

Florida Department of Transportation Guidance for Producing a Transit Development Plan



Prepared for
Florida Department of Transportation

August 2009



Florida Department of Transportation Guidance for Producing a Transit Development Plan

Prepared by

**Center for Urban Transportation Research
College of Engineering
University of South Florida**

With

Tindale-Oliver and Associates, Inc.

and

Dan Boyle & Associates, Inc.

For

**Florida Department of Transportation
Public Transit Office**

August 2009

Table of Contents

Chapter 1 – Introduction and Purpose	1
The Role of TDPs.....	1
The TDP Process.....	1
Local Emphasis	1
<i>Vision</i>	2
A Strategic Approach	3
<i>The Unconstrained TDP</i>	5
<i>The Luxury of a Long-Range Perspective</i>	6
<i>Not Just the Public Transit System</i>	6
<i>Customer Orientation and the TDP</i>	7
<i>Benefits of the TDP</i>	7
Key Requirements.....	8
Organization of the Guidance.....	8
The TDP Adoption and Approval Process.....	11
Resourcing TDP Development.....	14
Transit Development Plan Tasks	14
<i>Annual and Major Updates</i>	15
Chapter 2 – Public Involvement	17
Purpose of This Chapter	17
Pertinence to Required TDP Elements.....	17
Public Involvement Goals and Relevance	17
MPO or Alternative Approved Public Involvement Process.....	19
<i>MPO Public Involvement Requirements</i>	19
<i>MPO and MPO Advisory Committees</i>	20
<i>MPO Projects and Activities</i>	21
<i>MPO Communications</i>	21
TDP Public Input Activities and Strategies	21
<i>Public Information Materials</i>	21
<i>Stakeholder Interviews</i>	22
<i>Public Workshops</i>	22
Cumulative Comments.....	26
Review Committees and MPO Board.....	26
Surveys	27
Resources	33
Chapter 3 – Base Data and Analysis	34
Purpose of This Chapter	34
Pertinence to Required TDP Elements.....	34
Base Data Collection, Introduction and Needs.....	35
Socio-Demographic Data and Other Background Conditions	36
<i>Data Format</i>	37

<i>Data Utilization Approaches</i>	38
<i>Demographic Characteristics</i>	39
<i>Overall Transportation System Characteristics</i>	44
<i>Traffic/Roadway Characteristics</i>	44
<i>Parking</i>	46
<i>Pedestrian and Passenger Amenities</i>	46
Market Research/System Surveys	46
<i>On-Board Passenger Surveys</i>	47
<i>Operator/Customer Service Representative Surveys</i>	49
<i>Interviews with Key Local Officials and Community Leaders</i>	49
<i>Non-User Surveys and Focus Groups</i>	49
Public Transportation Service Performance and Trends	51
Use of Base Data in Other TDP Components	51
Resources	52
Chapter 4 – Existing Services and Performance Evaluation	53
Existing Services	53
Performance Evaluation Data	59
<i>National Transit Database</i>	59
<i>Florida Transit Information System (FTIS)</i>	60
<i>Other Sources of Data</i>	60
<i>Performance Evaluation of Agency’s Existing Transit Services (Peer & Trend)</i>	61
<i>Peer Review Analysis</i>	61
<i>Trend Analysis</i>	62
<i>Indicators and Measures</i>	62
<i>Limitations of Performance Evaluation</i>	66
<i>Performance Evaluation to Set Goals and Objectives</i>	67
Cross Reference to Other TDP Manual Chapters	67
Resources	68
Chapter 5 – Situation Appraisal	69
Review of Local Plans	70
<i>Local Comprehensive Plans</i>	71
<i>Metropolitan Planning Organization Long-Range Transportation Plan</i>	74
<i>Florida Transportation Plan</i>	76
<i>Other Plans and Documents</i>	76
Successful Public Transit Requires Intergovernmental Coordination	77
Organizational and Governmental Actions and Policies.....	78
Technology and the Transit System	79
<i>Electronic Fare Payment Systems (EFP)</i>	79
<i>Automatic Vehicle Location (AVL)</i>	80
<i>Automatic Passenger Counters (APCs)</i>	80
<i>Transit Scheduling/Operations Software</i>	80
<i>Electronic Traveler Information</i>	81
<i>Geographic Information Systems (GIS)</i>	81

<i>Transit Safety and Security</i>	82
<i>Transit Signal Priority</i>	82
<i>Driver Training Simulators</i>	82
Review of Situation Appraisal Components	82
Cross Reference to other TDP Guidance Chapters	83
Chapter 6 – Vision, Mission, Goals and Objectives	85
Step 1 – Developing the Agency Mission and Vision Statements	86
Step 2 – Developing Goals and Objectives	87
Step 3 – Communication and Monitoring	91
Cross Reference to Other TDP Manual Chapters	92
Chapter 7 – Forecasting Ridership and Designing Service	93
FDOT Guidance on TDP Ridership Forecasting	93
Overall Objectives in Providing Ridership Forecasting Guidance	94
FDOT Expectations of Transit Properties.....	95
An Overall Process for Demand Estimation	96
Information Gathering and Policy Considerations	96
Designing Transit Service Scenarios.....	98
<i>Service Strategies</i>	99
<i>Other Strategies</i>	100
<i>Markets for Transit</i>	101
<i>TDP Service Planning in Context</i>	102
Estimating Demand	102
Deciding which Forecasting Method to Use	103
Estimating and Forecasting Tools	105
<i>TBEST</i>	105
<i>Regional Model</i>	106
<i>Comparable Market Analysis</i>	108
<i>Service Elasticity</i>	109
<i>Other Methods</i>	111
Carrying Out Demand Estimation.....	111
<i>Determining Transit Needs and Opportunities</i>	111
Carrying Out Ridership Forecasting for TDP Plans	113
<i>Major Service Changes</i>	114
<i>Small to Moderate Service Changes</i>	116
<i>Treatment of Specific Service Types</i>	116
<i>Express Service Demand Estimates</i>	116
Forecast Refinements	117
<i>Fare Changes</i>	117
<i>Marketing</i>	118
<i>Facilities and Amenities</i>	119
<i>Vehicles</i>	119
Peer Review	119
TDP Plan Development.....	120

Chapter 8 – TDP Financial Plan	121
Financial Plan Tool Overview and Approach.....	121
<i>Operating Cost Element</i>	122
<i>Input Components</i>	123
<i>Spreadsheet Color-Coding</i>	123
How to Use the Financial Plan Tool	124
<i>Assumptions</i>	124
<i>Service Plan</i>	125
<i>Implementation Plan</i>	128
<i>Operating Cost Element</i>	129
<i>Capital Cost Element</i>	129
<i>Revenue Element</i>	131
Financial Plan Summary	133
FUNDING SOURCES	134
Federal Funding Sources	134
<i>Urbanized Area Formula Program (49 U.S.C. §5307)</i>	134
<i>Metropolitan Planning Program (49.U.S.C. §5303)</i>	135
<i>Small Transit Intensive Cities (49 U.S.C. §5336(j))</i>	135
<i>Formula Grants for Special Needs for Elderly Individuals and Individuals with Disabilities Program (49 U.S.C. §5310)</i>	136
<i>Bus and Bus Related Facilities Program (49 U.S.C. §5309)</i>	136
<i>New Starts Program – Major Capital Investment Grants over \$75 Million (49 U.S.C. §5309(d))</i>	136
<i>Small Starts Program – Major Capital Investment Grants Under \$75 Million (49.U.S.C. §5309(e))</i>	136
<i>New Freedom Program (49.U.S.C. §5317)</i>	137
<i>Job Access and Reverse Commute Program (JARC) (49 U.S.C. §5316)</i>	137
<i>American Recovery and Reinvestment Act of 2009</i>	137
State Funding Sources (FDOT).....	137
<i>FDOT Transit Block Grant Program</i>	137
<i>Transit Corridor Program</i>	138
<i>Public Transit Service Development Program</i>	138
<i>New Starts Transit Program (NSTP)</i>	139
<i>Commuter Assistance Program</i>	139
<i>Park and Ride Lot Program</i>	139
<i>Transportation Regional Incentive Program (TRIP)</i>	140
<i>Intermodal Development Program</i>	140
<i>County Incentive Grant Program</i>	140
<i>In-Kind and Other Soft Match</i>	141
Chapter 9 – Plan Development	142
Relevance	142
Approaches	142
<i>Operation Plan Elements</i>	143

<i>Management Plan Elements</i>	144
<i>Financial Plan Elements</i>	145
<i>Combined Approach for the Ten-Year Implementation Program</i>	145
<i>Standard Financial Tables</i>	145
<i>Issues</i>	145
TDP Submittal	146
Resources	147
Chapter 10 Annual Update	148
Requirements for Annual Updates	148
Major Update in Less Than Five Years	149
Appendix A	151
TDP Rule Change Implementation Schedule.....	152
Appendix B	153
Florida Administrative Code: Rule 14-73.001	154

Table of Tables

Table 1-1 Key TDP Requirements	10
Table 1-2 Outline of TDP Process, Rule Requirements, and Manual Organization	11
Table 2-1 Public Involvement Techniques*	31
Table 2-1 Public Involvement Techniques (Continued)	32
Table 4-1 Sample Service Frequency Data by Route	55
Table 4-2 Sample Annual Performance Data by Route	56
Table 4-3 Sample Service Hours by Mode	58
Table 4-4 Sample Performance Measures for a Peer & Trend Analysis.....	63
Table 4-5 Sample Five-Year Trend Table – Operational Measures.....	64
Table 4-6 Sample Peer Comparison Table – Operational Measures.....	65
Table 5-1 Evaluation of Local Plan Impacts on Public Transportation Sample Criteria	73
Table 5-2 Local Growth Management/Comprehensive Plans Sample Plan Goals and Objectives.....	74
Table 5-3 Evaluation of MPO Long Range Transportation Plans Example Goals and Objectives Supportive of Public Transportation	75
Table 5-4 Coordination of Transit Projects.....	78
Table 6-1 Sample Organization of Goals, Objectives and Strategies	90
Table 7-1 Forecasting Ridership Response to Service Changes.....	114
Table 8-1 Capital Cost Examples	131

Table of Figures

Figure 1-1 Pre-submittal TDP Communications between Transit Agency and FDOT District Office	12
Figure 1-2 TDP Review Process for Major Updates	13
Figure 2-1 Public Outreach Event Cost Illustration	26
Figure 3-2 Example of Combining GIS Maps with Census Data.....	38
Figure 3-3 Example of Journey-to-Work Data Graphic	42
Figure 3-4 Example of Roadway Level of Service Graphic.....	45
Figure 3-5 Example of On-Board Graphic Presentation.....	48
Figure 3-6 Example of On-Board Tabular Presentation	48
Figure 4-1 Sample Service Area Map with Route Overlay.....	57
Figure 4-2 Sample Alighting Locations for Paratransit Service	58
Figure 4-3 Sample Peer and Trend Graphic (Operating Expense per Revenue Mile) .	66
Figure 7-1 TDP Ridership Forecasting Process.....	97
Figure 7-2 TBEST Home Page	107
Table 7-2 Forecasting Impacts of Service Feature Changes	117
Figure 8-1 Financial Plan Tool Flowchart.....	122
Figure 8-2 Financial Plan Tool Assumptions Worksheet.....	125
Figure 8-3 Service Plan Steps	126
Figure 8-4 Service Plan Improvement Description Drop-Down Menu.....	127
Figure 8-5 Implementation Plan Year Drop-Down Menu	128
Figure 8-6 Capital Cost Element Worksheet.....	130
Figure 8-7 Revenue Sources List	132
Figure 8-8 Revenue Element Worksheet Input Table	134

Chapter 1 – Introduction and Purpose

The Role of TDPs

A Transit Development Plan (TDP) is an FDOT required; 10-year horizon plan intended to support the development of an effective multi-modal transportation system for the State of Florida. Public transit means the transporting of people by conveyances, or systems of conveyances, traveling on land or water, local or regional in nature and available for use by the public. TDPs serve a number of purposes for transit agencies; however, the State interest in TDPs is governed by Sections 339.135, and 339.155, Florida Statutes, as described in Chapter 14-73, (See Appendix 1-A, Florida Administrative Code: Rule 14-73.001 or <https://www.flrules.org/gateway/RuleNo.asp?id=14-73.001>). The TDP serves as the basis for defining public transit needs which is a prerequisite to receipt of state funds. The rule requires that the TDP be the provider's planning, development and operational guidance document.

Beyond these administrative motivations, TDPs are intended to serve as strategic planning documents. They define public transportation needs; solicit broad input by coordinating with other plans, involve substantial public participation, and explore community goals with decision makers and other stakeholders; define alternative courses of action, and develop a systematic plan and monitoring program. While required by FDOT, the greatest value from the TDP planning effort, gathered data, and resultant documents occurs when an agency uses the TDP to serve the local area and the traveling public by providing a logical, comprehensive basis for exploring near and mid-term public transit needs and opportunities.

The TDP Process

Local Emphasis

This Manual covers major concerns and issues that should apply to all transit properties in the state, and describes a framework by which to address these issues. While more specific guidance is offered on some elements of the process such as public participation, the estimation of transit ridership demand, and the development of a financial plan, considerable discretion is available to carry out the various elements of the TDP process within the general framework. Each urbanized area and each transit system in Florida has certain unique situations or conditions which should be addressed within the TDP process. Some areas are very oriented toward growth and are able to make changes and expand, while others may be significantly

influenced by land use and resource constraints that minimize transit opportunities. Some systems cater to tourists; others focus on the transit-dependent population while others may target commuters or students. Clearly, local priorities will guide the TDP process.

Florida Administrative Code Rule 14-73.001 requires certain process steps and specifies some elements of content of the TDP. This document provides guidance on how to accomplish those ends. However, both process and content requirements do little to constrain the resultant plan which should embody the local aspiration and vision for transit in the community at large. Complying with TDP requirements should in no way reduce the usefulness of the plan for local decision making. Compliance with the rule and the deadlines should not be a barrier to coordination and cooperation with other local planning efforts. Rather, compliance provides a forum and rationalization for carrying out the type of strategic transit planning that can serve the local community. The TDP draws on the most current existing plans in the community, such as comprehensive plans or regional transportation plans, and in turn is a source document for other planning efforts subsequent to the TDP. Each TDP should reflect the unique characteristics and composition of its area. The focus and approach of the TDP process should flow logically from the local situation.

Vision

In plotting a course for a ten-year period, an agency should define and express a vision of its role in the community. This vision may be developed as part of a strategic planning process, or it may become explicit as the result of decisions regarding service priorities. The agency will also address how it wants that vision to evolve. Establishing a vision is an act of self-definition. In the context of the TDP, the transit agency's vision must be firmly rooted in the community values and grounded by behavioral and financial realities, but forward thinking and inspirational. The vision should be integral to, consistent with and supportive of the overall land use and transportation vision for the region. The development of the vision could be a result of a formal process or an informal synthesis of the aspirations of the community. In any case, the vision should be reflective of the myriad of stakeholder values and aspirations. The vision will guide the TDP process.

An agency's vision will depend upon the local environment and priorities. For example, one transit agency might have a vision that the transit mode should be a real option for "choice" riders and a critical element of the area's overall strategy for accommodating growth, or addressing environmental and energy issues. Another agency may have a vision that focuses on current and future riders who have no alternatives and need the service.

Even if an agency has previously stated its vision, it can be easy for agency staff to lose sight of this vision in carrying out their day-to-day jobs or to default to a personal versus community vision. The TDP provides an excellent opportunity to develop, refine, or restate the agency's vision and build a shared understanding of the vision between the agency, the public and the decision makers in the community.

A Strategic Approach

It is helpful to approach the preparation of a Transit Development Plan as a strategic planning process. A TDP is not an operations plan. By its very nature, the TDP must address strategic issues. The TDP offers opportunities to rethink transit's role in a given area and define actions to help the agency achieve its vision.

There are four key components to strategic planning that are applicable to the Transit Development Plan:

- the agency's vision and its evolution over time;
- orientation toward the future;
- consideration of the external environment; and
- broad-scale data collection.

Below is a brief discussion of strategic planning's role in the TDP process.

A focus on the future ensures that the TDP process goes beyond the current transit system and existing conditions in the community. The TDP is not merely an extrapolation of current trends; it cannot assume that the present situation will continue unchanged. Demographic and land use changes within the community can open potential new markets and affect present markets. Anticipating changes carries an element of risk, but there is also risk in projecting the status quo into the future. The ten-year time frame of a TDP is sufficient to allow an assessment of future trends with some degree of confidence and to plan accordingly. The pace of growth in many areas in Florida is such that in ten years things can change significantly. Annual updates can serve as mid-course corrections in accounting for unexpected changes.

An explicit consideration of the external environment is important in two ways. First, the transit agency does not function in a vacuum. External factors involving the automobile (transit's primary competing mode for choice travelers) exert a strong influence on the nature of a system. Traffic congestion, parking availability and cost, and the price of gasoline influence transit's mode share at the route or corridor level and system-wide. The agency cannot focus

solely on internal operational improvements without considering the wider context in which it operates.

The second way in which the external environment is important is that the intent of the TDP is to emphasize transit's role in the community. Mobility needs and travel demands of the entire community, not just of current transit riders, must be considered. The agency's goals need to be in agreement with community goals and policies. A successful TDP will position the transit agency as an integral part of the area in which it operates by focusing on larger community-wide issues.

Information gathering plays a critical role in the TDP process. Types of information include community perceptions, travel behavior, attitudes of current riders, opinions of non-riders, planning and development priorities, counts of current and forecasts of future transit ridership, service and capital costs, and performance-related measures. Review of and coordination with other plans is mandatory in setting goals and objectives. Interviews, focus groups, surveys, and other public participation strategies are means to identify potential markets, reveal transit stakeholders, and highlight critical issues. Performance review often involves the collection and analysis of information on "peer" systems, which can pinpoint strengths and weaknesses. All these information sources, which are discussed in this guidance, provide the information necessary to support the identification of alternatives and the establishment of priorities among recommended actions.

The strategic planning process provides a context for evaluating, prioritizing, and presenting community and agency needs. The vision of the agency's mission is developed and serves as the unifying factor in bringing together the results of the various strategic activities into a coherent plan. Recommendations in a strategically-based Transit Development Plan are explicitly derived from and are justified by the information gathered. These recommendations are then placed in the wider context of the agency's vision of where it wants to be. The result will not necessarily be widespread consensus, but a TDP prepared in this manner will lend strong support to an agency's requests by making them readily understandable in an overall community context.

The Unconstrained TDP

A strategic approach to the TDP process calls for a different way of thinking about transit. In the past, it has been common to constrain transit planning within budgetary limits. What is affordable is not a reliable measure of what is needed. The Transit Development Plan is intended to define area-wide transit needs, develop alternatives, and make recommendations for the transit system to address these needs. Thus, the TDP development process should provide estimates of transit demand, assessments of community-wide mobility needs, and development of a range of transit alternatives, all without the constraints of historical trends and resource limitations. This is subsequently modified in light of political, market and financial reality to provide a plan that can be implemented.

This approach can disturb practical, operationally oriented transit managers and transportation planners. Their concern is that this is a “blue sky” approach and can lead to unrealistic planning and subsequent frustrations or reduced credibility. These concerns have some validity given the transit industry and the public’s stated desires to see substantially improved public transit in spite of the data that shows a growing but still very modest willingness to use public transit services by travelers. The planner is left with the challenge of preparing a plan that offers opportunities for transit to play a growing role in the community while respecting the behavioral and financial realities of expanding publicly supported services.

There are other elements involved in the strategic approach that balance any tendency to reduce the process to one of making unrealistic “wish lists.” One is the emphasis on extensive community input as a guiding factor in the TDP. This input concerns not only needs and desires, but the willingness and ability to provide increased funding for transit. Another element is the prioritization of needs leading to the development of an implementation plan. A financial plan is required in the TDP, although this is developed at a later point in the process.

Several TDPs submitted in recent years identified needs in an unconstrained fashion, but had difficulty in shifting to the financial plan element. FDOT has continued to emphasize in the updated TDP Rule that the TDP should include a list of recommended projects for which there are no identified funding sources. This list of unfunded projects is the means to connect the unconstrained approach to needs assessment with the realities of limited funding. The list of unfunded projects also serves as the primary justification for increased funding, at the state level and potentially at the local and national levels. It is in the best interests of the transit agency that these projects have sound local support and be justified to the fullest extent possible.

Preconceived constraints, financial or otherwise, to the process of assessing needs and identifying alternatives will result in inaccurate or incomplete estimates. The TDP is intended to consider strategic issues in a community-wide context. For these purposes, an unconstrained approach is best, with the recognition that final recommendations and selected plan elements will ultimately be chosen in the context of available funds.

The Luxury of a Long-Range Perspective

Any organization benefits from an occasional pause in day-to-day activities to consider its business and purpose from a long-range perspective. This is also true for transit agencies, particularly smaller agencies with lean staffs. Most transit managers and planners are so caught up in daily operational issues that they almost never have an opportunity to step back and take a longer-term view. The mandate to prepare a Transit Development Plan enables an agency to take the time themselves to reflect or to engage outside experts who can help them look at the issues with a fresh perspective. Benefits of the longer-term view typically include a clearer understanding of how daily activities fit into the agency vision and a renewed focus on agency priorities.

The ten-year period is useful in defining the appropriate perspective. This period falls in between the one to five years typical of a short-term operations analysis and the twenty years of the required comprehensive plan and long-range transportation plan. While intended to complement and draw upon existing short-term and long-term plans, the Transit Development Plan is neither an operations plan nor a substitute for the area's comprehensive plan. A ten-year period is long enough for a strategic focus to be effective. The final five years of the plan will necessarily be presented in less detail than the first five. The time frame of the TDP allows sufficient time to carry out actions to bring a transit agency closer to its vision. In an era where securing funding and implementing projects is a multiyear process, the ten year time frame enables a reasonable planning reference period.

Not Just the Public Transit System

As mentioned previously, the intent of the TDP is to go beyond the current transit network and ridership to consider community-wide mobility needs. The focus of the plan is not simply on the existing public transit system and its ridership, but must be wide enough to encompass community transportation needs. This wider focus necessarily brings up critical issues surrounding transit's role in the community.

The TDP should also assess transit service in the community provided by the private sector or by other public sector agencies. Transportation Disadvantaged (TD) service provided through the Community Transportation Coordinator (CTC) is perhaps the most obvious example of transit service that may be provided by others. It is important to consider all transit services because of the focus on community-wide needs. If transit-related needs are broadly defined, then all transit providers operating service should be considered. Some needs are met by other providers, and the public transit agency is not required to address these. Omitting this assessment could result in a misleading gap between transit supply and demand in the given area.

Customer Orientation and the TDP

From the previous sections, a strategic Transit Development Plan is clearly based on an orientation toward community needs, including those of riders and non-riders. In this sense, the trend toward improved customer orientation in the transit industry has implications for the TDP as transit agencies embrace a stronger customer service perspective. On some systems, core ridership is composed primarily of the transit-dependent, those who have no other transportation options. The TDP process can provide opportunities to shift or further move the agency's orientation toward the customer including future customers who may choose to use an improved service. This type of change can create a considerable amount of good will and public support for transit in the community and retain some riders who might otherwise abandon transit when other choices become available to them.

Benefits of the TDP

The TDP provides a context in which community and agency needs can be evaluated, ranked, and presented. In the process, a vision for the agency is developed. This vision serves as a unifying factor in bringing together the results of the various tasks into a coherent plan. Alternatives and recommendations in a strategically-based Transit Development Plan are explicitly justified by the information gathered and placed in the wider context of the agency's vision. The process lends strong support to an agency's requests by making them readily understandable and integrating them in the context of community values.

The TDP's focus on transit can help to level the playing field in a given community. Transportation planning sometimes focuses more on moving vehicles than on moving people, especially in smaller urbanized areas. The TDP provides a medium to advance the interests of transit when funding decisions are made. TDP recommendations feed the Transportation Improvement Program (TIP), as well as the work program and the planning and resource plan of

the Florida Department of Transportation. The recommendations will logically feed the Long Range Transportation plan process undertaken by the Metropolitan Planning Organization (MPO).

The TDP process should emphasize the importance of coordination with related local, state, and national plans and policies. Land use and development issues deserve particular attention, since these greatly affect the transit system. The TDP is expected to be the source of transit-related recommendations and, as such, the TDP will ultimately affect the development or refinement of other local, regional, and perhaps state plans.

In summary, the Transit Development Plan can lead to a clear identification of transit needs in a community-wide context, a prioritized listing of recommended actions, a more favorable attitude toward transit by residents, riders, and decision-makers, and a stronger competitive position for the transit agency in obtaining additional funding. The ultimate success of the TDP process will not be decided for several years, but it is possible to suggest measures of success now. These might include increased ridership (as latent mobility needs are met), improved customer satisfaction, additional funding for the transit system, and a better overall image for transit.

Key Requirements

Key requirements outlined in the TDP Rule are summarized in Table 1 and form the basis for the contents of this Manual. The organization of this report provides comprehensive coverage of the requirements outlined in the Rule and meshes with an overall process for TDP development outlined later in this chapter. Details of the Rule are discussed in the chapters or sections of this Manual that address the respective subject. The Rule presents the specific requirements for TDPs. This Manual both reviews and details those requirements but also provides guidance regarding the types of methods that one may want to use in developing the TDP. Transit agencies are encouraged to carefully differentiate between requirements of the Rule and the more general guidance provided in some sections of this guidance. Agencies must comply with the rule; however, the guidance is suggestive about how agencies can best comply. It is descriptive of quality planning practices.

Organization of the Guidance

This document consists of ten chapters and several appendices. The chapters cover the TDP planning process and provide guidance on satisfying the requirements of the Chapter 14-73 Rule regarding Transit Development Plans. These sections also provide guidance to local

entities regarding the process and planning methods useful in the development of their TDPs. The schedule for implementation of the Rule is contained in Appendix A in this document and the Rule governing TDPs is included in full in Appendix B.

Table 1-1 outlines key TDP requirements in summary form and may be appropriate for briefing policy makers on TDP requirements. This guidance is subsequently designed around a planning process that addresses the issues required in a TDP. Table 1-2, lays out a typical TDP planning process in column 1, references the relevant TDP requirements in column 2 and identifies the section of this guidance where the information is discussed in column 3. Column 1 is a typical planning process/problem solving step sequence. While one might challenge the sequence or debate the respective level of effort for each step, the overall set of activities represents a time-honored approach to planning and problem solving that is appropriate for TDP development.

The second column references the sections in the revised Rule that refer to each step and/or lays out specific requirements for each step. There is a close sequential match between the steps and the Rule, though not an exact match. The final column outlines the sections(s) in this guidance where the respective topics are discussed. In general, the text of the guidance outlines the general process of TDP planning, outlines the requirements and tasks, and discusses the activities and tools that might be used to carry out each respective task. The detailed technical discussion of appropriate methods is referenced in each chapter.

Questions on this document or TDP planning should be directed to the appropriate FDOT District Public Transportation Manager.

Table 1-1 Key TDP Requirements

Who: TDPs are required from all entities who apply for State Transit Block Grant Funds (Section 341.052, F.S).

When: TDPs must be developed, adopted and submitted on or before September 1st of the fiscal year for which funding is being sought. A major update is required every five years and an annual update/progress report is required all other years.

Where: Plans must be submitted to and on file with the appropriate District Office.

Time Period: Plans must cover the fiscal year for which funds are being sought and the subsequent nine years. Plan submittal is a prerequisite to fund receipt.

Contents of TDP: Compliance will be evaluated by FDOT District staff based on the major elements outlined below:

- Specification of an approved public participation process and documentation of its use
- A situation appraisal that includes at least:
 - ✓ effects of land use, state and local transportation plans, other governmental actions and policies, socio-economic trends, organizational issues and technology
 - ✓ estimation of the community's demand for transit service using an approved technique
 - ✓ performance evaluation of service provided in the community
- The agency vision, mission and goals
- Consideration of alternative courses of action
- Ten-year implementation plan including:
 - ✓ Ten-year program of strategies and policies
 - ✓ Maps indicating areas to be served and types and levels of service
 - ✓ Monitoring program to track performance
 - ✓ Ten-year financial plan noting sources and expenditures of funds
 - ✓ Implementation program noting projects and services
 - ✓ Relationship to other plans and policies

Contents TDP Annual Update: Annual updates shall be in the form of a progress report on the ten-year implementation program, and shall include:

- ✓ Past year's accomplishments compared to the original implementation program
- ✓ Analysis of any discrepancies between the plan and its implementation for the past year and steps that will be taken to attain original goals and objectives
- ✓ Any revisions to the implementation program for the coming year
- ✓ Revised implementation program for the tenth year
- ✓ Added recommendations for the new tenth year of the updated plan
- ✓ A revised financial plan
- ✓ A revised list of projects or services needed to meet the goals and objectives

FDOT Review: Within 60 days of receipt of a TDP, FDOT will notify the applicant regarding compliance. Reviews of Annual Updates will be completed in 30 days.

Table 1-2 Outline of TDP Process, Rule Requirements, and Manual Organization

Typical TDP Planning Process	Reference in the Rule	Location in Manual	
		Chapter 1 - Introduction and Context	Appendix 1-A TDP Schedule Appendix 1-B TDP Rule
Develop Public Participation Process	14-73.001 (7)a. 4. Public Involvement	Chapter 2 - Public Involvement	
Definition of Problems and Opportunities Demographics Market Research Performance Evaluation Demand Estimation	14-73.001 (7)a. 5. Situation Appraisal	Chapter 3 - Base Data Compilation	
		Chapter 4 - Performance Evaluation of Existing Services	
		Chapter 5 - Situation Appraisal	
		Chapter 7 - Forecasting Ridership and Designing Service	
Review and Update Community Goals for Transit	14-73.001 (7)a. 6. Transit Agency Mission and Goals 14-73.001 (7)a. 9. Relationship to Other Plans	Chapter 6 - Goals and Objectives	
Develop Alternatives	14-73.001 (7)a. 7. Alternative Courses of Action	Chapter 7 - Forecasting Ridership and Designing Service Chapter 8 - TDP Financial Plan	
Evaluate Alternatives	14-73.001 (7)a. 7. Alternative Courses of Action	Chapter 7 - Forecasting Ridership and Designing Service	
		Chapter 7 - Forecasting Ridership and Designing Service	
Implementation Plan	14-73.001 (7)a. 8. Ten Year Implementation Plan 14-73.001 (7)a. 2. Annual Updates	Chapter 9 - Plan Development Chapter 10 - Annual Update	
Monitoring			

The TDP Adoption and Approval Process

Once the Transit Development Plan is complete, the Rule requires that it be officially adopted by the agency's governing body. County commissions and city councils adopt TDPs of transit agencies operating as a part of those general purpose governments. The boards of independent agencies or authorities must officially adopt the TDPs of those agencies. As stated

in the TDP Rule, adopted Transit Development Plans must be submitted to the appropriate FDOT District Office by September 1st of the State fiscal year for which funding is sought.

The FDOT review and approval process is outlined in the following graphics and detailed in a companion document, *Transit Development Plan Review Guidance for Florida Department of Transportation District Offices*. Figure 1-1 outlines communications with the Florida Department of Transportation (FDOT) and Figure 1-2 portrays the TDP Review Process.

Figure 1-1 Pre-submittal TDP Communications between Transit Agency and FDOT District Office

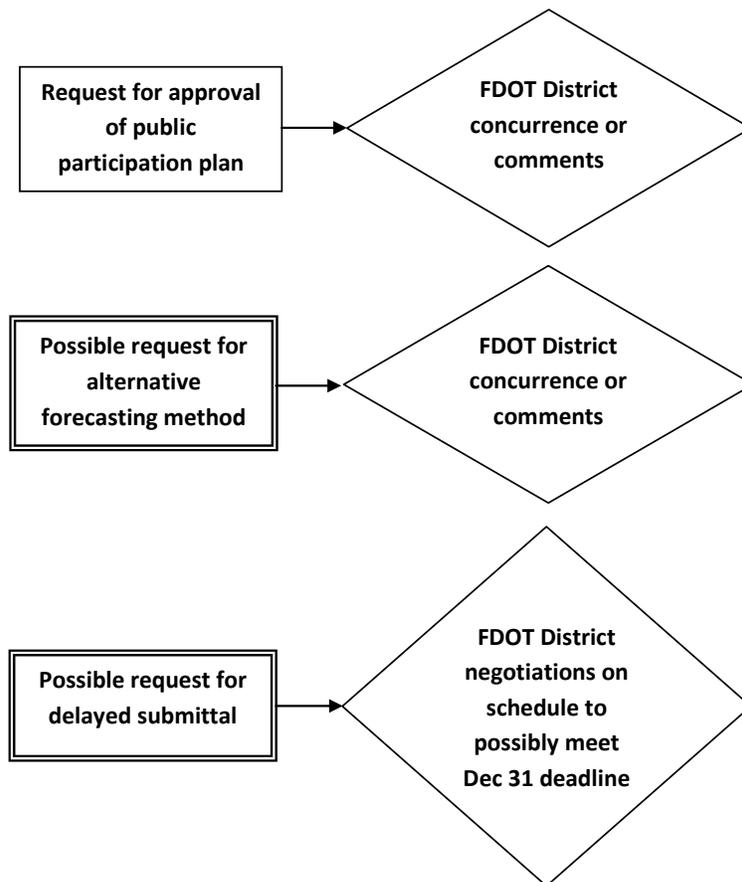
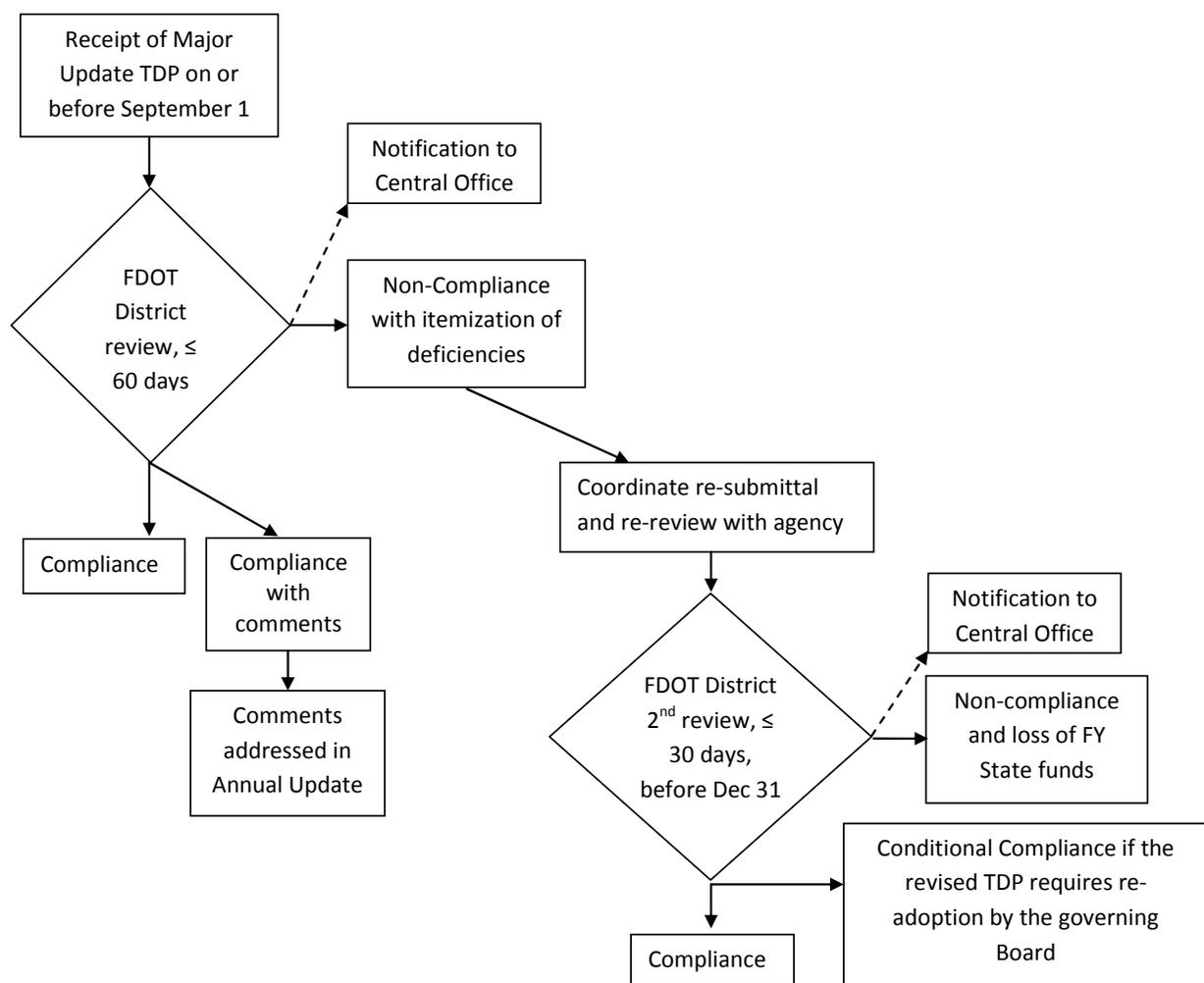


Figure 1-2 TDP Review Process for Major Updates



Notification of Compliance – for Major Updates and Annual Updates the District Offices will send a notification of compliance to those agencies whose submittals have been deemed to be compliant with the Rule. This notification will be transmitted before the end of December and provide assurance of receipt of apportioned State funds for that fiscal year.

