide a “compilation of insight, expertise and ideas from industry experts all over the world” into the current challenges and opportunities in the logistics industry.

**Needs and Trends:**

- Government regulation is a growing concern for trucking companies. In 2009, this concern (according to a recent survey of trucking companies across the US) even outweighed fuel prices and road congestion.
- Solutions for the increase in demand associated with population growth, both in the transportation of people and freight.
- Efficient operation of inland ports or intermodal hubs (gaining more recognition in the industry as the use of multimodal transportation systems has become more frequent).
- Connection of different modes of transportation in Atlanta (it has doubled its intermodal capabilities).
- A multimodal approach to logistics as part of a state-wide strategic plan.

### **3.2.7 Comprehensive Housing Market Analysis: Savannah, Georgia (October, 2011) (U.S. Department of Housing and Urban Development)**

**Purpose:** “to present economic trends in the Savannah Housing Market Area for a 3-year period.”

#### **Needs and Trends:**

- Providing transportation options for visitors is one of the foundations of the local economy. Tourism within the state has grown gradually since 2000 and this trend is expected to continue throughout the forecast period. This growth requires solutions involving improvements to the airport in Savannah, more viable connections from Hartsfield-Jackson to Savannah, or both.
- Enhancing the port of Savannah’s impact on the economy of both the city and state and improvements in transportation infrastructure at the port. The port has attracted businesses to the city. The Savannah Economic Development Authority reports that at least one-third of all inquiries by businesses interested in relocating to the area are related to the Port of Savannah.

### **3.2.8 Logistics Market Snapshot (June 2012) (Georgia Center of Innovation for Logistics)**

**Purpose:** “to provide a brief look at trends in the logistics market.”

#### **Trends:**

- Intermodal rail traffic in May 2012 was 3.5% higher than in May 2011 while “Intermodal loadings have experienced year-over-year gains for 30 straight months”.
- In April 2012, the Port of Savannah handled 248,886 TEUs, a 4.2% increase from April, 2011. Also in April 2012, the port’s Ocean Terminal handled 132,144 tons of break bulk cargo, up 18.8% from April 2010.
- In April 2012, the Port of Brunswick handled 59,926 automobile and machinery units, a 57% increase over the past year, making it the nation’s fifth busiest port for import-export RO/RO cargo.

### **3.2.9 City of Atlanta Urban Redevelopment Plan (October, 2011) (City of Atlanta)**

**Purpose:** “to identify needs for redevelopment for Atlanta. “

#### **Needs:**

- Investments in public transit are needed. A Streetcar, for example, will greatly enhance the city’s multi-modal transportation options.

- The proposed Multi-Modal Terminal will be a great addition to Atlanta’s transit system, serving as a hub to facilitate access to intercity bus and rail travel as well as commuter bus and rail travel services planned for the Atlanta region.

### **3.2.10 Transportation Policy Statement (2011) (Georgia Chamber of Commerce Policy Statement)**

**Purpose:** “position statement of the Transportation Policy group of the Georgia Chamber of Commerce.”

- Supports efforts to establish a statewide, multimodal transportation plan for Georgia.
- Supports a transportation plan and funding mechanisms that include:
  - expanded mass transit and freight options as part of a multimodal approach
  - an improved ability of Georgia employees to get to and from work
  - improved movement of companies’ products to the marketplace by road, rail, air and water
  - inclusion of innovative programs such as concessions, tolls, and public-private initiatives.

### **3.2.11 Metro Atlanta Chamber of Commerce**

Several statements and papers from the Metro Atlanta Chamber of Commerce (MAC) were analyzed to find needs and trends identified by the Chamber.

#### **Needs and Trends:**

- Increase in traffic demand in the metro Atlanta area outpaces roadway construction by 45 percent.
- The American Society of Civil Engineers grades Georgia’s road and transit infrastructure both a D+, citing funding as a major issue.
- Vehicle miles travelled will increase by almost 78% from 1990 to 2020.
- No county ships or receives more freight than Fulton County. There are six other Atlanta urban area counties in the top 15.
- The total amount of freight movement in metro Atlanta will increase by 78 percent through 2030.
- Any new funding proposal should be available for all transportation purposes.
- Investment in rail transit has been stagnant for a decade. Sustaining the current system is key to attracting and supporting conventions and major sporting events as well as corporate recruitment.
- Freight traffic to and from the two freight mega-centers in Georgia (metro Atlanta and the Port of Savannah) is projected to grow significantly over the next decade.

- Investment in freight corridors should recognize metro Atlanta and Savannah as logistics and distribution hubs and appropriately connect them to the statewide transportation network to drive our economy.
- The logistics industry employs over 1 million people in Georgia. Top employers include UPS, Delta Air Lines, Norfolk Southern, CSX, and Manhattan Associates. This sector of the economy will choke without strategic investments in freight mobility.
- Near the Port of Savannah, “last mile” transportation investments like a direct connection from the port to I-95 are essential (*to enabling efficient traffic movement*).
- The Legislature needs to pass a measure that allows the region to vote on a penny sales tax to finance transportation projects.
- Metro Atlanta’s business community and its many partners have collaborated to organize, fund and execute a campaign to support a major statewide transportation projects funding referendum scheduled for July 31<sup>st</sup>,2012. MAC has worked with partners from around the region to raise funds and to establish a campaign organization.
- MAC supports the development of a unified regional transit organization for the metro Atlanta region, and they call on the legislature to consider long-term transportation funding options, such as converting the excise tax on motor fuel to a sales tax.
- Instead of having access to a labor pool of about 2.5 million workers, the business community really has only about 500,000 people to draw from because many employees don’t want to work at a job if they have to commute more than 30 or 45 minutes.
- The business leaders’ patience is “at the edge”.

### **3.2.12 Get Georgia Moving Coalition**

The Get Georgia Moving Coalition includes a diverse group of transportation supporters, from clean air and transit advocates, to highway contractors, business leaders and bankers. Members of the coalition support a funding mechanism that will relieve traffic congestion, ensure air quality and promote economic development. To that end, the coalition also supports efforts to optimize current revenue sources, invest in transit and all other modes of transportation, and support innovative funding programs. The following quotes from coalition members and business leaders give an indication of their point of view and opinions.

- “For too long, Georgia has lacked the money to build the infrastructure we need to support our booming population and maintain our strong economy. As a result, badly needed projects are being canceled all across Georgia. This problem is affecting every corner of our state. It touches every one of the nearly 10 million people who call Georgia home. And it must be resolved.” – Charles Tarbutton, Assistant VP of Sandersville Railroad Company, Chair of Georgia Chamber of Commerce, Co-chair Get Georgia Moving Coalition



- “Congestion is the number one problem every citizen deals with every day in metro Atlanta and the biggest threat to our quality of life and continued economic success. This problem is not new. It has been looming for at least 10 years. In a decade, metro Atlanta has gone from 15th- to 4th- to 2nd-worst traffic in the nation.” - Bill Linginfelter, former Georgia State CEO for Wachovia Bank and former chairman of the transportation policy committee of the Metro Atlanta Chamber of Commerce
- “Any real solution must be immediate, generate enough funding to provide the relief we need, be open to all modes of transportation and have a meaningful impact on our quality-of-life and our economic competitiveness,” said Joe Leonard, retired chairman of AirTran Airways, chairman of the transportation policy committee of the Metro Atlanta Chamber of Commerce and co-chair of the Get Georgia Moving Coalition
- “Traffic in Atlanta is probably the single biggest detriment to attracting more business to the state and metro area [...] Atlanta has the second-worst traffic congestion in the country, and the state is next to last in funding levels for transportation. If we don't take action, we could lose over half a trillion dollars in economic benefit.” -Doug Hertz, CEO of United Distributors Inc., co-chair of the Metro Atlanta Chamber's transportation policy committee, and co-chair of the Get Georgia Moving Coalition

### **3.3 Stakeholder Interviews**

#### **3.3.1 Interview Respondents**

To further assess the transportation needs for Georgia, in-person and/or telephone interviews were held with 10 key stakeholder groups. Although names of interviewees will remain confidential, the groups that were interviewed include:

- Georgia DOT
- Atlanta Regional Commission (ARC)
- Metropolitan Atlanta Rapid Transit Authority (MARTA)
- Georgia Regional Transportation Authority (GRTA)
- State Road and Tollway Authority (SRTA)
- Georgia Ports Authority
- Chatham County – Savannah Metropolitan Planning Commission
- Hartsfield-Jackson Atlanta International Airport
- Glynn County Airport Commission
- Norfolk Southern (NS)

### 3.3.2 Example Interview Guide

The following 10 question interview guide was used as a straw-man starting point for stakeholder interviews, where the term “YOUR AGENCY” is used generically to refer to each of the 11 responding agencies listed above:

1. “YOUR AGENCY” directly or indirectly interacts with several modes of transportation. How are other modes of transportation incorporated into “YOUR AGENCY”’s planning and investment activities? Briefly describe how “YOUR AGENCY”’s current plan or investment strategy was developed. What groups outside of “YOUR AGENCY” were involved with the development of this plan, if any?
2. Using a transportation project as an example, please describe how the relationship between GDOT and “YOUR AGENCY” works.
3. Who do you interact with the most at GDOT, and for which types of projects or activities?
4. To what extent does “YOUR AGENCY” interact with regional or local transportation agencies with respect to transportation issues? Does “AGENCY” have a representative on the region’s metropolitan planning organization? If so, how often are issues of multimodal connectivity discussed?
5. There are various plans developed by GDOT that are specific to mode (Aviation System Plan, Freight and Logistics Plan, State Rail Plan). What is the involvement of “YOUR AGENCY” in the development of such plans? Do you know what GDOT does to ensure that the goals of these plans are consistent with other modal plans and with the statewide transportation plan?
6. A statewide transportation plan is required by the federal government. In your opinion, does the current plan represent a statewide multimodal transportation plan? Why or why not? Did “YOUR AGENCY” participate in any way in the development of this plan?
7. To your knowledge, are there financial, legal, constitutional, organizational, or other reasons why the plan has taken the form it has?
8. The year is 2015 and GDOT has just reorganized to become a true multimodal state DOT. What do you think it would look like in terms of organizational structure, funding categories, staffing priorities, etc.? What would that mean for “YOUR AGENCY”?

9. Are you aware of other states or other state transportation agencies that do a good job of organizing for and investing in a multimodal transportation system? If so, what role does a toll authority play in such a structure?
10. If you were going to recommend steps that should be taken to make GDOT, or for that matter, the entire state transportation structure (GDOT, “YOUR AGENCY”, GRTA, Georgia Ports Authority) become more “multimodal,” what would they be? What barriers would there be to implementing your suggested steps? How would you overcome those barriers?

In practice, a deliberately open-ended interview process also led to a number of additional topics.

### **3.3.3 Summary of Insights from Stakeholder Group Interviews**

The following insights were gained from the above listed interviews regarding multimodal transportation needs and trends:

#### **Modally Neutral Planning:**

- There is not a level playing field regarding “mode neutral” planning/needs.
- Restrictions on how the gasoline tax can be used need to be lifted to create a more level playing field and to allow for more flexible funding of programs and/or projects.

#### **GDOT Roles and Structure**

- GDOT should adopt a more decentralized organizational structure. Transportation is often a local issue and needs to be dealt with locally. Decentralization will also empower areas in Georgia outside of Atlanta and Savannah.
- Most modal agencies/groups see GDOT as not working well with them, communicating poorly, working slowly and excluding them from some planning efforts.
- GDOT should become more proactive, rather than reactive. It should create better partnerships with the big players. GDOT should adopt a business approach to investment decisions.
- Transportation agencies and major stakeholders can become much more efficient if they work together and learn from each other. GDOT should play a bigger role in this coordinating activity.

#### **Multimodal Planning within GDOT**

- The modal setup for GDOT is in part a result of a similarly modally oriented set up at the USDOT.

- GDOT's Intermodal Division needs to be better integrated, and given greater recognition, within the Department. The Intermodal Division should focus more on pro-active planning activities, and not just project oversight.
- GDOT's Intermodal Division lacks money and personnel. The career path for staff in the Division is limited. GDOT will have to look at career enhancement possibilities within the organizational structure for those interested in multimodal planning.
- In order to strengthen GDOT's multimodal planning focus and increase funding, GDOT will have to prove the value of non-highway modes and of multimodal planning to both stakeholders and legislators. The return on investment will have to be quantified in terms of economic growth, employment growth, user benefits, and benefits for the business community. Modeling such outcomes by, for example, using an analysis tool like the REMI model that was used in the Georgia Statewide Freight and Logistics Plan, could show how multimodal programs and projects can provide economic gains to the state.

### 3.4 Summary

Several transportation plans, reports and other documents were reviewed and a variety of local stakeholders were interviewed. Although many of the needs contained in the plans and various reports are specific, most reflect an interest in an increased and improved multimodal approach to transportation. *In particular, there appears to be a genuine interest among stakeholders in placing economic development, land use development, and transportation investments on a level playing field regarding modal planning.* As expected, stakeholders see funding deficiencies as the main constraints on progress, with a revised funding mechanism needed that will support increased multimodal investments and in the process expand and give greater meaning to GDOT's planning activities. Proactive multimodal planning is seen as being needed to deal with Georgia's transportation problems and to ensure that the transportation system can handle the expected and significant growth in the state's population and associated passenger and freight vehicle miles of travel.

### 3.5 References

Atlanta Regional Commission. 2010. Volume I: Plan 2040 Regional Transportation Plan. Report for ARC Strategic Plan, web document, accessed 8/30/2011.

([http://documents.atlantaregional.com/plan2040/docs/tp\\_PLAN2040RTP\\_072711.pdf](http://documents.atlantaregional.com/plan2040/docs/tp_PLAN2040RTP_072711.pdf) )

Cambridge Systematics, Inc. 2010. Georgia Statewide Freight & Logistics Plan, 2010-2050. Report for GDOT Freight & Logistics Plan, Task 2, web document, accessed 8/29/2011.

([http://www.dot.state.ga.us/informationcenter/programs/georgiafreight/logisticsplan/Documents/GDOT\\_Strategic\\_Need\\_for\\_Investing.pdf](http://www.dot.state.ga.us/informationcenter/programs/georgiafreight/logisticsplan/Documents/GDOT_Strategic_Need_for_Investing.pdf))

Georgia Department of Transportation. 2011. GDOT FY2011 Strategic Plan Update. Report for GDOT FY2011 Strategic Plan, web document, accessed 9/29/2011.

(<http://www.dot.state.ga.us/informationcenter/programs/Documents/Strategic/FY2011-StrategicPlan-FINAL.pdf> )

Georgia Department of Transportation Intermodal Programs Division. 2009. State Rail Plan. Report for Georgia State Rail Plan, web document, accessed 9/12/2011.

(<http://www.dot.state.ga.us/travelingingeorgia/rail/Documents/StateRailPlan2009.pdf> )

Georgia Department of Transportation Office of Planning. 2010. Statewide Strategic Transportation Plan 2010-2030. Report for Statewide Strategic Transportation Plan, web document, accessed 8/30/2011. (<http://www.it3.ga.gov/Documents/Final-SSTP.pdf> )

Wilbur Smith Associates, Inc. 2003. Georgia Aviation System Plan. Report for GDOT Aviation System Plan, Executive Summary, web document, accessed 8/20/2011.

[https://georgiaaviation.dot.ga.gov/PDF/System\\_Plans/Statewide\\_SysPlan1.pdf#page=1&view=fit](https://georgiaaviation.dot.ga.gov/PDF/System_Plans/Statewide_SysPlan1.pdf#page=1&view=fit)

Georgia Chamber of Business, 2011. Georgia Transportation Alliance

<http://www.gachamber.com/transportationalliance/> Last accessed October 2012.

## **Chapter 4. Multimodal Planning at State DOTs: A Nationwide Survey**

### **4.1 Introduction**

This chapter summarizes the results of a nationwide survey of State Departments of Transportation, focusing on the extent to which they emphasize multimodal solutions in planning for transportation services. The results offer some insights into the size, scope, and progress that states have been making in the area of multimodal planning in recent years.

### **4.2 Survey Methodology**

The *Survey Monkey.com* on-line software was used to distribute an on-line survey to potential respondents within state DOTs and selected other transportation planning agencies<sup>1</sup>, via an e-mail explaining briefly the purpose of the survey and what it was being used for. Information was requested about an agency's various modal responsibilities, planning practices, funding sources, and staffing levels. After an internet search for each state DOT's organizational structure, the director of multimodal planning (or the closest equivalent) from each state DOT was sent an email and a link to the survey. This resulted in 40 usable surveys being completed between April 27<sup>th</sup> and August 31<sup>th</sup> of 2012, including respondents employed by 35 different state DOTs. Figure 4.1 maps the state DOTs that responded to the on-line survey instrument. Most respondents answered all of the 18 questions put to them, and with all questions requesting a qualitative ranking (selecting a value between '1' to '5', see below), providing 34 or more usable answers. For three of the questions requiring a more involved, respondent specific response, at least 30 usable surveys were obtained in each case. For consistency, the statistics presented are those received from state DOT respondents only. The following sections describe the results obtained on a question-by-question basis. The full survey instrument can be found in Appendix A to this report. Per the e-mail letter to respondents, no individual respondent's answers are identified in survey reporting.

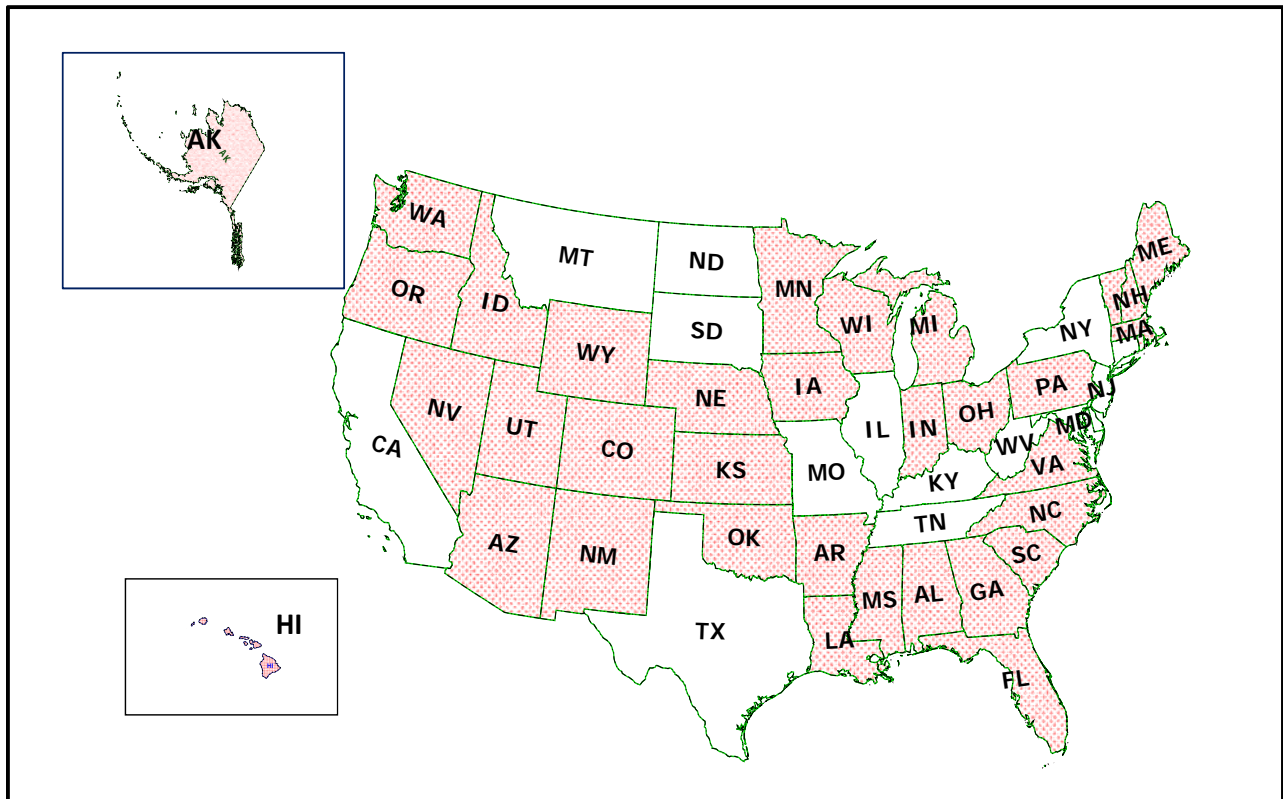
### **4.3 Survey Results**

#### **4.3.1 Modal Responsibilities**

After establishing if a respondent worked for a state DOT or other transportation agency, each respondent was first asked what modes of transportation other than highway the DOT was

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<sup>1</sup> In addition, five of other transportation planning agencies were also surveyed where a specific mode of transportation (air travel) was known to be part of a separate state agency. For consistency, only State DOT results are reported in this chapter. Information from these non-DOT responses was, however, consulted in developing the report's suggested action items.

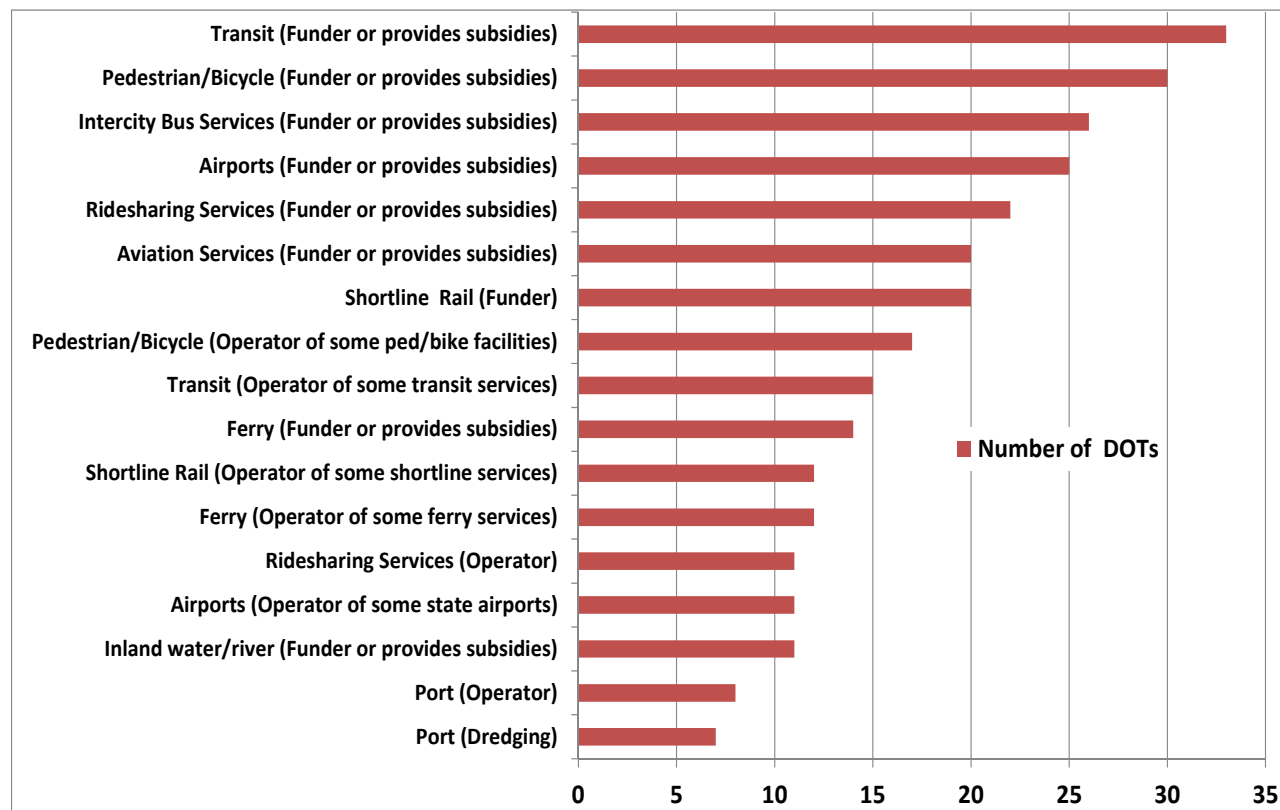


**Figure 4.1: Map of State DOTs Responding to Survey**

responsible for, and in what capacity, and to identify the responsible department for such mode specific activities. Specifically:

**Q4. If you work in a state DOT, which of the following modes of transportation does your state DOT have some responsibility for? Please indicate who is responsible for each mode so indicated. (Note all that apply.)**

As shown in Figure 4.2, the results indicate that state DOTs are most often involved in transit funding, airport funding, intercity bus funding, and pedestrian/ bicycle funding, and least involved in the funding of ports and inland waterways. It should be noted that only 34 out of the 35 respondents answered the question regarding modal responsibilities. Figure 4.3 shows how respondents broke down these various modal funding and operating activities by the type of departments responsible for them. In the majority of cases, responsibility falls under a mode-specific bureau or division or under the planning department/office within the DOT (note: agencies were allowed to identify more than one organizational unit having some responsibility). An Intermodal Bureau or Division had some responsibility for one or more of the 17 modal services listed in Figures 4.2 and 4.3 some 19% of the time, or in roughly one in five cases.



**Figure 4.2: DOT Modal Responsibilities (N = 34 DOT Responses)**

### 4.3.2 Planning and Performance

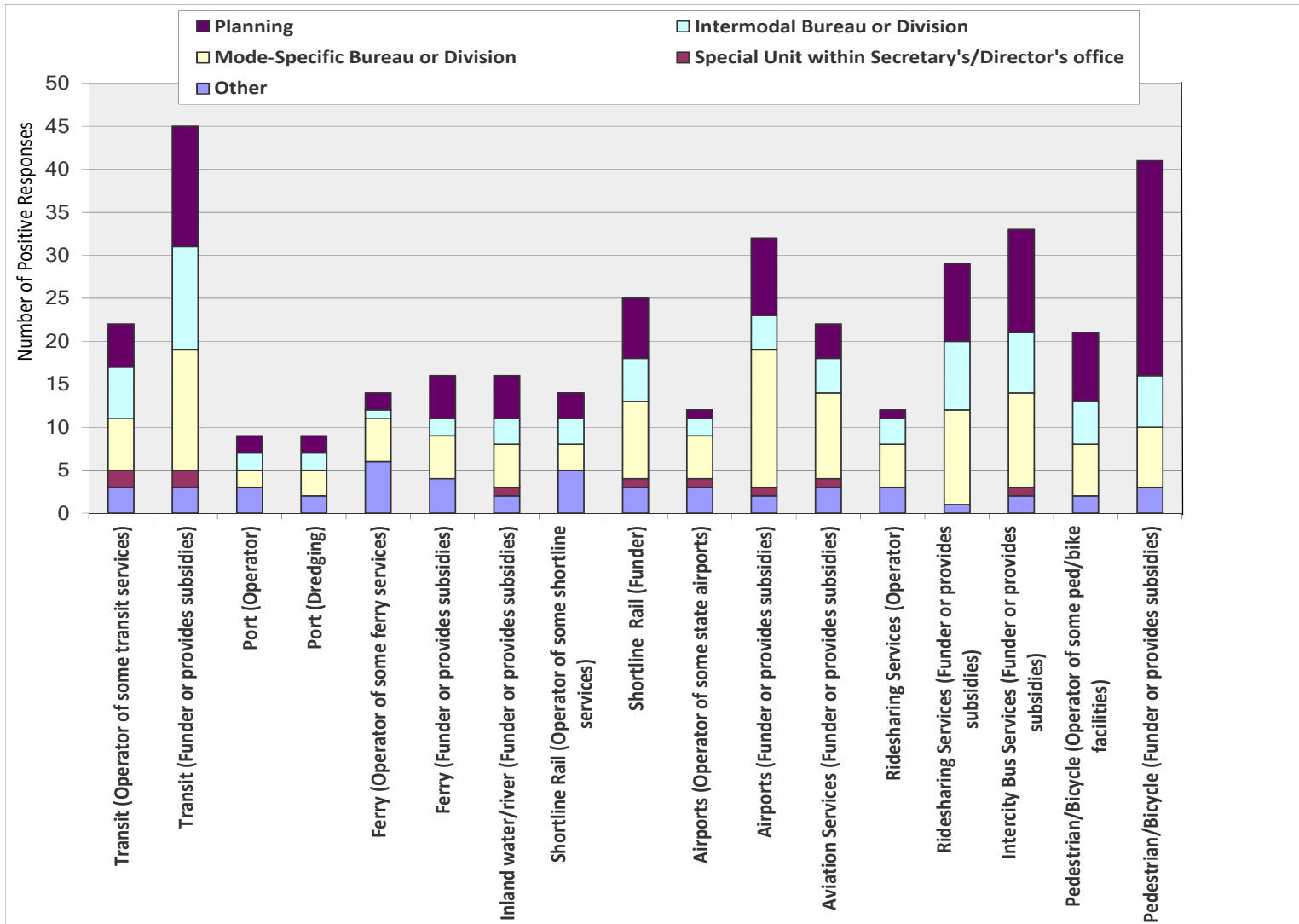
Respondents were then asked about their modal plans, the involvement of different modes in planning activities, and about the evaluation criteria used to compare modes. Specifically:

**Q5. Does your agency develop mode-specific plans and/or a multimodal plan? and...**

**Q5a What efforts exist to integrate the various plans?**

The majority of state DOTs (23 respondents) reported developing both mode-specific plans and multimodal plans. Four respondents indicated that their agency only developed mode-specific plans and seven respondents answered multimodal plans only. When asked what efforts exist to integrate the various plans, most respondents mentioned that the plans were integrated into a statewide transportation plan. Some mentioned the collaboration with the MPOs in their state and a few specifically mentioned that their mode-specific offices and their multimodal planning office work together closely. Only four respondents did not report efforts to integrate their plans. Survey respondents were then asked the following questions:



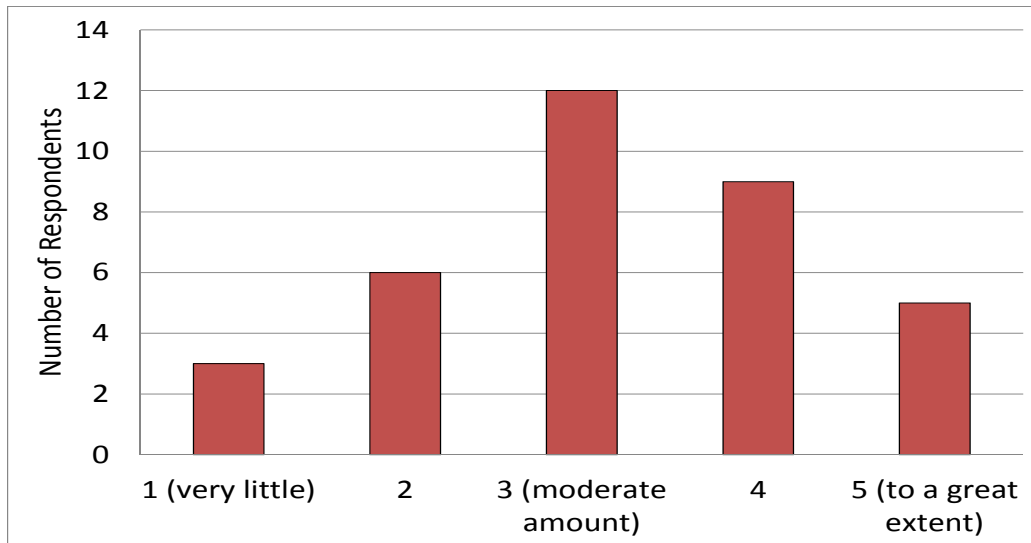


(Note: more than one department may have some responsibility for a modal activity)

