Considering Security in Florida’s Transportation Project Development Process

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Civil Engineering
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Dedication

This research effort and this degree are dedicated to my family. It is dedicated to the sacrifice of time and attention that they have made to allow this success. It is dedicated to my wife Lisa who has gone for periods of time without her husband and to my children Lauren, Andrew, Alex, Jared, and Ryan who have gone for periods of time without their father. It is dedicated to my mother Charlene who always made me “finish the game” no matter how much I wanted to quit.
Acknowledgements

This research effort is the culmination of 14 years of effort in pursuit of knowledge. It would not have been possible without the support of many people and agencies over the years. The faculty and staff of the University of South Florida have continuously supported this effort and through their professionalism and love of education, made this accomplishment possible. Special recognition is given to Dr. Frank Young for mentorship during undergraduate studies, Dr. Anita Callahan, P.E. for mentorship during the pursuit of a Master's Degree, and Dr. Ram Pendyala, E.I. for guidance and mentorship during pursuit of this Doctorate Degree. These individuals have sacrificed their own time and energy to ensure the success of this effort. Recognition is given to Dr. Jian “John” Lu, P.E., Dr. Edward Mierzejewski, P.E., Dr. Steven Polzin, P.E., and Dr. Stuart Silverman for their participation, expert guidance, and commitment to make this effort succeed.

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ABSTRACT

The transportation decision-making process takes on different forms in different states. The purpose of this study was to include and move considerations for national, state, and local security needs into the transportation project development arenas with a focus on Florida. A thorough and updated literature review was completed to determine the current state of the industry regarding incorporating security considerations into the transportation planning process. A review of current Federal, State, and Local laws and regulations concerning planning requirements was conducted to outline planning parameters and limitations. An information request letter was mailed to the key planning staff members for all 50 states in the United States, the District of Columbia and Puerto Rico and other key stakeholders. An online survey was conducted to determine public opinion about transportation security. As a result of these efforts, a modified PD&E process was developed, key findings were identified, future research needs were defined, and an outline of next steps was developed.
Chapter 1
Introduction And Approach

1.1 Problem Statement

Federal Code defines terrorism as “Terrorism includes the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.” (Code of Federal Regulations, Title 28, Volume 1, Section 0.85, July 1, 2004). United States Code defines security as “Protection from terrorist threats or actions due to acts of extreme violence resulting in significant loss of life, injury, and/or damage or destruction of facilities and infrastructure, whether or not these acts are intended to further political or social objectives.” (United States Code, Title 18, Part 1, Chapter 113B, Section 2331(5), January 7, 2003).

The transportation decision-making process takes on different forms in different states. There are clear federal guidelines that motivate and facilitate these processes. However, these guidelines lack provisions for security considerations in the transportation planning and decision-making processes. As with other issues, such as landscaping and Intelligent Transportation Systems
(ITS), that have historically migrated through the project cycle backwards, there is a high potential for security considerations to take the same path. This path would involve beginning in a retrofit, operations, and/or maintenance phase and proceeding backwards through asset acquisition, design, programming, and finally residing in the planning process.

1.2 Purpose And Objectives

The purpose of this study was to include and move considerations for national, state, and local security needs into the transportation planning arena, specifically into Florida’s Project Development Process. They currently exist in the operational phases of projects but are not involved in early project phases. This study accomplished this through the development of a set of guidelines for planners and decision-makers to use when developing and screening reasonable and feasible projects and alternatives and when implementing their planning and work programs.

1.3 Value Of Research

Specific benefits of these guidelines include:

- Established a methodology for comparing alternatives regarding transportation security.
Can justify management decisions for altering programming, budgeting, and staffing assignments that may differ from previous norms.

Encouraged identification of technical and research needs in transportation security planning.

Increased efficiency and effectiveness of transportation decision-making by educating decision-makers on potential fatal flaws.

Allowed for the information to be used in other similar situations, such as natural disasters.

1.4 Significance

This study can be used to provide specific recommendations for inclusion of security considerations into the transportation planning process that would have an immediate utility at various levels (i.e., federal, state, local) throughout Florida. This study can facilitate planning efforts between these levels and result in an additional screening tool that can be used to evaluate potential transportation projects and more accurately assess the benefits and costs of those alternatives. This study can also be used as instructional material for training those decision-makers on security sensitivity in the planning and project development phases.
1.5 Scope Of Study

1.5.1 Content Limitations

The content of this study was limited to that material that could be researched, documented, printed, reproduced, presented in any form, and discussed without violating any federal, state, or local laws, including those policies and procedures relating to issues of security.

1.5.2 Spatial Limitations

This study examined the transportation project development process as it exists in the State of Florida. Even though some discussion concerning the methodologies and status of decision-making initiatives of other states occurred, this study focused on Florida.

1.5.3 Temporal Limitations

The topic of this study is rapidly developing. The most current and available information was used during the life of this study. However, due to the significance of this topic in the project development process, and the current cultural sensitivities that may exist regarding the topic of security, this topic will continue to develop for several years.
1.5.4 Contextual Limitations

The application of the guidelines established during this study will primarily apply to the current transportation project development process in Florida. It can be expected that certain elements of the guidelines will be universally applicable but other elements will only apply to the conditions within Florida. In addition, the research was limited to those issues that are not currently developed within the industry.

1.6 Consumers Of Research

This effort will prove beneficial to a large number of consumers (Table 1-1).

<table>
<thead>
<tr>
<th>Research Beneficiaries</th>
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<tbody>
<tr>
<td>1. Federal, state, and local policy makers</td>
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<tr>
<td>2. Key project staff involved in Project Development &amp; Environment (PD&amp;E) studies or other similar National Environmental Policy Act (NEPA) studies</td>
</tr>
<tr>
<td>3. Staff involved in work program development and maintenance</td>
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<tr>
<td>4. Designated safety staff at all levels</td>
</tr>
<tr>
<td>5. Designated security staff at all levels</td>
</tr>
<tr>
<td>6. Transportation planners</td>
</tr>
<tr>
<td>7. Transportation consultants</td>
</tr>
<tr>
<td>8. Transportation system managers</td>
</tr>
<tr>
<td>9. Elected officials and appointees</td>
</tr>
<tr>
<td>10. Metropolitan Planning Organizations (MPO’s) and their staff</td>
</tr>
</tbody>
</table>
1.7 Methodology

The development of transportation planning strategies that include enhanced security considerations requires tremendous commitment to developing models for implementation over the long term. Specifically, there is considerable evidence to suggest that many transportation planning processes are weak and are ill-prepared to manage the needs of today's users without extensive modifications to processes and procedures. Unfortunately, with the continuous threats of violence, terrorism and other criminal behaviors in the United States, transportation systems have become increasingly vulnerable to these challenges. As a result, effective strategies must be developed that will accommodate the needs of users around the country. For the purposes of this chapter, Florida transportation planning systems will serve as the primary focus of this research study, with an emphasis placed upon the ability to develop effective security methods and processes that will lead to safer routes. The methodology for the proposed research study will employ a qualitative method of research, as this will require extensive attention to the quality of the processes currently in place, which will lead to new conclusions regarding the development of new and enhanced programs that will promote security at an even greater level.
Any research study involving transportation planning processes requires that there must be a thorough and comprehensive evaluation of existing strategies in order to identify areas that require improvements, as well as the direction in which these processes should lead in the future. There is considerable evidence throughout transportation planning to suggest that the quality of these strategies and their cohesiveness with existing transportation channels is a key indicator of their likelihood of success or failure. For example, if a program exists that does not provide effective measures for promoting and enhancing security, then it is very likely that transportation security planning is doomed for failure in one way or another. Therefore, strategic measures must be taken that will enable transportation planners to develop processes that are designed to fill the voids of current processes, emphasizing security-enhancing measures that are seriously lacking in many modern systems.

The level of security that is provided by a transportation system is perhaps the key measurement that transportation planners must consider in today's world. Since there are many threats to the livelihood and integrity of transportation systems, there is an important lesson to be learned with regards to the development of security measures that will offer passengers the best possible sense of comfort and ease in their travels. Regardless of the location across the United States, transportation planning has become a tricky and complex
phenomenon, whereby there are considerable challenges for planners in the areas of strategic development and security administration. Despite government and local influence, there are a number of challenges with respect to modifying systems to accommodate changing needs, and therefore, it is critical that the appropriate methods are utilized in order to accomplish the desired tasks. The proposed research study will define the overall effectiveness of a multi-dimensional transportation planning system in promoting a greater understanding of the needs of communities and leaders, as well as to address major security issues and complications that might ensue during planning and implementation.

The following efforts were completed to determine the current transportation planning practice, possible arenas to incorporate security considerations, possible methodologies to incorporate security considerations, and effectiveness of those methodologies to properly consider security in the planning process:

- A thorough and updated literature review to determine the current state of the industry regarding incorporating security considerations into the transportation planning process.
- A review of current Federal, State, and Local laws and regulations concerning planning requirements was conducted to outline planning parameters and limitations.
- An information request letter was mailed to the key planning staff members for all 50 states in the United States, the District of Columbia and Puerto Rico and other key stakeholder in Florida. The responses received were then used to assess the current condition and/or need for this study in the planning practices currently underway in their respective states. The responses were also used to determine staging scenarios involving deployment nationwide.

- An online questionnaire (http://home.earthlink.net/~securityplanning/) was developed and administered to obtain general perceptions about the transportation planning process and security concerns. The survey was distributed, via email notification, in January of 2006 to about 500 recipients, all of whom reside in Florida. The recipients were comprised of planners, engineers, and private citizens. The responses were used to determine perceived needs in the transportation planning process, as related to security considerations.

- Interviews were conducted with leading transportation officials and private security experts to develop initial guidelines and to determine effectiveness and utility of proposed modifications to the existing process.

1.7.1 Data Instrument

For the purposes of this study, a questionnaire provided the most interesting prospects for feedback and real-time data for consideration. The
questionnaire addressed various aspects of transportation planning at various stages of commitment, incorporating the necessity to implement enhanced security measures that will provide additional protection against a variety of events that could potentially lead to harm or damage to system infrastructures.

The questionnaire involved questions that required a simple yes or no response. Responses varied depending upon their role in the process and their assessment of current conditions. The questionnaire instrument required a specific method of implementation in order to obtain a wide variety of responses and important results for consideration. For the purposes of this study, it was estimated that an online questionnaire would offer the most effective means of gathering data and obtaining a wide variety of responses from participants all over the State of Florida. The advantages of this method included the following:

1. These types of surveys are relatively inexpensive;
2. Limited personal information was required for dissemination to participants; and
3. Online questionnaires enabled participants to have more time than in other strategies, where there may be specific time constraints in place.

Since the questionnaires required some thought and consideration of a number of transportation-related issues, the researcher provided ample time for
completion and submission of these surveys. The research study required that these questionnaires discuss a number of issues relative to transportation planning, strategic development, as well as current and future needs. The questionnaires made available to participants were identical in nature, and therefore, all questions were simple yet specific enough to provide sufficient detailed information for examination and evaluation. Since the target participant population was educated and possessed an acceptable level of intelligence, these questionnaires did not present too many challenges in terms of completion. Each questionnaire contained questions that could be divided into three sections, with a section emphasizing each of the following primary issues:

1. Security;
2. Perceptions of Transportation Planning; and
3. Federal, State, and Local support strategies

The questionnaire was developed as a 30-item scale, with questions related to each designated section. Participants were required to complete all questions in order to have their responses counted as valid in the evaluation process. Each questionnaire was brief, with a short explanation at the beginning of the online form to discuss the specifics of the submission process. Emails were sent to various State and Local agencies throughout the state with links to the questionnaire site, as well as a disclaimer regarding the confidentiality of this
information. No names or other personal information were used in the study with the exception of the individual’s affiliation or relationship to transportation planning, and these records will remain confidential at all times. It was critical that each participant was notified of confidentiality, since there were concerns regarding the content of the questionnaire or liability or perceived endorsement related to their answers. The protection of each participant’s identity was of primary concern for the researcher, and therefore, great lengths were taken to promote confidentiality at all times throughout the process.

1.8 Study Organization

This study is organized as follows:

- Chapter 1 - Introduction and Approach: This chapter includes a discussion of the problem statement, value and significance of research, study limitations, and methodology.
- Chapter 2 - Literature Review: This chapter documents the state of practice as determined by a thorough literature review.
- Chapter 3 - Framework for Security Planning: This chapter outlines the legislative and regulatory instruments involved in security planning along with agencies involved in the process and the current project development process.
Chapter 4 – Survey Results: This chapter includes analysis and discussion of results obtained from the information request letter mailed to the state Department’s of Transportation and analysis and discussion of results obtained from the security planning questionnaire that was administered online.

Chapter 5 - Revised Project Development Process: This chapter reflects the new and revised PD&E process that explicitly incorporates security considerations into the process.

Chapter 6 - Conclusions and Recommendations: This chapter summarizes the study by stating conclusions about the research and recommendations for improvement to the planning process and recommendations for further research.

References: This section contains references to all literature quoted or referenced in this study.

Bibliography: This section contains references to all literature that was studied, but not directly used, in this study.

Appendix A – Acronyms: This appendix defines all acronyms used in the study and report.

Appendix B – List of State Security Contacts: This appendix lists all of the recipients of the initial request letter.
Appendix C – Sample Request Letter to State Planning Agencies: This appendix presents a sample of the request letter that was sent to all planning agencies as listed in Appendix B.

Appendix D – State Responses to Inquiry Letter: This appendix documents all responses from the request letters.

Appendix E – Key Transportation Legislation: This appendix contains a description of key transportation legislation and regulations.

Appendix F - Transportation Planning and Security Agencies: This appendix contains a description of key transportation agencies involved in the transportation planning process.

About the Author: This section gives an overview of the author.
Chapter 2

Literature Review

There are many challenges involved in maintaining an effective and secure transportation system in modern society, and therefore, it is often very difficult to identify resources and strategies for improving these processes without specific attention to past research and case studies regarding the proposed topic. For the purposes of this study, existing research regarding security issues in transportation was evaluated for contribution to new strategies for improvement in this arena, and specifically, research concerning the State of Florida was particularly advantageous in promoting change and progress. The following discussion will identify and evaluate various resources from existing literature that provided insights into security and safety concerns in modern transportation systems throughout the State.

As a part of this study, an in-depth literature review was conducted to determine the state-of-the-industry with regards to transportation security planning. This review included obtainable literature, both written and online, from a variety of sources including government, education, and industry. As a result of that review, several topic areas emerged. Even though all of these topics are
not fully explored as a part of this study, they must be considered in the transportation planning process.

2.1 Emerging Transportation Security Issues

A report generated by Dillingham (2003) identifies many of the emerging threats to and concerns of modern transportation systems, which have significantly increased since September 11th. During the identification process, many weaknesses in security have been noted, including flaws in the luggage screening process at airports, easy access to restricted areas at airports, and limitations in air traffic control towers with respect to security measures (Dillingham 2003). With these weaknesses in mind, it is not surprising that the federal government continues to reassess its priorities with respect to homeland security and transportation protection, and substantial measures have been taken to ensure that these problems are resolved and new solutions are implemented on a long-term basis (Dillingham 2003).

With respect to mass transit alternatives, the Federal Transit Administration (FTA) established its own set of security initiatives in order to accommodate the needs of passengers and these systems as a whole (Dillingham 2003). Furthermore, it has been suggested that funding for transit security initiatives should be allocated from a variety of resources as a means of
facilitating new strategies for security improvements across these systems (Dillingham 2003). However, the challenges of enhancing security in transportation systems continue to cause concern in federal, state and local agencies, although immediate and long-term planning initiatives involving risk assessments have been created (Dillingham 2003). However, there are additional considerations with regards to funding such programs, as there is limited funding in place, which is far below the projected estimates required to fund these strategies (Dillingham 2003). Furthermore, it is necessary to consider that human contributions to enhancing transportation planning processes are just as significant as financial considerations, as the knowledge and expertise that these contributors bring to the mix are critical to the long-term development of key strategic initiatives in transportation planning (Dillingham 2003). Nonetheless, transportation security initiatives are still in their infancy stages, as there are still marked vulnerabilities across these channels that are difficult to ignore:

“Today, we have better intelligence, coordination, and communication; we have plans to alert the public to threats; and we are all more alert to the possibility of threats. Yet major vulnerabilities remain, particularly in air cargo, general aviation, mass transit, and port security…Addressing these vulnerabilities
will continue to require risk assessments and plans that balance security concerns against mobility needs, and that consider how much the nation can afford to spend for security improvements in light of other, competing demands for limited funds” (Dillingham 2003).

These challenges continue to provide particularly difficult circumstances for transportation planners, and although the federal government possesses considerable influence in advancing these objectives, they also serve as a limiting factor in inciting change and progress, due in large part to the lack of funding for such programs on a widespread basis (Dillingham 2003). It appears that in many instances, limited funding opportunities are secured for only larger metropolitan. However, there are many other regions throughout the United States that also face abundant threats of different types that require the attention and financial resources of the federal government in order to advance security measures into the coming years.

The optimization of resources serves as a key indicator of advanced initiatives for transportation planning processes. Berrick (2005) argues that continuous federal funding for transportation security initiatives requires that the President, Congress and the Senate must agree upon the key objectives for promoting advanced security capabilities in all types of transportation systems.
However, it should be noted that by integrating resources from all agencies into one cooperative system is likely to serve as the most feasible alternative in advancing transportation security initiatives to the next level (Berrick 2005). Therefore, the consolidation of efforts from one agency to the next is one of the most effective strategies in developing a cohesive effort that will facilitate transportation planning as desired (Berrick 2005). It is often necessary to reconstruct programs or strategies from the ground up in advancing these objectives; however, this strategy requires extensive time, capital and other resources that might not be readily available for use (Berrick 2005). Therefore, it is possible that integrating new models and strategies one at a time is perhaps the most effective strategy to ensure that transportation planning progresses to the next level without falling behind in the process (Berrick 2005). With this in mind, it is important to identify the critical steps in advancing transportation planning to the next level, achieving those steps on an individual basis, and then moving on to more advanced initiatives as time and funding permit (Berrick 2005). Transportation planners must assume responsibility for their actions and must affirm their commitment to these strategies as a primary means of advancing transportation to a new level, one that will provide the best possible outcomes for the end users (Berrick 2005).
Because of changes in our security state resulting from increased terrorist activity, it is absolutely imperative that the transportation planning process more thoroughly consider security implications when planning, screening, and selecting projects. The National Research Council (1999) identified scenarios (Table 2-1) that would be considered in the United States Department of Transportation Vulnerability Assessment.

Even though these possibilities have been published since 1999, little has been done to accommodate these concerns into the transportation planning process. These issues have found refuge in the operations, maintenance, and emergency response arenas. It is necessary to bring these issues forward into the early planning processes in order to better control the possibilities.
Table 2-1
Vulnerability Assessment Scenarios

<table>
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<th>Scenario</th>
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<tbody>
<tr>
<td>1. Car bomb at bridge approach</td>
</tr>
<tr>
<td>2. Series of small explosives on highway bridge</td>
</tr>
<tr>
<td>3. Single small explosive on highway bridge</td>
</tr>
<tr>
<td>4. Single small explosive in highway tunnel</td>
</tr>
<tr>
<td>5. Car bomb in highway tunnel</td>
</tr>
<tr>
<td>6. Series of car bombs on adjacent bridges or tunnels</td>
</tr>
<tr>
<td>7. Bomb detonated at pipeline compressor stations</td>
</tr>
<tr>
<td>8. Bomb detonated at pipeline storage facility</td>
</tr>
<tr>
<td>9. Bomb detonated on pipeline segment</td>
</tr>
<tr>
<td>10. Simultaneous attacks on ports</td>
</tr>
<tr>
<td>11. Bombing of waterfront pavilion</td>
</tr>
<tr>
<td>12. Container vessel fire at marine terminal</td>
</tr>
<tr>
<td>13. Ramming of railroad bridge by maritime vessel</td>
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<tr>
<td>14. Attack on passenger vessel in port</td>
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<tr>
<td>15. Shooting in rail station</td>
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<tr>
<td>16. Vehicle bomb adjacent to rail station</td>
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<td>17. Bombing of airport transit station</td>
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<td>18. Bombing of underwater transit tunnel</td>
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<td>19. Bus bombing</td>
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<tr>
<td>20. Deliberate blocking of highway rail grade crossing</td>
</tr>
<tr>
<td>21. Bombing of rail tunnel</td>
</tr>
<tr>
<td>22. Bomb detonated on train in rail station</td>
</tr>
<tr>
<td>23. Vandalism of track structure and signal system</td>
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<tr>
<td>24. Bombing of rail bridge</td>
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<td>25. Explosives attack on multiple rail bridges</td>
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<td>26. Explosive in cargo of passenger aircraft</td>
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<td>27. Biological release in multiple subway stations</td>
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<td>28. Anthrax release from freight ship</td>
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<tr>
<td>29. Anthrax release in transit station</td>
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<tr>
<td>30. Anthrax release on passenger train</td>
</tr>
<tr>
<td>31. Sarin release in multiple subway stations</td>
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<tr>
<td>32. Physical attack on railcar carrying toxics</td>
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<tr>
<td>33. Cyber attack on highway traffic control system</td>
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<tr>
<td>34. Cyber attack on pipeline control system</td>
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<tr>
<td>35. Attack on port power/telecommunications</td>
</tr>
<tr>
<td>36. Sabotage of train control system</td>
</tr>
<tr>
<td>37. Tampering with rail signals</td>
</tr>
<tr>
<td>38. Cyber attack on train control center</td>
</tr>
</tbody>
</table>

21
A literature review on this subject has to-date revealed very little directly concerning the subject matter. Literature reviewed to date is broken into the following security considerations that will be focal issues during the study.

- General Planning Needs
- Modal Integration
- Mode Attractiveness
- System Redundancy
- Application Of Technology
- Cost And Funding Priorities
- System Performance
- System Interdependency
- Land Use Interaction
- Risk Assessment
- Public Participation
- Information Availability
- Planning Levels: Federal, State, Local
- Organizational Structure
- Legal Considerations
- Facility Design
2.2 General Planning Needs

Transportation processes have become increasingly complex over the past decade, as issues related to security have increased in importance on a widespread basis across the United States. It is very difficult to develop new strategies for security improvements when the appropriate financial resources are unavailable, or if there are political or leadership challenges involved in these processes. It is increasingly difficult to develop processes that incorporate the appropriate level of security measures, especially since there are governmental bodies and leaders that are unable to secure the proper level of support and financial resources to perform such tasks as effectively as required. Therefore, there are considerable challenges that are evident in modern transportation systems, as the ability to advance security is not always readily available without modifying these systems dramatically in scope and premise.

