



NORTH CAROLINA
Turnpike Authority

TRIANGLE PARKWAY
FROM NC 540 TO I-40
DURHAM AND WAKE COUNTIES, NORTH CAROLINA

FEDERAL-AID PROJECT NUMBER NHS-54(7)
WBS ELEMENT 39942.1.TA1
S.T.I.P. PROJECT NUMBER U-4763B

ADMINISTRATIVE ACTION
FINDING OF NO SIGNIFICANT IMPACT

SUBMITTED PURSUANT TO THE NATIONAL ENVIRONMENTAL POLICY ACT
42 USC 4332(2)(C)
US DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA TURNPIKE AUTHORITY
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

7.18.08

DATE

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DOCUMENT PREPARED BY:
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7/18/08
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SPECIAL PROJECT COMMITMENTS

TRIANGLE PARKWAY DURHAM AND WAKE COUNTIES

FEDERAL-AID PROJECT NUMBER NHS-54(7)
WBS ELEMENT 39942.1.TA1
STIP PROJECT U-4763B

In addition to the Section 404 Conditions, Regional Conditions, State Consistency Conditions, North Carolina Department of Transportation (NCDOT) Best Management Practices for the Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by the North Carolina Turnpike Authority (NCTA):

FINAL DESIGN

- The Triangle Parkway bridges crossing Burdens Creek will be designed to accommodate the existing Durham County sanitary sewer lines, including future maintenance access.
- NCTA will replace the multi-use path with a sidewalk along the north side of Davis Drive at the interchange with Triangle Parkway to maintain the connection along the existing multi-use path.
- NCTA will coordinate the designs for the multi-use paths proposed along Davis Drive, Hopson Road, and NC 54 with Research Triangle Foundation (RTF).
- All efforts will be made to avoid the two residential relocations during final design and/or right-of-way negotiations.
- NCTA will coordinate with the North Carolina Native Plant Society to determine the feasibility of conducting plant rescues for Earle's blazing star (*Liatris squarrulosa*) and, if present, *Marshallia* sp.1 within the designated Significant Natural Heritage Area (Site ID 2527) prior to construction.
- The Design Build Team will be required to submit a public involvement plan to NCTA for approval. This plan will include coordinating the project status with the property owners adjacent to Triangle Parkway, including the United States Environmental Protection Agency (USEPA)/National Institute of Environmental Health Sciences (NIEHS), during the life of the project construction.
- During final design and right-of-way negotiations, NCTA and the Design Build Team will continue to evaluate options to minimize right-of-way impacts to properties located along Triangle Parkway.
- The Kit Creek Road connector is currently under study by the Town of Morrisville and is part of the proposed Triangle Parkway project. In response to the comments received regarding the concerns and potential impacts associated with this connection, the Town of Morrisville is preparing a study to review the transportation needs and is considering citizens' comments and the Kitts Creek subdivision concerns regarding this connector. If the Town of Morrisville determines following the traffic study that they do not want this connection constructed and transmits a letter to NCTA (during the



Design Build phase) requesting that this connection be removed from the project, then NCTA will remove the Kit Creek Road connector from the project.

- A noise barrier will be provided adjacent to the First Environments Early Learning Center (FEELC) childcare facility. (The federal property owner of FEELC has formally provided approval for NCTA to install the noise barrier. The approved noise barrier ballot can be found in Appendix A.) The height, length, and other design features of the noise barrier will be determined during the design phase in accordance with [NCDOT Traffic Noise Abatement Policy](#).
- The Design Noise Report will be updated after the Finding of No Significant Impact (FONSI) is approved to determine if building permits issued prior to the approval of the FONSI resulted in additional noise barriers being feasible and reasonable.
- Where possible, streams, such as the small segment of stream in the northwest quadrant of the Davis Drive interchange, will be “day-lighted”¹ to provide additional minimization of impacts to the streams.