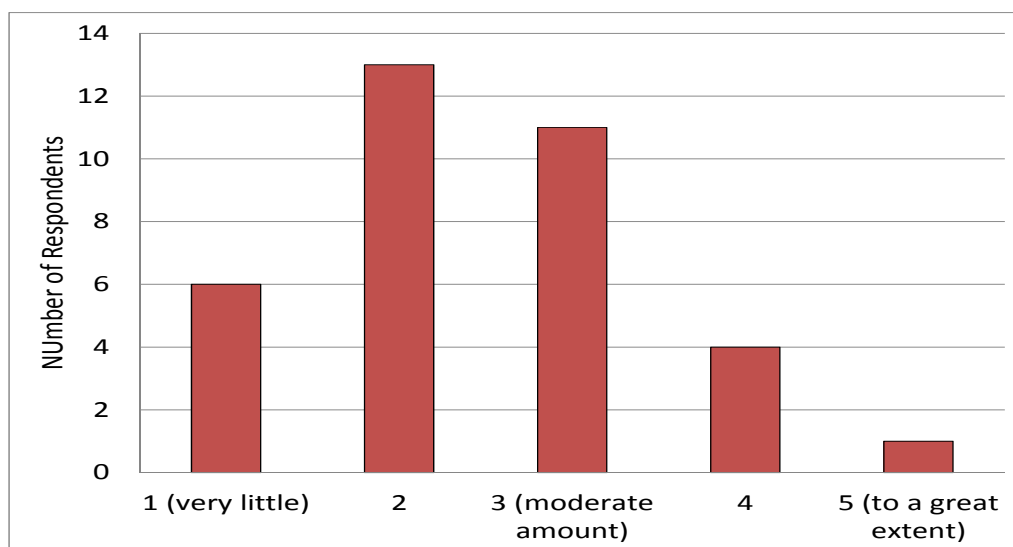
**Figure 4.3: DOT Modal Responsibilities by Department**

**Q6. In your opinion, to what extent does your agency conduct multimodal transportation planning that examines different modal strategies among the state-responsible modes indicated in Q4 above? and...**

**Q7. To what extent are different modal options compared to one another in the planning/programming process to determine the most cost effective investment for the state?**



**Figure 4.4: To what extent does your agency conduct multimodal transportation planning that examines different modal strategies?**



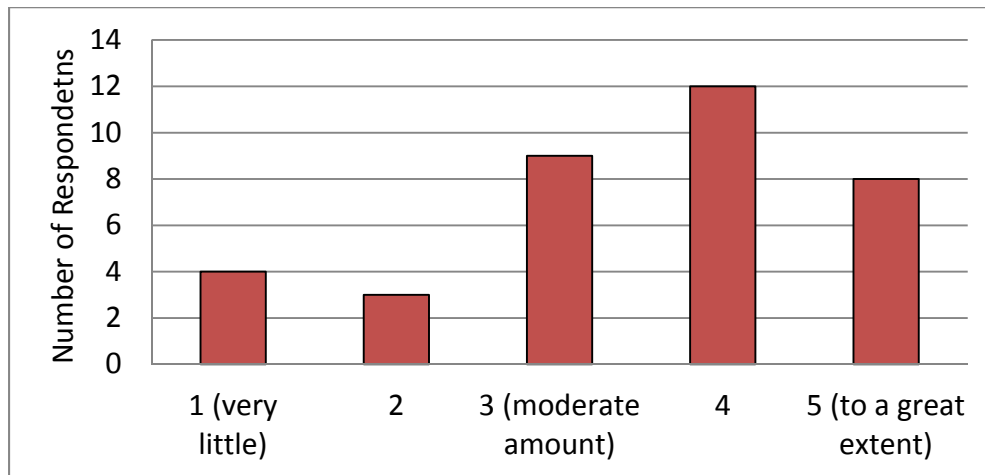
**Figure 4.5: To what extent are different modal options compared to one another in the planning/programming process to determine the most cost effective investment for the state?**

Figures 4.4 and 4.5 show the results. While the extent to which the DOTs conduct multimodal transportation planning that examines different modal strategies was considered moderate, to moderate-to-great according to the majority of survey respondents (Figure 4.4), when asked to what extent different modal options are compared to each other in the planning/programming process to determine the most cost effective investment for the state, 30 respondents (86% of those responding) indicated little to moderate effort (Figure 4.5). Survey respondents were then asked the following question:

**Q8. If different modal options are compared to one another, are there specific evaluation criteria that are used to conduct such a comparison?**

Nineteen (19) respondents or 54% of the states responding to this question, stating that in those cases where modal options were compared, *no evaluation criteria* were being used to conduct such a comparison. Only seven respondents, or 20% of states responding, said that their agency had such evaluation criteria. Three respondents said they did not know, and five replied not applicable. The next question put to survey respondents was the following:

**Q9. In your opinion, over the past 10 years, to what extent has your agency been incorporating a more multimodal approach into transportation planning and programming?**



**Figure 4.6: To what extent has your agency been incorporating a more multimodal approach into transportation planning and programming over the past 10 years?**

Although the above results suggest that the level of multimodal planning efforts is rather variable among the state DOTs, 20 respondents, or over 55% of the DOTs replying to the above question indicated that they had experienced a significant (‘moderate/great extent’ or ‘great extent’) increase in the incorporation of a more multimodal approach into their agency’s transportation planning and programming over the past 10 years: and with 29 respondents, or

83% of state DOT responses received indicating a moderate or better trend towards a more multimodal planning approach over the past decade (see Figure 4.6).

### 4.3.3 Funding

Funding, or the lack thereof, is a recurring topic within multimodal transportation planning (and within transportation planning activities in general, for that matter) and the survey therefore included several questions focusing on this issue. Specifically, agencies were asked about *the flexibility of use associated with transportation revenue sources* within their state, and if separate funding programs were available for non-highway modes:

**Q10. Does your state have a transportation trust fund whose funds can be used for any mode of transportation?**

Answer Options	Response Percent	Response Count
yes	29.4%	10
no	64.7%	22
don't know	5.9%	2

Only 10 states indicated that they had a trust fund that can be used for any transportation mode. The majority of the states **do not** (22 respondents). This inquiry was then followed with the following question:

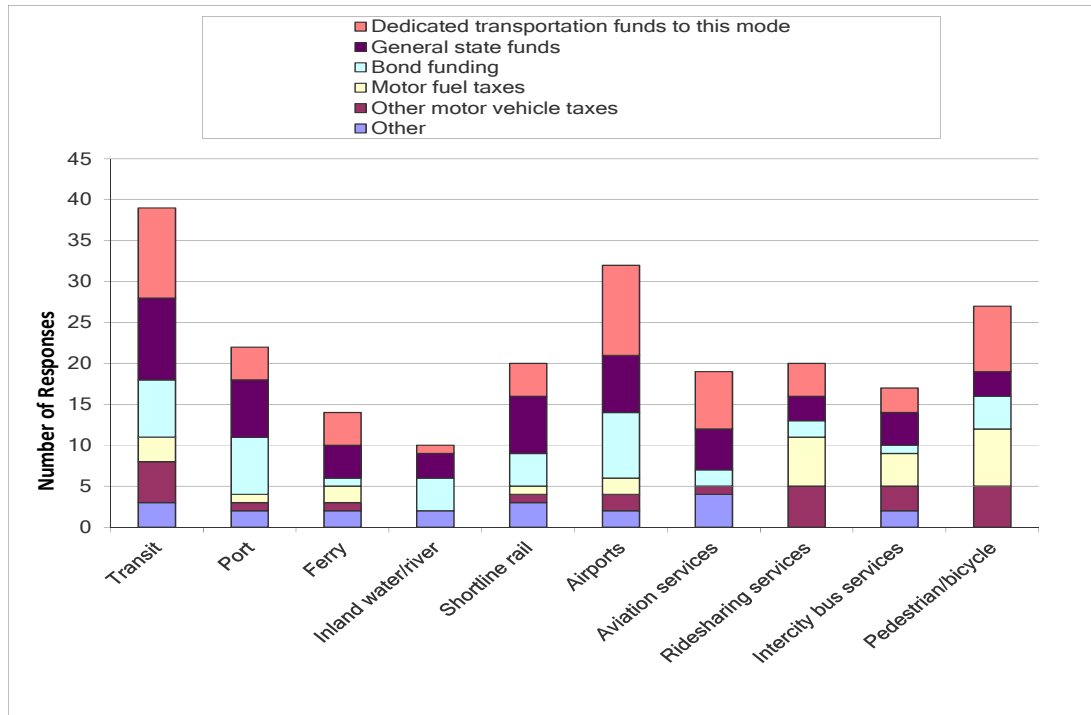
**Q11. Does your state have separate funding programs for non-highway modes, such as a freight rail investment program, ports program, airport improvements, etc? (Note: this includes funding programs outside of your agency, but still using state funds, such as a freight facility investment program.)**

Most states (25 out of 35 respondents, or 71%) reported having separate funding programs (including statewide funding programs outside the DOT) for non-highway modes (e.g. a freight rail investment program, a ports program, airport improvements). Those with separate funding programs were then asked the following question:

**Q12. If your answer to #11 is yes, which of the following modes are funded with state funds? Indicate which types of funding can be used for each mode that is funded.**

Figure 4.7 shows how these modes are funded for the states that have separate funding programs. Dedicated, mode-specific funds, general state funds, and bond funding are reported to

be the most popular forms of revenue for non-highway modes. Rideshare, intercity bus, and pedestrian/bicycle support activities also receive a significant share of their funding from motor fuel taxes as well as from other motor vehicle-related taxes.



	Dedicated transportation funds to this mode	General state funds	Bond funding	Motor fuel taxes	Other motor vehicle taxes	Other
All Mode Totals	57	53	40	26	24	20

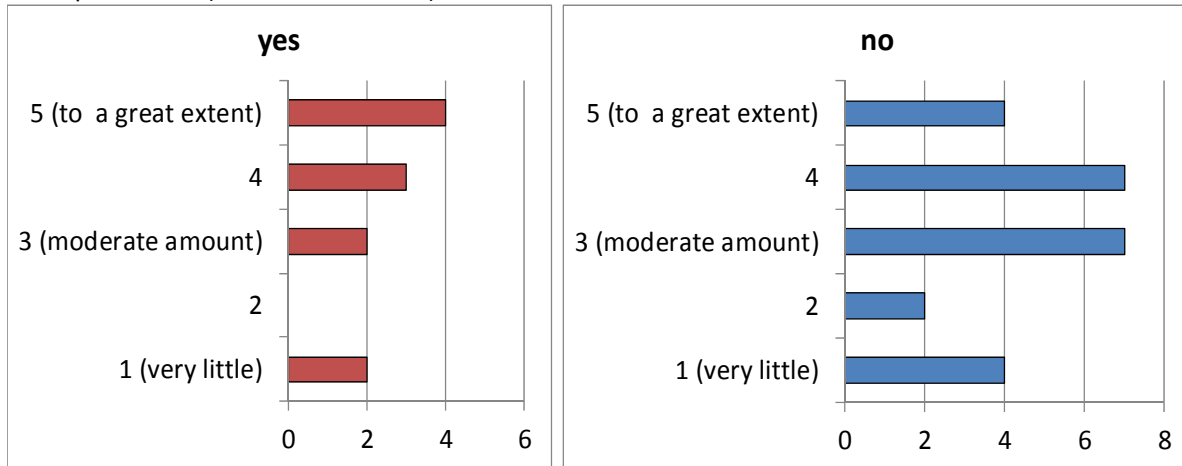
**Figure 4.7: Which modes are funded with what type of state funds?**

Funding is expected to have a direct impact on the extent to which a state incorporates modal strategies and modal comparisons in its multimodal planning activities. To show this relationship, the results from the planning questions were combined with the results from the funding questions. Figures 4.8 and 4.9 show the differences in responses to perceived progress in multimodal planning and programming within a DOT, and the availability of either flexible funding (Figure 4.8) or separate funding sources (Figure 4.9) for non-highway modes.

Given the limited number of DOTs that reported flexible funding sources, it may be too early to draw any conclusions here. However, in states where respondents reported having a separate funding source for non-highway modes, the percentage of scores of 4 or 5 on the perceived progress of their DOT towards multimodal planning within the past decade was more than double the percentage of those reporting a 4 or 5 score among DOTs where such separate

funding does not currently exist (i.e. at 17 out of 27 DOTs, or 63%, versus 3 out of 11 DOTs, or 27%: see Figure 4.9).

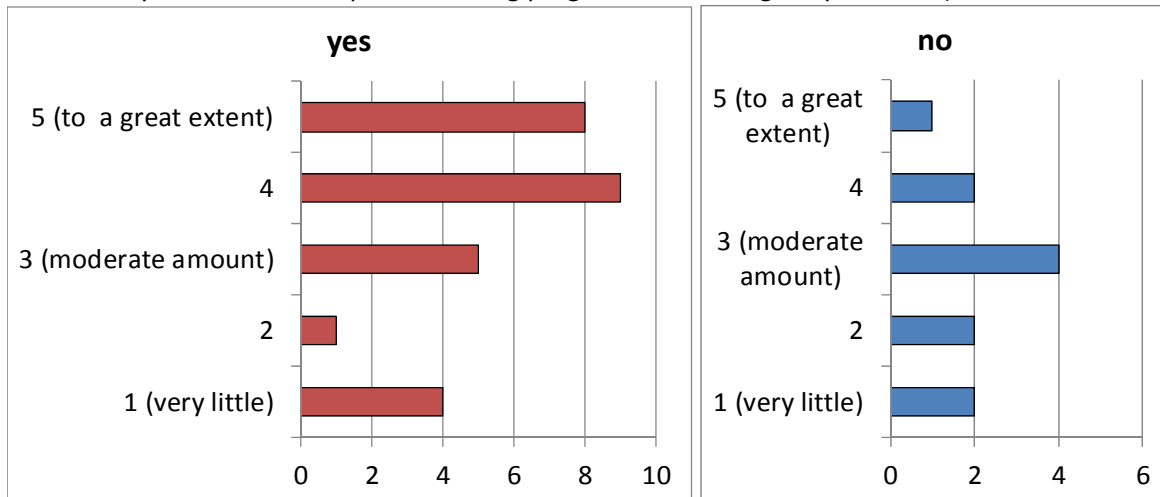
Q10. Does your state have a transportation trust fund whose funds can be used for any mode of transportation? (Answer = Yes or No)



Q 9. In your opinion, over the past 10 years, to what extent has your agency been incorporating a more multimodal approach into transportation planning and programming? (Score = 1 to 5)

**Figure 4.8: Incorporating a more multimodal approach into transportation planning over the past 10 years plotted against flexibility in use of state funding.**

Q11. Does your state have separate funding programs for non-highway modes? (Answer = Yes or No)



Q 9. In your opinion, over the past 10 years, to what extent has your agency been incorporating a more multimodal approach into transportation planning and programming? (Score = 1 to 5)

**Figure 4.9: Incorporating a more multimodal approach into transportation planning over the past 10 years plotted against separate funding programs for non-highway modes.**

#### 4.3.4 Staffing

Like funding, and closely related to it, staffing is an important aspect of multimodal planning and programming activity. First, state DOT interviewees were asked the following question:

**Q14. If you are an employee of a state DOT, please indicate the number of full time employees in the state DOT.**

The average number of full-time employees at the state DOTs included in the survey was approximately 4,200, but ranged from 730-12,000. The following question was then asked of these same respondents:

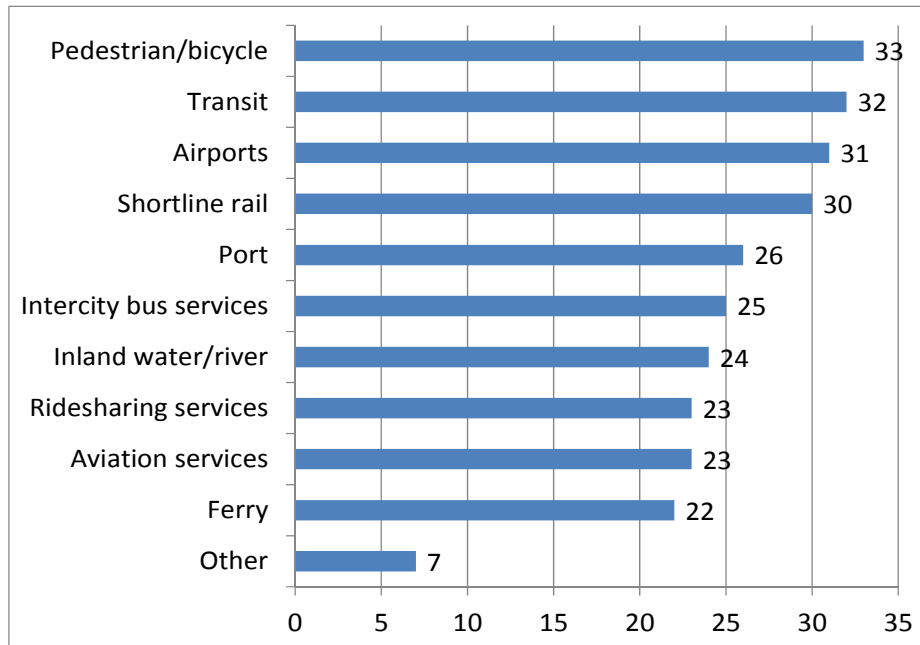
**Q15. If you are an employee of a state DOT, estimate the number of employees in the state DOT that deal primarily with the planning for the following modes. (Note: Do not double count. If one employee is equally responsible for port and inland water, count each as 0.5 employees. Round your final number to the nearest whole number).**

Figure 4.10a and 4.10b provide the results, showing respectively the number of state DOTs indicating one or more staff persons assigned to non-highway mode planning, and the average number of full-time employees devoted to planning issues per non-highway mode. Based on the 34 different DOT responses obtained on this question, the survey produced an average of 17.4 staff members per DOT summed over all non-highway modes, with an as expected emphasis (6.2 staff average) on public transit planning. For comparison, GDOT Planning staff numbers devoted to planning for non-highway modes were reported as follows:

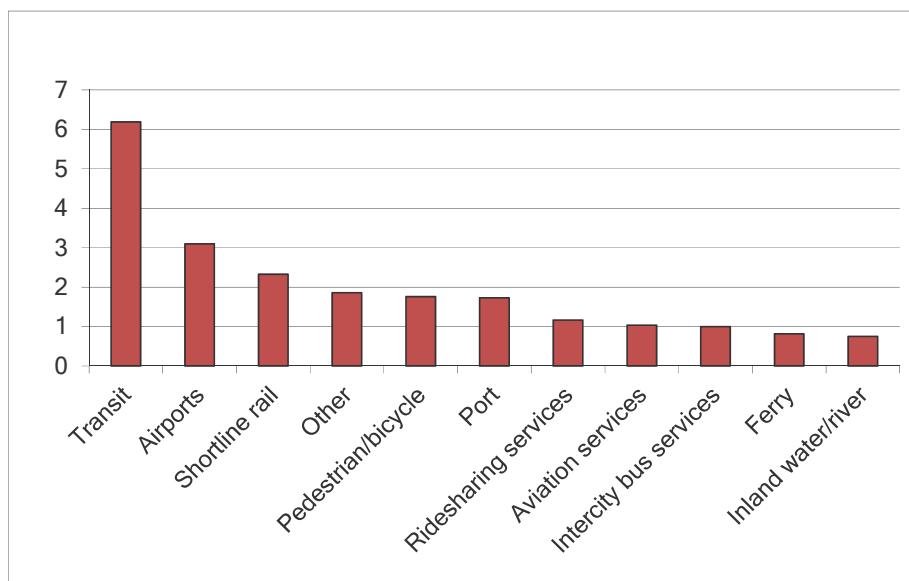
Transit = 21;  
Airports = 6;  
Shortline Rail= 4;  
Seaports = 1;  
Ridesharing Services = 1;  
Intercity Bus Services = 1; and  
Pedestrian/bicycle = 1;

This sums to a total of 35 staff in all. Comparing staff sizes across DOTs is difficult here, however, given that in some states the DOT (such as Virginia, for example, as described in Chapter 5 of this report does not cover all modes of transport), while many states do not have a major rail transit system such as Atlanta's MARTA to plan for (and among those that do, this planning is usually not entirely within the state DOT). And standardizing for a responding state's

total residential population and/or its DOT-wide total staffing levels still raises questions of useful comparisons. This said, at an estimated 1.4 *non-transit* planning staff per Georgia resident in 2012, this number is lower than all but one of the 8 other multimodal DOTs reporting total DOT staff numbers between 3,500 and 5,500 (bracketing GDOT’s survey estimated 4,500 employees).



**Figure 4.10a: Number of State DOTs Reporting Involvement in Non-Highway Mode Planning (N=34)**



**Figure 4.10b: Average number of employees in the state DOTs that deal primarily with the planning per non-highway modes (if the DOT covers that mode)**



#### 4.3.5 Critical Issues and Success Factors

The next part of the survey asked respondents to share their thoughts on critical issues that multimodal planning is facing and on the characteristics required of a truly multimodal DOT. This included a number of open response questions. A summary of these questions and the responses received is given below. First, the respondents were asked the following question:

**Q13. Given your experience with multimodal transportation planning, identify three of the most important reasons that can explain why such planning has not been undertaken more fully in your agency.**

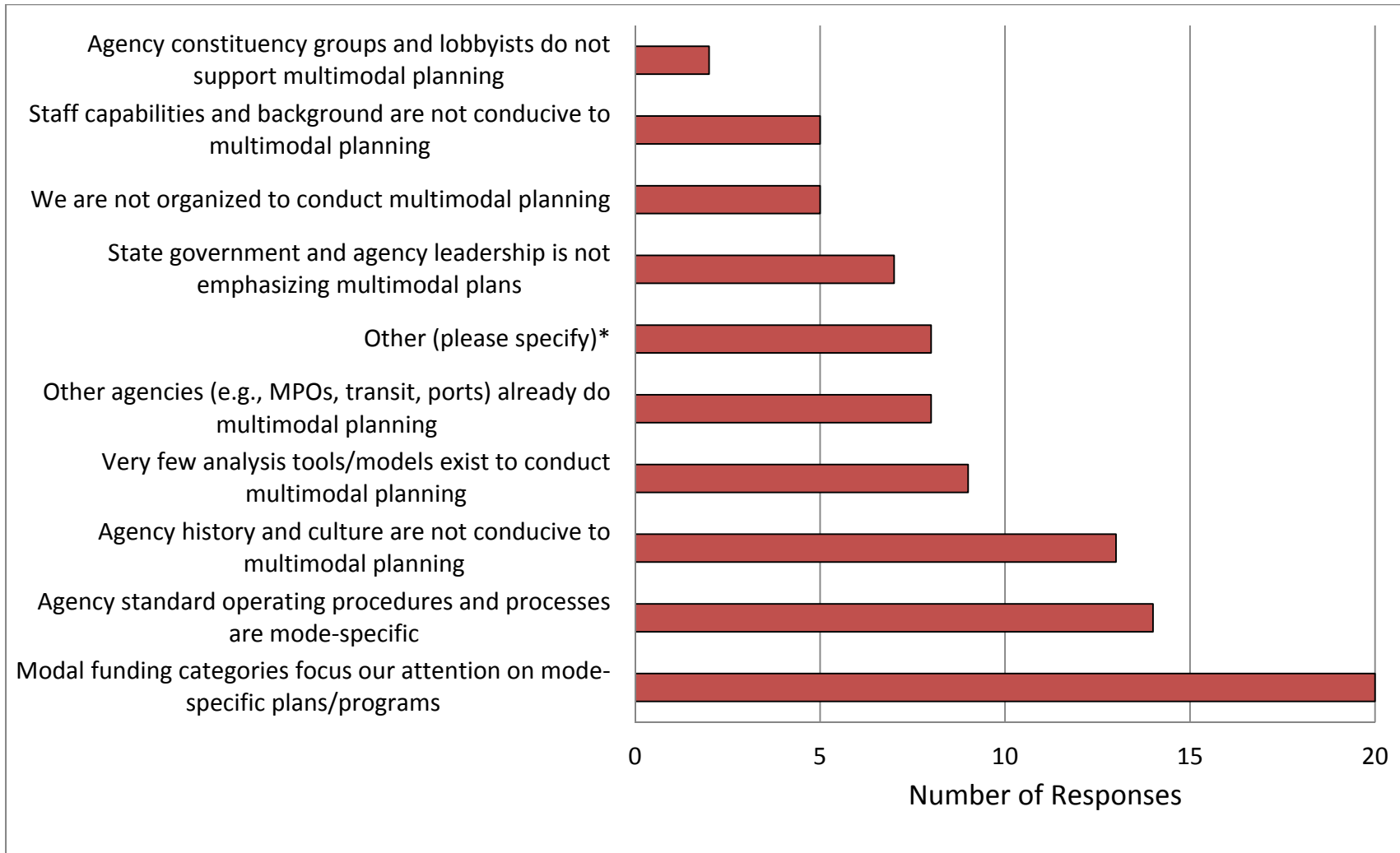
Figure 4.11 shows the results. Modal funding that focuses on mode-specific plans is considered the main reason, followed by agency standard operating procedures and agency history and culture. In addition to identifying the most important reasons, respondents were given the opportunity to further elaborate on the critical issues relating to statewide multimodal transportation planning. Specifically, respondents were asked the following question:

**Q16. What do you think are the most critical issues relating to statewide multimodal transportation planning in your state?**

Figure 4.12 is based on the responses received, showing the number of times a specific issue was mentioned by a respondent. A total of 50 issues were identified by the 30 respondents whose interviews were part of this exercise (i.e. some respondents raised more than one issue). As expected, funding shortfalls and the need for greater flexibility in the use of existing funds was the most popular response, with mode specific funding silos a commonly perceived problem. Lack of a multi-modal culture, seen as a problem from the top of an organization down, was the second most popular category of response. Problems with moving freight multi-modally, with inter-modal connections, and with the need to deal multi-modally with land use/urban sprawl issues were the next most popular issues raised. Interviewees were then asked to offer their thoughts on the following question:

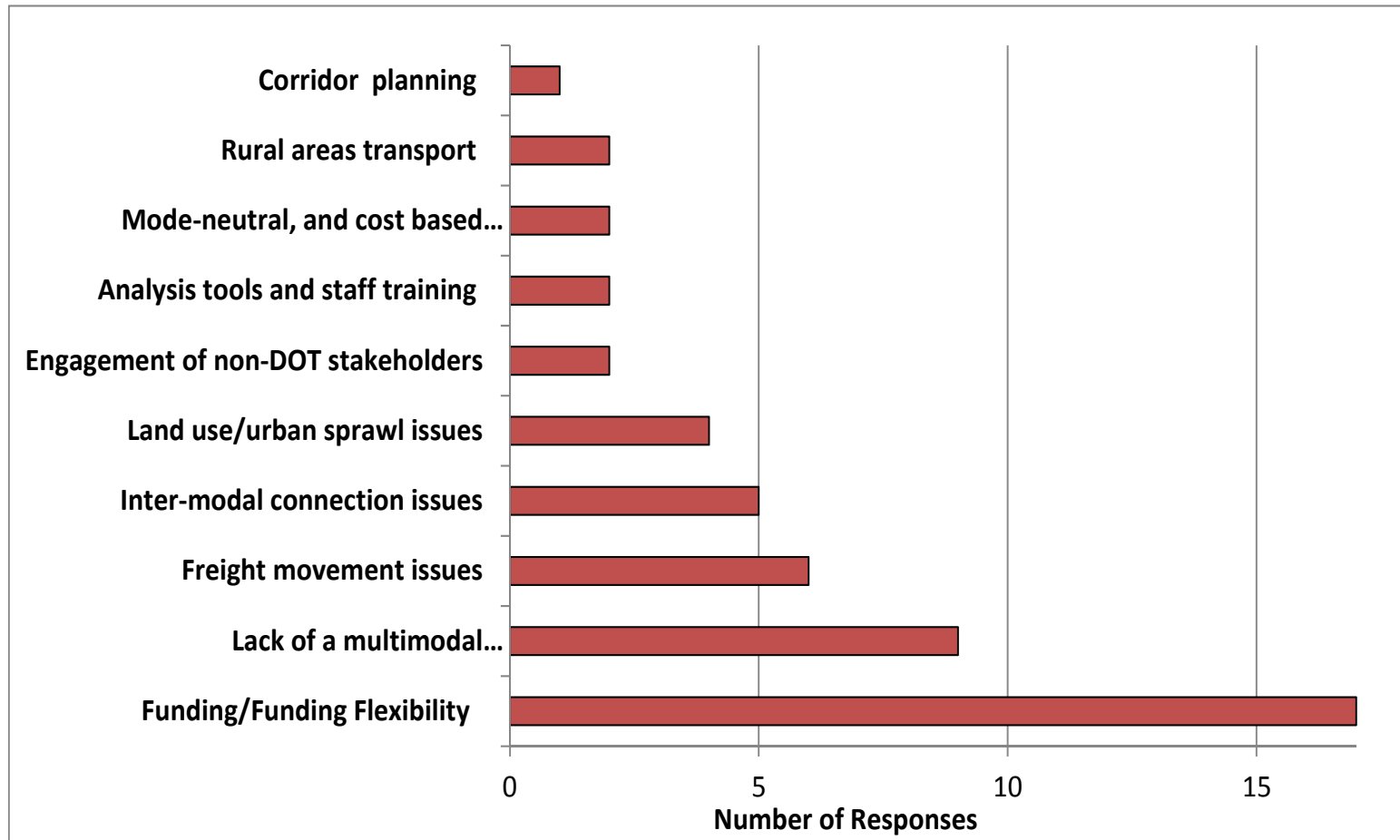
**Q17. What are the characteristics that are necessary in a state DOT to be considered a multimodal agency?**

Figure 4.13 is based on the responses received; again showing the number of times a specific issue was mentioned by a respondent. A total of 38 issues were identified by the 30 respondents whose interviews were part of this exercise. The same issues with funding flexibility, the need for a modally neutral culture, and for leadership commitment to multi-modalism came up once again. Also seen as important are the need for better communication between mode specific

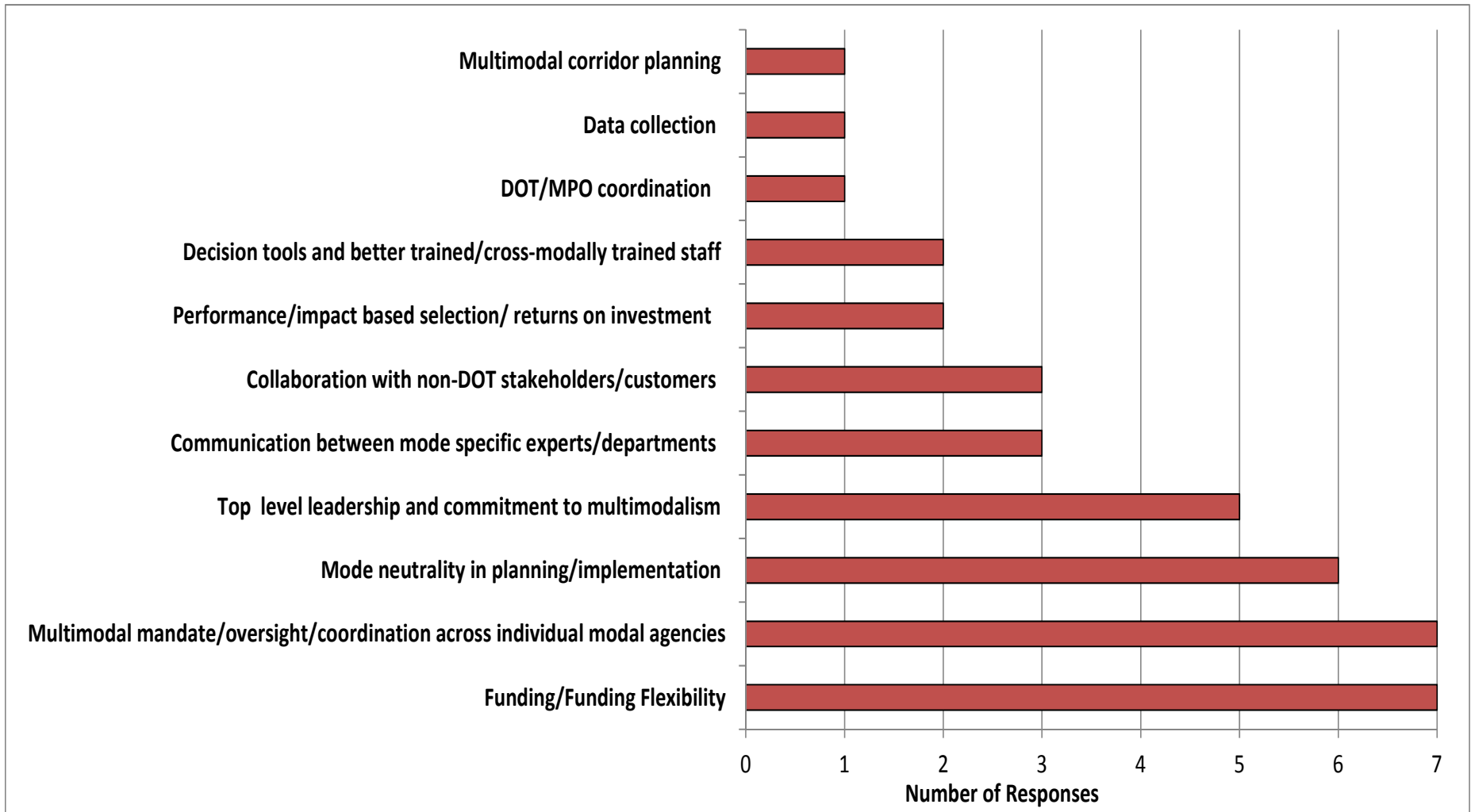


\* “Other” responses included discussions of greater MPO versus statewide attention to multi-modal planning in sparsely populated states.