It has been recognized by several individuals that there is a need for considering security in the transportation planning process. Khattak (2002) concurred that there was no substantial literature on transportation security planning prior to the September 11th attacks. Dillingham (2003) recently dealt with the issue of long term challenges to transportation security. He identifies five major challenges. These are:
1. developing a comprehensive transportation risk management approach;
2. ensuring that transportation security funding needs are identified and prioritized and that costs are controlled;
3. establishing effective coordination among the many public and private entities responsible for transportation security;
4. ensuring adequate workforce competence and staffing levels; and
5. implementing security standards for transportation facilities, workers, and security equipment.

A comprehensive planning effort is necessary for each of these five challenges to be met.

Flynn (2000) iterates that there is a need for “An ambitious, comprehensive approach” to raise awareness, advance standards, promote partnerships, and get adequate resources. Flynn also believes that transportation security cannot be treated as a “secondary or even tertiary issue.”

Khattak (2002) reiterates the idea that the September 11 events have increased the importance of national security. Most of the events and incidents shared success because they were largely unexpected. They exposed “gaps” in security planning. The gaps included lack of identification of critical assets and security concerns in the transportation system, planning and preparation by
governments, and erroneous perceptions of security risk by the general population.

Dornan and Maier’s white paper (2005) serves as a strong example of a key strategic process involved in planning for transportation security needs on a long-term basis. The authors indicate that in developing any type of wide-range transportation planning strategy, the following elements must be considered as critical factors in these processes:

- Provide support for economic development and stability in larger metropolitan areas, where there is the greatest opportunity to engage in globalization efforts and to promote competition;
- In planning for any type of transportation, there must be a long-term safety and security process in place to ensure that all users are protected as best as possible;
- Facilitate new and innovative options for transportation users so that their needs are met, particularly if they are unable to utilize traditional methods;
- All transportation planning efforts must encourage protecting the environment from harm while allowing individuals to experience an enhanced quality of life whenever possible;
- Enable transportation routes to be efficient at all times, facilitating a greater level of communication and ease in travel for all users;
• Facilitate the effective management and cohesiveness of all transportation system operations; and to
• Allow existing forms of transportation to maintain their effectiveness and to encourage their efficiency under any and all circumstances

These criteria serve as critical markers in the maintenance of current transportation processes, and they also provide a glimpse into the possibilities that are available to facilitate effective security measures into these processes, without interrupting the flow and progress of these systems as they are currently maintained.

2.3 Modal Integration

In determining the best possible course of action regarding security for a given transportation system, it is necessary to identify and understand the level of progress that has already been made. There are a number of key issues to consider in developing transportation strategies that incorporate mode specific security needs into their processes, and a white paper created by Dorman and Maier (2005) addresses such issues in a comprehensive and detailed format. This paper begins with an introduction to the issues that have emerged since the September 11th terrorist attacks, which have created new challenges for transportation experts with regards to systemwide planning and strategic
development on a long-term basis, including issues facing general operations and the sustainability of such systems over time (Dornan and Maier 2005). It is advantageous for field experts to begin to manage these challenges with an all-inclusive examination of current modal processes, many of which may appear outdated and ill-equipped to accommodate emerging security needs; however, there is a marked lack of understanding between what is perceived as critical and how to promote such issues in modern systems (Dornan and Maier 2005). With this in mind, it is not surprising that transportation planners continue to struggle in their efforts to identify the specific problems of each system and to develop strategies to overcome these problems without lengthy or severe interruptions to current processes, which might cause even further delays in maintaining adequate systems on a long-term basis (Dornan and Maier 2005). Nonetheless, these challenges must be faced directly and without fear, as transportation continues to evolve and to require the expertise and support of a wide body of groups in order to thrive, since individuals depend upon transportation in order to conduct their lives normally and without serious disturbance to their routines.

Polzin (2002) indicates that inter-system connectivity could be impeded by security concerns. The transportation industry has encouraged intermodal connectivity. Florida, along with other states, has been considering a high-speed
rail for several years. These initiatives will most likely be affected and impaired by the incorporation of security concerns into the planning process.

Khattak (2002) discusses the need for a comprehensive approach, with security in mind. This comprehensive approach must include different transportation modes.

2.4 Mode Attractiveness

Modal attractiveness, both existing and influenced, is an important factor for transportation planners. Being able to determine the modal split is a fundamental consideration in the transportation and traffic modeling systems. It seems logical that if a planning study does not consider transportation alternative to be viable due to concerns associated with the security of that mode then the attractiveness of that mode would be artificially altered as a result of that finding. This would most likely be a short term effect due to the resilience of modal patrons and the dependency of those users on the systems. However, it could prove annoying and difficult to properly analyze revenue potential of a particular mode and to deal with other long-term planning issues such as infrastructure needs. There should be sensitivity to the effects of identifying modes, routes or infrastructure that are more vulnerable to security issues. Polzin (2002) discusses the issue of modal attractiveness in light of September 11th. He
discusses the impacts that September 11th had on the airline industry and the subsequent shift in mode choice. He also discusses the possible discrepancies that could occur as a result of mode based security funding differentials. These differentials, or publicly perceived differentials, could greatly influence modal attractiveness.

2.5 System Redundancy

It is most important to recognize that in promoting new security measures for implementation in modern transportation systems, any number of possible scenarios or opportunities for security mishaps can occur, such as with natural disasters or with threats of terrorism. Transportation planning processes have long been ill-equipped to handle these types of threats, which have exposed serious defects in how these systems account for emergencies, regardless of their source (Dornan and Maier 2005). These flaws could potentially lead to fatal errors if they occur, and therefore, it is critical that transportation planning strategists are well-prepared to manage these challenges on a widespread and long-term basis (Dornan and Maier 2005).

System redundancy can provide alternative transportation modes and routes when available. A traditional utility of redundancy is that of alternatives associated with primary system failure as a result of events, such as crashes, or
lack of capacity. The value of redundancy is clear when observed from the user’s perspective. However, the value becomes less apparent or is mitigated when dealing with funding these redundant systems. Honea (2000) ventured into the topic of the planning of excess capacity. Excess capacity was recognized as a necessity for the national defense. Certain types of industries, like the rail industry, struggle to redeploy or add capacity due to the fixed nature of their infrastructure. This occurs even in the presence of reliable demand forecasts that justify the need for additional capacity. Other modes, like containers, deal with a trade imbalance of high import, low export of containers. Therefore, ships are already making trips with empty containers. For example, in the port of New York, there is not enough staging area. Excess capacity for redundancy or capacity considerations is extremely difficult and costly. New York is not alone in this dilemma. Every port in the eastern United States faces this problem as the public demands greater access to water fronts. Morgan (2000) believes that the existing surface transportation system has a tremendous amount of redundancy built in as evidenced by the system’s rapid recovery after natural disasters.

2.6 Application Of Technology

Technology presents many tools to be used in the transportation operation and maintenance processes. Some of these tools may have limited utility when planning for security. For example, the use of Intelligent Transportation Systems
ITS) and databases for drivers license processing hold great potential for preventing security events through detection of potential terrorists before they have the opportunity to strike. However, the value of those technologies is unclear when dealing with planning of infrastructure. The installation and operation of these technologies requires coordination and the utility in the planning phase needs to be completely explored.

In the modern world, technology infiltrates almost each and every aspect of existence in one way or another. In transportation planning, technology is utilized in many different areas, as there are specific needs that are best accommodated through technological means. Therefore, it is not surprising that transportation systems have evolved in recent years utilizing a combination of computer-based and other technology-based solutions in order to satisfy all desired objectives. A study conducted by Siwek and Associates (1999) examines the implementation of ITS as a means of promoting change and progress within these systems in order to provide a greater level of service for users. In order to satisfy the ever-changing needs of technology-based solutions in modern transportation systems, the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 was established as a means of promoting efficiency and advanced solutions to problems in transportation systems (Siwek and Associates 1999). ITS has evolved over time as a primary method of
providing exemplary service to transportation users, and it offers a greater level of understanding of the challenges of modern transportation systems, including but not limited to emergency response (Siwek and Associates 1999). However, the integration of various technologies into transportation systems has always been a challenge for leaders and experts in the field, as existing frameworks have often been unequipped to manage these challenges without serious interruptions to service (Siwek and Associates 1999). Nonetheless, there are considerable advantages to the implementation of these technologies, as they provide a greater level of efficiency, increased response times, and financial savings over the long term (Siwek and Associates 1999). It is expected that with continuous improvement on strategies incorporating emerging technologies, these systems, in theory, will be prepared for security events, such as terrorist threats or attacks (Siwek and Associates 1999). In determining the best possible course of action for a given transportation system, it is necessary to conduct the following evaluation: “As part of plan development, State or regional goals, objectives and performance measures can be identified to take into account how transportation facilities and services address, now and in the future, the social, environmental and economic goals of the State or region” (Siwek and Associates 1999). It is not surprising that these objectives represent tremendous challenges for many transportation systems, as their existing frameworks may not be prepared to identify or to manage such goals. However, they must be ultimately
incorporated into existing systems as a means of promoting change, progress, and to enhance existing security measures to satisfy users (Siwek and Associates 1999). In general, ITS serves two primary purposes, that of providing information to users so that these systems work more efficiently for their needs, and to provide improvements to general operations that will ensure long-term efficiencies at the operations level (Siwek and Associates 1999). Since there are a number of options available in the ITS portfolio, decisions regarding these systems must be made with considerations of current processes, the end users, and the entire well being of the system in question (Siwek and Associates 1999).

Although ITS serves as a helpful strategy in promoting progress throughout a given transportation system, it is necessary to consider these alternatives as only one component of a larger and more widespread set of strategies for implementation (Siwek and Associates 1999). In other words, ITS could potentially serve as the backbone or driving force of any given system, but it should not be the sole solution, as it is not capable of accommodating all possible system needs (Siwek and Associates 1999). Therefore, continuous improvement strategies must ultimately be considered as one of the key indicators of advanced progress in transportation systems (Siwek and Associates 1999). Other challenges remain that must also be evaluated and modified when necessary, and these include the following:
- Developing a greater understanding of ITS and its role with the cooperation of a variety of public and private agencies involved in transportation planning;
- Developing the technical capacity that is necessary to accommodate ITS initiatives of all types;
- Developing the capabilities that are necessary to implement and support ITS on a widespread basis;
- Evaluating all financial opportunities and limitations, many of which may require the support of members of private agencies (Siwek and Associates 1999).

It is not surprising that many transportation systems require extensive modifications to their existing processes in order to adapt to ITS, but these objectives may be realized with a concentrated effort from all involved parties (Siwek and Associates 1999).

It is important to identify locations that have successfully implemented ITS strategies into their existing transportation systems. For example, Chicago, IL possesses a complex network of associations amongst various agencies and other groups that are involved in transportation planning and implementation, and these groups have been successful in effectively communicating with each other through an established committee known as the Metropolitan Area Mayors’ Caucus (Volpe Center 2000). By utilizing this committee to communicate ideas,
express concerns, and share challenges, Chicago has been able to satisfy a number of objectives with respect to transportation systems, and this serves as a strong example of change and the ability to work cohesively towards a common goal (Volpe Center 2000). It is important in developing any transportation planning strategy involving ITS to perform the following:

- Include stakeholders from local and regional groups in order to secure the support of these key players in ITS strategies;
- Provide knowledge and information to local officials with respect to ITS so that the decision-making process is effectively promoted and implemented;
- Initiate project development strategies for future use, all of which depend upon ITS information that is readily available for use;
- Provide information to the general public regarding ITS, so that all objectives are appropriately communicated to the end users;
- Engage in networking strategies that will facilitate shared knowledge and resources; and
- Develop the appropriate strategies with respect to collecting data for use in ITS implementation (Volpe Center 2000).

These objectives serve as important indicators of the overall receptiveness of ITS planners, stakeholders, and general public involvement in any projects that may occur (Volpe Center 2000). With these strategies in place,
ITS initiatives are likely to be well received by key stakeholders and the general public at large.

Another key example of the success of an ITS initiative is Miami, FL, whereby an active committee was formed in order to identify the capabilities and advantages of ITS systems within existing transportation frameworks, and the committee included members of many different organizations, as a means of understanding how these changes could shape the direction of transportation planning in future years (Volpe Center 2000). With the committee firmly in place, a variety of ITS initiatives have been considered across the State of Florida, with specific concentrations in fiber optic connectivity and other related technologies (Volpe Center 2000). These opportunities have provided some insights into the current gaps in technology and strategy that have been observed, due in part to a prior lack of knowledge and resources for implementation (Volpe Center 2000). However, with respect to these challenges, the committee has created new strategies for consideration and possible implementation in future years (Volpe Center 2000).

Other considerations for transportation planning involving ITS must include the widespread dissemination of knowledge and information regarding these processes to elected leaders and other officials (Volpe Center 2000).
According to the text, after this educational endeavor had taken place in the Dallas-Fort Worth area,

“Including both elected officials and technical staff enhanced these discussions and improved communications between the two groups in terms of their expectations from ITS products and services. Operations staff gained a better understanding of the nontechnical concerns of the elected officials, and elected officials better understood the level of effort and timelines associated with deploying ITS projects” (Volpe Center 2000)

These initiatives are particularly important in facilitating the change that is necessary in providing the best possible measures for security and related support across all transportation systems, as they offer the appropriate personnel the knowledge and information that is required to make educated and well informed decisions that are likely to influence transportation systems in positive ways (Volpe Center 2000). Furthermore, it should be noted that transportation planning without the implementation of ITS initiatives will not be successful in providing effective options for end users, who serve as the most critical receivers of these systems (Volpe Center 2000). With this in mind, it is critical to continue the education and advancement of ITS initiatives for leaders, officials, experts, and even the end users (Volpe Center 2000).
2.7 Cost And Funding Priorities

Costs associated with security planning can consist of both direct and indirect costs. Direct costs can include design, construction, maintenance, and operation of improvements for both retrofit and new projects. Indirect costs can include right-of-way value impacts, cost of additional labor, tourism impacts, investment attractiveness, and delays associated with changing priorities. It is common in current practices to consider these costs when making transportation decisions. These considerations usually take the form of Benefit/Cost analyses. The current practices do not assign quantifiable benefits to a particular security consideration. Therefore, it is not possible to adequately incorporate those considerations into the analyses.

Transportation planning strategies serve as a substantial portion of the United States gross economic product, with approximately $1 trillion in spending on an annual basis (Dornan and Maier 2005). This figure is highly significant, as it represents a relatively large portion of federal spending for programs, and since transportation infiltrates almost every aspect of daily living, this funding must be expended wisely and without waste in order to preserve the integrity of these processes (Dornan and Maier 2005). With the increased interest in promoting security within these processes, it is not surprising that continuous assessments of transportation planning must take place in order to utilize such allocations as
best as possible so that residents are protected and supported by their own tax dollars (Dornan and Maier 2005). However, transportation planning has long been weak in many of these areas, as there have been considerable flaws in how security measures are provided to the public, their flexibility, and their overall long-term sustainability, considering the financial resources that are available for use (Dornan and Maier 2005).

There is considerable evidence to suggest that transportation planning strategies require a complex evaluation of current processes and routine needs assessments in order to promote change and progress regarding security measures. For example, some of the key required steps include financial forecasting of projected costs regarding operations and new program implementation; the utilization of existing land versus new land requirements; the feasibility of growth opportunities in existing regions in order to accommodate new users; the ability to utilize new and existing capital resources to maximize transportation opportunities; and identify areas of weakness and the potential for widespread improvements that will best influence transportation system users without serious interruptions to daily activities (Dornan and Maier 2005).

The development of modified transportation planning processes requires extensive funding from a wide variety of sponsors, including federal, state and local agencies. Federal funding is especially critical in developing new security
strategies for transportation, and there is a general rule that as spending is incurred upon approval of a given project, costs will be reimbursed by the federal government for the work that is performed in a given location (The Metropolitan Transportation Planning Process 2004). Each year, Congress is responsible for allocating a specific amount of funding for specific projects deemed necessary for the general operations of the U.S. Department of Transportation, with specific spending guidelines for many programs (The Metropolitan Transportation Planning Process 2004). Much of this funding is required to maintain existing operations within a given location; however, some project-specific funding is usually available for facilitating new programs that may include measures for security and other related issues (The Metropolitan Transportation Planning Process 2004). It is expected that as these needs arise, funding will be requested by states and local governments for specific projects, and that transportation experts, upon notification of funding, will implement their chosen strategies in order to promote greater effectiveness in the transportation planning process (The Metropolitan Transportation Planning Process 2004).

There are many different aspects of the transportation planning process that require specific attention to security details as well as measures for long-term improvements. With the specific allocations by the federal government provided on an annual basis, it is not surprising that an ever-increasing amount
of funding is being allocated for security-specific projects; nonetheless, there are many weaknesses in these plans, due in large part to funding constraints at all levels. Simply put, the amount of funding allocated for security strategies is still relatively low, which challenges transportation planners to develop additional cost-effective measures for supporting security needs in metropolitan areas and beyond.

Funding for transportation projects can be controlled, in both amount and allocation, by many factors. Unfortunately, security is not one of them. Safety is a very prominent factor in that it can generate funds in a very short time frame. For instance, in Florida, if a hurricane causes a high degree of scour on a major bridge that requires replacement of that structure, that project will receive priority funding due the importance of that linkage to the regional interests and the safety concerns associated with leaving the existing bridge. However, the new bridge may not receive additional funds to enhance its security attributes. Changes to existing systems will not go unchallenged because the addition of a single factor will cause competition for limited funds with other projects.

Dillingham (2003) addresses funding and risk management issues. The most critical funding criteria are identified as ridership level, population, identified vulnerabilities, and criticality of assets. Funds should also use risk-based criteria for fund distribution. Two key funding and accountability challenges will be (1)
paying for increased transportation security and (2) ensuring that these costs are controlled. The funding estimates for security projects do not come close to matching the project demand. In August 2002, the Congress appropriated $93 million to fund security improvements at the nation’s 361 ports in fiscal year 2002, but the Transportation Security Administration (TSA) received applications for as much as $697 million for these improvements. This is a differential of $604 million between what is provided and what is needed.

Polzin (2002) summarized the resource pressures resulting from security concerns as:

- Diversion of resources to security needs outside of transportation programs
- Diversion of funds to operating security enforcement, policing, planning, training
- Diversion of funds to capital investments in security (i.e. barriers, fencing, inspection)
- Use of funds to support network redundancy/connectivity
- Use of funds to support modal choice/redundancy

The President’s Fiscal Year 2005 Budget calls for significant increases in the security budget. The Federal Bureau of Investigation (FBI) has a proposed
doubling of funding for counterterrorism and counterintelligence. This equates to 44% of their total budget (Table 2-2). (2004)

<table>
<thead>
<tr>
<th>Element</th>
<th>Budget (US$)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>$1,242,000</td>
<td>0.02%</td>
</tr>
<tr>
<td>Forensic</td>
<td>$166,615,000</td>
<td>3.26%</td>
</tr>
<tr>
<td>Security</td>
<td>$262,083,000</td>
<td>5.12%</td>
</tr>
<tr>
<td>National Security</td>
<td>$2,241,114,000</td>
<td>43.81%</td>
</tr>
<tr>
<td>Criminal</td>
<td>$1,638,867,000</td>
<td>32.04%</td>
</tr>
<tr>
<td>Cyber Investigations</td>
<td>$283,041,000</td>
<td>5.53%</td>
</tr>
<tr>
<td>Technology Investments</td>
<td>$522,308,000</td>
<td>10.21%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$5,115,270,000</td>
<td>100.00%</td>
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</table>

2.8 System Performance

Polzin (2002) discusses the issue of system performance as the “most obvious area of impact to transportation.” He proposes that security concerns can impact the following performance measures:

- Cost to user
- Speed
- Accessibility
- Reliability
- Safety/security
- Convenience
- Connectivity

The consideration of security in the planning process will mean a redefining of traditional performance criteria and formulas.

2.9 System Interdependency

Currently, most systems are evaluated independently when dealing with planning, design, funding, operation, and maintenance considerations. This is partially driven by the condition that systems are funded through different means that are directly related to the type of system. For example, federal roadway resurfacing dollars are not normally used to fund a new bus station along a roadway. The current transportation planning process struggles to consider different modes or systems collectively or it simply considers them independently. This is not a desirable situation from a security planning perspective or from an overall efficiency standpoint. The planning processes should take into consideration the interdependency of these systems in evaluating security issues and in resources allocations. Morgan (2000) stated that the Department of Transportation should implement Research and Development, for security, across transportation modes, not separately for each mode.
It is strongly suggested that all transportation planning processes must account for enhanced security measures and objectives whenever possible. However, these goals are very difficult to achieve and maintain without a specific strategy, which involves a variety of public agencies and private groups, as well as general public awareness of the possible threats to the security of these systems. An article by Nelson (1999) examines these associations in greater detail, noting that there are many challenges involved in building cohesive and effective associations amongst these different groups, as they each possess their own agendas and objectives, many of which may not be supportive of one another. The article suggests that in preparing any transportation system for the real threat of terrorist attacks, all organizations involved in the planning process must develop what is known as a “dress rehearsal,” whereby all parties work together in conjunction with each other in a mock disaster incident, so that each team is aware of the responsibilities involved in achieving all desired objectives (Nelson 1999). In any transit system, there must be a comprehensive evaluation of entrance and exit points, where many users are likely to be found waiting for their chosen mode of transportation to arrive and depart (Nelson 1999). These locations are particularly vulnerable to potential acts of terrorism, since terrorists are indeed aware of the increased numbers of users at these points, thereby creating the potential for mass destruction in one concentrated area (Nelson 1999). Furthermore, fuel used for buses, electrical switches, train or rail tracks,
and computer systems must be continuously evaluated for any unexpected changes or threats (Nelson 1999). These steps are necessary in the development of any routine transportation planning process, and officials must not take these concerns for granted, since it is possible that terrorists may identify these vulnerabilities and take dangerous action if it is known that there are weaknesses in a given system (Nelson 1999). The author also notes that there must be comprehensive and detailed evaluation strategies in place at all times, since passengers must be protected from additional harm whenever possible (Nelson 1999). The author states that “Evacuation plans should include the selection of staging areas, where passengers can await transport to safe locations…if possible; alternatives to the affected transit line or system must be established in order to diminish the crowds that would otherwise accumulate at the scene” (Nelson 1999). Therefore, it is strongly suggested that emergency response plans must incorporate these types of objectives into the mix, since there is a strong likelihood of serious damage and casualties if these plans are not considered prior to an attack (Nelson 1999). If at all possible, the development of emergency response plans that include the evaluation of possible tampering of systems and vulnerable areas is particularly advantageous in developing an effective security planning process (Nelson 1999). Much of the lack of preparedness for terrorist threats to transportation systems has been in faulty designs and the lack of knowledge regarding threats when these systems
were created; therefore, it is often required that systems must undergo modifications in order to update equipment, exit and entrance locations, and computer systems in order to better recognize threats that may occur, as well as to better prepare users for the possibilities that might exist, allowing them to increase their awareness of such events (Nelson 1999).

