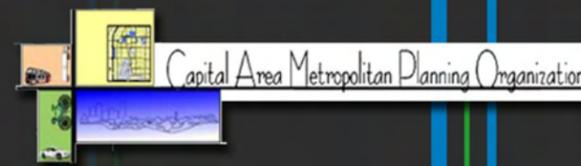




Chapter 1: Introduction





US 64 at
Patriot Way
(October 2009)

CHAPTER 1. INTRODUCTION

The US 64 corridor has been identified in the state's Strategic Highway Corridors (SHC) initiative. The Strategic Highway Corridors initiative seeks to identify, protect and maximize the use of highway corridors that play a critical role in regional or statewide mobility in an ongoing effort to enhance transportation, economic development and environmental stewardship throughout North Carolina.

The goal of the US 64 Corridor Study is to develop a master plan to preserve and enhance mobility and safety along US 64, while balancing community access and interests. The evaluation of the US 64 corridor is being done in phases. This study is the second phase of the comprehensive *US 64-NC 49 Corridor Study Phase 1 Report* completed in May 2005 that included US 64 and NC 49 from Statesville and Charlotte to Raleigh. Phase 1 of the study included a regional assessment of transportation needs, the evaluation of broad alternative roadway investment strategies to meet those needs and the selection of a vision for the entire US 64 and NC 49 corridors. Phase 2 of this study, the subject of this report, consists of a more detailed evaluation of the corridor from Pittsboro to Cary (identified as the highest priority segment in Phase 1); including developing recommended designs for both short-term and long-term solutions.

This plan will be used to guide development and improvements along the corridor from US 64 Business in Pittsboro to US 1 in Cary. The study is being conducted as a joint effort between the North Carolina Department of Transportation (NCDOT), the Capital Area Metropolitan Planning Organization (CAMPO), Town of Apex, Town of Cary, Town of Pittsboro, Wake County and Chatham County for the segment of US 64 from the US 64/US 64 Business split on the east side of Pittsboro to the US 1/US 64 interchange in Cary.

The report is organized as follows:

- Chapter 1 provides an introduction to the study, presents the purpose and goals for the study and the context of the study in relation to the overall planning process.
- Chapter 2 provides an overview of the existing and anticipated future conditions along the corridor.
- Chapter 3 describes the alternatives considered for the short-term and long-term solutions for the corridor and presents the master plan for the corridor.
- Chapter 4 describes how the master plan for the corridor will be implemented and presents the steps required before the recommended improvements are constructed.
- Chapter 5 describes the integration of alternate travel modes such as transit, bicycle and pedestrian into the recommended short-term and long-term solutions.
- Chapter 6 provides an analysis of the effects on the human and natural environments for the short-term and long-term solutions.
- Chapter 7 provides an evaluation of the land use along the corridor and provides recommendations for future zoning along the corridor.
- Chapter 8 describes the efforts made to engage the public in the development of this study as well as the coordination with regulatory agencies and the Corridor Study Team.

1.1 DESIGNATION OF US 64 AS A STRATEGIC HIGHWAY CORRIDOR

The Strategic Highway Corridors initiative was adopted by the North Carolina Board of Transportation on September 2, 2004, as a part of North Carolina's Long-Range, Multimodal Statewide Transportation Plan. Following adoption, a formal policy statement on the initiative was endorsed by the Departments of Commerce, Environment and Natural Resources, Transportation, and the Governor's Office. The NCDOT Board of Transportation approved revisions to the SHC Vision Plan in March 2007 and July 2008 and the currently approved SHC Vision Plan is shown in Figure 1.1.



The North Carolina SHC initiative represents the first major implementation step to be advanced under the state's Long-Range Multimodal Statewide Transportation Plan. The concept defines a new focus for NCDOT to improve, protect, and maximize the capacity of existing highway corridors deemed critical to statewide mobility and regional connectivity. The SHC initiative represents an opportunity for NCDOT in partnership with corridor stakeholders to create a long-range corridor vision. This vision encompasses decision-making consistency, land use and transportation relationships, and roadway design and operational elements.