**Figure 4.11: The Most Important Reasons Why Multimodal Transportation Planning Has Not Been Undertaken More Fully Within the State**



**Figure 4.12: Qualitative Assessment (Number of Mentions) of the “Most Critical Issues” Relating to Statewide Multimodal Transportation Planning in a Survey Respondent’s State**



**Figure 4.13: Qualitative Assessment (Number of Mentions) of the Characteristics That Survey Respondents Found Necessary for a State DOT To Be Considered a Multimodal Agency**

experts and the departments they work in, as well as greater collaboration with non-DOT stakeholders and customers, including transportation service providers in the private sector. The next most popular responses pertained to the need for performance based/impact based plan selection; and the need for better decision making tools and better cross-modally trained staff.

Taking the responses to questions 13, 16 and 17 together, and noting the similarity in issues identified in all three cases, the following themes summarize the major survey findings with respect to the critical issues facing, and the characteristics that need to be developed, in order to create a truly multi-modal state DOT:

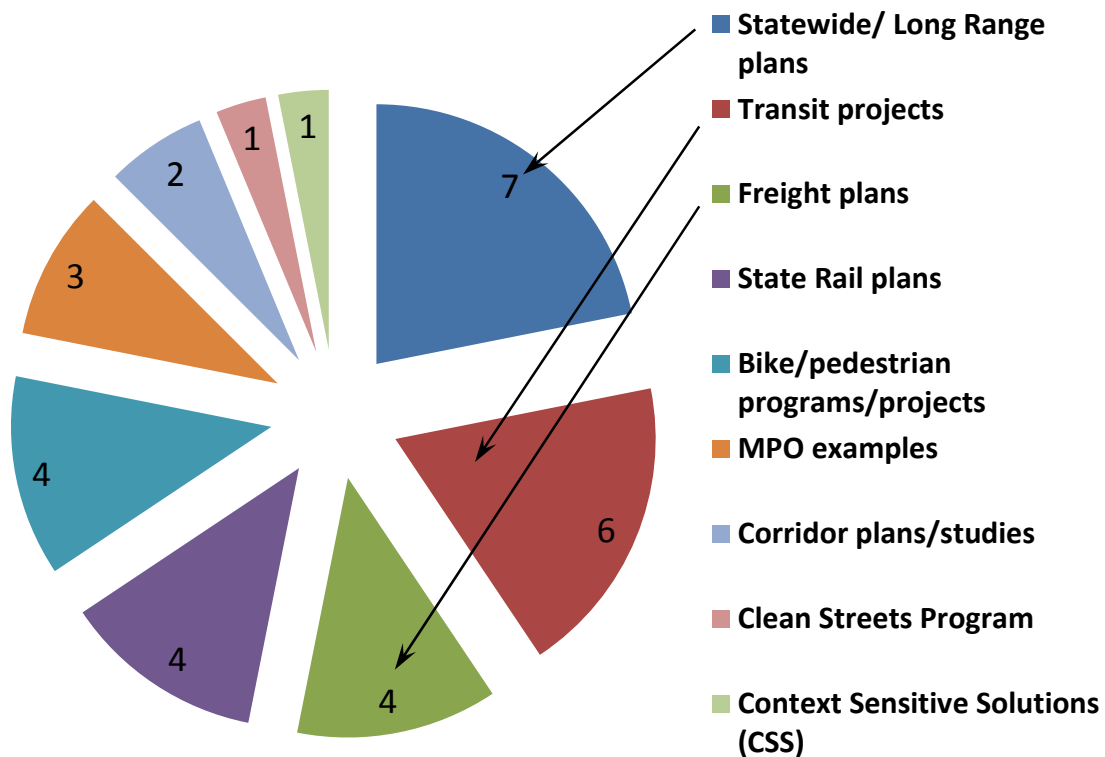
- **Funding:** with the decreasing amount of funding that is available to most states, it is hard to justify infrastructure expansion if you cannot even take care of your existing infrastructure. Federally supported modal fragmentation and federal mandates are also seen as a burden to funding and multimodal planning. *Flexible funding* is needed to create a level playing field among the modes available.
- **Culture:** a cultural change from an automobile and highway focus towards alternative modes of transportation is required within agencies as well as among the population at large.
- **Leadership:** strong leadership is needed at the top, as well as throughout the whole agency, that emphasizes the importance of multimodal planning.
- **Institutional issues:** fragmented ownership and operation of different modes causes competition among modes, instead of agencies coordinating in order to work towards the same DOT goals to solve *transportation* (rather than mode-specific) challenges.
- **Communication:** communication with and engagement of all partners and stakeholders both within the agency and externally is of major importance.
- **Mode-neutral planning:** an agency should look at solving transportation issues without bias toward one mode or another. Policies and procedures are needed to allow for an unbiased systems analysis in order to choose the most effective, rather than to plan according to available funding.
- **Staffing, data and analysis tools:** ongoing staff development and training are needed to shift the transportation paradigms more towards non-highway modes. In addition, data collection, analysis and decision making tools for multiple modes are important for analyzing the characteristics and impacts of multi-modal solutions and to determine objectively the most cost effective solutions and the returns on investment.

#### 4.3.6 Examples of Good Multimodal Planning

A final question asked survey respondents the following:

**Q18. In your opinion, are there examples of multimodal planning in your state that could be pointed to as good examples of such planning? If so, please describe.**

Figure 4.14 shows the number of times the most commonly referenced types of multi-modal planning activities were referenced, with 32 examples taken from the 30 individual responses received on this question. While most respondents referred to their long range or multimodal transportation plans, a number referenced specific public transit and also bike/pedestrian projects, as well as freight and rail (including passenger as well as freight) plans. Two corridor studies were also mentioned, as well as one reference each to the multimodal value of “Complete Streets”<sup>2</sup> and “Context Sensitive Solutions”<sup>3</sup> projects.



**Figure 4.14: Number of Good Multimodal Planning Practice Responses Received by Topic**

<sup>2</sup> <http://www.completestreets.org/>

<sup>3</sup> [http://www.fhwa.dot.gov/context/css\\_primer/whatis.htm](http://www.fhwa.dot.gov/context/css_primer/whatis.htm)

## 4.4 Summary

This nationwide, state DOT focused survey effort examined some of the key characteristics of multimodal transportation planning in state transportation agencies. The majority of state DOTs reported developing both mode-specific plans and multimodal plans. Although this “snapshot” of multimodal planning suggests that most state transportation agencies still do not use evaluation criteria to compare multiple modal options, 20 states out of 35 felt that multimodal approaches to planning and programming have increased over the past 10 years.

Not surprisingly, constraints and limitations on project eligibility because of funding sources were identified as the major barriers to advances in multimodal planning and program development: with the post-2007 economic recession mentioned as a contributory factor to funding shortfalls in general. While the majority of the states do not have a *transportation* trust fund (only 10 out of 35 said they did have one), most states have separate funding programs (including state funding programs outside the DOT per se) for non-highway modes (e.g. freight rail investment program, ports program, airport improvements).

In addition to the limitations to multimodal planning due to funding sources, agency standard operating procedures and an agency’s history and past culture were given as constraints on the adoption of a more multimodal planning approach. It appears that some of the key challenges that limited the adoption of multimodal planning approaches in earlier decades are still considered challenges today, notably modally-oriented funding categories. Given the size of most state DOTs, it is also informative that on average less than 17 employees per agency were assigned to non-highway mode planning activities (although this number varied significantly across agencies). As expected, public transit had the highest number of non-highway focused employees engaged in planning activities within a state transportation agency, while bicycle/pedestrian programs are common in DOTs, albeit with limited staffs. Shortline rail and seaport planning are common freight activities, again minimally staffed. Despite these limitations, however, it is a positive sign that many of the state officials interviewed concluded that real progress has been made in furthering multimodal planning objectives within their agencies over the past 10 years.

## Chapter 5. Example State DOT Case Studies

### 5.1 Introduction

This chapter includes four state DOT case studies, combining information gathered from publications and planning agency websites, as well as from both on-site and telephone interviews with state DOT and other agency personnel. Prior to each of these semi-structured and effectively open ended on-site and telephone interviews, a short list of questions was forwarded to the interviewees as a basis for contextualizing the discussions. This list can be found in Section 5.6 below. In all cases, these discussions took place after a staff member within the DOT had filled in the nationwide on-line survey described in Chapter 4 of this report, indicating a willingness to discuss multimodal planning issues with project staff. Two project staff members were present at each on-site and telephone interview session. On-site discussions with staff members in Georgia DOT's Multimodal Division were also used to inform this process and to refine the questions posed to the selected DOTs.

Based on information reported in previous chapters of this report, four state DOTs were selected for analysis: Florida, North Carolina, Oregon, and Virginia. As a set, they not only offer valuable insights into multimodal planning on a statewide level, they also represent a range of different organizational structures, with all four exhibiting recent significant efforts to evolve the way they are organized with respect to the planning and subsequent implementation of multimodal aspects of the transportation systems they are responsible for. The interviews and additional written materials subsequently collected reflect an evolving understanding of multimodal planning issues, supported by clear evidence of progress at both the project and programmatic levels within these state DOTs. They also confirm many of the findings of previous chapters of this report, that progress has had to work through increasingly tight funding constraints, both real in absolute terms, and artificial in legislative terms, notably since the post-2006 global financial downturn. *The reader should note that no official positions are represented in these descriptions and any opinions implied by the narratives, including the selection of multimodal activities to highlight, reflect our project staff's take on the topics covered, and are not necessarily those of the persons or agencies interviewed.*

To put the successes reported below into context, each section begins with a brief history of the state's DOT, followed by a top-down view of its organizational structure and where multimodal planning activities fit into it. A third section then describes a recent version of the state's programmatic and modally based funding profile. This is followed with a discussion and some examples of how each DOT has managed to bring multimodalism into the planning and project implementation process. These examples are not meant to be exhaustive of a DOT's



activity in this area. Rather, as a set, they were selected to represent examples of innovative funding, interagency co-operation, and innovative planning practices.

## 5.2 Florida Department of Transportation (FDOT)

Some of the information reported below for Florida was gathered as part of an on-site interview with members of FDOT's planning staff located in Tallahassee, FL in early October of 2012. The following aspects of FDOT's multimodal planning activities are emphasized below:

- 1) Bottom up planning through strong district level involvement in multimodal issues;
- 2) Some funding flexibility associated with non-highway investments;
- 3) A designated multimodal network treatment of important transportation facilities that focuses attention on connectivity via major corridors, hubs and connectors;
- 4) Increased attention to multimodal, statewide and network-based freight planning;
- 5) Bottom up planning through strong private as well as public stakeholder involvement;
- 6) Significant attention given to multimodal issues associated with land use-transportation interaction; and
- 7) Use of multi-modal performance measures.

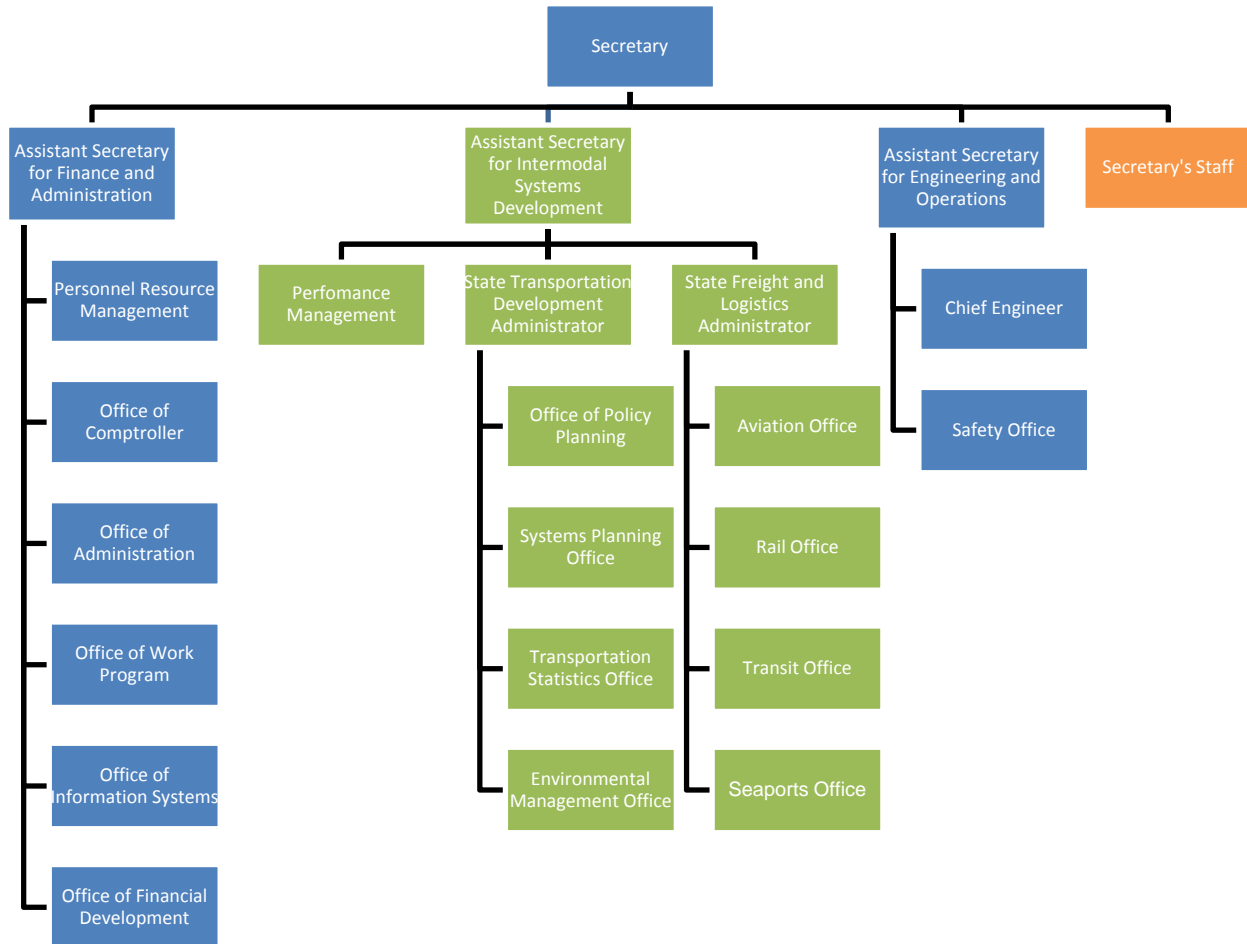
### 5.2.1 Brief History of FDOT

The Florida Department of Transportation (FDOT) traces its roots back to the Florida Department of State Roads. The transition process towards a multimodal agency began in 1968, when revisions to the state's Constitution were approved by voters. One of the revisions to the Constitution limited the number of departments allotted to the executive branch to 25 agencies<sup>4</sup>. In response to this requirement, "the Department of Transportation was created in 1969 by the reorganization of eight state agencies into one single department to manage Florida's transportation systems" (Florida Department of State, 2012). FDOT successfully transitioned into a multimodal agency following the reorganization as evidenced by a report published by AASHO in 1971, just two years after the reorganization. The report, titled "Florida's Multimodal Mix," described the reorganization of the department and lauded "the department's accomplishments in mass transit, aviation and environment and its potential rail projects" (Mueller, 1971). The department has remained committed to multimodal planning as evidenced in the latest Florida Transportation Plan. In this plan, the vision for Florida's transportation system is defined as "a statewide, multimodal transportation system of trade gateways, logistics centers, and transportation corridors to position Florida as a global hub for commerce and

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<sup>4</sup> The Constitution of the State of Florida, Article 4, Section 6

investment" (FDOT, 2010). This system is also envisioned to "[support] Florida's economic and livability goals by providing better connectivity to urban and rural areas" (FDOT, 2010).



**Figure 5.1: Simplified FDOT Organizational Chart (FDOT, 2012a).**

### 5.2.2 FDOT’s Organizational Structure

FDOT, in accordance with state legislation, is a decentralized agency, divided into eight districts, seven geographical jurisdictions and one turnpike enterprise, with varying organizational structures<sup>5</sup>. The eight district offices report to the central office in Tallahassee and fall under the Secretary’s Office. In the central office, three Assistant Secretaries for Finance and Administration, Intermodal Systems Development, and Engineering and Operations also report to the Secretary. The Intermodal Systems Development Office includes the State Transportation Development Administrator and State Freight and Logistics Administrator. The

<sup>5</sup> Information from <http://www.dot.state.fl.us/>

State Freight and Logistics Administrator directs the Aviation, Rail, Transit, and Seaport Offices. The State Transportation Development Administrator has authority over the Office of Policy Planning (the office in charge of statewide planning efforts), the Systems Planning Office, the Transportation Statistics Office, and the Environmental Management Office. Over the past few years, there has been an increased focus on privatizing work and FDOT relies heavily on consultants. The total number of employees went down from over 10,000 full-time equivalent (fte) to less than 7,000 fte. FDOT's organizational chart is shown in Figure 5.1.

### **Central Office Multimodal Divisions<sup>6</sup>**

*Intermodal Systems Development (ISD)*-The ISD Associate Administrator is in charge of planning, environmental management, performance management, and the modal offices for aviation, rail, transit, and seaports. Overall, ISD is composed of 142 employees with a budget of \$14,509,198 for administrative costs<sup>7</sup>.

- *Performance Management*- The Performance Management office is charged with the training and development programs for the agency including but not limited to business plan support, leadership academies, and employee surveys. For FY 2011-2012, the central office has eight positions and operates on an administrative budget of \$584,154.
- *State Transportation Development Administrator*- This office oversees the department's role in policy planning, systems planning, environmental management, and database management. Each of these roles is assigned to subordinate offices and the State Transportation Development Administrator serves as the facilitator of information exchange and coordination among the offices. The subordinate offices include:
  - *Office of Policy Planning (OPP)*- The OPP develops and facilitates the statewide and metropolitan planning processes. More specifically, the OPP develops the Florida Transportation Plan, the long-range statewide transportation plan, and provides guidance on transportation policy issues. The OPP houses 16 employees in the central office and is allocated an administrative FY 2012 budget of \$1,563,598.
  - *Systems Planning Office*- The major functions of the Systems Planning Office are the development and implementation of the Strategic Intermodal System (SIS), traffic systems modeling, and systems management. The Systems Planning Office has 22 central office employees who operate on an administrative FY 2012 budget of \$2,096,400.
  - *Transportation Statistics Office*- This office (TranStat) is the central database for the collection and analysis of highway and traffic data in the state. TranStat

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<sup>6</sup> Information in this section and the following section comes from FDOT website (<http://www.dot.state.fl.us>) and phone/in-person conversations with FDOT Staff, 2012.

<sup>7</sup> Administrative budgets include salaries, expenses, human resources development, and operating capital outlay for FY 2011-2012.

- employs 27 in the central office and is allocated an administrative FY 2012 budget of \$2,337,494 (9).
- *Environmental Management Office (EMO)*- EMO provides guidance for the integration of environmental management and project development policies into agency programs. The central office consists of 18 positions, which operate on an administrative FY 2012 budget of \$1,507,552.
  - *State Freight and Logistics Administrator*- This administrator oversees the Office of Freight, Logistics, and Passenger Options which includes the modal offices for aviation, rail, seaports, and transit. This office was created in early 2012 recognizing the importance of efficient freight movement to the state's economy. The goal of the office is to "better connect, develop, and implement a freight planning process that will maximize the use of the existing facilities and integrate and coordinate the various modes of transportation" (FDOT, 2012a). The office has yet to develop a statewide freight plan but one is expected to be finished soon.
    - *Aviation Office*-The Aviation Office oversees airport planning, operations, and safety and assists in aviation system development. This office has 11 staff members in the central office that are allocated an administrative FY 2012 budget of \$976,663.
    - *Rail Office*-The Central Rail Office in Tallahassee is in charge of policy development, planning functions, quality assurance, safety inspections, and technical assistance. The district offices oversee operations. There are 15 positions in the central office which operate on an administrative FY 2012 budget of \$1,344,517.
    - *Seaports Office*-The Seaport Office coordinates planning activities and funding with the Florida Seaport Transportation and Economic Council and the Florida Ports council to develop the state's 14 deep water ports. The unit has two staff members in the Tallahassee office that are allocated an administrative FY 2012 budget of \$210,647.
    - *Transit Office*- The Transit Office is in charge of transit operations, safety, planning, and grants administration. The unit has a total of ten staff members working out of the Tallahassee office that operate on an administrative FY 2012 budget of \$922,381.

### **District Office Multimodal Divisions**

In addition to the staff members located in the central office, FDOT has multimodal divisions at the district level that vary in staff numbers and organizational structure (see Figure 5.2).

*District 1:* This office provides assistance to the district's four major transit agencies, 115 private airports, 19 public airports, four major rail lines, and one deep-water port. The office employs one staff member to work solely in aviation, one staff member to work in rail, four staff members to work in transit, and one staff member to work in both seaports and aviation.



**Figure 5.2: Map of FDOT District Offices<sup>8</sup>**

*District 2:* This district is home to two major transit authorities, two deep-water ports, three major rail lines, and 144 private and public airports. The district has a total of six modal specialists: one in aviation, one in rail, two in transit, one who works in both aviation and transit, and one who works in rail and seaports.

*District 3:* This district office oversees four rail lines, three deep-water ports, 80 airports, and two major transit authorities. The office employs two aviation specialists, one rail specialist, two transit specialists, and one seaports specialist.

<sup>8</sup>Source: <http://www.dot.state.fl.us/publicinformationoffice/moreDOT/districts/district.shtm>.

*District 4:* This district is home to 90 airports, three deep-water ports, two railroads, two major transit authorities, a commuter rail service, and a commuter assistance program. The intermodal program in District 4 employs two rail specialists, five transit specialists, two seaports specialists, one employee who works between rail and aviation, two multimodal employees who work across all modes, and three growth management planners.

*District 5:* This district is served by five rail lines, five transit authorities, one deep-water port, and more than 160 private and public airports. The division employs four rail specialists, six transit specialists, and two employees who work between seaports and aviation.

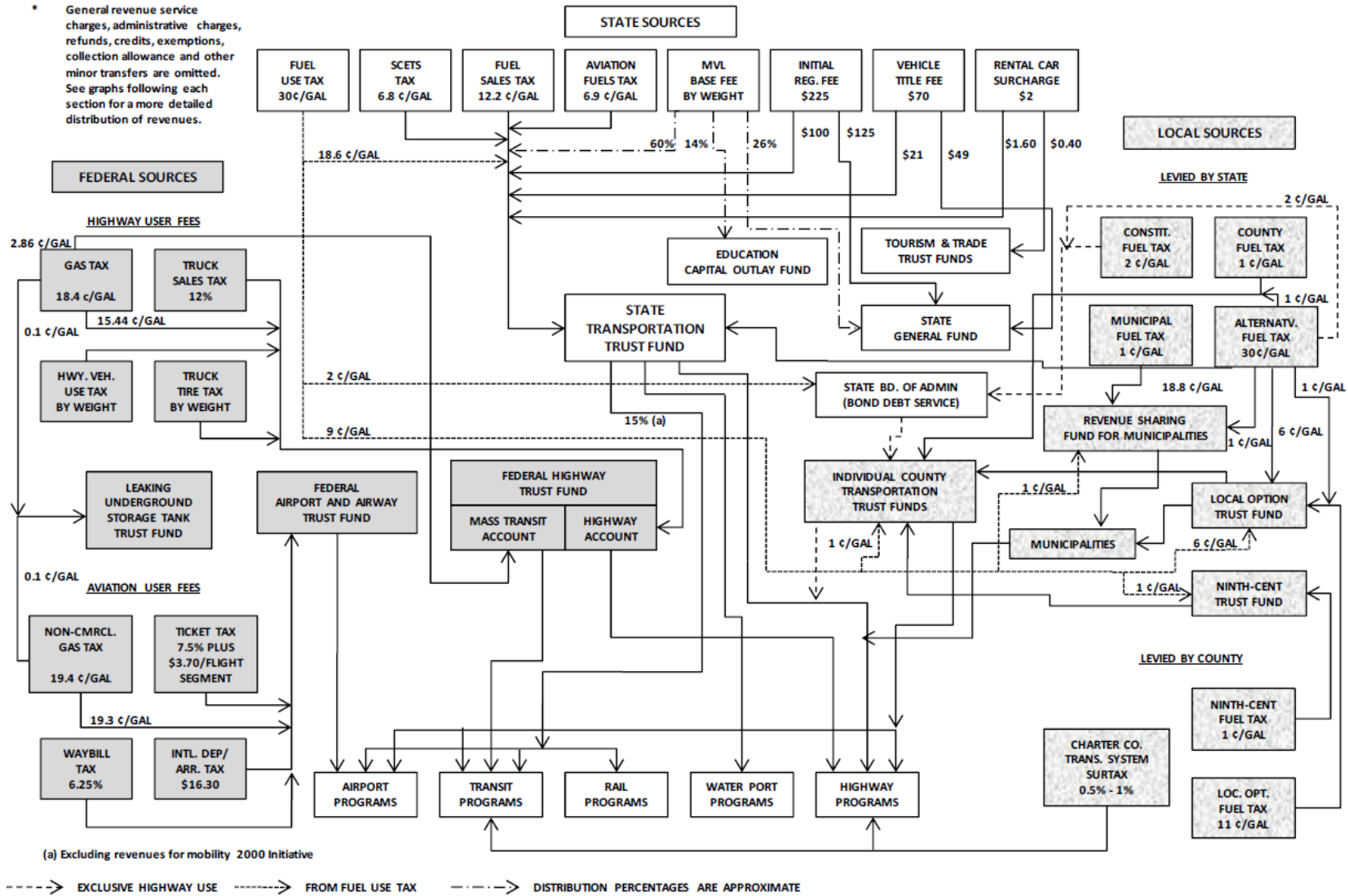
*District 6:* Two transit agencies, seven public airports, 78 private airports, two deep-water ports, and two- major rail lines are located in this district. The district office houses one employee who works in rail, one employee who works in transit, and one who works in both aviation and seaports.

*District 7:* This district is home to three major transit agencies, 42 airports, one major rail line, and two deep-water ports. The office employs two rail specialists, four transit specialists, and two employees who work in seaports and aviation.

### **5.2.3 Funding for FDOT**

Figure 5.3 below shows the flow of transportation funding in Florida. There are a number of state fuel tax sources that fund Florida's transportation system. In addition to collecting the federal fuel excise tax, Florida levies the state fuel sales tax, the State Comprehensive Enhanced Transportation System (SCETS) tax, and other fuel taxes that are distributed to local governments. The state fuel sales tax is currently at 12.2 ¢/gallon for all fuels but is adjusted on an annual basis to account for inflation (FDOT, 2011a). The tax has a floor of 6.9¢/gallon, which is indexed using the base year of FY 1988-89, to the Consumer Price Index (CPI). The SCETS tax is also an indexed tax; however, it varies on a county by county basis. For gasoline, the SCETS tax ranges from 5.6 to 6.8 ¢/gallon, and for diesel it is set at a standard 6.8 ¢/gallon. The SCETS tax must be spent in the district where it was collected. The state also collects an additional four cents per gallon in fuel taxes that are redirected to local governments. This tax is made up of a 2¢/gallon constitutional fuel tax, a 1¢/gallon county fuel tax, and the 1 ¢/gallon municipal fuel tax. The local governments are also able to levy local option transportation taxes up to 12 ¢/gallon. The only fuel tax restricted to use on highways is the 2 ¢/gallon constitutional fuel tax collected by the state and distributed to the counties. All other taxes kept by the state, including motor vehicle fees and state aviation fuel taxes are put into the State Transportation

**2011 TRANSPORTATION TAX SOURCES – PRIMARY\* DISTRIBUTION AND USE**



**Figure 5.3: 2011 Florida Transportation Tax Sources Distribution Chart (FDOT, 2011a)**

Trust Fund. It is required that 15% of FDOT expenditures from the State Transportation Trust Fund be spent on public transportation (aviation, transit, rail, and seaports) (FDOT, 2011a).

In 2011, FDOT’s total budget exceeded \$7.3 billion (FDOT, 2012b).The majority of this money, about \$4.1 billion or 55.9 percent, was spent on highways. Despite the large amount of money spent on highways, non-highway modes of transportation received a significant portion of the budget, totaling approximately \$1.6 billion or 22.2 percent. Of the non-highway modes, the programs receiving the most money were the transit and aviation programs. The transit program received over \$540 million, or 7.4 percent of the budget, which was primarily spent on operations, capital, and planning costs. The aviation program received approximately \$535 million dollars, or 7.3 percent of the budget, and directed the majority of the money to capital and administrative costs. The other non-highway programs that received money were seaports with 1.1 percent of the budget, rail with 3 percent, the Florida Rail Enterprise with 2 percent, multimodal projects with 0.4 percent, and intermodal projects with 1 percent. The remaining portion of FDOT’s budget that did not directly go to highway or non-highway programs made up 21.9 percent of the total budget. This money went to the Turnpike, maintenance, transportation disadvantaged, transportation planning, research, fixed capital outlay, and other miscellaneous programs (FDOT, 2012b). Figure 5.4 shows this breakdown of expenses in FDOT’s FY 2011 Budget.