It is also expected that as transportation planning initiatives continue to emerge throughout the United States, there must be considerable measures in place that will accommodate the many users of public transit systems, including buses, railways, and subways. However, prior to the development of any revised guidelines for emergency preparedness in transportation systems, the following assessments must be conducted and evaluated:

1. A general risk assessment must be performed in order to evaluate the potential threats against a system in a given location;
2. The likelihood of serious hazards stemming from acts of terrorism must also be considered; and
3. There must be a comprehensive strategy in place to manage any perceived risks or hazards that might occur as a result of a terrorist attack or threat (Boyd and Sullivan 2000).
There is a critical need in transportation planning processes to evaluate and consider the long-term outcomes of terrorist acts or threats, since these may incite fear in passengers, leading to a reduction in use of such systems over time. Therefore, if passengers are assured that their time spent in the transit system is as secure as possible; there is a greater likelihood that these circumstances will be managed more effectively and without serious consequences. Nonetheless, passengers must also be assured that their time spent on the public transit system will be secure, and this requires an extensive effort from all responsible agencies to ensure passengers that all measures are being taken to facilitate smooth travel time.

2.10 Land Use Interaction

There are many issues surrounding a discussion of land use interaction with security planning. Many questions arise about what effect security considerations have upon this such as zoning and access management. The current planning processes consider land use when establishing system routes and alignments. When perceived through a security planning framework, that process of alternatives evaluation will need to be modified. Polzin (2002) recently discussed this issue. He identified implications ranging from an increase in employment dispersion and sprawl to a refocus on the function and importance of the city. If additional security events occur in highly populated areas, some
shifts in migration patterns may occur as a result. This may become more important as Florida is beginning to look at transportation corridor preservation. If security becomes one of the main criteria in evaluating and establishing these corridors, land use will be affected.

2.11 Risk Assessment

The strategic development of transportation planning processes that involve security require that there must be substantial knowledge of the risks involved with maintaining these elements, as they are often very difficult to achieve without adequate financial resources. Much of the interest in transportation security planning processes has emerged in large part due to post-terrorism fears after September 11th, and there is a marked interest in emergency response efforts throughout all types of transportation planning mechanisms (Dornan and Maier 2005). However, throughout the evaluation process, highly visible flaws in security have been exposed to the general public and to experts in the field, which have created considerable challenges in their efforts to overcome these gaps in knowledge and information (Dornan and Maier 2005). In metropolitan areas, where these processes are highly visible and prominent, it is especially critical to develop and implement security strategies that will accommodate the specific needs and calm the fears of residents that utilize various forms of transportation, including but not limited to the subway and
bus lines (Dornan and Maier 2005). However, it is just as important to understand that security efforts are limited by the ability to secure funding for such projects at the local, state and federal levels, and that if these resources are scarce or are lacking altogether, little if any progress is anticipated in ensuring that transportation users feel more secure in their travels (Dornan and Maier 2005).

It is important to recognize the varying degrees of risk that are involved in threats to transportation systems, and this often requires an extensive examination of risk levels, as noted in Table 2-3 (Boyd and Sullivan 2000). Upon review and evaluation of the appropriate levels of risk involved in a given transit system, it is critical that the corresponding emergency preparedness strategy is also established in order to provide the best possible short- and long-term outcomes (Boyd and Sullivan 2000). According to the authors,

“In general, emergency plans used in the transit environment provide guidance for reporting and evaluating the incident, using the incident command system, notifying emergency response personnel/agencies, protecting personnel and equipment at the incident site, dispatching emergency response personnel and equipment to the site, evacuating passengers, providing briefings
and information updates, managing the emergency, and restoring the system to normal” (Boyd and Sullivan 2000)

Table 2-3
Transit Risk Levels

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Definition</th>
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<tbody>
<tr>
<td>1</td>
<td>Facilities whose loss or damage would have a major financial impact or result in the extended interruption of critical services.</td>
</tr>
<tr>
<td>2</td>
<td>Facilities containing items of physical value, confidential information, or computer access to sensitive data/operational processing networks.</td>
</tr>
<tr>
<td>3</td>
<td>Facilities whose disruption would be moderately serious.</td>
</tr>
<tr>
<td>4</td>
<td>Facilities relatively unimportant to operations</td>
</tr>
<tr>
<td>5</td>
<td>Criticality cannot be assessed</td>
</tr>
</tbody>
</table>

Risk considerations are often mitigated through improving design practices. This is somewhat of a self-policing process which involves modifications to current practices once a risk threshold has been crossed. In the planning process, risk must be estimated for at least two reasons: (1) to determine what additional costs may be associated with a project due to increased risk that requires additional considerations, or (2) to determine if a potential project is considered feasible due to properly considering security risks. It may be necessary and beneficial to adapt and transfer current practices in other industries to the transportation planning arena. This would most likely greatly reduce the “learning curve” and allow more rapid application of these
assessment methods to transportation planning by taking advantage of the lessons learned in other areas.

2.12 Public Participation

One of the major initiatives over the past 10 years has been to provide and encourage the public to be more involved in the transportation planning process. These initiatives have occurred nationwide. These practices will present a problem when security considerations are factored into the planning and decision-making processes. These processes will lose some of their transparency and the public may feel cheated out of their right to know when in fact the information may simply be classified. It is most probably not reasonable to expect the public to accept a decision without knowing all of the factors that went into that decision. Guidelines should be developed to assist those agencies presenting alternatives to the public with explanations without security compromises.

Depending upon the metropolitan location under consideration, there might be varying degrees of interest in security, as the need to develop strategies for natural disasters may be more important than the needs involving threats of terrorism, with examples including hurricanes and earthquakes (Dornan and Maier 2005). Since the proposed study is primarily concerned with transportation
security planning processes for the State of Florida, it is not surprising that the marked threat of hurricanes during peak season is considered to be an overwhelming challenge to most residents. In 2005, one of the most active hurricane seasons in history emerged and led to considerable threats to the livelihood of many residents of Florida, and therefore, it should be noted that many challenges involving transportation, security and the overall well being of residents were identified and compromised as a direct result these disasters. Therefore, the emergency preparedness of Floridians for such events continues to be of great concern for all residents. However, this is not the only issue that is cause for alarm, as threats of terrorism, although not clearly obvious in Florida, nonetheless continue to create apprehension for residents throughout the state. Florida residents want to know what plans are in place to protect them from both natural and man-made disasters.

2.13 Information Availability

In Florida many transportation planning studies involve data that is considered the “best available.” This limit is imposed by both the cost of collecting additional data or the time constraints associated with the project. Transportation planners need some guidance on how to properly consider transportation security when the information available is not the “best” or is simply not “available” because of security concerns. It is important for
transportation planners to know what assumptions or “rules of thumb” are most accurate, even without having all of the relevant data.

Although there has been much interest over the years in how to effectively prepare for safety in transportation planning, security measures have long been ignored, perhaps due in large part to a lack of knowledge and available resources for such projects (Dornan and Maier 2005). However, it should be duly noted that security and safety are not considered as the same, and that they should be evaluated and managed with different strategies in mind, as noted in the following: “Safety initiatives often have no bearing on the security of transportation facilities or services, and security initiatives may not impact the safety of transportation facilities or services” (Dornan and Maier 2005). Therefore, this study was not used as a means of grouping these concepts together, because their primary objectives and strategies should remain unique and distinct from one another throughout all planning processes.

2.14 Planning Levels: Federal, State, Local

Current planning practices allow control of key transportation decisions at different levels. Some decisions are made at the federal level whereas others are made at the state or local level. For example, the Florida Department of Transportation controls the flow of federal roadway and bridge dollars but the
local Metropolitan Planning Organizations or County Commissions assign project priorities. The local governments control which projects go to the top of the priority list. There should be a clear definition of who is responsible for addressing security issues during transportation planning. There should also be clarification of who else needs to evaluate those issues. For example, should a federally-controlled project be subject to local government scrutiny or visa versa.

In 1997, a study was conducted by Jenkins as a means of identifying the challenges of developing strategies in response to threats of terrorism across transportation channels. There are a number of key considerations that must be identified, implemented and evaluated with respect to terrorist threats, and there must be effective measures in place in the transportation planning process in response to these needs (Jenkins 1997). According to the author, “The general framework of preparedness progresses from planning and mitigation measures through response and recovery. The pre-incident mitigation steps incorporate, at a minimum, security and detection devices, environmental design, training, and outreach activities. The preparedness step focuses on the institutional capacity and capability of both internal and external emergency-response organizations and teams” (Jenkins 1997). This statement demonstrates that there must be a concentrated effort from a team of individuals that are focused on the same objectives in order to promote the best possible outcomes for transportation
planning processes, and that if emergency incidents occur, there will be a learning curve that is designed to encourage new types of response methods to promote improved outcomes (Jenkins 1997).

It is important to recognize that terrorist threats have increased in scope and incidence over the past quarter-century, and consequently, transportation systems continue to require additional security measures to be prepared for such events (Jenkins 1997). One of the key objectives of any terrorist threat or attack is to incite fear in mass numbers of transportation users, and therefore, it is not surprising that terrorists utilize these systems as a means of facilitating widespread panic and uproar (Jenkins 1997). It should also be known that such attacks are planned over a long period of time in order to maximize the potential for the greatest possible level of damage and destruction, which signifies the intelligence and research that is performed in deciding the location and extent of terrorist attacks on existing transportation systems (Jenkins 1997). Table 2-4 provides a historical perspective regarding terrorist targets over the past few decades, and it demonstrates that there is a widespread mix of attack targets that terrorists utilize in order to satisfy their desired objectives to create fear, panic and destruction within a given location (Jenkins 1997). It is not surprising that bombings are the most common strategy that is used by terrorists, responsible for approximately 61 percent of all attacks for the period under
consideration (Jenkins 1997). According the author, public transportation serves as a notable and relatively easy target, as noted in the following statement:

“These events clearly indicate that contemporary terrorists have made public transportation a new theater of operations. For those determined to kill in quantity and willing to kill indiscriminately, public transportation offers an ideal target. It is public, used by millions of people daily. There is necessarily little security with no obvious chokepoints (like those at airports) to inspect passengers and parcels. The passengers are strangers promising attackers anonymity and easy escape. Concentrations of people in contained environments are especially vulnerable to conventional explosives and unconventional weapons. Also, attacks on public transportation, the circulatory systems of urban environments, cause great disruption and alarm which are the traditional goals of terrorism” (Jenkins 1997).

This statement is not surprising, considering the importance of terrorism in modern society as a primary means of generating fear and panic in a given group of unsuspecting individuals; in other words, acts of terrorism via public transportation allow terrorists to advance their cause and to spread the word in a significant way (Jenkins 1997). Therefore, field experts and government officials
must be effectively prepared to manage such attacks on their systems without creating additional panic or harm whenever possible (Jenkins 1997).

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buses</td>
<td>29</td>
</tr>
<tr>
<td>Subways and Trains</td>
<td>27</td>
</tr>
<tr>
<td>Subway and Train Stations</td>
<td>13</td>
</tr>
<tr>
<td>Rails</td>
<td>8</td>
</tr>
<tr>
<td>Bus Terminals</td>
<td>7</td>
</tr>
<tr>
<td>Tourist Buses</td>
<td>7</td>
</tr>
<tr>
<td>Bridges</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td>School Buses</td>
<td>1</td>
</tr>
<tr>
<td>Tunnels</td>
<td>0 (2 Incidents)</td>
</tr>
</tbody>
</table>

In developing an effective security strategy for transportation systems, it is critical to reexamine current priorities and involved parties to determine if any new stakeholders or key players must be considered in the planning process (Dornan and Maier 2005). For example, it is necessary to include local emergency response teams, as well as national teams, such as FEMA and the FBI in such processes, since these teams may possess additional knowledge and skills that will facilitate a greater response to these challenges (Dornan and Maier 2005). A greater level of oversight and guidance from national response teams is absolutely critical in developing an effective response strategy, as these teams are much more knowledgeable of the requirements and cost of enhanced security measures in the desired location (Dornan and Maier 2005).
Furthermore, these teams often provide manpower and other resources that are not readily available at the local level due to limited financial resources or other limiting constraints (Dornan and Maier 2005). Regardless of the type of system under consideration, it is anticipated that extensive knowledge and resources from federal agencies is required in order to develop effective long-range security strategies (Dornan and Maier 2005).

2.15 Organizational Structure

Most governments seem to be using existing departments and staff to handle security considerations by simply adding those responsibilities to the primary duties of those staff. In most instances, the designated staffs are those associated with law enforcement or emergency response. However, few to none of these people have the training or experience to evaluate transportation alternatives based on security considerations. Ideally, there should be people who are uniquely qualified to deal with the planning implications of security and these duties should be their primary responsibility.

It is very important to identify the key roles and responsibilities of all federal, state and local agencies that are involved in developing effective transportation security planning strategies. The following key objectives must be satisfied in any unified transportation strategy:
• Developing a single response to any incidents that might occur so that all resources are utilized wisely;
• All goals are satisfied in a cohesive manner;
• Information is gathered and shared so that all agencies are provided with the data that is necessary to conduct an effective response;
• All agencies are well aware of their limitations in these processes; and
• All possible efforts that would lead to duplication are eliminated whenever possible (Boyd and Sullivan 2000).

Although these objectives appear to be relatively simple, they are in fact very difficult to accomplish if all supporting agencies do not take their responsibilities seriously and without consideration of the roles of other teams in these processes, since these actions could be detrimental to the overall integrity of the chosen strategy and the potential outcomes for managing the disaster without dire or long-term consequences (Boyd and Sullivan 2000).

2.16 Legal Considerations

There are many legal issues involved in transportation planning with regards to security issues. A security event usually results in a loss of property or life. Those affected will seek resolution concerning the level of preventative efforts taken. Current practices do very little to address these liability concerns.
Actual cases will go a long way in determining the parameters concerning adequate levels of consideration. However, there are secondary issues that must be addressed, including the inadvertent identification of critical assets through consideration during the transportation planning processes.

Recent legislation, Senate Bill 1138, in the State of Florida has allowed Construction Engineering & Inspection Consultants (CEI) to be considered agents of the state. This was done to protect CEI companies from lawsuits that put an undue strain on the cost of doing business in Florida. Contractors are already protected as agents of the state. However, people will seek deep pockets. It should be expected that lawyers representing citizens who are seeking compensation for an injury would essentially work their way upstream in the process. Figure 2-1 shows the typical project process consists of planning, design, asset acquisition, construction, and Operations & Maintenance. The process starts at time equal zero with the Planning Phase and progresses along the timeline as shown. If construction contractors and management companies are agents of the state then the next phase upstream would involve the project designers. Next to these people are the planners.
Guidelines should be developed that contain recommendations on how and when to protect planners who are making decisions that consider security, especially when those projects involve design, right-of-way acquisition, or construction that may be contrary to the traditional processes.

2.17 Facility Design

The focus of this study did not involve reinventing the ways in which transportation design is done. Transportation design, whether it be roadways or railways is an established science with proven methodologies. The study focused on sensitizing designers to potential safety and security issues that result from challenges to security. This exposure may generate different combinations or permutations of design elements in response to these challenges. It may also involve the usage of additional design elements whose sole use is to protect the users of the facility or adjacent interests. These additional elements will impact the project’s budget.
Chapter 3
Framework For Security Planning

In order to better understand the project development process in Florida, it is important to understand the legislative background that mandates the process and the major stakeholders that have a role in transportation security. Historically, aspects of the transportation planning process were addressed separately in different legislation and regulations (Figure 3-1) and have traditionally only addressed safety.

More importantly, the National Environmental Policy Act (NEPA) and the current and past two highway acts have done the most to shape the current state of project development. They are particularly important because the PD&E process is the manifestation of NEPA in Florida. Other key legislation includes the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Transportation Equity Act for the 21st Century (TEA-21), and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). A more detailed discussion of these key pieces of legislation is included in Appendix E.
Figure 3-1
Safety Legislation/Regulations

| Federal-Aid Highway Act of 1934 |
| Federal-Aid Highway Act of 1944 |
| Federal-Aid Highway Act of 1956 |
| Federal-Aid Highway Act of 1962 |
| Department of Transportation Act of 1966 |
| The National Highway Safety Act of 1966 |
| Federal-Aid Highway Act of 1968 |
| Intergovernmental Cooperation Act of 1968 |
| Federal-Aid Highway Act of 1970 |
| Federal-Aid Highway Act of 1973 |
| Highway Safety Act of 1973 |
| Federal-Aid Highway Act of 1976 |
| Federal-Aid Highway Act of 1981 |
| The Highway Safety Improvement Program (HSIP) (1982) |
| 23 United States Code 134 - Metropolitan Planning |
| 23 United Stated Code 135 - Statewide Planning |

There are a large number of agencies involved in the transportation planning process. Each of these organizations has their own versions of plans and goals related to their transportation networks. All of these organizations are moving towards improving the overall efficiency and security of their networks. However the different methodologies and organizational structures can be counterproductive to the overall emphasis on transportation security planning. A detailed description of roles, responsibilities, and objectives are included in Appendix F. The key players are shown in Figure 3-2.
3.1 Florida’s Existing Project Development Processes

Florida approved Procedure Number 650-000-001 on November 21, 1991 which established the use of the Project Development & Environment (PD&E) Manual to be used for the project development process. The PD&E Manual must be used any time the FDOT is involved, in any way, with the preparation of an environmental document in compliance with the National Environmental Policy Act (NEPA) of 1969. The authority to use the PD&E Manual as the basis of process comes from an informal agreement between the FDOT and the Federal
Highway Administration (FHWA) (2003). The Central Environmental Management Office has responsibility for development of the manual and subsequent updates. The procedures as documented in this manual serve to meet the requirements of the National Environmental Policy Act (NEPA) and other federal and state laws. The PD&E manual requires a multi-disciplined approach to project development. The Florida Department of Transportation works closely with the local governments and the Metropolitan Planning Organization (MPO) as they develop their Long Range Transportation Plan (LRTP). The LRTP determines the transportation improvements required over the next 20 to 25 years. The MPO’s also develop a Transportation Improvement Program (TIP) which identifies and prioritizes transportation projects to be implemented within a 10 year period based on the LRTP. Once the priorities are identified in the TIP, they are programmed in the FDOT’s 5 Year Work Program. Once a project is programmed, the Project Development & Environment (PD&E) Study phase can begin.

The PD&E Study phase for planned transportation projects provides the interface between the Planning and Design phases to evaluate and document solutions to transportation needs that are compatible with the environment. The PD&E study determines if there is an engineering and environmentally feasible alternative to meet the need determined in the Planning phase. This process is
mandated by the NEPA and State law. It represents a combined effort by technical professionals who analyze information and document the best alternative to meet transportation needs.

The PD&E process is well documented in the PD&E Manual (FDOT 1997). In order to understand how and where security considerations should be integrated, it is necessary to explain this process in some detail, especially those steps or phases where changes are recommended. Processes addressed in this chapter will only focus on those elements of the process that require transportation security considerations.

The steps in the process can be grouped into the Initialization, Data Collection, Analysis, Finalization, and Informational Phases (Figure 3-3). It is also important to note that, during all of the Phases, Public Involvement activities occur and are extremely important to educate and inform the public of programs, projects, and strategies.
Figure 3-3
Florida's Existing Project Development Process

Initialization Phase

Data Collection Phase

Analysis Phase

Finalization Phase

Informational Phase
3.1.1 Existing Initialization Phase

The Initialization Phase includes the recognition of a transportation need and adherence to the Advance Notification (AN) Process. The first step is to determine project need which requires proof that a proposed alternative is consistent with local planning efforts. The PD&E Manual, Part 2, Chapter 5 requires that all proposed projects be consistent with local transportation and comprehensive planning, land use planning and growth management efforts. The local planning efforts must be updated to reflect the necessary short-term and long-term security needs for their regions. Otherwise, proposed alternatives involving security considerations cannot be consistent with local planning efforts.

The AN Process is the process in which Federal, State, Local agencies and other stakeholders are informed of a proposed project by the FDOT. It serves to notify those same agencies that the FDOT intends to seek federal funding for the project. It, due to geographic location, will trigger other federal or state processes such as the Florida Coastal Zone Management Program (FCMP). The AN process is required by the Presidential Executive Order 12372 and the Florida Governor’s Executive Order 95-359. Transportation projects must be evaluated to determine if the AN process applies. The process for screening project for AN applicability is shown in Figure 3-4.
Figure 3-4
Decision Process for AN Process Applicability

Needs determination

Modernization requiring no additional right of way on existing highways by resurfacing, minor right-of-way acquisition, widening less than a single lane width, adding shoulders, landscaping, rest areas in a non-urbanized area, adding auxiliary lanes for localized purposes, increasing superelevations, skid hazard resurfacing, restoration and rehabilitation, median development, bridge widening (unless permits are required), additional bridge deck pavement layers?

Lighting, signing, pavement markings, signalization, freeway surveillance and control systems, railroad protective devices, break-away posts, progressive signal systems, pedestrian safety improvements?

Safety projects, and others such as grooving, glare screen, safety barriers, guardrails, energy attenuators, removal of signs, removal of roadside obstacles, removal of trees, addition of fog devices, and correction of road safety hazards?

Reconstruction of existing crossroad or railroad separations, railway/highway crossings, minor improvement or replacement of existing drainage structures, minor alterations or extensions of existing highway?

Project on new location?

Change in functional characteristics or significant change in access?

Significant impact on social, cultural, or natural environment?

