

The North Carolina Department of Transportation (NCDOT) is conducting a comprehensive study of US 64 and NC 49 from Statesville to Raleigh (US 64) and Charlotte to Raleigh (NC 49 and US 64), herein referred to as the US 64–NC 49 Corridor. The US 64–NC 49 Corridor is identified in the state’s Strategic Highway Corridors (SHC) concept¹ as a corridor of significance in preserving transportation mobility and connectivity within the central region of North Carolina. The intent of the corridor study is to develop an improvement master plan that will enhance the long-term mobility of people and goods, foster economic growth and development, and relieve congestion on I-40 and I-85, and optimize transportation funding.

The corridor study is being conducted in phases. Phase 1, the subject of this report, consists of a regional assessment of transportation needs and the evaluation of broad alternative roadway investment strategies to meet those needs as well as satisfy the objectives of a Strategic Highway Corridor. The product of Phase 1 is a corridor vision that defines the improvement design concept (major features and characteristics) and scope (range or extent of the action). Subsequent study phases will transition the corridor vision to location specific alternatives and evaluation.

1.1 Purpose of Report and Report Organization

The purpose of this report is to:

- Describe the corridor study methodology.
- Present the study goal and objectives.
- Describe existing and anticipated study area conditions, which contribute to the need for corridor transportation improvements.
- Define broad investment alternative strategies that address the need for transportation improvements.
- Present the results of comparing the alternative investment strategies against the evaluation criteria developed from the study objectives.
- Define a recommended corridor vision and implementation strategy based on the results of the alternatives’ evaluation.
- Describe land use policy guidelines and corridor preservation methods that may be used in implementing the corridor vision.
- Outline next steps for corridor planning.

This report is organized as follows:

- Chapter 1 provides an overview of the NCDOT Strategic Highway Corridors concept and the parameters in which this study was conducted.
- Chapter 2 describes the public involvement program for the study.

¹ <http://www.ncdot.org/planning/tpb/shc/>



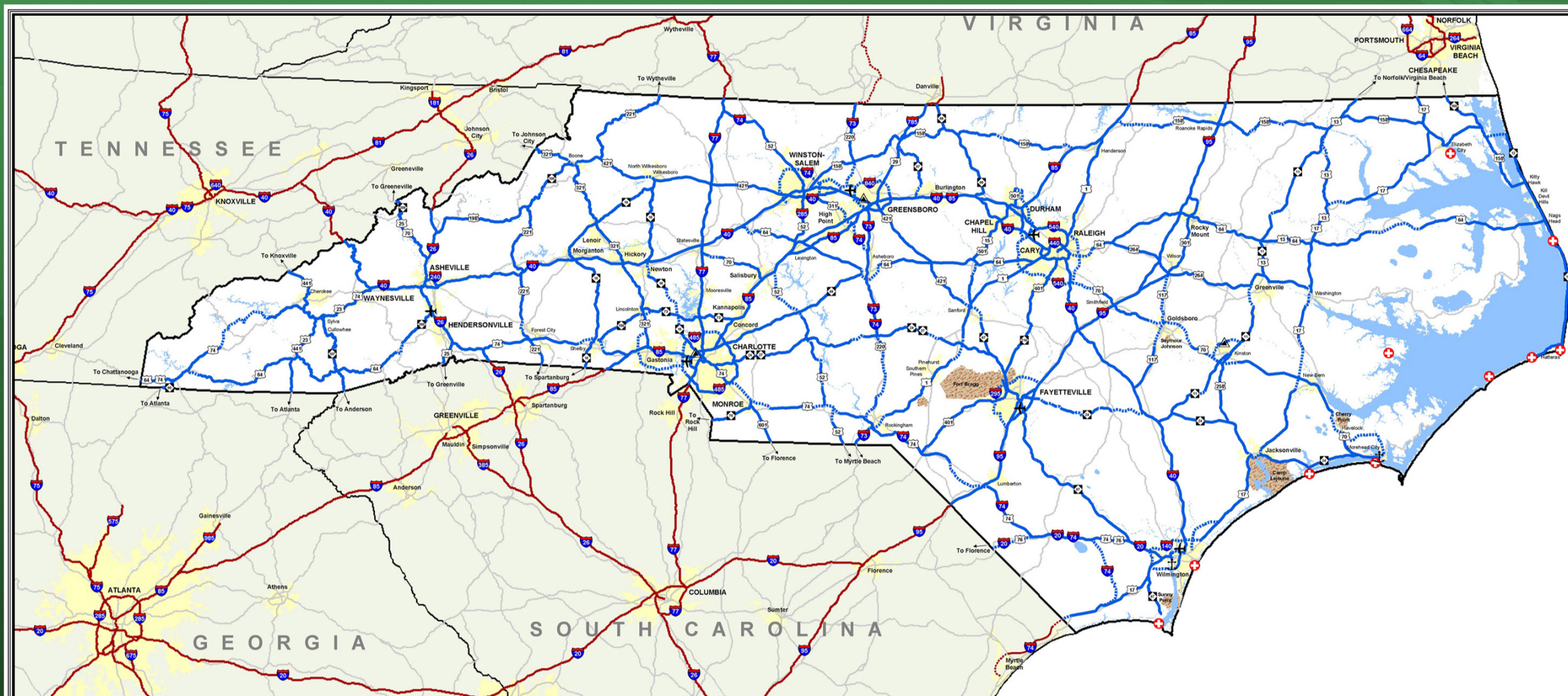
- Chapter 3 provides an overview of existing and anticipated conditions within the project study area.
- Chapter 4 presents the overall need for transportation improvements to US 64 and NC 49 within the study area.
- Chapter 5 defines the alternative roadway investment strategies that were examined.
- Chapter 6 describes the travel demand forecasting process and results.
- Chapter 7 presents the results of the alternatives' evaluation.
- Chapter 8 presents the recommended corridor vision.
- Chapter 9 provides an overview of corridor preservation methods at the local and state level.
- Chapter 10 presents example land use guidelines that may be used by the state and local governments to implement the corridor vision.
- Chapter 11 outlines next steps for the corridor study.