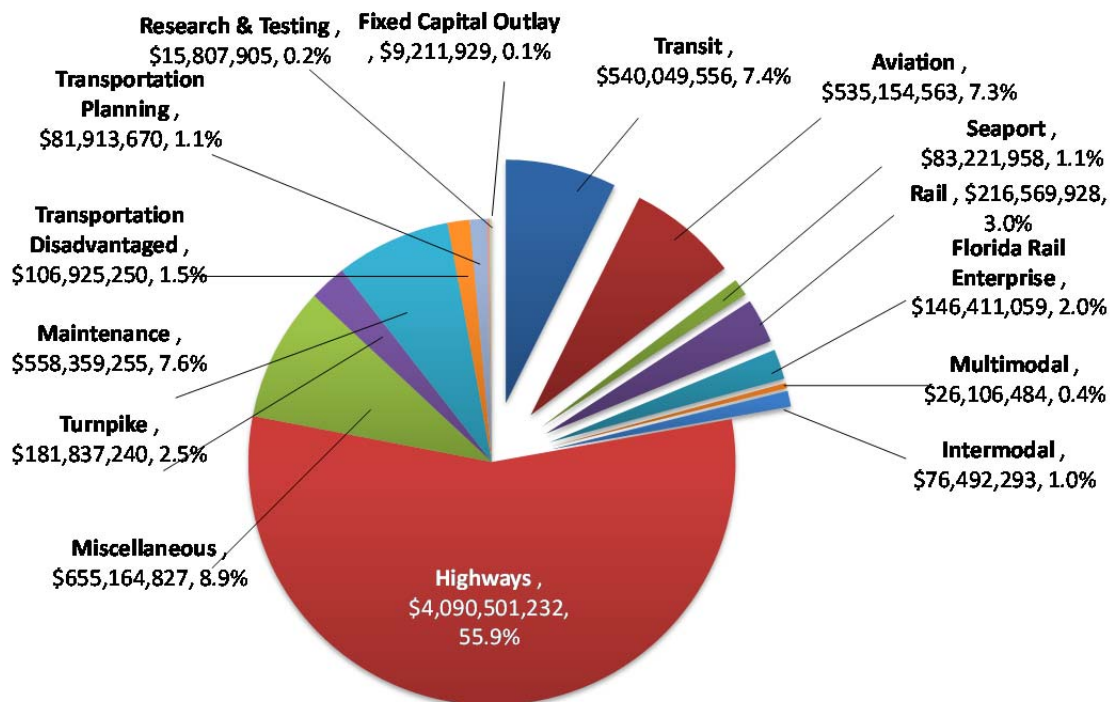


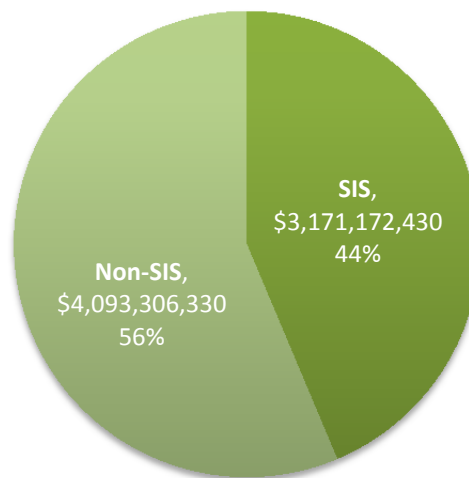
Figure 5.4: 2011 FDOT Budget (FDOT, 2012b)



## 5.2.4 Example Multimodal Activities

### Florida's Strategic Intermodal System (SIS)

The Strategic Intermodal System (SIS) is a designated network of transportation facilities for all modes that are of statewide importance. In 2000, the 2020 Florida Transportation Plan (FTP) urged the creation of the SIS, and by 2003 legislation establishing the SIS was passed (FDOT, 2010b). This SIS includes three different types of facilities, namely hubs, corridors, and connectors and as of today, transportation facilities designated as part of the SIS account for 99 percent of commercial air passengers and cargo, practically all waterborne and rail freight, 89 percent of rail and bus passengers, and 55 percent of all traffic and 70 percent of all truck traffic on the State Highway System (FDOT, 2010b). These facilities are designated based on an established set of criteria that relate to the SIS objectives. These objectives consist of interregional connectivity, efficiency, choices, intermodal connectivity, economic competitiveness, energy, air quality, and emergency management. The benefit of a transportation facility being designated as part of the SIS is the availability of statewide managed SIS funds and a greater chance of receiving funds from other sources, including local, federal and private sector funding (FDOT, 2010b). As shown in Figure 5.5, 44 percent of FDOT spending in 2011 was on SIS facilities (FDOT, 2012b).

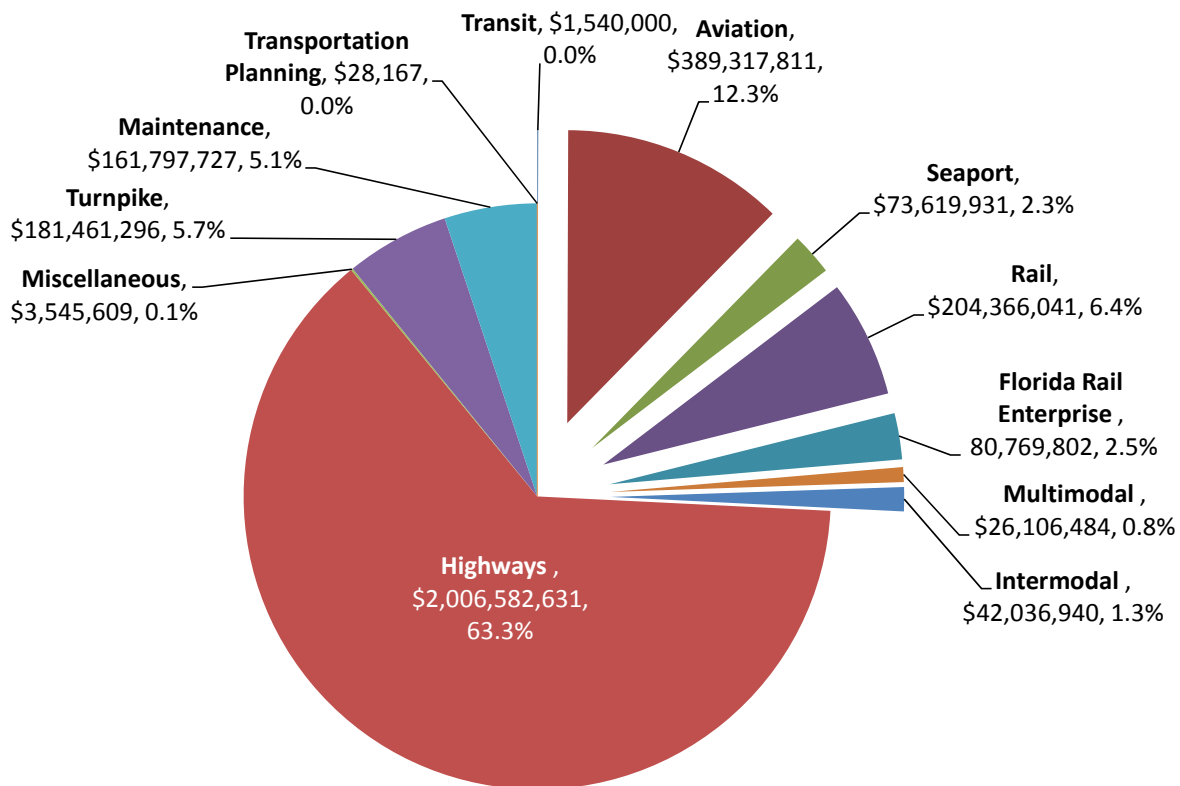


**Figure 5.5: FY 2011 FDOT Budget (SIS/Non-SIS) (FDOT, 2012b)**

The FDOT Systems Planning Office produces a document set known as the SIS Funding Strategy, which includes three inter-related sequential documents that identify potential SIS capacity improvement projects in various stages of development. The combined document set includes an adopted 5-year Work Program (\$7 billion), a Second Five Year Plan (\$5.2 billion) for 5 years beyond the Work Program, and a SIS Cost Feasible Plan for the 2020-2035 timeframe (\$10 billion). This office also produces a fourth document which is related to, but not part of, the SIS Funding Strategy: the SIS 2040 Multimodal Unfunded Needs Plan. This plan,

prepared in coordination with the MPOs and modal partners, identifies transportation projects on the SIS that help meet mobility needs, but where funding is not expected to be available during the 25 year time period of the SIS Funding Strategy (FDOT, 2011b). The current estimate of unfunded needs is \$131.2 billion.

Of the money spent on the SIS, the majority goes to highways. However, a larger share of the money goes toward non-highway modes in the SIS budget than in the overall budget. In the SIS expenditures, non-highway modes account for 25.6 percent. Aviation at 12.3 percent and rail at 6.4% account for the largest shares of SIS non-highway expenditures (FDOT, 2012b). A chart of the SIS expenditures for 2011 is shown in Figure 5.6.



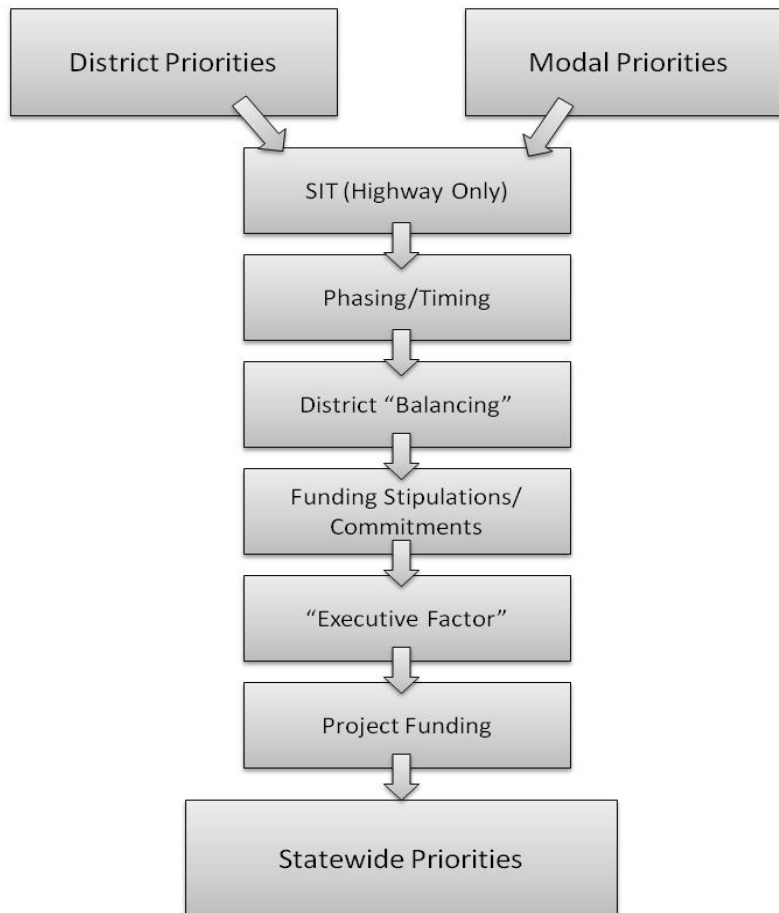
**Figure 5.6: FY2011 FDOT SIS Expenditures (FDOT, 2012b)**

**SIS Project Prioritization**

In order to prioritize SIS projects and make investment decisions for Statewide SIS Funds, FDOT uses a combination of a bottom up and top down approach, using district input from MPOs, local governments and other partners as well as statewide input. In addition, FDOT has developed the Strategic Investment Tool (SIT) used as input for priority setting (see Figure 5.7 below). The SIT is a transparent coordinated and automated tool that evaluates how candidate

projects meet FTP and SIS goals and objectives and allows project comparisons across the state based on objective measures. SIT includes 24 measures analyzing 5 FTP/SIS goals: safety and security, system preservation, mobility, economics, and quality of life. The measures include emphasis on interregional connectivity, economic competitiveness, intermodal connectivity, support for more than one mode, leverage of different funding sources and high return on investment. SIT is used when projects are added to the different SIS plans, when deferring projects due to decreased revenue forecasts, or when money becomes available during a given year (Wilbur Smith, 2010).

FDOT is actively trying to improve the SIT and the investment decision process in order to address issues related to multimodal data, return on investment, changes in future (freight) trends, inclusion of hubs, and increased flexibility of the tool.



**Figure 5.7: SIS Capacity Project Selection Process (adapted from: Wilbur Smith, 2010)**

**Intermodal Networks**

FDOT increasingly focuses on regional intermodal networks as was called for by many partners, including the Florida Chamber of Commerce, and regional and local stakeholders and landowners. Florida aims to be a competitive global hub that focuses on connecting economic activities and moving people and freight through Intermodal Logistics Centers (ILCs) and so-called ‘Future Corridors’.

**Intermodal Logistics Centers**

Intermodal Logistics Centers (ILCs) are expected to facilitate the movement of freight and improved the connectivity throughout the region while reducing coastal congestion problems. At an ILC, products are not only trans-loaded from rail to truck or truck to rail for distribution and warehousing, but products can also be manufactured and assembled before they are shipped. Such facilities do not necessarily have to be located at the main seaports, but could also serve as inland ports. The development of ILCs was an idea that came from private stakeholders like railroads and ports and landowners/developers and is an example of a bottom up approach. All stakeholders are closely involved in FDOT’s planning activities.

**Future Corridors**

Like the ILCs, many stakeholders called for and are involved in FDOT’s ‘Future Corridors’. Many of the steering committee members for the 2060 long range plan are business and community members. The ‘Future Corridors’ program aims to improve regional connectivity and relieve congestion while supporting growth in demand by transforming existing corridors, maximizing use of and adding capacity to existing facilities, and by considering new facilities when needed. An example corridor is the Tampa Bay – Jacksonville Corridor part of the so-called Tampa Bay – Central Florida “Super Region”. FDOT is trying hard to get all stakeholders involved at a very early stage in order to avoid surprises later. This includes the involvement of major land owners and utility companies. There is also a lot of interaction between FDOT and the economic development department and an overlap between their consultants to ensure that everybody speaks the same language.

In recent years, with changes in governors and administrations, the focus has switched from existing corridors to new corridors and back. Currently, there is a renewed focus on new corridors. Legislation to establish a greater permanency to the Future Corridors initiative is seen as important to its longer term success.

**Miami Intermodal Center**

FDOT is currently developing the Miami Intermodal Center (MIC), a centralized multimodal transportation hub located adjacent to Miami International Airport (MIA) that will provide access to multiple modes of ground transportation. A people mover will connect the airport to

the Rental Car Center and the Miami Central Station (MIC, 2012). The Rental Car Center is a consolidated facility for all rental car companies who operate out of MIA. The Miami Central Station will house access to Metrorail, Tri-Rail, Metrobus, Greyhound, taxi cabs, private vehicle parking, courtesy shuttles, and future high speed rail. Miami Central Station is also being designed to accommodate bicycle and pedestrian facilities. This project, expected to be complete in 2013, will improve connectivity between Miami International Airport and the entire South Florida region.

### **Land Use-Transportation Interaction**

In 1999, the Florida legislature amended Chapter 163, Florida Statutes, commonly known as the Growth Management Act, authorizing local governments to establish Multimodal Transportation Districts (MMTDs). The purpose of the legislation was to provide a planning tool that Florida communities could use to systematically reinforce community design elements that support walking, bicycling and transit use. FDOT produced the *Multimodal Transportation Districts and Areawide Quality of Service Handbook* (FDOT, 2003) and other supporting technical documents to provide guidance on the designation and planning of MMTDs (see Williams et al, 2004). The Handbook characterized a good candidate as having “a mix of mutually supporting land uses, good multimodal access and connectivity, an interconnected transportation network and the provision of alternative modes of transportation to the automobile”. This legislation also enabled Florida communities to advance the cause of *transportation concurrency*— a growth management policy which at that time required transportation and other public facilities be available concurrent with the impacts of a land development. To carry out transportation concurrency, local governments must define what constitutes an adequate level of service (LOS) and measure whether the infrastructure and service needs of a new development exceed existing capacity and/or new capacity created by any scheduled improvements. MMTDs are encouraged to address this issue through development of a high quality multimodal environment, rather than the typical approach involving road widening for automobile capacity (see FDOC, 2007 for some best practice examples).

While the Florida growth management/concurrency legislation, and FDOT’s role in it, has gone through a number of changes over the past decade (see Williams et al, 2011), the legislation driven links established between community development, land use planning and multi-modal transportation investment solutions continue to involve FDOT at the local and district-wide as well as corridor-wide (e.g. SIS corridor) scale (see FDOT/CUTR, 2009).

### **Use of Multimodal Performance Measures**

FDOT actively uses performance measures in its business practices and planning activities and the relatively high level establishment of presence of a Performance Management Office (cf. Figure 5.1) indicates the importance of this activity within the agency; while the positioning of

this activity within the same office that carries out staff training suggests possible benefits when it comes to looking at performance metrics across modes. FDOT develops and integrates its performance measures on three distinct levels. At the strategic level, performance measures are used to establish transportation goals and objectives and to monitor progress towards achieving them. At the decision-making level, they are used to inform financial policies that determine fund allocation. At the project delivery level, performance measures are used to monitor the efficiency and effectiveness of projects in the Five Year Work Program. Each year FDOT publishes a Performance Report covering four measurement categories: Safety and Security, Maintenance and Operations, Economic Competitiveness and Mobility, and Quality of Life & Environmental Stewardship. This report is then condensed into a four page overview showing statistics, trends and key strategies for each category. Among other outlets, the results are presented on a one page brochure including the highlights and key aspects of each performance category. While the current emphasis of such measures is on mobility and highway system performance, an expanded set of multi-modal measures is easily envisioned, and at least one FDOT funded effort to formally introduce transit and other modal measures of performance into the process as described by Seggerman et al (2008). In this instance, the focus is on evaluating the transportation impacts of large scale developments of regional impact, or DRIs, that cross at least one county boundary: proposing that a broader multimodal focus be introduced into the state's Site Impact Manual: and another example of getting non-highway options into the land use-transportation planning process.

### **5.3 North Carolina Department of Transportation (NCDOT)**

The following aspects of NCDOT's multimodal planning activities are emphasized below:

- 1) A Mobility Fund that can be used to support investment in Light rail, bus rapid transit and Commuter rail projects, with funding priority based in part on how well a project improves the performance of more than one mode.
- 2) A DRAFT planning process that requires numerous critical path-initiated assessments of multimodal/intermodal connectivity benefits associated with the state's comprehensive transportation plan.
- 3) A growing interest in multimodal, statewide freight planning.

#### **5.3.1 Brief History of NCDOT**

The North Carolina Department of Transportation (NCDOT) traces its beginnings to the founding of the State Highway Commission in 1915. In 1971, the Executive Organization Act merged the State Highway Commission with the Department of Motor Vehicles to create the North Carolina Department of Transportation and Highway Safety. Eight years later, "Highway

Safety" was taken out of the department's name. Key events which led NCDOT to becoming a more multimodal agency were the creation of the Public Transportation Division in 1974 (NCDOT, 2012a), and the passage of the Bicycle and Bikeway Act of 1974, the first legislation of its kind in the country (NCDOT, 2012b). From these beginnings, NCDOT's role in multimodal planning and project implementation has expanded to oversight of aviation, ferry, rail, public transportation, highway, bicycle, and pedestrian transportation (NCDOT, 2012c). Recent movement towards a truly multimodal perspective includes the 2004 adoption of a multimodal network investment framework, the 2009-10 introduction of a Mobility Fund that incorporates an explicit multimodal project assessment criterion (NCDOT, 2012d), and the drafting of a new approach to development of the state's Comprehensive Transportation Plan (CTP) that also adopts a multimodal perspective (NCDOT, 2012e).

### 5.3.2 NCDOT's Organizational Structure

NCDOT is divided into six units, each organized around the agency's strategic functions. These functions are: Organization, Monitoring, Communication and Control; Transportation and Investment Analysis; Transportation Business Administration; Process Management; Transportation Program and Asset Management; and Transportation Program Delivery (NCDOT, 2012c). A Deputy Secretary for Transit and a State Highway Administrator are located within the Transportation Program and Asset Management unit. The Deputy Secretary for Transit oversees the Aviation Division, Public Transportation Division, Rail Division, Ferry Division, and the Bicycle and Pedestrian Division. The State Highway Administrator manages the Division of Highways, which includes Pre-Construction, the Transportation Mobility and Safety Division, the Chief Engineer and 14 district offices (NCDOT, 2011a). The multimodal programs at NCDOT are centralized in Raleigh; however, the Division of Highways is decentralized with planning, design, construction and maintenance activities taking place in each of 14 district offices. NCDOT's complete organizational chart can be seen in Figure 5.8.

#### Multimodal Divisions

- *Aviation Division*- The Aviation Division is in charge of the development and maintenance of North Carolina's aviation system. The division manages the State Aid to Airports program and the Federal State Block Grant program, assists the private aviation sector, and implements safety and education programs for pilots and the public. The division is also in charge of identifying safety concerns in the state aviation system and creating programs to resolve these issues. Additionally, photogrammetry and aerial survey services are performed by the Aviation Division for NCDOT (OSBM, 2011a). The division consists of 19 staff positions and in 2011 budgeted \$2,364,903 for program administration. North Carolina's aviation system is composed of 72 public airports and almost 300 private airports. In 2011, the aviation program was also appropriated an additional \$38,401,413 in funds for airport

improvements, educational programs, airport planning, land acquisition, and airport construction and maintenance (OSBM, 2011b; NCDOT, 2012f).

- *Rail Division*- The Rail Division is charged with administering safety programs, partnering with the rail industry to attract economic development and job creation, partnering with shortline railroads to retain jobs outside of large urban areas, and promoting use of intercity passenger rail service. The division is made up of eight staff members and operated on an administrative budget in 2011 of \$645,520. The division also receives an appropriation of \$242,414,561, which is used to provide operational support for division programs like the operation of the Carolinian and Piedmont train service, the Industrial Access Program, the Sealed Corridor Program, and the development of high-speed passenger rail service (OSBM, 2011a and 2011b).
- *Ferry Division*- This division operates 22 ferries over seven routes and supports this operation with a full service shipyard, dredge, tugs, and barges (NCDOT, 2012g). There are 13 administrative positions within the division that operates on an administrative budget of \$1,220,810. The division also receives \$38,689,589 for operation of the ferry routes (OSBM, 2011b).
- *Public Transportation Division*- This division administers federal and state grants, provides planning and technical assistance, and creates safety and training opportunities (NCDOT, 2012a). This division has four administrative staff members that operate on an administrative budget of \$371,421. The division is also allocated \$129,351,575 to fund grants to local governments and public transportation agencies for planning, administration, capital improvements, operations, and maintenance (OSBM, 2011a; OSBM, 2011b).
- *Division of Bicycle and Pedestrian Transportation (DBPT)*-The DBPT provides engineering, planning, education and training services for the integration of bicycle and pedestrian facilities into the transportation network (NCDOT, 2012h). The division employs five administrative staff members and has an administrative budget of \$1,025,133 (OSBM, 2011b).

### 5.3.3 Funding For NCDOT

NCDOT operates on an annual budget of nearly \$4 billion per year (NCDOT, 2012j). The sources of funding for NCDOT come primarily from the Highway Trust Fund, the Highway Fund, and federal funds. The 'Trust Fund was established by law in 1989 to improve and maintain a 3,600 mile intrastate highway system and urban loops around seven of the state's largest cities.



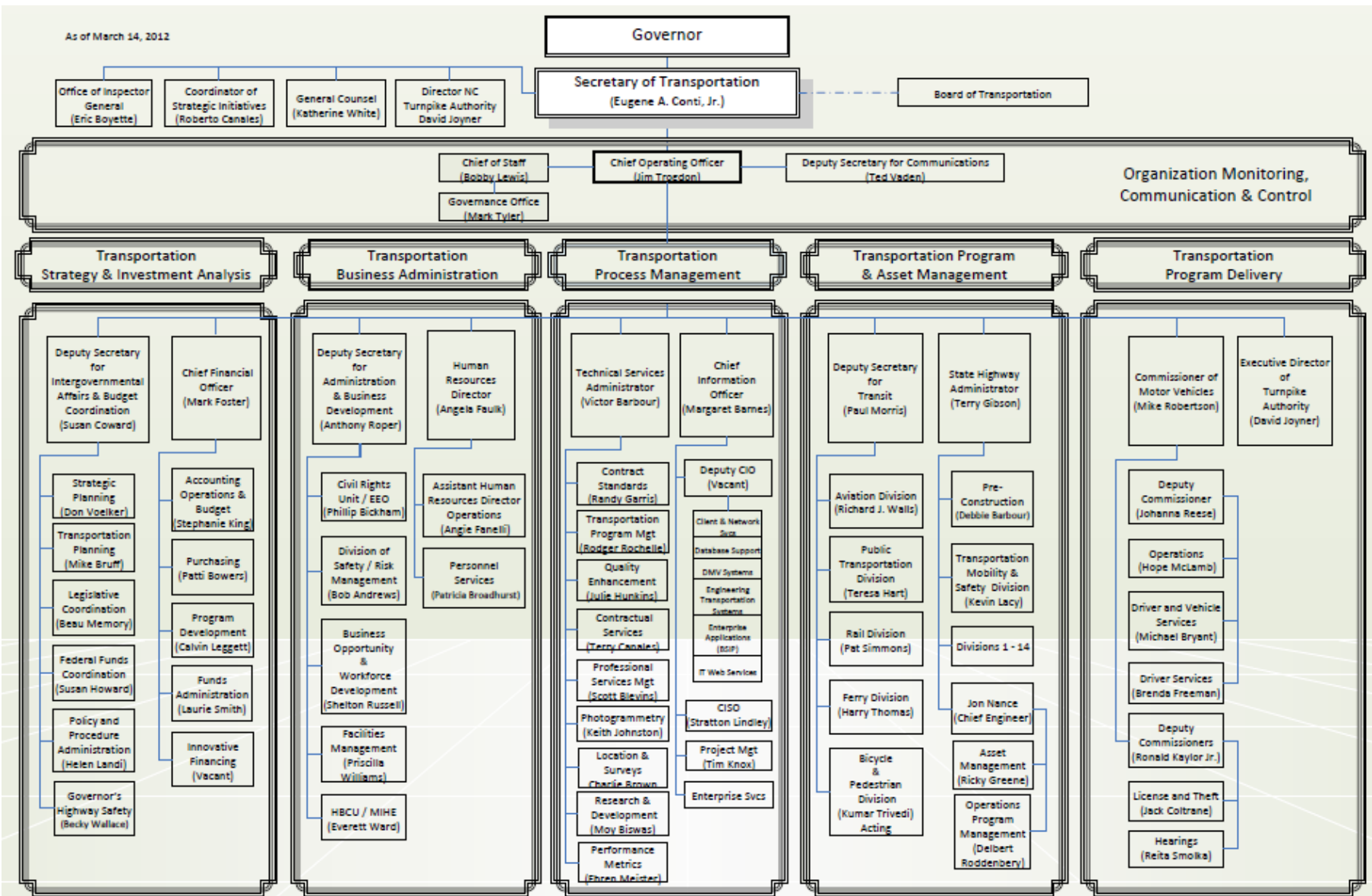
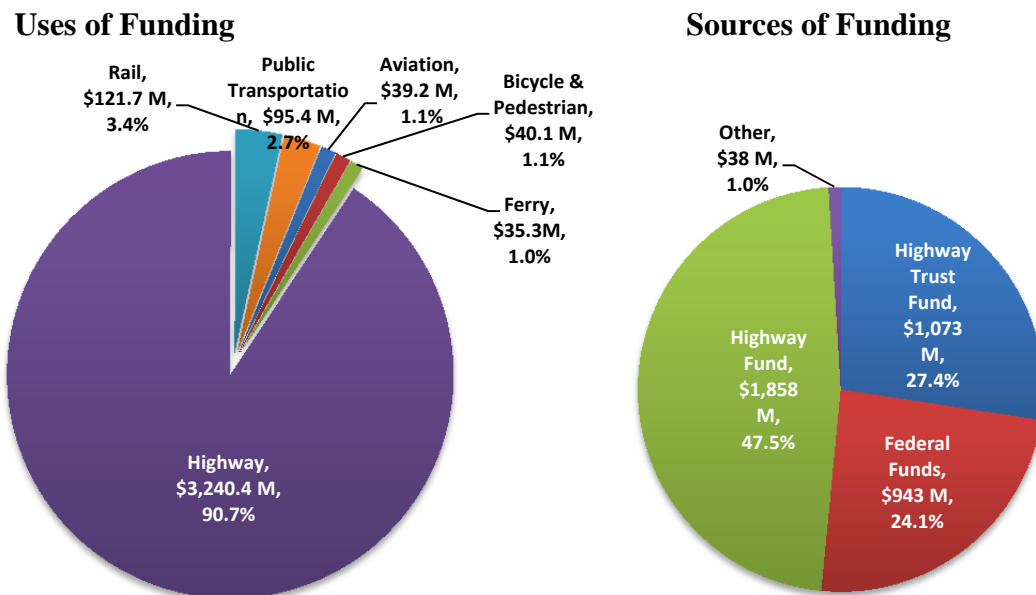


Figure 5.8: NCDOT Organization Chart (NCDOT, 2011a)

The state’s Highway Trust Fund provides \$1.073 billion towards the annual budget, approximately 27.4 percent of total funding sources (NCDOT, 2012j). This fund traces its roots back to 1921 when the state began collecting a gasoline tax. The tax rate was changed in 1992 to 17.5 ¢/gallon plus 7 percent of the average wholesale fuel price to account for dynamic fuel prices (NCDOR, 2012). The current tax rate is 38.9 ¢/gallon and is adjusted every six months. Today, the NC Highway Fund has other sources of revenue in addition to the gas tax. These sources include vehicle registration fees, title fees, and federal aid. Historically, this fund was reserved for construction and maintenance of highways, the State Highway Patrol, and the Department of Motor Vehicles. However, in the 1990s, the Highway fund began supporting public transportation and rail. The Highway Fund contributes \$1.858 billion, 47.5 percent of total funding sources, to the NCDOT budget. The remaining funds supporting NCDOT come from federal funds for highways, transit, rail, and airports or other sources (NCDOT, 2012j). Figure 5.9 shows these sources and uses of funds.