Construction or Reconstruction of waterway or significant wetland?

Non-Federally funded project requiring SEIR?

Involves controversy, substantial environmental alteration or community impacts?

Project MUST follow AN Process

Project is EXEMPT from AN Process
The AN process is facilitated through the use of the AN Fact Sheet (Figure 3-5). This form is completed for the initial dissemination of the AN.

**Figure 3-5**

**Advance Notification Fact Sheet**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> Need for Project:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong> Description of the Project:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3.</strong> Environmental Information:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Land Uses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Wetlands:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Floodplains:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Wildlife and Habitat:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Outstanding Florida Waters:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Aquatic Preserves:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Coastal Zone Consistency Determination is Required:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>h. Cultural Resources:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Coastal Barrier Resources:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Contamination:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. Soil Source Aquifer:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. Noise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. Essential Fish Habitat:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Comments:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4.</strong> Navigable Waterway Crossing?:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>5.</strong> List Permits Required:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Another possible element of the initial efforts can include the decision to implement the Local Agency Program (LAP) process. The FDOT can contract with other governmental agencies for transportation services provided to the traveling public. Local governments must be LAP certified before entering into this process. This program includes the involvement of the FHWA in the contractual relationships between the Department and Local Agencies. The use of LAP has dramatically increased over the past few years as the FDOT struggles with inadequate resources and funding to accomplish its planning efforts using their own staff and consultants. As the use of the LAP increases, there is a dependency, from the FDOT, on city or county staff to provide all of the required expertise necessary to satisfactorily conduct a PD&E study.

It is also important to consider privately funded projects during initial coordination with other agencies. In Florida, more agencies are looking to Public-Private-Partnerships as a means to accelerate project construction and to aid with funding delays or deficits. Currently, privately funded projects use their own processes to document compliance with NEPA. However, in many instances, there may be a high likelihood of transference of ownership of a certain facility.
3.1.2 Existing Data Collection Phase

The Data Collection Phase includes collection of all existing data or procurement of new data that will be required to accurately assess alternatives. This phase also includes the Class of Action (COA) determination once enough data is collected to assess significance of issues associated with the improvement.

The NEPA established that the Environmental Impact Statement (EIS), the Finding of No Significant Impact (FONSI) and the Categorical Exclusion (CATEX) would serve as the administrative record of compliance with its policies and procedures for federally funded projects. It further determined that the State Environmental Impact Report (SEIR) and the Non-Major State Action (NMSA) would serve as the record of compliance for non-federally funded projects. The decision as to which level of documentation is appropriate is made by the FDOT in consultation with the FHWA. The EIS is the appropriate level of documentation for actions that “significantly” affect the human environment. The normal types of projects that fall into this category are a new controlled-access freeway, a highway project of four or more lanes on a new location, new construction or extension of fixed rail transit facilities, and new construction or extension of a separate roadway for buses or high occupancy vehicles. An EA is
prepared for projects in which the environmental impact is not known. The EA is prepared in order to determine what level of document is required.

The administration of NEPA is typically done by the Federal Highway Administration or, in some cases, by other federal transportation agencies such as the FRA, the FAA, or the FTA. The lead state agency is typically the FDOT. It can be a specific county or city given the proper delegation of administrative authority by the FDOT. This can be accomplished through the LAP.

The determination of class of action begins with a review of the responses received during the AN process. After evaluation of the comments received, the FHWA is consulted and the COA is determined. In some cases, the COA determination may be delayed until later in the project development process in order to collect more data and better determine impacts associated with a project as alternatives are developed. The primary documentation of the COA determination is the Environmental Class of Action Determination form. Potential impacts of a particular project are used as the qualitative metric in order to determine the COA. Page 3 of the form (Figure 3-6) lists the considerations when evaluating a project.
These factors are qualitatively evaluated as being Significant, Minimal, None, or No Involvement. They are defined in Table 3-1.
Table 3-1
COA Impact Factors

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant</td>
<td>The perceived impact is significant in the sense of the use of the term by CEQ regulations.</td>
</tr>
<tr>
<td>Minimal</td>
<td>The project involves an environmental issue and has a perceived impact, which may range in level of magnitude varying from minor to substantial.</td>
</tr>
<tr>
<td>None</td>
<td>The project has been evaluated for an environmental issue; the issue exists but there is little or no impact</td>
</tr>
<tr>
<td>No Involvement</td>
<td>The environmental issue in question is not a part of or in anyway involved with the project.</td>
</tr>
</tbody>
</table>

Based upon the evaluation of these individual criteria, a COA determination is made.

3.1.3 Existing Analysis Phase

The Analysis Phase includes the development of alternatives, the analysis of environmental, social, and engineering impacts associated with the alternatives, the screening of the alternatives based upon the impacts, and public involvement efforts, usually in the form of a Public Workshop or Public Information Meeting.

A major element of this phase is the development of reasonable and feasible alternatives, which must be discussed (Figure 3-7) in the COA (CEQ 1978). A critical component of this phase is the documentation of which alternatives are reasonable and feasible and which are eliminated early in the
process for not meeting established criteria and all necessary background information and analysis used in the decision-making process.

**Figure 3-7**

**COA Discussion Items**

1. Thoroughly and objectively evaluate all reasonable alternatives and document why alternatives are eliminated.
2. Provide enough details and analysis for reviewers to completely evaluate individual alternatives.
3. Include reasonable and feasible alternatives that are not within the purview of the lead agency.
4. Clearly identify the preferred alternative
5. Mitigate the preferred alternatives as necessary
6. Include the no-build alternative

The alternatives discussion section generally discusses four types of solutions which include the no-build (no-action) alternative, the Transportation System Management (TSM) alternatives, the multimodal alternatives, and any construction alternatives. A construction alternative must be consistent with local comprehensive plans.

An important consideration during this phase is corridor preservation. It is the intent of the corridor analysis process to evaluate alternative corridors where deemed reasonable and feasible. Alternative corridors are typically considered reasonable and feasible if the existing or currently preferred corridor would experience significant impacts as a result of the proposed project. In order to avoid these impacts, other existing or new corridors may be considered.
Considerations of a new corridor traditionally include community values and concerns, contamination, archaeological or historical sites, publicly owned lands, threatened and endangered species, and wetlands. The corridor preservation procedure is defined in the FDOT PD&E Manual and consists of four primary steps (Figure 3-8).

Figure 3-8
Corridor Preservation Procedure

1. CORRIDOR DESIGNATION REPORT
   - prepared by the DISTRICT PLANNING AND PROGRAMMING OFFICE

2. FLORIDA TRANSPORTATION PLAN
   - DESIGNATED TRANSPORTATION CORRIDORS LIST

3. PRIORITIZE CORRIDORS

4. CORRIDOR PLANNING AND DESIGN REPORT
   - prepared by the DISTRICT PLANNING AND PROGRAMMING OFFICE

5. CLASS OF ACTION DETERMINATION
   - prepared by the DISTRICT ENVIRONMENTAL MANAGEMENT OFFICE

6. SATISFY NEPA
7. STATE LAW / FDOT POLICY
The process begins with a component of the Florida Transportation Plan (FTP) that designates corridors that are necessary for future development and needs. The FDOT will prepare a Corridor Designation Report (CDR) or its equivalent. An approved NEPA document, a state level environmental report, or other approved master or modal system plan can serve as an equivalent document to the CDR (FDOT Topic No. 525-030-201). The process continues with an environmental assessment of the proposed corridor through the Corridor Planning and Design Report (CPDR) or its equivalent (FDOT Topic No. 525-030-137).

One of the most important steps in any PD&E study is to establish evaluation criteria. There are many factors that are typically evaluated. In Florida, they are standardized, as outlined in the PD&E Manual. These criteria are shown in Table 3-2.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Impacts</td>
<td>Social, economic, land use, aesthetic/livability, relocation issues, and compliance with civil rights</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Existing/future conditions and determining if the project conforms to the Clean Air Act</td>
</tr>
</tbody>
</table>
Table 3-2 (Continued)
Standard PD&E Evaluation Criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>Noise levels and if they meet criteria reasonable and feasible noise abatement</td>
</tr>
<tr>
<td>Wetlands</td>
<td>Avoidance, minimization and mitigation of short-term and long-term impacts</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Prevention, reduction and/or elimination of pollution of ground and surface water</td>
</tr>
<tr>
<td>Wildlife/Habitat Impacts</td>
<td>Identification/Protection of threatened and/or endangered species and their habitat</td>
</tr>
<tr>
<td>Contamination</td>
<td>Identification and evaluation of potential contamination problems within and/or adjacent to a project</td>
</tr>
<tr>
<td>Floodplains</td>
<td>Avoidance, minimization and mitigation of encroachment within the floodplain</td>
</tr>
<tr>
<td>Archaeological &amp; Historical</td>
<td>Significance of sites and avoidance methods for projects involving recreation lands/historic/archaeological features</td>
</tr>
<tr>
<td>Section 4(f) Properties</td>
<td>Protection and preservation of the natural beauty of the countryside, public parks, recreation lands, wildlife and waterfowl refuges, and historic sites</td>
</tr>
<tr>
<td>Conceptual Design</td>
<td>Development and evaluation of engineering design concepts for environmental compatibility and satisfaction of the transportation need</td>
</tr>
<tr>
<td>Public Involvement</td>
<td>Informing and involving all stakeholders about the planned project using a Public Involvement Program</td>
</tr>
<tr>
<td>Aquatic Preserves</td>
<td>Impacts to sovereignty submerged lands that are to be preserved</td>
</tr>
<tr>
<td>Wild &amp; Scenic Rivers</td>
<td>Impacts to those water bodies designated as wild river areas, scenic river areas, or recreational river areas</td>
</tr>
<tr>
<td>Outstanding Florida Waterways (OFW)</td>
<td>Impacts to specially designated water bodies in Florida that have outstanding natural attributes</td>
</tr>
</tbody>
</table>
Table 3-2 (Continued)
Standard PD&E Evaluation Criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmlands</td>
<td>Impact to farmlands as designated by the Natural Resource Conservation Service (NRCS)</td>
</tr>
<tr>
<td>Scenic Highways</td>
<td>Impacts to the natural, physical, visual and cultural qualities of transportation facilities such as highway</td>
</tr>
<tr>
<td>Construction Impacts</td>
<td>Impacts to the local community as a result of the actual construction of the transportation project</td>
</tr>
<tr>
<td>Visual &amp; Aesthetic Impacts</td>
<td>Aesthetic effect of the proposed project on a community</td>
</tr>
<tr>
<td>Essential Fish Habitat (EFH)</td>
<td>Impact to fish habitat that involves anadromous and certain important marine species of fish</td>
</tr>
<tr>
<td>Coastal Barrier Resource Evaluation</td>
<td>Impact to designated undeveloped coastal barriers and their associated aquatic habitat</td>
</tr>
<tr>
<td>Utilities &amp; Railroads</td>
<td>Conflicts between the transportation project and existing and future utilities, railroads, and their users</td>
</tr>
<tr>
<td>Permits</td>
<td>Early coordination to determine if project is permittable</td>
</tr>
<tr>
<td>Bicycle &amp; Pedestrian Impacts</td>
<td>Impacts of the transportation project on different types of existing non-motorized transportation modes along with the potential impacts of future non-motorized modes</td>
</tr>
<tr>
<td>Corridor Preservation</td>
<td>Compliance with the FDOT’s plan for preservation of specific transportation corridors, which may include advanced right-of-way acquisition</td>
</tr>
</tbody>
</table>

One of the tools that are used to employ these evaluation criteria is called the Efficient Transportation Decision Making (ETDM) Process. In response to TEA-21 and in response to Florida’s citizens wanting faster project implementation, the Florida Department of Transportation has initiated the ETDM Process which addresses alternatives screening from the planning phase
through permitting. The main tool associated with this process is an Internet-accessible interactive database called the Environmental Screening Tool (EST).

Two main alternatives screening milestones occur in the process (FDOT ETDM Overview 2005). These are known as the Planning Screen and the Programming Screen. The Planning Screen occurs in conjunction with the cost-feasible plans and the Programming Screen occurs before projects are considered for the FDOT Work Program. The Programming Screen is the more detailed of the two phases and is intended to identify technical issues that must be addressed by project staff, agencies, and other stakeholders.

Another screening tool that is used is the Environmental Technical Advisory Team (ETAT). The Florida Department of Transportation is divided into seven geographic districts. Each of these districts has an ETAT. The ETAT consists of agency representatives or anyone having statutory responsibility for consultation as defined by NEPA. The ETAT’s responsibility is to interact with the FDOT throughout the life cycle of a project. The ETAT does contain members of law enforcement and emergency response. One of the early guidelines of ETDM established that each agency was responsible to ensure the validity of data in existing databases and to update as necessary to ensure accuracy.
The evaluation of these alternatives usually takes the form of an evaluation matrix (Figure 3-9). This matrix is a combination of quantitative comparisons, usually in the form of costs, and of qualitative factors, such as a determination of involvement or not.

**Figure 3-9**
**Evaluation Matrix Criteria**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Construction costs</td>
</tr>
<tr>
<td>2.</td>
<td>Right-of-way costs</td>
</tr>
<tr>
<td>3.</td>
<td>Engineering costs (Design and C.E.I.)</td>
</tr>
<tr>
<td>4.</td>
<td>Business damages</td>
</tr>
<tr>
<td>5.</td>
<td>Bicycle and pedestrian facilities</td>
</tr>
<tr>
<td>6.</td>
<td>Traffic control</td>
</tr>
<tr>
<td>7.</td>
<td>Environmental impacts (noise, air, 4(f), contamination sites, trees, etc.)</td>
</tr>
<tr>
<td>8.</td>
<td>Socioeconomic (R/W requirements, relocations, aesthetics, traffic flow improvements, neighborhood and social impacts, etc.)</td>
</tr>
<tr>
<td>9.</td>
<td>Operational analysis</td>
</tr>
</tbody>
</table>

### 3.1.4 Existing Finalization Phase

The Finalization Phase includes the selection of a Preferred Alternative, public involvement efforts in the form of a Public Hearing, and final documentation of the study in the form of an Environmental Impact Statement (EIS), an Environmental Assessment (EA), a Type 1 or 2 Categorical Exclusion (CATEX), or a Programmatic for Federally funded projects. For non-federally funded projects, the documentation takes the form of a State Environmental Impact Report (SEIR) or a Non-Major State Action (NMSA).
The alternatives development and analysis efforts are documented in the Preliminary Engineering Report (PER) and in the Location Hydraulics Report (LHR). They can be supported by several other documents including the Wetlands Evaluation Report (WER), the Endangered Species Biological Assessment Report (ESBA), the Cultural Resource Assessment Survey (CRAS), the Preliminary Pond Siting Report (PSR), the Noise Report, and the Contamination Screening Evaluation Report (CSER). This study will not review these support documents in any detail but will instead focus on the PER, which serves as a culmination of all of those efforts.

All Draft Environmental Impact Statements (DEIS) and Final Environmental Impact Statements (FEIS) are circulated to a determined group of government agencies for their review. This is done to satisfy the “Implementing Procedural Provisions” of NEPA found in CEQ, Section 1502.10(i)). The list of reviewers is developed by the Central Environmental Management Office (CEMO) in cooperation with the FHWA and the District Environmental Management Offices (DEMO). This list of reviewers will change project to project depending on the geographical location and the specific project issues expected to be encountered. The PD&E Manual lists the agencies that must be considered when developing the reviewer list. The agencies are shown in Table 3-3.
Table 3-3
Suggested DEIS And FEIS Reviewers

| Advisory Council on Historic Preservation - Office of Cultural Resources Preservation |
| Appropriate local planning agencies |
| Appropriate Metropolitan Planning Organization |
| Appropriate Regional Planning Council |
| Colorado State University - The Libraries, Documents Librarian |
| Federal Aviation Administration - Airports District Office |
| Federal Aviation Administration - Regional Director |
| Federal Emergency Management Agency - Associate General Counsel for Insurance and Mitigation |
| Federal Emergency Management Agency - Natural Hazards Branch, Chief |
| Florida Department of Community Affairs Federal Railroad Administration - Office of Economic Analysis, Director |
| Florida Department of Environmental Protection |
| Florida Department of Health |
| Florida Department of State - Division of Historical Resources |
| Florida Fish and Wildlife Conservation Commission |
| Police Department |
| United States Army Corps of Engineers - Regulatory Branch, District Engineer |
| United States Coast Guard - Commander (oan) - Seventh District |
| United States Coast Guard - Commander (obr) - Eighth District |
| United States Department of Agriculture - Natural Resources Conservation Service, State Conservationist |
| United States Department of Agriculture - Southern Regional Forester |
| United States Department of Commerce - National Marine Fisheries Service - Habitat Conservation Division |
| United States Department of Commerce - National Marine Fisheries Service - Southeast Regional Office |
| United States Department of Commerce - National Oceanic and Atmospheric Administration |
| United States Department of Housing and Urban Development - Regional Environmental Officer |
| United States Department of Interior - Bureau of Indian Affairs - Office of Trust Responsibilities |
### Table 3-3 (Continued)

**Suggested DEIS And FEIS Reviewers**

| United States Department of Interior - Bureau of Land Management - Eastern States Office |
| United States Department of Interior - Fish and Wildlife Service, Field Supervisor |
| United States Department of Interior - National Park Service - Southeast Regional Office |
| United States Department of Interior - Office of Environmental Policy and Compliance, Director |
| United States Department of Interior - United States Geological Survey Chief |
| United States Department of State - Office of Environment, Health and Natural Resources |
| United States Dept. of Health and Human Services - Center for Environmental Health and Injury Control |
| United States Environmental Protection Agency - Region IV, Regional Administrator |
| United States Environmental Protection Agency, Washington, D.C. |
| Water Management District |

#### 3.1.5 Existing Informational Phase

The Informational Phase involves the dissemination of the final commitments and recommendations to all appropriate agencies and to the public and other stakeholders. The distribution of these final elements is accomplished by the use of the same mailing list that is discussed in the AN process. Other means of notifying the public are employed such as newspaper advertisements and putting the final documents on display at public libraries.
3.1.6 Existing Public Involvement Considerations

The intent of the public involvement process is to inform the public about a specific transportation project. It provides opportunities for stakeholders to provide input into the decision-making process. The FDOT PD&E Manual states,

“As an effective public involvement plan can foster understanding and cooperation between the Department and the public; help develop a transportation system that meets real community needs; saves money by reducing or eliminating the need to redesign; and prevent last minute blow-ups or delays because of unresolved issues.”

The key to the process is in its comprehensive nature. Public involvement during the planning and programming phases is done to accomplish several things. These include determination of priorities, identification of social/economic impacts associated with projects, and identification of additional needs or wants associated with the proposed projects. (Virginia Department of Transportation 2004) Public involvement during planning phases deals more with projects and features whereas public involvement during programming deals more with prioritization and funding of solutions.

The requirements for public involvement are derived from Federal requirements for transportation planning (23 U.S.C. 134(g)(4) and 23 U.S.C.
mandating that public involvement must employ proactive practices
within the context of systematic processes; Public involvement processes
provide complete information, timely public notice, full public access to key
decisions, and supports early and continuing involvement of the public in
developing Statewide and metropolitan transportation plans and programs;
public involvement involves a holistic understanding of the environment and
community culture; and public involvement processes must be consistent with
Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act of
1990.
Chapter 4

Survey Results And Analysis

Due to the developing nature of security planning nationally and due to the complexity of the project development process in Florida, it was important to provide some relevant background regarding perceptions with respect to transportation security planning, both nationally and in Florida.

Two methods were used to establish this background. The first was a letter that was mailed to transportation leaders across the nation, and the second was an online questionnaire that was completed by professionals and general public, all of whom are residents of Florida. This chapter reports on the results of these two instruments.

4.1 State Request Letter

The State Request Letter, shown in Appendix C, was mailed in November of 2003. This letter was mailed to all 50 states, the District of Columbia and Puerto Rico. The intent of this letter was to:

- Establish a contact list of personnel currently dealing with security issues in each state.
Determine the level of effort for each state when dealing with security issues.

Indicate a state in which to conduct this research based upon development in that state and interest level of its staff.

Get an initial indication of the validity of the research.

Get an initial indication of the utility of the research.

4.1.1 State Request Letter Responses

The results (Table 4-1) are documented as No Response, Mailed Response, Emailed Response, or Phone Interview. In the case of a response, information is provided to indicate the agencies response and any information provided.