1.2 North Carolina Strategic Highway Corridors Concept

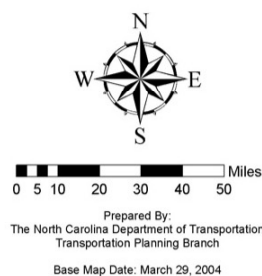
The North Carolina Strategic Highway Corridors concept represents the first major implementation step to be advanced under the update of the state's Long-Range Multimodal Statewide Transportation Plan. The concept, developed in partnership with the North Carolina Department of Environment and Natural Resources and the North Carolina Department of Commerce, represents a timely initiative to protect and maximize the mobility and connectivity on a core set of highway corridors, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible, and fostering economic prosperity through the quick and efficient movement of people and goods. The concept offers NCDOT and its stakeholders an opportunity to consider long-term vision when making land use decisions and design and operational decisions on the highway system. The creation of a long-term vision identifies the ultimately desired facility type (freeway, expressway, boulevard, or thoroughfare) for each corridor. A tri-agency policy statement endorsing the SHC concept was signed by the Secretaries of the three agencies on December 2, 2004

Figure 1.1 identifies the Strategic Highway Corridors as adopted by the North Carolina Board of Transportation (NCBOT) in September 2004. The following general criteria along with input from the public, NCBOT, and NCDOT staff guided the Strategic Highway Corridors selection process.

Figure 1.1: Strategic Highway Corridors



Selected Corridors
 Adopted by The North Carolina Board of Transportation
 Plan Date: September 2, 2004



- Legend**
- Strategic Highway Corridors**
 — Existing
 - - - - - Currently Planned on New Location
- Interstate
 — US/Other Route
- ⚓ State Port
 ✈ Major Airport
 △ Intermodal Connector
 ⚓ Coast Guard Station
 Major Military Base
 Urban Area
 Water Features