**Figure 5.9: NCDOT Uses (L) and Sources (R) of Funding** (NCDOT, 2012j; NCDOT, 2011c)

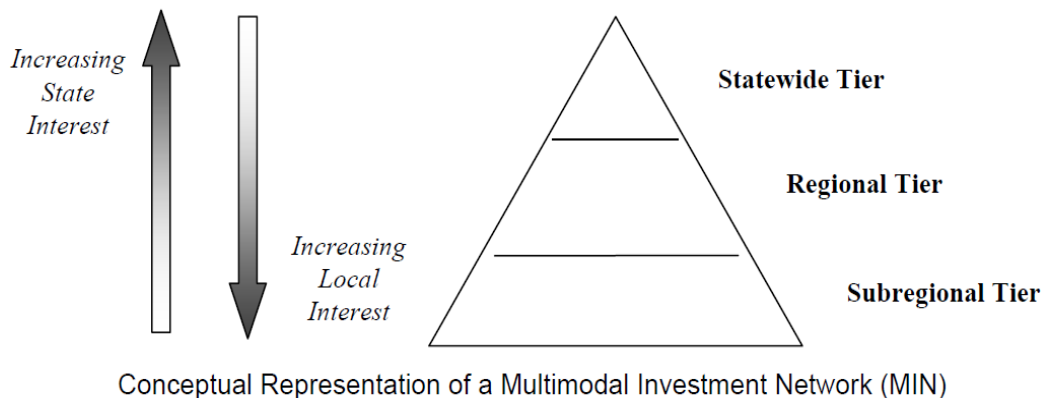
Slightly over 90 percent of NCDOT’s budget, or about \$3.2 billion, goes towards highways with the remaining 9.3 percent going to non-highway modes (NCDOT, 2011c). The rail program receives the largest share of these non-highway funds, at \$121.7 million, or a 3.4 percent share of the department’s budget. Public transportation also receives a significant portion of the budget at 2.7 percent, or \$95.4 million. The aviation, bicycle/pedestrian, and ferry programs each receive about a one percent share. Aviation receives \$39.2 million, the

bicycle/pedestrian program is allocated \$40.1 million, and the ferry program has a budget of \$35.3 million (NCDOT, 2011c).

### 5.3.4 Multimodal Reform in NCDOT's Decision Making Process

#### North Carolina Multimodal Investment Network (NCMIN) (2004)

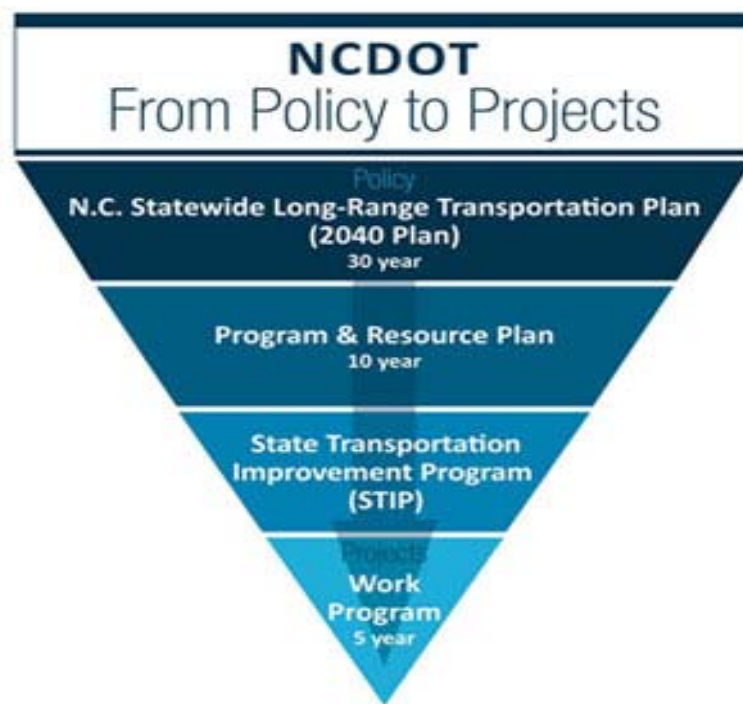
In its 2004 state transportation plan, NCDOT acknowledged that "a state's transportation system consists of all transportation modes and the facilities that link them together" and that "a true 'multimodal' statewide transportation plan must identify and evaluate a full spectrum of future transportation needs and potential solutions by mode and by function" (NCDOT, 2004). In order to broaden its modal coverage, NCDOT initiated a new planning framework called the North Carolina Multimodal Investment Network (NCMIN). NCMIN includes transportation facilities of all modes in the state and classifies them into one of three tiers according to their function. These tiers include a Statewide Tier, Regional Tier, and Subregional Tier. The Statewide Tier includes facilities that accommodate large volumes, are used for long-distance travel and are used for mobility. They are typically of greater interest from a statewide perspective. The Subregional Tier includes facilities that serve smaller volumes of localized travel, are used for access, and are of greater importance at the local level. Regional Tier facilities have characteristics of both Statewide and Subregional Tier facilities. They provide both mobility and access functions and are of both statewide and local interest. Figure 5.10 is a graphic representation of the NCMIN classification system (NCDOT, 2012k).



**Figure 5.10: NCMIN Classification Framework** (NCDOT, 2012k).

Perhaps as a result of this increased focus on multimodal planning, NCDOT has been involved with a number of multimodal projects, the most notable being the Southeast High Speed Rail (SEHSR) Corridor. This project will connect the District of Columbia, Virginia, North Carolina, South Carolina, Georgia and Florida with passenger rail averaging speeds of 85

to 87 miles per hour (SEHSR, 2010). The states that have led the charge in this project have clearly been Virginia and North Carolina. Through a joint venture between the Virginia Department of Rail and Public Transportation and NCDOT, a Tier I Environmental Impact Statement (EIS) for the segment from Richmond to Charlotte was completed in 2002 (SEHSR, 2010). These are the only two states in the Southeast High Speed Rail Coalition to have completed a Tier I EIS and they are expected to complete the Final Tier II EIS for the segment from Richmond to Raleigh by the end of 2012. According to the Tier I EIS, the Washington, D.C to Charlotte portion of the SEHSR corridor could be completed by 2018 to 2022, depending on the availability of funding. If this is the case, it appears that the states of South Carolina, Georgia, and Florida will be behind North Carolina and Virginia in implementation of high speed rail by several years (SEHSR, 2010).



**Figure 5.11: Policy to Projects Conceptual Framework (NCDOT, 2012l).**

### **Policy to Projects Process (2009)**

In 2009, North Carolina's Governor issued an executive order to ensure that NCDOT's decision making process focused on "the department's long term goals of safety, mobility, and infrastructure health" (NCDOT, 2012l). As a result, the department has developed a decision making process, called "Policy to Projects," that begins with the Long-Range Plan and ends with the 5-year Work Program. This process is meant to ensure the development of plans with a cohesive vision and the awarding of projects that further the goals laid out in the plans (NCDOT, 2012l). Figure 5.11 depicts the conceptual framework of this "Policy to Projects" process.

**NC Mobility Fund (2010/2011)**

In 2010, the NC Governor was also instrumental in creating the Mobility Fund. This fund is geared towards providing money for transportation projects that are of statewide or regional importance according to the NCMIN classification framework described above. The fund will receive \$45 million in FY 2013 and \$58 million in FY 2014 and onward. Light rail, bus rapid transit and commuter rail projects are eligible. After revisions enacted in 2011, projects selected for funding are judged by the criteria shown in Figure 5.12 (NCDOT, 2012d):

**Scoring Criteria:**

Criterion	Weight
<p><b><u>Mobility Benefit/Cost</u></b> - measured by the estimated travel time savings the project will provide (in vehicle hours) divided by the "cost to the Mobility Fund". Used to compare projects across transportation modes. There is no cap on The scoring for travel time savings. In other words, the greater the savings and/or the lower the cost of the project to the Mobility Fund, the greater the score the project can achieve for this criterion.</p>	<p><b>80%</b></p>
<p><b><u>Multimodal / Intermodal</u></b> - measured by whether the project provides an Improvement to more than one mode of transportation and thereby improves the overall efficiency of the transportation system. This is a Yes / No question. If the project improves more than one mode of travel, a sliding scale of points is assigned to the project score based on the overall resulting impact on the multimodal / intermodal improvement.</p>	<p><b>20%</b></p>

**Figure 5.12: Project Scoring Criteria** (see NCDOT, 2012d).

The most important criterion, accounting for 80 percent of the score, is the “Mobility Benefit-Cost” which is measured by the ratio of travel time savings to the cost of the project to the Mobility Fund. The other criterion used is called “Multimodal/Intermodal” and accounts for the remaining 20 percent of the score. This criterion takes into account whether the project contributes to the efficiency of the transportation network by improving more than one mode of transportation. Multimodal/intermodal scoring begins with an eligibility question: does the project provide an improvement to more than one mode of transportation and thereby improve the overall efficiency of the transportation system? If the answer is yes, then the project is evaluated, with the number of points awarded as shown in Figure 5.13, based on the opportunity a project has to provide seamless transportation efficiency, to enhance travel choice and to make important connections within the overall system (NCDOT, 2012d). Each project’s final score is

then determined simply by multiplying the number of points assigned to each of the two criteria shown in Figure 5.13 by their respective weights (i.e. by .80 or by .20) and then summing the points, with a higher score producing a higher ranking.

The following will be used for scoring:

Improvement	Multimodal / Intermodal Points
HOV/HOT Lanes	100
Light Rail	100
Bus Rapid Transit / Bus way	100
Commuter Rail / Intercity Rail	100
Highway and Rail Projects which improve access to or within ports, military installations, and inland ports; rail projects which reduce truck traffic on the highway system.	100
Short line Rail projects which enhance access to industrial sites	100
Addition of a new bus route to fixed route system	50
Adding new transit vehicles to improve frequency of service (not replacement vehicles).	50
Aviation Runway/Taxiway Projects	50
Bicycle/Pedestrian projects where the primary use is commuter (not recreational)	25
Ferry	25
Bicycle/Pedestrian commuter projects (not recreational)	10

**Note:** Projects can only receive points for one improvement. If a project includes more than one improvement listed above, the project receives the higher of the points. *Also, the above may not be all inclusive and other projects will be assessed on a case-by-case basis.*

**Example Overall Project Scoring**

The final project score is determined simply by multiplying the number of points in each of the criteria by their respective weight and summing the points. The higher the point total, the higher the project ranking. For example:

Criteria	Weight	Points	Weighted Points
Mobility Benefit-Cost	80%	55	44
Multimodal / Intermodal	20%	100	20
<b>Total Project Score</b>			<b>64</b>

**Figure 5.13: Multimodal Points System (NCDOT, 2012d)**



This approach is recognized to be a subjective analysis, but one that tries to support an equitable competition for funds across all modes of transportation. The first project selected by the General Assembly was Phase II of the I-85 Corridor Improvement Project. The project began construction in October 2010 and is expected to be completed in May 2013. It provides upgrades for bridge, highway, and rail infrastructure along a critical link in the state's transportation system (NCDOT, 2012m).

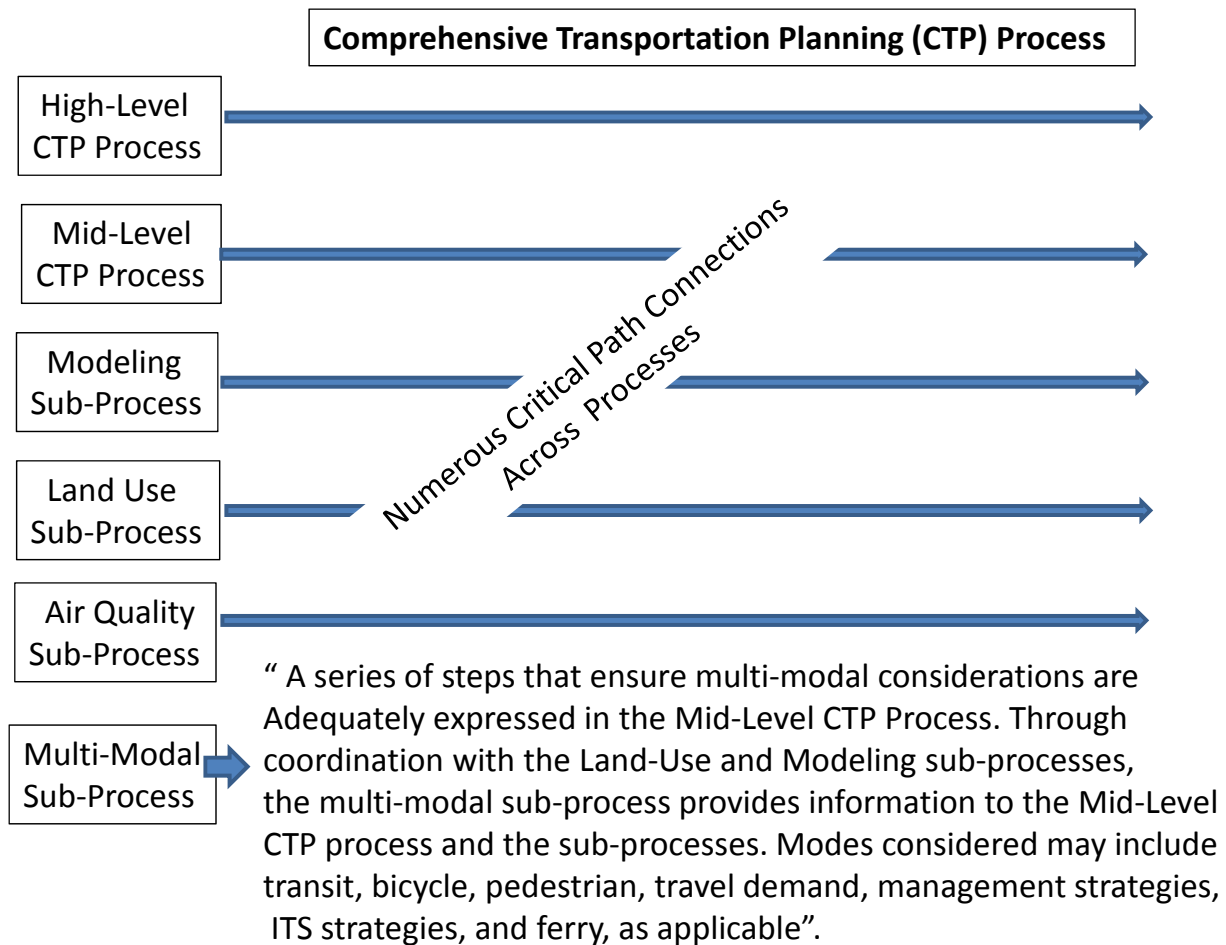
A recent (NCDOT, 2012e) DRAFT report by NCDOT describes a proposed new approach to transportation planning in the state, as a replacement of the process used to develop so-called “Thoroughfare Plans” with their historic focus on highway investment planning. First, the report defines the characteristics of an ideal multimodal transportation planning process (page 3):

**What characteristics would describe an ideal seamless, multi-modal transportation planning process?** Transportation and local planning agencies across the state were asked this question, and their responses are summarized below. The CTP process has been designed to provide the opportunity for these characteristics and values to be incorporated into plan development.

An ideal seamless, multi-modal transportation planning process would have the following characteristics:

- A continuous planning process that is based on the quality-of-life goals and objectives, as defined by the public within the planning area.
- A planning area that is not necessarily defined by political boundaries.
- A planning process that is structured so that it addresses a broad spectrum of issues, and yet is flexible and can be adjusted by the planning partners to meet its particular set of needs and modified as conditions change.
- A process that includes opportunities for stakeholder involvement from the public, resource agencies and other appropriate parties early and throughout.
- Coordination occurs between technical staff at the local and state level, and between local governments, resource agencies, and policy level decision makers. Coordination occurs in a timely manner and adequate time is provided for feedback.
- A process that encourages the consideration of multiple transportation modes to meet the projected needs within the planning area.
- Consensus between the planning partners is the preferred decision-making method.
- The planning partners commit to follow an agreed upon process with assigned roles and responsibilities, and everyone fully participates. The planning partners stand behind the process and use it as a way to educate public officials about the benefits of integrated planning and the consequences of decisions. Planning partners are considered to include representatives from NCDOT, FHWA, MPO/ RPO, local governments, environmental resource agencies, etc. Additionally, local officials would get involved early, remain engaged throughout the process and understand the benefits of the CTP process.

The report goes on to describe a “Multi-Modal Sub-Process” that represents one of six lines of plan development that are coordinated through a detailed critical path. Figure 5.14 simplifies this idea (the reader should see the full draft report for details).



**Figure 5.14: Proposed CTP Process (Based on NCDOT, 2012e)**

There are 17 different steps in the multi-modal sub-process, each with links to and from other sub-process steps in what is a rather elaborate critical path to plan development (see Figure 5.15). Benefits claimed for the proposed CTP process of both direct and indirect relevance to multimodal planning include (NCDOT, 2012e):

- It allows communities to consider all modes, not just road improvements, for the future transportation system;
- It is more efficient for MPOs because it ties the CTP and federal Long Range Transportation Plan processes together.



**Multi-Modal Sub-Process Steps Along The Critical Path:  
DRAFT Comprehensive Transportation Planning (CTP) Process**

<b>Multi-Modal Step 1 (MM1) -- Begin Multi-modal Process</b>	
Purpose	<ul style="list-style-type: none"> <li>• Ensure correct/ complete multi-modal partners are identified</li> <li>• Establish MM Team and commit to a multi-modal planning process</li> </ul>
Outcomes	<ul style="list-style-type: none"> <li>• Initial meetings with correct partners</li> <li>• Commitment to a multi-modal planning process</li> </ul>
<b>Multi-Modal Step 2 (MM2) -- Define Preliminary Roles and Responsibilities</b>	
Purpose	Define preliminary roles and responsibilities
Outcomes	Identified preliminary roles and responsibilities
<b>Multi-Modal Step 3 (MM3) -- Compile Existing Multi-modal Plans/ Policies</b>	
Purpose	To compile multi-modal plans and policies
Outcomes	Status of multi-modal planning in the area and to validate the status of existing multi-modal systems
<b>Multi-Modal Step 4 (MM4) -- Clarify Multi-modal Component of Community Vision</b> CP4	
Purpose	To recommend community vision and policies for multi-modal systems
Outcomes	Agreement by MM Team on community multi-modal vision
<b>Multi-Modal Step 5 (MM5) -- Establish Multi-modal Goals and Objectives (Compatible With Land Use Scenarios and G/Os)</b> CP6	
Purpose	Establish multi-modal goals and objectives
Outcomes	Recommended multi-modal goals and objectives that are compatible with land use goals and objectives
<b>Multi-Modal Step 6 (MM6) -- Identify Multi-modal High-Level Strategies</b> CP8	
Purpose	Develop strategies consistent with land use and multi-modal visions
Outcomes	Multi-modal strategies coordinated with land use strategies
<b>Multi-Modal Step 7 (MM7) -- Identify Multi-modal Measures of Effectiveness</b> CP9	
Purpose	Identify multi-modal measures of effectiveness (MOEs)
Outcomes	Agreed upon multi-modal MOEs by the MM Team
<b>Multi-Modal Step 8 (MM8) -- Develop Multi-modal Performance Targets</b> CP12	
Purpose	<ul style="list-style-type: none"> <li>• Develop multi-modal performance targets</li> <li>• Agree on multi-modal performance targets</li> </ul>
Outcomes	Agreement by MM Team on multi-modal performance targets
<b>Multi-Modal Step 9 (MM9) -- Agree on Multi-modal Analysis Tool(s) and Data Needs</b> CP14	
Purpose	Identify potential multi-modal analysis tools and data needs
Outcomes	<ul style="list-style-type: none"> <li>• Recommended multi-modal analysis tools and data needs</li> <li>• Agreement by the MM Team on recommended analysis tools, data needs, and roles and responsibilities</li> </ul>
<b>Multi-Modal Step 10 (MM10) -- Establish Project Plan for Multi-modal</b> CP17	
Purpose	Establish detailed MM project plan with schedule, tasks, roles, and responsibilities
Outcomes	Agreement by MM Team on project plan
<b>Multi-Modal Step 11 (MM11) -- Collect Multi-modal Data</b> CP19	
Purpose	Collect multi-modal data
Outcomes	Multi-modal data
<b>Multi-Modal Step 12 (MM12) -- Validate Multi-modal Data</b> CP20	
Purpose	Validate multi-modal data
Outcomes	Validated multi-modal data
<b>Multi-Modal Step 13 (MM13) -- Reach Consensus on Multi-modal Base Year Data</b> CP21	
Purpose	Establish multi-modal base year data
Outcomes	Agreement on multi-modal base year data
<b>Multi-Modal Step 14 (MM14) -- Forecast Multi-modal/ Transit Data</b> CP27	
Purpose	Establish future year multi-modal/ transit network and service data
Outcomes	Agreement by MM Team on future year multi-modal/ transit network and service data
<b>Multi-Modal Step 15 (MM15) -- Identify Future Year Multi-modal Policy Constraints/ Opportunities</b> CP34	
Purpose	Identify future year multi-modal policy constraints/ opportunities
Outcomes	Recommendation of future year multi-modal constraints/ opportunities
<b>Multi-Modal Step 16 (MM16) -- Identify Multi-modal Alternatives</b> CP 37	
Purpose	Identify multi-modal alternatives with project attributes
Outcomes	Multi-modal alternatives with project attributes
<b>Multi-Modal Step 17 (MM17) -- Recommend Multi-modal Modifications to Support CTP</b> CP50	
Purpose	Highlight inconsistencies between local multi-modal plans and CTP
Outcomes	Informed local governments of inconsistencies and how to reconcile local multi-modal plans with the CTP

**Figure 5.15: Multi-Modal Sub-Process Steps (Based on NCDOT, 2012e)**

In addition to the obvious relevance of the first bullet, the second bullet also warrants some attention here. As noted on the Mecklenburg-Union Metropolitan Planning Organization's (MUMPO) website, for example (MUMPO, 2012), North Carolina General Statute 136-66.2 requires each municipality or MPO, with the cooperation of the NCDOT, to develop a Comprehensive Transportation Plan (CTP) serving present and anticipated travel demand in and around the municipality or MPO. This appears to be a potentially beneficial requirement for multimodal planning, especially where freight movements entering, leaving and passing through a congested MPO are concerned.

### **Interest in Freight Transportation**

The state is looking to expand its role in freight, including non-highway freight movements. While most of the state's railroad system is owned and operated by the private sector, and the 317 miles of track that the state does own is leased to Norfolk Southern (NCDOT, 2011b), the department does administer two assistance programs, the Rail Industrial Access Program and the Short Line Infrastructure Assistance Program. The Rail Industrial Access Program funds the construction or refurbishment of tracks for economic development purposes, and the Short Line Infrastructure Assistance Program for the upgrading and maintenance of tracks in rural areas (NCDOT, 2011b). In 2007 legislation was passed that instructed the Office of State Budget and Management to prepare a statewide freight and logistics plan. With assistance from NCDOT and the Department of Commerce, the first statewide freight and logistics plan was unveiled in May 2008 (List et al, 2008). This document recommended creation of a Freight Logistics Authority, independent from NCDOT, to administer a statewide freight program. The document also called for NCDOT to "re-orient or re-structure its 'stovepipe' modal organizations to create a Division for Intermodal Transportation which would include Freight Logistics"(List et al, 2008). The goal of this restructuring would be to provide a division within NCDOT that could coordinate with the proposed Freight Logistics Authority. In 2009 Governor Perdue created the Governor's Logistics Task Force which is charged with studying the state's future role in freight (NCDOT, 2012i). (As of the completion of this report, neither a state freight logistics authority nor an intermodal division within NCDOT has been established).

## **5.4 Oregon Department of Transportation (ODOT)**

Some of the information presented below was obtained during joint on-site interviews with staff from the Oregon DOT (Transportation Development Division) and Portland METRO (the Portland MPO), as well as an on-site interview at the Port of Portland. The interviews took place in Portland in early October of 2012.

The following aspects of NCDOT's multimodal planning activities are emphasized below:

- 1) High level, top down coordination of Transportation, Land Use, and Economic and Community Developments
- 2) Some flexibility in funding that allows investments in non-highway investment projects and project selection that is not always constrained from the start by strictly limited budgets.
- 3) Integrated land use-transportation planning that draws heavily on non-highway, multimodal solutions
- 4) Multimodal freight planning, and notably the *ConnectOregon* program that began as a bottom up initiative by stakeholders (mainly the railroads and seaport) and that has encouraged new sources of project funding.
- 5) Well informed interaction between planning staffs at ODOT, METRO (the Portland MPO), and the Port of Portland.

#### **5.4.1 Brief History of ODOT**

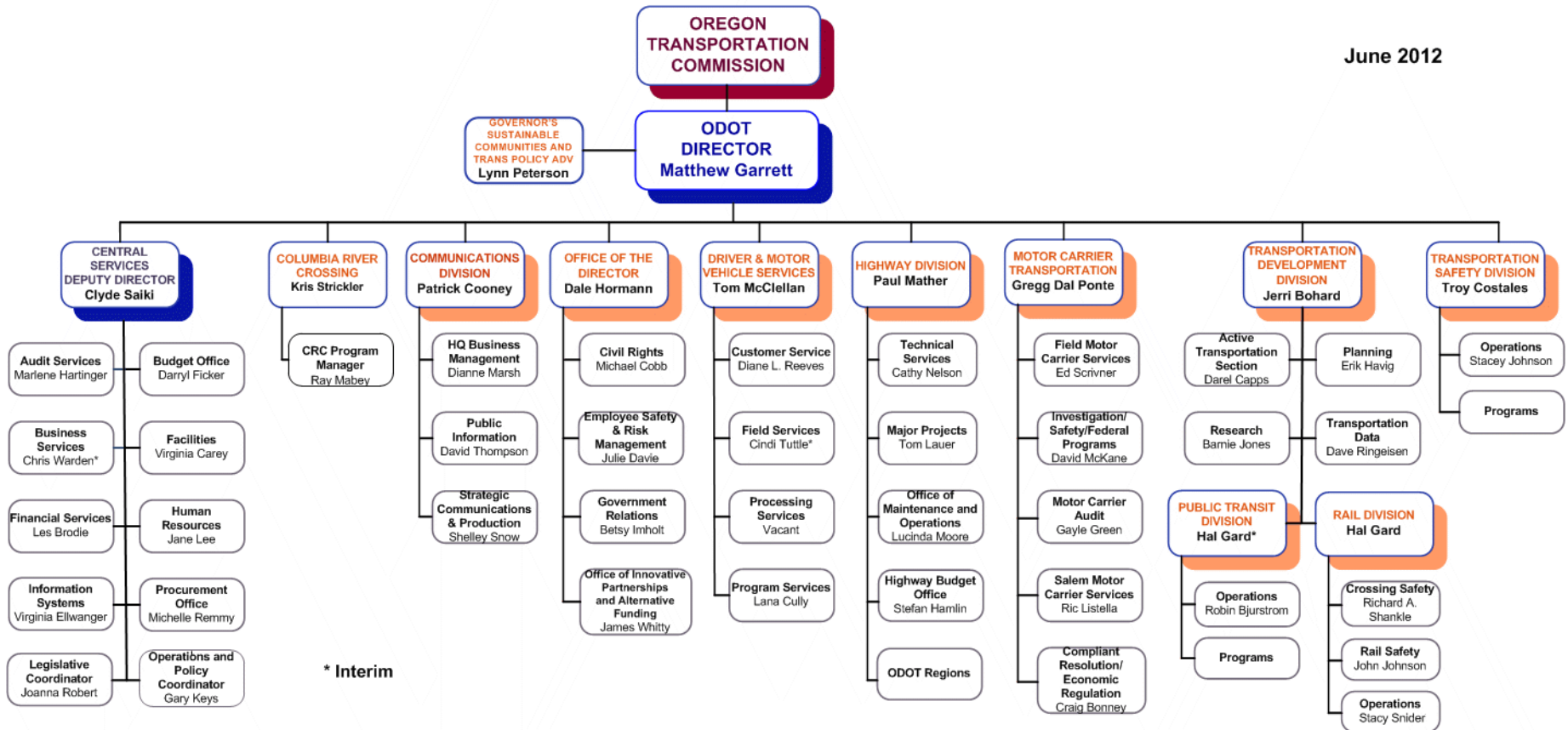
On August 12, 1913 the Oregon State Highway Department and the Oregon State Highway Commission were created through an act of the Oregon Legislative Assembly. In 1969 the Oregon Department of Transportation replaced the Highway Department emphasizing the importance of a broader transportation systems approach. ODOT works closely with the Oregon Transportation Commission (OTC, formerly the Oregon State Highway Commission), a five member agency with members being volunteers appointed by the Governor, in managing Oregon's state highways and other transportation projects (ODOT, 2012a). OTC members serve a four-year term and may be reappointed. Oregon's aviation system is the responsibility of the Oregon Department of Aviation, which was founded in 1921 as the first aviation agency in the United States. It was part of the ODOT until it was granted independent agency status in 1999, going into effect July 1, 2000. The State Aviation Board, a seven member board, sets statewide aviation policies (DOA, 2012). Oregon has experienced a shift from highway planning to a more integrated transportation systems and land use planning approach since the 1970s and as a result, has seen an increased interest and focus on multimodal planning.

#### **5.4.2 ODOT'S Organizational Structure**

ODOT employs around 4,700 employees and its organizational chart is shown in Figure 5.16 (ODOT, 2012a). ODOT chart shows a number of Divisions based on provided services or responsible modes. These include: Central Services, Communications, Driver and Motor Vehicle Services, Motor Carrier Transportation, Highway, Transportation Development (including Public Transit and Rail Divisions), and a Transportation Safety Division. Oregon's ports and waterways are the responsibility of the Motor Carrier Transportation Division, while a separate agency, the Oregon Department of Aviation is responsible for air travel. Special attention is also given within ODOT to Columbia River Crossing issues.

Oregon Department of Transportation

June 2012



\* Interim

Figure 5.16: ODOT Organizational Chart (ODOT, 2012a)

### Modal Divisions

The roles of the different ODOT modal divisions as well as the Department of Aviation and the budgets are presented below (ODOT, 2012a; Legislative Fiscal Office, 2011):

- *Highway Division*: the Highway Division is the largest division within ODOT and is responsible for planning, design, engineering, support services and maintenance of roadways and roadway projects. The division is divided into five geographic regions with some services located at ODOT's headquarters and others at regional "Tech Centers". The Highway Division spends 66 percent (\$2.5 billion) of ODOT's budget for the 2011-2013 biennium.
- *Motor Carrier Transportation*. This Division regulates the statewide commercial trucking industry, including Oregon's ports. The motor carrier budget for 2011-2013 is \$64 million, mainly to register and inspect trucks, to enforce weight, size and safety regulations, and to issue permits.
- *Transportation Development Division*. This Division provides planning services and analysis for all aspects and modes of the transportation system. The Division includes the Public Transit and the Rail Divisions. The 2011-2013 budget for the Transportation Development Division is \$238 million.
- *Public Transit Division*. The public transit Division administers programs that support public transit agencies and activities around the state, enhancing urban and rural public transportation options. The total 2011-2013 budget for Public Transit is \$83 million.
- *Rail Division*. The Rail Division is responsible for freight and passenger rail planning, operations and safety. The 2011-2014 budget for the Rail Division is \$67 million, mainly to regulate rail and crossing safety for freight and passenger rail, and to coordinate intercity rail and bus operations.
- *Oregon Department of Aviation*. Since 2000, the Oregon Department of Aviation is an independent state agency. Oregon has 97 public-use airports and 350+ private airports and airstrips. The Department aims to develop aviation as an integral part of Oregon's transportation network and supports aviation safety and aviation related economic development. The 2009-2011 budget for the Department of Aviation was \$11.5 million and currently the department has 12 positions (DOA, 2011).