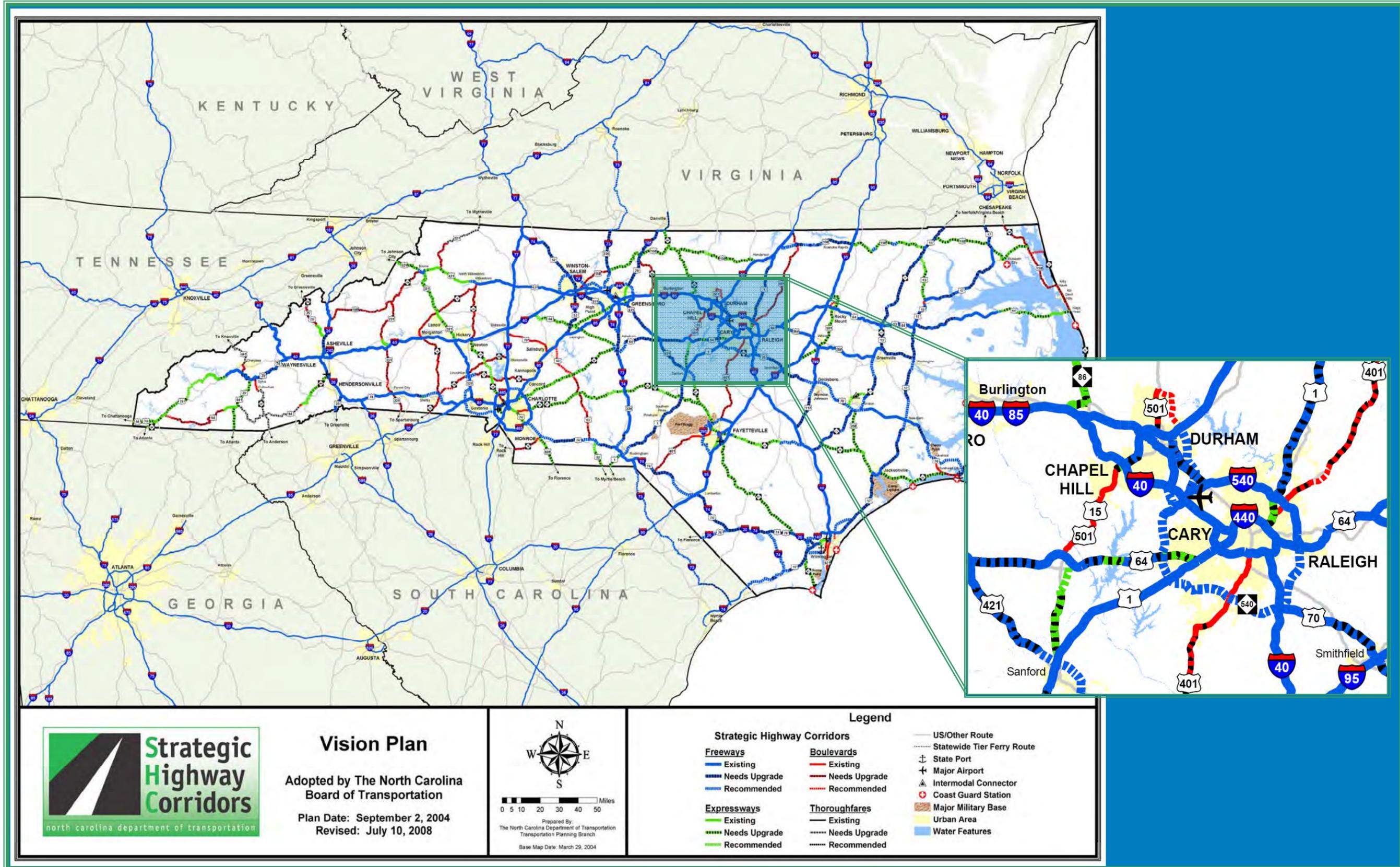
NCDOT has identified the US 64 corridor as a Strategic Highway Corridor. The US 64 corridor is considered to possess the following characteristics consistent with Strategic Highway Corridors criteria:

- Potential to carry significant traffic
- Connect existing major activity centers
- Connect existing and planned Interstate facilities
- Potential to serve as an Interstate reliever route
- Part of the National Highway System (NHS)

US 64 is an important highway in North Carolina. The route being studied serves three major functions:

- **Statewide Travel** - US 64 is used to travel between the Raleigh area, Greensboro area (via US 421), and Charlotte area (via NC 49), as the highway serves as an alternate route to the often-congested Interstate 40/85 corridor. As traffic volumes continue to increase along these interstate routes, US 64 will become an even more important highway to facilitate the efficient and safe movement of people and goods across the state. US 64 is an important route at both the state and national level. The designation of US 64 as a Strategic Highway Corridor demonstrates that it is one of the key highways in the state. US 64 is also part of the North Carolina Intrastate System and the National Highway System and is signed as a United States route.
- **Regional Travel** - US 64 is the only major east-west route in the Raleigh-Durham metropolitan area between Wake and Chatham Counties. Many commuters use this route to travel between Pittsboro, Apex, Cary, and Raleigh for work, shopping, and/or dining.
- **Local Travel** - Many neighborhoods are located along the US 64 corridor. Residents use the highway to travel to local shopping centers, community parks, area schools, and the Eva Perry Regional Library.

Figure 1.1: Strategic Highway Corridor Vision Plan



1.2 NEED FOR THE STUDY

Increasing traffic volumes over the past several years have substantially reduced the traffic flow and increased congestion along US 64. This congestion is expected to worsen as the Raleigh-Durham metropolitan area continues to experience rapid growth. An estimated 1.2 million new residents are expected to move within 30 miles of downtown Raleigh by the year 2035.

The proposed extension of NC 540 (Raleigh Outer Loop) is expected to enhance the desirability of the western Wake and eastern Chatham County area further, as motorists traveling to the Research Triangle Park (RTP), one of the major employment centers in the region, will experience shorter travel times. Roadways connecting to the proposed extension of NC 540, such as US 64, are anticipated to see an increase of traffic resulting from motorists using the new highway to travel to and from RTP. Many examples of the increased traffic on roadways connecting to the Raleigh Outer Loop (also known as I-540 and NC 540) can be found throughout the region. One notable example is along US 1 between I-540 and Wake Forest. Traffic along US 1 near the Neuse River has increased from 39,000 vehicles per day in 1998 to 63,000 vehicles per day in 2007 (I-540 was completed between RTP and US 1 in 2003). Travel times and congestion along US 1 have substantially increased as a result of the additional vehicles using the highway.



The need exists to develop a plan to preserve and enhance mobility and safety along US 64 as a result of the anticipated increase in motorists using the highway. Traffic volumes in 2007 ranged from 16,000 vehicles per day near Jordan Lake to 54,000 vehicles per day near US 1. The existing traffic volumes are causing several of the traffic signals in Cary and Apex to fail in rush hours, meaning there are more motorists who want to go through the signals than the signals can allow. In 2035 traffic volumes are projected to range from 44,000 vehicles per day near Jordan Lake to 70,000 vehicles per day near US 1, with an estimated 68,000 vehicles per day just west of

the proposed NC 540 extension. Without additional improvements to US 64, congestion and travel times are expected to substantially worsen, in a manner similar to US 1.

1.3 PURPOSE OF THE STUDY

The goal of the study is to develop a master plan to preserve and enhance mobility and safety along US 64, while balancing community access and interests. This plan will be used to guide development and improvements along the corridor from US 64 Business in Pittsboro to US 1 in Cary.

The master plan includes two distinct components, a short-term plan and a long-term plan:

- The short-term plan consists of interim strategies to improve mobility, safety and pedestrian accessibility at major intersections.
- The long-term plan consists of improvements needed to serve the anticipated amount of traffic in the year 2035 and later. It proposes to convert many of the major intersections to interchanges or overpasses.

The primary purpose of the master plan is to develop a vision for the corridor and establish a framework for collaborative decision making along the corridor. The goal of the study is to establish how the corridor will transition to accommodate the increased growth in traffic volumes that are anticipated in the next 30 years.