<table>
<thead>
<tr>
<th>State</th>
<th>Response Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>Mailed Response</td>
<td>Gathered and forwarded data concerning security measures/efforts currently being used.</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Mailed Response</td>
<td>They stated they do not &quot;incorporate security consideration in its transportation planning and decision-making processes&quot;. However, they did express interest in receiving the final results of this research effort.</td>
</tr>
<tr>
<td>Florida</td>
<td>Phone Interview</td>
<td>They stated that they do not consider security issues during planning. They recommended I speak with the emergency management agencies. They mentioned the possibility for ETDM screening for security. They forwarded information on sea port security and guidelines for implementation of flexible airport funding. They mostly funded projects related to security, like fencing, camera systems, lighting, etc. They are participating in conference call with other states.</td>
</tr>
</tbody>
</table>

Table 4-1
Request Letter Responses
Table 4-1 (Continued)
Request Letter Responses

<table>
<thead>
<tr>
<th>State</th>
<th>Mailed Response:</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia</td>
<td>Stated they are unwilling to participate at this time.</td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>They stated that their planning/project programming process is carried systematically by means of a blend of activities-some more judgment-based (such as reliance on our district personnel's field experience and interaction with local officials and the public), some more analytically based (such as continual evaluation of the entire state highway network using FHWA's Highway Economic Requirements System, or HERS program)-to arrive at a list of candidate projects. They mentioned that transportation security may be an explicit factor at the project alternatives' assessment level (e.g., redundancy in major river crossings). They stated that the DOT, as a matter of policy and standards, designs into its facilities risk-reduction measures for such things as floods (e.g., bridges designed to convey specific, infrequent flood events) and earthquakes (e.g., bridges in SW Indiana receive enhanced earthquake load design requirements).</td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>They stated that they have 2 MPO's that border military bases, Ft. Campbell and Ft. Knox. They work with representatives from each through their committees. Airport for Ft. Campbell affected intersection because of flight line. ITS branch handles part of it. There are 15 area development districts, which are local planning offices. These districts deal with Safety as part of agenda. They have only had presentations about security but it is not part of their normal focus. Unique issue is planning of vice presidential debate held in Danfield where they worked closely with security forces to assess needs including parking garages and speech needs.</td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>State has formed a &quot;security task force&quot; to deal with security issues.</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>They stated that they are unsure of the organizational structure in terms of security planning and that they were not aware of any single point of contact because it is being handled by several departments. They are currently consolidating policy.</td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>Forwarded copy of &quot;draft&quot; chapter on &quot;Transportation Security&quot; from their Long Range Plan. The information summarizes ODOT's program, policies, and procedures relative to security.</td>
<td></td>
</tr>
</tbody>
</table>
Table 4-1 (Continued)
Request Letter Responses

<table>
<thead>
<tr>
<th>State</th>
<th>Response Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon</td>
<td>Mailed Response: They forwarded information from draft guidelines that they were preparing concerning security operations as part of the Oregon Transportation Plan. They have formed a committee structure to discuss security. The committee structure includes a Steering Committee and 3 policy committees, one of which is entitled Safety and Security.</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Phone Interview: They do work in emergency response. They are structured as highway department. They have Volpe center doing a gap analysis to look at where they are, best practices, current guidance for transportation security. One areas already touching on was confidentiality of bridge plans but haven’t started changing bridge plans. They will identify critical infrastructure, do common sense types of things. Nothing yet on planning &amp; programming. One thing to come out of study will be organizational structure issues. Are amateurs going to do the jobs of professionals? On highway side may involve tunnels, bridges, facilities. They also run DMV and there is licensing, stolen plates, etc... issues. Motor carriers carrying inappropriate materials, bad routes, improper labels. Planning &amp; Programming will be focused on highway side. How to deal with funding, emergency response, training, material, location beyond the normal natural disaster. One issue that they deal with is nuclear generating stations that they have. Who plows radioactive snow? They have been talking to different states to find out what each state is doing differently, how they are organized and what advice can they give to Pennsylvania DOT. They are only dealing with broad brush themes. Some states have staff devoted full time looking for money. They contacted only select states that are considered leaders.</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Phone Interview: They responded with a list of contacts concerning security response efforts.</td>
</tr>
<tr>
<td>Washington</td>
<td>Phone Interview: They responded with a list of contacts concerning security response efforts. They have developed a “Gray Note Book”, which is used as an accountability tool.</td>
</tr>
<tr>
<td>Washington DC</td>
<td>Phone Interview: They stated that security was being discussed from 2 different perspectives (1) infrastructure protection and (2) emergency preparedness. They are discussing ITS regional architecture, partnerships, stakeholders that cross all disciplines, similar to hurricane arena.</td>
</tr>
</tbody>
</table>

Request letters were mailed to all 50 states, the District of Columbia and Puerto Rico. Of those 52 entities, 14 responded in some fashion (Figure 4-1). The states that responded include California, Connecticut, Florida, Georgia, Indiana, Kentucky, New Mexico, New York, Ohio, Oregon, Pennsylvania, Tennessee, Washington, and Washington, D.C. This equates to a 27% response
rate. Of those responding, only Georgia declined participation or discussion of security planning.

4.1.2 Request Letter Analysis

The first objective of the State Request Letter was to establish a list of personnel currently dealing with security issues in each state. As a result of this effort, a contact database was generated and is contained in Appendix B. A more long-term benefit of this effort is that this contact list can be used in further analysis of this topic area.

Another purpose of developing this list of planning, security, and emergency management personnel was to establish the level of effort that each state is putting forth in the area of transportation security planning. As evidenced by the responses, only a very few states had initiated efforts along this path. Most of the states that responded were investing the majority of their efforts and funding towards operations and maintenance and were concerned with retrofitting their existing facilities.

Also, based upon the responses and the activity of each state with regards to transportation security planning, the results of this effort confirmed the approach of using Florida and their processes as the basis of study and analysis for this research effort.
This request letter, through the lack of response and indication of little effort being expended by the states, demonstrated that this is a topic area that is largely unexplored nationally. Of the 52 letters mailed, 38 states (approximately 73%) did not respond to multiple efforts to contact them regarding the subject. This clearly demonstrated the validity of the research effort. There was also a large interest, from those states that responded, to receive the results of this research effort. All of the states that responded, except for Georgia, gave an initial indication that this research had utility in their states.

Figure 4-1
State Request Letter Response

![Map of State Request Letter Response]

Legend
- No Response
- Participated
- Did Not Participate
4.2 Online Questionnaire

The online questionnaire (http://home.earthlink.net/~securityplanning/) was developed and administered to obtain general public perceptions about security concerns in Florida. Public perception is an important consideration as related to the Project Development Process in Florida. Public Involvement is mandated throughout the process and, as long as there are no overriding safety concerns involved, can greatly influence the outcome of a PD&E Study. It is necessary to consider the results of the online questionnaire as a means of understanding the perceptions about security that Floridians possess and how that may affect the project development process. There were some basic principles (Figure 4-2) revealed with respect to how Floridians perceive transportation planning in their state.

Figure 4-2
Online Questionnaire Observations

- Floridians feel fairly safe
- Some advances in Security are being made
- Government is not necessarily working together
- Overall sense of loss of control over security
- Floridians will participate in security programs
Chapter 5
Revised Project Development Process

This chapter will serve as a supplement to Florida’s PD&E Manual and will address how to adequately consider and incorporate transportation security into Florida’s PD&E process. The Project Development Process has been modified, as shown in Figure 5-1, to reflect those considerations. The following sections will address each of those steps, identify the “Deficiency” associated with each step, determine a “Security Solution” to properly deal with the deficiency, and then explain the “Benefit” of the solution.
Figure 5-1
Revised Project Development Process

Need
Advance Notification
Existing Conditions
Class Of Action
Alternatives Development

Environmental Impacts
Social Impacts
Engineering Impacts
Security Impacts

Alternatives Screening
Public Workshop
Select Preferred Alternative

Public Hearing
Documentation
Publication

Initialization Phase
Data Collection Phase
Analysis Phase
Finalization Phase
Informational Phase

Legend:
- Modified Process
- Existing Process
5.1 Revised Initialization Phase

The AN Process should be modified to eliminate certain exclusions (Figure 5-2).

**Figure 5-2**
Project Type Exclusion Modification

- **Deficiency:** The exclusion of certain types projects from the AN process allows a project, especially a safety or signalization project, to progress without review from critical security agencies. This is especially important when many signalization projects now involve advanced technologies such as ITS and complicated fiber optic networks.

- **Security Solution:** Safety projects, signalization projects and Non-Major State Actions (NMSA) must comply with the Advance Notification (AN) process.

- **Benefit:** All projects will be reviewed for security concerns. This will ensure coordination and communication and no projects will fall in the gaps.

The AN response system should be modified to provide an active response requirement (Figure 5-3).
Deficiency: The AN response system is a passive response system and any agency failing to respond is considered to have no concerns or involvement.

Security Solution: Implement an active response system that requires a written response from all agencies on the distribution list, regardless of involvement in the project.

Benefit: This will ensure review by qualified personnel. Security concerns will not fall victim to lack of time or personnel.

The AN Fact Sheet should be modified to add a section providing security comments (Figure 5-4). The form should be modified as shown in Figure 5-5.
Figure 5-4  
**AN Fact Sheet Modification**

<table>
<thead>
<tr>
<th>Deficiency:</th>
<th>The AN Fact Sheet does not currently contain a specific section for discussion of security considerations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Solution:</td>
<td>Modify the AN Fact Sheet to include a section to indicate whether the project may involve critical infrastructure, critical corridors, or other potential targets of terrorist acts.</td>
</tr>
<tr>
<td>Benefit:</td>
<td>All agencies will know about the potential security concerns and allocate resources more efficiently and effectively.</td>
</tr>
</tbody>
</table>

Figure 5-5  
**Modified AN Form**

6. **Security**: Does this project involve critical infrastructure, critical corridors, or other potential targets of terrorist acts?  
   ______ Yes  ______ No

The AN process should be modified to not require inclusion of any graphical exhibit that may represent sensitive security information (Figure 5-6).
Deficiency: The current process requires certain graphical elements to orient the recipient to the project and its associated issues.

Security Solution: Do not include graphical or detailed representation of any security sensitive sites, those that are deemed “Critical Infrastructure” by the State of Florida, in the Advance Notification (AN) package or any other published document. Rely on the security agency to review their secure databases and provide a fatal flaw analysis of the project.

Benefit: This will protect sensitive information and reduce the risk of additional circulation of AN.

The LAP Program should be modified to require ETAT review of all projects conducted using the program (Figure 5-7).
Deficiency: As the use of the LAP increases, there is a dependency, from the FDOT, on city or county staff to provide all of the required expertise necessary to satisfactorily conduct a PD&E study. Most cities and counties do not have the adequately trained personnel to deal with security concerns on a state level.

Security Solution: Require all LAP participants to adhere to all of the security considerations discussed in this research and that their ability to implement these considerations is a deciding factor in their LAP approval.

Benefit: This will reinforce the core process and allow a complete review of projects, regardless of funding sources.

The private development process should be modified to require compliance with all FDOT requirements (Figure 5-8).
Deficiency: In Florida, more and more agencies are looking to Public-Private-Partnerships as a means to accelerate project construction and to aid with funding delays or deficits. Currently, privately funded projects use their own processes to document compliance with NEPA.

Security Solution: Require privately funded projects to adhere to the same processes involving security review as those publicly funded projects, especially if there is any potential for transference of ownership of the facility to the government. Make demonstration of compliance with FDOT processes mandatory before ownership can be transferred.

Benefit: This will protect the FDOT from liability associated with lack of due diligence regarding security concerns.

Local comprehensive planning efforts should reflect security planning elements (Figure 5-9).
Figure 5-9
Local Comprehensive Planning Modification

Deficiency: A proposed alternative must be consistent with local planning efforts when establishing need. Currently, local plans do not contain a security element nor does it address security concerns on specific projects mentioned in their planning efforts.

Security Solution: The local planning efforts must be updated to reflect the necessary short-term and long-term security needs for their regions. Otherwise, proposed alternatives involving security considerations cannot be consistent with local planning efforts.

Benefit: This will force local governments to direct resources towards identification and planning of critical assets.

5.2 Revised Data Collection Phase

The COA form should be modified to reflect security impacts (Figure 5-10). The resulting form should include those items shown in Figure 5-11.
Deficiency: The current COA form does not reflect any consideration of transportation security in its evaluation of appropriate level of effort or documentation in the PD&E process.

Security Solution: The potential risk to the proposed project from either a man-made or natural disaster should be included in the determination of the level of study required to analyze the project. A section should be added to the COA form, page 3, in Section 6 (“Impact Evaluation”) that addresses security concerns for a particular proposed project.

Benefit: This will allow a security concern to dictate the COA of a particular project and thereby potentially allow a greater level of analysis.

Figure 5-11
Modified COA Form

F. SECURITY
1. Stand-Off Distance [ ] [ ] [ ] [ ] [ ]
2. Access Restriction [ ] [ ] [ ] [ ] [ ]
3. Time on Target Reduction [ ] [ ] [ ] [ ] [ ]
4. Protection of Key Elements [ ] [ ] [ ] [ ] [ ]
5. Role in Economy [ ] [ ] [ ] [ ] [ ]
6. Replacement Cost [ ] [ ] [ ] [ ] [ ]
7. Lost Time [ ] [ ] [ ] [ ] [ ]
8. Visibility [ ] [ ] [ ] [ ] [ ]
9. National Symbol [ ] [ ] [ ] [ ] [ ]
10. National Defense [ ] [ ] [ ] [ ] [ ]
11. Site Hazards [ ] [ ] [ ] [ ] [ ]
12. Interdependency [ ] [ ] [ ] [ ] [ ]
13. Maintenance [ ] [ ] [ ] [ ] [ ]
14. Operations [ ] [ ] [ ] [ ] [ ]
15. Vulnerability [ ] [ ] [ ] [ ] [ ]
16. Community Impact [ ] [ ] [ ] [ ] [ ]
5.3 Revised Analysis Phase

The corridor analysis process should be modified to consider security needs (Figure 5-12). The list of reviewers should list those shown in Table 5-1.

Figure 5-12
Corridor Analysis Modification

Deficiency: Security should be a primary consideration when considering a new corridor. Related to corridor analysis is the concept of corridor preservation. The FDOT has established a procedure for preserving land for the future needs of infrastructure and the transportation systems. As development in Florida accelerates, there is a great potential for development of land that, due to geographic location, is critical to the future needs of Florida’s transportation network. This process does not currently provide for security as a viable motivation for corridor preservation.

Security Solution: Security experts should review the proposed corridors for potential concerns or fatal flaws. Amend the corridor preservation process to allow for advanced right-of-way acquisition, or at least easements acquisition, to preserve the continuity of necessary transportation corridors from both connectivity and security perspectives.

Benefit: This will ensure review by qualified personnel. Security concerns will not fall victim to lack of resources.
Table 5-1
Recommended Security Agency Reviewers

| 1. Federal Motor Carrier Safety Administration (FMCSA) |
| 2. Federal Railroad Administration (FRA) |
| 3. Federal Transit Administration (FTA) |
| 4. Maritime Administration (MARAD) |
| 5. National Highway Traffic Safety Administration (NHTSA) |
| 6. Pipeline & Hazardous Materials Safety Administration (PHMSA) |
| 7. Department of Homeland Security (DHS) |
| 8. Transportation Security Administration (TSA) |
| 9. Customs and Border Protection (CBP) |
| 11. Federal Emergency Management Agency, Preparedness Division |
| 12. Local Emergency Management Agencies |

The ETDM tool should be modified to provide a security screening module (Figure 5-13).

Figure 5-13
ETDM Modification

Deficiency: The ETDM does not currently use any security based evaluation criteria for identification or project issues nor do any security qualified personnel participate in the electronic screening efforts.

Security Solution: A security screening module should be included in the program that would allow security experts to be involved in the process of screening alternatives. This module should be attached to both the Planning and Programming Screens.

Benefit: This would allow those security personnel assigned to the ETAT to review the project with regards to security and provide selection of the best alternative.
The ETAT membership should be modified to require participation of security experts on the committee (Figure 5-14).

**Figure 5-14**
**ETAT Membership Modification**

**Deficiency:** The ETAT does contain members of law enforcement and emergency response, but does not include anyone who is trained and qualified to make security assessments.

**Security Solution:** Because of the internet based review process, it would be simple for an expert, located anywhere in the United States, to review projects. Therefore, require a representative from the same agencies that are added to the review phase also participate electronically via the internet.

**Benefit:** This would ensure that a properly qualified individual is reviewing projects for security concerns and allow rapid update of that information via the internet.
A GIS layer should be developed to represent critical infrastructure and other facilities that represent security considerations (Figure 5-15).

**Figure 5-15**
GIS Layer Modification

**Deficiency:** The ETDM screening tools depend on members on the team to ensure accuracy of data available from their own respective agencies for screening alternatives. There currently exists no data layer available with regards to critical infrastructure because there is no security representation either in ETAT or the ETDM process.

**Security Solution:** This data could consist of Geographic Information System (GIS) data or other data deemed relevant. The FDOT should develop a security based, GIS layer that could be easily overlaid onto proposed projects as an initial screening tool to determine fatal flaws in proposed projects or alternatives.

**Benefit:** This will allow ETAT members to determine fatal flaws with particular projects or alternatives early in the process and continuously throughout the process.
The evaluation matrix should be modified to account for security costs and considerations (Figure 5-16).

**Figure 5-16**
EVALUATION MATRIX MODIFICATION

<table>
<thead>
<tr>
<th>Deficiency: The evaluation matrix and the minimum requirements for such, used to evaluate alternatives, do not consider security issues in the evaluation of alternatives.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security Solution: Include the following factors in the evaluation matrix: (1) Overall cost of security provisions, which would consist of all design, construction, maintenance, and operations costs associated with recommended improvements to protect infrastructure, and (2) a qualitative assessment of whether a particular alternative involves a higher likelihood of attractiveness or vulnerability as a result of recommended improvements.</td>
</tr>
<tr>
<td>Benefit: This will indicate to the public that there are security concerns associated with particular alternatives and allow them to see the impacts of those concerns on the decision making process.</td>
</tr>
</tbody>
</table>
The list of standard evaluation criteria should be modified to reflect security considerations (Figure 5-17). The list should include the 16 factors listed in Table 5-2.

**Figure 5-17**
*Evaluation Factors Modification*

---

**Deficiency:** There are many evaluation factors that are typically evaluated in Florida. They are largely standardized and are outlined in the PD&E Manual. There are no evaluation criteria for security considerations.

**Security Solution:** Include a list of standard security evaluation criteria in the overall list of evaluation criteria.

**Benefit:** These new criteria will provide both qualitative and quantitative measures that will allow a proper screening of alternatives based on security concerns.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Evaluation</th>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-Off Distance</td>
<td>Cost associated with provision of adequate stand-off distance (Sufficient</td>
<td>▪ Acquisition of additional right-of-way not required otherwise</td>
<td>▪ Corridor preservation</td>
</tr>
<tr>
<td></td>
<td>distance as determined by the most current criteria).</td>
<td>▪ Modification of horizontal alignment</td>
<td>▪ Increased corridor security</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Reduction of primary and secondary impacts to transportation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>facility and adjacent facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Reduced vulnerability</td>
</tr>
<tr>
<td>Access Restriction</td>
<td>Cost associated with the limitation of access to critical areas such as</td>
<td>▪ Limitation of access (connecting facilities)</td>
<td>▪ Reduced vulnerability</td>
</tr>
<tr>
<td></td>
<td>transportation system or adjacent critical infrastructure (i.e. petroleum</td>
<td>▪ Improved barrier systems to prevent deviation from established</td>
<td>▪ Detection</td>
</tr>
<tr>
<td></td>
<td>tank farms, chemical plants)</td>
<td>corridors</td>
<td>▪ Deterrence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-on-Target</td>
<td>Cost associated with the reduction of allowable delay time along specific</td>
<td>▪ Reduction of facility features (shoulders on roadways)</td>
<td>▪ Increased security</td>
</tr>
<tr>
<td></td>
<td>corridors that may be within the allowable stand-off distance</td>
<td>▪ Increased speed limits</td>
<td>▪ Reduced vulnerability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Increased enforcement activity</td>
<td>▪ Deterrence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Increased surveillance</td>
<td></td>
</tr>
<tr>
<td>Criteria</td>
<td>Evaluation</td>
<td>Costs</td>
<td>Benefits</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Protection of Key Elements    | Cost of protection of critical infrastructure through attack on key elements such as bridge pilings.| ▪ Hardening costs  
▪ Increased maintenance costs                                                                    | ▪ Applies to man-made and natural disasters  
▪ Reduced vulnerability                                                                      |
| Economic Role                 | Impact of loss of the facility or of reduced capacity on the local or regional economy. This is a qualitative factor that can be assessed as Low, Medium, or High for comparative purposes. | ▪ Redundancy  
▪ Network Development                                                                               | ▪ Applies to man-made and natural disasters  
▪ Accurate budgeting  
▪ Efficient funding allocation  
▪ Encourage asset hardening by other parties                                                      |
| Replacement Cost              | Evaluate the potential cost to replace the infrastructure.                                            | ▪ Value assessments  
▪ Updates to assessments                                                                               | ▪ Applies to man-made and natural disasters                                                      |
| Lost Time                     | Cost associated with increased travel time or other delays caused by the loss of the facility.      | ▪ Travel time studies  
▪ Redundancy                                                                                          | ▪ Applies to man-made and natural disasters  
▪ Network flexibility  
▪ Multi-use capability                                                                                  |
| Visibility                    | Costs associated with economic losses, caused by a loss of a facility, associated with public perception. | ▪ Value assessments  
▪ Identification of public concerns  
▪ Monitoring of public opinion                                                                            | ▪ Applies to man-made and natural disasters  
▪ Accurate budgeting  
▪ Efficient funding allocation                                                                            |
### Table 5-2 (Continued)
#### Security Evaluation Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Evaluation</th>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
</table>
| National Symbol        | Impact associated with the loss of a facility deemed a national symbol. This is a qualitative factor that can be assessed as Low, Medium, or High for comparative purposes. Any alternative ranking Medium or High should not be considered feasible. | ▪ Access restrictions  
▪ Route circuity  
▪ Hardening  
▪ Shielding | ▪ National morale  
▪ Encourage asset hardening by other parties |
| National Defense       | Importance of the facility to national defense, primarily related to transportation of needed resources. Facilities that are on Strategic Highway Network (STRAHNET). This is a qualitative factor that can be assessed as Low, Medium, or High for comparative purposes. | ▪ Priority treatment  
▪ Design restrictions  
▪ Higher standards | ▪ Protects STRAHNET  
▪ Allows increased response efficiency |
### Table 5-2 (Continued)
#### Security Evaluation Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Evaluation</th>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
</table>
| Site Hazards      | Impacts associated with the specific site conditions. This may include increased secondary damages resulting from on-site storage of hazardous materials. This is a qualitative factor that can be assessed as Low, Medium, or High for comparative purposes. The ranges for each category will be determined by the types of hazards present. | ▪ Database of site conditions  
▪ Update site conditions database | ▪ Applies to man-made and natural disasters  
▪ Encourage asset hardening by other parties |
| Inter-dependency  | Costs associated with reduction of service of other elements of the infrastructure as a result of the loss of this facility. | ▪ Communication equipment compatibility  
▪ Redundancy  
▪ Increased coordination  
▪ Study requirements beyond the immediate project area | ▪ Applies to man-made and natural disasters  
▪ Improvements to alternative modes  
▪ Encourages multi-modal consideration to meet needs |
## Table 5-2 (Continued)
### Security Evaluation Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Evaluation</th>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance</td>
<td>Costs associated with additional maintenance of protective measures.</td>
<td>• Increased maintenance costs over the life of the infrastructure</td>
<td>• Accurate budgeting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Efficient funding allocation</td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td>Costs associated with additional operations of protective measures.</td>
<td>• Infrastructure</td>
<td>• Accurate budgeting and allocation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Human resources</td>
<td>• Effective communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Equipment</td>
<td>• Increase responsiveness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Training</td>
<td>• Applies to man-made and natural disasters</td>
</tr>
<tr>
<td>Vulnerability</td>
<td>Impact associated with a change in vulnerability of an asset as a result of</td>
<td>• Assessment</td>
<td>• Decrease vulnerability</td>
</tr>
<tr>
<td></td>
<td>the developed alternatives. This is a qualitative factor that can be</td>
<td>• Resolution</td>
<td>• Encourage asset hardening by other parties.</td>
</tr>
<tr>
<td></td>
<td>assessed as Low, Medium, or High for comparative purposes.</td>
<td>• Tracking</td>
<td></td>
</tr>
<tr>
<td>Community Impact</td>
<td>Impact to community function and integrity. This is a qualitative factor</td>
<td>• Hazards Analysis</td>
<td>• Public acceptance of project</td>
</tr>
<tr>
<td>Impact</td>
<td>that can be assessed as Low, Medium, or High for comparative purposes.</td>
<td>• Monitoring of public concerns</td>
<td>• Ability to accurately access impacts</td>
</tr>
</tbody>
</table>

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5.4 Revised Finalization Phase

The distribution of the environmental documentation for review should be modified to include certain agencies (Figure 5-18). The agencies that should be included are shown in Table 5-1.