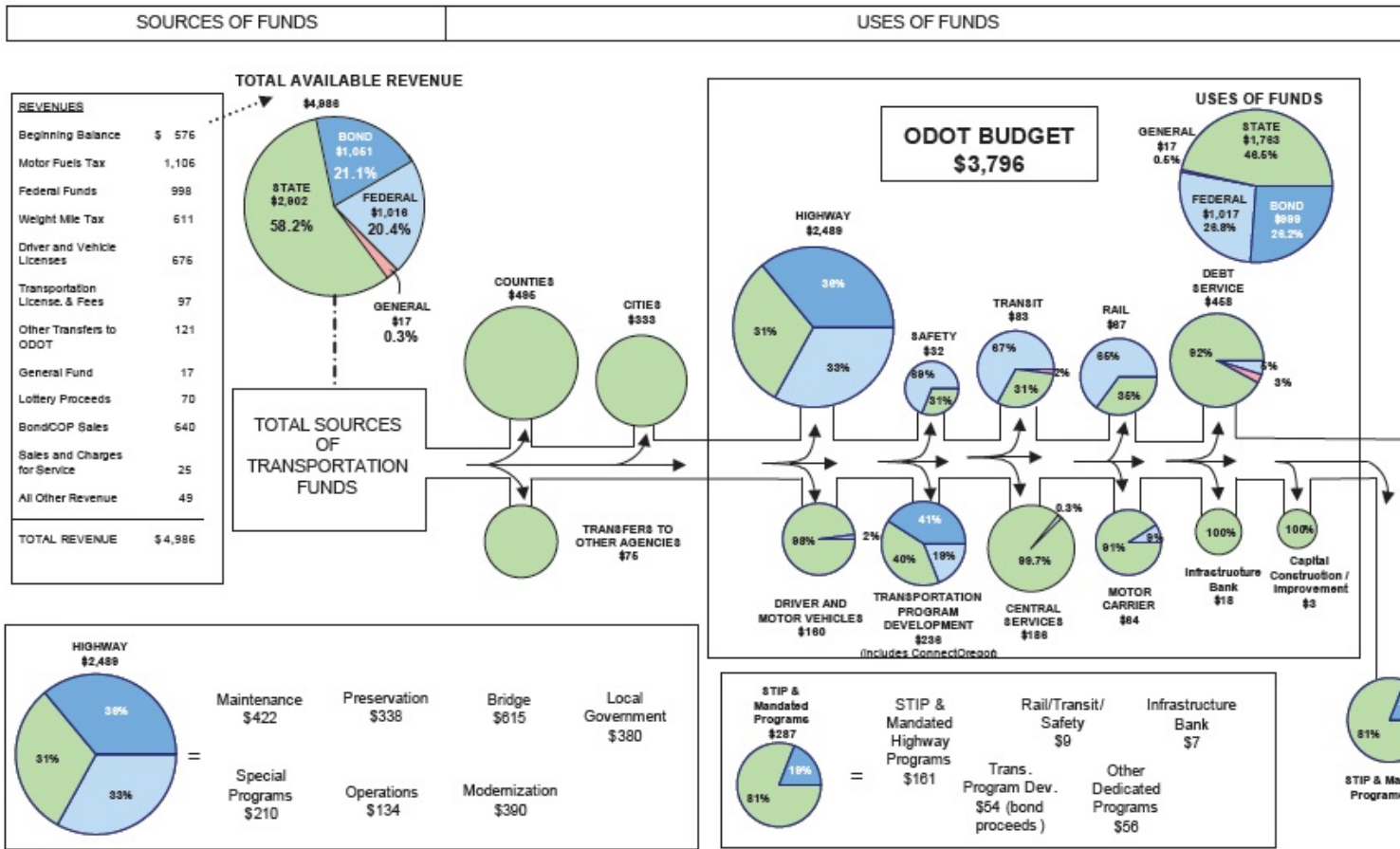
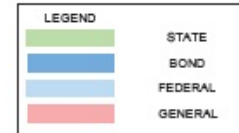
### 5.4.3 Funding For ODOT

During the 2011-2013 biennium, ODOT will collect about \$4.986 billion in revenue. About 20% of this comes from the federal government with the other 80% coming from state sources. After disbursements have been made to cities, counties and other agencies, \$3.796 billion remains for ODOT (ODOT, 2011). Figure 5.17 shows this revenue break down for 2011-2013.

# SOURCES AND USES OF FUNDS

## DEPARTMENT OF TRANSPORTATION

2011-2013 Legislatively Adopted Budget



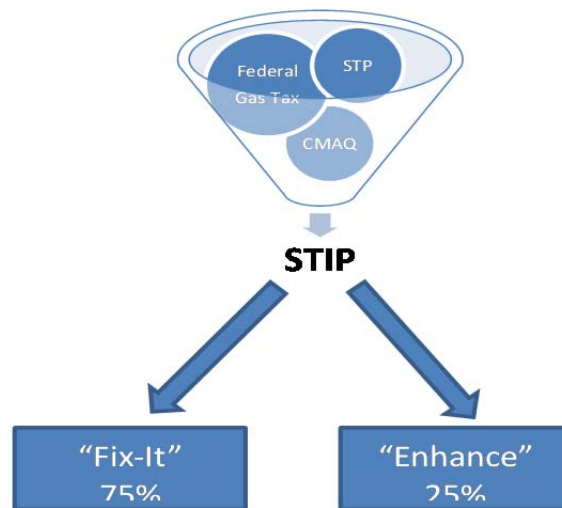
Updated 8/3/11

**Figure 5.17: ODOT's Budget 2011-2013 (numbers given in thousands of dollars) (ODOT, 2011)**

The Highway Division will spend 66 percent (\$2.5 billion) of ODOT’s budget for the 2011-2013 biennium. The majority will be spent on the Highway Maintenance Program (\$422 million), the Preservation Program (\$338 million), the Bridge Program (\$615 million), the Modernization Program (\$390 million) and the Local Government Program (\$380 million) (see Figure 5.17). The majority of the state funds are generated through gas taxes (30 cents per gallon for state gas tax; \$1.1 billion total), weight mile taxes (\$611 million) and Driver and Vehicle Licenses (\$676 million), together accounting for 48% of total revenue. Another \$640 million is generated through Bonds (ODOT, 2011). Like many states, ODOT’s motor fuel tax can only fund highway projects and transit capital funds cannot be shifted into operations.

**STIP Changes**

Oregon has recently changed its Statewide Transportation Improvement Program (STIP). “The STIP will no longer be developed as a collection of programs tied to specific pools of funding dedicated to specific transportation modes or specialty programs” (ODOT, 2012e). Now, 75 percent of the funds are reserved for “Fix-It” projects. These are projects that maintain and preserve the existing system. The remaining 25 percent goes to “Enhance-It” projects - enhancements and improvements to the system (i.e., added capacity) (see Figure 5.18).



**Definitions:**

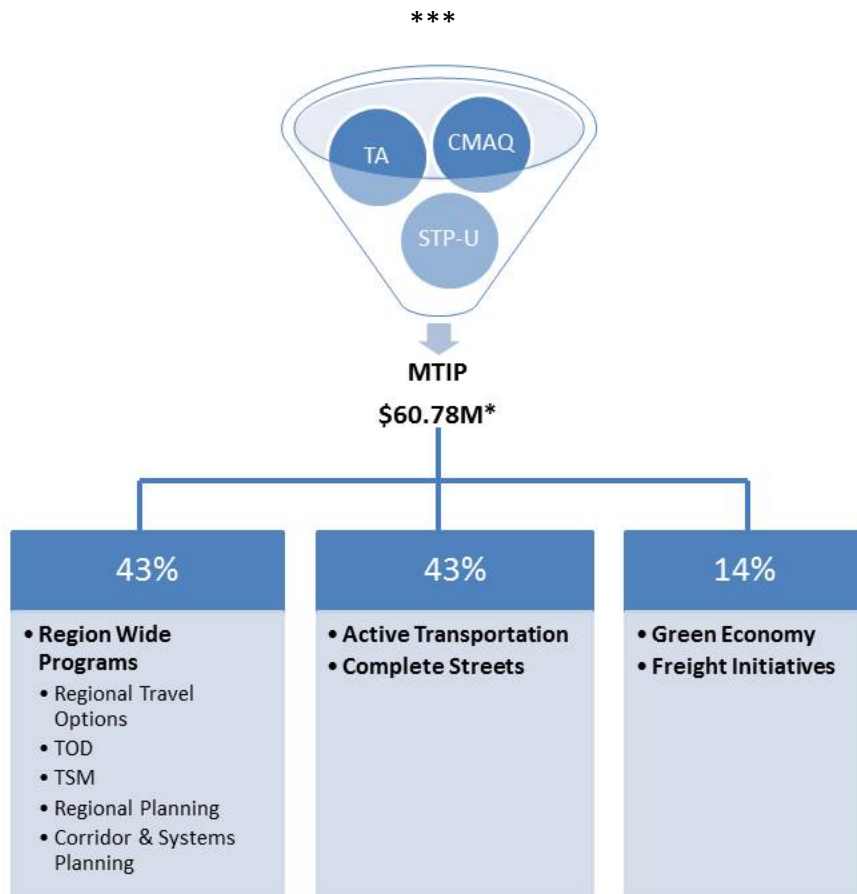
- **Fix-It:** Activities that fix or preserve the transportation system
- **Enhance:** Activities that enhance, expand, or improve the transportation system

**Figure 5.18: 75/25 Funding Split Representation**



The Enhance-It funds come from the Surface Transportation Program (STP) and Congestion Mitigation and Air Quality (CMAQ) funds, so they are more flexible. This 25 percent is much more flexible in terms of spending restrictions (from interview notes). The annual funds were split into four buckets: Interstate Maintenance (IM), STP, CMAQ, and Bridge. All IM funds have to be used for IM projects. 50 percent of the STP, however, can be flexed. CMAQ funds are reserved for projects that contribute to improvements in air quality and traffic congestion. Bridge funds were used for the replacement, rehabilitation, and maintenance of bridges. New transportation legislation folds the Bridge program into STP and the IM Program.

Like Georgia, Oregon has a single metropolitan area in Portland (and its seaport) that houses a significant percentage of its population and business activity. Portland’s MPO, the Portland Metro, prepares a regional, typically 2-year TIP, or MTIP, that draws a significant portion of the federal transportation funds that are allocated to the state. The MTIP is broken down, roughly, into three pots. This is shown in Figure 5.19. The amount of funding was \$60.78 million in 2012, not including the \$48 million that is used for transit capital construction debt service or the \$37.78 million remaining funds (METRO, 2012).



**Figure 5.19: MTIP Funding Allocation, Source: Oregon Metro**



### **Projects First, Then Funding**

For the 2015-2018 STIP, ODOT has changed the application process as well as the eligibility criteria and prioritization factors. In short, the old process began by setting funding levels then selected projects within each of program area. The new process reverses this approach, begins by selecting the best projects and then determining which types of funds can be used to deliver those projects. With this change, ODOT hopes that greater funding flexibility will lead to improved project selection by maximizing the effectiveness and efficiency of projects and investments and at the same time, allowing consideration of a wider range of community issues and benefits (ODOT, 2012b).

### **5.4.4 Example Multimodal Efforts**

#### **Integrated Land Use – Transportation Planning**

Since the 1970s, when the Portland-area and state planners decided that transportation decisions could go hand in hand with land use decisions, Oregon has experienced a shift in planning focus from a highway-centric approach to a multimodal one. In 1991 Oregon became a pioneer in managing the so-called transportation-land use connection and it is still one of a few states with a statewide land use department. Planning activities started to demand local transportation system plans, consideration for all modes, and planning that links transportation to land use policies that favored compact urban form. Likewise, land use planning must take into consideration transportation needs and requirements (OTREC, 2010).

In realizing this ‘*incremental*’ movement away from purely highway capacity expansion projects, stakeholders like activists, planners, politicians, civic leaders, lobbyists and business activists played a major role at four levels: national, state, metropolitan, and local (OTREC, 2010). Today, Oregon is considered to be a leading example of how to balance and integrate land use and transportation planning initiatives and policies to enhance, and to promote multi-modal planning solutions. This balancing act starts from a top down perspective outside the DOT itself, with regularly scheduled, monthly meetings between the Chairs of the Oregon Transportation Commission, the Oregon Department of Land Conservation and Development (DLCD) Commission, and the Oregon Economic and Community Development Department (and with ODOT and the other two department heads meeting bi-monthly).

The Oregon Transportation Plan (OTP) is the “umbrella document” that creates the framework for performance, expectation, and policy. Though ODOT has no official authority over them, there are land use consistency requirements throughout the state. This requirement calls for the cities and counties in the state to be consistent with 19 statewide planning goals. These goals are established at the legislative level. In particular, the transportation goal emphasizes land-use and transportation coordination. This goal complements multimodal

transportation planning. The OTP of 1992 “established a vision of a balanced, multifaceted transportation system leading to expanded investment in non-highway transportation options” (ODOT, 2006) and subsequent plans have built upon this foundation. In addition to the OTP, there are modal and topic specific plans. The different modal plans include Aviation, Bicycle/Pedestrian, Freight, Highway, Public Transportation, and Rail. Moreover, most of the local jurisdictions put together their own Transportation System Plans. Integration of these plans is primarily done at the comprehensive plan level, but is taken into consideration from the highest level out to project delivery. In order to encourage sound decision-making, there are five statewide modal advisory committees: Oregon Freight Advisory Committee, Public Transit Advisory Committee, State Aviation Board, Marine Project Review Committee, and Rail Advisory Committee. Having these committees also ensures that the different modes are all represented.

### **Area Commissions on Transportation**

Local representation within the multimodal planning process is achieved through Oregon’s 12 Area Commissions on Transportation (ACTs). These ACTs are made up of local officials that address transportation issues and interests that are particular to their own jurisdiction. A letter from the OTC to ACT chairmen (OTC, April 2012) discusses the transition of ACT activities from a highway focused effort towards a broader multimodal focus, noting that “When establishing the voting membership, an ACT needs to consider all modes and aspects of the Transportation System”, with this policy going on to reference “elected officials, tribal governments, port officials, transit offices, as well as interested stakeholders such as freight, trucking, bicycle, pedestrian, and public transportation, among other community interests, as potential members”.

In addition to the above mentioned modes, ODOT has placed added emphasis on the promotion and planning for “Active Transportation”, such as walking and biking. METRO, the MPO in Portland, plays an important role here in promoting this “Complete Street”-like policy, by emphasizing street connectivity through design. There is also concurrency planning, which requires public facilities, such as transportation corridors, to be in place to serve new land developments. The same April 2012 letter from the Oregon Transportation Commission to ACT’s regional chairs pointed out that the October 2011 creation of an *Active Transportation Section* within the Transportation development Division “helps streamline project selection. Federal and state programs similar in function are now located in one section. Staff working on Transportation Enhancement, Congestion Mitigation, and Air Quality (CMAQ), Bicycle/Pedestrian, Flex Funds, and Safe Routes to Schools programs now sits and works side-by-side.” (OCT, April 2012)

**Multimodal Freight Inclusive Projects**

ODOT maintains mobility for freight. Two issues with freight transportation that have multimodal implications are the lack of redundancy (in freight moving capacity), and the conflict between freight supporting and passenger supporting performance measures. There are three freight-involved initiatives, in particular, that are exemplary of ODOT's multimodal efforts. One is the *ConnectOregon* program, the second is the Pineville Project, and the third, which involves passenger-freight interactions, is the WES Commuter Rail Project.

In 2005, 2007, 2009 and 2011, the Oregon Legislature approved the *ConnectOregon* program (ODOT, 2012c). The program is a major funding initiative targeted at multimodal transportation in Oregon. ConnectOregon started as a bottom up initiative, initiated by stakeholders (mainly the railroads and ports) who presented the idea to the Governor directly and is now a "lottery backed bond initiative focused on improving the connections between the components of a whole transportation system by improving the flow of commerce and easing delays in travel" and functions as a grant/loan program. The first three initiatives each provided \$100 million for air, rail, marine, and public transit infrastructure and for the fourth initiative (2011-2013 biennium), Legislature authorized \$40 million. With the addition of leveraged funds, programs I through IV represent \$779 million in direct investment in multimodal transportation improvements. Project applications come from public, private and joint organizations and are reviewed by ODOT staff, modal and regional committees, stakeholders, and the 'Final Review Committee'. Applicants for the first three ConnectOregon programs indicated 3,516 construction jobs and 19,953 permanent jobs would be promoted or retained as a result of the state's investments. For the fourth initiative, ODOT initially received 70 applications for funding. After review by all committees, 38 projects totaling \$40,038,333 in *ConnectOregon* IV funding were recommended. In all, the 38 projects recommended will leverage approximately \$95 million in non-ConnectOregon funds. Currently, the allocation of the funds is statutory, but efforts are being made to institutionalize the process.

***City of Prineville Railway***

One of the projects made possible by ConnectOregon is the development of the Prineville Freight Depot (ODOT, 2012d). The \$5.5 million infrastructure investment converted an abandoned mill site into a premier Central Oregon regional trans-load facility. Prineville has "110,000 square feet of covered warehouse space equipped with rail and truck dock doors, a 25-ton overhead crane, drive-through truck loading facilities and in-warehouse rail to facilitate loading of weather sensitive products in all conditions."

***WES (Westside Express Service) Commuter Rail Project***

Created by a partnership between Washington County, ODOT METRO, and the cities of Wilsonville, Tualatin, Tigard and Beaverton, the 27.4 mile WES commuter rail line is managed and funded by TriMet, the Portland metropolitan area's regional transit agency, which also owns and maintains the railcars and stations (TriMet, 2012). In planning since the 1990s, and opened

for service in 2009, WES operates over a mostly upgraded freight rail line, while the self-powered diesel railcars are operated by staff from the Portland & Western Class II Freight Railroad. These WES vehicles share the track with freight trains, using a state-of-the-art computerized dispatch and signal system. Free 24-hour parking is provided for riders and carpoolers at numerous Park & Ride Lots, with weekday spaces in many Lots donated by churches and businesses. The result is a mixed passenger-freight as well as passenger multi-modal travel corridor.

## **5.5 Virginia Department of Transportation (VDOT)**

Some of the information presented below is based on two separate telephone interviews that were conducted in October 2012 with a staff member at the Virginia DOT and Virginia Department of Aviation.

### **5.5.1 Brief History of VDOT**

The Virginia Department of Highways was established in 1927 as a state transportation agency. In 1974, the agency's name was changed to the Virginia Department of Highways and Transportation. Along with this name change, rail and public transportation were added to the agency's areas of responsibility. In 1986, the General Assembly expanded revenue sources for transportation and added a new focus on airports and seaports, and renamed the agency the Virginia Department of Transportation (VDOT). In 1992, the General Assembly moved the rail and public transportation divisions into their own agencies.

### **5.5.2 Virginia's Transportation Organizational Structure**

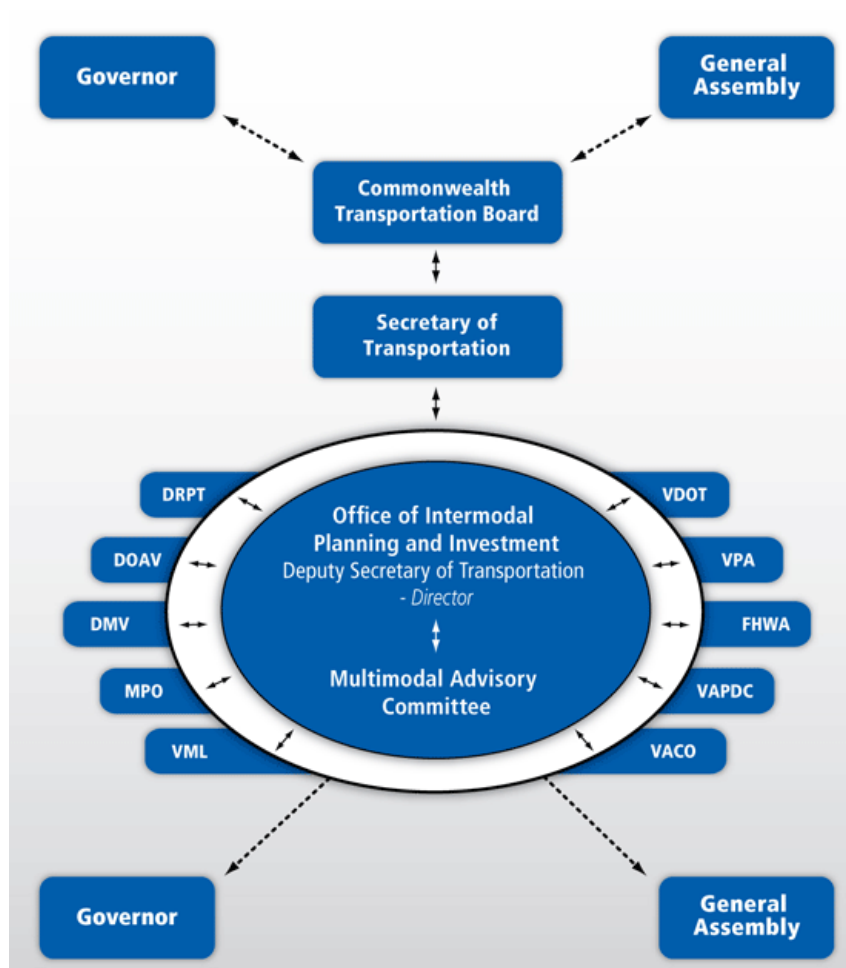
Virginia has established a transportation "secretariat" that includes several transportation agencies, including the Department of Transportation (VDOT), the Department of Rail and Public Transportation (DRPT), the Department of Aviation (DOAV) and the Virginia Port Authority (VPA). The 17-member Commonwealth Transportation Board is responsible for creating the overall transportation policy for the state and allocates funding to projects. The Secretary of Transportation, the Commissioner of VDOT, and the Director of the Department of Rail and Public Transportation are members of the Board. The Board has adopted a statewide multimodal transportation plan, VTrans2035, which provides overall guidance to the state transportation agencies. In addition, a strategic plan provides performance measures, data, and strategies to assess the policies of the transportation agencies.

- *Virginia Department of Transportation.* Due to the separate agencies, VDOT's responsibility narrowed to mainly "building, maintaining, and operating the state's roads, bridges, and tunnels" (VDOT, 2011a). VDOT's jurisdiction includes a total of nine highway districts. The

districts, which collectively employ about 7,500 full time workers, are further divided into 29 residency offices and two district satellite offices. Each of these offices is responsible for between one and four counties. In addition to these offices, there is a central office located in Richmond. VDOT's budget for Fiscal Year 2013 was \$4.76 billion, a 43 percent increase from 2011. Of the total budget, \$1.78 billion (or 37%) was budgeted for road maintenance, \$1.54 (or 32%) for earmarks and special financing, \$711 million (or 15%) for construction, and the remaining 729 million (or 16%) for support of other agencies and programs and for debt service (VDOT, 2011b).

- *Department of Aviation* - The DOAV provides a number of functions for the state. The department is separated into divisions by function. The Airport Services Division provides technical assistance to airport sponsors and managers for planning, construction, design, and maintenance of airport facilities, administers aviation-related funding programs, and conducts statewide aviation system planning (VPA, 2011). This division functions with 11 staff members. The Communications and Education Division promotes the Commonwealth's airports and employs seven staff members. The Flight Operations and Safety Division manages an aviation safety program and maintains the state-owned aircraft. This division is composed of eight employees, five of whom are pilots. The Finance and Administration Services Division has six employees who handle the department's budget and manage the procurement and contracting of goods and services. The entire department operates on a total budget of \$34 million, with \$24 million spent on capital improvements and the remaining \$10 million going toward facilities, equipment, promotion, aircraft operations, safety, and security. Including the Director, DOAV currently employs 33 staff members (VPA, 2011; VDOT, 2011c).
- *Department of Rail and Public Transportation* - The DRPT's three areas of activity are rail, public transportation, and commuter services. DRPT provides assistance to passenger and freight rail through funding options, research, and expert advice; supports public transportation by providing technical assistance and funding for public transportation programs throughout the state; and coordinates with 18 commuter service programs to provide Virginians with information, business incentives, and ride-matching services. The department has a total administrative budget in FY 2012 of \$9,682,408 (CTB, 2012). The Director's Office accounts for \$423,941 of these costs with \$262,141 going toward salaries including benefits. Finance and IT is appropriated \$3,442,101, of which, payroll and fringe benefits accounts for \$1,610,237. The Public Transportation Division receives \$3,120,433 for administrative purposes and \$1,771,933 is spent on salaries. The Rail Division manages an administrative budget of \$2,695,933 and directs \$1,259,283 of that towards payroll and benefits. The DRPT has a maximum employment level of 53 staff members but is currently operating with 47 (CTB, 2012).
- *Virginia Port Authority* - The VPA is in charge of any functions dealing with the development or improvement of commerce in the ports of Virginia. The VPA owns and operates three marine terminals and an inland intermodal facility. The authority also leases

and operates an additional facility. In addition to the operation of these five facilities, the VPA provides assistance to smaller ports in the Commonwealth (OIPI, 2012). As of 2011, the employee base for the VPA is 126. Of those employees, 81 are security personnel, eight work in marketing and economic development, six deal with port promotion, eight are engineering and acquisition specialists, and 23 are administrators. In 2011 the VPA spent \$751,266 on port facilities planning and \$35,970,599 of its administrative budget in general management and direction. These expenses contributed to the VPA’s total operating budget of \$119,358,924. After the operating budget was deducted from the total revenues, \$16,315,331 was available for capital improvements (OIPI, 2012).



**Figure 5:20: Office of Intermodal Planning and Investment Organization (OIPI, 2012)**

In addition to these agencies, the State of Virginia has an *Office of Intermodal Planning and Investment* that coordinates the multimodal and intermodal planning for transportation modes in the state. The work of the Office is coordinated through a Multimodal Transportation Working Group that includes representatives from various agencies in the Transportation Secretariat. These agencies include VDOT, the Department of Rail and Public Transportation (DRPT), the

Department of Motor Vehicles (DMV), the Motor Vehicle Dealer Board (MVDB), the Virginia Department of Aviation (DOAV), and the Virginia Port Authority (VPA). Figure 5-20 shows the organization structure of the Office of Intermodal Planning and Investment. These agencies, along with the Federal Highway Administration, work together to encourage multimodal planning in the state. The goals of this office are to carry out tasks that “link existing systems, reduce congestion, improve safety, mobility, and accessibility, and provide for greater travel options” (OIFI, 2012).

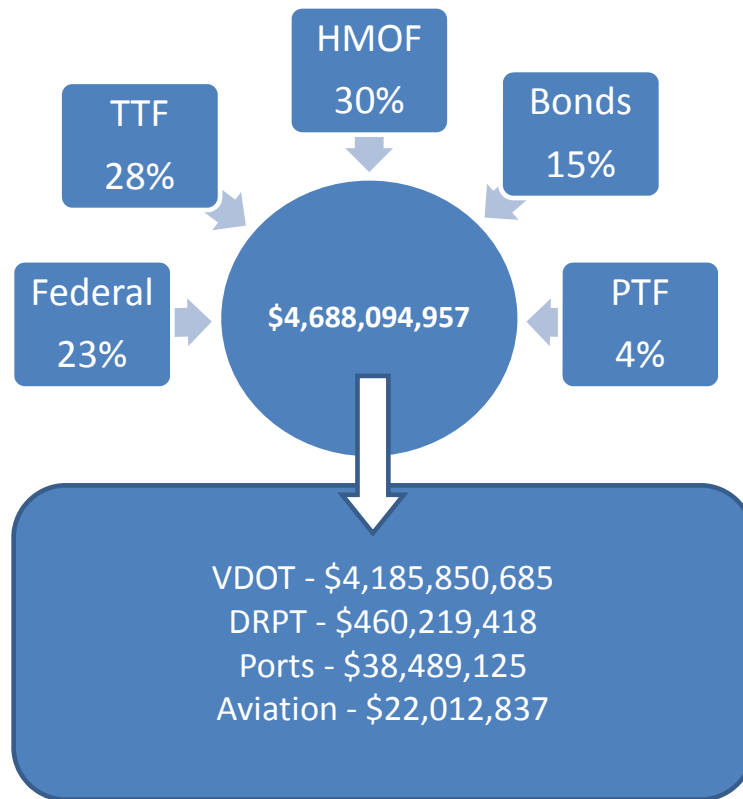
### **5.5.3 Funding For Virginia Transportation**

The Commonwealth Trust Fund (CTF) is Virginia’s central fund that collects transportation revenue and distributes this revenue to the Commonwealth’s transportation agencies and programs. The budget for the FY 2013 CTF totals over \$4.88 billion and comes from a number of sources (VDOT, 2012). Three revenue sources accounted for nearly three quarters of the CTF revenue: the Highway Maintenance and Operating Fund (HMOF), the Transportation Trust Fund (TTF), and federal funds. The HMOF contributes over \$1.42 billion, or 30 percent; the TTF makes up roughly \$1.3 billion, or 28 percent; and federal funds account for a little over \$1.0 billion, or about 23 percent. The other two sources of revenue are the Priority Transportation Fund (PTF, 4%), and bonds (15%). Figure 5.21 shows this breakdown of the CTF revenues for FY 2013 (VDOT, 2012).

*The distribution of funds* in the CTF is predetermined. Revenues from the HMOF are dedicated for highway maintenance, operations, and administration. The PTF revenues are reserved for debt service on Federal Highway Reimbursement Anticipation Notes and Commonwealth of Virginia Transportation Capital Projects Bonds. Federal funds are used for their predetermined purposes that support transit or construction and maintenance of highways. This leaves the revenues from the TTF, which are distributed formulaically in accordance with the Code of Virginia. Approximately 79 percent of the TTF revenues go to the Construction Fund administered by VDOT, 14.7 percent is directed to the Mass Transit Account managed by the Virginia Department of Rail and Public Transportation (DRPT), 2.4 percent is dedicated for the Airport Fund governed by the DOAV, and 4.2 percent is deposited in the Port Fund overseen by the VPA (VDOT, 2012). In FY 2012-2013, the VPA received over \$38 million, or 0.8 percent of the CTF budget; the DOAV received nearly \$22 million, or 0.5 percent; and the DRPT received almost \$460 million through the Mass Transit Fund, or 9.8 percent (VDOT, 2012).

### **5.5.4 Example Multimodal Efforts**

As discussed in Chapter 2 of this report, in 2002 the Virginia Transportation Research Council (a cooperative organization sponsored by VDOT and the University of Virginia) conducted a survey of statewide multimodal transportation planning practices in order



TTF – Transportation Trust Fund  
 HMOF – Highway Maintenance and Operating Fund  
 PTF – Priority Transportation Fund  
 DRPT –Department of Rail and Public Transportation

**Figure 5.21: FY 2012-2013 CTF Revenue Sources (VDOT, 2012)**

to learn from other states and from best practices (Fontaine and Miller, 2002). That same year, the above discussed Office of Intermodal Planning and Investment was established by the Legislature “to encourage the coordination of multimodal and intermodal planning across the various transportation modes within the commonwealth” (OIP, 2012). This Office developed has slowly over the past few years and has only recently been allocated official fulltime staff. Although the Office receives funding for planning, it cannot select projects. Virginia’s multimodal efforts were further demonstrated when Governor McDonnell released the Multimodal Strategic Plan in 2010. The motivation behind this plan was explained by Virginia Transportation Secretary Connaughton: “Virginia’s multimodal transportation challenges require multimodal transportation solutions. We will strive to make better transportation decisions by looking at every alternative and by focusing available resources” (Office of the Secretary of Transportation, 2010). All the different agencies were involved in creating this plan in some capacity and the different departments and agencies are still meeting monthly.