- **Mobility:** Corridor currently serves or has the potential to expeditiously move large volumes of traffic.
- **Connectivity:** Corridor provides a connection between activity centers including cities, airports, military bases, seaports, etc.
- **Interstate Connectivity:** The corridor provides connectivity between existing and/or planned Interstates.
- **Interstate Relief:** Corridor serves or has the potential to serve as a reliever route to an existing Interstate facility.
- **Hurricane Evacuation Routes:** Corridor represents a major route within North Carolina's Emergency Management's Coastal Evacuation Route Map
- **Cited in Prominent State Report:** For example, the Rural Prosperity Task Force Report.
- **Part of a National, Statewide, Economic, or Military Highway System:** For example, the National Highway System or STRAHNET

The purpose of the Strategic Highway Corridors concept is to create a consensus-based vision for each identified corridor. Goals of the corridor vision are to improve mobility and connectivity, foster economic prosperity, promote environmental stewardship, and protect the state's transportation investment. The Strategic Highway Corridors concept will influence key policy decisions related to funding, project planning, design, facility type, and local land use.

1.3 US 64–NC 49 as a Strategic Highway Corridor

NCDOT has identified the US 64 and NC 49 corridors within the central portion of the state as Strategic Highway Corridors. The US 64 and NC 49 corridors are considered to possess the following characteristics consistent with Strategic Highway Corridors criteria:

- Potential to carry significant traffic, including substantial truck traffic.
- Connect existing major activity centers.
- Connect existing and planned Interstate facilities.
- Potential to serve as an Interstate reliever.
- Part of the national highway system.

An assessment of the extent to which the US 64 and NC 49 corridors meet these criteria is provided in **Table 1.1**.



Table 1.1: Satisfaction of Strategic Corridors Criteria by US 64–NC 49 Corridor

Statewide Strategic Corridors Criteria	Degree of Satisfaction of Criteria
Part of a National, Statewide, Economic, or Military Highway System.	The segments of US 64 from Statesville to Asheboro and from Asheboro to Raleigh, and the segment of NC 49 from Charlotte to Asheboro are all on the North Carolina portion of the NHS. Criterion is fully satisfied.
Connects an existing major activity center to another major activity center, seaport, major airport, or major military base.	Existing major activity centers served directly by the US 64–NC 49 Corridor include Charlotte, Concord, Cary, Raleigh, and the major airports in Charlotte and Raleigh. Criterion is fully satisfied.
Connects an existing Interstate facility to another existing or planned Interstate facility.	US 64 between Statesville and Asheboro connects I-40, I-85, and I-73/I-74. NC 49 between Charlotte and Asheboro connects I-85, I-485, and I-73/I-74. US 64 between Asheboro and Raleigh connects I-73/I-74, I-540, I-440, and I-40. Criterion is fully satisfied.
Currently serves or has the potential to serve as a reliever route to an existing Interstate facility.	I-40 links Statesville with Greensboro/High Point/Winston-Salem. I-85 links Charlotte with Greensboro/High Point/Winston-Salem, where it joins I-40. The combined I-40/I-85 Corridor then links Greensboro/High Point/Winston-Salem with Raleigh/Durham/Chapel Hill. Since the same major urban regions are also interconnected by the US 64–NC 49 Corridor, there is clearly an opportunity to serve as a reliever route for the I-40/I-85 Corridor. Criterion is fully satisfied.

1.4 Corridor Study Goal and Objectives

The study goal and objectives for the US 64–NC 49 Corridor Study are a derivative of the purpose and goals of NCDOT’s Strategic Highway Corridors concept. They provide study direction as well as the measure for determining how well improvement alternatives fulfill the criteria of a Strategic Highway Corridor. The study goal and objectives were drafted through collaboration between the Study Team and the Corridor Development Team (see Section 2.2.2.1).



Study Goal

“To develop a transportation system consistent with the Strategic Highway Corridors concept definition that will serve the mobility needs of people and freight to and through Central North Carolina while addressing the environmental and economic development opportunities of the public.”

Study Objectives

1. Enhance transportation connectivity and mobility.
2. Serve as a reliever to I-40 and I-85.
3. Improve safety.
4. Support regional and local transit plans.
5. Support economic development.
6. Support local land use plans.
7. Optimize costs and benefits to system users and funding agencies.
8. Be sensitive to environmental and social factors.