Notification of Compliance with Comments – for Major Updates and Annual Updates the District Offices will send a notification of compliance with comments to those agencies whose submittals have been deemed to be compliant with the Rule but may need or benefit from changes incorporated in the next annual update. This enables the District Office to share feedback and suggestions with the agency so that their Transit Development Planning can be improved and avoid risking non-compliance in the future.

Notification of Non-compliance and Itemization of Deficiencies – This designation provides the agency with an itemization of specific deficiencies that need to be addressed before a second review for compliance. Notices of non-compliance should be copied to the FDOT Central Office, Transit Planning Administrator.

Re-reviews - If a TDP is found non-compliant the agency and FDOT District Office should negotiate a schedule and activities for re-submittal. Hopefully that re-review can be completed before the December 31st deadline. Re-review of non-compliant TDPs are limited to 30 days by rule. A re-reviewed TDP may subsequently need to be reapproved by the adopting governing body; hence, compliance of a re-reviewed TDP may be conditional on a subsequent approval.

Resourcing TDP Development

The development of the TDP plan is a significant planning effort but one that is complementary to ongoing service, financial, strategic and other planning for the agency. The major updates are sufficiently significant that they should be planned for and included in resource planning for the agency. Some agencies find it useful to engage outside support which can help accommodate the additional level of effort required, can bring in a fresh perspective for the planning effort, and can provide access to expertise in certain tasks that may not be resident in the agency. However, in all cases it is recommended that the agency work in close partnership if outside support is involved. The databases, knowledge and plans developed for the TDP are critical to ongoing agency operation and the foundation for development of the Annual Update.

Transit Development Plan Tasks

The required tasks in a Major TDP Update, to be undertaken every five years, include the following, which are not necessarily listed in the order in which each should be accomplished. Column 1 of Table 1-2 provides a general sequence of planning activities; however, some steps can be overlapping, simultaneous, or undertaken in an alternative sequence with appropriate coordination.

1. Public Involvement Process
2. Situation Appraisal
3. Demand Estimation
4. Assessment of Land Use and Urban Design Patterns
5. Mission and Goals
6. Exploration of Alternatives
7. Ten Year Implementation Program

8. Relationship to Other Plans
9. Adoption by Governing Body

These tasks are described in detail in the following chapters along with guidelines for completing the necessary elements.

As emphasized earlier in this guidance, the intent of this document is not to provide a “cookbook” for preparing these plans. Each transit agency should consider its local environment when outlining its TDP process. For example, an agency might choose to complete specific tasks with greater or lesser detail, or to add other tasks related to its mission within the community.

Annual and Major Updates

A new Transit Development Plan (referred to as a “Major Update”) must be prepared on a five-year basis, depending upon changes in the local environment. This Major Update will be a new Transit Development Plan and must include, with a high level of detail, each of the nine required TDP tasks discussed in this Guidance (listed in the summary of tasks above). While the Major Update is mandated every five years, the Rule also requires Annual Updates to the Transit Development Plan in the years between the Major Updates. These need to be on file by December 31st of each year, and will necessarily be less detailed than the original plan.

Requirements for Annual Updates

Annual updates will take the form of a progress report on the TDP and include the following elements:

- past year accomplishments compared to the original recommendations from the last major update;
- reasons for any discrepancies between the plan and its implementation for the past year;
- revisions to the coming year’s recommendations, as appropriate;
- added detail to recommendations for the final years of the updated plan; and
- a revised standardized financial plan, including revised financial tables.

Any significant updates or changes to the findings in the original plan must be addressed. The Annual Updates can also address any broader community changes that may affect elements of the original plan in future years, not just in the current or past year. Depending on the scope of

Chapter 1 – Introduction and Purpose

change or deviation from the most recent Major Update, an opportunity for public involvement is advised.

The preparation of Annual Updates is detailed in Chapter 10 of this guidance.

Chapter 2 – Public Involvement

Purpose of This Chapter

The purpose of this chapter is to demonstrate public involvement methods as they relate to the preparation of local Transit Development Plans.

Pertinence to Required TDP Elements

Public involvement efforts provide support and a basis for completion of other TDP components. Specifically, the following TDP components are developed based on feedback received through public outreach efforts.

- Situation Appraisal – Information obtained from public involvement efforts is needed in order to ascertain community perceptions and expectations regarding local transit services.
- Mission and Goals – The development of a TDP mission, vision, goals, and initiatives requires a thorough understanding of the general public's expectations and desires for local transit services.
- Alternatives Analysis – The basis for the selection of preferred service alternatives and/or priorities should integrate feedback received through public involvement efforts.

Public Involvement Goals and Relevance

The Transportation Equity Act for the 21st Century (TEA-21) requires that the public have “full and open access” in the development of transportation plans and programs. The transportation plans of the metropolitan area should reflect the needs of its citizens and promote the enhancement of the community's assets. The successive Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users (SAFETEA-LU) emphasizes broadening public participation to include stakeholders that have not been traditionally involved in the transportation planning process. Consequently, the preparation of a TDP should include efforts to involve the public and integrate public feedback into the decision-making process.

The fundamental goal of public involvement for public transportation decision-making is to ensure that decisions regarding public transportation incorporate public participation and feedback. Public transportation plans should include the concerns of all the parties who may be affected directly or indirectly by proposed transit service changes and/or improvements. Specific objectives related to this fundamental goal are listed below.

- Objective 1: **Educate** and present information by promoting proactive and early public involvement.

Public transportation agencies are responsible for disseminating information to the public regarding the TDP update process. Such information should be presented in non-technical terms so the public can understand and process this information.

- Objective 2: **Solicit** public input throughout the planning process by gathering full and complete information from the public.

Representative input from the public assists in identifying transit needs, desires, issues, and concerns. Comprehensive and accurate public input provides insight for developing transit alternatives and ensures that stakeholders benefit from proposed transit projects. Public transportation agencies should continuously seek public involvement throughout the planning process. Specifically, public involvement efforts should be targeted at the beginning of the planning process, at key decision points, and when final product drafts are issued.

- Objective 3: **Integrate** public feedback into the TDP.

Public issues, comments, and concerns obtained through public involvement efforts should be completely and concisely documented in the TDP. Continuous feedback regarding public concerns should be captured in follow-up public involvement activities. Major public concerns should be addressed in the final transit implementation plan.

- Objective 4: **Monitor** and improve the public involvement process.

Federal and state rules and regulations regarding public involvement are being revised regularly. Changes to federal and state regulations require that public transportation agencies continuously monitor their public involvement process in order to make any needed changes. In addition, new ideas and strategies about public input should be routinely incorporated in order to improve the process by which public input is collected and integrated into the TDP update process.

MPO or Alternative Approved Public Involvement Process

Transit agencies have the choice of either developing their own public involvement plan (PIP) or using the approved local MPO public involvement plan. All public involvement plans must be approved by FDOT. This involves the agency authoring a letter to the District FDOT representative and outlining the public participation process planned for the TDP process.

Specific FDOT requirements for public involvement processes for TDP preparation include:

- Obtaining public involvement plan approval from FDOT
- Soliciting comments from the regional workforce board
- Advising FDOT, the regional workforce board, and the MPO of all public meetings
- Providing FDOT, the regional workforce board, and the MPO an opportunity to review and comment during the development of the mission, goals, objectives, alternatives, and ten-year implementation program
- Establishing time limits for receipt of comments

Transit agencies are encouraged to develop their own process or customize the MPO process as the MPO PIP is designed to address a host of transportation planning efforts (i.e., highway planning, bicycle and pedestrian infrastructure planning, etc.).

Although no formal public involvement process is specified for annual TDP progress reports, transit agencies also are encouraged to conduct some level of public involvement during their development, depending on the magnitude of proposed service changes.

Required TDP Review Agencies

FDOT – The state transportation agency. Approves all TDP documents.

MPO – Local regional transportation planning agency. Integrates TDP improvements into the regional long range transportation plan

Regional Workforce Board – Carries out Florida's workforce policy and programs as established by Florida Statutes. Ensures local workforce transportation needs are adequately met by local public transportation services.

The majority of the balance of this chapter discusses characteristics and strategies for public involvement. Many are discussed in the context of the MPO public participation process but are elements and strategies that can be integrated into your specific Transit Development Plan public participation process.

MPO Public Involvement Requirements

All MPOs in Florida are required by federal and state regulations to develop a public involvement process that ensures public participation in transportation decision-making is

actively solicited. Some of the specific regulations that apply to MPO public participation are listed below.

- **23 CFR 450, Section 316 (b)(1)** includes requirements such as providing the public with timely information about transportation issues, plans, and programs; providing adequate public notice and time for public review of transportation activities; and granting explicit consideration and response to public input received.
- **Title VI** of the Federal Civil Rights Act of 1964 mandates non-discrimination by race, color, or national origin in connection with programs and activities receiving federal financial assistance.
- **Executive Order 12898 on Environmental Justice (1994)** requires measures to avoid disproportionately high adverse environmental effects of federal programs through full and fair participation of low-income and minority communities.
- **Chapter 286, Florida Statutes** (a.k.a. Florida Sunshine Law) demands public access to governmental meetings at the state and local level and demands meetings of boards and commissions to be open to the public, adequately noticed, and recorded via minutes.

Each MPO can develop and adopt its own public involvement process consistent with the requirements set by federal and state regulations. However, the MPO public involvement plan will generally include the following core aspects: the MPO and MPO advisory committees, MPO projects and activities, and MPO communications. A description of each one of these components is provided below.

MPO and MPO Advisory Committees

To help make decisions, the MPO considers recommendations from its advisory committees. Typical advisory committees include, but are not limited to the following.

- Technical Advisory Committee (TAC)
- Citizens Advisory Committee (CAC)
- Bicycle and Pedestrian Advisory Committee (BPAC)

MPO and advisory committee meetings are public forums that afford citizens an opportunity to participate in the planning process. A detailed description of the MPO advisory committees can be found in the TDP Public Input Activities and Strategies section of this chapter.

MPO Projects and Activities

The MPO develops numerous plans and programs in fulfillment of its statutory obligations. Major MPO projects may involve collecting and analyzing background data and performing extensive public outreach efforts. Typical major projects that need a wide variety of public involvement activities include the following.

- Long Range Transportation Plan
- Bicycle and Pedestrian Plan
- Transit Development Plan Major Update
- Congestion Management Plan
- Transportation Improvement Program (TIP)
- Unified Planning Work Program (UPWP)
- Special Studies

MPO Communications

It is the responsibility of the MPO to develop and maintain transportation plans and information that are of interest to and requested by the general public. Meanwhile, comments from the public are used to ensure that MPO plans and activities reflect the values of the community. MPOs generally employ a variety of techniques to distribute information and publicize activities.

TDP Public Input Activities and Strategies

There are numerous public input activities and strategies that can be used to gather public feedback and integrate that feedback into the transportation planning process. However, those public involvement activities and strategies that are most suitable and applicable for the update process of the TDP are provided here.

Public Information Materials

Public information materials can be used to notify the public of a variety of transit planning issues, including meetings/workshops, project status, project goals, and general information concerning changes to service. Typical distribution materials include the following.

- Newsletters
- Brochures/Flyers
- Legal Advertisements

- Mailing/Contact Lists
- Websites (agency, project specific, social networking etc.)
- Other Advertising (television, radio, etc.)

Stakeholder Interviews

This public input strategy focuses on soliciting ideas, concerns, and comments from key individuals and/or organizations in the study area. Typical stakeholder groups include local officials, representatives of jurisdictions, and organizations with an interest in transportation services. Interview scripts with detailed questions related to public transportation in the study area can be used to gather the opinions and perceptions of these stakeholder groups. The interviews themselves can be conducted in person or via telephone, depending on the availability and the preference of the stakeholders.

Situation Appraisal

Feedback gathered from stakeholder interviews should be included as part of all TDP Situation Appraisals. Such outreach efforts afford a broad understanding of community perceptions on existing transit issues.

Public Workshops

Public workshops provide an opportunity for public transportation agencies to solicit ideas, opinions, and comments from different target groups by direct information distribution and exchange. Depending on the specific objectives and available resources, interactive public involvement activities also can be employed in a public workshop. Such activities can help facilitate public participation by providing a more interesting and engaging method through which to identify the involved groups' issues and preferences. Activities can be used during public workshops, fairs, Citizen Advisory Committee meetings, expositions, and/or other community events organized by other groups. Typical benefits of interactive activities include:

- Increased trust between participants and agency officials;
- Higher levels of participant interest;
- Improved relations among participants with diverse backgrounds;
- Enhanced communication and cooperation;
- Motivated participants;

Mission & Goals

Public workshops can guide the development of the TDP Mission & Goals.

Alternatives Analysis

Public workshops should be integrated into any Alternatives Analyses and/or TDP project prioritization processes.

- Increased individual and group participation; and
- Reduced conflict.

Contingent upon the cost, needs, and effort requirements, several types of public workshops that are most applicable to Transit Development Planning are introduced below. It is not necessary to limit public involvement strategies to just one of the following examples. In addition, transit agencies can attempt to conduct public workshops at regularly scheduled committee and board meetings whenever possible to ensure that workshops have been appropriately advertised and to ensure attendance and participation.

Open Houses

An open house is typically the most flexible public workshop that allows the participants to observe displayed information at their own pace. The public is allowed to arrive at the designated workshop location at any time during the duration of the scheduled open house rather than at a specific time. The facility should be set up with several stations, each addressing a separate issue, so that a number of people (6-10) can view a particular station at once. Depending on staffing availability, it is helpful to equip each station with staff that can explain the topic at hand to the public and answer any related questions. Staff also should be present to explain the format of the open house to arriving participants and ask them to sign in at the door. After participants complete a tour of the stations of interest they are typically requested to provide feedback via a brief survey of some sort. Open houses provide an opportunity for the public to address a problem in stages. They make it difficult for an individual or interest to dominate the discussion and as such help ensure more perspectives are heard. The primary disadvantage of open houses includes the difficulty in documenting the public input; for this reason, brief survey forms or questionnaires are typically utilized in conjunction with the open houses to help facilitate the input documentation process.

Discussion Group Workshops

Informational meetings and discussion groups have proven to be an extremely effective technique for obtaining substantive public participation in the planning process. Discussion group workshops should normally be scheduled early in the TDP process and should be conducted in locations that coincide with the major areas of the study area. For a TDP, the discussion group workshop seeks to gather public input regarding existing transit issues and desired improvements. This public involvement technique is typically designed to be informal and does not necessarily require an invitation to participate, although invitations for this purpose are extremely beneficial in helping to ensure some level of participation. Notice is typically

provided via flyers and newspaper advertisements. Participants in the discussion groups may include transit users, non-users, transit agency drivers, and/or other interested individuals or groups. For optimal discussion and interaction, a discussion group should consist of 8 to 12 participants, ideally, though smaller or larger workshops still can be productive with appropriate preparation and facilitation. Survey forms also can be utilized in conjunction with the conduct of a discussion group workshop.

Public Workshop with Dot Polling Exercise

“Dot Polling” was developed to assist agencies in ranking citizen priorities by providing for individual input, while at the same time encouraging group decision-making. Project alternatives are recorded on a flip chart after an initial discussion. Each participant is then given a series of dots. Participants are asked to rank the identified project alternatives by placing the dots beside each according to how important they consider each one. Up to three dots can be assigned to an alternative if considered “high priority,” with two dots for “medium priority” and one dot for “low priority” (different colored dots can also be used to represent different levels of priority). Alternatives are ranked based on the number of dots received. Through this process, public-preferred prioritization of a set of alternatives can be achieved. Such an exercise can be used in most any public workshop setting, including an open house or discussion group workshop.

Public Workshop with Strings and Ribbons Exercise

“Strings and Ribbons” is another public involvement activity and is specifically designed to teach citizens about funding flexibility, constraints, and priorities. This activity assists in building community consensus whenever public input is solicited regarding funding issues. The basic scheme of a Strings and Ribbons exercise consists of three major components: allocations, funding flexibility, and cost feasible mapping. Under “allocations,” each participant receives a funding allocation and planned expenditures for a jurisdiction. Under “funding flexibility,” each participant is given the opportunity to trade the strings and ribbons for other transit improvements. For example, individuals can choose to utilize a length of ribbon that represents an amount of transit funding for one year. They can use this ribbon to expand an existing transit service, initiate a new transit line, or improve transit stations, etc. Once the participants have explored their alternatives, they can begin to place their improvements on a cost feasible map to illustrate their opinion of priority improvements that can be funded. Like the dot polling activity, this exercise also can be utilized in a variety of public workshop settings. However, due to the

time required to complete such an exercise, it is prudent to make a strings and ribbons activity the sole focus of a workshop.

Focus Groups

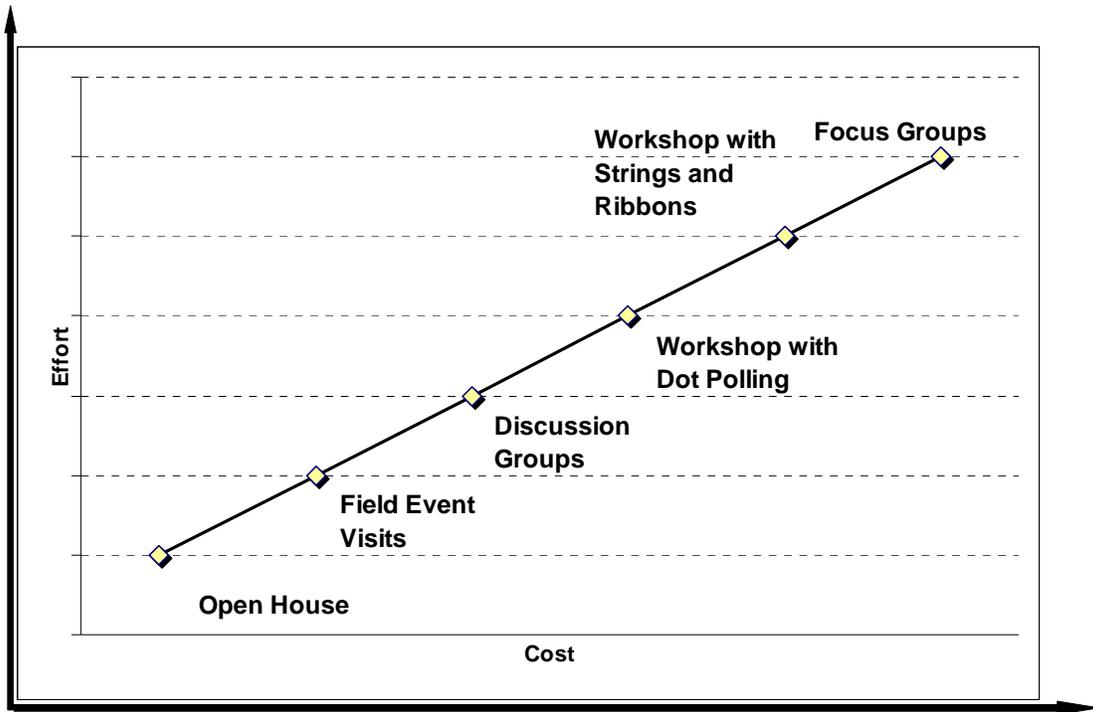
Focus groups are one of the most costly public involvement strategies used to gather public opinions on a critical topic. Representatives of different target audiences are randomly selected to attend the focus groups and recruitment is handled through direct invitation. A skilled focus group facilitator is needed to conduct each focus group session and participants are usually compensated for their time. The facilitator is responsible for involving all individuals within a group, identifying group attitudes on the topic at hand, and recording and interpreting final results. Focus groups provide an opportunity to test key messages prior to implementing a program. If used for a TDP, a focus group workshop can be applied at key decision points during the transit planning process. Opportunities to conduct focus groups include consideration of new routes, fare policy changes, and pre-testing new logos or system branding. However, due to its high-cost nature, it is not commonly applied during the preparation of a TDP.

Field Event Visits

This is a family of strategies that take advantage of existing events or gatherings to capture input from the public. This might include participating with a table/display and staff at town hall meetings, fairs, festivals, malls, and special events. It could include taking a transit vehicle to a public location or major gathering place. It can piggyback on another event that draws a diverse crowd and is particularly effective in gathering input from a broad audience that might not be motivated to participate in a single purpose meeting. This can expose the TDP to the general public whose interest might include being a customer or potential customer but might also be restricted to being a taxpayer primarily interested in the stewardship of their public resources.

Figure 2-1 illustrates a conceptual cost spectrum for each type of public workshop. It should be noted that the figure depicts general cost-effort relationships that are relative in nature and actual costs should be determined on a case-by-case basis. Public transportation agencies may refer to this illustration to determine the most appropriate public outreach event type to use for TDP preparation based on their specific objectives and budget limitations.

Figure 2-1 Public Outreach Event Cost Illustration



Cumulative Comments

It is important to emphasize that public involvement is an ongoing process and that feedback and comments about service are being provided to transit agencies throughout the year. Transit agencies receive comments from the public on a daily basis via e-mail, letters, and telephone. This feedback should be integrated into the TDP preparation process as appropriate. Some agencies accumulate appropriate feedback throughout the year and assess it once the TDP update process is in motion. Appropriate feedback for a TDP update process would include suggestions that go beyond existing daily operations. Examples include recommendations for new service, service expansions, and/or additional transit infrastructure.

Review Committees and MPO Board

If the agency decides to follow the MPO planning process, TDP public involvement efforts will include formal meetings with transit agency advisory committees, if any, the MPO Board, the MPO Technical Advisory Committee (TAC), and the MPO Citizens' Advisory Committee (CAC).

Alternatively, some MPOs may use slightly different committee designations (e.g., Technical Coordinating Committee).

Many large transit agencies make use of their own transit advisory groups or committees. Such committees are generally composed of actual bus system users. Because transit advisory committee members represent the bus riding public, they provide valuable perspectives, opinions, and recommendations on bus service and on potential bus service improvements.

Mission & Goals

Formal meetings with the MPO Board and its advisory committees can support TDP Mission & Goals development and the prioritization of transit service improvements.

The MPO board is largely comprised of a group of elected officials. Some MPOs do allow for non-elected representatives on the MPO board. In some counties, the MPO has approval responsibility for the TDP. Continuous input from the MPO during the process of developing the TDP ensures that MPO board comments and revisions are integrated into the final TDP document.

The CAC is comprised of a cross-section of representatives of the community and serves as the “eyes and ears” of the community. The CAC reviews and makes recommendations concerning transportation plans to the MPO board.

TAC members consist of professional and technical planners, engineers, and other agency staff from the participating jurisdictions within each corresponding MPO planning area. The TAC also reviews and makes recommendations concerning transportation studies to the MPO board. Input from the TAC is generally more technical in nature.

Surveys

Surveys are an effective tool for obtaining information on potential transit service improvements, assessing travel characteristics and perception of bus riders and non-riders, and ascertaining other important feedback about public transportation from other stakeholders such as major employers in the community. Feedback from surveys can assist transit agencies in identifying potential future transit needs. Seven kinds of survey tools generally used by transit agencies during the Transit Development Planning process, are summarized below.

Public Workshop Short Survey/Questionnaire

This type of survey is generally used to gather information from public workshop attendees. The survey form should be clear, concise, and simple in order to be easily completed. There should also be space for those wishing to provide more extensive comments or suggestions. Questions on the survey can vary depending on the target groups at the public workshop and the objectives of the workshop.

Transit Intercept Survey

A transit intercept survey is one of the least expensive survey applications for gathering information directly from transit riders. Surveys are generally distributed at major transfer stations to persons who are waiting for the bus or other transit modes. Alternatively, it is possible that brief personal interviews can be conducted with waiting transit patrons in lieu of using a questionnaire hand-out. Typical aspects covered include the following.

- General Questions (frequency of use, payment types)
- Customer Service (frequency of hotline service use, hotline service quality)
- Household Information (mode choice, car availability, time of work shifts)
- Personal Demographic Information (gender, age, licensed driver)
- Bus Service Satisfaction (service quality rating, potential improvements)
- Point of Origin and Point of Destination (trip purposes, transfer activity)

Despite the low-cost advantage of the transit intercept survey, it may not cover a sufficient number of respondents to make the final results statistically sound due to the geographic limitation of its respondent base. Therefore, a transit intercept survey should be used to gather general information on a small scale, and then be taken together with other means of gathering input.

Mail-Out Survey

A mail-out survey is a traditional method for obtaining a relatively limited set of information from a large target population. Target populations may include transit riders, non-riders, and transit-interested groups, etc. If sampling is to be utilized, a random selection scheme should be used to ensure statistically-valid results. Surveys can be widely distributed and the cost of the survey can be kept low if included as part of the distribution of a utility bill or other mechanism. Mail-out surveys typically cover the following topics:

- Demographics (household vehicles, employment status, mode to work, income)
- Transit Agency Information (agency recognition, advertisement awareness)
- Public Attitudes (use of transit, service satisfaction, service improvements)

It also should be noted that the response rate for a mail-out survey is generally low (often in single digit percentages). Therefore, the number of surveys that needs to be distributed should be carefully determined to ensure that final results are statistically sound. It also is important to make the mail-out survey form as concise and user-friendly as possible to help encourage participation. To help improve response rate, return postage should be provided in advance via metering.

On-Board Survey

The on-board survey is a tool used by most, if not all, transit agencies to gather feedback on various aspects of a transit agency's operations and services directly from bus patrons. This information is extremely useful to determine how the transit agency can improve and/or ensure the quality of its services. Typical aspects covered by an on-board survey include the following:

- General Questions (frequency of use, payment type)
- Customer Service (frequency of hotline service use, hotline service quality)
- Household Information (mode choice, car availability, time of work shifts)
- Personal Demographic Information (gender, age, licensed driver)
- Bus Service Satisfaction (service quality rating, potential improvements)
- Travel Patterns and Origin/Destination Information (trip purpose, transfer activity)

Bus Operator Survey

A bus operator survey differs from all the other presented survey types as it targets bus operators rather than transit patrons, transit non-patrons, or other interested groups external to the transit agency. Since a transit agency's bus operators are in direct contact with riders every day, they are an invaluable source of information concerning public opinion and attitude about the daily operation of the agency's transit services. As such, it is often prudent to conduct interviews with or survey operators to get their input on a variety of topics. Operators can provide information on various complaints and/or desired improvements that they observe or hear from transit patrons, thus helping to corroborate the information that is gathered from riders as part of an on-board or intercept survey. They also can be asked about their own personal opinions about the transit services being provided and any potential improvements that are

necessary. Operators also are a good source of information about specific problems that may be occurring on certain routes that are service and/or safety related. Regardless of whether a written or interview-style survey is administered, it is important to keep the operator input as anonymous as possible to encourage their honest and open participation.

Household Telephone Survey

The telephone-based household survey is typically employed by transit agencies as a tool for gathering input primarily from non-riders. Similar to the on-board survey, the household survey can help the agency assess travel behavior and characteristics. The data obtained from a household telephone survey can be utilized to identify and program appropriate improvements that may better help meet the needs and demands of non-riders to help make transit a more attractive mode for them. Typical aspects covered by a household telephone survey include:

- Demographics (household vehicles, employment status, mode to work, income)
- Transit Agency Information (agency recognition, advertisement awareness)
- Non-Rider Attitudes (reasons for being non-riders, future riding possibility)

Employer Interviews

Interviews with major employers in the area can assist transit agencies in targeting and/or tailoring transit services that meet the needs of the employees of those businesses. Understanding the travel needs of the employees of large businesses also assists the transit agency in developing appropriate marketing and educational tools. In-person or phone interviews may be conducted with human resources managers of the largest employers in the study area.

A letter can be mailed to the selected employers with a list of questions prior to the actual interview to help them better prepare. Typical questions are often related to issues such as commuting, parking, recruitment, marketing, and current usage of public transportation by employees. It is important to note that scheduling such interviews with business representatives is often a difficult and time-consuming process. The individuals that should be interviewed to get the best information typically do not have much free time and may be skeptical about how discussing transit will help their company. Multiple contacts are often needed to secure a single interview and, often, a number of these individuals will choose not to participate at all. Table 2-1 notes the advantages and disadvantages of the public involvement techniques presented in this chapter.

Table 2-1 Public Involvement Techniques*

Technique	Advantages	Disadvantages	Cost	Probable Success**
Public Information Materials				
Newsletters	<ul style="list-style-type: none"> • Able to reach large target audience. • Encourages written responses if comment form enclosed. • Facilitates documentation of public involvement process. 	<ul style="list-style-type: none"> • Only as good as mailing list. • Limited capability to communicate complicated concepts. • No guarantee materials will be read. 	Low	Low
Brochures/Flyers				
Mailing/Contact Lists				
Legal Advertisement	<ul style="list-style-type: none"> • Potentially reaches broad public. 	<ul style="list-style-type: none"> • Expensive, especially in urban areas. • Allows for relatively limited amount of information. 	Medium	Medium
Websites	<ul style="list-style-type: none"> • Makes information accessible anywhere at any time. • Saves printing and mailing costs. 	<ul style="list-style-type: none"> • User may not have easy access to the internet or knowledge of how to use computers. • Large files or graphics can take a long time to download. 	Low	Medium
Other Advertising (television, radio, etc.)	<ul style="list-style-type: none"> • Able be used in multiple geographic areas. • Many people will take the time to watch rather than read. 	<ul style="list-style-type: none"> • High expense. • Difficult to gauge impact on audience. 	High	Medium
Stakeholder Interviews	<ul style="list-style-type: none"> • Provides opportunity for in-depth information exchange in non-threatening forum. • Provides opportunity to obtain feedback from all stakeholders. 	<ul style="list-style-type: none"> • Scheduling multiple interviews can be time consuming. 	Medium	High
Public Workshops				
Open Houses	<ul style="list-style-type: none"> • Fosters small group or one-to-one communications. • Staff is available to answer prompt questions. • Builds credibility. 	<ul style="list-style-type: none"> • Difficult to document public input. • Agitators may stage themselves at each display. 	Low	Medium
Discussion Groups	<ul style="list-style-type: none"> • Involves different interest groups. • Provides opportunity for in-depth information exchange in non-threatening forum. 	<ul style="list-style-type: none"> • Number of participants constrained. • Possibly low attendance rate because of its informal nature. 	Low	Medium
w/ Dot Polling Exercises	<ul style="list-style-type: none"> • Provides opportunity for participants to join the alternatives selection process. • Ability to draw team members into deep discussions on specific topics. • Maximizes feedback obtained from participants. 	<ul style="list-style-type: none"> • Labor and time intensive. 	Medium	Medium
w/ Strings and Ribbons Exercises		<ul style="list-style-type: none"> • Labor and time intensive. 	Medium	Medium
Focus Groups		<ul style="list-style-type: none"> • Several facilitators are necessary. • Labor and time intensive. 	High	High

Table 2-1 Public Involvement Techniques (Continued)

Review Committees and MPO Boards	<ul style="list-style-type: none"> Allows for direct guidance on project issues. Ensures the project is right on track. 	<ul style="list-style-type: none"> Members may not achieve consensus. 	Medium	High
Field Event Visits	<ul style="list-style-type: none"> Involves diverse cross section of public. Provides opportunity for in-depth information exchange in non-threatening forum. 	<ul style="list-style-type: none"> No assurance of interest by audience. 	Medium	Medium
Surveys				
Public Workshop Short Questionnaire	<ul style="list-style-type: none"> Helps obtain feedback from workshop attendees. 	<ul style="list-style-type: none"> No guarantee questionnaire will be filled out. 	Low	Low
Transit Intercept	<ul style="list-style-type: none"> Helps gather information directly from transit riders. 	<ul style="list-style-type: none"> Final results may not be statistically significant due to geographic limitation of its respondent base. 	Medium	Medium
Mail-Out	<ul style="list-style-type: none"> Obtains information from a large target population. Cost can be kept low if included in utility bill. 	<ul style="list-style-type: none"> Low response rates. 	Medium	Medium
On-Board	<ul style="list-style-type: none"> Most popular survey type for transit agencies to use to obtain information directly from transit patrons. Information is extremely useful regarding transit operation and quality of service improvement. 	<ul style="list-style-type: none"> Labor and time intensive. 	High	High
Bus Operator	<ul style="list-style-type: none"> Useful tool to obtain information from bus operators. Provides insights about transit service from different perspective. 	<ul style="list-style-type: none"> Drivers are often reluctant to complete the survey. 	Low	High
Household Telephone	<ul style="list-style-type: none"> Useful for obtaining information from transit non-users. 	<ul style="list-style-type: none"> Labor and time intensive. 	High	High
Employee /Employer Interviews	<ul style="list-style-type: none"> Especially useful to obtain information from employees of regional major employers. 	<ul style="list-style-type: none"> Labor and time intensive. 	High	High

*Some advantages and disadvantages are referenced from FDOT Public Involvement Handbook, October, 2003.

**Reflects the capability of the public involvement technique to meet the expected goal of delivering and/or obtaining sufficient, accurate, and comprehensive information to/from the public.

Resources:

- *A Public Involvement Handbook for Median Projects*. Florida Department of Transportation, 1996.
- *Caltrans Project Development Manual – Community Involvement*. California Department of Transportation, 1993.
- *Foundations of Public Participation*, 2003 International Association for Public Participation.
- *Improving the Effectiveness of Public Meetings and Hearings*. National Highway Institute, 1991.
- *Innovations in Public Involvement for Transportation Planning*. U.S. Department of Transportation, 1994.
- *Public Involvement Techniques for Transportation Decision-making*. Publication No. FHWA-PD-96-031. U.S. Department of Transportation, 1996.
- *Public Involvement Handbook*. Florida Department of Transportation, 2003.

Chapter 3 – Base Data and Analysis

Purpose of This Chapter

The purpose of this chapter is to present approaches and suggestions for documenting existing base data and analysis techniques that provide the setting to gain an understanding of the environment in which the transit system is operating. The information referred to in this chapter will provide the factual basis upon which several other TDP elements are developed. Therefore, base data development is one of the first tasks undertaken in the TDP process.