CONSTRUCTION

- During construction, NCTA will require the Design Build Team to incorporate measures to minimize the removal of trees along the entire length of the project.
- Based on the United States Army Corps of Engineers (USACE) and North Carolina Division of Water Quality (NCDWQ) requests, NCTA will require the Design Build Team to incorporate measures to minimize impacts to trees and buffers along Burdens Creek and unnamed tributaries to Burdens Creek during construction.
- NCTA will coordinate with adjacent property owners during construction to keep them apprised of construction activities and sequencing.
- NCTA will ensure that the construction contract precludes construction staging in the area adjacent to the First Environments Early Learning Center childcare facility.

POST CONSTRUCTION

- NCTA will pay for the design and installation of a traffic signal at the entrance to the USEPA property and the Eisai Inc. property at Hopson Road when the intersection meets the NCDOT traffic signal warrants as identified in the [Manual on Uniform Traffic Control Devices](#) (MUTCD) and when the NCDOT approves a signal at this location. The responsibility of evaluating the intersection and determining whether a traffic signal is warranted rests with NCDOT.

The NCDOT will consider a request for a traffic signal after Triangle Parkway has been open to traffic and there has been enough time for traffic patterns to stabilize (generally about three to six months). A request for a traffic signal study should be submitted by USEPA or Eisai Inc. in writing to NCDOT. NCDOT typically does not evaluate an intersection more frequently than once per year, unless there is a major change (e.g. new development) in the area. In addition, intersections are usually not evaluated during the summer, due to changes in normal driving habits.

- A Letter of Map Revision (LOMR) will be prepared post-construction by NCTA using as-built plans and submitted for Federal Emergency Management Agency (FEMA) approval.

¹ Day-lighting is a term used when a section of culvert is left open in its natural state that otherwise would be a continuous reinforced concrete box culvert.



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1.0 TYPE OF ACTION

This document is a Federal Highway Administration (FHWA) Administrative Action, Finding of No Significant Impact (FONSI).

The FHWA has determined this project will not have any significant impact on the human or natural environment. This FONSI is based on the February 20, 2008 Environmental Assessment (EA), which has been independently evaluated by the FHWA and determined to adequately and accurately disclose the environmental issues and impacts of the proposed project. The EA, together with the information contained in this FONSI (including responses to comments on the EA), provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the EA.

2.0 DESCRIPTION OF PROPOSED ACTION

The North Carolina Turnpike Authority (NCTA) proposes to construct a tolled freeway facility known locally as the Triangle Parkway (North Carolina Department of Transportation [NCDOT] State Transportation Improvement Program [STIP] Project Number U-4763B). Triangle Parkway is located in southern Durham County and western Wake County, predominately within the Research Triangle Park (RTP). Triangle Parkway is proposed as an approximately 3.4-mile long multi-lane facility on new location from NC 540 in Wake County to I-40 in Durham County (See Figure 1). The Proposed Action also includes improvements to 1.9 miles of northbound NC 147 from I-40 to T.W. Alexander Drive. Improvements to 1.3 miles of eastbound NC 540 between NC 55 and Triangle Parkway are also included as part of the Proposed Action, but are not part of the initial construction and are not expected to be constructed until year 2024.

Triangle Parkway is proposed as a six-lane tolled freeway on new location with three travel lanes in each direction that are divided by a 46-foot wide median. The typical roadway section includes 12-foot travel lanes, a 12-foot shoulder on each side and ditches or side-slopes to connect with the existing terrain. The total construction width is approximately 250 feet and would require an estimated 300-foot total width of property for right-of-way. Additional right-of-way area will be needed at interchanges and access roads.



The improvements proposed along NC 147 include widening northbound NC 147 from I-40 to T.W. Alexander Drive by adding a 12-foot inside lane for a distance of 1.9 miles. The improvements along NC 540 include widening eastbound NC 540 by adding a 12-foot lane from NC 55 to northbound Triangle Parkway for a distance of 1.3 miles. The widening of eastbound NC 540 will include the widening of existing bridges over Davis Drive, Cisco Access Road, and the planned Louis Stephens Road. The improvements include the addition of a third lane to the flyover between eastbound NC 540 and northbound Triangle Parkway. While part of the Proposed Action, the NC 540 widening and flyover widening will not be included with the initial construction of Triangle Parkway. The NC 540 widening will be constructed at a later date when traffic volumes warrant its widening and in accordance with the Project Specific Agreement between the NCDOT and the NCTA. The traffic analysis estimates the NC 540 widening will be needed by 2024.