The desired outcome is to establish solutions that can be implemented in the short-term, within the next 5 to 10 years, and in the long-term horizon of the next 30 years. These solutions will help guide the planning and development along the corridor such that there is a transportation system that can support the projected growth in a manner that balances the interests and desires of many users who live or travel along US 64.

One of the most important elements of this study is to establish a framework and collaborative process for the decision making for land use and transportation along the corridor. Numerous agencies and groups are responsible for overseeing elements of the corridor, including environmental agencies, NCDOT, counties and local municipalities. This study will provide a comprehensive plan for the corridor that will provide the decision makers with the tools to collaborate and make decisions that are consistent with the vision for the corridor. Once the study is completed, it is anticipated that it will not be the end of the process, but the beginning of the stage where the partners along the corridor work together to implement solutions that enhance the corridor for users, residents and businesses along the corridor.

Just as important as defining what is the purpose of the study, it is important to define what the purpose of the study is not. The results of this study and the recommended solutions will not directly result in the construction of any of the solutions identified, but will act as a basis for developing additional studies to implement solutions that are consistent with the vision for the corridor. As these additional studies are undertaken there will typically be opportunities for public input prior to any solution being implemented.

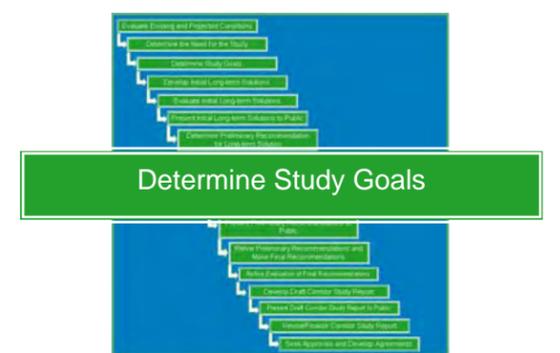
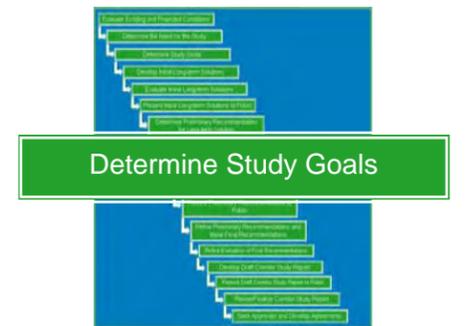
The study will establish a guide for the corridor, and is based on existing data and projections of how the corridor is expected to evolve in the future. The results of the study are meant to be flexible and allow for innovation and enhancement of the solutions in the event that the future trends change or better solutions are developed. With a collaborative effort by the stakeholders along the corridor, it is likely that elements of this study may be improved upon and changes made that will better balance the community's needs while maintaining the overall vision for the corridor.

1.4 CORRIDOR STUDY PROCESS

A brief description of the steps included in the corridor study process is included in this section. The entire evaluation process for the US 64 Corridor Study is shown in Figure 1.2. Throughout this report, the steps of the study process will be highlighted in each of the pertinent sections by using the graphic shown at right, with the text in the box showing which step is being described in that section.

Evaluate Existing and Projected Conditions – The first step undertaken was to collect existing data along the corridor and project what the corridor will be like in the future if no improvements are made. This step included evaluating accident data and traffic data for the existing and future conditions, as well as collecting pertinent land use and environmental data for the corridor.

Determine the Need for the Study – The next step was to develop a list of needs based on the projected deficiencies along the corridor as a basis for developing goals for the study, and ultimately solutions for the corridor.



Determine Study Goals – The Corridor Study Team then developed the goals for the study based on the needs established. The goals were later used as a measure to determine whether a solution was viable and should be considered as a part of the study.

Figure 1.2: Corridor Study Process



Develop Initial Long-term Solutions – Initial Long-term Solutions were then developed to determine the range of solutions along the corridor that would meet the established needs and goals for the study. From this step, approximately three potential solutions were developed for the corridor.

Evaluate Initial Long-term Solutions – The design for the potential Long-term Solutions was then developed along with a preliminary cost estimate. Projected traffic volumes were determined and the effects on the human and natural environments along the corridor were evaluated.