Pertinence to Required TDP Elements

Transit Development Plan Elements Grid Chapter 3 Base Data Relationship		
Key TDP Elements	Essential	Supportive
1. Public Involvement Process	✓	
2. Situation Appraisal	✓	
3. Mission & Goals		✓
4. Alternatives	✓	
5. Ten Year Implementation Program		✓
6. Relationship to Other Plans		✓
7. Annual Updates	✓	

This chapter directly relates to the Public Involvement Process, Situation Appraisal, Alternative Actions and Annual Update elements of the FDOT TDP rule:

- **Public Involvement Process** – base data is required to help the public understand the environment in which the transit system operates and to spotlight areas of opportunity for development of future transit systems.
- **Situational Appraisal** – base data is necessary to provide the foundation upon which to review trends, provide data inputs for forecasting, and evaluate land use and urban design impacts on the community’s transportation networks and services.
- **Alternatives Analysis** – base data establishes the conditions upon which all

alternatives for improvement to the transit system can be measured. Areas of opportunity and needs can emerge from the analysis of the base data. Similarly, solid base data provides a picture of what types of transit services may or may not prove to be realistic and successful.

- **Annual Updates** – an examination and analysis of changes to the base data should be included as an element of the TDP annual updates. Population growth and changes in the local operating environment may suggest consideration of changes in priorities, development of new transit services and opportunities to pursue additional service improvements.

Base Data Collection, Introduction and Needs

The strategic planning process provides a context for evaluating, prioritizing, and presenting community and agency needs. The agency’s vision, mission and goals are developed and serve as the unifying factor of the various strategic activities into a coherent plan.

Recommendations in a strategically-based Transit Development Plan explicitly arise from and are justified by the information gathered. The base data collected for the TDP should include a description of the communities served by public transportation, the conditions and trends of the overall transportation system, land use development patterns, public transportation system characteristics, customer profiles and general public perceptions and opinions.

Relative to the overall strategic nature of the TDP, the most significant purpose for the base data is to establish a benchmark of conditions and trends that allow an analysis of the “environmental” influences on the mobility organization’s issues, challenges and opportunities. Some key base data categories will be presented in this chapter; however additional data needs will be cited in other sections of this guidance related to very specific topics such as public participation, system performance evaluation, public transit’s situation appraisal and financial plans.

In the sections that follow, an overview of the types of base data sets to be collected are summarized and detailed:

- **Socio-Demographic Data** – the objective is to provide a comprehensive overview of the study area focusing on demographics, economic conditions and land use patterns. The data collected provides a description of the community and provides an understanding of the extent to which transit can help meet the community goals.

- **Overall Transportation System Characteristics** – base data and an understanding of the community's overall transportation system in the service area is required for an analysis of service alternatives for transit service improvements.
- **Market Research and System Surveys** – market research provides an understanding of the characteristics, needs and satisfaction levels of existing and potential transit customers. Market research utilized for TDP's can take various forms from formal community wide surveys to a review of customer comments.
- **Public Transportation Service Performance and Trends** – one of the key elements required for a TDP is operating and financial data collected by the transit agency. This includes National Transit Database information, as well as other data and information routinely collected. These datasets are utilized to monitor the performance and trends of the transit agency.
- **Local and Regional Plans** – the review of the area's comprehensive plans, growth management programs, and long range transportation plans will yield additional pertinent data that can be utilized in the TDP process.
- **Geographical Information Systems and Map Resources** – the ability to display the data in a map format is essential to provide an understanding and interpretation of a wide variety of data collected during the TDP process, supplemented with graphical detail of alternatives and recommendations.

Socio-Demographic Data and Other Background Conditions

The purpose of this section is to provide an overview of the study area focusing on demographics, economic conditions, and land use patterns. The selected data that is collected and presented should describe the community and measure the extent to which the transit service meets the community's goals. The data are also used to assess the need for transit service. Data should include the base year of the TDP with projections through the tenth year of the planning period.

While most TDP tasks need not be accomplished in a specific order, the compilation of base data should be one of the first tasks completed. The remaining tasks use and build upon the information resulting from this task. Several demographic characteristics and community perceptions are directly related to transit usage. For example, travel patterns offer insight into transit needs. The perceptions that riders have of the transit system are important for identification of areas in need of improvement. Community perceptions of the transit system provide insight into reasons for using, or not using, public transit. Traffic conditions, such as levels of congestion and parking availability, also have an effect on transit usage. The

identification of transit-dependent population segments (based on income, age, and vehicle ownership data) is extremely important in defining the mobility needs of the community.

The location of activity centers that act as trip generators and attractors must be identified and compared with the existing transit network. Marketing research such as attitudes and opinions non-riders and potential riders have of the transit system are helpful in identifying any perceived weaknesses, planning service improvements, and preparing marketing and customer information material.

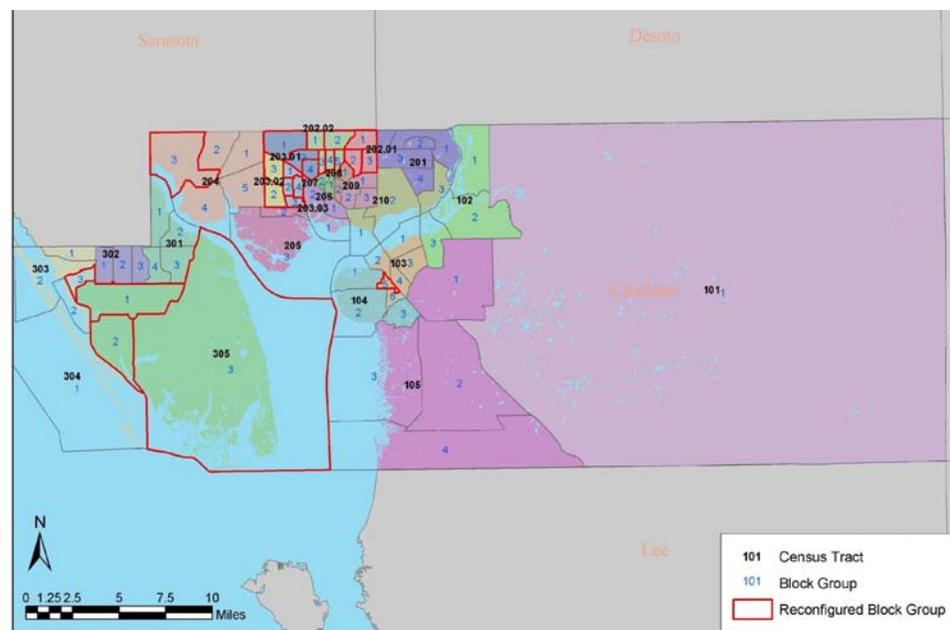
The Transit Development Plan should reflect a conscious effort to convert the various data into information that is readily usable for identifying needed improvements and evaluating proposed alternatives. Suggestions regarding how the data might best be analyzed are included throughout the remainder of this chapter as well as in subsequent chapters. The ultimate success of the TDP is strongly influenced by the quality and relevance of the data and the extent to which the recommendations are derived from an analysis of the data.

Data Format

The “census block group” is generally used as the standard geographical unit in the TDP since much of the demographic and journey-to-work data is available from U.S. Census information (<http://www.census.gov/>). However, the choice of the geographical unit ultimately rests with the individual transit agency, and depends upon the availability of data for the study area. Some transit agencies

may prefer to use the smaller breakdown of census block groups, or perhaps traffic analysis zones (TAZ). No matter what unit is chosen that unit should be used consistently throughout the TDP.

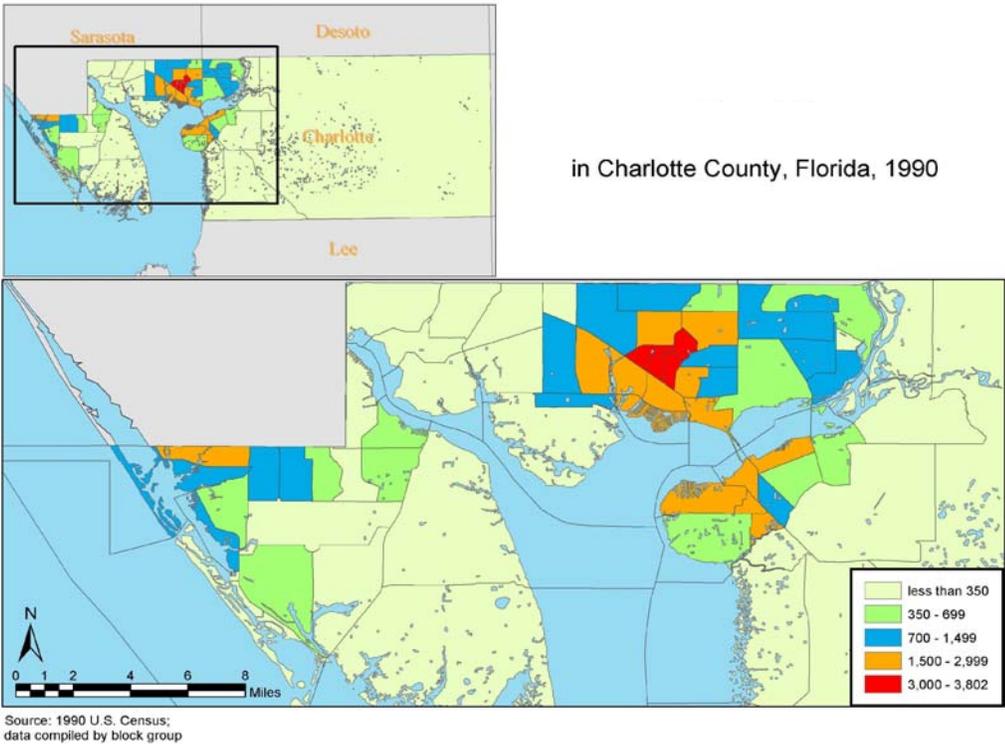
Figure 3-1 Example of Census Tracts and Blocks



Data Utilization Approaches

The data used for the study area analysis should be presented in map form, when appropriate. GIS mapping software such as MapInfo and ArcView/ArcInfo can be used to map the distribution of various population and demographic data in the study area. In addition, an agency’s transit route network can be overlaid on certain maps to further illustrate how well existing service is meeting community goals and identify areas that might warrant service. The spatial representations provided by the GIS maps are a very useful tool in the analysis of the base data and in other tasks in the TDP process. Figure 3-2 exemplifies combining GIS maps with census data.

Figure 3-2 Example of Combining GIS Maps with Census Data



While most of the information described below can be presented in tabular form, maps of the study area will prove helpful in providing a quick visual reference of the individual characteristics as they relate to transit use. By overlaying a transit system map on another map showing household vehicle ownership, for example, it can quickly be assessed whether areas with low levels of vehicle ownership are well served by transit in the study area. Census block (or other consistent geographical unit) maps depicting the distribution of each of the demographic elements studied should be included in this section.

Demographic Characteristics

After compiling a general physical description of the study area, the next focus should be on population and population characteristics. Many population characteristics and trends are connected to transit usage. For example, employment characteristics identify transit use in terms of work-oriented demand. Major employment centers should receive special attention in planning transit service. Armed with knowledge of population and other demographic information, the transit agency can identify areas that are in need of service improvements or those that would support service expansion. A general level of transit service demand can be estimated from population statistics; however, other characteristics that affect ridership which should be analyzed in the TDP include the following categories:

- Census Items
 - Population and Housing Density
 - Population Age Distributions
 - Income Levels
 - Journey-to-Work Data
 - Vehicle Availability
 - Labor Force Participation/Unemployment Rate
- Other Items
 - TD and Potential TD Populations
 - Seasonal Population (Tourists/Visitors)
 - Employment Density

Population and Housing Density

Population density is a key characteristic affecting transit use. Population density levels can be illustrated in map form for the study area and can be compared with the transit system's route network. Similarly, an analysis of housing unit density levels in the study area offers insight as to where residential development is concentrated. Transit works best in dense areas, so these areas should be a priority when introducing or expanding service. The *Transit Capacity and Quality of Service Manual* provides some insight on transit supportive densities (TCRP *Web Document 6: Transit Capacity and Quality of Service Manual*, First Edition, TRB, Washington, DC (1999). http://www.tcrponline.org/bin/doc-distr.cgi/TCRP_RPT_100/library/TCRP%20Report%2088/Library/TCQSM%201st%20Edition/tcrp_webdoc_6-e.pdf).

Population Age Distribution

The population age distribution, with emphasis on youth (under 18 years of age) and elderly (over 65 years of age), is useful in determining mobility needs which could be met through transit services. The young and the old typically are less likely to have access to a vehicle making them more dependent on public transit for their travel needs.

Income Levels

Information on the income of residents in the study area should be included in the compilation of base data. Low-income households often have limited mobility options and therefore have a greater reliance on public transit. Such areas may be characterized as transit-dependent (a method for assessing the transit-dependent population is described in a later section of this Manual), and generally have high potential for transit use. Once again, the distribution of low-income households should be compared with the existing transit network to assess whether these transit-dependent areas are well-served by the system.

Vehicle Availability

Areas exhibiting a low incidence of vehicle ownership can also be characterized as transit-dependent. The distribution of vehicle availability should be analyzed in the TDP to gain insight into the geographic locations of households with low vehicle ownership (or zero vehicle ownership). While not necessarily identical to low-income areas, low or zero vehicle areas will likely have considerable overlap. Individuals with low vehicle availability have a greater tendency to utilize public transit.

Employment Density

Areas of growth in service and industrial employment will more directly identify areas of transit use related to employment destinations. Employment locations and densities are important determining factors with regard to the extent to which transit can feasibly serve work trips effectively. Urbanized areas with significant levels of employment in the Central Business District (CBD) are more transit-friendly than those with more dispersed employment concentrations. A large, but low-density industrial park located at the edge of an urbanized area will likely not attract many transit trips and may not be feasible to serve with fixed-route transit.

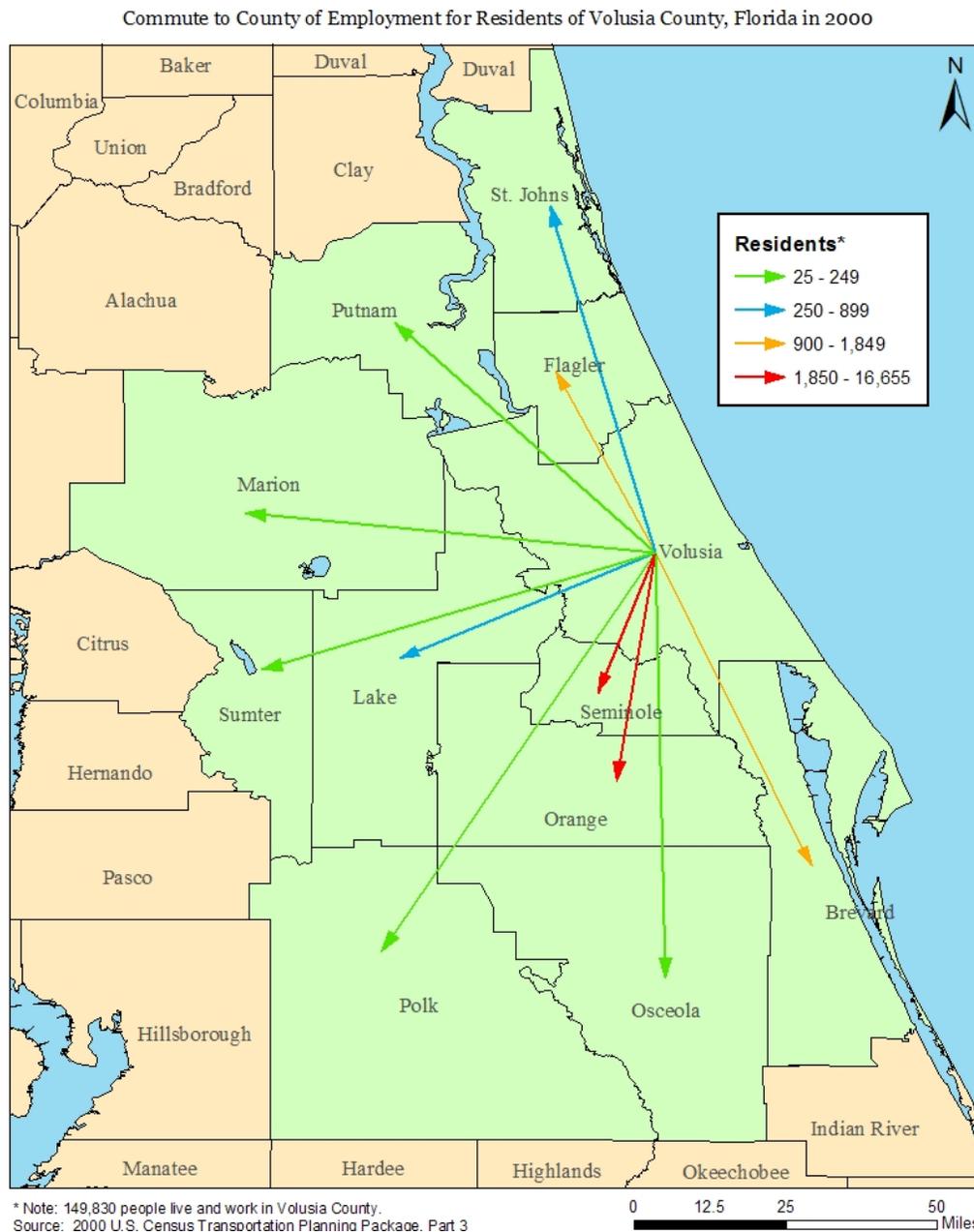
Labor Force Participation/Unemployment Rate

Along with the examination of employment density, the analysis of labor force participation rates can also offer insight into work-based travel needs. Additionally, a transit agency may consider including information on the unemployment rate within the study area, to provide additional information concerning employment patterns.

Journey-to-Work Data

Census information on journey-to-work can also be quite useful. Published data include the means of travel to work and the travel time to work. Specifically, analyzing data on the means of travel to work provides information on the proportion of workers who drive alone to work, carpool/vanpool, use public transportation, bicycle or walk, or work at home. Travel time to work provides information on how long it takes workers to get to their jobs. Information regarding place-to-place work commutes within a metropolitan area may also be available for the study area. This data can provide insight to inter-county travel patterns which may support mobility services such as commuter rail, express buses, van pools and car pools. Figure 3-3 exemplifies mapping of journey to work data.

Figure 3-3 Example of Journey-to-Work Data Graphic



TD and Potential TD Populations

Chapter 427 of the Florida Statutes defines transportation disadvantaged (TD) persons as:
“those persons who because of physical or mental disability, income status, or age are unable to transport themselves or to purchase transportation and are, therefore, dependent upon others to obtain access to health care, employment, education, shopping, social

activities, or children who are handicapped or “high-risk” or “at-risk” as defined in s. 411.202.”

The Florida Coordinated Transportation System serves two population groups. The first group, now being referred to by the Florida Commission for the Transportation Disadvantaged (CTD) as the “Potential” TD Population, includes persons who are disabled, elderly, low-income, and children who are “high-risk” or “at-risk.” These Potential TD persons are eligible for trips that are sponsored by social service or other governmental agencies.

The second population group, referred to by the CTD as the Transportation Disadvantaged (TD) population, is a subset of the Potential TD population. The TD population includes those persons who are unable to transport themselves or to purchase transportation and are not able to receive transportation under other sponsored programs. Persons in this subset may be eligible to receive trips subsidized by the TD Trust Fund monies allocated to local community transportation coordinators (CTCs). Often, there is a local process developed to determine the eligibility under this category and may become required by the CTD.

Estimates of the TD and Potential TD populations can be obtained using the technique described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level*, available from the TD Commission and CUTR.

Most communities in Florida experience significant seasonal shifts in population due to “snowbirds” (seasonal residents that live in Florida for several months at a time) and other tourists and visitors (vacationers, spring breakers, etc.). The impacts of these part-time residents and visitors must be considered in the TDP process, since they can have a measurable effect on transit needs and services.

With seasonal population increases, congestion on area roads tends to increase. Many snowbirds are elderly and some may not drive, thereby increasing the demand on public transit. With the seasonal influx of tourists and other visitors, there could be a need for additional transit services, especially within beach communities. Such additional services may be necessary not only to help reduce congestion on the beaches, but also to provide access to an often increased number of service jobs in beach communities during the peak season.

Information on seasonal population shifts can often be obtained from local planning agencies, as well as local convention and visitors bureaus.

Overall Transportation System Characteristics

It is important to have ample base data regarding the overall transportation system of the service area in order to analyze the role and alternatives for specific public transportation service improvements. The local Metropolitan Planning Organization (MPO) can provide a wealth of base data including various transportation studies, corridor analysis, maps and in particular, the urbanized area's Long Range Transportation Plan (LRTP). The TDP Rule recognizes the coordination requirements between the transit agency and the MPO. Early involvement with the MPO in base data collection efforts will promote a sound and focused TDP that will directly relate to the Long Range Transportation Plan (LRTP) and will make the TDP more useful to the next update of the LRTP. Chapter 5 of this manual provides a more detailed discussion on this type of source information.

Traffic/Roadway Characteristics

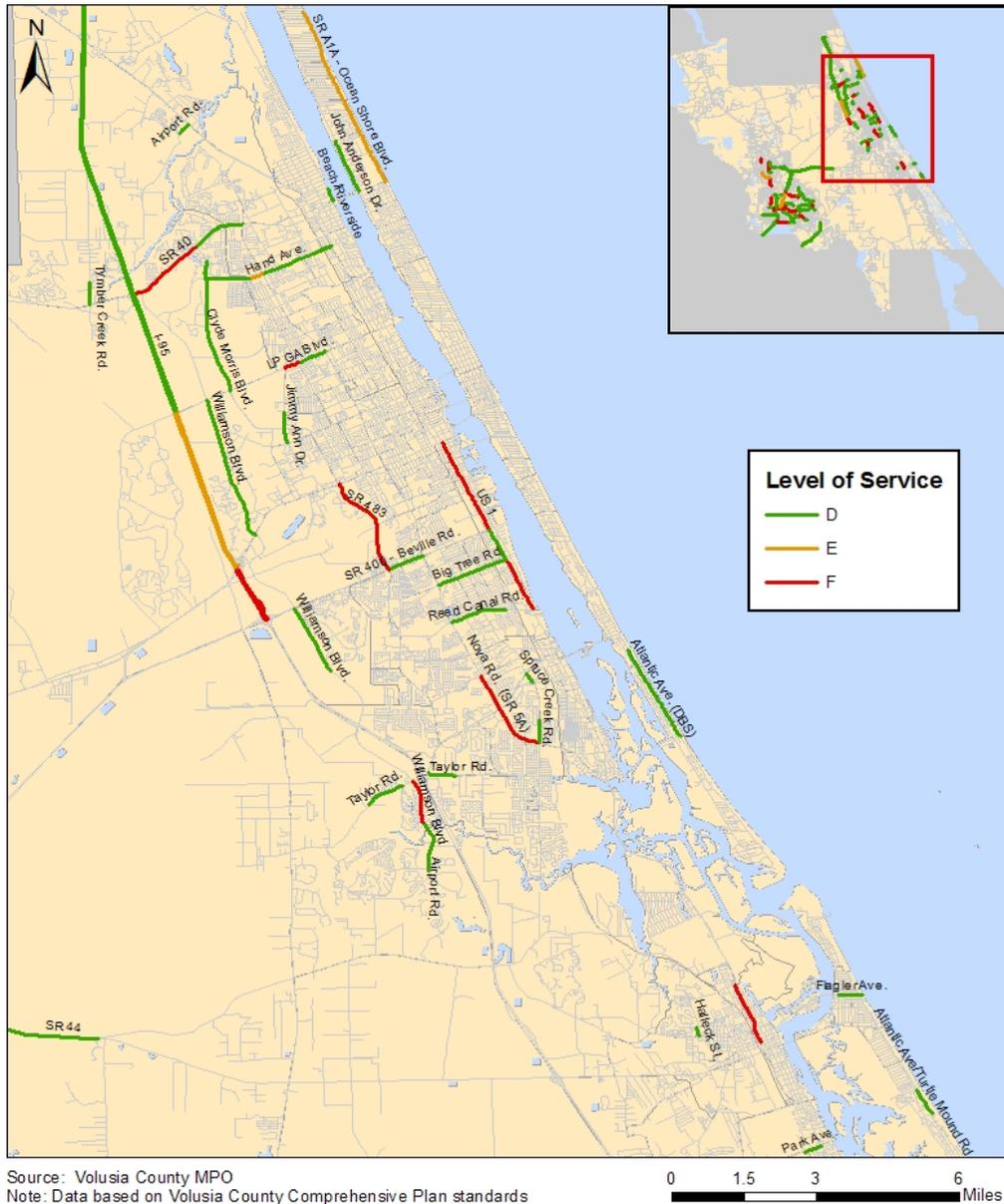
Traffic characteristics, including major trip generators and attractors may also be addressed in this task. Major trip generators and attractors, such as shopping malls, employment centers, entertainment facilities, government centers, health care facilities, education centers, and other centers of activity within the study area, should be listed as well as portrayed in map form. It is useful to include the transit route network on the same map(s) to show clearly the extent to which the current network serves the major generators.

An analysis of traffic congestion in the study area will identify areas where roadways or roadway segments are deficient in terms of level of service (LOS). Deficient roadways or corridors can be targeted for increased transit service or for Transportation Demand Management (TDM) strategies to prevent further deterioration of the current LOS. In the short term, deficient corridors are indicators of places where it may be difficult for transit to maintain schedules.

The metropolitan planning organization and the local comprehensive plan are excellent sources of information on trip generators and traffic congestion. Parking data, addressed below, can sometimes be more difficult to obtain, particularly in the smaller urban areas. Figure 3-4 is an example of roadway level of service information.

Figure 3-4 Example of Roadway Level of Service Graphic

Road Level of Service in Eastern Volusia County, Florida, 2000



Parking

Because of its effect on transit use, a description of parking conditions in the study area should be included in the TDP. The location, availability, and costs of parking will, influence an individual's mode choice. Large quantities of low-cost or free parking will decrease the need for transit and may make it more difficult to encourage alternative modes of transportation. Parking shortages due to quantity or price will lead to increased use of the transit system.

The analysis of parking data must be sensitive to potential localized effects. For example, it may appear that a CBD has ample, low-cost parking overall, but there may be portions of the CBD in which parking is scarce. Depending upon activity levels, such an area may have significant potential for generating transit trips.

Pedestrian and Passenger Amenities

Transit passengers are typically pedestrians on both ends of their transit trip. Therefore, the study area's pedestrian access and its relationship to the system's bus stops will have a great impact on the potential success of transit services. The TDP should include some discussion on the importance of adequate pedestrian accessibility throughout the study area. At a minimum, this should include an overview of the existing sidewalk system; as well as the ADA accessibility of the adjoining sidewalks and crosswalks.

Additionally, the provision of pedestrian/passenger amenities will help make transit services a more viable and attractive mobility option. The TDP should detail the existing passenger amenities provided (e.g., benches, shelters, transfer centers, information signage, accommodation of bicycles, etc.) as well as areas of need for additional pedestrian amenities.

Market Research/System Surveys

Many transit agencies conduct some form of market research to understand the characteristics, needs and levels of satisfaction of their existing and potential customers. This market research can take various forms which could include formal community wide surveys, on board customer surveys or a review of comments received by customer service. This is valuable information to be incorporated into the TDP. Some agencies may coordinate certain market research activities with the major TDP update effort.

Perceptions and opinions of the transit system and the role it serves in the community are very important components of the data-gathering process. Such insight helps the agency respond to

community concerns and increases the credibility of the completed TDP. The following techniques may be used to obtain public input regarding the perceptions of the transit system. These data gathering efforts while perhaps more focused on transit services and facilities, are integral with some elements of the public participation process and may be planned and implemented in concert.

On-Board Passenger Surveys

The demographic characteristics, travel behavior, satisfaction levels, and perceptions of current transit riders can be obtained through on-board surveys. This information can prove useful in programming resources for needed improvements and in identifying target demographic groups for marketing activities.

Major objectives of an on-board survey include:

- collection of data useful in strategic and service planning
- establishment of demographic profiles of patrons
- definition of travel characteristics and patterns of patrons
- identification of perceptions and attitudes about the provider's service
- solicitation of patron's opinions on transit-related issues for the system's management and decision-makers.

Due to the expense and time involved in conducting an on-board survey and analyzing its results, they are not required for a TDP. However, good transit planning practices would recommend that on-board surveys be conducted regularly to maintain a current database of rider demographics, travel patterns, and levels of satisfaction. Therefore, in compiling base data for a TDP, a transit agency should include the results of its most recent on-board survey. If the survey is non-existent or out of date, the agency should consider conducting an on-board survey along with the major TDP update every five years.

The information collected in the on-board passenger surveys may be presented in tabular or graphic format as shown in Figure 3-5 and 3-6 below.

Figure 3-5 Example of On-Board Graphic Presentation

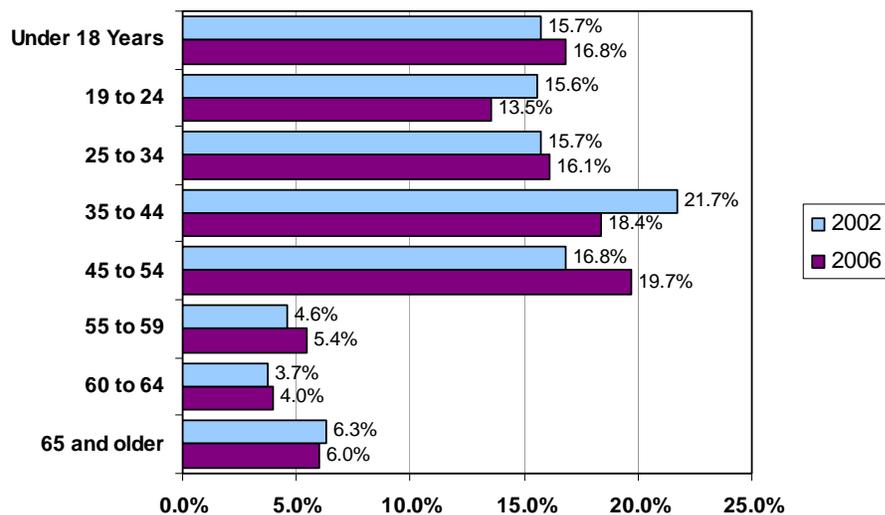


Figure 3-6 Example of On-Board Tabular Presentation

Frequency of Use (Q1) By Age (Q15)

FREQUENCY OF USE	AGE								Total
	<24	25-34	35-44	45-54	55-64	65-74	75-84	85+	
Community Coach Demand Response									
Daily	2.0%	2.0%	1.3%	3.3%	1.3%	0.7%	1.3%	2.0%	14.0%
2-4 Times/Week	1.3%	1.3%	4.7%	4.7%	2.7%	4.0%	12.7%	10.0%	44.7%
Once/Week	0.7%	0.0%	0.7%	0.7%	0.0%	0.0%	8.7%	4.0%	16.0%
Few Times/Month	0.0%	0.0%	0.0%	2.7%	0.7%	5.3%	4.0%	4.0%	16.7%
Occasionally	0.7%	0.0%	0.0%	0.0%	0.0%	0.7%	2.0%	4.7%	8.7%

NOTE: Totals may not add up to 100% due to incomplete responses.

Operator/Customer Service Representative Surveys

As an adjunct to on-board surveys, employee surveys can provide valuable information regarding transit demand and mobility needs. Drivers and customer service representatives are aware of the day-to-day operations of the system, and they are on the “front-line” of the users’ complaints and comments. Operators and customer service representatives can offer first-hand knowledge concerning routing, scheduling, safety issues, and rider opinions. Transit users will more readily make suggestions or complaints to these employees than take the time to write a letter or phone management. Operators and customer service representatives are a valuable and sometimes overlooked source of information.

An example of an operator/customer representative surveys is included in Appendix 3-B.

Interviews with Key Local Officials and Community Leaders

Local decision-makers play important roles in the transit agency’s attempts to obtain public support and funding. Thus, the TDP process should seek and reflect the opinions of elected officials and key local governmental representatives. Beyond elected officials and public office holders, key officials and representatives could include private sector business leaders and heads of non-profit organizations. Heads of non-profit organizations often exert substantial influence over matters of local concern, including transit-related issues.

Purposes of interviews with key local officials and community leaders are:

- to discover perceptions of current transit service
- to discuss expectations and support
- to solicit ideas for improvements
- to identify issues of greatest local concern

Non-User Surveys and Focus Groups

Non-user surveys and focus groups with participation from member of the general public can provide important information on the community’s perceptions and attitudes toward public transportation, as well as determine why potential transit users are not using existing services. Non-users make up the largest potential source of new business. To attract them as transit users, the agency must be aware of their opinions regarding the existing transit service and public transit in general. The inclusion of non-transit-users’ opinions is valuable in the process discovering transit demand and mobility needs. Transit users see the system differently from those currently not using the system. Gaining knowledge of the perceptions and opinions of

non-transit-users is the best method for identifying ways to attract new riders to the system. While other surveying methods (i.e., phone interviews or newspaper surveys) can be expensive and time-consuming, small focus groups of non-users can provide information on many issues related to their mode choice decision at a lower cost.

Focus groups should be scheduled at a time when the public can easily attend and held at a public location, such as the transit agency, MPO or local government facility. Participants can be screened (for non-use of transit in the last month or the last six months for example) and invited by random telephone calls (or calls to a specific group, such as registered voters) or prominently displayed public notices. A small cash payment (on the order of \$10 to \$20), or refreshments/meals can be offered to encourage participation.

The focus group moderator should be familiar with transit issues in the community, but should not be a transit agency employee. The moderator's two most important assignments are to keep the discussion on track without becoming directly involved and to avoid a situation in which one or two people dominate the conversation. The moderator should never express an opinion, but instead should encourage participants to respond to any questions and issues raised. The open-ended nature of a focus group allows for the discussion of a variety of issues. While encouraging this, the moderator must be sure to bring the discussion back to transit if it digresses too far.

Random digit dialing telephone surveys provide another excellent method to obtain a cross-section of the community's perceptions and familiarity with existing public transit services. Additionally, a random telephone survey can measure the levels of support for public transportation services, including approval of additional public resources for transit services. Depending upon the population of the area to be surveyed, random telephone surveys generally require approximately 400 - 800 completed interviews to yield confidence levels of a 90% to 95%. A random digit dialing telephone survey may cost between \$12,000 to \$18,000 depending on the local area and the length of the survey.

The research objectives for a random telephone survey should:

- describe the demographic characteristics within the transit providers service area
- measure the resident's familiarity with local transit services
- determine the usage of the local transit services
- measure the perceived importance of public transportation services
- determine the community's perceptions of the role of the local transit service
- measure levels of support for improving public transportation

Public Transportation Service Performance and Trends

A transit system's performance and system-wide trends as well as a comparison to similar or "peer" systems can reveal strengths and weaknesses. This data can also assist in the identification of alternatives for future public transit development scenarios. The analysis of service performance, level-of-service, accessibility and trends and peer performance is so significant that a separate chapter is provided in this manual to detail methodologies and analysis techniques. Refer to Chapter 4 of this Guidance for a more detailed explanation of performance analysis techniques.

Use of Base Data in Other TDP Components

The background data compiled for TDP development is used in numerous aspects of TDP development. Examples include:

- Public Involvement Process – Provides base data to evaluate the strengths and weaknesses of the system as they relate to the overall public involvement program
- Situation Appraisal – Includes many of the data elements necessary for preparation of the situation appraisal including but not limited to: socioeconomic trends, traffic/roadway information and the results of public outreach activities
- Mission, Goals and Objectives – Provides base data to evaluate the strengths and weaknesses of the system to aid in the development of priority goals, objectives and strategies
- Development of Alternatives Service Plans – Identifies areas that may be underserved by transit or areas that may warrant new service, for consideration in service planning efforts.
- Forecasting Ridership – Identifies areas that may be underserved by transit or areas that may warrant new service for evaluation of service alternatives and potential ridership impacts
- Plan Development – Provides a foundation for identifying basic needs and opportunities and their potential impacts on capital and operating requirements
- Annual Update – Provides data necessary to measure socioeconomic trends, traffic/roadway information and impacts other local and regional plans may have and their potential impacts in program or service initiatives

Resources

The following are resources that can be used in the compilation of study area base data in the TDP process.