Figure 5-18
Environmental Document Review Modification

Deficiency: All Draft Environmental Impact Statements (DEIS) and Final Environmental Impact Statements (FEIS) are circulated to a determined group of government agencies for their review. These agencies address the historical aspects of transportation planning but do not adequately provide input from those agencies concerned with transportation security.

Security Solution: Security experts from several agencies should be involved in the review of these significant projects.

Benefit: This will ensure review by qualified personnel. Security concerns will not fall victim to lack of resources.

A security document should be developed to adequately document the decision making process as related to transportation security (Figure 5-19).
Deficiency: There is no mechanism, document, or report that is currently produced to chronicle the decisions that were made on alternatives development, analysis, and selection with regards to transportation security. This cannot be accomplished in the traditionally published documents such as the PER or the environmental document due to the sensitive nature of the information.

Security Solution: Develop a technical memorandum or report entitled “Security Assessment Report” (SAR) to fully document the decision-making process for security based decisions. This information would then become a controlled informational items treated similarly to bridge reports.

Benefit: This will document decision making process related to security concerns and allow reproduction of those decisions at a later date.

5.5 Revised Informational Phase

Security experts should receive final distribution of the final environmental and security documentation (Figure 5-20). The distribution list should include those listed in Table 5-1.
Deficiency: The final version of the Environmental Document is sent to reviewing agencies for their files and for incorporation into their planning efforts. However, security experts from several agencies are not currently on the distribution list.

Security Solution: Security experts from several agencies should be involved in the distribution list for the final environmental documents.

Benefit: This will ensure review by qualified personnel. Security concerns will not fall victim to lack of resources.

5.6 Revised Public Involvement Considerations

Revisions to the Public Involvement Process should be made that would allow adequate response by the public (Figure 5-21).
Deficiency: With the widespread diversity of the Florida population, there is a strong interest in accommodating the needs of both the Spanish and English-speaking populations in the state. Therefore, all transportation initiatives must consider the influence of these population characteristics prior to implementation of any new processes or strategies that are likely to impact the population as a whole. Most importantly, transportation planners must involve the general public in some aspects of the development process as a means of identifying new areas of influence and the overall direction of transportation throughout the state.

Security Solution: Security measures that lead to implementation must evolve slowly, taking the population and their needs into consideration, such as language barriers and tourist limitations. Therefore, security enhancements must be well publicized throughout all transportation channels as a means of promoting these changes in all areas of the state. Transportation users must experience a sense of confidence and support for these initiatives, and if they are introduced gradually to the general public, their impact will be even greater and more widespread.

Benefit: Will allow solutions that meet the needs of a multi-cultural state where growth and tourism can dramatically change the face public opinion over a short period of time.

An education program should be developed to train project personnel on process for security information dissemination (Figure 5-22).
Figure 5-22
Information Dissemination Modification

Deficiency: The challenge with regards to transportation security is in the discussion of how much and what kind of information can be revealed to the public in order to convince them that the best, most secure, alternative is being chosen. This has to be done without violating any federal or state laws with regards to secure information dissemination.

Security Solution: Efforts should be made during the implementation of the entire public involvement phase to screen information for appropriateness. In order to educate staff, training should be conducted that will inform them of the appropriate types of information that can be given to the public. Also, all information should be reviewed by appropriate security personnel prior to being released to the public or media. This should occur at project milestones which may include the community awareness memorandum, a public information meeting, a project website, a project newsletter, or a public hearing.

Benefit: This will increase information security and standardize, through education and process, information dissemination.

The modified PD&E process described in this chapter will enable practitioners to adequately consider security in the project development process. The cost of implementation will be minimal. These changes can be accomplished in a short time frame without jeopardizing the existing methods and results.
Chapter 6
Findings And Next Steps

6.1 Key Findings

Based upon this research effort, there are three (3) key findings. The most critical findings include the criteria to evaluate a project based upon security, the necessity for adequate participation by other federal agencies, and the consideration of public opinion and input into the modified process. These findings were based upon exhaustive efforts to determine the most critical needs and opportunities that lie in the existing process, thereby enabling realistic integration of security considerations with minimal change to the existing organizational culture. After completion of this research effort, a vetting phase ensued wherein the reasonableness and effectiveness of the modified process was discussed with transportation practitioners in Florida. Based upon conversations with leading transportation officials with the FDOT and private security consultants, there is a distinct need for security considerations in the development process and it is expected that there will be great interest in implementation of the modified process. The inoculation of security into the project development process will take time to mature and take on a stable form in
the long term process, but this research effort, based upon post-research interviews, seems to be a necessary step in accomplishing those goals.

6.1.1 Security Evaluation Criteria

This research effort has resulted in a project security evaluation toolbox that can be immediately applied to Florida’s project development process with minimal efforts. The sixteen (16) evaluation criteria will allow project participants to practically evaluate the reasonableness and feasibility of projects within a security framework. They will provide a means to accurately estimate potential impacts, both social and economic, associated with both man-made and natural disasters. These assessments will allow accurate budgeting and efficient allocation of resources. These new criteria will sensitize planners to the security needs of transportation projects and will result in decreased vulnerability and increased safety and security.

6.1.2 Agency Review Involvement

A critical factor to the success of this modified project development process lies in the willingness and ability for key agencies and personnel to participate in the process. The basic requirement that projects be reviewed by qualified, competent staff that has access to the information they need to properly and accurately review projects is paramount. This need exists in every
phase of the modified process. The effectiveness of the modified process cannot be realized if we depend on other disciplines (i.e. safety, engineering) to determine applicability of security accommodations during the development process. The modified process gives an efficient venue in which agencies can readily participate with minimal resource commitment. The phased implementation process allows acclimation and adequate preparation during the move towards full utilization.

6.1.3 Revision/Clarification Of Public Involvement

Security is a public issue. It is impossible to properly consider security in the project development process without fully considering the impact of public participation in the process, especially when the process mandates public involvement. The selection of the preferred project or the viability of project need can be controlled by public opinion alone, as long as a safety issue is not involved. It is imperative that, during the modified project development process, we continue to involve the public and make the process as transparent as possible. The modified process does not change the requirements for public involvement; it simply adds another focal point for practitioners. The efforts to involve and educate the public of security consideration during project development must continue, especially when Floridians are struggling to understand all of the implications that security has on their daily lives. These
efforts will manifest themselves in the project evaluation and selection process, in
central workshops and hearings, and in other efforts to inform the public.

6.2 Next Steps

This research effort can be applied immediately in order to consider
security in Florida’s project development process. As the topic of security and
planning continue to develop at a rapid pace, so will the needs for continued
efforts along this line of study. These needs will include validation of the
process, implementation efforts, future research needs, participation by local
governments, and application of revised processes.

6.2.1 Validation

There are three apparent methods to validate the revised process. One
method would include the use of a panel of experts to review the existing and
modified processes and comment on its utility and effectiveness. This panel
could consist of FDOT PD&E personnel, representatives from the federal
agencies involved in transportation planning and security (Appendix F),
designated security personnel from the local and state governments, and
recognized national security experts. The panel would provide important
feedback in order to further develop the process. However, there will be a great
reluctance on the part of local, state, and federal agencies to officially review and
comment on the procedure due to perceived endorsement and the liability associated with that perception. During the course of this study, this phenomenon was experienced several times and would therefore be expected to occur during implementation.

Another method that could be used to validate the model would be to exhume completed projects, apply the revised process, and determine what changes would occur in the process and where those changes happened. This would allow further development of the process and possibly determine certain threshold criteria for implementation of the process. However, the only way in which this would work would be to have the additional federal security agencies (Table 5-1) participate in the process as if this were a new project. The likelihood of this occurring, given the resource challenges of most federal agencies, would be remote. Most of those agencies expend all of their resources interacting with current projects and could not afford to invest additional resources in past projects. Participation would be minimal and would therefore not prove informational.

A final method would be the use of pilot projects along with a phased implementation plan. This would allow governmental entities to participate in an official capacity, within the boundaries of their duties and responsibilities, and be expending resources on active projects. This method would prove the most
realistic and proper way to advance this research effort to the next level of analysis.

6.2.2 Implementation

Implementation of new policies and procedures occurs through pilot projects in Florida. There have been several other initiatives, like ETDM and ITS, that have followed the same process and have been successfully implemented within the state. It is expected that the revised project development process would follow this same path. It is envisioned that a certain number of sample projects would begin to utilize the new process on an annual basis with the ultimate intent of widespread utilization in the next 3 to 5 years. The mitigating factor of the revised process is that it does alleviate or relieve practitioners from fulfilling the requirements of the existing process. This means that if a problem occurs on a pilot project, the existing system can be used to complete the project as normal.

Organizational change, especially in the public sector, can sometimes take long periods of time. This research effort was undertaken with the intent of working within the existing organizational framework in order to reduce the amount of change that needed to occur. This would allow greater acceptance of the revised processes and allow immediate implementation at some scale. The revised process does not require any new committees to be formed, new
software to be developed, new infrastructure to be acquired, or any new employees to be hired. The greatest amount of change that will be required will lie in changing the thought processes of those conducting the studies. There will be additional efforts and energy expended for the increased coordination and communication, but no additional expertise is required for this to occur. The changes to existing chapters of the PD&E Manual are minimal, with only form changes and additional procedure integration to occur.

Attention will have to be given to participation by the additional federal agencies. As it stands, there would be little motivation for them to expend the additional efforts to review large numbers of projects above their normal workloads. The phased implementation plan will help reduce the amount of additional review time and personnel needed at the onset of the program. The FDOT should encourage the lead federal agency, typically the FHWA or FTA, to encourage participation by its sibling federal agencies. This encouragement from other agencies and the implied liability associated with the reluctance to participate in such an important program should generate sufficient interest and response to the program. It is also noted that many of the federal agencies could easily and quickly determine if they had any facilities involved with the proposed project through the use of the online ETDM screening tool. ETDM would provide them with location information and they could quickly discount involvement of
certain agencies. For example, the CBP could readily determine an assessment of no involvement if the project did not involve a national border.

6.2.3 Future Research Needs

This research is the initial effort at incorporating security considerations into the project development process. In order to fully develop and deploy security to our nation’s infrastructure, additional research must be done. There must be additional research on the integration of technology into the process to allow detection, deterrence, and response. The public involvement process must be reviewed for determination of adequate public education and involvement levels. The interaction of land use with security and transportation networks must be explored. Methods and costs of hardening existing and proposed infrastructure must be developed. Funding priorities must be established and a funding implementation plan written. A system of metrics should be developed in order to allow planners to accurately estimate costs and impacts associated with security considerations. The legal ramifications of security concerns must be structured to include responsibility and liability.

6.2.4 Local Participation

The revised process does not require a dramatic increase in resource needs from the local government agencies. Since the revised process works
within the existing process, little new resources are required. There are already several initiatives underway by local governments to inventory and assess critical infrastructure and security sensitive sites within their geographic area of responsibility. However, in order to make the revised process efficient and effective, there is a minimum amount of data that would need to be collected. The minimum data to be collected would consist of location and descriptions of those facilities, both existing and planned, listed in Table 6-1. This data should be collected and made available in some electronic format, preferably as a GIS layer.
Table 6-1
Minimum Data Collection

1. Bridges
2. Tunnels
3. Essential interchange structures
4. Technological or other monitoring infrastructure
5. Traffic management centers
6. Telecommunications networks or hubs
7. Utilities, such as power or natural gas
8. Tourist attractions
9. Public transportation networks and hubs
10. Transportation networks
11. National landmarks
12. Industrial sites, such as chemical or nuclear plants
13. Commercial traffic hubs, such as container ports
14. Significant environmental protection areas
15. Water supplies
16. Banking and financial institutions
17. Agricultural/Food producing facilities

6.2.5 National Applicability Of Research

There are two elements of application that must to be addressed. The first is that of spatial transferability and the second is that of application transferability. The Florida Project Development Process is sometimes used as a model of a complete and thorough satisfaction of the requirements of NEPA. The nature of the PD&E manual is that of a framework for addressing the necessary elements of NEPA. The PD&E Manual was developed as an agreement between the FHWA and the FDOT and reflects satisfaction of NEPA for roadway projects. The PD&E Manual does not present a detailed prescription of quantitative and qualitative factors. Instead, it establishes the process and allows the user to
apply industry standards, standard practice, and local conditions to the formulation of reasonable and feasible alternatives and the selection of a preferred alternative. Because of this, the process lends itself to easy transference to any other state in the nation. All states must comply with NEPA and, because of the flexibility of the process in accommodating site specific conditions, this revised process can be employed effectively anywhere. This flexibility also allows the process to be applied to different modes. Even though the process in Florida is commonly used for roadway facilities, this method would prove effective for any mode of transportation. It could even be used for private developments to include sites and facilities.
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Appendices
### Appendix A: Acronyms

#### Table A-1

**List Of Acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHO</td>
<td>American Association of State Highway Officials</td>
</tr>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
</tr>
<tr>
<td>AN</td>
<td>Advance Notification</td>
</tr>
<tr>
<td>APTA</td>
<td>American Public Transportation Association</td>
</tr>
<tr>
<td>ASCE</td>
<td>American Society of Civil Engineers</td>
</tr>
<tr>
<td>ASME</td>
<td>American Society of Mechanical Engineers</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
</tr>
<tr>
<td>ATA</td>
<td>American Trucking Association</td>
</tr>
<tr>
<td>BTS</td>
<td>Bureau of Transportation Statistics</td>
</tr>
<tr>
<td>CAAA</td>
<td>Clean Air Act Amendment of 1990</td>
</tr>
<tr>
<td>CATEX</td>
<td>Categorical Exclusion</td>
</tr>
<tr>
<td>CBP</td>
<td>Customs and Border Protection</td>
</tr>
<tr>
<td>CDR</td>
<td>Corridor Development Report</td>
</tr>
<tr>
<td>CE</td>
<td>Categorical Exclusion</td>
</tr>
<tr>
<td>CEI</td>
<td>Construction Engineering &amp; Inspection</td>
</tr>
<tr>
<td>CEMO</td>
<td>Central Environmental Management Office</td>
</tr>
<tr>
<td>CEQ</td>
<td>Council on Environmental Quality</td>
</tr>
<tr>
<td>COA</td>
<td>Class of Action</td>
</tr>
</tbody>
</table>
### Appendix A (Continued)

#### Table A-1 (Continued)

**List Of Acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>Consultation</td>
<td>Consultation means that one party confers with another identified party and, prior to taking action(s), considers that party's views.</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Cooperation means that the parties involved in carrying out the planning, programming and management systems processes work together to achieve a common goal or objective.</td>
</tr>
<tr>
<td>Coordination</td>
<td>Coordination means the comparison of the transportation plans, programs, and schedules of one agency with related plans, programs and schedules of other agencies or entities with legal standing, and adjustment of plans, programs and schedules to achieve general consistency.</td>
</tr>
<tr>
<td>CPDR</td>
<td>Corridor Planning and Design Report</td>
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<tr>
<td>CRAS</td>
<td>Cultural Resource Assessment Survey</td>
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<tr>
<td>CSER</td>
<td>Contamination Screening Evaluation Report</td>
</tr>
<tr>
<td>CTAA</td>
<td>Community Transportation Association of America</td>
</tr>
<tr>
<td>CTBSSP</td>
<td>Commercial Truck and Bus Safety Synthesis Program</td>
</tr>
<tr>
<td>CUTR</td>
<td>Center for Urban Transportation Research</td>
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<td>DEIS</td>
<td>Draft Environmental Impact Statement</td>
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<td>DEMO</td>
<td>District Environmental Management Office</td>
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<td>DHS</td>
<td>Department of Homeland Security</td>
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<td>ESBA</td>
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<td>EST</td>
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<td>Florida's Coastal Management Program</td>
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<td>FEIS</td>
<td>Final Environmental Impact Statement</td>
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<td>FEMA</td>
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<td>FHWA</td>
<td>Federal Highway Administration</td>
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<td>FMCSA</td>
<td>Federal Motor Carrier Safety Administration</td>
</tr>
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<td>FRA</td>
<td>Federal Railroad Administration</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Administration</td>
</tr>
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<td>FTP</td>
<td>Florida Transportation Plan</td>
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<td>FY</td>
<td>Fiscal Year</td>
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<tr>
<td>GIS</td>
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<tr>
<td>HSIP</td>
<td>Highway Safety Improvement Program</td>
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<td>Intermodal Surface Transportation Efficiency Act of 1991</td>
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<td>Institute of Transportation Engineers</td>
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<td>Intelligent Transportation System</td>
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<td>LBR</td>
<td>Legislative Budget Request</td>
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<td>LHR</td>
<td>Location Hydraulics Report</td>
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<td>MARAD</td>
<td>Maritime Administration</td>
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<td>MIS</td>
<td>Major Investment Study</td>
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<td>MPO</td>
<td>Metropolitan Planning Organization</td>
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<td>NCHRP</td>
<td>National Cooperative Highway Research Program</td>
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<td>NEPA</td>
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<td>NHTSA</td>
<td>National Highway Transit Research and Development Program</td>
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<td>NMSA</td>
<td>Non-Major State Action</td>
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<td>Natural Resource Conservation Service</td>
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<td>NSA</td>
<td>National Security Agency</td>
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<tr>
<td>NTSB</td>
<td>National Transportation Safety Board</td>
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<tr>
<td>OFW</td>
<td>Outstanding Florida Waterway</td>
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<td>OST</td>
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<tr>
<td>PHMSA</td>
<td>Pipeline &amp; Hazardous Materials Safety Administration</td>
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<tr>
<td>Plan</td>
<td>Transportation Plan</td>
</tr>
<tr>
<td>PPP</td>
<td>Public-Private Partnerships</td>
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<tr>
<td>Programmatic</td>
<td>Type 1 Categorical Exclusion</td>
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<tr>
<td>PSR</td>
<td>Pond Siting Report</td>
</tr>
<tr>
<td>RITA</td>
<td>Research and Innovative Technology Administration</td>
</tr>
<tr>
<td>SAE</td>
<td>Society of Automotive Engineers</td>
</tr>
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<td>SEIR</td>
<td>State Environmental Impact Report</td>
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<tr>
<td>SLSDC</td>
<td>Saint Lawrence Seaway Development Corporation</td>
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<tr>
<td>STB</td>
<td>Surface Transportation Board</td>
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<tr>
<td>STIP</td>
<td>Statewide Transportation Improvement Program</td>
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<td>STRAHNET</td>
<td>Strategic Highway Network</td>
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<td>TCRP</td>
<td>Transit Cooperative Research Program</td>
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<td>TEA-21</td>
<td>Transportation Equity Act for the 21st Century</td>
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<tr>
<td>TIP</td>
<td>Transportation Improvement Program</td>
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<td>TRB</td>
<td>Transportation Research Board</td>
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<td>Transportation Security Administration</td>
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List Of Acronyms

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<td>Transportation Safety Institute</td>
</tr>
<tr>
<td>TSM</td>
<td>Transportation System Management</td>
</tr>
<tr>
<td>USDOT</td>
<td>United States Department of Transportation</td>
</tr>
<tr>
<td>USF</td>
<td>University of South Florida</td>
</tr>
<tr>
<td>VOLPE</td>
<td>John A. Volpe National Transportation Systems Center</td>
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<td>WER</td>
<td>Wetlands Evaluation Report</td>
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Appendix B: List Of State Security Contacts

<table>
<thead>
<tr>
<th>State</th>
<th>Position</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Alabama</td>
<td>Transportation Planning Engineer</td>
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<td>Alaska</td>
<td>Planning and Program Administrator</td>
<td>Alaska Department of Transportation and Public Facilities</td>
</tr>
<tr>
<td>Arizona</td>
<td>Director</td>
<td>Arizona Department Of Transportation</td>
</tr>
<tr>
<td>Arkansas</td>
<td>Director</td>
<td>Arkansas State Highway and Transportation Department</td>
</tr>
<tr>
<td>California</td>
<td>Division Manager</td>
<td>California Department Of Transportation</td>
</tr>
<tr>
<td>Colorado</td>
<td>Manager</td>
<td>Colorado Department Of Transportation</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Chief</td>
<td>Connecticut Department Of Transportation</td>
</tr>
<tr>
<td>Delaware</td>
<td>Director</td>
<td>Delaware Department Of Transportation</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>Chief</td>
<td>District of Columbia Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>Director</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Planning Manager</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>Director of Production</td>
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### Table B-1 (Continued)

**List Of State Security Contacts**

<table>
<thead>
<tr>
<th>State</th>
<th>Position</th>
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<tr>
<td>Florida</td>
<td>District Planning Manager</td>
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<tr>
<td>Florida</td>
<td>District Planning and Environmental Engineer</td>
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<tr>
<td>Florida</td>
<td>Director of Planning and Public Transportation</td>
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<td>Florida</td>
<td>District Planning Manager</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Planning, Public Transportation, and</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td></td>
<td>Environmental Management Manager</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>District Planning Manager</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Director of Operations</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Director of Planning &amp; Production</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Public Transportation Manager</td>
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</tr>
<tr>
<td>Florida</td>
<td>District Public Transportation Manager</td>
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### List Of State Security Contacts