Interchange connections for Triangle Parkway are proposed for access to NC 540, Davis Drive (SR 1999), Hopson Road (SR 1978), and I-40. The interchanges at these locations include new interchanges at Hopson Road and Davis Drive and existing interchanges at NC 540 and I-40.

Construction of the Kit Creek Road connector between Davis Drive and Church Street is included as part of the proposed project. This connector is currently under study by the Town of Morrisville. The final decision to include this connector as part of the Triangle Parkway project will be determined based on the outcome of the Town’s studies and their recommendations. The NCTA will construct the Kit Creek Road connector unless the Town of Morrisville determines following the traffic study that they do not want this connection constructed and transmits a letter to NCTA requesting that this connection be removed from the project.

Triangle Parkway, although identified in the STIP as Project U-4763B, is not programmed for traditional (non-toll) state and federal transportation funds in the 2007-2013 STIP. The 2007-2013 STIP identifies Triangle Parkway as an NCTA project with “funding by others.” For this project, the term “funding by others” refers to the use of toll revenues and other non-traditional funding sources.

The NCTA schedule for Triangle Parkway includes right-of-way acquisition and construction beginning in 2008. The project is scheduled to be open to traffic in the fall of 2010. Table 1 provides the project cost estimates in two formats to reflect potential inflation: “2008 Dollars” reflects the cost with inflation if all expenditures are made at the project start in 2008. “Dollars Through Project Opening in 2010” reflects the cost with anticipated inflation for expenditures made over time from 2008 through project opening in 2010.

TABLE 1 PROJECT COST ESTIMATES SUMMARY¹

		2008 Dollars	Dollars Through Project Opening in 2010 ³
	Construction ²	\$131.0 Million	\$147.1 Million
	Right-of-Way	\$26.0 Million	\$27.8 Million
	Utilities	\$ 5.4 Million	\$ 5.5 Million
	Total	\$ 162.4 Million	\$ 180.4 Million

¹ For consistency, both 2008 and 2010 costs include the amounts needed to implement the NC 540 improvements.

² NC 540 eastbound widening and flyover ramp widening will not be part of initial construction planned to open to traffic in 2010.

³ “Dollars Through Project Opening in 2010” is the total cost estimate anticipating inflation for expenditures made over time from 2008 through 2010.



In accordance with CFR 771.111(f) an evaluation of logical termini and independent utility was conducted to justify the project termini at NC 540 and I-40. Based on this evaluation, these termini were determined to be appropriate based on three criteria. These criteria and determinations are provided as follows:

1. Connects logical termini – Triangle Parkway serves an identified need within the regional and local comprehensive plans. It extends 3.4 miles between two major freeway facilities, NC 540 to I-40, which would each serve on some sections of roadway between 100,000 to 200,000 vehicles per day in the design year (2030). The project is of sufficient length to connect these two major freeways with a controlled access facility that on its own merit will provide transportation improvements for the public traveling within RTP and between NC 540 to I-40. The project also has sufficient length to address environmental matters on a broad scope.
2. Has independent utility – Triangle Parkway has independent utility, meaning that it would "be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made." Of course, Triangle Parkway would function most effectively if other planned transportation improvements are also made, and it certainly would be preferable from a financing standpoint to develop and operate Triangle Parkway as part of a larger toll system known as the Triangle Expressway. But the fact that Triangle Parkway works best as part of an integrated toll system does not mean that the project "is not functional on its own as a toll road." In fact, the preliminary traffic and revenue study for Triangle Parkway actually considered the project as a stand-alone toll road and found that the project has "relatively good bonding capacity" on its own. See [Proposed Triangle Parkway Preliminary Traffic and Revenue Study \(T&R Study\)](#) (March 30, 2006), p. 4-20. This report supports the conclusion that, if other planned improvements were not made, NCTA still could make a reasonable decision to proceed with Triangle Parkway as a stand-alone toll project.
3. Would not restrict consideration of alternatives for future projects –Triangle Parkway will not limit consideration of alternatives for other reasonably foreseeable transportation improvements. The region's long-range transportation plans include many projects that are intended to address the severe and widespread traffic congestion on the road network. Each project is complementary to the others, but implementing one project does not require other projects to go forward. For example, one reasonably foreseeable future project is the planned extension of Triangle Parkway to McCrimmon Parkway (known as the McCrimmon Connector). The completion of Triangle Parkway does not necessitate the construction of the McCrimmon Connector, nor does it limit the range of alternatives that can be considered for that project.