- GIS mapping software
- Florida Statistical Abstracts
- The Bureau of Economic and Business Research (BEBR), University of Florida, <http://www.bebr.ufl.edu/>
- Florida Department of Transportation (Public Transit Office), <http://www.dot.state.fl.us/transit/>
- Local planning agencies and comprehensive plans, long range transportation plans
- Local convention/visitors bureau
- On-board surveys and operator surveys
- Interviews with key local officials and community leaders
- Focus groups or other techniques to gather information on non-users of transit
- General travel surveys (as available)
- U.S. Census Bureau data, including:
 - Total Population
 - Population Density
 - Housing Density
 - Age Distribution
 - Household Income
 - Vehicles Available by Household
 - Employed Persons (16+) by Place of Residence;
 - Employment by Place of Work
 - Means of Travel to Work (Employed Persons 16+)
 - Times of Travel to Work (Employed Persons 16+)

Chapter 4 – Existing Services and Performance Evaluation

As outlined below, the performance evaluation of existing public transportation services is a key element of the TDP. The documentation and analysis of a wide variety of operating and financial measures identifies areas where the agency is performing well and provides a focus on areas that may require management’s attention. The base data collected for the performance evaluation can be used as a tool to provide an assessment of the agency’s condition during the public outreach activities. This can then guide the formulation of goals, objectives and strategies designed to enhance service performance. The performance evaluation reveals existing conditions and trends for the situation appraisal and also influences the development of service alternatives.

Transit Development Plan Elements Grid		
Chapter 4 Existing Service and Performance Evaluation Relationship		
Key TDP Elements	Essential	Supportive
1. Public Involvement Process	✓	
2. Situation Appraisal	✓	
3. Mission & Goals	✓	
4. Alternatives		✓
5. Ten Year Implementation Program		✓
6. Relationship to Other Plans		✓
7. Annual Updates	✓	

Existing Services

An overview of existing public transportation services in the study area provides a reference point for service conditions, characteristics and an evaluation of performance. This may include:

- a brief narrative of the system’s history within the study area,
- the current institutional arrangements describing who oversees and manages the transit services (i.e., city department, county department, independent transportation authority, management firm, etc.),
- a description of current services provided.

At a minimum, the summary of current transit services should include the following details:

- description of the service area,
- types of services provided (e.g., fixed route, paratransit/transportation disadvantaged, vanpool, fixed guideway, BRT, commuter rail, light rail, and regional connections, etc.) to include an explanation of each system's structure and functions,
- description of the fixed route system:
 - level of service provided (e.g., days of service, service spans, service frequencies, etc.),
 - route and system-wide data (e.g. ridership, miles, hours, passengers/mile, passengers/hour, revenue, etc.),
 - description of existing transit infrastructure (e.g., major transfer stations, bus shelters, benches, etc.),
 - description and map of service area with route overlay,
 - description of any performance standards and/or evaluation criteria,
- similar detailed information on the other transit services such as paratransit services, van pools and activity area circulators.

Tables 4-1 and 4-2 provide examples of possible descriptions of the fixed route system that could be included in this section. Table 4-3 displays an example of the service characteristic of other modes. Figures 4-1 and 4-2 show examples of some graphical displays (maps) that could be included in this section.

Table 4-1 Sample Service Frequency Data by Route

ROUTE NUMBER & NAME	Frequency		
	Weekday / Saturday	Night	Sunday
1A - A1A North	:60	:60	:60
1B - Granada	:60	:60	:60
3 - N. RIDGEWOOD	:60	:60	:60
4 - S. RIDGEWOOD	:60	:60	:60
5 - CENTER STREET	:60	---	---
6 - N. NOVA	:60	---	---
7 - S. NOVA	:60	---	---
8 - HALIFAX	:60	---	---
9 - INTN'L SPEEDWAY	:60	---	---
10 - MEDICAL CENTER	:30	:60	:60
11 - MASON AVE.	:60	---	---
12 - CLYDE MORRIS	:60	---	---
15 - ORANGE AVE.	:30	:60	:60
17A - SOUTH ATLANTIC	:60	:60	:60
17B - DUNLAWTON	:60	:60	:60
40 - PORT ORANGE	:60	---	---
41 - EDGEWATER	:60	---	---
42 - NEW SMYRNA BEACH SHUTTLE	:60	---	---
43 - NEW SMYRNA BEACH MAINLAND	1:20	---	---
44 - NEW SMYRNA BEACH MAINLAND	1:20	---	---
60 - EAST/WEST CONNECTOR	:60	---	---
20 - DELTONA/DELAND	:60	---	---
21 - ORANGE CITY	1:20	---	---
22 - DELTONA	1:20	---	---
24 - PIERSON/SEVILLE	1:20	---	---
200 - ORLANDO I-4 EXPRESS	3 - a.m @ :30. 3 - p.m. @ :45	---	---
700 - BEACH TROLLEY	:45 12 Noon to 7:00 pm Jan to Labor Day	---	---

Table 4-2 Sample Annual Performance Data by Route

ROUTES NUMBERS/NAMES	TOTAL PASSENGERS	TOTAL REVENUE	TOTAL MILES	TOTAL HOURS	PASSENGERS/TOTAL MILES	PASSENGERS/TOTAL HOURS	RANKING BASED ON PASS./HR.
EASTSIDE ROUTES							
1A - AIA NORTH/1B - GRANADA	396,206	\$252,945	245,119	16,939	1.62	23.39	4
3 - N. RIDGEWOOD	197,839	\$122,614	96,990	7,217	2.04	27.41	3
4 - S. RIDGEWOOD	186,075	\$109,525	100,458	6,660	1.85	27.94	2
5 - CENTER STREET	63,541	\$34,636	55,537	4,684	1.14	13.57	16
6 - N. NOVA	122,070	\$69,110	125,042	8,536	0.98	14.30	13
7 - S. NOVA	183,570	\$101,579	122,290	8,781	1.50	20.91	6
8 - HALIFAX	68,469	\$41,389	57,317	3,935	1.19	17.40	11
9 - INTN'L SPEEDWAY	72,139	\$36,924	55,639	4,011	1.30	17.99	10
10 - MEDICAL CENTER	238,789	\$131,622	158,199	11,986	1.51	19.92	8
11 - MASON AVE.	116,741	\$64,615	100,398	7,970	1.16	14.65	12
12 - CLYDE MORRIS	119,772	\$64,713	90,123	6,363	1.33	18.82	9
15 - ORANGE AVE.	145,073	\$74,980	52,207	4,855	2.78	29.88	1
17A - S. ATLANTIC/17B - DUNLAWTON	260,997	\$168,759	200,874	12,646	1.30	20.64	7
40 - PORT ORANGE	54,119	\$29,054	87,548	3,962	0.62	13.66	15
41 - EDGEWATER	31,725	\$20,503	70,259	3,698	0.45	8.58	17
42 - NEW SMYRNA BEACH SHUTTLE	22,166	\$13,307	52,964	3,900	0.42	5.68	18
43 - NEW SMYRNA BEACH MAINLAND	9,868	\$5,471	24,478	1,968	0.40	5.01	19
44 - NEW SMYRNA BEACH MAINLAND	7,358	\$4,174	26,146	1,973	0.28	3.73	20
60 - EAST/WEST CONNECTOR	90,492	45,873	85,845	3,883	1.05	23.30	5
700 - BEACH TROLLEY	43,110	\$32,235	48,861	3,072	0.88	14.03	14

Figure 4-1 Sample Service Area Map with Route Overlay

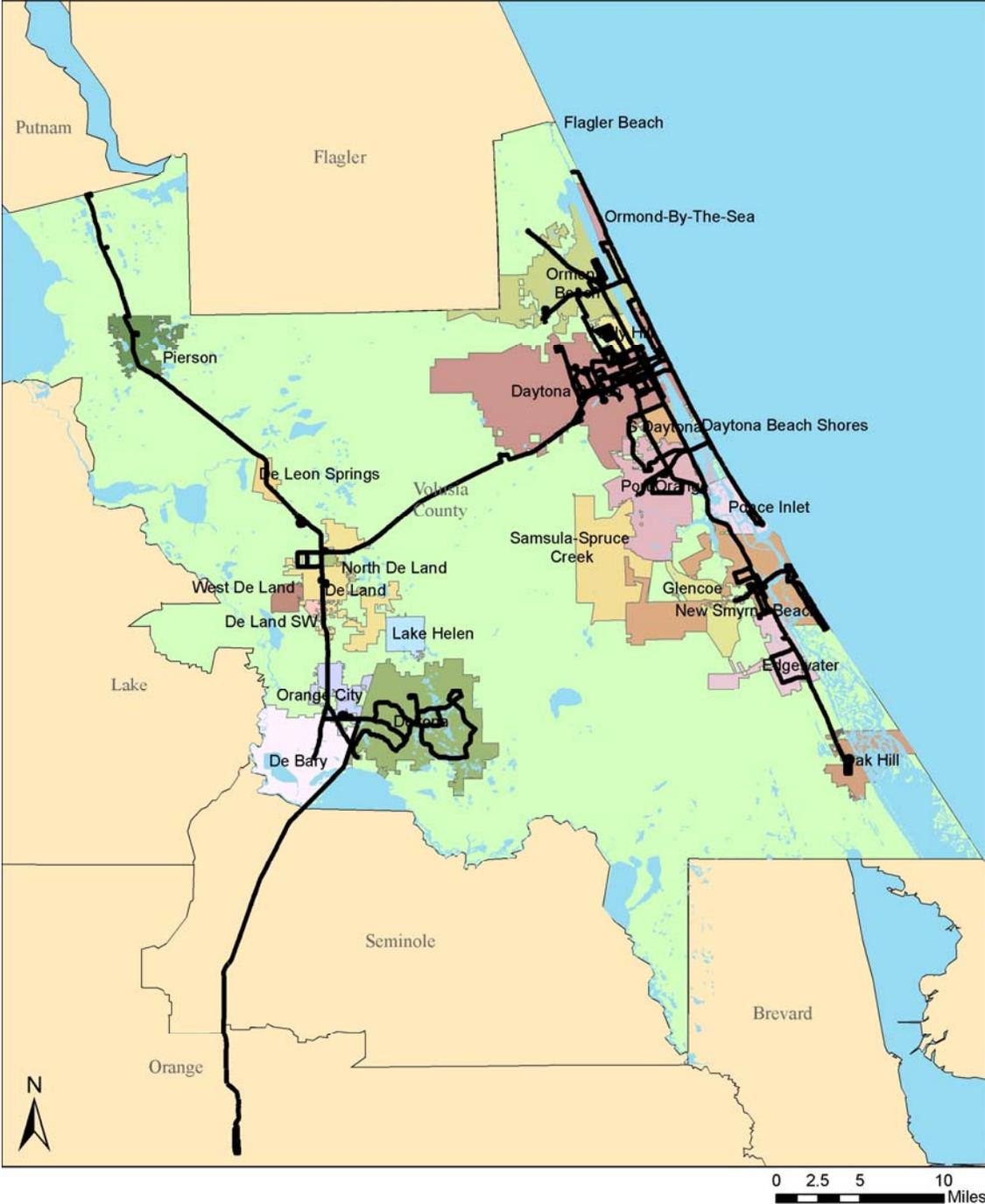
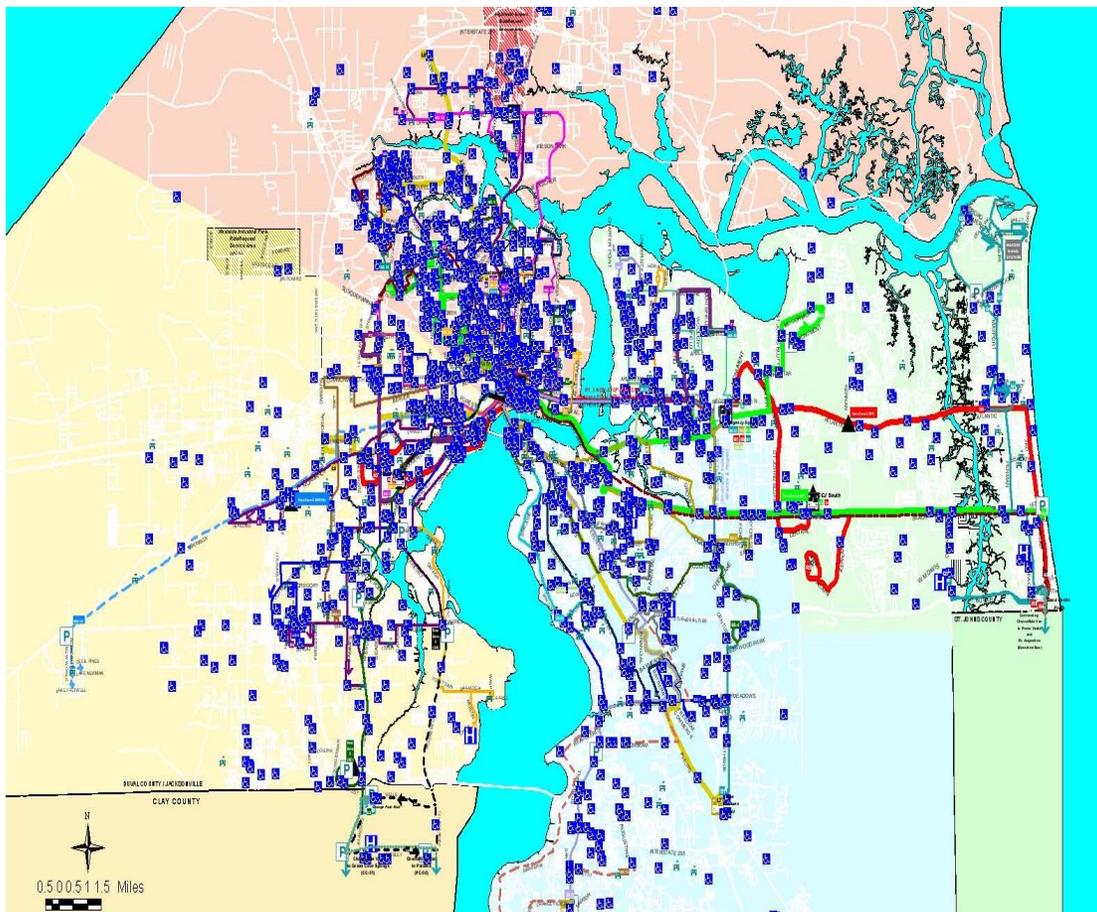


Table 4-3 Sample Service Hours by Mode

Type of Service	Monday - Friday	Saturday	Sunday and Holidays
Bus Lines	4:30 a.m. – 3:15 a.m.	5 a.m. – 2 a.m.	6 a.m. – 1:15 a.m.
The Trolley	6:30 a.m. – 7 p.m.	No Service	No Service
Skyway	6 a.m. – 11 p.m.	10 a.m. – 11 p.m.	Closed – except for special events
Ride Request – Highlands/JIA Airport Shuttle	5 a.m. – 7 p.m.	No Service	No Service
Ride Request – Marbon-Gran Park	6 a.m. – 7 p.m.	No Service	No Service
JTA Connexion Paratransit	5 a.m. – 10:30 p.m.	5 a.m. – 10:30 p.m.	6 a.m. – 8:30 a.m.

Figure 4-2 Sample Alighting Locations for Paratransit Service



Performance Evaluation Data

Each public transit agency will have collected system data covering all aspects of the system – operations, maintenance, and financial. This data is collected in various divisions of the transit system, but is usually centrally collected and compiled by either the transit planning department or the administrative/financial section. Data such as passenger trips, revenue miles and hours, number of vehicles operated in maximum service, fare revenue, operating expense data, and subsidy per trip are just a few measures that may be collected on a system and route level. Transit service planners and management typically use this data to evaluate the performance of their system and routes on a daily, monthly, quarterly, or annual basis. The purpose of the performance evaluation provided in the TDP is to analyze the overall system level performance on an annual basis.

National Transit Database

The National Transit Database (NTD) is a standardized federal program that requires public transit agencies in the United States to submit annual statistics about their system within 120 days following the close of each fiscal year. The data is subject to considerable review and validation by the Federal Transit Administration (FTA) before approval and release to the public (via the NTD website) in the form of tables and profiles.

The NTD was designed to collect and disseminate uniform public mass transportation financial and operating data for use by all constituencies of the transit agency. A positive aspect of NTD data is that it is collected using a standardized methodology allowing for comparative analysis of performance characteristics. It can also be used to support public investment decisions and to provide information for mass transportation service planning.

Each year, more than 600 transit operators report to the FTA on transit activities in more than 400 urbanized areas. Nationally, statistics include about 85,000 transit vehicles, 7,000 miles of rail track, 2,000 rail stations, and 1,000 maintenance facilities in these reports. NTD data is a rich source of data that an agency may utilize to evaluate their system performance for the purpose of reporting in its TDP. This is especially relevant in utilizing other agency data in the form of a transit peer analysis (which will be described later in this chapter). Because of the lengthy submittal and validation process, NTD data will be at least one year old before it is released for public use. For the purpose of examining performance trends, internal agency data may be required if an agency would like to include data from the most recent completed year.

Florida Transit Information System (FTIS)

The Florida Transit Information System or (FTIS) is a user-friendly software program designed specifically for obtaining and analyzing the vast amount of data provided through the NTD for transit planning applications. Developed for the Florida Department of Transportation (FDOT) by the Lehman Center for Transportation Research (LCTR) at Florida International University, FTIS was first introduced in 2001 and has been updated annually. The current version contains two major program components: INTDAS and FTGIS. INTDAS is a database system designed for the retrieval and analysis of NTD data from 1984 to the most current available year. FTGIS is a stand-alone GIS system customized for Florida transit systems.

The FTIS software is a robust and very customizable program with many features for transit performance analysis. To use the program, specific systems or states are selected using the scroll-down boxes. Specific modes and/or aggregate of modes are then chosen followed by the specific NTD measure or set of measures. Finally, the output method is selected in the form of the actual NTD forms; a table, a chart, or a report. There is also a peer selection tool that enables an agency to identify peer systems based on select data. The types of analysis that can be performed with this software are near limitless, but the guidelines included later in this chapter are provided for a standard performance evaluation of existing transit services for a Transit Development Plan.

Each year, the FTIS is updated with the latest available data and periodically adds new features. FTIS 2007 is the first version to be web-based (completely accessible from the internet with no need to download software). For more information, visit <http://www.ftis.org/intdas.html>.

Other Sources of Data

While the NTD is an obvious choice to find transit specific data, rural transit systems are not required to submit full NTD reports. If an NTD report is not available, then the Florida Commission for the Transportation Disadvantaged Annual Performance Reports (APR) can be used for evaluation. This data is somewhat limited in that it is county-based and not agency based, so only geographic regions can be compared as opposed to individual agencies. Also, there are some measures available in the NTD that are not available in the APR and vice versa. The APR is an adequate substitute for transit data if no NTD report exists.

Performance Evaluation of Agency's Existing Transit Services (Peer & Trend)

A performance evaluation of a transit agency's current service typically involves two main components: the comparison of performance of the subject transit system with other systems that have similar characteristics (*peer review analysis*) and an analysis of performance over a specified time frame (*trend analysis*). These two components of assessing transit performance are further described below.

Peer Review Analysis

A peer group analysis compares a transit system's performance with that of similar transit systems. Characteristics of the transit system can be compared with similar systems in Florida and/or other systems in the U.S. Similar systems are generally defined by the number of transit vehicles operated, service area population and density, and geographic location; but there are other NTD variables that may prove useful in selecting suitable peer systems. The U.S. Census is another excellent source of data that can be utilized when selecting peers. Some measures that may be used include but are not limited to: county population and population density, age, and income measures.

There is no standardized methodology for selecting peer systems, but this report provides some general guidelines to follow so that the selected peers will be comparable to the system being evaluated. First, an agency must decide what types of systems it would like to be compared with. For example, if an agency's main customer base is students in a University town, it would make sense to compare the agency's performance to other cities with large universities. Another example would be a "new start" system. The agency might want to limit its peer selection to only systems that have started service within the last x number of years.

Once a general peer selection philosophy is established, the specific peer selection characteristics from the NTD, Census, or another source, can be selected. For NTD data, it is easiest to copy the selected data to an Excel spreadsheet using the FTIS software, but other methods may be used. FTIS does have a peer selection tool embedded and an ongoing Transit Cooperative Research Program project is expected to provide additional guidance on transit peer analysis and peer agency selection in 2009.

If the number of initial agencies selected from NTD data is too large (approximately 30 or more), it may be appropriate to narrow down the number of agencies before proceeding to a ranking process. This can be done by sorting by a specific data set (for example, number of vehicles), and eliminating others.

Once the number of agencies has been selected, a ranking methodology should be applied for comparison purposes. One potential method is to calculate the percentage difference between each potential peer system and the system being evaluated for the individual measure. By taking the sum of all percentage differences for the measures, the potential peer systems can be ranked. The systems with the lowest percentage difference are the best peer candidates. Other more complex ranking methods such as standard deviations or other mathematical techniques may also be utilized if desired.

One variation of the peer review analysis involves the use of an alternate peer group. This group represents transit systems similar in size to the system being analyzed at some future point in time. Beyond current conditions, this approach enables the transit agency to make peer comparisons based on projected future growth. This provides an indication of the agency's future needs (i.e., potential level of service, operating revenue) based on projected peer group data. This variation is most useful in long-term studies, but it is also appropriate in areas with new transit systems and for those systems experiencing rapid growth. Generally, the peer selection process for future peers would be a similar to that used for a regular peer analysis.

Trend Analysis

The purpose of trend analysis is to understand how a transit system's performance has changed over time. Once again, NTD data are the most logical basis for comparison. Naturally, when conducting a trend analysis it is necessary to have collected data over several years, three at a minimum, but typically a five year time frame is recommended.

Indicators and Measures

In conducting peer and trend analyses, the indicators in Table 4-4 are typically used, which represent NTD data or ratios of various NTD data. The measures are divided into two types: operational measures and financial measures. Depending upon its unique circumstances, a transit system may wish to add or subtract measures from this suggested list for its own performance evaluation. It should also be noted that the evaluation of demand-response service or purchased transportation services will require an abbreviated version of this list due to the limited availability of some data for those modes.

Table 4-4 Sample Performance Measures for a Peer & Trend Analysis

Operational Measures	Financial Measures
<p>General Service Area Population Service Area Population Density Passenger Trips Passenger Miles Average Passenger Trip Length Vehicle Miles Revenue Miles Revenue Hours Route Miles</p> <p>Vehicle Vehicles Available in Maximum Service Vehicles Operated in Maximum Service Revenue Miles per Vehicles in Max. Service Average Age of Fleet (in yrs.)</p> <p>Labor Total Employee FTEs Revenue Hours per Employee FTE Passenger Trips per Employee FTE</p> <p>Service and Service Effectiveness Vehicle Miles Per Capita Passenger Trips per Capita Passenger Trips per Vehicles in Max. Service Passenger Trips per Revenue Mile Passenger Trips per Revenue Hour</p>	<p>Expense and Revenue Operating Expenses Maintenance Expenses Local Revenue Passenger Fare Revenue Local Contribution Other Non-Fare Revenue Average Fare</p> <p>Efficiency Operating Expense per Capita Operating Expense per Passenger Trip Operating Expense per Revenue Mile Operating Expense per Revenue Hour Maintenance Expense per Revenue Hour Maintenance Expense per Vehicle Farebox Recovery</p>

With performance measures selected and data collected, a series of tables and figures can be developed to depict the agency's trend for a specific measure statistically and graphically over time and an agency's compared value to its peers and the average value of its peers (mean). Table 4-5 and Table 4-6 show samples that could be included in a performance evaluation. Table 4-5 shows the five-year trend of the agency being evaluated. Both tables show operational measures only (a separate table would be included for financial measures).

Table 4-5 Sample Five-Year Trend Table – Operational Measures

Measure	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	% Change 2000-2004
Service Area Population	420,431	443,343	443,343	454,581	468,663	11.5%
Service Area Density	348	367	367	377	388	11.5%
Passenger Trips	4,046,072	3,817,964	2,963,067	2,836,863	2,908,054	-28.1%
Passenger Miles	15,611,101	16,442,216	16,974,203	16,114,121	16,170,006	3.6%
Average Passenger Trip Length	3.86	4.31	5.73	5.68	5.56	44.1%
Revenue Miles	2,531,865	2,479,548	2,462,762	2,534,359	2,601,922	2.8%
Revenue Hours	165,554	171,570	164,805	158,747	162,269	-2.0%
Route Miles	671.6	671.6	645.3	646.3	620.3	-7.6%
Vehicles Available	63	59	60	55	56	-11.1%
Vehicles Operated in Max. Service	51	48	44	48	48	-5.9%
Rev. Miles per Veh. in Max. Service	49,644	51,657	55,972	52,799	54,207	9.2%
Average Age of Fleet	4.68	5.63	5.80	4.76	5.00	6.8%
Total Employee FTEs	135.09	149.40	146.81	137.23	139.61	3.3%
Revenue Hours per Employee FTE	1,226	1,148	1,123	1,157	1,162	-5.2%
Passenger Trips per Employee FTE	29,951	25,555	20,183	20,672	20,830	-30.5%
Vehicle Miles per Capita	6.55	6.00	6.00	5.97	5.94	-9.2%
Passenger Trips per Capita	9.62	8.61	6.68	6.24	6.21	-35.5%
Passenger Trips per VOMS	79,335	79,541	67,342	59,101	60,584	-23.6%
Passenger Trips per Rev Mile	1.60	1.54	1.20	1.12	1.12	-30.1%
Passenger Trips per Rev Hour	24.44	22.25	17.98	17.87	17.92	-26.7%

Table 4-6 shows a sample peer comparison. In this example, the peer group was divided into two separate groups, Florida peers and Non-Florida peers. In some cases, using only one peer group is sufficient, but many systems will need to look outside of the state to identify an adequate number of peers for comparison.

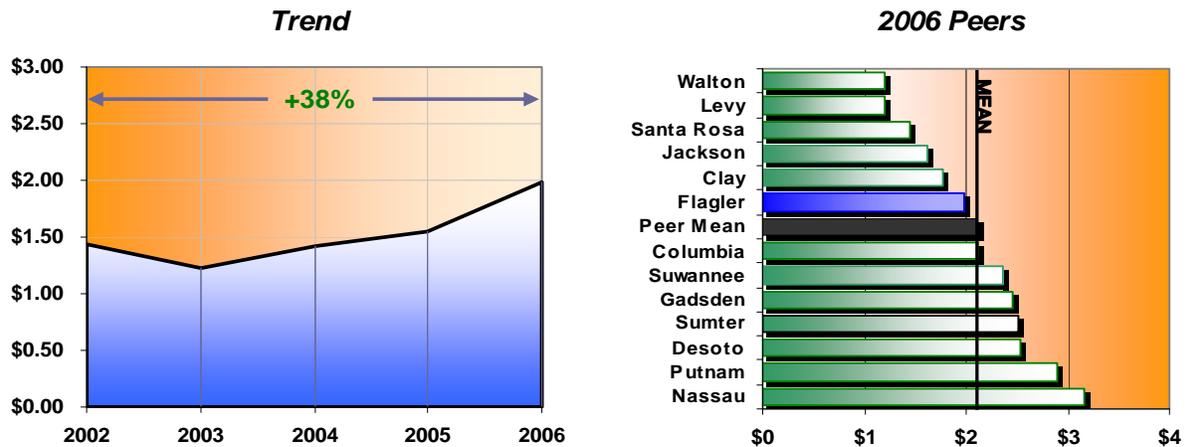
Table 4-6 Sample Peer Comparison Table – Operational Measures

Measure	VOTRAN	Florida Peer Group Mean	VOTRAN % From Mean	Non-Florida Peer Group Mean	VOTRAN % From Mean
Service Area Population	468,663	234,298	100%	322,667	45%
Service Area Density	388	1,590	-76%	1,266	-69%
Passenger Trips	2,908,054	3,486,129	-17%	2,671,149	9%
Passenger Miles	16,170,006	10,518,417	54%	10,577,378	53%
Average Passenger Trip Length	5.56	3.30	69%	4.44	25%
Revenue Miles	2,601,922	2,399,872	16%	2,253,815	15%
Revenue Hours	162,269	148,974	9%	147,791	10%
Route Miles	620.3	309.4	101%	287.0	116%
Vehicles Available	56	62	-10%	60	-6%
Vehicles Operated in Max. Service	48	47	3%	49	-2%
Revenue Miles per Vehicles in Max. Service	54,207	49,446	10%	46,543	16%
Average Age of Fleet (in years)	5.00	7.95	-37%	6.11	-18%
Total Employee FTEs	139.61	133.49	5%	147.32	-5%
Revenue Hours per Employee FTE	1,162	1,112	5%	1,068	9%
Passenger Trips per Employee FTE	20,830	27,034	-23%	19,498	7%
Vehicle Miles per Capita	5.94	10.81	-45%	8.21	-28%
Passenger Trips per Capita	6.21	19.10	-68%	8.41	-26%
Passenger Trips per VOMS	60,584	74,059	-18%	52,953	14%
Passenger Trips per Revenue Mile	1.12	1.74	-36%	1.16	-4%
Passenger Trips per Revenue Hour	17.92	24.72	-27%	17.88	0%

A sample figure for a performance measure, in this case operating expense per revenue mile, is shown below. The following method for displaying the peer and trend data side-by-side for each measure is the preferred style to enable visualization of one particular measure. For the peer

graphic, it is recommended that the peer mean of the measure be depicted and stand out from the rest of the data to make it easy to see which agencies exceed or fall below the peer mean.

**Figure 4-3 Sample Peer and Trend Graphic
(Operating Expense per Revenue Mile)**



Finally, for each table and figure provided in the performance evaluation, a brief description should be included to explain the data. Significant trends and anomalies in the data should be highlighted and potential justification for those results provided.

Limitations of Performance Evaluation

A system-wide performance evaluation based on available NTD data provides an overview of general measures, service efficiencies and cost effectiveness. It can be a useful and important tool for monitoring and improving transit system performance. However, it should be recognized that the results of peer and trend analyses are only a starting point for fully understanding the performance of a transit system. The issues identified can create a dialogue that will lead to an enhanced understanding of the “hows” and “whys” of system performance.

A data-based performance evaluation does not address the system from a customer’s point of view (i.e. customer satisfaction), or from the community’s point of view (i.e. economic and political concerns). For these issues, other tasks in the TDP process that can provide this information include customer and operator survey results, interviews with local officials, and other forms of public involvement.

Performance Evaluation to Set Goals and Objectives

As previously mentioned, another potential use of performance evaluation is to help establish the agency's goals and objectives (Chapter 6 in this TDP manual). A system can look at an area of deficiency based on the performance evaluation and define a specific goal and related objective to improve that measure. For example, an agency's average age of fleet might be 10 years and 50 percent older than its peers. In this instance, an objective related to a reduction in the average age of fleet might be warranted.

In addition, standards can be devised to ensure that the system meets certain performance objectives. For example, an agency may have a system wide farebox recovery ratio standard of 30 percent. If its performance evaluation shows that the farebox recovery ratio is only 25 percent, the agency must either revisit its standard or take steps to ensure that its farebox recovery is increased in the upcoming year.

Cross Reference to Other TDP Manual Chapters

The documentation and performance analysis of existing services provides a base foundation for an understanding of services currently provided and their performance in various operating and financial categories. The analysis also provides an opportunity to see how the system compares to others with similar characteristics. The performance analysis relates to the other chapters of this manual as follows:

- Public Involvement Process – Provides base data to demonstrate the strengths and weaknesses of the system to the customers, the general public and outside organizations
- Situation Appraisal – Provides a snapshot of current operating and financial characteristics and trends for further evaluation and identification of potential improvements
- Goals and Objectives – Provides a basis for developing goals and objectives to help the agency fulfill its mission and achieve its vision
- Development of Alternative Service Plans – Provides a basis for understanding the potential impacts that new or modified services and programs will have on system-wide operating and financial performance
- Forecasting Ridership – Provides a basis for determining the potential ridership impacts of service changes
- Plan Development – Provides a basis for identifying the agency's capital and operating needs

- Annual Update - Provides data necessary to measure performance, evaluate progress, and make decisions related to potential program or service modifications inclusion in the annual TDP update.

Resources

- National Transit Database (NTD) information - <http://www.ntdprogram.gov/ntdprogram/>
- FTIS Software 2006 and 2007 - <http://www.ftis.org/intdas.html>
- Annual Performance Report Data from the Florida Commission for the Transportation Disadvantaged – 2003 through 2007 - <http://www.dot.state.fl.us/ctd/programinfo/apraorcountypages.htm#2005%20Data>

Chapter 5 – Situation Appraisal

As noted in Chapter 3, changing demographic and economic conditions within the community can affect the existing transit market, as well as offer new opportunities to serve potential customers. Through the collection and analysis of Census and other demographic data, the transit agency can monitor the changing conditions in the area. However, it is also important for the transit agency to keep apprised of and react to changes in local business or economic activity, local governmental actions that can enhance, as well as hinder, the goal of operating an effective and efficient transit system and changing technologies.

This chapter addresses one of the key TDP elements specified in the TDP rule and as illustrated below is essential in addressing other TDP elements.

Transit Development Plan Elements Grid Chapter 5 Situation Appraisal		
Key TDP Elements	Essential	Supportive
1. Public Involvement Process	✓	
2. Situation Appraisal	✓	
3. Mission & Goals	✓	
4. Alternatives		✓
5. Ten Year Implementation Program		✓
6. Relationship to Other Plans	✓	
7. Annual Updates	✓	

The situation appraisal can be viewed as an assessment process that continues the theme of strategic planning by analyzing the strengths and weaknesses of a transit organization as well as external barriers and opportunities that impact the delivery of transit services. The TDP rule requires that at a minimum the following factors be analyzed:

- The effects of land use, state and local transportation plans, other governmental actions and policies, socioeconomic trends, organizational issues, and technology on the transit system.
- An estimation of the community’s demand for transit service using the planning tools provided by the Florida Department of Transportation, or a Department approved transit demand estimation technique with supporting demographic, land use, transportation, and

transit data. The result of the transit demand estimation process shall be a ten-year projection of transit ridership as described in Chapter 8.

- An assessment of the extent to which the land use and urban design patterns in the provider's service area support or hinder the efficient provision of transit service, including any efforts being undertaken by the provider or local land use authorities to foster a more transit-friendly operating environment.

Transit systems do not have the ability to directly “plan” the community in which they operate. However, transit agencies do have the ability to influence the way in which the community grows and changes throughout the years. Transit agencies must understand the planning and land use processes that occur in the community and must find ways to be involved as a stakeholder in these processes. This involves being an active partner with local governments as well as the private sector community during the planning, designing and construction of land use developments.

Review of Local Plans

All county and municipal governments within the State of Florida are required by law to have a comprehensive plan that outlines the future growth pattern of the community. Within the comprehensive plan, several “elements” or chapters that guide future growth and development must be included. Required elements that are of greatest importance to a transit agency include the future land use element, the capital improvements element, and the transportation element, as these issues are what can most closely affect the operation of a transit system. To this end, transit agencies must be aware of what is contained in and what may be considered in the future updates of these comprehensive plans.