Present Initial Long-term Solutions to Public – The three initial Long-term Solutions were then presented to the public at a workshop in order to help the public to understand the study process and give the public the opportunity to comment on the solutions presented.

Determine Preliminary Recommendation for Long-term Solution – The comments from the public were collected and summarized and the Corridor Study Team met to evaluate the comments and select a preliminary recommendation for the Long-term Solution. The Preliminary Recommended Long-term Solution was then developed into a detailed design plan.

Develop Initial Short-term Solutions – The Corridor Study Team then evaluated potential Short-term Solutions that can be implemented along the corridor as it transitions from the existing condition to the Long-term Solution. From this step, a single Short-term Solution for the corridor was carried forward for additional evaluation.

Evaluate initial Short term Solutions – The next step was to develop the design for the potential Short-term Solution, determine the projected traffic volumes, develop a preliminary cost estimate and evaluate the effects on the human and natural environments along the corridor.

Develop Initial Recommendations for Implementation – Based on the Preliminary Recommendations for the Long-term and Short-term Solutions, the Corridor Study Team developed initial recommendations for how the improvements along the corridor will be prioritized and determined the timeframe that each improvement will likely be implemented.

Present Preliminary Recommendations to Public – The Preliminary Recommendations for the Short-term and Long-term Solutions and the Initial Recommendations for the Implementation were presented to the public at a second workshop. The Workshop was an opportunity for the public to ask questions and make comments on the preliminary recommendations and provide feedback to the Corridor Study Team.

Refine Preliminary Recommendations and Make Final Recommendations - The comments from the public were collected and summarized and the Corridor Study Team met to evaluate the comments and make a recommendation for the Short-term and Long-term Solutions.

Refine Evaluation of Final Recommendations – The Long-term and Short-term Solutions were refined and the Final Recommendations were evaluated in greater depth, including a detailed evaluation of the traffic operations, environmental effects, construction costs and land use effects.

Develop Draft Corridor Study Report – The Draft of the Corridor Study Report was developed and reviewed by the Corridor Study Team.

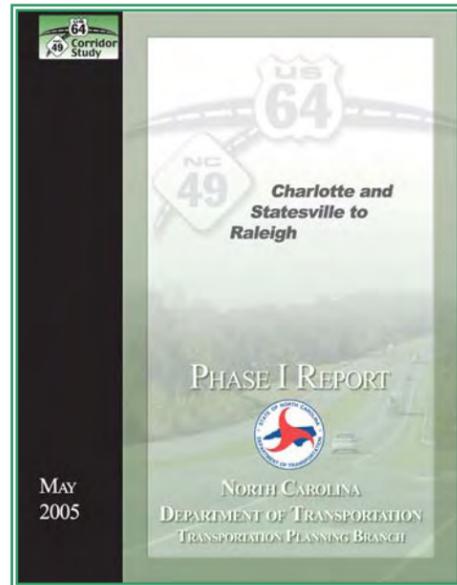
Present Draft Corridor Study Report to Public – The Draft Corridor Study Report is currently being made available for public comment for a minimum of 30 days.

Revise/Finalize Corridor Study Report – Following the public comment period, the Corridor Study Team will meet to discuss the comments from the public, make any final revisions to the study and develop the Final Corridor Study Report.

Seek Approvals and Develop Agreements – The Final Corridor Study Report will be submitted to CAMPO for approval and the Corridor Study Team will develop an agreement to continue periodic coordination on the elements of the corridor in the future.

1.5 RELATIONSHIP TO THE PHASE I STUDY

The US 64 Corridor Study included in this report is the second phase of a larger analysis of the US 64 and NC 49 corridor that was completed in May 2005, known as the Phase 1 study. The Phase 1 study included evaluating US 64 and NC 49 from Charlotte and Statesville to Raleigh and is included in the *US 64-NC 49 Corridor Study Phase 1 Report*. Phase I of the study consisted of a regional assessment of transportation needs and the evaluation of a broad range of alternative roadway investment strategies to meet those needs. The product of Phase I was a corridor vision that defines the improvement design concept (major features and characteristics) and scope (range or extent of the proposed action). The Phase 1 study also prioritized segments of the corridor and recommended further detailed evaluation to address location specific improvements. The segment of US 64 from Pittsboro to the US 1 interchange was determined to be the highest priority due to the exiting traffic conditions and area growth and this study further evaluates this segment to determine the specific improvements along this segment.