1.5 Corridor Study Process

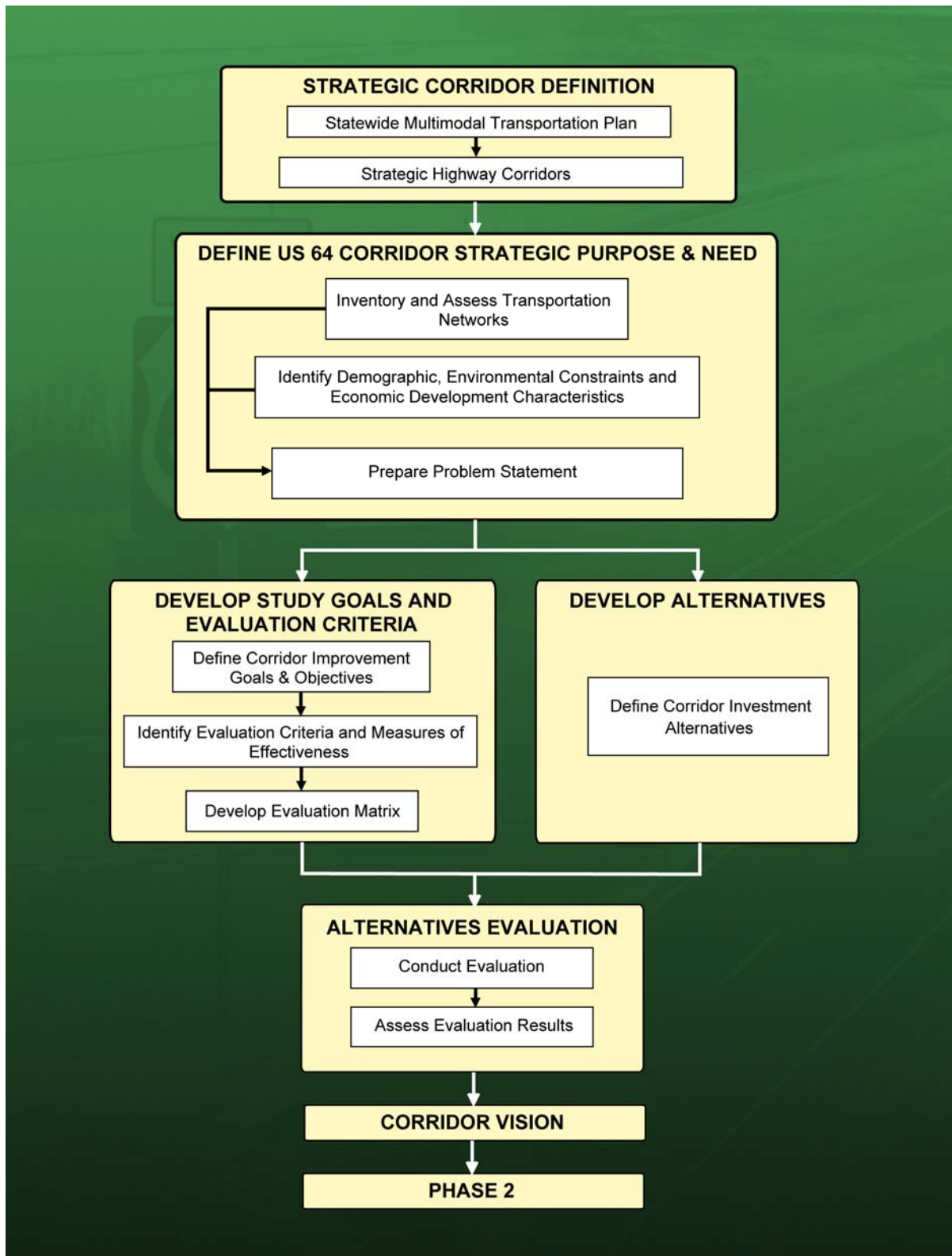
As noted in Section 1.2, it is the goal of the Strategic Highway Corridors concept to support the creation of a consensus-based vision for each corridor. The resulting vision would then be used to influence key decisions related to design, location, access, local land use decisions, project planning, and funding. Phase 1 of the US 64 -NC 49 Corridor Study establishes such a vision.