During the creation of and updates to required local plans, development reviews, community visioning exercises, and other initiatives that influence growth management and land development policies, there are formal opportunities for public input. It is important for transit representatives to participate and offer technical expertise and information about the transit agency's plans to inform and influence these plans and processes. The transit agency should strive to see that there is a common understanding of how the respective agencies' plans interrelate, coordinating and complementing wherever possible and hopefully not contradicting or competing. In turn, the transit agency must consider the broader needs and desires of the community as it formulates its goals, objectives and service plans and assesses its level and quality of involvement in the planning process for incorporation in the TDP. Types of plans that need to be reviewed include:

- Comprehensive plans of counties and municipalities within the transit agency's service area
- Metropolitan Planning Organization's Long Range Transportation Plan
- State of Florida Transportation Plan
- Regional Planning Council plans and reports
- Other documents such as Campus Master Plans (for universities within service area), Downtown Master Plans, Developments of Regional Impacts, Corridor Development Plans, Economic Development Plans, etc.

Following is a brief description of each of these types of plans.

Local Comprehensive Plans

During the Transit Development Plan process, the transit agency should review the comprehensive plans of the county government(s) it serves, as well as any municipalities that are contained within the county of operation. In reviewing the comprehensive plans, transit agencies should look for and identify those goals, objectives and policies that can enhance, as well as deter, the transit agency from operating in the most effective and efficient manner possible.

In reviewing land use elements, transit agencies should be looking for goals, objectives and policies where the local government entity encourages higher densities and/or mixed uses that can assist the transit agency in operating more efficiently. Increased residential and commercial densities can limit urban sprawl and make mass transit more viable and efficient. Low density development patterns lead to a dependence on the automobile and can increase urban sprawl. Urban sprawl is one of the biggest challenges transit agencies face when trying to provide efficient service. The more spread out the community is, the more miles transit routes must cover. Longer routes mean greater cost and less efficient service. In addition, it is more difficult for transit to compete with automobile travel in a sprawled environment as it becomes difficult and costly to provide the level of service needed to be competitive.

Within the transportation element of a comprehensive plan, the transit agency should look for goals, objectives and policies that assist the transit agency in operating more effectively and efficiently. The issue of multi-modalism – connectivity between varying modes of transportation to provide the seamless movement of people, goods and services within a community – is a policy that many local governments can try to promote to aid in the delivery of transit service. Examples include bike lanes/sidewalks connecting with transit stop locations, connectivity

between and among subdivisions and developments, carpooling/vanpooling opportunities, and feeder-type shuttles serving areas adjacent to transit facilities.

Another development technique that can enhance transit operations is a community's support of transit oriented development (TOD). TODs can include mixed-use residential or commercial areas designed to maximize access to public transit. TODs often incorporate features to encourage transit ridership including more compact communities designed to encourage bicycling and walking for short trips. TODs also include transit facilities (stations/stops) and amenities that increase the accessibility and convenience of transit service.

Although land development codes have historically encouraged automobile use by instituting setback requirements and single use districts, it is possible to use policy elements such as land development codes and comprehensive plans in order to encourage TOD instead. Some examples that have been instituted in Florida include:

- Replacing single use districts with activity center districts that promote mixed-use development.
- Enforcing a minimum density requirement for specific zones.
- Including a maximum parking space requirement in addition to any minimum requirement associated with concurrency.
- Instituting bicycle and pedestrian amenity requirements in front of all commercial, retail, and residential developments.
- Requiring maximum setback standards, varied depending on a specific zone's location.
- Providing transit services that are competitive with the automobile through shorter headways and travel times.
- Creating a manual for mobility design for use by architects, planners, landscape architects, engineers, local officials, and developers to provide a detailed guide for integrating TOD into new growth and redevelopment. (Source: FDOT District One and Seven – Transit Facility Handbook 2007)

Table 5-1 provides examples of elements the transit agency should consider as it evaluates the extent to which the goals, objectives and policies included in local plans are supportive of transit. Transit supportive land use traits include greater density of development, features to support ease of access to and from transit, and features that give priority to modes that are alternatives to auto travel.

Table 5-1 Evaluation of Local Plan Impacts on Public Transportation Sample Criteria

1. Is public transportation discussed/supported in plan?
2. Is transit oriented development (TOD) discussed/supported in plan?
3. Does the plan advocate appropriate multi-modal connectivity to activity centers, including sidewalks, roadways, bicycle facilities?
4. Are transit design/customer amenity guidelines available to assist planners and decision makers in incorporating transit into the planning process?
5. Is the concept of bus rapid transit discussed/supported in the plan?
6. Does the plan support the development of multi-use paths (off-road) and bicycle lanes (on-road) - availability, location, standard of facility design, LOS, connectivity?
7. Are there planned, programmed or committed improvements to existing or new multimodal facilities including documentation of designated corridor space for transit or multi-modal option?
8. Are there sufficient population and activity densities to support transit ridership?
9. Does the plan define levels of service for transit or multi-modal alternatives?
10. Does the plan advocate a variety of land uses, including both employment and residential?
11. Do the land use categories promote pedestrian, bicycle, and transit use?
12. Does the plan identify sufficient intensity along major transit corridors?
13. Are there sufficient intensities in and around core areas?
14. Does the plan support appropriate numbers of connections within the street network?
15. What is the degree to which public and private transit service is proposed or available including the location of bus routes, frequency of service, hours of operation, bus stops and amenities (concrete pad, bench, bus shelter and connectivity to the sidewalk network)?
16. Are there proposed transit facility improvements (e.g. transfer stops, super-stops, stations, park n rides, etc.) that address transit access within and between activity centers?
17. Does the plan address specific transit-related facilities needed to provide access to existing or planned transit service?
18. Is parking management discussed in the plan?
19. Are transportation demand management concepts explored/supported in the plan?

Table 5-2 provides examples of transit “friendly” goals and objectives within local growth management plans throughout the State.

Table 5-2 Local Growth Management/Comprehensive Plans Sample Plan Goals and Objectives

1. Continue to coordinate the provision of bus shelters, benches and stops with proper lighting and signage at those locations which generate 25 passengers or more per day.
2. Include provisions within the development review process that required new and expanding development to consider implementation of Transportation System Management (TSM) strategies in addition to any necessary internal and offsite improvements.
3. Increase annual ridership from 36 million unlinked trips in to 40 million unlinked trips by 2011.
4. Incorporate design principles that encourage safe pedestrian access using LYNX's Central Florida Design Manual and LYNX Customer Amenities Manual.
5. Orient pedestrian access to transit centers and existing and planned transit routes.
6. Incorporate traffic mitigation strategies include construction of bus turn-out facilities, payments to RTS which increase frequencies and extend service and provisions for bus pass programs for employees and residents.
7. The MPO shall investigate the use of transit services to promote more efficient urban development through increased services in the coastal communities.
8. The County shall increase the transit presence to achieve at least 1 percent modal split through modifications of the existing route system or increased services in areas with high propensity for transit use.
9. The City shall explore providing altered routes to address home to work commutes between neighborhoods and employment centers.
10. The City adopts a peak hour transit level of service standard C in terms of functional area coverage. (70 percent of higher density areas are served)
11. Within two years of the adoption of the Downtown Master Plan, the City will initiate an evaluation of the inclusion of the Downtown Master Plan pedestrian and transit system standards for the incorporation of mass transit, carpool, pedestrian, and bicycle amenities in major commercial, industrial and office buildings outside of the Downtown.

Metropolitan Planning Organization Long-Range Transportation Plan

Each transit agency within the State of Florida operates in a community where one, if not more than one, Metropolitan Planning Organization (MPO) has jurisdiction. Federal laws establish the role of the MPO, which is charged with the responsibility of planning, programming and coordinating federal highway and federal transit investment dollars within its jurisdictional boundaries. As such, each MPO is required to produce a Long Range Transportation Plan

which covers the area in which it is designated to serve. Similar to the comprehensive plans of the local governments, the Long Range Transportation Plan contains goals, objectives and policies that exist to support transit operations. It is necessary for the transit agency to review these plans and consider how the policies put forth by the local MPO can influence the operating conditions of the transit agency.

The TDP situation appraisal should also evaluate the extent to which the MPO and the transit agency maintain open lines of communication and cooperation. This might include transit agency coordination with the MPOs Technical Advisory Committees, Citizen Advisory Committees and Pedestrian/Bicycle Committees to ensure transit alternatives and needs are considered as these committees provide valuable input to the local planning process.

Table 5-3 provides examples of transit supportive goals and objectives within MPO long range transportation plans throughout the State.

Table 5-3 Evaluation of MPO Long Range Transportation Plans Example Goals and Objectives Supportive of Public Transportation

1. Plan a network of integrated transportation systems to safely and efficiently move people and goods by auto, truck, aviation, rail, bus, bicycle and pedestrian modes.
2. Provide a balanced transportation system with viable modal options that increase vehicle occupancy, minimize per capita vehicle miles traveled by auto and promote travel by non-auto modes.
3. Promote the efficiency of land uses to maximize the effectiveness of the transportation system.
4. Establish regional transportation priorities and support regional transportation efforts, projects and plans.
5. Identify and promote multi-modal improvements on congested corridors.
6. Provide appropriate highway, public transit, bicycle and pedestrian links to airports, seaports, rail facilities, major transit terminals/stops, theme parks and other major tourist destinations.
7. Promote transit services that are competitive with automobile travel.
8. Provide efficient, frequent, convenient, competitive transit service.
9. Provide a transportation system that is coordinated and consistent with agency plans of the County, its communities and neighbors.
10. Ensure transportation system plan costs are affordable within anticipated funding levels.

Florida Transportation Plan

Similar to the local government agencies and the metropolitan planning organizations, the State of Florida produces its own Long Range Transportation Plan that identifies the goals and objectives for the next 20 years to address the needs of the entire state transportation system (<http://www.dot.state.fl.us/planning/2025ftp/2025FTP.pdf>). The Florida Transportation Plan (FTP) provides a vision for Florida's transportation system and lays out a policy framework. As such, this is another plan that transit agencies should review during the Transit Development Plan process.

In identifying the challenges facing the State of Florida as it attempts to address its future transportation needs, the FTP discusses capacity constraints facing the State and suggests that expanding existing rail and urban transit systems may offer viable options for the movement of people and freight within the State of Florida. The FTP also goes on to discuss existing weaknesses in the area of intermodal connectivity, which can be remedied with expanded transit options to link-up such places as airports, seaports, rail corridors, urban centers and other transportation hubs.

In developing goals, objectives and strategies, the FTP noted that future success of the transportation system in Florida depends upon how well the State can coordinate transportation investments to ensure an integrated system, enhance mobility options, and provide a system that supports community livability and is environmentally responsible. The FTP also discusses the need to embrace new and future technologies that can provide innovative approaches in the delivery of a multi-modal transportation system. As such, it is important for transit agencies to utilize the goals, objectives and strategies put forth in the Florida Transportation Plan.

Other Plans and Documents

Some transit agencies operate in environments where there may be additional plans and documents to review. Examples of such environments include transit agencies that encompass service areas of a more regional nature. These agencies may need to consider the plans of adjacent governmental entities. Regional Planning Councils may have also prepared plans related to economic strategies, visioning and environmental plans that could have an impact on the provision of transit services. These should be reviewed and considered during the preparation of the TDP. Additionally, transit agencies that serve large universities such as Florida State University, University of Florida, University of Central Florida and University of South Florida to name a few, may wish to review Campus Master Plans. Local plans may also exist for special districts, downtowns, activity centers, major travel corridors and Developments

of Regional Impact (DRI). A review of economic development plans and proposals may provide insight to needs and opportunities for transit to complement these initiatives. A review and analysis of these plans will provide important input for the situation appraisal of the TDP.

After reviewing the plans and identifying applicable goals, objectives and policies, the transit agency should consider how these policies relate to the overall goals, objectives and policies of their transit agency. As such, those policies found to be supportive of the transit system should be identified and noted within the Transit Development Plan. The plan should strive to leverage or complement supportive goals. The identification of contradictory or competing goals and initiatives should trigger an opportunity to engage in educating and participating as a stakeholder when the agency's plan is updated or amended.

Successful Public Transit Requires Intergovernmental Coordination

Many types of transit improvements involve the coordination of many layers of government, often at the federal, state and local levels. The need for congruency of land use, road networks, and transit planning to support a successful public transit system often makes it necessary for multiple government agencies to collaborate in developing and operating in a given area. The planning agency must design land use to induce pedestrian activity and transit ridership. The transportation engineering department must design the road networks to accommodate transit and non-motorized mobility, and the transit agency must plan its system with development plans, road construction, and safety in mind. Each interdepartmental arrangement is different, and therefore it is not possible to discuss every possible issue that may arise between agencies. However, it is important to remember that, for public transit to be successful, all involved agencies whether on a city, county, or state level, must work together. In addition, the more extensive a region's transit system is the more impactful transit alternatives such as bus rapid transit (BRT) and transit oriented design (TOD) become. This outcome is logical because a larger transit system offers a greater choice of destination points, causing greater transit demand. Therefore, it may be necessary for multiple agencies and counties to join in the creation of a regional transit system that serves BRTs and TODs. This will allow systems to flourish in multiple areas within the region and connections made that will increase the mobility options of those who live, work, and shop in the area.

Table 5-4 provides examples of how intergovernmental coordination would be necessary for certain types of transit projects (including BRT and TOD).

Table 5-4 Coordination of Transit Projects

Project Type	Agency				
	Federal	State	County	Municipal	Private
Bus Rapid Transit	FHWA for Interstate right-of-way and NEPA; FTA for NEPA, rating process, & funding.	FDOT for NEPA process, Alternatives Analysis, rating process, & funding, and when using FDOT right-of-way.	When on county roads or crossing them, and when county manages traffic control system. Also with local funding issues.	When using city streets or crossing them, and when the city manages traffic control system. Also with local funding issues.	When using private right-of-way, for access issues, station development, and funding support
Transit-Oriented Development	FTA for funding	When modifying/using FDOT roadway or right-of-way, development review process, and potential funding.	When modifying/using county roadway or right-of-way, development review process, and potential funding	When modifying/using city roadway or right-of-way, development review process, and potential funding	In development process and for sponsorship
Park-and-Ride	FHWA for funding, FTA for funding	FDOT for funding, planning, and approval of right-of-way use.	For planning, maintenance, and approval to use right-of-way	For planning, maintenance, and approval to use right-of-way	When using private right-of-way or in joint or private developments
Curbside Improvements	FHWA for right-of-way if on Interstate; FTA for funding	For major impacts, contact FDOT	On state and county roads	On state and local roads	In developments and for joint-use and encroachment

Source: FDOT Districts One and Seven Transit Facility Handbook 2007

Organizational and Governmental Actions and Policies

The transit agency can only influence and participate in the community’s planning process after identifying how local land development decisions are made. Following the review, analysis and documentation of land use plans and policies within the transit service area that support or hinder the efficient provision of transit service, the transit agency should evaluate its level of involvement in the community’s planning process.

Some agencies will find that they are not a part of the process where local jurisdictions are making land use decisions that may directly affect the ability of the transit system to provide effective service. Within most local government jurisdictions (county-level and municipal-level), there is a deliberate and well established land development process. This includes project review by local planning departments and decisions made by local planning commissions and boards. At some point transit needs should be considered in the development process. All jurisdictions have a development review process that a transit agency should be able to participate in. The transit agency should contact the local government entity to ask to be included in the review of land development requests. For example, if construction of a large strip mall is being planned, the transit agency should be apprised of the development request prior to its breaking ground, so it can plan to provide service in the most efficient manner.

Likewise, when road improvements are being considered by local, county or state authorities, the transit agency should have some representation on a review committee to ensure the interests of the transit agency are protected. This way, when a road is planned for widening and/or major construction, the transit agency is aware of the timing and schedule and can plan any service changes and anticipate interruptions as necessary and suggest the inclusion of transit features such as pull outs or bulb outs that can be accommodated at relatively low cost as part of larger projects.

As part of the Transit Development Plan process, each agency should identify someone or some department within the transit agency that could become part of the land development process. Having a link to the development process will enable the transit agency to better influence and plan for future growth and service needs. While some agencies serve many local municipalities and often multiple counties, a more advanced organizational structure may be necessary so that transit concerns are heard at the different jurisdictional levels.

Technology and the Transit System

In the past decade, Intelligent Transportation Systems (ITS) have become integral tools in assisting transit agencies provide more effective and efficient transit service. While there are many technology tools that fall under the ITS umbrella, it is important for a transit agency to keep apprised of and evaluate the need for various types of technologies. During the preparation of the situation appraisal for the Transit Development Plan, it is vital for the agency to consider the added value these components may provide to the agency's overall operating structure.

Each transit agency should consider how implementing these new technologies could support the provision of more efficient service, assist in providing riders' better customer service, and generate invaluable data for future planning activities within the transit agency. Ideally, the consideration of overall costs for start-up, operation and maintenance of any technology enhancements should also be considered. The technologies described below are not the only advances available to transit agencies, but they are examples of technology advances that can assist the transit agency in providing effective, efficient service to its customers.

Electronic Fare Payment Systems (EFP)

Electronic Fare Payment (EFP) systems, also known as Automatic Fare Collection (AFC) systems use electronic communication, data processing, and data storage techniques to automate manual fare collection processes. The purpose of this technology is to make fare

payment more convenient for travelers and revenue collection less costly for transit providers. Electronic fare media in the form of magnetic stripe cards or smart cards are capable of storing information in a read and/or write format.

EFP systems benefit both transit agencies and customers. For transit agencies, EFP systems reduce labor-intensive cash handling costs and risk of theft, improve reliability and maintainability of fare boxes, provide information to support service planning, and permit sophisticated fare pricing, based on distance traveled and time of day. In addition, EFP systems permit the automation of accounting and financial settlement processes and create multimodal and multi-provider transportation networks that are seamless to the rider, but operationally and organizationally sound for the multiple providers. For customers, transit becomes easier to use because exact change is not necessary and only a single fare card is needed to use the system.

Automatic Vehicle Location (AVL)

AVL systems are computer-based vehicle tracking systems that function by measuring the real-time position of each vehicle and relaying this information back to a central location. They are used most frequently to identify the location coordinates of vehicles for a variety of purposes. Potential benefits to a transit agency are: improved dispatch and operational efficiency; improved overall reliability of service; quicker responses to disruptions in service, such as vehicle failure or unexpected congestion; quicker responses to threats of criminal activity; and improved data for future planning purposes.

Automatic Passenger Counters (APCs)

APCs are devices that count the number of passengers automatically as they board and alight vehicles at each stop along a route. The benefits of APCs come both in a reduced cost to collect ridership information and in an increase in the amount and quality of data collected. Because APCs also provide time information for passenger boardings and alightings, they are also very useful in tracking on-time performance of transit vehicles.

Transit Scheduling/Operations Software

Scheduling/Operations software applications allow an agency to provide more reliable, dependable, and efficient fixed route or demand response service. These software systems are used for transit service route planning, monitoring and control of transit operations, and for providing more accurate information of transit demand and ridership trends. When linked with AVLs, operational software systems can provide real-time dispatching, faster response to

service disruptions, and improved coordination of service of various transit modes. When linked with AVLs and other onboard communication technologies, operational software systems are being used to reduce the amount of voice communications as well as prioritize voice and digital messages from vehicles to the control center.

Electronic Traveler Information

Electronic Traveler Information combines electronic and communications technologies to provide vehicle information to travelers at home, at work, on the roadside, or at bus and rail transit stations. Travelers can access static information on transit services by using automated phone technologies or by traditional printed route maps and schedules. This type of information can also be displayed on kiosks, video displays, and on the internet. Travelers can access real-time information on vehicle arrival times, delays, service disruptions and re-routings through telephone (511), variable message signs, and kiosks. Travelers can also utilize internet based trip planners where they can go on-line and enter origin and destination information to determine the best route or mode of travel. Electronic traveler information enables travelers to choose the most efficient and convenient modes of travel. Better information will in turn benefit the transit system as it will likely increase visibility and usage of the system.

Geographic Information Systems (GIS)

Implementation of a GIS provides an extremely powerful tool to assist transit operators in developing the necessary data to make operations and investment decisions. GIS can provide a current, spatial, and interactive visual representation of transit operations. It is a type of computerized database management system in which geographic databases are layered on one another based on a common set of location coordinates.

Integration of both GIS and spatial data efforts, within a transit agency or region, can provide some of the biggest cost-saving benefits in ITS. With so many ITS transit applications using a street network base map and transit features such as stops and routes, having only one database in which to maintain a particular data set is a big benefit in terms of lower costs, more efficient use of staff time, and better data consistency. Benefits can also include more efficient service delivery, better quality services, more accurate customer information, and improved integration between modes and service providers.

Transit Safety and Security

The use of alarms and surveillance cameras can help protect riders from criminal activity on transit vehicles and at transit stations/stops.

Transit Signal Priority

Transit signal priority is a strategy by which a particular set of vehicles is given preference at traffic signals, either anytime they arrive at the intersection or only under certain conditions (e.g., on-time status, amount of traffic on other intersecting roads). The goal of this technology is to maximize the number of people per hour that traverse the intersection. As transit vehicles can hold more passengers than automobiles, giving priority to transit vehicles can assist in realizing the goal.

Driver Training Simulators

Vehicle-training simulators can help in screening applicants, training operators and most importantly, serving as a valuable tool in accident reduction.

Nearly every transit agency can enhance its operating efficiencies and customer services through the addition of some type of ITS technology. While the needs will vary among agencies (ranging from basic scheduling software packages for example, to more complex Electronic Payment or Automatic Vehicle Location Systems) it is important to recognize that due to their costs, a wide range of ITS technologies are rarely implemented concurrently; they are typically staged to build upon each other. The Situation Appraisal should include an analysis of the findings of the public involvement process, the performance analysis and the agencies goals and objectives to determine what technology applications may be required in both the short term and long term. This analysis may further influence the process of developing new goals and objectives and the formulation of service alternatives and the ten year capital and operating plans.

Review of Situation Appraisal Components

After compiling, reviewing and analyzing the information discussed in this chapter, the situation appraisal can be developed and organized accordingly to meet the three major factors that are required under the TDP rule:

1. Analyze and identify the effects of land use, state and local transportation plans, other governmental actions and policies, socioeconomic trends, organizational issues and technology on the transit system.

2. Assess land use and urban design patterns in the transit system's service area that support or hinder the efficient provision of transit service, and,
3. Discuss how the aforementioned issues impact the current provision of transit service and how the future of the transit system may be affected by the organizational issues that exist. Identify any gaps found in support for transit in the community related to land use planning, jurisdictional issues and boards/committees that comprise the service area.

The discussion above covered the types of activities that would constitute the information collection phase of the situation analysis and address item 1. The subsequent activities are the interpretive steps, first identifying the consequences of the situation and then exploring possible strategies for changing or mitigating the situation to the benefit of the transit system. This set of activities provides an opportunity for the planners to synthesize the situation appraisal in a manner that communicates the salient points to the policy makers. This establishes a context that helps the plan reader fully understand the relationship between context and the implications in terms of the challenges and opportunities that are presented to the transit provider.

Moving beyond the implications of the current context revealed in the situation appraisal, the next step is for the plan to explore how possible changes in policy, governance, and resource allocations might be altered such that it would improve the opportunities for the transit system to more fully attain its goals. This would potentially identify policy changes that might support the development of a more transit friendly and supportive land use and urban design environment, help align investment priorities such that other mode investments were complementary and not competitive, and address resource needs required to accomplish the vision laid out in the TDP.

These two steps serve to synthesize an extensive data and information gathering process into an interpretative narrative and menu of possible action steps.

Cross Reference to other TDP Guidance Chapters

Similar to the ITS technology component described above, the other key elements of the situation appraisal have a relationship to the TDP guidance chapters as follows:

- **Public Involvement Process** – Utilizes the findings of, and provides input for, the Public Involvement Process
- **Situation Appraisal** – Provides an important foundation for making decisions related to all other TDP elements

- **Mission, Goals and Objectives** – Assists the agency in developing its mission, goals and objectives while ensuring they are consistent with and supportive of other local plans and policies
- **Development of Alternative Service Plans** – Relates various service delivery options, programs, and initiatives to the current and future operating environment.
- **Forecasting Ridership** – Identifies program and service initiatives that influence customer needs and choices
- **Plan Development** – Impacts decisions related to capital and operating needs
- **Annual Update** – Provides a tool for evaluating and potentially modifying programs and services based on current conditions

Chapter 6 – Vision, Mission, Goals and Objectives

As mentioned in Chapter 1, Section 341.052, F.S. states “A TDP shall be the provider’s planning, development, and operational guidance document, based on a ten year planning horizon and covers the year for which funding is sought and the nine subsequent years.” This sets the overall theme of the TDP and requires a strategic assessment of all aspects of public transportation services and how these services are developed and implemented. The fundamental foundation of the TDP will be the provider’s purpose, and its vision for the mobility services delivered to its local service area, and in turn its associated mission and goals.

This chapter directly relates to the public involvement process, situational appraisal, alternative actions and annual update elements of the FDOT TDP role as outlined below.

Transit Development Plan Elements Grid Chapter 6 Goals and Objectives		
Key TDP Elements	Essential	Supportive
1. Public Involvement Process	✓	
2. Situation Appraisal	✓	
3. Mission & Goals	✓	
4. Alternatives	✓	
5. Ten Year Implementation Program		✓
6. Relationship to Other Plans		✓
7. Annual Updates	✓	

Consistent with its strategic nature, the Transit Development Plan serves as the vision and mission statements for the organization by articulating goals, business objectives and service performance expectations. Designed to evaluate the current situation, identify desired outcomes and define the strategies or initiatives that will help it achieve its ideal future, the TDP

should include carefully crafted goals, objectives and performance measures. The goals and objectives will serve as the roadmap or guide for internal and external actions and initiatives that must be undertaken in order for the organization to “arrive” at its ideal future.

Step 1 – Developing the Agency Mission and Vision Statements

The agency’s mission and vision statements should be included in the Transit Development Plan and utilized as the foundation for the development of goals and objectives, as they encapsulate the agency’s purpose and its ideal future. A vision statement is typically a brief, broad and inspiring statement about what the agency wants to achieve. Examples of public transit agency vision statements include:

“.....to provide quality public transportation services in a professional and responsive manner”

“public transit sustains and builds the quality of life for all people.....through mobility services that support the economy, safeguard the environment, and strengthen communities”

“your preferred choice of transportation for now and in the future”

“to become America’s premier public transportation company”

An agency may also have a mission statement which is a basic and broad perspective of the overall purpose of the organization, the activities it conducts to serve that purpose and the organizational values that guide its work. Some agencies have adopted very simple mission statements while others include more detail, but most include one or more elements related to public image, target markets, efficiency, products/services and social responsibility. Following are several examples of agency mission statements:

The mission ofis to build, establish and operate a safe, efficient and effective transportation system thatprovides mobility, improves the quality of life and stimulates economic development through the implementation of the Service Plan....”

“To keep...moving with safe, reliable and accessible public transit and a commitment to balance our fiscal and environmental responsibilities”

“to deliver outstanding transportation services which connect people to life”

“the mission of...is to provide the citizens of...with a safe, convenient and affordable mode of transportation. Employees pledge to provide the highest quality of transit service available by successfully accomplishing each of their assigned roles including not only meeting customer’s needs by exceeding their expectations. The management is committed to the highest quality of customer and employee satisfaction. This includes short and long term plans for system development, marketing and employee training which will foster a sense of pride in our employees and customers...”

Step 2 – Developing Goals and Objectives

Building upon the mission and vision statements, the agency must develop goals, objectives and strategies for achieving its vision and fulfilling its mission as part of the TDP effort. The starting point for this task is the examination of findings and analysis of the tasks described in the previous chapters including: base data compilation, public involvement activities, a system performance evaluation and a situation appraisal. In addition, any goals and objectives the agency has prepared in the past should be revisited to identify areas of potential modification or expansion based on current conditions.

A **goal** is a somewhat broad long-range aim that states a general intention that is not necessarily measurable in and of itself. An **objective**, on the other hand, is something more specific and usually (but not necessarily) measurable. A **strategy** is quite simply “a plan of action” for attaining a goal. While most transit related goals and objectives will likely be output related, others may be considered more attitudinal or behavioral. Specific performance measures are sometimes identified to help the agency determine its success or failure in achieving the goals and objectives.

The number and complexity of goals and objectives will vary significantly by the size and type of agency, but all should be related to its overall mission and vision whenever possible. It is important to consider both internal and external factors when developing goals and objectives. From an internal perspective, the goals and objectives should “touch” all facets and functional

areas of the organization including but not limited to Finance, Planning, Marketing, Transportation, Maintenance, Administration and others as appropriate. It is easy for personnel to lose sight of the agency vision in the course of carrying out their day-to-day responsibilities. By involving personnel to the fullest extent possible in the formulation of goals and objectives there is a greater likelihood of buy-in and a commitment to positively impact the specific areas over which they have control, which in turn, will support and complement the agency's overall vision and mission.

While the agency staff will likely take the lead role in formulating the goals and objectives, they should not do so in a vacuum. They must consider the findings of the various data collection activities, such as demographic and socio-economic characteristics, system performance data, the situational appraisal, and the input received while carrying out the public involvement plan for the TDP. Additionally, the expectations of the service provider's governing body and any directives it has issued should be incorporated in the goals and objectives.

Important external factors that must be considered are the local and regional planning documents that identify existing transit-related goals. The urbanized area's comprehensive plan is the best place to begin this review. The Florida Transportation Plan, city and county transportation plans and legislative resolutions should also be reviewed. Obviously, the transit agency's goals and objectives should not conflict with the transit goals and objectives found in the review of other planning documents. In most urbanized areas, the transit agency will not be constrained by the goals and objectives contained in other plans, however the Transit Development Plan should clearly show the relationships between its goals and the goals contained in other planning documents as described in Chapter 5.

The desires of the broader community are also extremely important to the strategic intent of the TDP. In addition to consistency with the local government's planning documents, many communities have conducted broad-based community visioning exercises which identify and prioritize regional issues and priorities-often with a focus on growth management and transportation. These kinds of initiatives should also be evaluated and incorporated into the agency's goals and objectives.

As described in Chapters 2 and 3, local community leaders can provide valuable input into the process. These individuals may represent major employers or chambers of commerce that have firsthand knowledge of the specific programs and services necessary to meet mobility

needs related to existing and/or future employment opportunities. They may also be able to provide the perspective of the tourism/hospitality sector, for example, as it relates to the transportation needs of visitors and their impacts on the area's transportation network. Other community leaders that can provide input include elected officials, heads of public agency departments, educators, representatives from health and social service organizations, senior citizen representatives, emergency management, and environmental organizations.

The representatives selected to participate in the formulation of the goals and objectives should be tailored to gain broad based perspectives based on the specific characteristics of the transit provider's service area and the various institutions it serves. Participation in the goal development process should be coordinated and integrated within the overall public participation process.

While each agency's objectives should be tailored based upon the factors mentioned above, there are several broad goal categories the nearly every agency should address (for example: Quality of Service, Image/Awareness, Facilities/Equipment, Coordination, Performance, Technology and Finance) that should be addressed in the TDP. Following are examples of each goal and an associated objective and strategy that may be used as guidance. Most TDPs will include additional goals and multiple objectives and strategies depending upon the unique characteristics of the agency.

The goals and objectives will be further utilized in the TDP to shape Alternative Service Plans, Ridership Forecasts, a Ten (10) Year Implementation Program, the Ten (10) Year Capital and Operating Plan, and future Annual TDP Updates as discussed in subsequent chapters.

Table 6-1 Sample Organization of Goals, Objectives and Strategies

Goal 1	Improve the <u>Quality</u> of Fixed Route Services	
	Objective 1-1	Enhance connectivity and transfer opportunities
	Strategy	Foster partnerships with municipalities, developers and major activity centers for community based circulators
Goal 2	Enhance <u>Image</u> as a Viable Transportation Option for the Community	
	Objective 2-1	Identify opportunities for new programs that expand the customer base
	Strategy	Develop travel training program for senior citizens
Goal 3	Develop Appropriate Infrastructure and <u>Facilities</u>	
	Objective 3-1	Provide passenger amenities
	Strategy	Install five bus shelters per year
Goal 4	<u>Coordinate</u> with State and Local Governments to Integrate Transit into the Land Development Process	
	Objective 4-1	Coordinate service and program initiatives with local governments
	Strategy	Coordinate with FDOT to ensure bus pull-out bays are incorporated in new road projects
Goal 5	Enhance System <u>Performance</u>	
	Objective 5-1	Increase farebox recovery
	Strategy	Implement fare increase
Goal 6	Utilize <u>Technology</u> to Enhance Efficiency	
	Objective 6-1	Improve communications
	Strategy	Procure new radio system for fixed route services
Goal 7	Identify and Secure <u>Financial</u> Resources for System Expansion	
	Objective 7-1	Serve the Inter-county commuter market
	Strategy	Secure a Service Development Grant for new express service

Step 3 – Communication and Monitoring

Once the goals, objectives and strategies have been developed and evaluated for thoroughness and consistency, they need to be communicated with all customers. This includes the internal customers (employees) and external customers (governing board, local governments, and community leaders and organizations). The initial communication step would occur with the adoption and dissemination of the Transit Development Plan to ensure that the anticipated outcomes are clear to all who will be responsible for conducting and supporting the agency's business and fulfilling its mission. However, simply communicating the goals and objectives is not enough. It must be accompanied by a monitoring program to assist in measuring the agency's success and identifying roadblocks that hinder the achievement of its objectives.

The foundation of a monitoring program is already in place at most agencies and takes the form of the National Transit Database (NTD) submissions as described in Chapter 4, Performance Evaluation of Existing Services. The financial and performance data provides a snapshot of how the system is performing in a wide range of categories. Using the sample Goal 5 and its associated objective of increasing farebox recovery as shown in Table 6-2, the NTD would show whether or not the agency achieved its objectives based on the impacts of the fare increase on passenger fare revenue, average fare and farebox recovery.

Another tool that could be used to monitor progress would be a passenger amenities/infrastructure inventory. Again, using examples in Table 6-2, the agency could monitor its progress in achieving its objectives of providing passenger amenities and coordinating service and program initiatives with local governments. The inventory would reveal if the agency had accomplished the installation of five bus shelter per year or had facilitated the incorporation of bus pull-out bays in new road projects.

The continuous refinement and communication of goals and objectives along with a regular monitoring program will enable the agency to adjust to a changing marketplace, identify areas of strengths and weaknesses and reveal new opportunities for program and service excellence.

With a clear understanding of the agency's mission, goals and objectives, and an expectation that performance is carefully monitored, both the employees and the organizations the agency relies on for support can be confident that its personnel and financial resources are well spent.

Cross Reference to Other TDP Manual Chapters:

The development of the agency's mission and vision statements, goals, and objectives relates to the other chapters of this manual as follows:

- **Public Involvement Process** – Articulates the strategies the agency will employ to fulfill its mission and achieve its objectives while affording the public an opportunity to shape decisions that affect the organization.
- **Situation Appraisal** – Outlines initiatives that will be undertaken in response to the finding from the situation appraisal.
- **Development of Alternative Service Plans** – Relates various service delivery options to the objectives of the agency.
- **Forecasting Ridership** – Outlines program and service initiatives that influence customer choices.
- **Plan Development** – Impacts decisions related to capital and operating needs
- **Annual Update** – Provides a tool for evaluating and potentially modifying programs and services based on current conditions.

Chapter 7 – Forecasting Ridership and Designing Service

FDOT Guidance on TDP Ridership Forecasting

The purpose of this chapter is to describe ridership estimating methodologies for transit agencies or the professionals preparing Transit Development Plans for the agencies. The estimation step is critical in the development of the TDP. The chapter addressed the process of applying ridership forecasting tools or other methods to understand potential transit demand for and evaluate transit service scenarios. This includes the forecasting expected ridership from implementation of the specific scenario(s) identified in the Transit Development Plan.