For these reasons, FHWA has concluded that Triangle Parkway meets the criteria for consideration as a stand-alone project in the NEPA process.

3.0 SUMMARY OF BENEFICIAL AND ADVERSE ENVIRONMENTAL IMPACTS

3.1 Impact Summary

Discussions of the environmental impacts associated with Triangle Parkway are located in Chapters 5 and 6 of the EA. An updated summary of impacts for the proposed project is provided in Table 2.



Impacts to streams and wetlands have decreased from the impacts presented in the EA and reflect the most recent hydraulic design elements proposed in the preliminary design plans and as shown in the Section 401 and Section 404 permit applications. The number of property parcels and acres of Urban/Disturbed Land have also been updated since the publication of the EA.

TABLE 2 IMPACT SUMMARY

Resource	Impact	
Right-of-way	167.6 acres	
Number of relocations	2 Residences 0 Businesses	
Number of property parcels	23 parcels	
Historic Properties	None	
Section 4(f) Properties	None	
Archaeological Sites	None	
Jurisdictional Streams Linear Feet (LF)	3,718 LF Perennial 3,519 LF Intermittent	
Wetlands	1.79 acres	
Floodplains	12.6 acres	
Protected Species	None	
Natural Communities	Oak-Hickory Forest	8.5 acres
	Piedmont Alluvial Forest	33.2 acres
	Mixed Pine/Hardwood Forest	64.0 acres
	Urban/Disturbed Land	49.0 acres
Noise Impacts – without abatement	Residences	13
	Recreational Facilities	1
	Businesses	2 ¹
Air Quality	No Violation of CO NAAQS ²	

¹First Environments Early Learning Center and RTI Parent's Childcare Cooperative Organization (Both are childcare facilities)

²CO NAAQS – Carbon Monoxide National Ambient Air Quality Standard

The area surrounding the proposed Triangle Parkway is primarily within the RTP, which is zoned for research-oriented development. Within the project vicinity are areas of Durham and Wake Counties that continue to experience residential development and commercial growth. The Triangle Parkway is consistent with local, state, and regional transportation and land use plans and local zoning.

The proposed project is not anticipated to have substantial impacts to the human environment. Constructing Triangle Parkway will result in changes to access and some travel patterns. Access along the



project would be controlled to prevent direct driveway and side road access to Triangle Parkway. Access to Triangle Parkway would be provided with interchanges located at NC 540, Davis Drive, Hopson Road, and I-40. Existing access to and from Davis Drive and Hopson Road through RTP will remain relatively the same since their connections to roads such as McCrimmon Parkway, T.W. Alexander Drive, NC 54, and NC 55 will remain. Access changes include:

- Kit Creek Road currently includes a short section of roadway that connects with Davis Drive just north of the NC 540 interchange. This part of Kit Creek Road has temporarily provided access to NC 540 since July 2007. The closure of the Davis Drive/Kit Creek Road temporary spur connection to NC 540 will affect access to and from employers located along Kit Creek Road. The other end of Kit Creek Road connects with Church Street and extends toward Davis Drive through the Kitts Creek subdivision and dead ends. The NCTA has included the construction of the Kit Creek Road connector as part of the project. This connector would provide direct access between Church Street and Davis Drive through the Kitts Creek subdivision. The NCTA will construct the Kit Creek Road connector unless the Town of Morrisville determines that they do not want this connection constructed and transmits a letter to NCTA requesting that this connection be removed from the project.
- NC 147 currently terminates at T.W. Alexander Drive. This NC 147 spur currently provides direct access to I-40 from T.W. Alexander Drive. Since NC 147 will connect with Triangle Parkway at the I-40 interchange, this existing spur connection with T.W. Alexander Drive will be closed. As part of the project, a detour will be provided along NC 54 to allow the NC 147 spur between I-40 and T.W. Alexander Drive to remain open as long as possible during construction. When the Triangle Parkway opens and the NC 147 spur is closed, RTP employees currently using the NC 147 spur will have choices of travel: employees can exit from I-40 onto Triangle Parkway and then exit on Hopson Road for access to T.W. Alexander Drive; they can exit at T.W. Alexander Drive from NC 147; they can exit at Cornwallis Road from NC 147 to access T.W. Alexander Drive; they can exit I-40 at Davis Drive to Hopson Road to T.W. Alexander Drive; and, from the west, they can exit I-40 at NC 55 to NC 54 to T.W. Alexander Drive (See Figure 3). The difference in travel distances between using the NC 147 spur versus using the non-toll alternative routes is less than a half-mile for vehicles traveling from any of these three general directions.
- The NCTA, in coordination with NCDOT, determined that the current unsignalized full movement entrance to the United States Environmental Protection Agency (USEPA) property and the Eisai Inc. property at Hopson Road will remain a full movement intersection after completion of the project. In addition, the NCTA will pay for the design and installation of a traffic signal at this location when the intersection meets the NCDOT traffic signal warrants as identified in the Manual on Uniform Traffic Control Devices (MUTCD) and when the NCDOT approves a signal at this location.
- Business access and/or driveways along Hopson Road and Davis Drive were reviewed in relation to the proposed location of the Triangle Parkway interchange connections based on the NCDOT Policy on Street and Driveway Access to North Carolina Highways. Several business driveways along these roads are under review. The specific changes in driveway access will be determined during final design and reviewed with business owners during right-of-way acquisition. If changes to accesses are made, appropriate alternative access points would be provided to minimize effects to the viability of the business.



The cost of tolls may influence the extent of the changes in travel patterns since commuters would have a choice to travel on the existing non-toll routes still available or pay a toll to use this new freeway facility. Triangle Parkway and other proposed roadway improvements in the region should further enhance connectivity, reduce congestion, and improve travel time locally and regionally.

Construction of Triangle Parkway is anticipated to result in the relocation of two residences. All efforts will be made to avoid the two relocations during final design and/or right-of-way negotiations.

The project will have noise impacts on 13 residential uses, two businesses, and one recreational facility. Prior to the release of the EA, all impacted receivers were evaluated for traffic noise mitigation and four areas were evaluated for noise barriers. Based on the [NCDOT Traffic Noise Abatement Policy](#), a noise barrier was preliminarily determined to be cost-effective at one impacted location. The NCTA determined a noise barrier at the First Environments Early Learning Center (FEELC) childcare facility, which is located on federal property, is reasonable and feasible. More in-depth modeling was performed in March 2008 at this location using FHWA's Traffic Noise Model version 2.5 (TNM), which verified that the noise barrier is both reasonable and feasible. Also, NCTA received an approved noise ballot from the federal landowner to construct a noise barrier adjacent to the FEELC childcare facility to mitigate noise impacts from the Triangle Parkway project (See Appendix A). The noise barrier adjacent to the FEELC childcare facility will be constructed as part of the project. The actual design and dimensions of the noise barrier will be determined during final design.

The proposed project is located in Durham and Wake Counties, which is in non-attainment for Ozone (O₃), in maintenance for Carbon Monoxide (CO), and in attainment for all other criteria pollutants. However, due to improved monitoring data, this area was redesignated as maintenance for O₃ under the eight-hour standard on December 26, 2007. The United States Department of Transportation (USDOT) determined the Durham-Chapel Hill-Carrboro and the Capital Area Metropolitan Planning Organizations' 2030 Long Range Transportation Plans and the 2007-2013 Metropolitan Transportation Improvement Programs were in conformity on June 29, 2007. The conformity determination is consistent with the transportation conformity regulations found in 40 CFR Part 93. There are no significant changes in the project's design concept or scope, as used in the conformity analyses.