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<tr>
<td>Florida</td>
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<td>Florida</td>
<td>District Modal Development Administrator</td>
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</tr>
<tr>
<td>Florida</td>
<td>District Planning and Public Transportation Manager</td>
<td>Florida Department Of Transportation</td>
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<tr>
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<td>District Planning and Public Transportation Manager</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Director of Planning &amp; Production</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Public Transportation Manager</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>District Director of Planning &amp; Production</td>
<td>Florida Department Of Transportation</td>
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<tr>
<td>Florida</td>
<td>District Director of Planning</td>
<td>Florida Department Of Transportation</td>
</tr>
<tr>
<td>Florida</td>
<td>Assistant Secretary for Intermodal Systems Development</td>
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</tr>
<tr>
<td>Florida</td>
<td>Manager</td>
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<th>State</th>
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<td>Executive Director</td>
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<td>Florida</td>
<td>Manager, District Environmental Management Office</td>
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<td>Florida</td>
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<tr>
<td>Florida</td>
<td>Modal Development Administrator</td>
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<td>Florida</td>
<td>Emergency Coordination Officer</td>
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</tr>
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<td>Hawaii</td>
<td>State Transportation Administrator</td>
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<tr>
<td>Idaho</td>
<td>Public Involvement Coordinator</td>
<td>Idaho Department Of Transportation</td>
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<tr>
<td>Illinois</td>
<td>Director</td>
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#### Table B-1 (Continued)

**List Of State Security Contacts**

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<th>State</th>
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<td>Director</td>
<td>Kansas Department Of Transportation</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Secretary</td>
<td>Kentucky Transportation Cabinet</td>
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<tr>
<td>Louisiana</td>
<td>Assistant Secretary</td>
<td>Louisiana Department Of Transportation and Development</td>
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<td>Mississippi</td>
<td>Director</td>
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<tr>
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<td>Transportation Program Manager</td>
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### Table B-1 (Continued)

#### List Of State Security Contacts

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<td>Division Manager</td>
<td>Nebraska Department Of Roads</td>
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<tr>
<td>Nevada</td>
<td>Deputy Director</td>
<td>Nevada Department Of Transportation</td>
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<tr>
<td>New Hampshire</td>
<td>Administrator</td>
<td>Department Of Transportation</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Assistant Commissioner</td>
<td>New Jersey Department Of Transportation</td>
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<td>New Mexico</td>
<td>Director</td>
<td>New Mexico Highway and Transportation Department</td>
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<td>New York</td>
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<td>Manager</td>
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<td>Director</td>
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<td>Ohio</td>
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<td>Oklahoma</td>
<td>Division Engineer</td>
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<td>Planning and Research Unit Manager</td>
<td>Oregon Department Of Transportation</td>
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<td>Pennsylvania</td>
<td>Planning Deputy Secretary</td>
<td>Pennsylvania Department Of Transportation</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Researcher</td>
<td>Volpe Center</td>
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<td>Puerto Rico</td>
<td>Director</td>
<td>Puerto Rico Department Of Transportation</td>
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<tr>
<td>Rhode Island</td>
<td>Deputy Chief Engineer</td>
<td>Rhode Island Department Of Transportation</td>
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<tr>
<td>South Carolina</td>
<td>Planning Engineer</td>
<td>South Carolina Department Of Transportation</td>
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<td>South Dakota</td>
<td>Planning and Programs Manager</td>
<td>South Dakota Department Of Transportation</td>
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<td>Virginia</td>
<td>Chief</td>
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Appendix B (Continued)

Table B-1 (Continued)
List Of State Security Contacts

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<td>Washington DC</td>
<td>Director</td>
<td>FHWA</td>
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<tr>
<td>West Virginia</td>
<td>Director</td>
<td>West Virginia Department Of Transportation</td>
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<tr>
<td>Wisconsin</td>
<td>Director</td>
<td>Wisconsin Department Of Transportation</td>
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<tr>
<td>Wyoming</td>
<td>Director</td>
<td>Wyoming Department Of Transportation</td>
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</table>
Appendix C: Request Letter

Alabama Department Of Transportation
George Ray
Transportation Planning Engineer
Transportation Planning
1409 Coliseum Boulevard
Montgomery, Alabama 36130-3050

Dear Sir or Madam:

I am a Doctoral student at the University of South Florida located in Tampa, Florida. I am currently conducting my research in the area of security planning. Specifically, I am developing a set of guidelines for incorporating security planning into the transportation planning and decision-making processes, at both the federal and state levels. The transportation planning and decision-making processes take on different forms in different states. There are clear federal guidelines that motivate and facilitate these processes. However, these guidelines lack provisions for security considerations in the transportation planning and decision-making processes.

The purpose of this study is to include and move considerations for national, state, and local security needs into the transportation planning arena. They currently exist in the operational phases of projects but are rarely involved in early project phases. This study will accomplish this through the development of a set of guidelines for planners and decision-makers to use when developing and screening projects and alternatives. Some of the specific benefits of application of these guidelines will include:

- Establishes a methodology for comparing alternatives regarding transportation security.
- Justifies management decisions for altering programming, budgeting, and staffing assignments that may differ from previous norms.
- Encourages identification of technical and research needs in transportation security planning.
- Increases efficiency and effectiveness of transportation decision-making by educating decision-makers on potential fatal flaws.
- Allows for the information to be used in other similar situations.

This study will be used to generate an initial set of guidelines that would have an immediate utility at various levels (i.e., federal, state, local) throughout the nation. These guidelines will facilitate planning efforts between these levels and result in an
Appendix C (Continued)

Phillip W. Stevers, P.E., AICP
Planning for Security: Incorporating Security Considerations Into the Transportation Planning Process

additional screening tool that can be used to evaluate potential transportation projects and more accurately assess the costs of those alternatives. These guidelines could also be used as instructional material for training those decision-makers on security sensitivity in the project development and selection phase.

This study will identify, through consolidation and analysis, examples of programs that are better able, by process, to include security considerations in their transportation decision-making processes. The security issues considered will include:

1. General planning needs – There is a recognized need for security planning.
2. Modal integration – Inter-system connectivity could be impeded by security concerns.
4. System redundancy – Redundancy can provide alternative transportation modes and routes when available.
5. Application of technology – Technology presents many tools to be used in the transportation operation and maintenance processes. Some of these tools may have limited utility when planning for security.
6. Funding priorities – Funding for transportation projects can be controlled, in both amount and allocation, by many factors. Unfortunately, security is not one of them.
7. System performance – Traditional performance measures can be affected by security concerns. The consideration of security in the planning process will mean a redefining of traditional performance criteria and formulas.
8. System interdependency – The current transportation planning process struggles to consider different modes or systems collectively or it simply considers them independently. This is not a desirable situation from a security planning perspective or from an overall efficiency standpoint.
9. Land use interaction – When perceived through a security planning framework, the process of alternatives evaluation, with respect to land use, will need to be modified.
10. Risk assessment – It may be necessary and beneficial to adapt and transfer current practices in other industries to the transportation planning arena.
11. Public participation – Public involvement activities will present a problem when security considerations are factored into the planning and decision-making processes.
12. Cost of security – Costs associated with security planning can consist of both direct and indirect costs.
13. Information availability – Transportation planners need some guidance on how to properly consider transportation security when the information available is not the “best” or is simply not “available” because of security concerns.
14. Planning levels: Federal, State, Local – Current planning practices allow control of key transportation decisions at different levels. There should be a clear definition of who is responsible for addressing security issues during transportation planning.
Appendix C (Continued)

15. **Organizational structure** - There should be people who are uniquely qualified to deal with the planning implications of security and these duties should be their primary responsibility.

16. **Legal considerations** - There are many legal issues involved in transportation planning with regards to security issues. A security event usually results in a loss of property or life. Current practices do very little to address these liability concerns.

17. **Facility design** - The focus of this study will not involve reinventing the ways in which transportation design is done. The study will focus on sensitizing designers to potential safety and security issues that result from challenges to security.

I would welcome the opportunity to discuss these issues and their relevance in your state. I am wide open to suggestions/comments/feedback of any form. You can respond in any format that you choose, including mail, email, fax, or phone call. You can call me at 1-800-646-8242 or I would be glad to contact you at your earliest convenience. Also, I would welcome any references to other individuals involved in this topic area.

I would greatly appreciate any assistance you can offer. I believe this to be an important topic in today’s planning environment.

Thank You.

Sincerely,

Phillip W. Stevens, P.E., AICP
Appendix D: State Responses To Inquiry Letter

Connecticut

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06111-7546
Phone:

January 12, 2004

Mr. Phillip W. Stevens, P.E., AICP
3112 Highlands Lakeview Circle
Lakeland, Florida 33813

Dear Mr. Stevens:

This is in response to your November 17, 2003 letter regarding your research in the area of security planning.

The Connecticut Department of Transportation does not incorporate security consideration in its transportation planning and decision-making process, other than those issues traditionally addressed for the safe operations of the system and the safety of the travelling public. It appears that your study is concerned with the higher-level security issues to address terrorist threats.

The State of Connecticut’s Office of Emergency Management has developed a State Terrorist Alert Plan in concert with the National Terrorist Alert System. All state agencies participate in this plan and have specific actions to carry out under each alert level.

Your effort is of great interest and this office would be interested in receiving the final report of your study, especially any guidelines developed for security considerations in transportation planning.

Very truly yours,

H. James Boice
Bureau Chief
Policy and Planning

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Appendix D (Continued)

Indiana

Phil Stevens

From: BSTECKER@indot.state.in.us
Sent: Monday, December 01, 2003 11:08 AM
To: securityplanning@earthlink.net
Cc: JOSADZUK@indot.state.in.us

Sensitivity: Confidential

Mr. Stevens,

Your November 17 letter was addressed to Ms. Janice Osadczuk. She asked me to respond on her behalf.

In your discussion of "security planning into the transportation decision-making processes" you mention "These guidelines will facilitate planning efforts... in an additional screening tool that can be used to evaluate potential transportation projects." INDOT's planning/project programming process is carried systematically by means of a blend of activities—some more judgment-based (such as reliance on our district personnel's field experience and interaction with local officials and the public), some more analytically based (such as continual evaluation of the entire state highway network using FHWA's Highway Economic Requirements System, or HERS program)—to arrive at a list of candidate projects. Transportation security may be an explicit factor at the project alternatives' assessment level (e.g., redundancy in major river crossings).

While it's not entirely clear to me if your definition of "security planning" focuses on natural (disasters) or non-natural events, or both, INDOT certainly, as a matter of policy and standards, designs into its facilities risk-reduction measures for such things as floods (e.g., bridges designed to convey overflow, infrequent flood events) and earthquakes (e.g., bridges in SW Indiana receive enhanced earthquake load design requirements).

JTRP, an INDOT-Purdue University joint research effort, is conducting a study on this topic, under project study SPR 2072, Synthesis of Best Practices in Transportation Security. You can find it at this web site under Current Projects: http://tesseract.purdue.edu/JTRP/. Jim Potrasiak, INDOT's Division Chief of Operations Support, has been involved in that research effort.

Regards,
Brad Stecker
Manager of Engineering Assessment
Indiana D.O.T.
317-232-5137
bsteccker@indot.state.in.us
Appendix D (Continued)

New York

Phil Stevens

From: Gary Frederich [GFREDERICH@dot.state.ny.us]
Sent: Friday, November 28, 2003 10:14 AM
To: securityplanning@eamsiminc.net
Subject: In reference to your November 17, 2003 letter

Thank you for your letter. It comes at a time when the Department is undergoing a transformation/renovation to better serve our customers. While I am not the best contact for the information you request it will be several months before I can send you the name that will be your best contact. At the moment security is handled by several program areas working together to deal with many of the factors outlined in your letter. The transformation, along with new policies and guidelines coming from the Federal level will result in consolidation of the Department’s security policies. In the mean time, I may be able to find some contacts that will be of use to you. I will forward that information as it becomes available to me. We will not know the organizational structure of the transformation till spring of 2004 but some information will be available after the first of the year. I suggest you e-mail me a reminder at that time.

Yours Truly,
Gary Frederich
Director, Transportation Research and Development
New York State Department of Transportation

Oregon

Phil Stevens

From: Jerri L. Bohard (jbohard@dot.state.or.us)
Sent: Friday, November 28, 2003 12:23 PM
To: securityplanning@eamsiminc.net
Cc: Barbara K. Frager (bfrager@dot.state.or.us)
Subject: DRAFT Security Background Paper

I am in receipt of your letter. I have attached an INTERNAL document that we are in the process of finalizing. This is part of a series of background papers that we are putting together in anticipation of updating the Oregon Transportation Plan. The kickoff of this update will occur in Jan/Feb. The committee structure includes a steering committee and 5 policy committees, one of which is entitled Safety and Security. While the emphasis is clearly on policy as you develop your guidelines for projects/alternatives, the information could be helpful.

Good luck and feel free to give me a call if you would like to discuss our efforts further. Especially since you are from my old stomping ground having lived in St Pete and worked for the Tampa Bay Regional Planning Council for a number of years.

Jerri Bohard
Planning Section Manager
(503) 986-4165
555 13th Street
Mill Creek Building
Salem, OR 97301

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Appendix D (Continued)

Georgia

Department of Transportation
State of Georgia
#2 Capitol Square, S.W.
Atlanta, Georgia 30334-1002
December 8, 2003

Mr. Phillip W. Stevens, P.E., AICP
3112 Highlands Lakeview Circle
Lakeland, GA 33813

Subject: Security planning

Dear Mr. Stevens:

I recently received your letter concerning your research in the area of incorporating security into transportation planning. I appreciate your interest in both of these areas and that you have an interest in what the Georgia Department of Transportation has to offer. Unfortunately, I cannot participate in this study at this time.

Again, thank you including us in your study. Perhaps, we can participate at a future date.

If you need additional information, I can be reached at 404-656-5411 or via email at joseph.palladi@dot.state.ga.us.

Sincerely,

Joseph P. Palladi
State Transportation Planning Administrator

JPeiv
Appendix D (Continued)

Florida

Phil Stevens

From: randy.fox@dot.state.fl.us
Sent: Thursday, January 29, 2004 9:02 AM
To: sscourtplanning@earthlink.net
Cc: Shannon.Slap@dot.state.fl.us; nancy.clements@dot.state.fl.us
Subject: Response to Nov 17, 2003 letter

Mr. Stevens,

This is in response to your letter to Nancy Clements, Director for Planning and Production for Florida's Turnpike Enterprise regarding security planning.

Planning for new roadways, additional lanes on existing roadways, interchange improvements and similar projects does not consider "security" issues if you are discussing terrorist activities. Of course, we do apply highway design guidelines for safety purposes. Security issues will be a major consideration in the development of a tunnel project that is currently in the early stages of development. We have not yet entered into that phase of project development for the tunnel so I cannot provide details other than to mention that issues concerning evacuation and emergency response will be included as well as restrictions on transporting explosive materials into the tunnel (and possibly electronic monitoring and screening of vehicles).

Good luck with your research.

Randy Fox, ACIP
Turnpike Enterprise Planning Manager
Ph (407) 582-3969 ext.3041, SC 335-3041
Fax (407) 822-6612, SC 335-3152
randy.fox@dot.state.fl.us
December 22, 2003

Mr. Phillip W. Stevens, P.E., AICP
3112 Highlands Lakeview Circle
Lakeland, FL 33813

Re: Security Planning

Dear Mr. Stevens:

In response to your letter dated November 17, 2003, attached is some information which may be of assistance in your research in the area of security planning.

For Transit information, we suggest you contact Mr. Roosevelt Bradley, Miami-Dade Transit Agency, 111 N.W. First St., Suite 910, Miami, Fl. 33130, Tel. (305) 375-2597.

We trust this information will be helpful to your project and do not hesitate to contact us should you need our further assistance.

Sincerely,

Gene R. Rodriguez, P.E.
Public Transportation Manager

Enc.
c/cv
j/svevenet
December 1, 2003

Phillip W. Stevens
3112 Highlands Lakeview Circle
Lakeland, Florida 33813

Dear Mr. Stevens:

I am forwarding your research request on security planning to our Office of Policy Planning in Tallahassee. Specifically, I am forwarding it to Bob Romig, Director of the Office of Policy Planning.

The Florida Department of Transportation (FDOT) is a decentralized department and the planning level information you are requesting is developed within our central office. Actual implementation is then accomplished within each of the FDOT’s district offices. If you would like to discuss organization or implementation as it relates to your research please feel free to contact me at the address or telephone number on the letterhead.

Sincerely,

Nancy A. Ziegler
Modal Development Administrator

NAZ/Im

cc: Bob Romig, FDOT OPP
    Gus Schmidt, FDOT D4 PLEM

www.dot.state.fl.us
Appendix D (Continued)

Ohio

Director of Transportation
AIM Engineering & Surveying, Inc.
1058 North Broadway
Bartow, Fl 33830
Email: pstevens@aimengr.com
Toll Free: (800) 646-8242
Local: (863) 533-6800
Fax: (863) 533-5998
Cell: (863) 441-0048

-----Original Message-----
From: Suzann Rhodes [mailto:Suzann.Rhodes@dot.state.oh.us]
Sent: Monday, January 05, 2004 9:03 AM
To: securityplanning@earthlink.net
Cc: Matt Sellhorst
Subject: Ohio DOT - Security

TO: Phillip Stevens

Mr. Stevens,

Matt Sellhorst asked me to send you a copy of our "draft" chapter on "Transportation Security" from our Long Range Plan. The chapter summarizes ODOT's program, policies, and procedures relative to security. It is attached. Please let me know if you are unable to open it or would like a hard copy. Good luck with your dissertation.

Suzann S. Rhodes, AICP (formerly Suzann Gad)
Administrator, Office of Urban and Corridor Planning
Ohio Department of Transportation
1980 West Broad Street, Columbus, Ohio 43223
614-466-7053  FAX 614-728-9358
suzann.rhodes@dot.state.oh.us
Appendix E: Key Transportation Legislation

*National Environmental Policy Act (NEPA)*

In 1969 Congress passed the National Environmental Policy Act (NEPA). The law was in response to increased concern for the natural environment. This is the primary legislation that has shaped today’s Project Development & Environment (PD&E) process in Florida. This Act satisfied the following goals:

- Created the Council on Environmental Quality (CEQ)
- Created basic requirements of Environmental Impact Statement (EIS) which must be prepared for all major Federal actions that significantly affect the environment.
- Established a national environmental policy
- Required federal agencies to use an interdisciplinary approach in planning and decision-making for any actions affecting the environment.
- The creation of the CEQ was a major product of NEPA and has several primary functions which include:
  - Creation of environmental policy
  - Monitoring of environmental policy
  - Preparation of reports concerning status of environmental quality
  - Monitoring of all federal involvement in NEPA
Appendix E (Continued)

The NEPA process regiments the alternatives development and selection process by mandating that certain areas of analysis occur. Compliance with NEPA is mandated when at least one of the following occurs:

- Federal support will be required for any single phase of the project. This support would most likely come in the form of funding.
- There is the possibility that federal support may be needed for a project and there is a need to maintain the eligibility of the project.
- Federal permits may be required. An example may be a United States Coast Guard permit for a new bridge crossing over a navigable waterway.
- Generally, federal approval of the project may be necessary.

Federal agencies can include the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Federal Aviation Administration (FAA), and the Federal Railroad Administration (FRA). A significant amount of guidance has been developed concerning the intent of the NEPA process. However, the approach to implementation often varies substantially. Many states have adopted umbrella policies or procedures under which they apply the NEPA process. Federal agencies involved in the sponsorship of projects within these states have supported the guidelines for
Appendix E (Continued)

each state and have developed a list of criteria that must be met for a project to be considered for federal funding.

*Intermodal Surface Transportation Efficiency Act* *(ISTEA)*

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) implemented broad changes in the way governments plan for all modes of surface transportation. The objective of ISTEA was to improve the performance of transportation systems by making transportation decisions with due consideration for social, economic, and environmental factors early in the planning process, coordinate planning efforts among affected agencies, and involve the public earlier in the decision-making process. This legislation established many of the alternative evaluation criteria that are required in Florida’s PD&E process. Security concerns alone are not a primary focus. ISTEA involved many aspects of the transportation process that had not been previously considered. ISTEA considered the following:

- System preservation, rather than new systems became a priority.
- Acknowledged changing patterns in metropolitan areas in areas of development, economics, and cultural diversity and established stronger coordination and control for those areas.
Appendix E (Continued)

- Dictated a more integrated planning process.
- Increased emphasis on stakeholder participation in the process, especially the public.
- Increased awareness of expansion constraints of the transportation network in highly urbanized or developing areas and the need for intermodal considerations.
- Created a direct link between transportation improvements to the Clean Air Act Amendment of 1990 (CAA) and state air quality plans.
- Provided for a more flexible funding approach to transportation projects. Traditionally, there was little flexibility between funding sources for highway and transit projects. The possibility of moving monies between these two areas greatly increased.
- Required State Departments of Transportation (DOT) and Metropolitan Planning Organizations (MPO) develop cost feasible long-term and short-term transportation improvement plans based upon forecast revenues.

Transportation Equity Act for the 21st Century

On June 9, 1998, the President signed into law Public Law 105-178, the Transportation Equity Act for the 21st Century (TEA-21) authorizing highway,
highway safety, transit and other surface transportation programs for the next 6
years. Subsequent technical corrections in the TEA 21 Restoration Act have
been incorporated; thus, the material presented here reflects the combined
effects of both Acts and the two are jointly referred to as TEA-21.

TEA-21 builds on the initiatives established in the Intermodal Surface
Transportation Efficiency Act of 1991 (ISTEA), which was the last major
authorizing legislation for surface transportation. This new Act combines the
continuation and improvement of current programs with new initiatives to meet
the challenges of improving safety as traffic continues to increase at record
levels, protecting and enhancing communities and the natural environment as we
provide transportation, and advancing America’s economic growth and
competitiveness domestically and internationally through efficient and flexible
transportation.

Significant features of TEA-21, that are reflected in Florida’s project
programming and development processes, include:

- Assurance of a guaranteed level of Federal funds for surface transportation
  through FY 2003. The annual floor for highway funding is keyed to receipts of
  the Highway Account of the Highway Trust Fund (HTF). Transit funding is
Appendix E (Continued)

guaranteed at a selected fixed amount. All highway user taxes are extended at the same rates when the legislation was enacted.

- Extension of the Disadvantaged Business Enterprises (DBE) program, providing a flexible national 10 percent goal for the participation of disadvantaged business enterprises, including small firms owned and controlled by women and minorities, in highway and transit contracting undertaken with Federal funding.