Understanding the amount of travel that can be attracted to and served by transit is critical in helping position transit to realize its potential in meeting mobility needs in Florida communities. One of FDOT's priority areas for TDPs is developing ridership estimates as part of the preparation of a TDP. The vast majority of transit's benefits are dependent on the services being utilized by travelers. Developing an accurate estimate of demand is important because it enables agencies to gauge the benefits of their investments. Estimates of demand provide a measure of the public transit needs of the community and provide a basis to guide the design of services. A capacity to systematically estimate demand for service options enables transit planners to evaluate various service proposals and provide the information necessary for making informed tradeoffs concerning service options.

A series of ridership estimates can provide a measure of transit use that might be expected for an area if served by different service scenarios. The ridership forecast for the recommended Transit Development Plan may be less than that in some planning scenarios considered in the plan development as the public may not be able or willing to fund the levels of service that produced the highest demand scenarios tested. The ridership forecasts for the TDP plan serves as a basis for understanding the anticipated traveler response to implementation of that service plan.

The ridership forecasts for a service plan are a measure of the future role of transit in the community and provide a basis for estimating fare revenue expectations and capital and operating needs for the transit agency. Fares are a significant revenue source for transit properties. Fare revenues range from approximately 10 percent to more than 40 percent of system operating revenues for Florida fixed-route properties. Nationally, capital costs for

providing transit averaged 50 percent of the operating costs amount in the 2001-2005 period, thus, understanding demand and operating requirements will have a big impact on capital needs.

Overall Objectives in Providing Ridership Forecasting Guidance

Rapid population growth in Florida creates both an opportunity and a desire for transit to play a larger role in providing mobility in Florida's urban areas. The ability to forecast demand is necessary to support Transit Development Planning. TDPs have a ten-year time frame over which it may be common for a transit property to undergo rather significant changes in transit services. Fixed-route transit ridership at Florida transit properties has ranged from an increase of well over 200 percent to a decline of approximately 20 percent in the ten years between 1996 and 2005. Of Florida's 27 fixed-route transit properties, 25 had ridership increases over that time period or since inception whereas 2 had ridership declines from 1996 to 2005.

The objective of providing guidance for demand forecasting in the TDP Manual is to assist transit properties in developing useful fixed-route transit ridership forecasts for the ten-year TDP time frame. The ridership forecasts are not only useful in helping focus service on demand but they support estimates of operating cost requirements and vehicle and facility needs, including supporting infrastructure such as bus shelters, signage, park-and-ride facilities, etc. - items that will drive the capital cost program of projects in the TDP. Hence, a forecasting capability is critical to the TDP development process.

The basic characteristics of the forecasting processes that transit properties should aspire to incorporate in their ridership forecasts for TDPs are:

- uses the best available data on market conditions,
- uses the best available knowledge of the relationship between changes in service characteristics, market conditions, and changes in transit use,
- uses a method that is able to be replicated by others or otherwise sufficiently transparent that a reader can understand, and hence evaluate the validity of the forecasts,
- uses methods sensitive to the types of service changes that are options under consideration in the TDP development, and,
- is efficient.

Parties using the TDP to help make decisions should expect that the forecasts of ridership for the time period of the analysis are high quality professional estimates providing the best information available. This should include assurance that the information was based on sound data and sound application of knowledge of how markets respond to changes in various characteristics of transit service. The forecasts should be objective and acknowledge uncertainty.

The TDP is not an operations plan. It is not documentation of a comprehensive operations analysis or necessarily a plan for route-level service review and redesign (though these activities may be carried out simultaneously). Rather, it is a five and ten year plan that includes exploration of service changes often at the system or corridor level. Accordingly, forecasts of demand as a result of anticipated changes in markets, services or facilities should be focused at a level of detail consistent with the overall level of detail of analysis in the TDP. This might include expanded or new routes, route restructuring, changes in hours of operation, changes in frequencies, and changes in service concepts (i.e., addition of express services, addition of circulators, introduction of transfer centers, etc.).

FDOT Expectations of Transit Properties

FDOT expects the Florida transit properties to follow the guidance provided in this report in the preparation of their TDP ridership forecasts. Each property should select a methodology or methodologies from the menu of approaches presented below that are appropriate for their situation. The TDP Rule (Appendix 1-A) specifically mentions ridership forecasting as part of the situation appraisal.

(3) Transit Development Plans (TDPs).

(b) Situation Appraisal. The TDP is a strategic planning document and will include an appraisal of factors within and outside the provider that affect the provision of transit service. At a minimum the situation appraisal shall include:

- 1. ...*
- 2. An estimation of the community's demand for transit service using the planning tools provided by the Department, or a Department approved transit demand estimation technique with supporting demographic, land use, transportation, and transit data. The result of the transit demand estimation process shall be a ten-year annual projection of transit ridership.*

A transit agency should select their forecasting method(s) in the context of their situation and their plans for service change. Agencies should carefully review this chapter to determine what method(s) might be most relevant in their context. The options include using the tools developed and supported by FDOT or selecting a methodology other than that provided by FDOT. If choosing the latter option the agency must solicit preapproval from their FDOT District Office before implementing the alternative approach.

An Overall Process for Demand Estimation

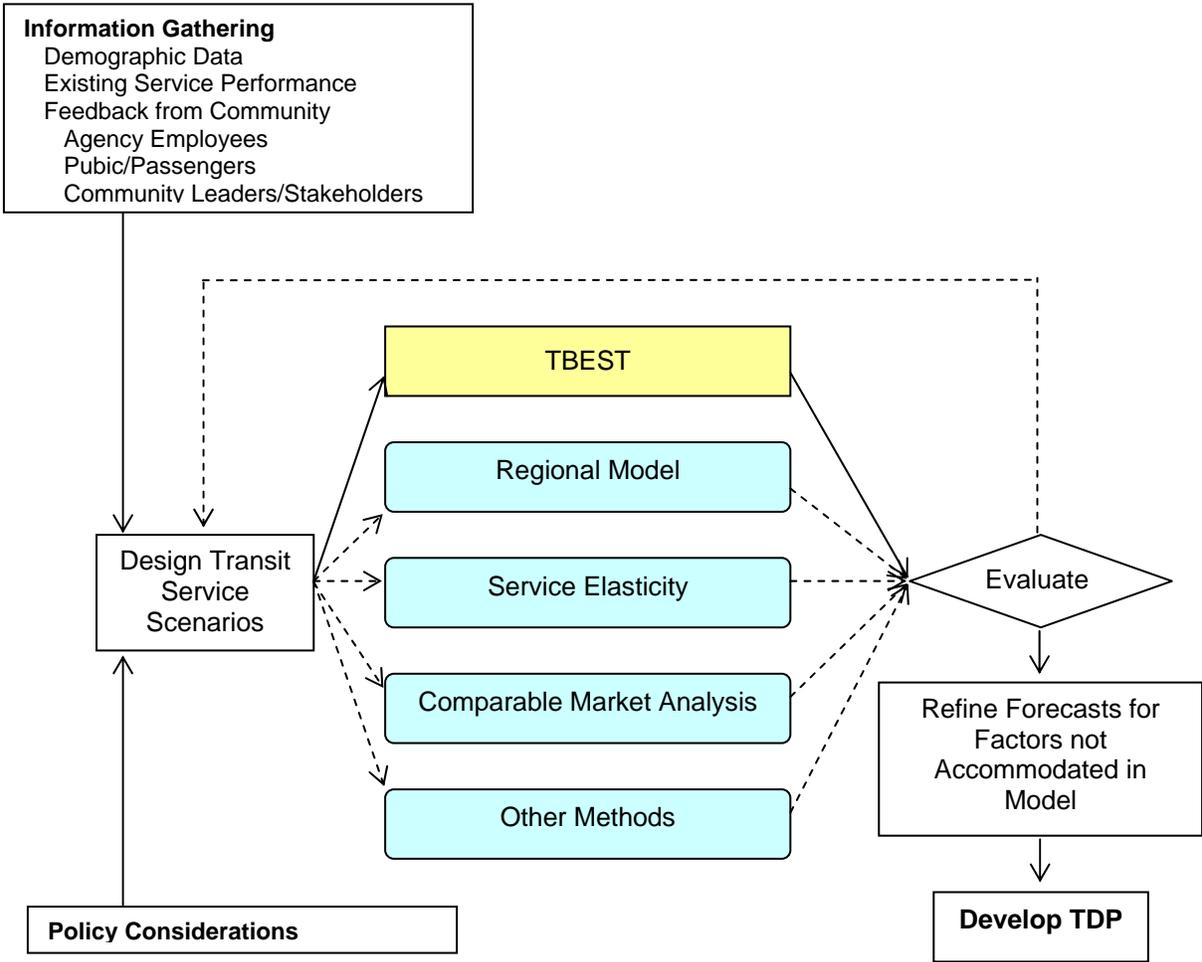
Figure 7-1 below, outlines a multi-step process of TDP development that highlights the steps directed at estimating public transit demand. The process is subsequently described in the remainder of this chapter. This process applies to all transit properties, however, the level of attention and effort dedicated to various steps will depend on the particular situation. The process is intended for use in major TDP updates.

Information Gathering and Policy Considerations

Figure 7-1 includes two boxes labeled as Information Gathering and Policy Considerations and shows these as inputs to the demand estimating process. Previous chapters of this TDP Manual detail guidance for carrying out various aspects of the TDP process including information gathering activities referenced in Figure 7-1 (compilation of study area base data, development of goals and objectives, performance evaluation of existing services, and public involvement efforts). These steps provide the background information, both quantitative and qualitative, that provides planners with the knowledge base to enable them to carry out subsequent steps. Some of these activities are carried out specifically for the development of the TDP, such as demographic analysis, while others may be ongoing activities such as bus service performance monitoring (conducting ridechecks and applying service standards), conducting market research or monitoring public and business requests for service changes. Collectively, these steps provide a substantial base of background information that supports the estimation of demand and the design of service. The set of information sources should be diverse and include venues for input from the three principle impacted groups: 1) passengers and potential passengers and service supporters (taxpayers), 2) employees who have direct and indirect interaction with passengers coupled with a knowledge of the system, and 3) stakeholders, those individuals who have an interest in the service. The information should

include both opinion and perception (stated preference data) and empirical data that reflect measured behavior of customers.

Figure 7-1 TDP Ridership Forecasting Process



The role of the planning professional is not incidental, but critical to the development of the forecasts. The transportation planner brings their own knowledge to the process including knowledge of other systems and points in time and knowledge of how the market has reacted to service changes in the past. The planner has the responsibility of assimilating the data, assuring its accuracy and relevance and executing the overall process. The creative aspects of

service design, discussed later in this report, are a critical opportunity for the professional to impact the future service plan. In addition, the post forecast refinement step is another opportunity for the transit planning professional to apply judgment, experience and knowledge, both theirs, and that gathered from peers, to provide refinements in the service plan and the expectations for ridership. The travel forecasting step is a science aided by extensive quantitative tools and data bases, but it remains an inexact science that benefits from the active participation of an experienced transit planning professional.

Designing Transit Service Scenarios

Most service planners have several ideas for transit improvements, developed either internally or suggested by riders, stakeholders, bus operators, or others. These improvements may be motivated by several factors, including:

- additional residential or commercial development;
- existing ridership demand (e.g., overcrowding in certain areas at certain times of day)
- policy objectives;
- a desire to enhance system efficiency and effectiveness.

The TDP can be an excellent place to prioritize these improvements and develop strategies to address future growth and guide future development of the transit network.

Most plans take the existing transit system as the starting point, although there can be exceptions:

- A new transit system has no precedents to follow, although a new fixed route system can analyze travel patterns on dial-a-ride service as a means of developing routes. One sign that fixed-route service may be warranted is when dial-a-ride productivity approaches eight riders per vehicle hour.
- Introduction of a new mode (light rail or bus rapid transit) can encourage a re-examination of the entire transit network in light of this new mode.
- Changes at the transit network level, such as moving from a radial network where all routes converge in downtown to a hub-and-spoke network with multiple transit centers or minimizing route deviations by focusing major routes on specific corridors, can also require a re-thinking of the existing system.

Major changes of this nature are often generated as part of a detailed analysis of existing transit service and use rather than as part of the TDP process. The TDP may propose or reflect

strategies that include major system changes. In most cases, however, the service planner will begin with the existing system.

Service Strategies

Many strategic decisions faced by service planners come down to a choice between coverage and frequency. A coverage-oriented strategy would extend service (often low-frequency service due to constrained resources) to all parts of the service area. The resulting “lines on a map” are pleasing to many stakeholders, regardless of service frequency or ridership levels.

A frequency-oriented strategy would provide additional service on major (or all) lines before adding routes in un-served areas. Enhanced frequency is one of the most effective strategies to encourage additional ridership. Given that transit operates within a political setting and that resources for system improvements are often scarce, most strategies involve a mix of coverage and frequency. The relative emphasis on one aspect over another will affect how the system changes over time.

A new dedicated local funding source can highlight the tensions in these strategic decisions. There is often great pressure to provide new services in all parts of a city or county that has approved a dedicated funding source for transit. However, downtown stakeholders and current riders may expect a completely different focus. Thus, a balanced strategy with a mix of coverage and frequency is likely to work best even in the rare situation where a transit agency is a recipient of meaningful additional monies. Through extensive public input, one agency in this situation found a general consensus around a 60/40 split between enhancements to existing service and provision of new service.

The majority of service planners (who can only wish that they had a new funding source) have different concerns. These concerns often focus on reallocation of current services to maximize effectiveness or on reductions in service in response to fiscal constraints. The TDP can develop strategies to deal with these circumstances as well.

Some agencies approach service cuts from an equity perspective. An example of this is to reduce service by 10 percent on all routes and services. Some take a productivity approach, for example, cutting service on unproductive routes and using service standards as a means to identify these routes. Another strategy that has been adopted by transit agencies is to focus on

the “core” routes of the system, in good times and in bad. It is not unusual for 20 percent of an agency’s routes to carry 50 percent or more of total ridership. A core routes strategy enhances service on major routes when funding is available and attempts to maintain service levels on major routes in times of fiscal constraints.

Service guidelines or standards are often used in making decisions about specific routes. The TDP is an appropriate place to develop, revise, and clarify these standards. Many agencies have different standards for different types of routes, acknowledging that core routes are expected to be more productive than crosstown routes or routes in suburban areas. The varying standards are justified as a reflection that the transit network needs all types of routes to meet the needs of its customers.

Other Strategies

The discussion so far has focused on transit service, but there are other strategies that should be considered and incorporated in the TDP. The State of Florida has been at the forefront in emphasizing service quality measures. On-time performance, vehicle cleanliness and comfort, bus stop amenities, and friendly operators all play a role in the customer’s decision to use transit. Agencies that have campaigned issues of these types with their employees have achieved desired improvements in service quality.

Service quality impacts can be subtle and difficult to measure, but some agencies believe that service quality is an important factor in ridership retention. Most surveys of former transit users indicate that the primary reason to stop using transit is, “I bought a car.” Good service quality can encourage riders to continue to use transit for at least some of their trips after a vehicle purchase.

Service quality strategies often interact with service plans. For example, a radial system with timed transfers at a central downtown location every hour can accommodate a few minor route deviations and extensions to serve new developments at the outskirts of the service area. Routes can be extended only so far before on-time performance issues begin to occur with regularity. Some agencies have made a policy decision to serve newly developed low-density areas with new “connector routes” instead of by extensions to existing routes. A connector route is timed to meet an existing route at its outer terminus. A smaller, more neighborhood-friendly bus or van can be used on the connector route, making it easier to enter into residential

areas and provide service closer to the front door of a residence or business. Marketing strategies are also an important component of TDPs, and should be coordinated with service strategies.

Markets for Transit

Transit Development Plans offer the opportunity to prioritize potential service changes, as noted earlier. Many transit agencies have found that consideration of transit markets in general and specific markets intended to be served by a proposed change is very useful in helping to set priorities.

Conventional wisdom holds that the only significant market for transit in most areas is composed of residents without other mobility options. A close examination of ridership patterns by route can yield interesting information on sub-markets. For example, a route with ridership concentrated in peak hours is typically serving the journey to work and school trips (an express route that operates only during peak hours is the purest example of a route serving the journey to work). A route with ridership spread more evenly throughout the day probably has retail and local shopping destinations. A route where peak period ridership is evenly balanced by direction is carrying reverse-commute riders to jobs or schools in outlying locations.

Understanding the market for a specific route is very important in considering potential changes. For new routes, identifying the market to be served is critical. The transit agency through its governing body may have given priority to specific target markets. As one example, college students may be a target market through a university pass program, and service planners would be guided in this case by the need to connect the campus with major student housing areas and off-campus student destinations. If elderly residents are a target market, neighborhood circulators may be a high priority. Park-and-ride lots combined with express bus service are important if commuters are a high priority. Enhancing service for existing riders might involve improved frequency to encourage additional trips by those who are already familiar with the system.

Routes can certainly serve more than one purpose. The pitfall in designing a route that serves multiple markets is that, by serving many purposes, it does not provide a convenient trip for any one market segment.

One approach to service planning in the context of the TDP might be to develop an initial service design that specifies service levels that would maximize ridership potential of the area. This will be a generous service level that provides good coverage of both geography and time periods. This generous level of service is then used as the basis for estimating transit potential or service needs. The results of this estimate are subsequently used as the basis for refining service scenarios that improve productivity and focus service on the markets that are most promising. The refined service concepts are then the basis for viable service scenarios for which the planners will develop forecasts of ridership that are used in the TDP. The forecasting process is thus iterative, as discussed in the next section, with the analyst first testing generous service levels to determine need and then refining the service in subsequent forecasts to arrive at a system level service plan that is the basis for the TDP.

TDP Service Planning in Context

This section has highlighted strategic considerations in service planning that are important in preparing a TDP. There are obviously detailed considerations, such as how to write a schedule or how to design a route, that are not discussed here because these elements of service planning are more appropriately the subject of a comprehensive operational analysis or route review.

Within the TDP process, service planners can:

- Describe service strategies
- Prioritize proposals for service improvements in light of these strategies
- Identify strategies to address service quality
- Clarify the market for transit with relation to service strategies

Unmet needs are the primary driving force in the TDP. Service planners can contribute by developing strategies to address these unmet needs. The “art” of service planning is to design the best ways to meet these needs, while keeping within the budget and balancing sometimes contradictory goals and objectives.

Estimating Demand

The series of boxes in the center of Figure 7-1 contains the steps that are formally part of the demand estimation and forecasting process. Each box contains one of the available possible

choices of analytical methods for carrying out the forecasting work. An early step in the estimating and forecasting task will be to determine the appropriate model or method to use for the study area. Each of the potential methods is discussed below.

Deciding which Forecasting Method to Use

The TDP Rule specifies the Department's position regarding forecasting methods. FDOT has provided a service planning tool, the Transit Bus Estimating Simulation Tool, (TBEST) as that tool.

2. An estimation of the community's demand for transit service using the planning tools provided by the Department, or a Department approved transit demand estimation technique with supporting demographic, land use, transportation, and transit data. The result of the transit demand estimation process shall be a ten-year annual projection of transit ridership. (Florida Administrative Code: Rule 14-73.001)

TBEST is described below and FDOT has supported its application via development of supporting data bases including demographics and baseline coded route networks for most transit agencies. Some agencies might choose to use an alternative method. Several alternative methods are briefly described below. Each of these methods has different capabilities and data requirements and is appropriate for use in various contexts.

The basis for deciding what method to use is one that should be made by the local transportation planning professionals based on several factors and considerations as noted below:

- The nature of the service area including size, population, amount of existing and anticipated transit service, growth rate, and interface with adjacent area transit services
- The professional planning capabilities available in-house or through contract
- The magnitude of service change anticipated or possible in a 10-year timeframe being studied
- The presence of existing calibrated and validated forecasting tools for the service area.
- The extent to which other studies such as major investment studies, are being carried out in the service area
- The resources available to support the study and the time frame for study completion.
- The familiarity of the staff at the various tools being considered
- The availability of data to support various service demand estimating methods under consideration

- Established track record of various methods in TDP application

Generally, TBEST will be the logical choice for estimating ridership. Exceptions might include larger urban areas where multimodal models have been developed and validated for local application and can be used to test TDP service scenarios. While large-scale regional models are seldom recommended for application in making route level service priority decisions, they can provide insights and guidance at a level sufficient for use in TDP development. Most probably subsequent detailed service planning would be carried out as part of implementing service changes evaluated through a regional modeling effort.

Other areas might consider using comparable route or service elasticity-based methods in situations where their transit service is very modest and changes are similarly expected to be relatively minor. This might be the case in areas where a few routes exist today and expectations include adding a few more routes over the time period of TDP analysis.

Requesting Approval for an Alternative Method

Should a transit operator want to pursue approval for an alternative method for demand forecasting they should:

- Author a letter of request directed to the public transit administrator at the FDOT District Office
- Indicate serious consideration of the approved as well as alternative methods.
- Include a discussion of the proposed alternative method and the reasons why it is being proposed
- Talk to district personnel in advance of the request
- Allow District personnel 30 days to respond in writing
- Provide a copy of the District's letter as an appendix in the submitted TDP

Estimating and Forecasting Tools

TBEST - Over the past several years, the Public Transit Office of the Florida Department of Transportation has been spearheading the development of transit demand forecasting models and transit systems planning tools for a wide variety of applications as part of its broader Transit Model Improvement Program. Quite often, transit agencies do not have the resources and staff to implement large-scale travel demand modeling systems or collect and assemble the elaborate databases needed to support such model systems. The model development efforts of the FDOT Public Transit Office have been focused on meeting the transit planning and modeling needs of a wide variety of planning agencies through the development of user-friendly tools that can be implemented in a wide variety of planning contexts. TBEST represents a culmination of efforts to develop a truly operational and user-friendly stop-level ridership forecasting software package that offers full GIS-based functionality and network coding capability.

The software includes a host of methodological developments that make it a very powerful transit planning and analysis package. TBEST is capable of simulating travel demand at the individual stop-level while accounting for network connectivity, spatial and temporal accessibility, time-of-day variations, and route/stop competition and complementarity, making it a powerful tool for transit planning and ridership forecasting. Public transit's distinctive characteristic is its dependence on walking to access the system. Transit's appeal is highly dependent on the ability to access activities by walking to and from transit. Capturing this important characteristic requires databases and software capabilities to be able to capture small geographic scale differences in accessibility. This capability within TBEST gives it a distinctive advantage over more traditional roadway based travel demand forecast models.

TBEST has been developed so that the user can interface with the software largely through an interface that provides full GIS functionality. Users have to have ArcView 9.3 or the most current version residing locally on the machine to use TBEST. A modest investment in ArcView will allow the user to realize the full potential of TBEST. Socio-economic scenarios, supply attributes, and route and stop configurations can be changed and edited on the fly, thus making TBEST a truly user-friendly transit ridership forecasting tool. TBEST includes estimates of several performance measures in its output. Performance measures such as route miles, service miles, service hours, boardings per service mile or hour, and average boardings per service run are provided by TBEST at the individual route-level and for the system as a whole.

These performance measures can be used to assess the impacts of various socio-economic and service supply scenarios on system performance.

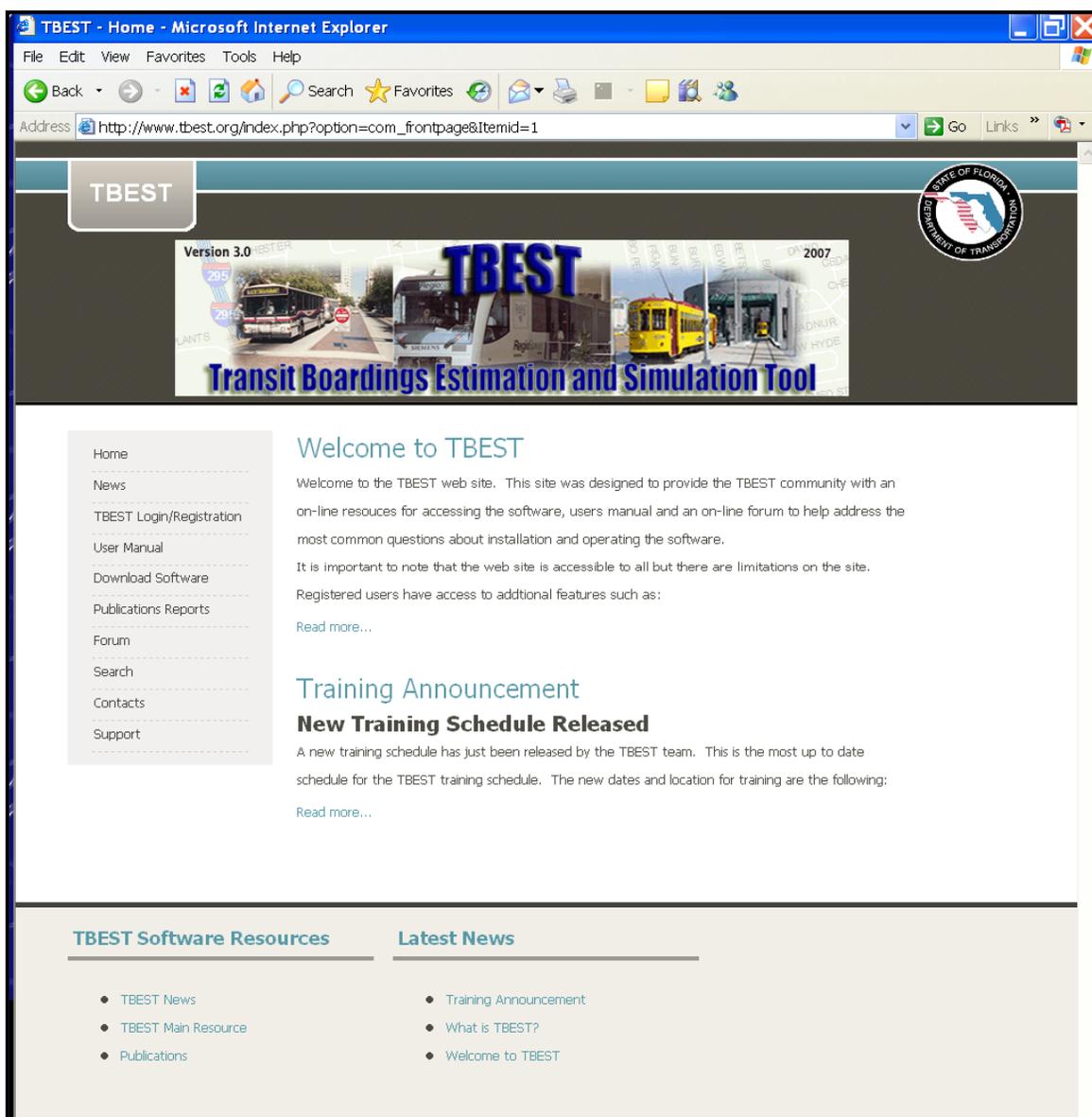
Ridership estimates provided by TBEST are sensitive to a host of planning factors including socio-economic characteristics, network configuration and connectivity, and transit system attributes. TBEST ridership estimates are sensitive to population characteristics such as income, auto ownership, household size, number of children, number of elderly, race/ethnic composition, and number of workers. Employment variables in the TBEST equations include commercial, industrial, and service employment (consistent with definitions used in FSUTMS). Transit system attributes that affect ridership include first boarding fare, transfer fare, travel time, frequency/headway, special generator type (e.g., shopping mall, stadium, university, etc.), number of transfers, out-of-vehicle time including both access/egress time and waiting time, route type (e.g., cross-town, express, local, circulator, etc.), and technology type (e.g., BRT, bus, trolley, etc.).

TBEST software is provided free by FDOT. A user manual, technical support, reference materials and other guidance are provided on the TBEST website sponsored by FDOT. FDOT sponsors periodic training for TBEST users. To facilitate the implementation of TBEST, FDOT has supported the development of statewide demographic data sets for TBEST operation and has secured base transit networks coded into GIS for most Florida transit properties. These base networks and databases provide a substantial head start for agencies that choose to implement TBEST. It's important to note that TBEST will have applications well beyond TDP updates and it is hoped that it will be a valuable resource for ongoing service planning and potentially land use analysis work carried out by the transit authorities. Resources on the TBEST website allow agencies to explore the use of TBEST for demand forecasting. Figure 7-2 is the TBEST website home page: <http://www.tbest.org>. It is anticipated that TBEST will continue to evolve with refinements, improvements, and modifications to accommodate upgrades in supporting software packages.

Regional Model - Another means of developing a measure of market potential and forecasting demand for a service plan would be to use a calibrated regional four-step travel demand model or a regional activity based model to develop estimates. Four-step models are typically regional models that utilize trip generation, trip distribution, mode choice and trip assignment models to forecast travel given a zonal demographic data base, a transportation network and a set of models or equations that reflect individual decision making for travel. Major urban areas in

Florida use a localized version of the Florida Standard Urban Transportation Modeling System (FSUTMS). Occasionally a consultant will use other industry standard packages such as TranPlan, that similarly model travel behavior.

Figure 7-2 TBEST Home Page



Four-step models can be data intensive and, in areas with limited transit service, it is challenging to use a large regional model that may not be sensitive to a mode like transit that has under one percent of total trips in many mid-sized and smaller urban areas. Four-step models are most appropriate for the larger urban areas where models are in existence and have been calibrated and used in long-range transportation planning. Four-step models have been most successfully applied in determining differences in transit use between different scenarios of service. If four step models are being used to evaluate new starts it may be logical to use them for TDP planning to ensure consistency and avoid confusion. However, they are unlikely to have the same sensitivity to route level service design and demographic characteristics as would the TBEST model.

Some urban areas in Florida are moving toward activity based regional models. There is an expectation that these models may be more powerful in forecasting travel behavior. In the future they may be an option for transit forecasting in the larger metropolitan areas.

Comparable Market Analysis - One of the more common strategies for estimating demand and forecasting ridership for transit service is to use knowledge of transit use in existing locations with particular characteristics as a basis of estimating how comparable service might perform in similar markets. The comparisons can range from the route segment level within an urban area to comparisons across urban areas at the system level. Often urban areas have their own classification of services or market types that they might use as the basis for developing comparable market analyses.

Unlike the prior two methods, comparable market methods are not premised on a standardized analytical framework. Most applications are based on spreadsheet comparisons developed locally and include the market parameters/traits for which local data might exist. The term “comparable” may include judgmental information provided by the planner. For example, determinations of appropriate comparable routes might rely on quantitative data on adjacent population or employment density and demographic characteristics, but analyst’s judgment might be used to infer comparability with respect to such things as activity distribution along the route. A comparison to other cities might rely on size, income, and density to determine comparability but other judgments such as the extent to which employment is concentrated, parking costs, employment type, etc., may be based on more limited data or judgments.

In application, the analyst would determine a set of future conditions, then base estimates of demand or ridership on levels of ridership for other areas that currently had those conditions. For example, a radial commute suburban route on the north side of town may be used as a comparable route for a proposed radial route on the south side of town that is expected to have similar demographic traits in the forecast year. The level of precision that one might expect will be highly dependent on the extent to which the comparability between areas is, in fact, true with respect to the variables that influence travel behavior.

Comparable market analysis can be applied to different levels of scale, from looking at ridership per capita for a comparable community with a given level of service to estimating ridership for extended hours of service based on how similar routes in the system performed during those time periods. The analyst carrying out the demand estimate will have to define the increment of service change, identify a comparable context from which behavioral assumptions can be transferred, and then apply it based on the proposed increment of service change.

For transit systems contemplating the addition of a new route within the existing transit network, one reliable way to gauge the potential ridership demand for the route is to look at the ridership levels on similar routes within the system, or the average ridership level system-wide. This has been found to be one of the most common methodologies for estimating demand in this situation among transit agencies nationwide. It employs a solid mixture of “art” and “science;” with the “science” being related to ridership expectations based upon system averages, industry rules of thumb, or a system’s service standards, and the “art” involving judgments based on experience and the operating characteristics that may be unique to the system or to the given situation.

Service Elasticity - Another popular method for transit demand estimation and ridership forecasting is to use service and fare elasticities to estimate how changes in service would be responded to by the markets. Elasticity refers to the change in one variable, in this case ridership, as a function of another variable, in this case often a measure of service supply expressed in terms of service miles. The knowledge regarding how markets have historically responded to changes in service is the behavioral basis used to estimate how ridership might respond to future changes. This fundamental methodology has proven quite stable and acceptable over the years. However, the analyst should be knowledgeable about service planning and transit travel behavior to know when and how to apply elasticity measures.

As in the case of comparable market strategies, elasticity measures can be used at the route or system level and sources of elasticity measures can come from local data or from observations in other similar markets. Elasticity based methods are designed solely to provide estimates of change.

The elasticity of ridership with respect to service levels has been shown to be “inelastic”, indicating that ridership levels increase at a lesser rate than changes in service levels (with all other factors being constant). While variations can occur, especially for changes at the level of individual routes, service elasticities have been shown to remain relatively consistent across transit systems of all sizes at the aggregate system level.

The most comprehensive review of transit service elasticities is the database assembled and reported on in TCRP Report 95, *Traveler Response to Transportation System Changes*, Chapter 10—Bus Routing and Coverage, Richard h. Pratt and John E. (jay) Evans, IV, Transit Cooperative Research Program. Transportation Research Board, Washington, D.C, 2004. This document provides a comprehensive review of service elasticities in a variety of contexts and is an excellent source of information that can be used in conjunction with prior local experiences with service changes.

Service elasticities would be a reasonable technique to apply in gauging the ridership impact of small to moderate service changes such as those involving frequencies or service spans within an existing route network (or for an individual route). When comparing the trends for ridership levels and revenue miles (level of service) for Florida transit systems between fiscal years 1991 and 1996 (using the National Transit Database) utilizing regression analysis, the slope of the regression line was 0.32. This suggests an elasticity to service increases of 0.32 (for a 10 percent increase in service revenue miles, one might expect a 3.2 percent increase in ridership), a number consistent with some of the literature. However, it is extremely important to realize that the observed changes in ridership among Florida transit systems incorporate changes in myriad other factors such as other attributes of service, changes in demographics, changes in roadway and parking conditions, and changes in travel behaviors associated with shifts in values and life-status conditions. Most of the literature suggests a higher elasticity of ridership with respect to service changes, in the neighborhood of 0.6.

Frequently the novice planner is surprised that the elasticities for service increases are low. There is a perception that perhaps there will be very elastic responses to service increases if the level of service reaches some threshold level of attractiveness where it then becomes attractive to choice riders. Thus, one might think that doubling frequencies might result in more than doubling ridership if that service then becomes competitive with auto commuting. There is

no empirical evidence that validates that hypothesis as a general rule. Occasionally, there are service increases in particular markets that have elastic ridership responses where ridership increases more than the increase in service. Such a reaction might occur in a situation where a dependent market has been under served and increases in service are widely used or where new service results in dramatic reduction in total travel time because transfers are dramatically reduced, but these situations are very rare.

One way to understand the traditional decline in service productivity associated with increasing service is to recognize that current service is almost always focused on the best locations for transit ridership potential, at the best time of the day/week and in the most productive frequencies. New service, by its very nature, is applied to lower priority markets that are likely to produce lower than system average ridership.

Other Methods - There is ongoing research and test applications of travel demand tools in the transportation planning community. Over time it is possible that additional methods and analytical tools as well as refinements in existing tools will be forthcoming. Transit agencies may develop or have consultants develop other alternative methods as well. Any alternative method needs advanced approval for use in TDP ridership forecasting as noted above. If, in the future, FDOT decides to provide blanket pre-approval of an alternative methods, industry partners will be notified. *TCRP Synthesis 66, Fixed Route Transit Ridership Forecasting and Service Planning Methods*, provides an overview on several forecasting options.