The intent of the corridor study is to develop a facility “master plan” improvement strategy for the enhancement and long-term preservation of passenger and freight mobility. Such studies are typically conducted in phases and/or tiers with successively more refined alternative definitions and evaluation. The first phase of the US 64–NC 49 study addresses broad investment strategy alternatives, which are defined by typical roadway cross section, type of access, and operational characteristics. The product of the first phase is a corridor vision along with an implementation concept to achieve the vision. Subsequent corridor study phase(s) transition the broad investment strategy vision into a concept design that more precisely defines alignment location, access type and location, facility details, and operations.

The evaluation process for Phase 1 of the US 64–NC 49 Corridor Study is shown in **Figure 1.2**. The process consists of five steps:

1. Definition of Need
2. Definition of Alternatives
3. Development of Evaluation Criteria
4. Evaluation of Alternatives
5. Recommended Corridor Vision (Design Concept and Scope)

Figure 1.2: Phase 1 Study Process





1.5.1 Definition of Need

As a first work element of the corridor study, the Study Team prepared a Problem Statement, which provides support for the purpose and need of corridor improvements. While improvements to the corridor have not yet entered into the environmental clearance phase of project development, in which a formal, project-specific Purpose and Need Statement would be prepared consistent with the requirements of the National Environment Policy Act, the preparation of a Problem Statement supports planning phases of the project. In addition, the Problem Statement allows an early opportunity for state and federal resource agencies to advise NCDOT on concerns that they might have regarding roadway improvements in the corridor. The Problem Statement has been prepared with the intent of demonstrating the extent to which US 64 and NC 49 meet the Strategic Highway Corridors' criteria and exhibit a need for improvement.

As part of the Problem Statement, the Study Team conducted an assessment of the ability of the existing and planned transportation system to meet mobility and land accessibility needs. This resulted in the creation of a Transportation Profile for the study area. This assessment also reviewed state and local economic development and land use initiatives, and demographic characteristics for the study area, to identify the need for additional transportation system improvements. It also examined environmental characteristics to identify major constraints to large-scale construction.

1.5.2 Definition of Alternatives

The objective of the Phase 1 definition of alternatives activity is to establish a level of facility improvement that addresses the mobility needs of the US 64–NC 49 Corridor and is consistent with the overall general objectives of Strategic Highway Corridors in North Carolina. Alternative definitions define an investment strategy characterized by conceptual typical section, access plan, and operational elements.

1.5.3 Evaluation Criteria

The degree to which the alternatives achieve the study goal and objectives is determined through the application of evaluation criteria corresponding to those objectives. The eight study objectives can be summarized into the following study objective categories:

- Mobility Benefits
- Growth Management Benefits
- Economic Development Benefits
- Environmental Issues
- Cost Effectiveness



Evaluation criteria were developed for each study objective. Evaluation criteria are defined by measures of effectiveness (MOEs), which are the actual data upon which each alternative is evaluated. MOEs can be either qualitative or quantitative. For some criteria, there were no quantitative measures available for assessing criteria satisfaction. In such cases, collective Study Team experience was used as the basis for evaluation.

1.5.4 Evaluation of Alternatives

An alternatives' evaluation matrix was developed that reflects the broad nature of the analysis at this stage of study. Alternatives were assessed based on the degree to which they satisfy the criterion. The matrix provides a comparison of facility type characteristics comprising the investment strategy alternatives. An interpretation of the evaluation results provides the basis for defining the corridor vision.

1.5.5 Corridor Vision

From the results of the alternatives evaluation, a corridor vision is established. The vision may be a single investment strategy definition or a combination of definitions. The vision sets the ultimate desired improvement strategy for the corridor and outlines an approach for improvement implementation. The vision is not location specific, nor does it address facility characteristic details such as access locations. However, it is essential for establishing stakeholder consensus and commitment to substantial facility modifications and enhancements.