- Strengthening of safety programs across the Department of Transportation (DOT). New incentive programs, with great potential for savings to life and property, are aimed at increasing the use of safety belts and promoting the enactment and enforcement of 0.08 percent blood alcohol concentration standards for drunk driving. These new incentive funds also offer added flexibility to States since the grants can be used for any Title 23 U.S.C. activity.

- Continuation of the proven and effective program structure established for highways and transit under the landmark ISTEA legislation. Flexibility in the use of funds, emphasis on measures to improve the environment, focus on a strong planning process as the foundation of good transportation decisions—all ISTEA hallmarks—are continued and enhanced by TEA-21. New programs
Appendix E (Continued)

such as Border Infrastructure, Transportation Infrastructure Finance and Innovation, and Access to Jobs target special areas of national interest and concern.

- Investing in research and its application to maximize the performance of the transportation system. Special emphasis is placed on deployment of Intelligent Transportation Systems to help improve operations and management of transportation systems and vehicle safety.
- Maintained ISTEA program structure and decision-making processes;
- Increased Federal funding levels and guaranteed annual funding;
- Stressed simplification and streamlining of transportation decision-making processes; and
- Established seven planning factors for consideration in Statewide and metropolitan planning processes.

SAFETEA-LU

On August 10, 2005, the President signed into law (Public Law 109-59) the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. This federal transportation law provided funding for highway and transit improvement through the year 2009. According to a brochure published by the
Appendix E (Continued)

Florida Department of Transportation (FDOT September 2005), this new law provides the following:

- Approximately $2 billion per year for transportation funding
- Increased return on federal gas tax dollars
- Protection of the Efficient Transportation Decision Making Process
- Additional transit services
- Increased funding on safety
- It also modified some of the existing planning requirements for both Metropolitan and Statewide Planning (FDOT, August 17, 2005).

Metropolitan Planning Organizations (MPOs) are required to develop long-range transportation plans (LRTP) and transportation improvement programs (TIPs). The MPO process was changed as follows:

- Provided additional funding sources for planning
- Changed the existing 7 planning factors into 8 factors by separating safety and security into 2 distinct factors
- Added requirements to the Long Range Plan for discussion of mitigation and consultation.
Appendix E (Continued)

- In Florida, changed the Long Range plan update cycle from every 3 years to every 5 years.
- Modified the period for the TIP from 3 year coverage with a 2 year update cycle to 4 year coverage with a 4 year update cycle.
- Extended the federal certification of Transportation Management Areas (TMAs) from 3 years to at not less than every 4 years.

The State of Florida is required to develop long-range statewide transportation plans and statewide transportation improvement programs (STIP). The statewide planning process was changed as follows:

- Changed the existing 7 planning factors into 8 factors by separating safety and security into 2 distinct factors
- Modified the Long Range Statewide Transportation Plan to require more consultation with State, tribal, and local agencies
- Modified the period for the STIP from 3 year coverage with a 2 year update cycle to 4 year coverage with a 4 year update cycle.

The 8 planning factors now include the following:
Appendix E (Continued)

1. support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. increase the safety of the transportation system for motorized and nonmotorized users;
3. increase the security of the transportation system for motorized and nonmotorized users;
4. increase the accessibility and mobility of people and for freight;
5. protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. promote efficient system management and operation; and
8. Emphasize the preservation of the existing transportation system.
Appendix F: Transportation Planning And Security Agencies

United States Department of Transportation (USDOT)

The United States Department of Transportation was established by an act of Congress on October 15, 1966. Their mission is to “Serve the United States by ensuring a fast, safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future.” (USDOT 2006) The USDOT contains several organizations that include the Office of the Secretary (OST), the Federal Aviation Administration (FAA), the Federal Highway Administration (FHWA), the Federal Motor Carrier Safety Administration (FMCSA), the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA), the Maritime Administration (MARAD), the National Highway Traffic Safety Administration (NHTSA), the Pipeline & Hazardous Materials Safety Administration (PHMSA), the Research and Innovative Technology Administration (RITA), The Saint Lawrence Seaway Development Corporation (SLSDC), and the Surface Transportation Board (STB).

Office of the Secretary (OST)

The OST oversees the formulation of national transportation policy and promotes intermodal transportation. Other duties include negotiation and implementation of international transportation agreements, assuring the fitness of
Appendix F (Continued)

United States airlines, enforcing airline consumer protection regulations, issuance of regulations to prevent alcohol and illegal drug abuse in transportation systems and preparing transportation legislation.

*Federal Aviation Administration (FAA)*

The FAA is responsible for the safety of all civil aviation in the United States. Their mission statement is that “Our mission is to provide the safety, most efficient aerospace system in the world.” Their vision is to “…improve the safety and efficiency of aviation, while being responsive to our customers and accountable to the public.” (FAA 2006) The duties of the FAA include:

- issuance and enforcement of regulations and standards relating to the manufacture, operation, certification, and maintenance of aircraft
- certification and rating program for airmen and airports serving air carriers
- oversees the program to protect the security of civil aviation
- enforces regulations under the Hazardous Materials Transportation Act for air shipments
- operates a network of air towers, air route and traffic control centers and flight service stations
- develops air traffic rules
Appendix F (Continued)

- allocates use of air space
- provides for security control of air traffic to meet national defense requirements
- construction/installation of electronic and visual aids to air navigation and safety
- licenses commercial and private space launch facilities

In the aftermath of the September 11th, 2001 terrorist attacks in the United States, primary responsibility for civil aviation security was transferred to the newly created Transportation Security Administration.

Federal Highway Administration (FHWA)

The Federal Highway Administration (FHWA) is an agency of the United States Department of Transportation (USDOT). The FHWA is tasked with the safety and technological status of the nation’s roadway network. The FHWA typically provides funding to state and local agencies in support of the maintenance of the roadway network. Their funding is directed towards two programs; (1) state and local governments and (2) the Federal Lands Highway funding for national parks and forests. The Vision statement of the FHWA is “Improving Transportation for a Strong America.” Their mission is “Enhancing
Mobility through Innovation, Leadership, and Public Service.” (FHWA 2006)

Their strategic goals include:

- Safety
- Mobility and Productivity
- Global Connectivity
- Environment
- National Homeland Security
- Organizational Excellence

They also state they have a few “Vital” priorities that include Safety, Congestion Mitigation, and Environmental Stewardship and Streamlining. By these statements, it can be seen that the FHWA has a strong emphasis on safety and also somewhat of security. The safety program is focused on reducing the 42,000 traffic crash related deaths each year in the United States. However, it is apparent that security concerns are not yet considered “Vital” in the nation’s primary, roadway focused, organization. As security concerns continue to become more prevalent, it is expected that these concerns would mandate additional resources.
Appendix F (Continued)

Federal Motor Carrier Safety Administration (FMCSA)

The Federal Motor Carrier Safety Administration was established as a part of the Department of Transportation by the Motor Carrier Safety Improvement Act of 1999 (Public Law No. 106-159, 113 Statute 1748, December 9, 1999). The FMCSA historically was a part of the FHWA. The FMCSA’s mission is to “…reduce crashes, injuries, and fatalities involving large trucks and buses.” It is based in Washington, D.C. and currently employs over 1,000 people.

The FMCSA’s strategy to carry out its mission involves:

- Development and enforcement of regulations which balance motor carrier safety with efficiency.
- Use of safety information systems to identify high risk carriers and to focus of enforcement of safety regulations.
- Implementation of training and educational programs for carriers, drivers, and the public.
- Partnership with federal, state, and local law enforcement agencies and motor carrier specific groups.
Appendix F (Continued)

The key programs of the FMCSA are:

- Federal Motor Carrier Safety Regulations (FMCSRs)
- Hazardous Materials Regulations (HMRs)
- Commercial Driver’s License Program
- Motor Carrier Safety Identification and Information Systems
- Motor Carrier Safety Assistance Program (MCSAP)
- Performance & Registration Information Systems Management (PRISM)
- Research and Technology (R&T)
- Border and International Safety
- Safety Education and Outreach
- Household Good Program

Federal Railroad Administration (FRA)

The FRA was created by the Department of Transportation Act of 1966 (49 USC 103, Section 3(e)(1)). The FRA promotes safe and environmentally sound rail transportation. It has the responsibility for railroad safety throughout the United States. It employs safety inspectors to enforce federal safety standards which include track maintenance, inspection, and operation issues. It also conducts research and development to evaluate projects for safety.
Appendix F (Continued)

compliance. It also administers an education program for highway-rail grade crossing and trespassing on rail property.

The FRA operates through its seven offices. These offices include Administration and Finance, Chief Counsel, Civil Rights, Policy, Public Affairs, Railroad Development, and Safety. The Office of Safety promotes and regulates safety throughout the Nation’s railroad industry. Its inspectors focus on 5 safety disciplines. These safety disciplines include: Track, Signal and Train Control, Motive Power and Equipment, Operating Practices, Hazardous Materials, and Highway-Rail Grade Crossing Safety. (FRA 2006)

*Federal Transit Administration (FTA)*

The FTA assists in developing mass transportation systems for cities and communities. FTA helps to plan, build, and operate transit systems, primarily through grant programs. Their primary mission is to “Improve public transportation for America’s communities.” (FTA 2006) Their 3 core values are Excellence, Leadership, and Community. They deal with all types of public transportation including buses, rail vehicles, ferryboats, trolleys, inclined railways, subways, and people movers. The FTA has 4 strategic goals which include:
Appendix F (Continued)

- Attract and retain the best people
- Deliver products and services that are valued by FTA customers
- Establish effective business processes and leverage technology
- Position public transportation as the mode of choice in America

They also have 4 Core Accountabilities which include:

- Transit Ridership Growth
- Safety and Security Readiness
- Major Project Cost Control
- Grant Processing Efficiency

*Maritime Administration (MARAD)*

The MARAD serves to promote development and maintenance of an adequate, well-balanced, United States merchant marine that is sufficient to carry the United States’ domestic waterborne commerce and a substantial portion of it waterborne foreign commerce. It also has the capability to serve as a naval and military auxiliary in time of war or a national emergency. MARAD also ensures that the Nation has adequate shipbuilding and repair service, efficient ports, effective intermodal water and land transportation systems, and reserve capacity.
The mission of MARAD is

“To strengthen the U.S. maritime transportation system - including infrastructure, industry and labor - to meet the economic and security needs of the Nation. MARAD programs promote the development and maintenance of an adequate, well-balanced United States merchant marine, sufficient to carry the Nation’s domestic waterborne commerce and a substantial portion of its waterborne foreign commerce, and capable of service as a naval and military auxiliary in time of war or national emergency. MARAD also seeks to ensure that the United States maintains adequate shipbuilding and repair services, efficient ports, effective intermodal water and land transportation systems, and reserve shipping capacity for use in time of national emergency.” (MARAD 2006)

Its goals include commercial mobility, national security, the environment, organizational excellence, and vision. Their national security goal focuses on assuring an intermodal sealift capacity to support vital national security interests.
National Highway Traffic Safety Administration (NHTSA)

The NHTSA is responsible for reducing deaths, injuries and economic losses resulting from motor vehicle crashes. They determine and enforce safety performance standards for motor vehicles and equipment. The NHTSA responsibilities include:

- investigation of safety defects
- establishment and enforcement of fuel economy standards
- assistance to states and communities to reduce the threat from drunk drivers
- promotion of the use of safety belts, child safety seats and air bags
- investigation of odometer fraud
- establishment and enforcement of vehicle anti-theft regulates
- Consumer information on motor vehicle safety.

Their mission statement is to “Save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity.” (NHTSA 2006) They are dedicated to achieving the highest standards of safety through its core values of Integrity, Service, and Leadership.
Appendix F (Continued)

*Pipeline & Hazardous Materials Safety Administration (PHMSA)*

The PHMSA was created through the Norman Y. Mineta Research and Special Programs Improvement Act (Public Law 108-426) on November 30th, 2004. The PHMSA oversees the safety of more than 800,000 daily shipments of hazardous materials in the Nation and about 64 percent of the Nation’s energy transported by pipelines. They are tasked to eliminate transportation related deaths and injuries related to hazardous materials and pipeline transportation. They also promote programs that enhance communities and protect the natural environment. Their emphasis is on safety. Their safety focus is defined as follows:

- Hazardous Materials Safety Risk Management
- Hazardous Materials Safety International Standards
- Pipeline Compliance and Safety
- Pipeline Damage Prevention
- Pipeline Safety Research and Development

The PHMSA focuses on 2 programs, hazardous materials and pipeline safety. They have an active education and training program to educate industry, transportation system operators, and governments. They use cooperation with
industry, academia, professional associations and government to facilitate the education and training programs. Another key role is that of regulation. The PHMSA’s Office of Hazardous Materials Safety develops regulatory standards for classifying, handling and packaging of daily shipment of hazardous materials within the United States. The Office of Pipeline Safety ensures safety in the design, construction, operation and maintenance, and spill response to 2.3 million miles of pipelines.

Research and Innovative Technology Administration (RITA)

RITA as formed under the Norman Y. Mineta Research and Special Programs Improvement Act (Public Law 108-426, 2004). Their mission is centered on the desire to advance DOT priorities for innovation and research in transportation technologies and concepts. These concepts would improve mobility, promote economic growth, and deliver a better integrated transportation network. They focus on collaboration, information sharing, coordination, support, and advocacy. RITA includes the Volpe National Transportation Systems Center. The Volpe Center is dedicating to enhancing the effectiveness, efficiency, and responsiveness of other Federal organizations with critical transportation functions and mission. RITA also includes the Bureau of
Appendix F (Continued)

Transportation Statistics and the Transportation Safety Institute and the University Transportation Centers program, such as the Center for Urban Transportation Research (CUTR) located at the University of South Florida (USF).

*John A. Volpe National Transportation Systems Center*

The Volpe Center is a center for transportation and logistics expertise. The Center helps decision makers solve transportation related problems through research and development, engineering, and analysis. Their work includes projects that involve multiple modes and disciplines. Their vision is “To be a world-recognized Center of excellence, a leader for innovation and a forum for government, industry, and academic cooperation in the development and improvement of transportation and logistics systems.” (Volpe 2006) Their mission is “To anticipate future national, state, local and international transportation and logistic issues and requirements, to develop tools and technologies addressing them for our clients, and to be a catalyst for innovation in transportation technologies and management processes to make the transportation system safer and more effective and efficient.” (Volpe 2006)
Bureau of Transportation Statistics (BTS)

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 established BTS for data collection, analysis, and reporting and to ensure the most cost-effective use of transportation monitoring resources. The mission of BTS is “...to lead in developing transportation data and information of high quality, and to advance their effective use in both public and private transportation decision making.” Their vision is that their “Data and information of high quality will support every significant transportation policy decision, thus advancing the quality of life and economic well being of all American.” (BTS 2006) The strategic goals of the BTS include Relevance, Quality, Timeliness, Comparability, Completeness, and Utility.

Transportation Safety Institute (TSI)

The TSI was established in 1971 to assist the DOT accomplish their training needs. The TSI develops and conducts worldwide safety, security, and environmental training, products, and services for both public and private sectors. The training offered by TSI includes transit, aviation, pipeline, motor carrier, highway safety, hazardous material, and risk management. The divisions of the TSI include Aviation Safety Division, The Coast Guard Inspection Training &
Appendix F (Continued)


Saint Lawrence Seaway Development Corporation (SLSDC)

The SLSDC was created on May 13, 1954. The SLSDC operates and maintains a safe, reliable and efficient waterway for commercial and non-commercial vessels between the Great Lakes and the Atlantic Ocean. The SLSDC works in conjunction with the Saint Lawrence Seaway Authority of Canada to oversee operations safety, vessel inspections, traffic control, and navigation aids on the Great Lakes and the Saint Lawrence Seaway.

Surface Transportation Board (STB)

The STB was created by the Interstate Commerce Commission Termination Act (ICCTA) of 1995 (Public Law 104-88). The STB is an economic regulatory agency responsible for:

- resolving railroad rate and service issues
- rail restructuring transactions to include mergers, line sales, construction, and line abandonment
Appendix F (Continued)

- certain trucking company, moving van, and non-contiguous ocean shipping company rate matters
- certain intercity passenger bus company structure, financial, and operational matters
- rates and services of certain pipelines not regulated by the Federal Energy Regulatory Commission

The STB is divided into the Office of Compliance and Enforcement, the Office of Congressional and Public Services, the Office of Economics, Environmental Analysis and Administration, the Office of Proceedings, and the Office of General Counsel.

Transportation Research Board (TRB)

The TRB is a unit of the National Research Council (NRC). The NRC is charged to serve as an independent advisor to the federal government and others on scientific and technical questions of national importance. The mission of the TRB “is to promote innovation and progress in transportation through research.” (TRB 2006) The TRB acts as an information clearinghouse of transportation practice and policy, stimulates research and offers research
management services that promote technical excellence, and provides “expert” advisory services.

Department of Homeland Security (DHS)

The DHS was formed as part of the Homeland Security Act of 2002 (Public Law 107-296). The DHS provides the main mass for the variety of national organizations and institutions involved in national security efforts. Their mission is “We will lead the unified national effort to secure America. We will prevent and deter terrorist attacks and protect against and respond to threats and hazards to the nation. We will ensure safe and secure borders, welcome lawful immigrants and visitors, and promote the free-flow of commerce.” (DHS 2006) Their strategic goals include Awareness, Prevention, Protection, Response, Recovery, Service, and Organizational Excellence. Three agencies comprise the DHS. These include the Transportation Security Administration (TSA), Customs and Border Protection (CBP), and the Federal Emergency Management Agency (FEMA).
Appendix F (Continued)

Transportation Security Administration (TSA)

The TSA was created in direct response to the terrorist attacks on September 11, 2001 as part of the Aviation and Transportation Security Act (Public Law 107-71) that was enacted on November 19, 2001. The mission of the TSA is to protect the nation's transportation network through ensuring movement of people and goods. The TSA is also responsible for security at the nation's airports. It strives to set the standard in transportation security.

Customs and Border Protection (CBP)

The CBP is a part of the DHS. Their mission is to protect our borders against terrorism.

Federal Emergency Management Agency (FEMA)

FEMA was formally organized on July 20, 1979 by President Jimmy Carter (Executive Order 12148). FEMA's mission is “to lead the effort to prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident. FEMA also initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program and the U.S. Fire Administration.” (FEMA 2006)
Appendix F (Continued)

Council on Environmental Quality (CEQ)

The CEQ was established within the Executive Office of the President by Congress as a part of the National Environmental Policy Act of 1969 and supplemental responsibilities were added by the Environmental Quality Improvement Act of 1970. The CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. The CEQ reports to the President of the United States annually on the state of the environment, oversees federal agency implementation of the environmental impact assessment process, and acts as a referee when other agencies disagree over the adequacy of assessments.

National Transportation Safety Board (NTSB)

The NTSB was created on April 1, 1967. The NTSB is a federal agency that is responsible for investigating and recommending corrective actions for every civil aviation accident in the United States and for “significant” accidents for other modes. In addition, the NTSB conducts special studies of safety issues of “national significance.” The NTSB does not regulate transportation equipment, personnel, or operations nor does it handle enforcement. Their
Appendix F (Continued)

recommendations have achieved an 82 percent adoption rate with over 12,000 recommendations being adopted.

Private Organizations

There are a large number of private organizations involved in the transportation planning process. The key players are the American Public Transportation Association (APTA), the American Association of State Highway and Transportation Officials (AASHTO), and the Institute of Transportation Engineers (ITE) and their general roles in transportation planning are discussed in the following sections.

American Public Transportation Association (APTA)

The APTA is a private organization that focuses on advocacy in Washington, coordination of meetings and conferences, training and education, industry information clearinghouse services, data collection and dissemination, and an awards and recognition provider for the Public Transportation Industry. Their mission statement is “To strengthen and improve public transportation, APTA serves and leads its diverse membership through advocacy, innovation,
Appendix F (Continued)

and information sharing.” (APTA 2006) They currently have 6 strategic goals which include:

- Ridership
- Economic Vitality
- Advocacy
- Image
- People and Organizations
- Safety and Security
- Association Development

Their fifth goal, Safety and Security, has 5 desired outcomes. These include:

- Enhanced public confidence in the safety and security of public transportation
- Programs to encourage safer and more secure public transportation systems
- Sustained development and implementation of industry standards
- Programs and services on standards and effective safety practices for public transportation systems.
- Full engagement of the public transportation industry in shaping government safety and security policies and programs
Appendix F (Continued)

Their strategies for accomplishing these outcomes include:

- Maintain regular communication with members regarding APTA and industry safety and security resources and initiatives.
- Continue the exchange of effective safety and security practices through committees, conferences, and workshops.
- Educate governmental security agencies and facilitate partnerships with them to foster responsiveness to industry and user needs.
- Continue to develop operational and cost-effective industry standards that promote safety and security.
- Assess APTA’s safety audit program and identify opportunities for improvement.
- Continue to promote the vital role of public transportation in local and regional emergency preparedness.
- Identify, promote, and encourage the use of industry best practices for safety and security initiatives developed in partnership with governmental organizations.
- Facilitate partnerships to develop and implement innovative responses to transit security threats.
Appendix F (Continued)

The American Association of State Highway and Transportation Officials (AASHTO)

The American Association of State Highway and Transportation Officials (AASHTO) is a nonprofit, nonpartisan organization representing highway and transportation departments in all 50 states, the District of Columbia, and Puerto Rico. Their mission is to advocate transportation policies and provide technical services to support agencies to efficiently and safely move people and goods.

Institute of Transportation Engineers (ITE)

The ITE was founded in 1930 as a private multimodal professional international organization. Its membership is comprised of professional who are responsible for meeting society’s needs for safe and efficient surface transportation through planning efforts, system design, system implementation, and operation and maintenance of networks.
About The Author

Phillip W. Stevens received his Bachelor’s Degree in Civil Engineering from the University of South Florida in June of 1996 and a Master’s Degree in Engineering Management from the University of South Florida in 1997. Afterwards, he entered the Ph.D. program at the University of South Florida. All of Mr. Stevens’ education at the University of South Florida has been as a part-time, non-traditional student. In addition to his academic involvement as a student, Mr. Stevens teaches Engineering Economics at the University of South Florida, as an adjunct professor.

Mr. Stevens is a licensed practicing professional engineer in Florida and is also a registered professional planner with the American Institute of Certified Planners. He is involved in many professional organizations including the Florida Engineering Society, the National Society of Professional Engineers, the American Society of Civil Engineers, the Institute of Transportation Engineers, and the American Planning Association.