Carrying Out Demand Estimation

The process of carrying out demand estimation as part of the development of a Transit Development Plan is intended to accomplish two objectives:

1. First, planners should aggressively explore service expansion with the intention of identifying where transit needs and opportunities might exist.
2. Second, the planners must synthesize what they've learned through a series of scenario experiments into a Transit Development Plan that communicates a vision for future transit service for the area.

Determining Transit Needs and Opportunities

In reviewing practices around the state and nation it is clear that the vast majority of properties forecast near-term ridership by using methods that incrementally look at changes in service and the subsequent changes in ridership. They, in essence, skip what is referred to as estimating transit needs and opportunities in this process. The temptation to focus on incremental changes

is logical given the substantial knowledge base from existing service and the limited resources typically available for service planning and analysis. Often the degree of service change anticipated is modest in the context of the levels of current service, making incremental analysis a sound approach to estimating future ridership. This high reliance on the market's response to the existing system both prejudices expectations toward existing service levels and performance, but also ensures a grounding of expectations on the empirical reality as evidenced by actual market response to service in the local markets.

The concept of initiating the TDP demand forecast with an assessment of needs and opportunities provides a fresh, unbiased start in looking at the service demands of an area. A transit ridership potential or transit needs assessment provides a gauge of transit demand that can serve as the basis for service planning. Ideally, the planner would benefit from having an objective measure of the potential or need for transit service from the perspective of ridership demand. This can then serve as the basis for service design. Methods for conducting an estimate of ridership potential are outlined below.

This basis for estimating demand partially unlinks demand estimates from service supply and budget constraints; hence, it should be used with caution. Such a scenario provides guidance to planning professionals but is not the basis for financial planning. The intent is to understand what the ridership response would be if high quality service were provided throughout the service or geography. This implies testing some service expansion scenarios that might not be financially feasible, yet can serve to identify market areas in service configurations that appear to be most successful. If one uses the TBEST model for developing scenarios, this step is a relatively easy attempt to identify promising opportunities for service expansion.

The planner might use a variety of strategies in developing these scenarios. For example, it might be helpful to test 50 percent or 100 percent service expansion scenarios as useful points of reference for discussion. Other options might include testing specific service scenarios proposed by various stakeholders, testing service levels that are similar to those offered in peer cities, serving all areas with buffer demographics within some range or testing some service standards that might include offering a certain amount of service per capita or per square mile of developed area.

Having explored a number of service scenarios, the planner will digest the findings from these tests and use that information and knowledge as the basis for forming a limited number of service plans that can be evaluated for inclusion in the TDP.

Carrying Out Ridership Forecasting for TDP Plans

Using the analytical tools adopted by the urban area and used to estimate demand, the planner now applies those forecasting methods to forecast the ridership that specific service plan proposal(s) would be expected to produce. These forecasts are used to aid in the selection of the service plan to be adopted and to enable the planner to estimate the capital and operating requirements and fare revenues that can be expected from the plan.

Each of the forecasting strategies mentioned above could be applied in estimating the ridership of the service plan. The discussion that follows provides examples of how the forecasting could be carried out.

Transit properties adapt to changing market conditions by making a variety of changes in service simultaneously while, typically, methods for estimating market response to change have been developed by isolating and quantifying each change and attempting to establish a linkage between that change and the market (ridership) response. A multifaceted set of changes complicates the ability to understand how the market might respond. Even service supply changes can consist of a combination of changes in coverage, frequency, and span of service, each of which may engender a different response by the market.

Knowledge of market response to service changes has been strongest in the area of understanding the response to changes in service supply and fare policies. The industry is less knowledgeable in understanding the market response to marketing, equipment changes, changes in service quality (such as improved reliability or comfort), and changes in amenities (such as shelter and signage). Likewise, less is known about how ridership might respond to more radical service reconfigurations (such as from radial to grid service), or to changes such as the implementation of real-time public information systems, the introduction of a transit police force to improve security, or the introduction of alternatively-fueled vehicles. Yet, these changes can impact ridership.

There is a significant degree of uncertainty in the ability to predict ridership responses to changes in operations. However, it remains important to develop ridership estimates that can aid decision makers in evaluating investment choices. The “art” is likely to remain in the art and science of forecasting demand, yet planners must utilize the science by applying the best available methods and tools to forecast demand.

Table 7-1 addresses how various strategies for development of ridership forecasts might be applied. The left-hand column categorizes changes by types. The middle column lists specific

types of service changes that may be considered and the right-hand column lists appropriate estimating/forecasting strategies. Any given area may have a number of different types of service changes being contemplated and hence the resultant methods must accommodate all of the planned changes or multiple methods might be combined to develop an overall system forecast. The "small to moderate changes" section of the table itemizes service changes that are regularly considered in Florida TDPs. The "other" section contains somewhat unique situations that call for using comparable experience from other urban areas as a basis for estimating demand. Specific analytical tools are not necessarily available for developing estimates for these situations.

Table 7-1 Forecasting Ridership Response to Service Changes

Major Changes	Major Guideway Investment	Use Estimates from Major Investment Study (MIS) or Project Implementation Plan, Perhaps in Conjunction with TBEST
	Major System Analysis	TBEST, Use Forecasts of Ridership From Comprehensive Operations Analysis (COA), or Regional Model Results.
Small to Moderate Changes	New route, Extensions, Realignment	TBEST or Preapproved Alternative
	Frequency Changes	
	Span of Service Changes (hours, days)	
	Addition of Circulators	
	Addition of Express Service	
Other	Vanpool Services	Survey Research, Peer City or Local Experience
	New System Start-up	Peer City Analysis, TBEST
	Route Deviation	Peer City or Local Experience
	Special Events	

Major Service Changes

Table 7-1 identifies two major types of service changes that a property may be considering. These major changes may be preceded by major planning investments that can serve as the basis for TDP demand estimates as discussed below.

Major Guideway Investment

Some of the larger Florida transit properties are in the process of developing or evaluating major investments in transit service or facilities. The full implementation of these proposed investments will fall within the time frame of subsequent TDPs. Often, consideration of major investments entails major bus service reconfigurations or service expansion in early years in order to cultivate a market for subsequent busway or rail service. The major investment planning may very much shape the five and ten-year plan.

Major Investment Studies are typically supported by full-scale travel demand modeling efforts, occasionally including interim year forecasts. The TDP demand forecasts might be derived from a forecast carried out in the development of the MIS or there might be a special forecast carried out taking advantage of the model and network development that occurred as part of the MIS. Major Investment Studies typically have client and peer review processes integrated within them as well as a public participation process making the transit planning reflected in them a valuable contribution toward TDP development.

The actual use of MIS-generated planning information and ridership forecasts may require some additional processing for use in TDPs. Planners may want to modify results to reflect different points in time or resource or other constraints that make the TDP differ from the forecasts developed as part of a MIS. The MIS analysis may cover only a portion of the service area and other tactics as discussed below may be used to estimate ridership impacts from other parts of the service area.

Major System Reconfiguration

Somewhat analogous to the MIS study, properties occasionally undergo comprehensive system reviews or carry out what is often referred to as a Comprehensive Operations Analysis (COA). These major studies focus on comprehensively evaluating the system at the route level and analyzing a number of service changes to respond to changing market conditions and local needs. COAs typically produce a series of recommended service changes along with an estimate of the cost and ridership impacts of the changes. The methodologies for forecasting ridership response used in COAs varies but typically involves route segment or stop-level reviews of demand. They may also use TBEST.

Ideally, a property carrying out a COA would include in the COA scope of study the development of ridership forecasts that correspond in time with those required for the TDP. As

COAs are typically conducted system wide, the forecasts from COAs would meet the needs of the property in responding to the demand forecasting required in a TDP.

Small to Moderate Service Changes

The next category in Table 7-1 covers the group of service changes that are categorized as small to moderate. The majority of properties are likely to be proposing changes in their TDPs that fall within this category. These changes can be characterized as changes in geographic coverage, frequency, and span of service. The change may or may not result in changes in the total service level for the system versus reallocations of service to respond to markets. TBEST is the FDOT supported method for carrying out ridership forecasts for these types of changes.

Treatment of Specific Service Types

Increasingly, transit properties are looking for new ways to meet market needs and save costs by considering new service concepts. This might include services such as deviated fixed-route service, vanpools, subscription services or other concepts. Express service, circulators, and crosstown routes may be new service concepts in some markets or corridors. Forecasts of demand should be sensitive to significant changes in service concepts.

While comparable route approaches are useful for estimating the demand for these types of service, there has been a significant amount of effort invested in developing capabilities for doing ridership estimates for express services.

Express Service Demand Estimates

Express services have received more attention by service planners and demand forecasters due to their specific nature. They typically concentrate on service to a large concentration of activity, usually the downtown. Their origin is often suburban development eight or more miles from the destination. Part of the motivation for wanting good quality forecasts for express services is that often properties build park-and-ride lots to offer parking for travelers. This extra capital investment benefits from a good understanding of demand so that the parking lots can be located and sized appropriately. TBEST handles parking for express services but more specialized tools that explore the drive access market shed for each park and ride facility might be more accurate.

Forecast Refinements

Once an urban area has developed forecasts using one of the methods referenced above, they may benefit from applying additional adjustments to their forecasts to reflect other changes in service delivery that may impact demand. Table 7-2 outlines some other service delivery changes that need attention in the demand forecasting process.

Table 7-2 Forecasting Impacts of Service Feature Changes

Change	Forecast Methods
Fare Changes	Fare Elasticities
Marketing Programs	Peer City Comparison, Expert Judgments
Transfer Center	
New Vehicles	
Shelters, Signage, Amenities	

With the exception of fare increases, considerably less is known about how passengers respond to changes in other aspects of transit service. This section discusses how planners may address estimating the changes in ridership that might result from various changes in service characteristics. Unfortunately, it is not possible to give a model or formula to use for most of the types of changes described. The local context and the nature of the changes will govern the passenger response. Specific tactics related to several types of changes are discussed below.

Fare Changes

A significant amount of industry data is available regarding the response of passengers to fare increases of various types. Some properties have developed in-house data on passenger response to fare changes while others rely on industry experience. The data base on ridership reaction to fare increases ranges from aggregate system level elasticities to more detailed elasticities by service type, ridership segment, mode, and other variables. These data, collected over the years, provide a strong resource for use by transit properties. In some cases, the change in fare structure, particularly if there is a new payment method such as a deep discount pass or an unlimited ride all-day pass, make it difficult to apply traditional fare elasticity measures. Fare elasticity information should be supplemented with information from discussions with planners in properties that may have implemented a similar fare structure change.

Other considerations in assessing the impact of the fare structure change include:

- **Adjustments for market share not directly paying the fare** — often some share of the ridership is not paying the fare with out of pocket dollars but, rather, is having their cost of using transit paid by an employer or social service agency. If this is a significant share of users, they will not suffer the consequence of a fare change and should not be included in the impact assessment.
- **Other fare structure changes** — in some cases, the change in fare structure involves implementing a distance-based fare or changing from a free to a paid transfer system. In these cases the analyst has to develop an estimate of the actual fare change to users. Sometimes the burden of the change may vary significantly across market segments. In these cases it may be appropriate to apply elasticities to the various market segments. For example, if a system moves from a paid-transfers type of structure, then the market segment that uses transfers may have a significant fare decrease whereas the non-transfer users may actually have a fare increase.
- **Time interval since previous fare hike** — occasionally passengers are sensitive to the interval between fare increases. If a property has gone a long time between fare hikes, there may be a greater willingness to accommodate the change. The rate of inflation in the overall economy is also likely to impact the response to fare increases.
- **Passengers' attitudes about the overall quality of the service** — response to fare increases may vary depending on the attitude of passengers to the quality of service. Passengers may be more tolerant of a fare hike if they are satisfied with the quality of the service or if they feel that there will be improvements in the service quality.
- **Changing costs for alternative modes** — the response to a fare change may be impacted by actual or perceived changes in the cost of competing modes. Specifically, the public may be more tolerant of fare increases if gasoline costs are increasing and/or if downtown parking costs are rising. For choice riders, these factors may influence their response to fare increases.

Marketing

A number of transit properties are increasingly recognizing the value in more aggressive marketing of services and enhanced customer information. While not traditionally a variable in demand forecasting, forecasts should be sensitive to significant changes in marketing and/or customer information services.

For marketing to have a measurable impact on ridership, a significant marketing program commitment would be required. Written analysis of marketing expenditures are scarce, as are industry rules of thumb. The variability of responses to marketing is so large as to preclude a clear determination of the impacts of marketing investments. Additionally, the range of

marketing tactics is extremely broad. Tactics such as cultivating businesses' willingness to subsidize employee passes has been shown to be able to triple transit use for that business, while other marketing efforts have shown no response because the product was not competitive for the audience being exposed to the marketing effort.

Facilities and Amenities

Transit ridership is influenced by characteristics of facilities and amenities that affect passenger comfort, convenience, safety, and awareness of the service. Particularly important are shelters and other investments to facilitate transfers. Bus stop signage and convenient schedule information are also important. This is an area not traditionally considered in patronage forecasting but one that should be considered in cases where significant changes are implemented. The best way to develop estimates of ridership impact from facilities and amenities is to discuss the types of changes planned with other properties that have made similar changes and might have some feedback on ridership responses to changes. The types of changes implemented are difficult to specifically link to changes in ridership. The magnitude of the response is such that the impact of individual facilities is unlikely to have measurable impacts on total ridership absent a massive investment in facilities.

Vehicles

Vehicles can be a factor in transit ridership. The age and condition of the fleet can affect the reliability, speed, image, and comfort of the transit trip. Several properties have had a positive ridership response to the implementation of new vehicles and this factor should be given consideration in ridership forecasts if a significant change in fleet age or composition is planned. The significance of ridership responses to changes in the fleet are dependent on a number of factors including how large a share of the fleet is replaced and how "nice" or attractive the new vehicles are in contrast to the replaced fleet. Significant changes in amenities and perhaps a change in the vehicle size, floor height and appearance can also be important. Properties anticipating a significant change in the fleet should contact other properties that have recently made similar changes to develop an estimate of the magnitude of the ridership response.

Peer Review

One of the virtues of a preapproved methodology for forecasting is that the specification of these standardized methods is expected to help provide assurances that the methodology is technically valid and objective. Another complementary strategy to verify the validity of a methodology and results is to have a peer review process as part of the methodology. The peer reviewer critiques the methodology, as well as the inputs and results, to ensure that reasonable

estimates were provided. Peer review should be considered as a strategy to enhance the quality and credibility of the service design and forecasting process.

TDP Plan Development

Having completed the demand estimating steps, the planners will review the various scenarios in the context of the goal set of the community and the resources available. This has been an ongoing process through the development and refinement of the alternatives and as the final forecasts are completed the locally preferred scenarios will be used as the basis around which the remainder of the Transit Development Plan is detailed. Ridership, cost, community needs and resource availability will influence the choice of the final service plan concept. The planner may cycle back through service design and forecasting if not satisfied with the results. If the scenarios are satisfactory, the planning process will proceed to Implementation planning and completion of the TDP. Subsequent and prior sections of this report cover other aspects of the TDP development.

CHAPTER 8 – TDP Financial Plan

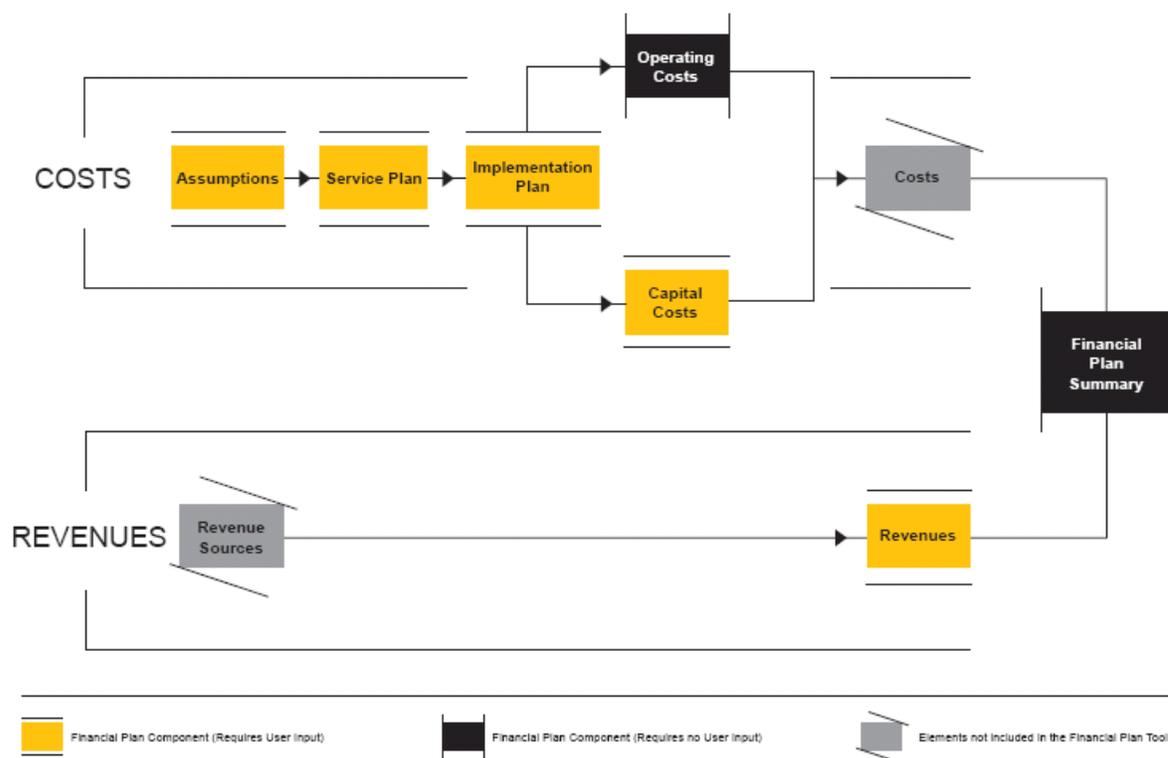
Until this point in the TDP process, cost has not been considered as a factor in identifying transit needs. The TDP Financial Plan affords agencies the opportunity to match needed transit improvements with available financial resources. In the financial plan, service costs are projected and financial resources are identified for the ten-year planning horizon of the TDP. Consequently, it is through the development of the TDP financial plan that transit agencies can determine which service improvements can be realistically achieved and when those service improvements should be implemented.

Financial Plan Tool Overview and Approach

The financial plan tool is intended to provide a standard format in which Florida transit systems can submit their TDP financial plans. This tool, available through the FDOT Public Transit Office web site, is prepared in Microsoft Excel format and consists of seven components. Each component is included in the TDP financial plan tool as a separate worksheet. Not all worksheets require user input. Several of the financial plan tool components automatically populate based on information and inputs in other tool components. As such, the spreadsheet is designed to offer a user-friendly methodology that will minimize errors, effort, and time in preparing capital and operating plans. The financial plan tool components are briefly described below and an illustration of how each component relates to the others is shown in Figure 8-1.

- **Inputs** - Documents operating and capital cost assumptions to be utilized as part of other financial plan tool components.
- **Service Plan** - Includes information for existing services by mode and new alternative services for the current year. Annual operating costs for vehicle miles and vehicle hours of service are calculated in the Service Plan Element.
- **Implementation Plan** - Displays time frames for implementing needs and projects. This component takes the annual operating costs for the current year, applies the inflation rate and projects the cost for implementing new service alternatives and other existing service improvements for future TDP planning years.

Figure 8-1 Financial Plan Tool Flowchart



Operating Cost Element

The operating cost element combines the results of the Implementation Plan and the Service Plan Components. This worksheet details annual operating costs for maintaining existing services and implementing new alternative services through the TDP planning horizon period.

- Capital Cost Element** - Includes capital cost estimates associated with new service alternatives during the planning period. These costs includes new, replacement and spare vehicles as well as transit infrastructure costs such as benches, shelters, signage, and software. Subtotals for each fiscal year are provided.
- Revenue Element** - Lists anticipated federal, state, local, and private revenue sources for transit services. Total operating and capital costs are carried forward to the Revenue

Element Section. Thus, budget surpluses or shortfalls throughout the planning period are displayed in this section.

- **Final Summary** - Presents two tables: a Cost Summary table and a Revenue Summary table for the 10-year planning period. Based on the costs and revenue summaries, funded and/or unfunded needs are also shown in this section of the spreadsheet. Information for this section is populated based on the detail provided in other components of the financial plan tool.

Input Components

As shown in Figure 8-1, financial plan components are divided into two major categories, components that require user input and components that require no user input. This distinction between the financial plan tool components adds to the user-friendliness of the spreadsheet. As such, of the seven components included in the tool, five require direct user input of data and information. Those five components include:

- Assumptions
- Service Plan
- Implementation Plan
- Capital Costs
- Revenues

Spreadsheet Color-Coding

To increase the usability of the spreadsheet tool, cells and columns within the spreadsheet have been color-coded. In this way, the end user can easily recognize cells within each of the four input components that need to be populated. Color-coding within the financial plan tool is structured as follows:

- Yellow – Directly populated by the user
- White – Selection from a list of categories within a drop-down menu
- Green – Automatically calculated fields

How to Use the Financial Plan Tool

The following section includes instructions on using the financial plan tool. Each component is discussed separately. Those components identified as needing direct input from the end user are noted with an asterisk (*).

Assumptions*

Input into the assumptions worksheet will be applied to develop costs in other components of the financial plan tool. The assumptions provide a basis for estimating costs by unit and future year costs. Assumptions for the financial plan consist of three main elements:

- Operating cost assumptions
- Inflation rates
- TDP year

The screen capture in Figure 8-2 shows the contents of the Assumptions worksheet. Cost categories reflected in that worksheet include operating cost per revenue hour and operating cost per revenue mile for different service types and modes. The determination on what variable to use to project costs for service improvements should be made by the agency preparing the financial plan.

Operating and capital cost **inflation rates** can be based on agency trends or the Consumer Price Index (CPI). A **Notes/Sources** column is included in the worksheet for the purpose of documenting the source for each assumption in the worksheet. The last element of the Assumptions worksheet is identification of the current year and the TDP base year. The **TDP base year** differs from the **current year** in that the development of the TDP document may occur in the year prior to the actual TDP planning horizon; thus, unit costs obtained for the current year need to be inflated in order to accurately reflect future year costs.

Figure 8-2 Financial Plan Tool Assumptions Worksheet

The screenshot shows an Excel spreadsheet with the following data:

Table	Cost For 2008	Notes/Source
Fixed-Route Operating Cost per Revenue Hour	\$100	Indicate Source/s
Fixed-Route Operating Cost per Revenue Mile	\$100	Indicate Source/s
ADA Paratransit Operating Cost per Revenue Hour	\$50	Indicate Source/s
ADA Paratransit Operating Cost per Revenue Mile	\$5	Indicate Source/s
Van Pool Operating Cost per Revenue Hour	\$50	Indicate Source/s
Van Pool Operating Cost per Revenue Mile	\$5	Indicate Source/s
Other Mode Operating Cost per Revenue Hour	\$50	Indicate Source/s
Other Mode Operating Cost per Revenue Mile	\$5	Indicate Source/s
Operating Costs Inflation Rate	3.0%	Indicate Source/s
Capital Cost Inflation Rate	5.0%	Indicate Source/s

Below the main table, there are two input fields:

Enter Current Year	2008
Enter TDP Base Year	2009

Service Plan*

The service plan component of the financial plan tool includes the 10-Year Service Plan of the TDP and consists of maintenance of existing transit services and planned service expansions and changes. The service plan details the level of transit service in terms of revenue hours of service, revenue miles of service, days of service, and service frequency. Accurate cost estimation of transit services requires that each of these cost components be included in the overall cost assessment of each project in the service plan. Service improvements, changes, and maintenance should be derived directly from the alternatives prepared in the Development and Evaluation of Alternatives phase of the TDP development process.

The service plan worksheet is divided into two major sections, the Maintenance of Existing Services section, which is found at the top half of the worksheet, and the Service Improvements section, which is found at the bottom half of the worksheet. The two categories are further divided into two subcategories of improvements to reflect projects in the service plan by mode. These two subcategories and examples of the service modes to include within each are noted below.

- Fixed Route/Fixed Guideway –Fixed-route bus, commuter rail, trolley
- Other Services – ADA, vanpool, other mode not falling into the Fixed Route/Fixed Guideway category.

Once the appropriate service alternative and projects have been identified, they can be addressed in the necessary detail in the service plan worksheet. Steps to complete the service plan component of the financial plan tool are illustrated in Figure 8-3 and listed as follows:

- Step 1:** Enter service plan projects under the appropriate sub-category heading.
- Step 2:** Choose a description of the new or existing service alternative from the drop down menu in the description column. For other service not listed, choose the blank line and enter the appropriate description (See Figure 8-4).
- Step 3:** Revenue miles, hours, headway minutes (if any), and annual days of service are recorded next. For revenue miles and hours, use daily operational hours.

Figure 8-3 Service Plan Steps

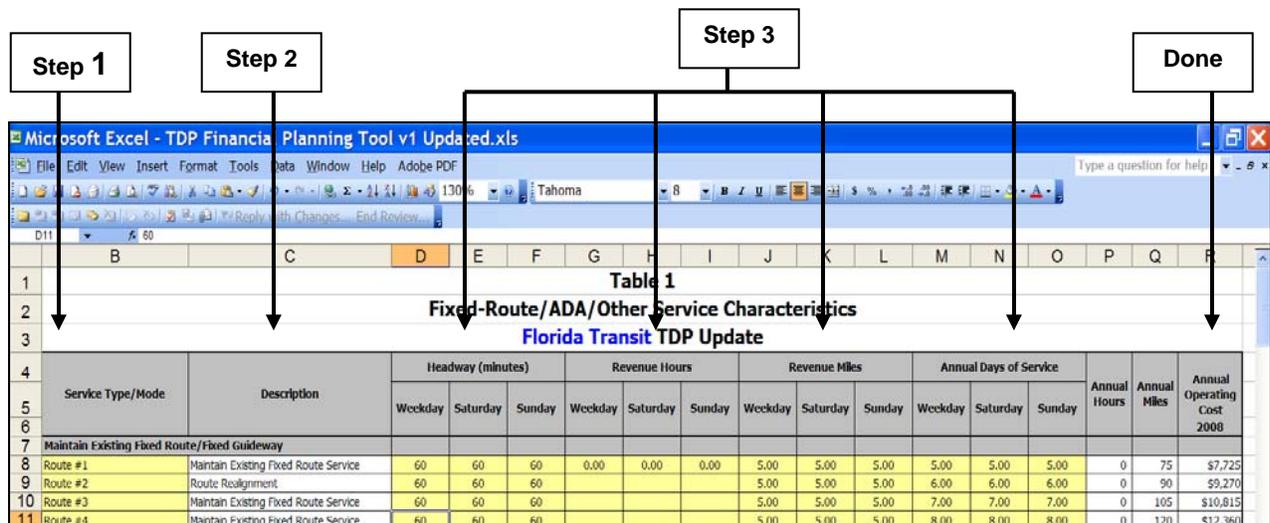


Figure 8-4 Service Plan Improvement Description Drop-Down Menu

Service Type/Mode	Description	Headway (minutes)			Revenue Hours			Revenue Miles		
		Weekday	Saturday	Sunday	Weekday	Saturday	Sunday			
Maintain Existing Fixed Route/Fixed Guideway										
Route #1	Maintain Existing Fixed Route Service	60	60	60	0.00	0.00	0.00			
Route #2	Route Realignment	60	60	60						
Route #3	Maintain Existing Fixed Route Service	60	60	60						
Route #4	Maintain Existing ADA Paratransit Service	60	60	60						
Route #5	Increase Hours of Service	60	60	60						
Route #6	Add New Service	60	60	60						
Route #7	Eliminate Service	60	60	60						
Route #8	ADA Service for New/Expanded Service	60	60	60						
Route #9	Route Realignment	60	60	60						
Route #10	Maintain Existing Fixed Route Service	60	60	60				5.00	5.00	5.00
Route #11	Maintain Existing Fixed Route Service	60	60	60				5.00	5.00	5.00
Route #12	Maintain Existing ADA Paratransit Service	60	60	60				5.00	5.00	5.00
Route #13	Maintain Existing Fixed Route Service	60	60	60				5.00	5.00	5.00
Route #14	Maintain Existing Fixed Route Service	60	60	60				5.00	5.00	5.00
Route #15	Maintain Existing Fixed Route Service	60	60	60				5.00	5.00	5.00
Route #16	Maintain Existing Fixed Route Service	60	60	60				5.00	5.00	5.00

Service project description types in the drop-down menu include the following:

- Maintain Existing Fixed-Route Service
- Maintain Existing ADA Paratransit Service
- Increase Frequency
- Increase Hours of Service
- Add New Service
- Eliminate Service
- ADA Service for New/Expanded Service
- Route Realignment
- Other (is indicated by a blank in the drop-down menu)

It is important to remember that expansions to existing routes should be detailed in two parts. First, the existing service detail should be input into the Maintenance of Existing Services section of the service plan worksheet. The second part, which would detail the increment of service expansion above the existing service level, should be input into the Service Improvements section of the service plan worksheet.

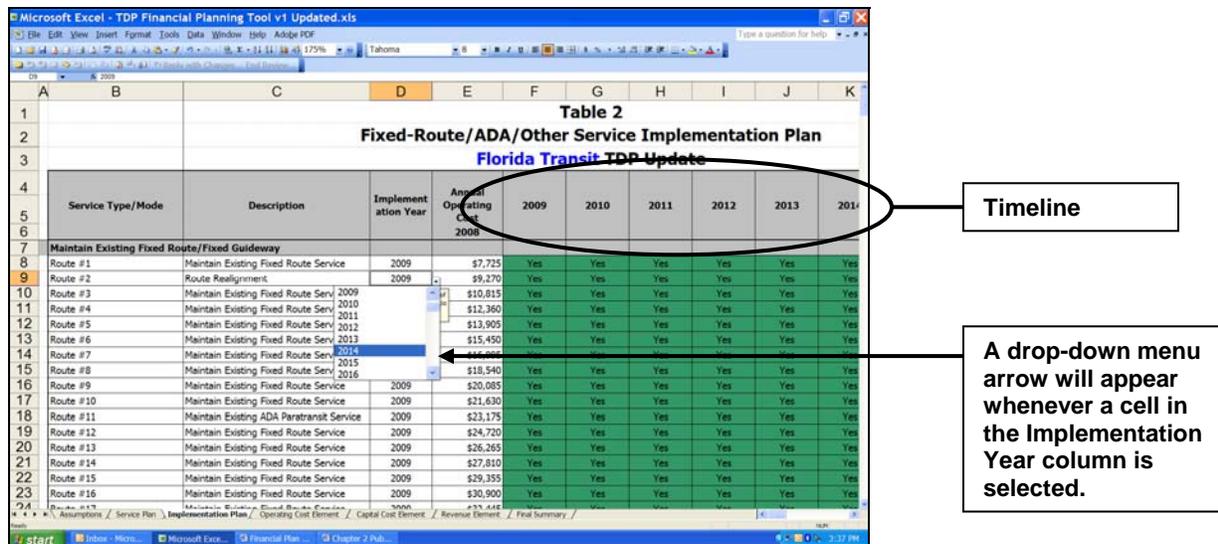
Total annual hours, miles, and operating costs are automatically calculated once the above data are entered into the appropriate cells. The total annual cost for each project is automatically calculated based on operating cost assumptions entered into the assumptions worksheet and the service detail in the service plan worksheet. Corresponding elements of the Implementation Plan and the Operating Cost Element are automatically populated based on information entered into the Service Plan component.

Implementation Plan*

Projects in the implementation plan worksheet are organized similar to the organization of projects in the service plan worksheet. There is no need to re-input projects as the project list in the implementation plan is populated automatically based on the information provided in the service plan worksheet. The TDP base-year annual operating cost is also carried over into the implementation plan worksheet from the service plan worksheet.

Only one task per project needs to be performed by the user in the implementation plan worksheet. An **implementation year** for each corresponding service plan project must be selected from a drop-down menu for (See Figure 8-5).

Figure 8-5 Implementation Plan Year Drop-Down Menu



Once an implementation year is selected, the remainder of the worksheet will populate with a Yes or No in order to indicate the year(s) in which each project will be in operation. The timeline shown in the implementation plan worksheet consists of only the TDP 10-year planning horizon years.

Operating Cost Element

The operating cost component of the financial plan tool populates automatically based on the information provided in the first three worksheets. This worksheet calculates the yearly operating costs for each project entered into the 10-year service plan. Capital and operating cost inflation rates entered into the assumptions worksheet are applied to estimate future year cost beyond the identified base year for each project.

No data are required to be manually entered into the operating cost element worksheet. As such, the end user should use the operating cost element worksheet as a quality assurance and quality check mechanism.

Capital Cost Element*

The capital cost element of the financial plan tool allows the user to input capital needs for each project in the service plan. Capital needs are entered by capital need category by project for each year of the TDP planning horizon. Capital needs should be based on scheduled improvements and the agency capital needs/improvements plan.

Figure 8-6 is a snapshot of part of the capital cost element worksheet. Capital needs are organized into two major categories within the worksheet, **vehicle requirements** and **other transit infrastructure**. Sub-categories of vehicle requirements include fixed-route/fixed guideway, other revenue vehicles, and support vehicles. Table 8-1 includes examples of capital costs to be included within each category and sub-category.

Projects in the capital cost element worksheet are carried over from the operating cost element worksheet. Capital cost elements to be entered into the capital cost element worksheet are color-coded in yellow and fall into two types of inputs:

- Unit costs

- Number of units

Capital unit costs should reflect current year unit costs for the corresponding capital need. The number of units should be entered in the column that reflects the appropriate year of purchase or implementation. Total capital need costs by year are shown at the bottom of the worksheet.

Figure 8-6 Capital Cost Element Worksheet

**Table 3
Capital Needs & Costs for Fixed-Rou
Florida Transit TD**

Capital Needs	Unit Cost	10-Year Need	2009	2010	2011			
Fixed-Route/Fixed Guideway								
Replacement Buses - Maintain Existing Service	\$300,000	50	5	\$1,575,000	5	\$1,653,750	5	\$1,736,438
New Alternative 1	\$450,000	10	1	\$472,500	1	\$496,125	1	\$520,931
New Alternative 2	\$330,000	4	1	\$346,500	1	\$363,825	1	\$382,016
New Alternative 3	\$450,000	10	1	\$472,500	1	\$496,125	1	\$520,931
New Alternative 4	\$450,000	10	1	\$472,500	1	\$496,125	1	\$520,931
New Alternative 5	\$450,000	10	1	\$472,500	1	\$496,125	1	\$520,931

Table 8-1 Capital Cost Examples

Capital Cost Category	Examples
Vehicle Requirements	
Fixed-Route/Fixed Guideway	Buses Rail Cars Trolleys
Other Revenue Vehicles	Vans Spare Vans
Support Vehicles	Relief Vehicles Maintenance Vehicles
Other Transit Infrastructure	Bus Stop Infrastructure Vehicle Technology (i.e., APC, AVL) Miscellaneous Capital

Revenue Element*

As in any financial plan, costs need to be matched to available revenues. The revenue element worksheet allows the user to perform the following financial plan functions.