### **Performance Measures**

Virginia has a prioritization process that includes performance measures, but this process is not being used currently. Since 2006 they have been publishing statewide performance reports which have been getting more attention recently and Virginia is hoping to apply the performance measures to projects in the future. Currently, the report includes 42 performance measures (but only 12 targets) and the measures are by mode. The reports are prescriptive reports and are published for prior years. Virginia is hoping to change to a more proactive approach using an automated process and ideally include multimodal rather than single mode measures.

### **Intermodal Networks**

**I-66 Corridor:** In July 2011, VDOT and DRPT initiated the \$4 million I-66 Multimodal Study to identify and evaluate the most effective multimodal and corridor management solutions for addressing the congestion and transportation needs of the I-66 corridor inside the Capital Beltway (I-495) (Cambridge Systematics, 2011; Office of the Governor, 2010). The study that is expected to be completed in 2012 considers “a wide range of complementary and mutually supportive multimodal improvement options, such as public transportation, transportation demand management, high-occupancy vehicle (HOV) lanes, high-occupancy toll (HOT) lanes, congestion pricing, managed lanes, active traffic management, bicycle and pedestrian corridor access, and highway improvements” (Cambridge Systematics, 2011). VDOT has formed a Participating Agency Representative Committee (PARC) to ensure that the study uses a broad lens to evaluate options. “The PARC meets with VDOT, DRPT, and the project consulting team on a monthly basis to provide input on draft materials and advise the study. Over the course of the project, the PARC will meet at least 10 times to comment on and review progress. In addition, representatives serve as liaisons with their respective agencies and elected officials and help distribute study information to constituents and interested citizens” (Cambridge Systematics, 2011).

**The Heartland Corridor And Roanoke Region Intermodal Facility:** The Heartland Corridor is a public-private partnership between the Norfolk Southern railroad, the federal government, and the states of Virginia, West Virginia, and Ohio. The project involved raising vertical clearances along tracks owned by Norfolk Southern to allow double-stacked intermodal container trains to be moved from the Port of Virginia to Chicago, Illinois (Norfolk Southern, 2010)). These improvements are expected to reduce the travel time by up to a day and a half and reduce the travel distance by over 200 miles. The project is expected to take 150,000 trucks off Virginia’s highways each year. As a part of this project, the Virginia Department of Rail and Public Transportation and Norfolk Southern are planning to construct an intermodal facility in Roanoke with close proximity to the Heartland Corridor, the Crescent Corridor, and Interstate 81. This facility will provide connectivity for the entire state of Virginia to these important intermodal rail corridors (Office of the Secretary of Transportation, 2011). The \$169 million project cost is shared between Norfolk Southern and the involved governments. VDOT and

DRPT fund \$9.75 million for the Heartland Corridor and \$12.6 million for the Roanoke facility through a Virginia Rail Enhancement Grant (CTB, 2006).

## 5.6 List of Pre-Interview Questions

### Multimodal Planning Study:

#### Example Questions for Transportation Planning Officials

##### ***Questions about the current state of multimodal planning in your state/region:***

1. Please identify those elements of your agency's mission and procedures that lend themselves to multimodal transportation planning...e.g., enabling legislation, agency mission, goals and objectives statement, funding criteria, standard operating procedures, etc. Have there been any changes to organizational structure that have made multimodal planning more effective? Changes to state funding categories (e.g. flexible funding opportunities)? Changes to agency rules or standard operating procedures?
2. Describe how investment decisions are made in your state DOT...for all modes that your agency is responsible for. Identify the different organizational units that are part of these decisions. To what extent are agencies other than your own involved with such decisions (e.g., MPOs, port authorities, transit agencies, etc.)?
3. How would you describe the evolution of this process over the past 10 to 15 years? To what extent has your agency become more involved in multimodal transportation planning?
4. With respect to the decisions described in #2, what criteria are used to determine priorities? Are tradeoffs made among different modal investments? That is, does someone determine the value of a dollar spent on highways to that spent on transit, airports, ports, etc.? Please provide some specific examples where such tradeoffs were made.
5. The DOT produces a strategic transportation plan in addition to separate modal plans for bicycles and pedestrians, transit, highways, aviation, and rail. How did this plan view integrate these different modal plans (e.g. how did the rail plan consider connections to truck movements)? *What is done to ensure that these separate modal plans complement each other and are in line with the overall mission of the DOT and/or MPO?*
6. How has stakeholder/public involvement influenced multimodal planning within your agency? How did you go about involving key stakeholders?
7. How does MPO/DOT interaction play a role in multimodal planning outcomes? Can you suggest one or more good examples of how this has worked?

8. How are different modal options compared to one another in the planning /programming process to determine the most cost effective investment? What evaluation criteria and performance measures are used by your agency to compare different modal options? *How do you communicate the benefits of multimodal planning to legislators and other political leaders?*
9. What are the current staffing levels in your agency for those units engaged in transportation planning for all modes? How have these levels changed over the past 10 to 15 years? Has there been a lower or higher rate of change in staffing levels in planning compared to the rest of the agency?

***Questions about the future of multimodal planning in your state/region:***

10. Do you envision your agency evolving even more in the direction of multimodal transportation planning? If so, what specifically do you think your agency will do? Are there specific factors that will motivate such changes?
11. How is MAP-21, and in particular the requirements for performance-based planning, likely to affect multimodal planning in your agency?
12. Based on your experience, what would you tell other state DOTs with respect to establishing a more effective multimodal transportation planning process?

## **5.7 References**

### **Florida DOT References**

FDOC, 2007. *Transportation Concurrency Best Practices Guide*. Florida Department of Community Affairs. web document, accessed 11/19//2012.

(<http://www.fdottransportationimpacthandbook.com/resources>)

Florida Department of State, 2012. *Department of Transportation Collection*. Florida Memory, Division of Library and Information Services, web document, accessed 11/1/2012

(<http://www.floridamemory.com/photographiccollection/collections/?id=8>)

FDOT, 2003. *Multimodal Transportation Districts and Multimodal Areawide Quality of Service Handbook*. Florida Department of Transportation.

FDOT/CUTR, 2009. *Trends and Conditions Report, 2009. Impact of Transportation. Transportation and Land Use*. Florida Department of Transportation/Centre for Transportation Research, University of South Florida.

(<http://www.dot.state.fl.us/planning/trends/>)

FDOT, 2010a. *2060 Florida Transportation Plan*. Florida Department of Transportation, web document, accessed 11/1/2012.

(<http://www.2060ftp.org/images/uploads/home/2060FTPlanbook7%2004152011.pdf> )

FDOT, 2010b. *Florida's Strategic Intermodal System Strategic Plan*. Florida Department of Transportation, web document, accessed 11/1/2012.

(<http://www.dot.state.fl.us/planning/sis/strategicplan/2010sisplan.pdf>)

FDOT, 2010c. *FDOT Transportation Impact Handbook. Estimating the Transportation Impacts of Growth*. Systems Planning Office. Florida Department of Transportation. web document, accessed 11/19/2012. (<http://www.fdottransportationimpacthandbook.com/>)

FDOT, 2011a. *Florida's Transportation Tax Sources*. Florida Department of Transportation, Office of Financial Development, web document, accessed 11/1/2012

(<http://www.dot.state.fl.us/financialplanning/revenue/taxprimer/201101/Tax%20Primer%202011%20JAN.pdf> )

FDOT, 2011b. *SIS Plans and Projects*. Florida Department of Transportation, Systems Planning Office, web document, accessed 11/1/2012

(<http://www.dot.state.fl.us/planning/systems/mspi/plans/> )

FDOT, 2012a. *Logistics & Passenger Operations 2012-2013 Organization and Activities Guide*. Florida Department of Transportation, Office of Freight, web document, accessed 11/1/2012.

([http://www.dot.state.fl.us/publictransportation/FLP%20Organization%20Guide%202012\\_13.pdf](http://www.dot.state.fl.us/publictransportation/FLP%20Organization%20Guide%202012_13.pdf) )

FDOT, 2012b. *Work Program and Budget*. Florida Department of Transportation, web document, accessed 11/1/2012.

(<http://www2.dot.state.fl.us/fmsupportapps/workprogram/WorkProgram.aspx> )

MIC, 2012. *MIC Program*. Miami Intermodal Center, web document, accessed 11/1/2012.

([http://www.micdot.com/mic\\_program.html](http://www.micdot.com/mic_program.html) ).

Mueller, E A., 1971. *Florida's Multi-modal Mix*. American Association of State Highway Officials.

Seggerman, K.E., Hendricks, S.J. and Joslin, A.C. 2008. *Guidelines and Performance Measures to Incorporate Transit and Other Multimodal Considerations into the FDOT DRI Review*

*Process*. Report BD549, RPWO #31. National Center for Transit Research, Center for Urban Transportation Research, University of South Florida.

Wilbur Smith Associates, 2010. *Strategic Intermodal System, Multimodal Project Prioritization. Task 1 Technical Memorandum*. Prepared for the Florida Department of Transportation.

Williams, K.M., Seggerman, K.E. and .Nikitopoulos, I. 2004. *Model Regulations and Plan Amendments for Multimodal Transportation Districts*. Center for Urban Transportation Research University of South Florida, Tampa, FL. web document, accessed 11/19/2012.

(<http://www.fdottransportationimpacthandbook.com/resources>)

Williams, K.M., Seggerman, K.E., Pontoriero, D. and McCarville, M. 2011. *Mobility Review Guide*. Proposed Practice. Center for Urban Transportation Research, University of South Florida. web document, accessed 11/19/2012.

(<http://www.dot.state.fl.us/planning/systems/sm/mobility/default.shtm>)

### **North Carolina DOT References**

List, G.F., Foyle, R.S., Canipe, H., Cameron, J. and Stromberg, E., 2008. *Statewide Logistics Plan for North Carolina*. Prepared for the North Carolina Office of State Budget and Management, web document, accessed 11/4/2012

([http://www.ncdot.org/download/business/committees/logistics/StatewideLogisticsPlan\\_080513.pdf](http://www.ncdot.org/download/business/committees/logistics/StatewideLogisticsPlan_080513.pdf) )

MUMPO, 2012. *Comprehensive Transportation Plan*. The Mecklenburg-Union Metropolitan Planning Organization (MUMPO), web document, accessed 11/4/2012

(<http://www.mumpo.org/plans-programs/comprehensive-transportation-plan> )

NCDOR, 2012. *Motor Fuels Tax Rates*. North Carolina Department of Revenue, web document, accessed 11/4/2012 (<http://www.dornc.com/taxes/motor/rates.html> )

NCDOT, 2004. *Charting a New Direction for NCDOT: North Carolina's Long-Range Statewide Multimodal Transportation Plan*. North Carolina Department of Transportation, web document, accessed 11/4/2012

(<http://www.ncdot.org/doh/preconstruct/tpb/statewideplan/pdf/NCStatewideTransportationPlan.pdf> )

NCDOT, 2011a. *Organizational Chart*. North Carolina Department of Transportation, web document, accessed 11/4/2012

(<http://www.ncdot.gov/download/about/structure/NCDOTOrgChart.pdf> )

NCDOT, 2011b. *North Carolina Statewide Transportation Plan Challenges and Opportunities*. North Carolina Department of Transportation, web document, accessed 11/4/2012

([http://www.ncdot.gov/download/performance/2040\\_ChallengeOpp.pdf](http://www.ncdot.gov/download/performance/2040_ChallengeOpp.pdf))

NCDOT, 2011c. *From Policy to Projects - Five Year Work Program*. North Carolina Department of Transportation, web document, accessed 11/4/2012 ([http://www.ncdot.gov/download/performance/Five\\_Year\\_Work\\_Program.pdf](http://www.ncdot.gov/download/performance/Five_Year_Work_Program.pdf) )

NCDOT, 2012a. *Division of Public Transportation*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.gov/nctransit/> )

NCDOT, 2012b. *Division of Bicycle and Pedestrian Transportation*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.gov/bikeped/lawspolicies/> )

NCDOT, 2012c. *NCDOT Organizational Structure*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.gov/about/structure/>)

NCDOT, 2012d. *Mobility Fund*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.org/about/finance/mobilityfund/>)

NCDOT, 2012e. *Guidance for North Carolina's Comprehensive Transportation Planning (CTP) Process. DRAFT, May 11*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.gov/doh/preconstruct/tpb/PDF/IP-CTP-Guidelines.pdf>)

NCDOT, 2012f. *Division of Aviation*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.org/aviation/>)

NCDOT, 2012g. *Ferry Division*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.org/ferry/> )

NCDOT, 2012h. *Division of Bicycle and Pedestrian Transportation*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.org/bikeped> )

NCDOT, 2012i. *Statewide Logistics Plan*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.gov/business/committees/statewidelogistics/> )

NCDOT, 2012j. *Finance & Budget*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.gov/about/finance/> )

NCDOT, 2012k. *North Carolina Multimodal Investment Network*. North Carolina Department of Transportation, web document, accessed 11/4/2012. ([http://www.ncdot.gov/download/performance/NCMIN\\_Definitions.pdf](http://www.ncdot.gov/download/performance/NCMIN_Definitions.pdf) )

NCDOT, 2012l. *Transportation Reform*. North Carolina Department of Transportation, web document, accessed 11/4/2012 (<http://www.ncdot.org/performance/reform/> )

NCDOT, 2012m. *I-85 Corridor Improvement Project*. North Carolina Department of Transportation, web document accessed 11/4/2012. (<http://www.ncdot.org/projects/i85corridor/>)

OSBM, 2011a. *Summary of Base Budget and Fund Descriptions*. North Carolina Office of State Budget and Management, web document, accessed 11/4/2012.  
([http://www.osbm.state.nc.us/files/pdf\\_files/FundPurpose2011-13\\_Transportation.pdf](http://www.osbm.state.nc.us/files/pdf_files/FundPurpose2011-13_Transportation.pdf) )

OSBM, 2011b. *2011-2013 Certified Budget*. North Carolina Office of State Budget and Management, web document, accessed 11/4/2012.  
([http://www.osbm.state.nc.us/files/pdf\\_files/2011-BD307-V6.pdf](http://www.osbm.state.nc.us/files/pdf_files/2011-BD307-V6.pdf) )

SEHSR, 2010. *Southeast High Speed Rail Corridor. Project History*. SEHSR, web document, accessed 11/4/2012. (<http://www.sehsr.org/history.html> )

### **Oregon DOT References**

DOA, 2011. *Annual Report*. Oregon Department of Aviation, web document, accessed 11/4/2012  
([http://www.oregon.gov/aviation/docs/resources/FY2010\\_11\\_Annual\\_Report.pdf](http://www.oregon.gov/aviation/docs/resources/FY2010_11_Annual_Report.pdf) )

DOA, 2012. *Oregon Department of Aviation*, web document, accessed 11/4/2012  
(<http://www.oregon.gov/Aviation/Pages/index.aspx> )

Legislative Fiscal Office, 2011. *Budget Highlights. 2011-2013 Legislatively Adopted Budget*. Legislative Fiscal Office, web document, accessed 11/4/2012  
(<http://www.leg.state.or.us/comm/lfo/2011-13/2011-13%20Budget%20Highlights.pdf> )

METRO, 2012. *Direction of the 2016-18 Regional Flexible Funds Allocation*. Portland Metro, Meeting Memorandum  
([http://rim.oregonmetro.gov/webdrawer/rec/247325/view/General%20Administrative%20Records%20\(GAR\)%20-%20A~ting%20Records%20-%20Joint%20Policy%20Advisory%20Committee%20on%20Transportation%20\(JPACT\)%20Packet.PDF](http://rim.oregonmetro.gov/webdrawer/rec/247325/view/General%20Administrative%20Records%20(GAR)%20-%20A~ting%20Records%20-%20Joint%20Policy%20Advisory%20Committee%20on%20Transportation%20(JPACT)%20Packet.PDF) )

OCT, 2012. *Transitioning Role of Area Commissions on Transportation (ACTs)*, Oregon Transportation Commission. Salem, OR. April 24th, 2012. Accessed 11/12/2012.  
([www.oregon.gov/.../OTC%20Chair%20Egan%20letter%20to%20ACTs.pdf](http://www.oregon.gov/.../OTC%20Chair%20Egan%20letter%20to%20ACTs.pdf) )

ODOT, 2006. *Oregon Transportation Plan*. Executive Summary. Oregon Department of Transportation, web document, accessed 11/4/2012  
(<http://www.oregon.gov/ODOT/TD/TP/docs/otp/executivesummary.pdf> )

ODOT, 2012a. *Oregon Department of Transportation*, web document, accessed 11/4/2012  
(<http://www.oregon.gov/ODOT/> )

ODOT, 2012b. *Draft Multimodal Transportation Enhance Program/Project Application Information*. Oregon Department of Transportation, web document, accessed 11/4/2012 ([http://www.oregon.gov/ODOT/TD/TP/STIP\\_SSC/Draft%20STIP%20Enhance%20Application%20Instructions.pdf](http://www.oregon.gov/ODOT/TD/TP/STIP_SSC/Draft%20STIP%20Enhance%20Application%20Instructions.pdf) )

ODOT, 2012c. *ConnectOregon*. Oregon Department of Transportation, web document, accessed 11/4/2012 (<http://www.oregon.gov/ODOT/TD/TP/pages/connector.aspx> )

ODOT, 2012d. *City of Prineville Railway*. Oregon Department of Transportation, web document, accessed 11/4/2012. (<http://www.oregon.gov/ODOT/TD/TP/CO/City%20of%20Prineville%20Railway.pdf> )

ODOT, 2012e. *Project Funding*. Statewide Programs Unit, web document, accessed 10/25/12. (<http://www.oregon.gov/odot/hwy/lgs/Pages/funding.aspx>)

ODOT, 2011. *Budget 2011-2013*. Oregon Department of Transportation, web document, accessed 11/4/2012 ([http://www.oregon.gov/ODOT/COMM/docs/budgetbooklet\\_11-13.pdf](http://www.oregon.gov/ODOT/COMM/docs/budgetbooklet_11-13.pdf) )

OTREC, 2010. *A Brief Portrait of Multimodal Transportation Planning in Oregon and the Path to Achieving It, 1890-1974*. Oregon Transportation Research and Education Consortium, web document, accessed 11/4/2012. (<http://www.reconnectingamerica.org/assets/Uploads/2010MultiModalTrans1890-1974.pdf> )

TriMet, 2012. *WES Commuter Rail Project History*. TriMet, web document, accessed 11/4/2012 (<http://trimet.org/about/history/wes.htm> )

### **Virginia DOT References**

Cambridge Systematics, 2011. *Inc I-66 Multimodal Study Inside The Beltway. Interim Report*. Cambridge Systematics, Inc. for the Virginia Department of Transportation, web document, accessed 11/2/12. ([http://virginiadot.org/VDOT/Projects/Northern\\_Virginia/asset\\_upload\\_file900\\_54324.pdf](http://virginiadot.org/VDOT/Projects/Northern_Virginia/asset_upload_file900_54324.pdf))

CTB, 2006. *The Heartland Corridor*. Commonwealth Transportation Board, web document, accessed 11/2/2012. ([http://www.virginiadot.org/ctb/resources/Agenda\\_Item6\\_Heartland\\_CTB\\_Update\\_Dec2006\\_short.pdf](http://www.virginiadot.org/ctb/resources/Agenda_Item6_Heartland_CTB_Update_Dec2006_short.pdf))

CTB, 2012. *Commonwealth Transportation Board*. web document, accessed 11/2/2012. (<http://www.ctb.virginia.gov/>)



DOAV, 2012. *About the Virginia Department of Aviation*. Virginia Department of Aviation, web document, accessed 11/2/2012. ([http://www.doav.virginia.gov/about\\_doav.htm](http://www.doav.virginia.gov/about_doav.htm))

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

Norfolk Southern, 2010. *Heartland Corridor Fact Sheet. The Future Needs Us*. Norfolk Southern, web document, accessed 11/2/2012.  
([http://www.thefutureneedsus.com/images/uploads/Heartland\\_Corridor\\_Fact\\_Sheet.pdf](http://www.thefutureneedsus.com/images/uploads/Heartland_Corridor_Fact_Sheet.pdf))

Office of the Governor, 2010. *Virginia Continues Advances for Interstate 66 Corridor*. State of Virginia, June 21, 2010, web document, accessed 11/2/2012.  
(<http://www.governor.virginia.gov/news/viewRelease.cfm?id=210> )

Office of the Secretary of Transportation, 2010. *Governor McDonnell Releases Multimodal Strategic Plan During Governor's Transportation Conference in Roanoke*. State of Virginia, December 8, 2010, web document, accessed 11/2/2012.  
(<http://www.transportation.virginia.gov/news/viewRelease.cfm?id=503> )

Office of the Secretary of Transportation, 2011. *Governor McDonnell Comments on Roanoke Intermodal Facility and State Supreme Court Ruling*. State of Virginia, November 4, 2011, web document, accessed 11/2/2012.  
(<http://www.transportation.virginia.gov/News/viewRelease.cfm?id=983> )

OIPI, 2012. *Office of Intermodal Planning and Investment*. web document, accessed 11/2/2012.  
([http://vtrans.org/about\\_us.asp](http://vtrans.org/about_us.asp) )

VDOT, 2011a. *The Commonwealth's Transportation Agency*. About VDOT. Virginia Department of Transportation, web document, accessed 11/2/2012.  
([http://www.virginiadot.org/about\\_vdot/default.asp](http://www.virginiadot.org/about_vdot/default.asp) )

VDOT, 2011b. *Fiscal Year 2011-2012 VDOT Annual Budget*. Virginia Department of Transportation, web document, accessed 11/2/2012.  
([http://www.virginiadot.org/about/resources/VDOT\\_fy12\\_Budget\\_revised.pdf](http://www.virginiadot.org/about/resources/VDOT_fy12_Budget_revised.pdf) )

VDOT, 2011c. *Fiscal Year 2011-2012 Commonwealth Transportation Fund Budget*. Virginia Department of Transportation, web document, accessed 11/2/2012.  
([http://www.virginiadot.org/VDOT/About\\_VDOT/asset\\_upload\\_file786\\_41323.pdf](http://www.virginiadot.org/VDOT/About_VDOT/asset_upload_file786_41323.pdf) )

VDOT, 2012. *Fiscal Year 2012-2013 Commonwealth Transportation Fund Budget*. Virginia Department of Transportation, web document, accessed 11/13/2012.  
([www.virginiadot.org/VDOT/About\\_VDOT/asset\\_upload\\_file841\\_58764.pdf](http://www.virginiadot.org/VDOT/About_VDOT/asset_upload_file841_58764.pdf) )

VPA, 2011. *Comprehensive Annual Financial Report*. Virginia Port Authority, web document, accessed 11/2/2012.  
(<http://www.portofvirginia.com/media/19260/cafr%20final%20web%20version.pdf> ).

## **Chapter 6. Conclusions and Recommendations: Elements of A Strategy for Meeting Georgia's Multimodal Transportation Needs**

### **6.1 Introduction**

The preceding chapters have identified a number of frequently voiced needs for, and barriers to, a multimodal approach to transportation planning. They also provide examples of actions that a number of DOTs have taken for moving a state's transportation system in a more efficient and competitive multi-modal direction. This chapter builds on some frequently identified themes from these earlier chapters to describe a series of action items for making the best use of planning resources and, ultimately, transportation infrastructure investment dollars, to meet the significant growth expected in personal and goods movement demands within Georgia over the first half of the twenty-first century. These actions are organized under the following four, complimentary headings:

- Policy/Legislative/Funding Issues
- Multimodal Planning and Program Activities within GDOT
- Inter-Organizational Activities (for GDOT vis-a-vis Other State Organizations)
- Multimodal Performance Measures, Planning Tools and Data Needs.

### **6.2 Policy/Legislative/Funding Issues**

In the post-2007 U.S. economic downturn the Georgia DOT, along with the state's many regional and local planning agencies, is facing severe financial constraints. Annual budgets are being strained as these governments look for ways to cope with growing highway network maintenance costs, at a time when an increasingly fuel efficient automobile fleet means fewer fuel tax revenues to work with. However, while less fuel is being used to travel the same number of vehicle miles, the demand for both personal and freight supporting travel within Georgia is expected to grow steadily over the next two decades. Limited highway network expansion monies based on fuel and other vehicle use taxes seem likely, while the use of such funds to develop non-highway travel options has to date been unpopular with Georgia legislators as well as with many Georgia residents. The lack of flexibility in the use of the state's major transportation system revenue source to address non-highway options severely limits the range of infrastructure investment plans for dealing with future traffic growth.

This said, empirical evidence from Chapters 2, 4 and 5 of this report suggests that a number of states have made real progress in giving their planning and programming activities a broader, and potentially more cost-effective, multimodal perspective. In some cases this has been made possible by bringing flexibility into the way funding is being allocated across programs. Such

changes require committed and sustained top down leadership by state legislators in order to succeed. In other instances, state planners have found ways to leverage highway funding to introduce the benefits of transit and non-motorized transportation options at the project or site-specific level. The best examples of this are external (to the state DOT) stakeholder group initiated, and are best fostered using a bottom up approach to project development. At their most successful, these often localized stakeholder led efforts to fund multimodal projects can lead to broader geographic, even statewide funding programs.

Our interviews and literature searches indicate that successful funding efforts should include both top down and bottom up approaches to supporting multimodal alternatives to future transportation infrastructure investments:

**1. Seek Top Down Support for Multimodal, Multiagency Planning.** The policy decision to move to a more multimodal approach needs to come from the highest level of decision making. GDOT needs to develop stronger connections with elected officials, address (through plans, funding decisions, and projects) those areas on the political agendas of the elected officials, appeal to a wide range of policy issues, and be flexible enough to adapt these plans, funding decisions, and projects when policy issues change. GDOT's Intermodal Division can play an important role here by identifying and encouraging multimodal projects that complement the Governor's and state Legislature's plans and programs, and that support not only GDOT goals, but also where feasible the complimentary goals of other statewide agencies such as the Georgia Departments of Economic Development, Agriculture, Natural Resources, Public Safety and Social Services.

- *In 2009, in North Carolina, the Governor issued an executive order to ensure that the NCDOT's decision making process focused on the department's long term goals. In response, the department developed a decision making process called "Policy to Projects". The process ensures that plans are developed in accordance with the vision and the goals that are expressed in the policies. The Governor was also instrumental in creating a Mobility Fund to support this effort.*

**2. Maximize Use of Existing Funds.** The nationwide survey of state DOTs described in Chapter 4 shows that dedicated revenue, mode-specific funds, general state funds, and bond funding are commonly used for non-highway projects. One of the barriers for multimodal planning within GDOT is that the Intermodal Division has no dedicated revenue. Since the majority of the GDOT funds come from the federal government, one option is to reserve flexible funds from the federal government for use in planning mode-neutral investment solutions. The Intermodal Division within GDOT should play a lead role here in both seeking such funding opportunities and in setting up a formal project selection process to decide how to allocate these flex funds among modes.

- *Maine DOT, for example, instead of diverting highway funds for multimodal planning, has used funds from bonds, the FTA and the CMAQ program from the SAFETEA-LU transportation legislation. There are also implications here for the flexibility of funds in the July 2012 MAP-21 legislation, which allows states to transfer up to 50 percent of any apportionment to another formula program in order to enhance flexibility of funds.*

**3. Encourage Bottom-Up Funding Initiatives.** Since GDOT has already established its Public Private Partnerships Program, the agency should make use of such partnerships for the purpose of developing funding programs.

- *For example, ConnectOregon, which is now a lottery based funding program, used for funding projects that connect different components of the transportation system, was started by stakeholders representing railroads and the seaport.*

**4. Focus Initially on Potentially High Payoff Multimodal Policies.** A greater emphasis over the past decade on freight transportation needs, both within Georgia and nationwide, also brings with it the opportunity to consider non-highway exclusive solutions to major transportation corridor planning, as well as to major intermodal terminal and terminal-to-corridor connector planning. Here “time is money” concerns offer more readily apparent linkages to a state’s economic growth, and multimodal projects that involve seamless intermodal freight movements that can often report good benefit-to-cost ratios. A multimodal treatment of transportation mobility needs and supporting infrastructure investment plans seems especially important in the following four areas, where well thought out policies should offer significant economic as well as environmental and travel safety benefits:

- **Statewide Planning for Multimodal Corridors.** Based on the results of our review of future transportation needs (cf. Chapter 3), both high speed passenger and freight travel options between cities as well as into and out of the state will need to be developed if Georgia is to remain competitive with other states in the coming decades. It is important that planning for the sort of dollar investment levels needed to meet such demands starts from a multimodal perspective that includes rail and air as well as highway corridor options. By taking a statewide as well as multimodal view of such corridors, the resulting plans have a better chance of capturing the synergies offered by multi-corridor as well as multi-modal investments in (current and forecast to be) highly trafficked routes.
- *A useful resource here is NCHRP 661 (Carr, et al, 2010). This guidebook provides recommendations on steps for the implementation of a statewide corridor planning process that uses the results of individual corridor plans in developing a statewide transportation plan based on a network of multimodal passenger and/or freight transportation corridors. This includes significant rail as well as truck freight corridors*

*within the state. Based on state DOT surveys and case studies, the benefits of a corridor-based statewide planning process (as compared with a systems wide or project-based planning process) include “The ability to more closely examine the trade-offs among different modes.”*

- *Florida DOT’s Strategic Intermodal System (SIS) is also worth studying, as it has placed a good deal of emphasis on a multimodal network treatment of important transportation facilities that focuses attention on connectivity via major corridors, hubs and connectors (cf. Section 5.2).*
  
- *Corridor-based analysis also supports the evaluation of multimodal linkages between Georgia and other states. Here GDOT can take advantage of federally supported network data resources. In particular, MAP-21 legislation (Section 6310) includes a requirement that the US DOT (Bureau of Transportation Statistics) continue to maintain its National Transportation Atlas Database, which must include a network database “that shall be capable of supporting intermodal network analysis”. When used in combination with FHWA’s Freight Analysis Framework (FAF3) database of annually updated multimodal commodity flow forecasts and associated interstate truck movements ([http://www.ops.fhwa.dot.gov/freight/freight\\_analysis/faf/](http://www.ops.fhwa.dot.gov/freight/freight_analysis/faf/)), these data offer a useful basis for assessing future network capacity needs on a multimodal/intermodal basis. This sort of effort is also consistent with Section 1115 of MAP-21, which requires the U.S. Secretary of Transportation to develop a Primary Freight Network whose performance must be reported on biennially.*
  
- *A recent report to the FHWA by McDowell (2009) notes that “transportation corridor coalitions are evolving toward an all-modes orientation that has the potential to bridge the freight-only and passenger-only orientations. While these coalitions do not have a clear role yet that is defined in federal law or practice, a growing interest in multistate (possibly including megaregion) investments in long distance transportation networks suggests a growing role for multimodal planning within the state DOT.” GDOT’s involvement with the I-95 Corridor Coalition is one possible avenue into exploring such broader state mobility issues.*
  
- **Intermodal Connectivity Issues at Ports and Other Hubs.** Ports, both seaports and airports, are by their very nature the sites of both multimodal and inter-modal traffic activity. The need for effective multimodal planning is nowhere more evident, in Georgia and elsewhere, than when problems of moving freight or people through ports present themselves. Also, nowhere is the importance of coordinating transportation, economic development, and land use planning more immediately evident than within and around

such ports. In particular, GDOT's Intermodal Division can play an important role in developing and promoting multimodal solutions in the following three areas:

- ***First and Last Mile Intermodal Freight Connectivity (via Trucking).*** The geographic ubiquity provided by trucking makes truck-to-rail, -air and -water connections essential to efficient freight movement in Georgia. This is one area where GDOT's Intermodal Division can play a significant role in ensuring that these intermodal transfers take place safely and with minimal delay. One way to do this is to establish and maintain a reporting of such connections into and out of the state's seaports and airports.
- ***Shortline Railroads.*** GDOT's 2009 Rail Plan identifies and describes the importance of shortline railroads to Georgia. And both the economic importance and also potential environmental benefits of efficient shortline access to the Port of Savannah are demonstrated by the recently opened inland container port in Cordele, GA.
- ***Efficient Multimodal Airport Ground Access/Egress.*** The Georgia Aviation System Plan (GDOT, 2003) has as one of its five goals a passenger accessibility goal "To provide an airport system that is accessible from both the air and the ground." With the most heavily enplaned passenger airport and also the 11<sup>th</sup> largest air cargo airport in the nation (GDOT, 2011), Atlanta's Hartsfield-Jackson International Airport in particular poses significant truck as well as auto and bus access issues should freight as well as passenger air traffic grow as expected in coming decades.
- ***Ensuring System Robustness in Times of Stress.*** During times of stress, when a loss of network capacity within one or more modes of transport occurs, the economic costs to industry can be high if important routes remain compromised for any significant length of time. Where such disruptions to movement last for weeks at a time, alternative means of delivery are usually sought by freight shipping or receiving companies as well as by individual travelers. The more serious, more widespread or more protracted the disruption, the greater the chance of it inducing a mode as well as route shift. In such circumstances the availability of additional throughput capacity on more than a single mode can prove especially beneficial. Where urban passenger travel is concerned, the availability of a reliable and easily accessible public transit option may be the only reasonable "second-best" solution for many travelers. Where intercity or interstate freight movements are concerned, the option of using rail or truck may be the key to limiting business losses (GTRI et al, 2012). A useful role for GDOT's Intermodal Division here would be to identify those high volume (freight/passenger/mixed freight and passenger) traffic corridors and terminals where a protracted disruption both warrants and supports, on a dollar cost basis, the development of plans that facilitate temporary modal shifts. From a purely technical standpoint, this is a relatively new area of endeavor for state

DOTs such as GDOT, but one that has gained a good deal of importance in recent years since the disruptions to travel caused by widespread severe weather events such as Hurricane Katrina and Superstorm Sandy.