1.6 MAKEUP, ROLE AND PURPOSE OF THE CORRIDOR STUDY TEAM

The US 64 Corridor Study is being overseen by a committee made up of representatives of the entities that are responsible for decision making along the corridor, known as the Corridor Study Team (CST). The Corridor Study Team is made up of representatives from the following organizations:

- NCDOT Strategic Planning Office
- NCDOT Transportation Planning Branch
- NCDOT Roadway Design Unit
- NCDOT Project Development and Environmental Analysis Branch
- NCDOT Mobility and Safety Division
- NCDOT Bicycle and Pedestrian Division
- NCDOT Division 5
- NCDOT Division 8
- CAMPO
- Triangle Area Rural Planning Organization
- Chatham County
- Wake County
- Town of Pittsboro
- Town of Apex
- Town of Cary
- North Carolina Turnpike Authority
- Federal Highway Administration



- US Army Corp of Engineers
- North Carolina State Park Service

The role of the CST is to oversee both technical and non-technical matters, provide input on meeting the goals of the study and develop consensus for the solutions presented in this study. CST members were critical to the study process in assisting with the following items:

- Developing the goals and objectives for the study
- Providing in-depth knowledge of the study area
- Developing potential solutions for the corridor
- Evaluating solutions and providing input into the recommendation of solutions
- Raising and discussing issues of concern
- Providing support in the public involvement process
- Representing the range of interests along the corridor
- Communicating project information and findings to their respective organizations



The CST operates on a consensus basis, with each member having the ability to discuss concerns and request additional detail in the development of this study. Consensus was defined as each member of the team being able to live with the results of the study. Each step in the study was discussed with the CST, with consensus being reached on each element before it was moved forward in the study. For more information on the meetings held by the CST refer to Chapter 8 of this report.

The purpose of the CST also extends beyond the development of this report, as it is envisioned that the CST or a subset of the group will continue to meet in the future as the results of this study are implemented. The establishment of an ongoing effort is critical to ensure that goals of the study are realized in the most effective manner possible.

1.7 RELATIONSHIP OF THE STUDY TO THE OVERALL PROJECT DEVELOPMENT PROCESS

It is important to note that this study is an initial step toward the implementation of the solutions recommended for the US 64 corridor. The overall process for construction of transportation projects includes numerous steps to complete. The development of transportation projects, Shown in Figure 1.3, generally follows a four step process including the following steps:

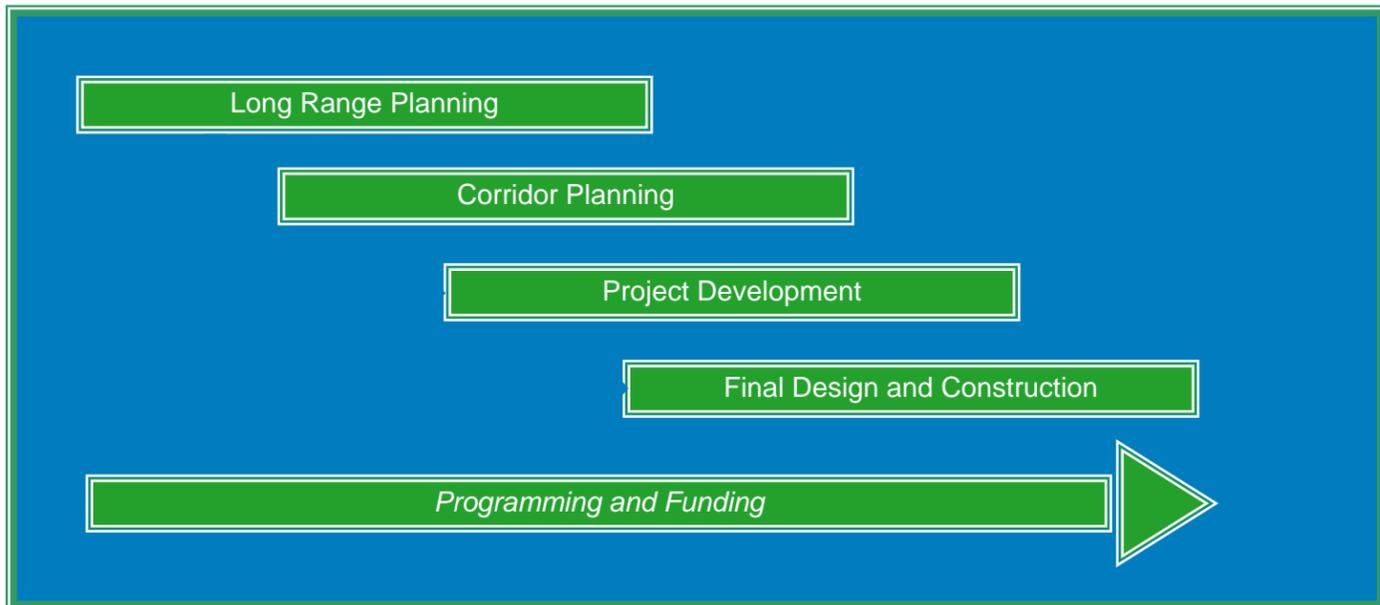
- Long Range Planning – Typically done on a regional level and involves developing strategies for the overall transportation network. Steps in the process include: determine transportation deficiencies, develop scenarios to eliminate deficiencies, determine priority of projects based on funding, and develop a Long Range Plan. Improvements at this stage are typically identified by the number of lanes and facility type required and very little detailed analysis at the corridor level is undertaken. Examples of Long Range Plans are CAMPO Long Range Transportation Plan and the Town of Cary Comprehensive Transportation Plan.
- Corridor Planning – Typically done for major corridors once the Long Range Plan for the corridor has been established. This is the level of planning included in this Corridor Study Report. In corridor planning, more

detailed concepts for specific locations along the corridor are evaluated. This level of planning typically includes the conceptual design of the corridor, detailed evaluation of traffic operations, prioritization of corridor segments and analysis of the effects on the human and natural environments.

- Project Development – This step in the process includes developing detailed preliminary designs of the corridor and completion of an environmental document. The Project Development process requires public involvement and can be a lengthy process, depending on the size of the project and the magnitude of impacts that it would create.
- Final Design and Construction – Once the Project Development process is completed, projects enter a stage where detailed construction drawings are developed including all elements necessary for the construction of the project.

In addition to these four steps, a fifth step is often included in the process that overlaps with the four-step process. The fifth step is the programming of the project in a funding plan and includes determining the construction cost and priority of the project. The typical funding plan for projects paid for with state or federal funds is the State Transportation Improvement Program (STIP) which allocates the available funding throughout the state to individual projects. For locally funded projects, the programming of the project is typically included in a Capital Improvement Program developed by each local government.

Figure 1.3: General Planning Process



The planning process will vary slightly for the Project Development phase depending on the funding source for the project. The following three general funding sources are typically used for construction projects:

- State or Federal Funds – for projects paid for with state or federal funds, a longer and more complex Project Development phase is undertaken that must satisfy the requirements for the National Environmental Policy Act (NEPA) for federal projects and the State Environmental Policy Act (SEPA) for state funded projects. Depending on the magnitude of the project either a Categorical Exclusion (CE), Environmental Assessment (EA) or Environmental Impact Statement (EIS) will be required, with a CE taking as little as 6 months to prepare to an EIS typically taking 5-10 years to complete. All projects with state or federal funding require public involvement.

- Local Funds – for projects paid for by local municipalities or regional agencies, a less detailed process is typically undertaken. The process includes evaluation of alternatives and includes public involvement opportunities.
- Private Funds – for projects that are constructed by private entities, typically by developers, the process is not as well defined. Most municipalities require public involvement as a part of the development process and the Project Development phase is typically short in duration.

A more detailed description of the planning process is included in Chapter 4.