- Identify revenue sources available to the agency
- Indicate the amount of revenue available from each revenue source for each service plan project
- Identify any shortfalls in capital and operating revenues for each service plan project

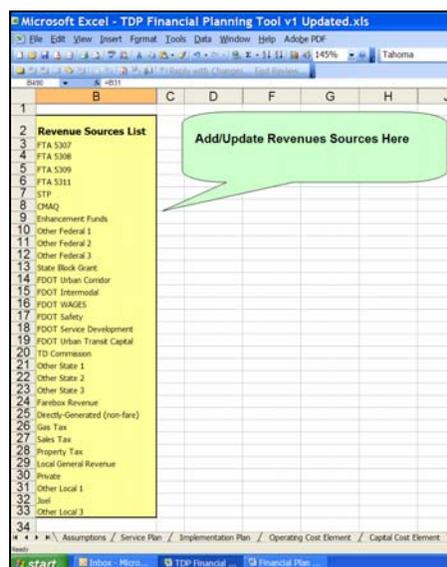
The revenue element worksheet is organized into three sections, revenue sources list, TDP costs and revenues by source, and the revenue source summary. User input into the revenue element worksheet is performed in two steps using revenue sources list and the TDP costs and revenues by source worksheet sections. The third section, revenue source summary, is automatically populated using the entered revenue data from the other two sections.

Step 1: Update revenue source list

Step 2: Enter revenue sources by service plan project

The first step of the revenue element is to update the revenue sources list. This step is performed in the revenue sources list menu shown at the top of the worksheet (Figure 8-7). All federal, state, and local revenue sources to be utilized by the transit agency should be included in this list. Opportunities to specify other revenue sources not listed in the revenue element worksheet are afforded to the user by the inclusion of “Other” revenue source categories in the revenue sources list which can be substituted by another specific revenue source.

Figure 8-7 Revenue Sources List



To add a revenue source in the revenue source list or add additional lines in the table, right click and choose the insert row option. For the revenue source list, you must right click within the yellow area. Once a new source is added in the source list, it is automatically available in the drop-down menu within the table.

The second step to complete in the revenue element worksheet involves specifying revenue sources and revenue source amounts to each project in the service plan for each TDP planning year. The table to be populated within the revenue element worksheet with the revenue source

and amount information is labeled as Table 4 in the worksheet and a screen shot of part of that table is shown in Figure 8-8.

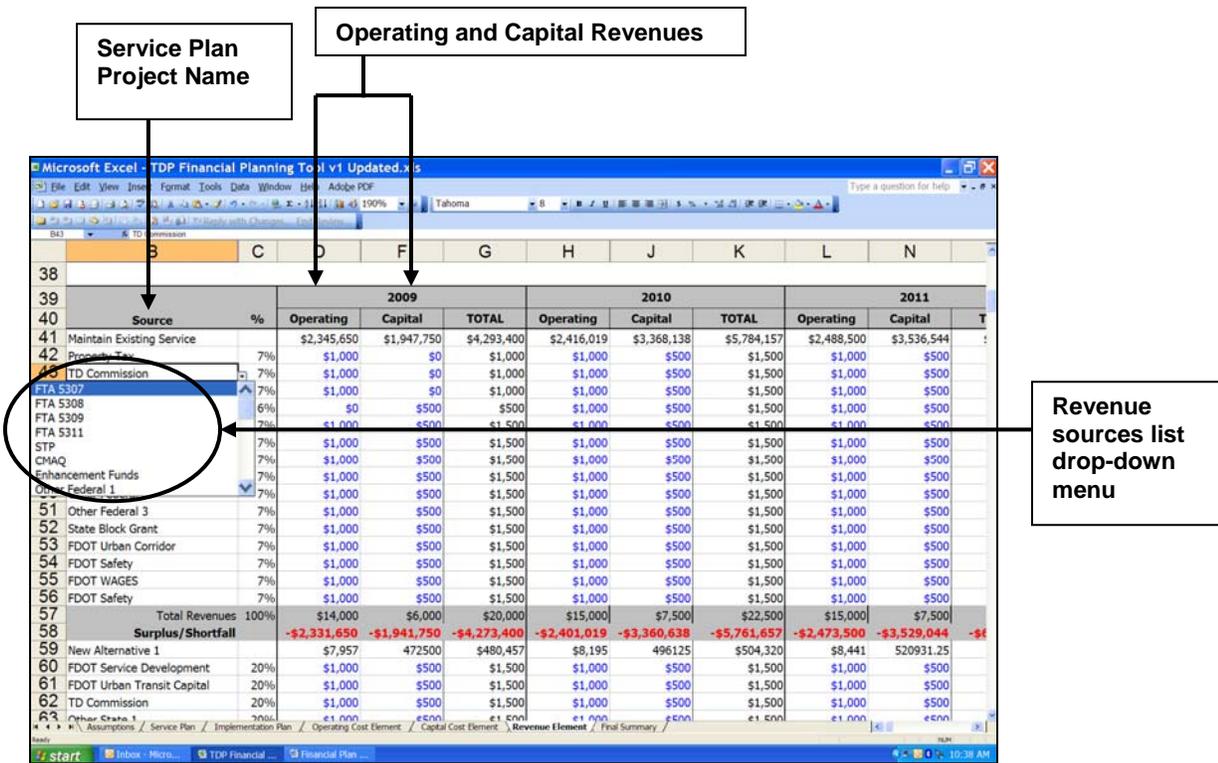
Service plan projects are populated directly from the operating cost element worksheet. Revenue sources for each service plan project are selected using the revenue sources list drop-down menu. Once a revenue source is selected, the appropriate revenue dollar figures are entered into the appropriate columns, operating and/or capital. The selection of revenue sources and amounts is identified and entered into the table for each service plan project and each year in the TDP planning horizon. As shown in Figure 8-8, the revenue element worksheet shows the operating and capital cost for each service plan project to assist the user in matching the appropriate amount of funding for each project.

The last table in the revenue element worksheet, Table 5, includes a summary of all operating and capital revenues by year by revenue source. This table requires no input from the user. Values in Table 5 are automatically populated based on revenue inputs in Table 4.

Financial Plan Summary

The Final Summary worksheet consists of a cost summary table and a revenue summary table. The tables in the worksheet reflect combined operating and capital costs and revenues. All TDP service plan projects and identified revenue sources are shown in the appropriate tables within the worksheet. At the bottom of the revenue summary table, revenues are matched to costs by year and the total TDP shortfall, if any, is reflected for each TDP planning year as total unfunded needs.

Figure 8-8 Revenue Element Worksheet Input Table



FUNDING SOURCES

The following paragraphs present information on a range of funding sources that may be available for transit and transit-related programs. Funding sources are organized into federal and state funding sources.

Federal Funding Sources

Urbanized Area Formula Program (49 U.S.C. §5307)

This program makes federal resources available to urbanized areas for transit capital and operating assistance in urbanized areas and for transportation related planning. For urbanized areas with 200,000 or more in population, funds are apportioned and flow directly to a designated recipient selected locally to apply for and receive federal funds. For urbanized areas

under 200,000 in population, funds normally are apportioned to the governor of each state for distribution.

Eligible projects include planning, evaluation of transit projects and other technical transportation-related studies, capital investments in bus and bus-related activities such as replacement of buses, overhaul of buses, security equipment and construction of maintenance and passenger facilities. All preventive maintenance and some ADA complementary paratransit service costs are considered capital costs.

Metropolitan Planning Program (49.U.S.C. §5303)

State DOTs and metropolitan planning organizations (MPOs) may receive funds for purposes that support the economic vitality of the metropolitan area. This includes increasing the accessibility and mobility options available to people, enhancing the integration and connectivity of the transportation system, and emphasizing the preservation of the existing transportation system.

Funds are apportioned to states by formula that includes consideration of each state's urbanized area population in proportion to the urbanized area population for the entire nation. These funds are then sub-allocated by states to MPOs (occasionally referred to as Transportation Planning Organizations or TPO's) according to a formula that considers each MPO's urbanized area population, its individual planning needs, and a minimum distribution.

Small Transit Intensive Cities (49 U.S.C. §5336(j))

The Small Transit Intensive Cities program was established by SAFETEA-LU within the Urbanized Area Formula Program. The program is available to transit intensive urbanized areas with less than 200,000 in population and is funded through a set-aside from the formula program. Both operating and capital programs that are consistent with the Urbanized Area Formula Program guidelines are eligible projects.

Formula Grants for Special Needs for Elderly Individuals and Individuals with Disabilities Program (49 U.S.C. §5310)

This program provides formula funding to states for the purpose of assisting private non-profit groups, public non-profit agencies and Community Transportation Coordinators in meeting the transportation needs of the elderly and disabled persons when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.

In Florida, the Section 5310 funding is administered by FDOT. FDOT obligates program funds from FTA based on the annual program of projects included in a statewide grant application. Once an application is approved, funds are available for state administration of its program and for allocation to each FDOT district office to be distributed to individual sub-recipients within those districts.

Bus and Bus Related Facilities Program (49 U.S.C. §5309)

The Bus and Bus Related Facilities Program provides capital assistance to eligible recipients on a discretionary basis. Transit authorities and other state and local public bodies and agencies are eligible recipients.

New Starts Program – Major Capital Investment Grants over \$75 Million (49 U.S.C. §5309(d))

This Federal Transit Administration (FTA) discretionary program supports locally planned, implemented, and operated transit guideway capital investments. This includes heavy, light, and commuter rail and bus rapid transit systems. Capital investments made through this program help to improve mobility, reduce congestion, and improve air quality in service areas as well as foster the development of viable, safer, and more livable communities.

Small Starts Program – Major Capital Investment Grants Under \$75 Million (49.U.S.C. §5309(e))

This program provides funding for smaller projects with a federal share of less than \$75 million. Small Starts projects may not total more than \$250 million. Small Starts projects may include streetcar, trolley, and bus rapid transit projects.

New Freedom Program (49.U.S.C. §5317)

This formula funding program provides funding for new services that are developed beyond that required by ADA to assist persons with disabilities. In Florida, FDOT will apply for and administer this grant program in coordination with the Florida Commission for the Transportation Disadvantaged. Sixty percent of the apportionment under this program is allocated directly to urbanized areas with populations over 200,000 and forty percent is allocated to states for use in urbanized areas of less than 200,000 population and rural areas.

Job Access and Reverse Commute Program (JARC) (49 U.S.C. §5316)

This program provides funding to develop transportation services for welfare recipients and low income individuals to and from jobs and to develop transportation services from urban centers to suburban employment opportunities. These funds are distributed by formula to designated recipients in urbanized areas with over 200,000 in population and to states for use in small urban and rural areas through an application process. Funds can be used to support both capital and operations.

American Recovery and Reinvestment Act of 2009

President Barack Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA) into law on February 17, 2009. The ARRA includes \$48 billion in transportation infrastructure investments, of which \$8.4 billion is being made available for transit capital improvements through Federal Transit Administration (FTA) programs. New legislation being introduced by the Senate Banking Committee would allow agencies to use 10 percent of their ARRA formula fund allocation for operations. More information on ARRA funds is available on the FTA website: www.fta.dot.gov.

State Funding Sources (FDOT)

FDOT Transit Block Grant Program

The Public Transit Block Grant Program provides a source of funding for public transit. FDOT awards funds to those public transit providers that are eligible to receive funding from the

Federal Transit Administration's Sections 5307 and 5311 programs and to Community Transportation Coordinators.

Public Transit Block Grant funds may be used for eligible capital and operating costs of providing public transit service. Funds may also be used for transit service development and transit corridor projects. Program funds may be used to pay up to 50 percent of eligible operating costs or an amount equal to the total revenue, excluding farebox, charter, and advertising revenue, and federal funds received by the provider for operating costs. State participation is limited to 50 percent of the non-federal share of capital projects.

Transit Corridor Program

This program provides funding to Community Transportation Coordinators (CTCs) or transit agencies to support new services within specific corridors when the services are designed and expected to help reduce or alleviate congestion or other mobility issues within the corridor. Transit Corridor funds are discretionary and are distributed based on documented need. These funds can be used for capital or operating expenses but eligible projects must be identified in a TDP, Congestion Management Plan, or other formal study undertaken by a public agency.

Priority for funds under this program is for existing projects to meet their adopted goals and objectives. Any remaining funds are allocated to each FDOT district by formula based on each district's percentage of the total state urbanized population. Projects are funded at one-half the non-federal share. However, projects that are designed to alleviate congestion in a region may receive funding at up to 100 percent.

Public Transit Service Development Program

The Public Transit Service Development Program provides initial funding for special projects. The program is selectively applied to determine whether a new or innovative technique or measure can be used to improve or expand public transit services. Eligible projects include projects involving the use of new services, routes, or vehicle frequencies; the purchase of special transportation services; and other techniques for increasing service to the riding public. Projects involving the application of new technologies or methods for improving operations,

maintenance, and marketing in public transit systems are also eligible for Service Development Program funding.

New Starts Transit Program (NSTP)

The New Starts Transit Program assists local governments in developing and constructing fixed guideway and bus rapid transit projects to accommodate and manage urban growth and development. The program also leverages State funds to generate local transportation revenues and secure FTA New Starts Program funding for Florida projects.

Eligible projects include those capital projects that support the Strategic Intermodal System. These funds may be used to support final design, right of way acquisition, and construction projects. Projects eligible under this program should have a dedicated funding commitment and be included in local plans. A project must also have either a Record of Decision (ROD) from the Federal Transit Administration or a Finding of No Significant Impact (FONSI).

State participation of transit capital projects may not exceed 50 percent of the nonfederal share of a project. Other state funds cannot be used as match for NSTP funds.

Commuter Assistance Program

The Commuter Assistance Program was established to encourage public and private partnerships to provide brokerage services to employers and individuals for carpools, vanpools, buspools, express bus service, subscription transit service, group taxi services, heavy and light rail, and other systems designed to increase vehicle occupancy. The program encourages the use of transportation demand management strategies.

Funding is allocated to each FDOT district based on a statewide assessment of commuter assistance program need.

Park and Ride Lot Program

The statewide Park and Ride Lot Program helps to provide organized, safe parking for vehicles constantly congregating on roadsides. This program provides for the purchase and/or leasing of

private land for the construction of park and ride lots, the promotion of these lots, and the monitoring of their usage.

Transportation Regional Incentive Program (TRIP)

TRIP was created by Legislature in 2005 to improve regionally significant transportation facilities in “regional transportation areas.” State funds are available throughout Florida to provide incentives for local governments and the private sector to help pay for critically needed projects that benefit regional travel and commerce. FDOT will pay for 50 percent of the project costs or up to 50 percent of the non-federal share of project costs for public transportation facility projects.

This program must be linked to growth management objectives. Eligible TRIP projects must be identified in appropriate local government capital improvement program(s) or long-term concurrency management system(s) that are in compliance with State comprehensive plan requirements and the Strategic Intermodal System. Projects must also support facilities that serve national, statewide, or regional functions and function as an integrated transportation system.

Intermodal Development Program

This program was developed to provide funding for major capital investments in fixed-guideway transportation systems. Eligible projects include major capital investments in public rail and fixed-guideway transportation facilities and systems which provide intermodal access; road, rail, intercity bus service, or fixed-guideway access to from, or between seaports, airports, and other transportation terminals; construction of intermodal or multimodal terminals; development and construction of dedicated bus lanes; and projects that otherwise facilitate the intermodal or multimodal movement of people and goods. FDOT will pay up to 50 percent of non-federal share of net project costs.

County Incentive Grant Program

The County Incentive Grant Program’s purpose is to provide grants to counties to improve a transportation facility, including transit, that is located on the State Highway System or that

relieves traffic congestion on the State Highway System. Municipalities are eligible to apply also by submitting their application through the county. FDOT will cover 50 percent of eligible project costs. Eligible projects include those that improve the mobility on the State Highway System; encourage, enhance, or create economic benefits, foster public-private partnerships, maintain or protect the environment, or enhance intermodalism and safety.

In-Kind and Other Soft Match

Local governments and other agencies may, in limited circumstances, use in-kind and/or other contributed services as soft match for projects. Office space, staff services, contract expenses, and other local operating costs may be allowable as in-kind match to certain grant funded projects. Real property may also be used toward the local share of certain capital projects. The use of in-kind match must be approved by the FDOT district financial office.

Additional information on the Federal and State funding sources listed above as well as other funding sources and transit resources information can be found in the FDOT District One Office of Modal Development *Resource Guide for Transit and Transit-Related Programs (November 2005)*.

Chapter 9 – Plan Development

Relevance

The objective of plan development is to develop the recommended alternative(s) into a ten-year, phased implementation plan that will serve as a sketch for the design of the desired transit system. It is expected that the first five years of the plan will contain a higher level of detail than the remaining five years. The last ten years of the plan should be more generalized and include, as appropriate, vehicle replacement and planning for new facilities. The implementation plan should be responsive to the unique nature of the service area and its transit needs. It should also carry out the agency's vision as established in the early stages of the Transit Development Plan.

As the design for the transit system's future, this task sets into motion the alternative(s) chosen as best meeting the demand and mobility needs of the community. In some cases, the alternative(s) may be general in nature, reflecting a general direction for the transit agency and the community. This task would then include the identification of specific action items or recommendations that support the preferred alternative. In other cases, selected alternatives may be quite specific, and the focus of this task would then be on prioritization and/or financial implications.

Until this point in the TDP process, cost has not been considered at all in identifying needs and devising strategies. It is important to note in this task that, while costs are now explicitly addressed, financial considerations should not affect the prioritization of recommendations. FDOT expects that this task will result in a list of needed actions for which there are either no funding sources or insufficient funding.

Approaches

Once the appropriate service alternatives have been selected, they can be addressed in the necessary detail for the ten-year implementation plan. The components of this step might include:

- a list of recommended actions;
- maps showing the areas served and the types and levels of the new or improved services provided;

- a ten-year phasing/implementation schedule that ranks recommended actions (keeping in mind the greater detail for the first five years);
- an organizational/management chart of the transit agency;
- a marketing plan for the service alternatives/improvements;
- a monitoring program to track performance of the implemented alternatives;
- a policy or governance action plan to address items identified in the situation analysis relating to coordination and supportive land use policies;
- a ten-year financial plan consisting of operating expenses, capital expenditures, and revenue sources for operating and capital projects; and
- a list of projects for which funding sources have not been identified

These components can be grouped in several ways to result in a logical arrangement for the TDP. For example, the first three elements listed above might be grouped under the heading of “operation plan.” The next three elements could be grouped under the heading of “management plan,” and the final two elements could be grouped under the heading of “funding plan” or “financial plan.” Organization of the components will depend largely on the specific recommendations for the transit system.

Operation Plan Elements

The role of transit services in the community as a part of the total transportation system should be reviewed. This discussion reinforces the TDP’s commitment of furthering the agency’s vision, goals, and objectives. There should be a summation of the transit needs of the community and how the identified alternative(s) and specific recommendations address these needs.

The operation plan should include maps that show the areas served by the recommendations and the types and levels of service proposed. These maps can be extensions of or additions to existing service maps. They should highlight the proposed new transit facilities and services so that the additions can be easily distinguished from the existing system.

An effective tool for presenting the ten-year schedule for phasing in the selected alternatives is a timeline. Each recommendation can be listed and the proposed time frame for its implementation shown via a horizontal bar. Bars of different shading types could be used to represent different phases for the implementation of each alternative. For example, the solid

portion of a bar might represent the planning stage of the alternative, while the hatched portion represents the implementation phase.

The timelines offer a quick-reference visual aid for the phasing/implementation schedule of each alternative. The duration and timing of planning and implementation phases for any alternative can be easily observed for any point over the ten-year period.

Management Plan Elements

An organizational chart depicting the structure of the public transit agency should be provided. This may be included in the results of an earlier task, but should also be presented in this section if any organizational changes are proposed. Roles, responsibilities, and relationships between the various parties should be addressed as appropriate.

There should be a discussion of the marketing plan for the services that will be introduced or affected with the implementation of the alternatives. Since the plan will not necessarily represent improvements to all users or interested parties, the proposed marketing plan should address the occasions where a decrease in service will result.

Marketing activities are not necessarily confined to new services. Recommendations addressing a need for marketing and informational programs for the existing transit system can form a major part of the Transit Development Plan.

To achieve the goals established in the early stages of the TDP process, there must be a monitoring program. Such a program can track performance measures for the recommendations as they are implemented. Clearly stated and measurable goals and objectives are necessary for an effective monitoring program. The efficiency and effectiveness measures discussed previously in this Manual are appropriate for monitoring system performance. Measures based on past performance levels, peer performance levels, or other benchmarks, as appropriate, should be established. The monitoring program will provide input to annual TDP updates in terms of describing the results of each recommendation that has been implemented. A monitoring program can be part of an agency's existing set of service standards or guidelines.

Financial Plan Elements

Once service alternatives have been identified, cost estimates for the alternatives should be formulated.

Chapter 8 discussed the development of the financial plan.

Combined Approach for the Ten-Year Implementation Program

This step can be completed in an abridged manner, combining the above elements into a series of tables (and figures, if appropriate). A timeline is one method to depict visually the prioritized recommended implementation schedule. Then, the ten-year capital and operating budgets and a financial capacity analysis, updated to reflect the proposals, can be presented. Proposal costs are treated as marginal cost increments in updating current budget projections. Capital needs, particularly the schedule of vehicle acquisition and replacement, should be presented separately.

Standard Financial Tables

To increase the ease with which the ten-year implementation program is produced, as well as to aid in the review and adoption of the TDP, standard financial tables have been developed that quickly organize the capital and operating financial plans. The tables are discussed in detail in Chapter 9 of this Manual. The purpose of the standard tables is not to constrain the agency as to how it will present its plan, but to allow for a user-friendly, time-saving, and accurate template for the capital and operating budgets.

Issues

Any operating cost, revenue, or capital investment assumption must be clearly noted in the discussion of each recommended action and in footnotes to the tables. The Transit Development Plan must be updated yearly, and transit demand and mobility needs (as well as many other factors) can change quickly. Therefore, the level of detail necessary to complete this task will vary with the year being presented. The first five years should be presented in detail, while the final years can be addressed in more general terms.

The TDP should rank recommendations based on their importance in implementing the selected alternative and improving the transit system. Trend and peer analyses can be useful in developing a better understanding of the system's performance and in identifying target areas

for additional attention and improvement. The results of these analyses, though, should be viewed primarily as a starting point for fully understanding the performance of the system. That is, performance evaluation measures do not comprehensively cover all of the objectives of a transit system. Additional information should be collected and more subjective evaluations should be conducted to measure the ability of recommendations to meet objectives.

The approach taken to implement the chosen alternative(s) might be driven by a strategy of market penetration. Markets that exhibit a potential for increased transit services and are more likely to be attracted to transit could be pursued first. Once alternatives serving these “primary targets” have been implemented, subsequent alternatives representing more challenging markets could be pursued.

TDP Submittal

The TDP rule is very specific and self explanatory regarding submittal of TDPs. That language says:

(5) Plan Submission and Approval.

(a) To be approved by the Department, a TDP must meet all applicable deadlines and address all requirements of this rule, including a public involvement plan that included opportunities for review and comment by interested agencies, and citizens or passengers during the development of the provider’s mission, goals, and objectives during the development of alternatives and during the development of the ten-year implementation program.

(b) The Department will accept TDPs for review at any time. Provider adopted TDPs must be submitted to the Department by September 1. Late filed TDPs will be accepted if extenuating circumstances beyond the provider’s control exist and the District Office is able to complete its review and approval process by the last business day of December. Within 60 days of receiving an adopted TDP or annual update the Department will notify the provider as to whether or not the TDP or annual update is in compliance with the requirements of this rule, and, if not in compliance, a list of deficiencies. Within 30 days of any resubmitted TDP or annual update the Department will notify the provider as to whether or not the resubmission is in compliance with the requirements of this rule.

(6) Grant Administration.

(e) The Department will award public transit grant funds after July 1 of each state fiscal year, but will not award funds until a provider’s TDP has been found to be in compliance with this rule.

(f) Annual updates and approved TDPs shall be on file at the appropriate District Office by the last business day of December of the state fiscal year for which funding is sought. If a provider’s

annual report has not been submitted by the last day of December in the fiscal year for which funding is sought, the provider will not receive any state public transit grant funds in that state fiscal year, and funds previously allocated for the provider will be allocated among the remaining providers. If a provider's TDP has not been submitted and found in compliance by the last business day of December of the state fiscal year the annual or five-year update was due, the provider will not receive any public transit grant funds in that state fiscal year, and funds previously allocated for the provider will be allocated among the remaining providers (Florida Administrative Code: Rule 14-73.001).

Resources

- Results from all previous TDP tasks, including a list of projects or actions to be included in the implementation plan
- Most current operating and capital budgets for the transit system
- Most current financial capacity analysis
- Current marketing plan
- Cost allocation model or other techniques used by the agency to assess revenue and cost changes resulting from service improvements
- Standard financial tables

Chapter 10 Annual Update

Requirements for Annual Updates

Annual Updates will take the form of a progress report on the TDP and include the following elements as specified in the Florida Administrative Code: Rule 14-73.001:

- (4) Annual Update. Annual Updates shall be in the form of a progress report on the ten-year implementation program, and shall include:*
 - (a) Past year's accomplishments compared to the original implementation program;*
 - (b) Analysis of any discrepancies between the plan and its implementation for the past year and steps that will be taken to attain original goals and objectives;*
 - (c) Any revisions to the implementation program for the coming year;*
 - (d) Revised implementation program for the tenth year;*
 - (e) Added recommendations for the new tenth year of the updated plan;*
 - (f) A revised financial plan; and*
 - (g) A revised list of projects or services needed to meet the goals and objectives, including projects for which funding may not have been identified.*

The Transit Development Plan is a major initiative for transit agencies and consumes a significant amount of staff time and resources. The Annual Updates are intended to be far more modest an effort - sufficiently intensive to ensure the continued relevance of the plan and maintain the momentum developed during the TDP process, but not as resource demanding as the original TDP development. The annual update process provides an opportunity to refresh the agency's goals and action plans in the minds of its stakeholders and provide feedback and discipline to the agency itself. Recognizing that the agency's staff and policy makers as well as communitywide stakeholders and interest groups are constantly changing, the Annual Update provides an opportunity to introduce the TDP to new individuals.

Enumerating prior-year accomplishments serves to provide feedback on the original plan as well as providing an opportunity to showcase progress towards the agency's goals. The presentation of accomplishments can be laid out in tabular format building on the original format used in the Transit Development Plan.

Discrepancies between the plan of accomplishments should be noted along with revisions noting new schedules or modifications to the original plan and the reasons why. This should include noting any other known changes in the original schedule and how those will cascade into the future.

With each new year, the 10-year timeframe looking forward is incremented by one additional year. Thus, the Annual Update should include a new 10th year. This 10th year action items and financial conditions should be presented with a level of detail and format consistent with that in the original TDP. It is recognized that this 10th year action plan will not have the benefit of the comprehensive study carried out in the original TDP development. Thus, this 10th year plan as well as those in the subsequent four years may well be modified at the next major TDP update. However, in most mature transit systems the majority of the programs of activity continue with only incremental changes between years.

The Annual Update will not require the production of new ridership forecasts, however, if an agency is utilizing TBEST on an ongoing basis to support their planning efforts they may choose to update demand forecasts as well.

As noted in Chapter 2, public participation should be included for the TDP Annual Update development. The level of outreach may be far more modest and there may be opportunities to integrate it with other ongoing citizen and community participation initiatives in order to economize on resources. Remembering that one of the benefits of public participation is the opportunity to both receive feedback and build awareness and support among the community, the more comprehensive the public participation process can be for annual updates the more likely the agency is to benefit.

The Rule does not call for agency adoption of the Annual Updates; however, it is recommended that the governing board authorize, endorse, receive or otherwise acknowledge concurrence with the Annual Update. FDOT approval of the Annual Update is a requirement of being in compliance with the Rule and is necessary for subsequent receipt of state funds.

Major Update in Less Than Five Years

Florida State Statute requires major updates on a five-year cycle; however, extraordinary circumstances may merit more frequent updates. A transit agency may find it useful to do a major update as a result of a significant change in governance or agency funding. For example, if a citizen referendum approves a new funding source or if local agencies are merged into a regional agency, a major update may be appropriate. Looking ahead, the prospect of considerable uncertainty surrounding issues such as fuel prices, reauthorization of federal transportation funding, or new initiatives associated with climate change, might result in some of the annual updates needing to integrate fairly significant changes in financial and other

assumptions. These dynamic conditions suggest that even routine annual updates will require some careful reflection and appropriate updating of the action plan and financial plan.

Appendix A

Implementation Schedule

TDP Rule Change Implementation Schedule		
2006	December	Rule Development Notice Published December 30, 2006
	January	
2007	February	Final Rule Change Adopted 2/20/2007, Transit Agencies Notified
	March	
	April	
	May	
	June	
	July	
	August	
	September	
	October	
	November	
	December	Last 3 Year Major TDP received
	2008	January
February		
March		
April		
May		
June		
July		
August		
September		First TDP Due in Compliance with New Rules by September 1, 2008
October		
November		Compliance Notification Due to Properties
December		
2009		January-September

Appendix B

Florida Administrative Code: Rule 14-73.001
<https://www.flrules.org/gateway/RuleNo.asp?id=14-73.001>

Florida Administrative Code: Rule 14-73.001

14-73.001 Public Transit.

(1) Purpose. This rule sets forth requirements for the recipients of the Department's public transit grant funds.

(2) Definitions.

(a) "Department" means the Florida Department of Transportation.

(b) "District Office" means any of the seven geographically defined districts as set forth in Section 20.23(4)(a), F.S.

(c) "Provider" means a transit agency or a community transportation coordinator as set forth in Section 341.052, F.S.

(3) Transit Development Plans (TDPs). TDPs are required for grant program recipients in Section 341.052, F.S. A TDP shall be the provider's planning, development, and operational guidance document, based on a ten-year planning horizon and covers the year for which funding is sought and the nine subsequent years. A TDP or an annual update shall be used in developing the Department's five-year Work Program, the Transportation Improvement Program, and the Department's Program and Resource Plan. A TDP shall be adopted by a provider's governing body. Technical assistance in preparing TDPs is available from the Department. TDPs shall be updated every five years and include all elements described below.

(a) Public Involvement Process. The TDP preparation process shall include opportunities for public involvement as outlined in a TDP public involvement plan, approved by the Department, or the local Metropolitan Planning Organization's (MPO) Public Involvement Plan, approved by both the Federal Transit Administration and the Federal Highway Administration. The provider is authorized to establish time limits for receipt of comments. The TDP shall include a description of the process used and the public involvement activities undertaken. As required by Section 341.052, F.S., comments must be solicited from regional workforce boards established under Chapter 445, F.S. The Department, the regional workforce board, and the MPO shall be advised of all public meetings where the TDP is to be presented or discussed, and shall be given an opportunity to review and comment on the TDP during the development of the mission, goals, objectives, alternatives, and ten-year implementation program.

(b) Situation Appraisal. The TDP is a strategic planning document and will include an appraisal of factors within and outside the provider that affect the provision of transit service. At a minimum the situation appraisal shall include:

1. The effects of land use, state and local transportation plans, other governmental actions and policies, socioeconomic trends, organizational issues, and technology on the transit system.

2. An estimation of the community's demand for transit service using the planning tools provided by the Department, or a Department approved transit demand estimation technique with supporting demographic, land use, transportation, and transit data. The result of the transit demand estimation process shall be a ten-year annual projection of transit ridership.

3. An assessment of the extent to which the land use and urban design patterns in the provider's service area support or hinder the efficient provision of transit service, including any efforts being undertaken by the provider or local land use authorities to foster a more transit-friendly operating environment.

(c) Provider's Mission and Goals. The TDP shall contain the provider's vision, mission, goals, and objectives, taking into consideration the findings of the situation appraisal.

(d) Alternative Courses of Action. The TDP shall develop and evaluate alternative strategies and actions for achieving the provider's goals and objectives, including the benefits and costs of each alternative. Financial alternatives, including options for new or dedicated revenue sources, shall be examined.

(e) Ten-Year Implementation Program. The TDP shall identify policies and strategies for achieving the provider's goals and objectives and present a ten-year program for their implementation. The ten-year program shall include: maps indicating areas to be served and the type and level of service to be provided, a monitoring program to track performance measures, a ten-year financial plan listing operating and capital expenses, a capital acquisition or construction schedule, and anticipated revenues by source. The implementation program shall include a detailed list of projects or services needed to meet the goals and objectives in the TDP, including projects for which funding may not have been identified.

(f) Relationship to Other Plans. The TDP shall be consistent with the Florida Transportation Plan, the local government comprehensive plans, the MPO long-range transportation plan, and regional transportation goals and objectives. The TDP shall discuss the relationship between the ten-year implementation program and other local plans.

(4) Annual Update. Annual updates shall be in the form of a progress report on the ten-year implementation program, and shall include:

- (a) Past year's accomplishments compared to the original implementation program;
- (b) Analysis of any discrepancies between the plan and its implementation for the past year and steps that will be taken to attain original goals and objectives;
- (c) Any revisions to the implementation program for the coming year;
- (d) Revised implementation program for the tenth year;
- (e) Added recommendations for the new tenth year of the updated plan;
- (f) A revised financial plan; and
- (g) A revised list of projects or services needed to meet the goals and objectives, including projects for which funding may not have been identified.

(5) Plan Submission and Approval.

(a) To be approved by the Department, a TDP must meet all applicable deadlines and address all requirements of this rule, including a public involvement plan that included opportunities for review and comment by interested agencies, and citizens or passengers during the development of the provider's mission, goals, and objectives during the development of alternatives and during the development of the ten-year implementation program.

(b) The Department will accept TDPs for review at any time. Provider adopted TDPs must be submitted to the Department by September 1. Late filed TDPs will be accepted if extenuating circumstances beyond the provider's control exist and the District Office is able to complete its review and approval process by the last business day of December. Within 60 days of receiving an adopted TDP or annual update the Department will notify the provider as to whether or not the TDP or annual update is in compliance with the requirements of this rule, and, if not in compliance, a list of deficiencies. Within 30 days of any resubmitted TDP or annual update the Department will notify the provider as to whether or not the resubmission is in compliance with the requirements of this rule.

(6) Grant Administration. Public transit funds will be considered on the basis of public transit needs as identified in TDPs. The Department is authorized to fund up to such percentages as are designated for each type of public transportation project by Chapter 341, F.S., for the respective state and federal projects described therein. The Department shall, within statutory parameters, determine the level of funding participation for each project.

(a) State funding participation in public transit projects and services shall require a duly executed agreement, unless otherwise required by law.

(b) Eligibility to receive state public transit grants from the Department is limited to those providers specifically designated by law to receive such grants, and determined by statutory budgeting and programming requirements.

(c) Written requests for appropriated public transit grant funds by a provider are to be addressed to the District Office in which district the provider operates public transit service. The request shall include at a minimum the name and address of the provider, level of funding being requested, type of funding or program participation requested, and use to be made of the requested funds. Where a deadline for applications has been established, applications received after the deadline shall be returned. Deadlines for each program application may be obtained from the District Office.

(d) Federal funds for which the Department is the primary recipient may involve special application procedures or submittal format, imposed by the federal grantor agency as a condition of receiving federal funds. The provider will be notified by the District Office of special application requirements at the time of submission of a written request for funding if the District Office has not previously distributed such information to the provider.

(e) The Department will award public transit grant funds after July 1 of each state fiscal year, but will not award funds until a provider's TDP has been found to be in compliance with this rule.

(f) Annual updates and approved TDPs shall be on file at the appropriate District Office by the last business day of December of the state fiscal year for which funding is sought. If a provider's annual report has not been submitted by the last day of December in the fiscal year for which funding is sought, the provider will not receive any state public transit grant funds in that state fiscal year, and funds previously allocated for the provider will be allocated among the remaining providers. If a provider's TDP has not been submitted and found in compliance by the last business day of December of the state fiscal year the annual or five-year update was due,

the provider will not receive any public transit grant funds in that state fiscal year, and funds previously allocated for the provider will be allocated among the remaining providers.

*Specific Authority 334.044(2), 341.041(12)(b) FS. Law Implemented 341.041, 341.051, 341.052, 341.071 FS.
History—New 9-24-75, Formerly 14-73.01, Amended 12-*