The National Environmental Policy Act (NEPA) requires Federal Agencies to evaluate many categories of potential social, economic and natural environmental impacts for all Reasonable Alternatives under consideration for a proposed project. The purpose of the NEPA process and the Draft Environmental Impact Statement (DEIS) is to provide the decision-makers with the best available information to make an informed decision about the project.

5.1 Introduction

This chapter provides a description of the current conditions in the study area, and a description of impacts that could be expected for the human and natural environment, with and without the proposed project. Both negative and beneficial impacts can occur as a result of implementing transportation improvements. Various conditions are studied to determine the impacts or changes that may occur as a result of the effects of proposed improvements on both people and the environment. After all environmental impacts associated with each alternative have been identified and evaluated, a preferred alternative can be recommended.

Three types of impacts were evaluated for each reasonable alternative: direct impacts, indirect impacts and cumulative impacts.

5.1.1 What are direct impacts?

Direct impacts are those that are caused by the action/project and occur at the same time and place. Impacts from actions may have both beneficial and detrimental effects.

5.1.2 What are indirect impacts?

Indirect impacts are caused by the action/project and occur later or farther away (off-site) but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

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A  40 CFR 1508.7 and 1508.8
5.1.3 What are cumulative impacts?

Cumulative impacts are defined as impacts on the environment that result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

5.1.4 How were indirect and cumulative effects evaluated?

The analysis of indirect and cumulative impacts was conducted in accordance with guidance established in the National Cooperative Highway Research Program (NCHRP) Report 466, Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects. This report lays out eight steps for scoping, identifying the direction and goals of the study area, gathering data on the study area's notable features, identifying impact-causing activities of the proposed project, identifying and analyzing indirect effects and assessing the consequences of those effects.¹

5.1.5 How has the study area been refined?

The project team has conducted ongoing reassessment and modification of the area of study for the Mark Clark Expressway project in order to provide the most effective level of analysis for the appropriate stage of the project development process. These areas of study include an overall project boundary labeled as the study area and a smaller boundary labeled as the refined study area, see Figure 5-1.

The larger study area boundary was established when the project team was evaluating a broad range of preliminary alternatives. The study area boundary encompasses the majority of the existing roadway network in West Ashley, Johns Island and James Island that may be affected by the proposed Mark Clark Expressway project. Resources such as land use, traffic, air quality, socioeconomics and indirect and cumulative impacts may be affected on a more regional scale and will be evaluated with the study area boundary.

Once the alternative analysis process determined the Reasonable Alternatives, including six new location alternatives, the large study area was modified to the refined study area in order to focus the evaluation of