- **Integrated Urban Land-Use/Transportation Solutions.** One barrier to multimodal transportation planning is the lack of formal linkages between land-use and transportation projects, notably within built-up and congestion sensitive urban areas. Closer and if possible more formal coordination between transportation improvement plans and land-use development decisions is warranted.
- *The experience of the state of Oregon as a leader in transportation-land use connection is worth studying here. Planning in the state requires local transportation system plans that consider all modes of transportation and integrate land use policies that encourage multimodal projects (cf. Section 5.4).*

### 6.3 Multimodal Planning and Program Activities within GDOT

**5. Promote Pro-Active Multimodal Planning.** Successful intermodal/multimodal programs within state DOTs exhibit a significant degree of pro-active planning and project development, involving efforts to bring consideration of alternative mode and inter-modal alternatives into investment planning in a formal manner. In addition to the program monitoring and management activities it currently engages in, the Intermodal Division within the Georgia DOT should seek a more pro-active role in developing both long and short range plans, and in providing inputs to strategic transportation infrastructure investment decisions. One way to do this is to get the evaluation of specific intermodal criteria put into the critical path when developing both strategic and short range transportation investment plans.

- *The draft comprehensive planning process being considered by North Carolina DOT as described in Chapter 5 offers one example of the level of multimodal office involvement that is likely to be required.*

**6. Choose Projects Then Find Funding.** GDOT should create a process for selecting projects such that the projects are selected first and then funding sources are found to fund the projects, and not vice versa. This will remove some of the constraints for multimodal planning.

- *Oregon DOT's "new application process mainly serves the purpose to change from setting funding levels for a multitude of programs and then selecting projects within each of those programs to selecting the best project and then determining which types of funds can be used to deliver those projects."*

**7. Consider an Expanded Role in Multimodal Planning and Project Development Based on MAP-21 Legislation.** GDOT’s Intermodal Division should assess the implications of MAP-21 for increased participation in multimodal planning activities and where the new lines of funding supported by MAP-21 can be leveraged to support both local project level activities as well as broader planning efforts.

**8. Intermodal Division: Improve Staffing Resources.** Additional staffing resources could usefully be devoted to finding multimodal solutions, including staff training courses in multimodal/intermodal planning and in the acquisition and use of analytic tools to support formal approaches to multimodal plan generation and assessment (see section 6.5 below on available tools and their uses). Current staffing numbers devoted to non-highway and non-transit modes are very limited within GDOT. Areas that would benefit from greater attention, given the needs (and costs of meeting them) identified in Chapter 3, include rail (high speed freight and passenger rail corridors and shoreline freight railroad connectors), seaport and inland water/river transport, airport planning, bicycle and pedestrian planning (e.g. via Complete Streets and Context Sensitive Design-driven projects) and ridesharing. While consultant staffing resources may be used in some or all of these instances, each of these modes requires GDOT staff coordination with other agencies (e.g. the Georgia Port Authority and the U.S. Army Corp of Engineers for water transport issues, the railroads, bicycle associations, local ridesharing agencies).

**9. Across Department Training in Multimodal Planning and Program Development.** The Intermodal Division should develop a cross-divisional training program in multimodal/intermodal planning and project evaluation, with participation encouraged and also rewarded for staff members who are willing to spend a few weeks or months working on “other mode” projects that require them to work on topics outside their comfort zones. Promotions in the areas of planning and program development could require time spent in different modal divisions, including experience in planning and implementing projects that involve investing departmental funds in more than one mode of transportation. Both hands on project-level and program or plan development level training courses should be considered, to provide both a bottom-up and top down understanding of the issues associated with mode-neutral as well as intermodal planning concepts.

## **6.4 Inter-Organizational Activities (for GDOT vis-a-vis Other State Organizations)**

**10. Collaborate with Land-Use and Economic Development Organizations.** The links between land use and transportation and between transportation and economic development need to be made stronger. GDOT should work more closely and more formally with organizations



such as the Georgia Department of Community Affairs, and with the state's MPOs to make more comprehensive and informed transportation decisions. The long term goal here should be to place economic development, land use development, and transportation investments on a level playing field regarding modal planning.

- *As an example, Oregon's Transportation Commission works directly with the Oregon Department of Land Conservation and Development and the Oregon Economic and Community Development Department, with regular monthly meetings.*
- *A more immediate example is the close collaboration between GDOT, the Governor's office, the Department of Economic Development's Center of Innovation for Logistics, and a number of private sector stakeholders who contributed to GDOT's national award winning Freight and Logistics Plan (GDOT, 2012a).*

**11. Develop Tools or Techniques to Improve Interagency Coordination in Project Development.** Involving other agencies early in the process can improve decision making, incorporate multimodal alternatives into the project development phase, and improve efficiency in environmental review. GDOT should formalize a collaboration process and look into developing a stakeholder-interactive tool to facilitate interagency communication.

- *As a useful example here, Florida DOT is currently using the Efficient Transportation Decision Making (ETDM) process to improve communication between the public, transportation agencies, environmental agencies, and land use planning agencies. The ETDM process employs the Environmental Screening Tool (EST), an interactive project database that can be accessed online by public agencies as well as by the general public.<sup>9</sup>*

**12. Prepare a Multimodal Planning Guidebook.** Just as a Guidebook for Pedestrian Planning was created by GDOT, a similar document should be prepared for multimodal transportation planning. It should be prepared as a document that is used as a supplementary resource to planning procedures that are already in place.

- *Oregon DOT has prepared a guidebook to help local jurisdictions develop their Transportation System Plans. The Plans are adopted by local governments and reviewed and approved by Oregon's Land Conservation and Development Commission.*

**13. Hold a Statewide Multimodal Planning Exposition.** GDOT's Intermodal Division should coordinate events that transportation staff from various agencies can attend to learn more about

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<sup>9</sup> <http://www.dot.state.fl.us/emo/ETDM.shtm> <https://etdmpub.fl-a-etat.org/est/>

multimodal planning and have open conversations about ideas for multimodal transportation in the state. Ideas from the event can then be considered in the plans of the agency. This presents an opportunity for various transportation agencies to work together and learn from each other and from experts in the field. GDOT's role in coordinating such activities was mentioned in the stakeholder interviews.

- *New Mexico held a Statewide Multimodal Summit in which modal experts from around the country came to train NMDOT staff and representatives from other agencies and stimulate ideas for multimodal planning.*

**14. Create Interagency Committees for Multimodal Studies.** For a larger multimodal project, GDOT can create a committee specifically for the project. The committee can be composed of staff with technical expertise from the various agencies that are involved with the project, directly and indirectly.

- *Virginia DOT formed a Participating Agency Representative Committee (PARC) to ensure that the I-66 Multimodal Study considered a broad range of options to evaluate. "The PARC meets with VDOT, DRPT, and the project consulting team on a monthly basis to provide input on draft materials and advise the study."*

**15. Clearly Delineate Roles.** The roles of the department and other transportation agencies in the state should be clearly delineated in transportation plans. The current role as well as the vision of the role should be discussed with the other agencies before addressing it in the plan.

- *In North Carolina, the statewide multimodal plan was updated with expectations of better delineated roles for the divisions inside the Department, MPOs, and various transit authorities.*

**16. Investigate Bottom-Up, Stakeholder Proposed Approaches.** Ideas for effective multimodal solutions often originate from outside the agency. GDOT's Intermodal Division can partner with stakeholders to carry out innovative practices, especially in freight.

- *Intermodal Logistics Centers in Florida facilitate freight movement, enhance regional connectivity, and reduce congestion. Though the idea for these ILCs came from private stakeholders, Florida DOT is heavily involved with their planning (cf. Section 5.2).*
- *The "ConnectOregon" program described in Chapter 5 grew out of a bottom up, stakeholder effort that has now moved into a broader statewide funding initiative.*

**17. Coordinate with MPOs, Airport and Seaport Authorities.** GDOT can implement committees that include GDOT staff as well as MPO, Airport and Seaport staff in order to accomplish coordination between local, state, and regional governments.

- *In Minnesota, for example, coordination between “state and regional/local governments is accomplished through participation in state MPO and Regional Development Commission committees.” Oregon DOT works with local governments and MPOs to assist in multimodal planning and has close contacts with its major seaport/airport authority.*

**18. Engage Local Officials From Rural Counties.** The need to engage rural area stakeholders in multimodal planning issues is important in a state such as Georgia, where a good deal of the state’s economic growth and current wealth is concentrated within a single metropolitan region (Atlanta) and its supporting seaport (Savannah). Engagement in freight-based projects that show a clear economic benefit is one avenue to pursue here.

- *For example, the survey results reported in Chapter 4 identified the operation of shortline railroads as one of the most common non-highway modal issues within state DOTs. Most of these lines in Georgia are located outside major metropolitan areas (see GDOT’s 2009 State Rail Plan, page 27) and many have been identified as candidates for capital improvement.*

**19. Use Advisory Committees.** GDOT’s Intermodal Division can make use of modal advisory committees made up of modal experts from different agencies in order to foster collaboration and solicit guidance for multimodal planning. Such advisory committees were used in the early 1990s when GDOT was establishing management information systems in response to the 1991 ISTEA legislation, in particular transit stakeholders and freight companies (for the then required intermodal management system).

- *Oregon has five statewide modal advisory committees to ensure sound decision-making for the various modes. Wisconsin DOT and Maine DOT also use advisory committees to coordinate the planning of the Department with the plans of local and regional transportation related groups.*

**20. Get Input for Project Prioritization.** When prioritizing projects, GDOT should get formal input from a diverse group of transportation organizations in the state.

- *Florida DOT uses the Strategic Intermodal System (SIS) Project Prioritization to prioritize SIS projects and make funding decisions. “FDOT uses a combination of a bottom up and top down approach, using district input from MPOs, local governments and other partners as well as statewide input.”*

## 6.5 Multimodal Performance Measures, Planning Tools and Data Needs

**21. Use Tools to Inform Policy Decisions.** To encourage policy that favors multimodal transportation planning, GDOT has to present readily understood and useful information to policy makers. In particular, it will need to convince stakeholders and legislators of the value and net benefits (both economic and social) of multimodal plans and projects. Insufficient data and limited information gathering and presentation tools make it difficult to get legislators on board with the projects.

- *In the Georgia Statewide Freight and Logistics Plan, the REMI (Regional Economic Modeling Inc.) Model was used to show how multimodal programs and projects can contribute to economic growth in the state (GDOT, 2012a).*

**22. Identify a Network of Important Multimodal Transportation Facilities for Dedicated Investment.** There should be quantitative criteria to classify these facilities for each mode, and a method for prioritizing investment in facilities that support the operation of the state's strategically important multimodal network.

- *Both Florida (via its SIS) and North Carolina (via NCMIN) have identified a strategic network of transportation facilities of all modes that are vital to the states' mobility needs. This seems to have had an impact on focusing these state DOTs on the most important links in the transportation network, regardless of mode, which in turn is a step closer to more mode-neutral planning. Within Georgia, a potential passenger transportation application of such criteria is the proposed Multimodal Passenger Terminal (MMPT) within Atlanta (GDOT, 2012b,c). A potential rural freight application is the assessment of inter-modal (truck-rail, truck-port) connectivity to the Governor's Road Improvement Program, or GRIP. (Adopted in 1989 by the Georgia General Assembly to stimulate economic development through greater rural area connectivity, GRIP's over 3200 miles of highway is designed to connect 95% of Georgia cities with a population of 2,500 or more to the Interstate System and ensure that 98% of all areas in the state will be within 20 miles of a four-lane road). (GDOT,2012d).*

**23. Establish Data-Sharing Relationships with Other State Agencies and Businesses Responsible for Transportation Facilities.** In order to track system performance in all modes, GDOT must have access to transit, HOT lanes, port, and rail performance data before it can develop tools to measure performance across, as well as within, each of these modes.

**24. Include Performance Measures which Account for the Performance of Non-Highway Modes into its Performance Dashboard - currently none exist.** It has been said in the literature and a number of interviews that the incorporation of a multimodal approach within an

agency requires a commitment from the top; therefore, the introduction of multimodal or non-highway related performance measures at a strategic level could bring more attention to non-highway options. Tracking non-highway performance over time is an important step towards a mode-neutral performance management program.

- *Other states report on the performance of non-highway modes. For instance, Florida DOT reports transit ridership, and Rhode Island DOT is proposing to roll out a series of performance measures broken down among all modes and programs in its draft LRTP. Virginia has a performance-based prioritization process that it has not been implemented yet, but it has been tracking performance measures for non-highway modes since 2006 with the hope of transitioning to mode-neutral performance measures.*

**25. Make Use of Existing Tools to Prioritize Projects within Modes and Programs.** Most DOTs have been accustomed to assuming funding levels for each of the programs or modes they are responsible for, and prioritizing within each mode specific program (see the review by Spence and Tischer, 2008).

- *A number of tools exist to assist with the first step in this conceptual framework: prioritizing projects within modes or programs. This includes a number of benefit-cost analysis tools that exist to rank projects within a mode, for instance FHWA's Highway Economics Requirement System—State Version for highways, the Transit Economic Requirements Model for transit, and the National Bridge Investment Analysis System for bridges.*

**26. Develop a Methodology for Comparing Investment Scenarios across Programs and Modes (Multimodal Tradeoff Analysis).** State DOTs have had limited success in developing mode-neutral performance evaluations. However, over the past decade, a number of federally and state supported efforts have begun to address this more demanding issue of inter-modal project development and comparison.

- *In 1999 the Washington State Transportation Commission funded development of the Multimodal Investment Choice Analysis (MICA) tool (Young, et al, 2002) which offers one approach to multimodal trade-off analysis based on a hybrid of benefit–cost and multi-criteria analysis methodologies.*
- *Cambridge Systematics Inc. (CSI, 2004) has created an analytical framework for use in statewide transportation planning that includes both a vertical component for prioritizing projects within modes, and a horizontal component for prioritizing across modes.*
- *Possible multimodal tradeoff approaches identified by Spence and Tischer (2008), based on their experience in Virginia Multimodal Office, include cost benefit analyses which transform benefits and costs into dollar amounts to derive a ratio, cost-effectiveness*

*analyses which measure the effectiveness of reaching a specified goal in relation to cost, least-cost planning which selects the lowest-cost project that meets a specific performance measure, and goals achievement analyses which simultaneously evaluate and rank alternatives based on a standard set of criteria.*

- *The state of Virginia has funded a number of studies over the past decade addressing issues associated with multimodal tradeoff analysis, including Lambert, et al (2007), Winter (2007), Spence and Tischer (2008), and Miller (2012).*
- *Georgia DOT previously funded an effort to develop a multimodal planning tool for rural and statewide applications (Dixon, et al, 2001) that may warrant looking at in light of the above, more recent technical developments in this area.*

**27. Develop Level of Service (LOS) Methodologies for All Modes.** LOS can be a promising performance measure because it can be applied to all modes and it is easily understandable by the public. The drawback with this technique is that levels of service are not consistently determined across modes as they are calculated using different, mode-specific performance measures.

- *Florida DOT's experience with developing methodologies for determining a LOS for each mode in its Quality/Level of Service Handbook is worth looking at here (Spence and Tischer, 2008).*
- *North Carolina DOT, through its draft LRTP, is also proposing to use LOS designations for program or modal systems performance to evaluate varying investment strategies. The evaluation will consist of using mode or program specific performance measures that will factor in to the determination of a LOS graded A through F. The plan is to conduct investment summits where stakeholders are able to change investment scenarios and the resulting LOS, to determine the appropriate funding mix. The approach might be used to examine the impact of highway capacity, transit, and TDM alternatives on the number of congested vehicle miles traveled (VMT) and vehicle hours of travel in its long range transportation plan (LRTP).*
- *Dowling et al (2008) describe LOS models that they claim are "ideal for evaluating the benefits of "complete streets" and "context sensitive" design options because the models quantify the interactions of the modes sharing the same street right-of-way. The models enable the analyst to test the tradeoffs of various allocations of the urban street cross section among autos, buses, bicycles, and pedestrians. For example, the analyst can test the effects of reducing a four-lane street to three lanes and using the width saved to provide bicycle lanes and a landscaped strip between the sidewalk and the street. The*

*method enables the analyst to compute the before and after levels of service for auto, bus, bicycle, and pedestrians.”*

- *GDOT is currently well placed to look into such LOS models. In October of 2012 the Georgia State Transportation Board, GDOT’s governing body, adopted a Complete Streets policy to “routinely incorporate bicycle, pedestrian, and transit (user and transit vehicle) accommodations into transportation infrastructure projects as a means for improving mobility, access, and safety for the traveling public.” GDOT’s primary strategy for implementing Complete Streets is to incorporate bicycle, pedestrian, and transit accommodations into roadway construction and reconstruction projects. Local government and regional planning agencies can also implement Complete Streets by partnering with GDOT and by initiating and managing their own locally-funded projects and programs. Cooperation between GDOT and local planning agencies is already an important aspect of GDOT’s use of Context Sensitive Design (CSD) solutions: with both CSD and Complete Streets aspects of highway design incorporated in its latest Design Policy Manual (GDOT, 2012e).*

**28. Create Literature that Reports on System and Agency Performance and Trends to Inform The Public and Key Decision Makers.** A major driver behind the use of performance measures is for increased agency transparency and accountability. Publication of performance measures is vital to achieving this. The medium used for this publication could be a detailed report or a single page pamphlet for members of the General Assembly. These reports can serve to justify increased spending for GDOT, specifically for non-highway modes.

- *For example, Florida DOT currently publishes a detailed annual performance report that is accessible online along with a one page performance snapshot with key performance metrics that is distributed to the state legislature. The agency provides different levels of technical details depending on the user.*
- *GDOT’s Planning Division has already developed a highly visual approach to reporting on a series of both mode-specific and mode-neutral performance measures associated with its statewide strategic transportation plan (GDOT,2012f). Expansion of this measurement set to include intermodal and additional cross-modal measures addressing each of the issues listed in this chapter would be desirable.*

## 6.6 References

Carr, J.I., Dixon, C.D. and Meyer, M. 2010. *A Guidebook for Corridor-Based Statewide Transportation Planning*. NCHRP Report 661. Transportation Research Board, Washington, D.C.

CSI , 2004. *Development of a Multimodal Tradeoffs Methodology for Use in Statewide Transportation Planning*. Cambridge Systematics, Inc. Prepared for the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Planning. NCHRP 08-36/Task 07(02). Accessed November 26,2012.

<http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=1249>

Dixon, K. et al, 2001, Tool For Rural and Statewide Multimodal Transportation Planning. *Journal of Computing In Civil Engineering Vol. 15: 275-283*.

Dowling, R. Reinke, D. et al, 2008. *Multimodal Level of Service Analysis for Urban Streets*. NCHRP Report 616. Transportation Research Board, Washington , D.C.

GDOT, 2003. Georgia Aviation System Plan. Executive Summary. Office of Intermodal Programs, Georgia Department of Transportation, Atlanta, GA.

GDOT, 2009. Georgia State Rail Plan. Intermodal Programs Division. Georgia Department of Transportation, Atlanta, GA. Accessed November 26, 2012.

<http://www.dot.state.ga.us/travelingingeorgia/rail/Pages/StateRailPlan.aspx>

GDOT, 2011, Georgia Statewide Freight and Logistics Action Plan. Georgia Department of Transportation and Georgia Department of Economic Development, Atlanta, GA. Accessed November 27, 2012.

<http://www.dot.state.ga.us/informationcenter/programs/georgiafreight/logisticsplan/Pages/default.aspx>

GDOT, 2012a, Georgia Statewide Freight and Logistics Action Plan. Georgia Department of Transportation. Atlanta, GA. Accessed November 27, 2012.

<http://www.dot.state.ga.us/informationcenter/programs/georgiafreight/logisticsplan/Pages/Documentation.aspx>

GDOT, 2012b. Multimodal Passenger Terminal (MMPT). Draft Scoping Document. Prepared by the Georgia Department of Transportation on behalf of the Federal Transit Administration, Washington, D.C.

GDOT, 2012c, Multimodal Passenger Terminal (MMPT).Project Fact Sheet. Georgia Department of Transportation, Atlanta, GA.



GDOT, 2012d, Governor's Road Improvement Program. Fact Sheet. Accessed November 26, 2012. . Georgia Department of Transportation, Atlanta, GA.

<http://www.dot.state.ga.us/informationcenter/programs/roadimprovement/GRIP/Pages/GRIPFactSandMap.aspx>

GDOT, 2012e. GDOT Design Policy Manual. Georgia Department of Transportation, Atlanta, GA. Accessed Nov 27, 2012. . Georgia Department of Transportation, Atlanta, GA.

<http://www.dot.ga.gov/doingbusiness/PoliciesManuals/roads/designpolicies/Pages/DesignPolicyManual.aspx>

GDOT, 2012f, Statewide Strategic Transportation Plan. Progress Report. . Planning Division. Georgia Department of Transportation, Atlanta, GA. February 2012

GTRI, et al, 2012. *Methodologies to Estimate the Economic Impacts of Disruptions to the Goods Movement System*. NCHRP Report 732. Transportation Research Board, Washington, D.C.

Lambert, J.H., Joshi, N., Peterson, K.D and Wadie, S.M, 2007. Coordination and Diversification of Investments in Multimodal Transportation *Public Works Management Policy Vol. 11*: 250-265.

McDowell B.D., 2009. *Multi-State Institutions For Implementing Improved Freight Movement In The U. S.* Report prepared for the Freight Office, Federal Highway Administration, Washington, D.C. in Partnership with the I-95 Corridor Coalition.

Miller, J.S., 2012. Evaluating State Multimodal Transportation Policy Responses. *Journal Of Urban Planning And Development Vol. 138*. :121-132.

Spence, K. and Tischer, M.L., 2008. Multimodal Trade-Off Analysis for Planning and Programming. *U.S. and International Approaches to Performance Measurement for Transportation Systems*. Conference Proceedings 44: 109- 122. Transportation Research Board, Washington, D.C.

Williams, K.M. and Seggerman, K.E., 2004. Model Regulations and Plan Amendments for Multimodal Transportation Districts. Center for Urban Transportation Research University of South Florida Tampa, FL. <http://www.nctr.usf.edu>

Winter, K , 2007. "Multimodal Tradeoff Analysis." *Research Helps Clarify Funding Allocation and Priority Scenarios*. Virginia Department of Transportation (VDOT) Research Library. Charlottesville, VA.

Young, R., Barnes, J. and Rutherford, G.S., 2002. *Multimodal Investment Choice Analysis, Volume I: Phase I*. Washington State Transportation Center, Final Research Report, T1803, Task 36.

## Appendix A. State Multimodal Survey Instrument



**The Georgia Department of Transportation has entered into a study with the Georgia Institute of Technology that is examining multimodal transportation planning and multimodal transportation agencies. This survey is a very important part of this research and we ask that you or someone knowledgeable about such concepts for your agency fill it out. We think the survey will take approximately 15 minutes to complete.**

**The answers for your state or from you will not be quoted in any report or presentation without your permission. Please help us in this very important study by completing the survey.**

## State Multimodal Survey



1. In what state are you located?

2. Do you work for the state DOT?

yes

no

3. If not, what agency do you work for?

6

## State Multimodal Survey

**4. If you work in a state DOT, which of the following modes of transportation does your state DOT have some responsibility for? Please indicate who is responsible for each mode so indicated. (Note all that apply)**

	Planning	Intermodal Bureau or Division	Mode Specific Bureau or Division	Special Unit within Secretary's/Director's Office	Other
Transit (Operator of some transit services)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transit (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port (Operator)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port (Dredging)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ferry (Operator of some ferry services)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ferry (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inland water/river (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortline Rail (Operator of some shortline services)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortline Rail (Funder)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Airports (Operator of some state airports)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Airports (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aviation Services (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ridesharing Services (Operator)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ridesharing Services (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intercity Bus Services (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pedestrian/Bicycle (Operator of some ped./bike facilities)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pedestrian/Bicycle (Funder or provides subsidies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If other is selected for a mode, please identify who is responsible for the mode. Also, if there is a mode your DOT is responsible for that is not listed above, please identify the mode as well as who is responsible for it.

### State Multimodal Survey

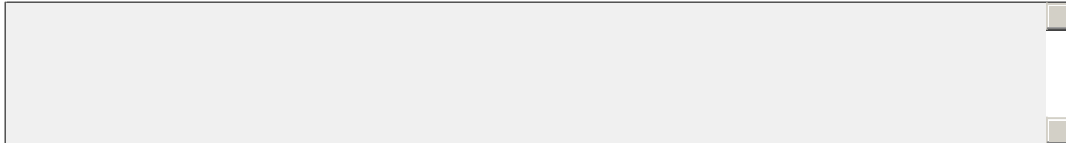
5. Does your agency develop mode-specific plans and/or a multimodal plan?

Mode specific plans

Multimodal Plans

Both

What efforts exist to integrate the various plans?



6. In your opinion, to what extent does your agency conduct multimodal transportation planning that examines different modal strategies among the state-responsible modes indicated in #4 above?

1 (very little)

2

3 (moderate amount)

4

5 (to a great extent)

not applicable

7. To what extent are different modal options compared to one another in the planning/programming process to determine the most cost effective investment for the state?

1 (very little)

2

3 (moderate amount)

4

5 (to a great extent)

not applicable

8. If different modal options are compared to one another, are there specific evaluation criteria that are used to conduct such a comparison?

yes

no

don't know

not applicable

### State Multimodal Survey

9. In your opinion, over the past 10 years, to what extent has your agency been incorporating a more multimodal approach into transportation planning and programming?

- 1 (very little)
- 2
- 3 (moderate amount)
- 4
- 5 (to a great extent)
- not applicable

10. Does your state have a transportation trust fund whose funds can be used for any mode of transportation?

- yes
- no
- don't know

11. Does your state have separate funding programs for non-highway modes, such as a freight rail investment program, ports program, airport improvements, etc? (Note: this includes funding programs outside of your agency, but still using state funds, such as a freight facility investment program)

- yes
- no
- don't know

Please identify such programs.

5

6

### State Multimodal Survey

12. If your answer to #11 is yes, which of the following modes are funded with state funds? Indicate which types of funding can be used for each mode that is funded.

	Dedicated transportation funds to this mode	General state funds	Bond funding	Motor fuel taxes	Other motor vehicle taxes	Other
Transit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ferry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inland water/river	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortline rail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Airports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aviation services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ridesharing services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intercity bus services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pedestrian/bicycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If the type of funding for a mode is "Other", please identify the type of funding. Also, if your state funds other modes not listed above, please identify the modes and the type of funding they receive.

13. Given your experience with multimodal transportation planning, identify three of the most important reasons that can explain why such planning has not been undertaken more fully in your agency.

- Modal funding categories focus our attention on mode-specific plans/programs
- State government and agency leadership is not emphasizing multimodal plans
- We are not organized to conduct multimodal planning
- Agency history and culture are not conducive to multimodal planning
- Agency standard operating procedures and processes are mode-specific
- Very few analysis tools/models exist to conduct multimodal planning
- Staff capabilities and background are not conducive to multimodal planning
- Agency constituency groups and lobbyists do not support multimodal planning
- Other agencies (e.g., MPOs, transit, ports) already do multimodal planning

Other (please specify)

### State Multimodal Survey

14. If you are an employee of a state DOT, please indicate the number of full time employees in the state DOT.

15. If you are an employee of a state DOT, estimate the number of employees in the state DOT that deal primarily with the planning for the following modes. (Note: Do not double count. If one employee is equally responsible for port and inland water, count each as 0.5 employees). Round your final number to the nearest whole number

Transit	<input type="text"/>
Port	<input type="text"/>
Ferry	<input type="text"/>
Inland water/river	<input type="text"/>
Shortline rail	<input type="text"/>
Airports	<input type="text"/>
Aviation services	<input type="text"/>
Ridesharing services	<input type="text"/>
Intercity bus services	<input type="text"/>
Pedestrian/bicycle	<input type="text"/>
Other	<input type="text"/>

16. What do you think are the most critical issues relating to statewide multimodal transportation planning in your state?

17. What are the characteristics that are necessary in a state DOT to be considered a multimodal agency?

18. In your opinion, are there examples of multimodal planning in your state that could be pointed to as good examples of such planning? If so, please describe below.



### State Multimodal Survey

19. We might like to contact you about some of your answers to this survey. Please provide below the name and contact information of the individual who could provide more information. In addition, we will provide a summary of the results of this survey to the person indicated below.

Name

E-mail address

Telephone number