The proposed project will not cause CO levels to exceed the National Ambient Air Quality Standard (NAAQS). The signalized intersection at Davis Drive and Hopson Road was selected as the site for the CO analysis because the site represents a residential and commercial location where the highest CO concentrations can be expected and human activity is anticipated. None of the predicted concentrations for 2010, 2015, and 2030 exceed either the one-hour or eight-hour NAAQS for CO.

Because of the specific characteristics of the Triangle Parkway, as a new roadway connecting NC 540 with I-40 and NC 147, there may be localized areas where vehicle-miles traveled (VMT) would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in Mobile Source Air Toxics (MSATs) emissions may occur, but current tools and science are not adequate to reliably quantify them (i.e., increases or decreases relative to existing conditions). The localized increases in MSATs emissions would likely be most pronounced along the Triangle Parkway. However, based on the analysis, MSAT emissions are expected to decline considerably between 2006 and 2030 within the Affected Transportation Network, which includes the constructed roadway segments and other links where traffic volumes are expected to change by \pm five percent as a result of the project. The proposed project will not interfere with the substantial emissions reductions forecasted in the project area, due in large part to the implementation of USEPA's vehicle and fuel regulations.



Triangle Parkway will not impact any eligible historic architecture or archaeological resources within the project area.

The construction of Triangle Parkway will not have a disproportionately high and adverse impact to minorities or low-income populations by acquiring property, changing land use patterns, eliminating transportation services, or by substantially impacting human health or the natural environment. The project is located in, and primarily serves, a relatively high-income area. The project area has a lower percentage of low-income and minority populations than in the surrounding area. There is one minority property directly impacted by the project which will result in right-of-way acquisition. Non-toll alternative routes such as I-40, NC 54, NC 55 and Davis Drive serve the area. NC 55 and NC 54 provide parallel existing routes to the west and east of Triangle Parkway, and Davis Drive extends throughout the project vicinity. If the toll fee causes financial hardship on some individuals, these three non-toll transportation routes, along with I-40, are still available for use. In addition, some persons who do not use the toll facility may still gain benefit from its effects on travel time savings with the reduced traffic volume on surrounding non-toll routes.

Triangle Parkway, in combination with other transportation projects planned in the area, could cause indirect and cumulative effects to the Kit Creek Road area and streams as a result of road construction and potential future complementary development. Research Triangle Foundation (RTF) land use restrictions limit potential development to research-oriented business uses within RTP. In addition, there are local land use controls and environmental regulations in place to guide growth and minimize potential effects to the area's resources. Development associated with the proposed project is expected to be limited not only by the RTF restrictions, but also because Triangle Parkway includes full control of access with access only at interchange connections. In addition, current environmental regulations combined with other local, state and federal plans would limit growth and minimize cumulative effects.

In response to a request from the Town of Morrisville, the Kit Creek Road connector is included as part of the Triangle Parkway project. This connector would improve connectivity for vehicular traffic, including emergency vehicle access, to Davis Drive. However, with the construction of this connector, there is the potential for an increase in through traffic within the Kitts Creek subdivision. The Town of Morrisville could implement various types of traffic calming measures to slow traffic and discourage the use of this facility as a "cut-through" in the future if the neighborhood experiences problems.

The Kit Creek Road connector will provide additional access to a large tract of land within the Shiloh area. This large tract of land is currently owned by descendants of the original Shiloh community. These property owners have expressed interest in maintaining ownership of their properties to preserve the Shiloh area history. Providing additional access to these properties, combined with other transportation projects and the continuous growth in the Future Land Use Study Area - the area within which Triangle Parkway has the potential to induce land use changes - could increase the development pressures on these property owners and increase the probability that these properties become desirable for other uses. The attractiveness for denser development of the large tracts of land within the Shiloh community and adjacent to the Kit Creek Road connector could be reduced with limited access provisions from the new roadway and/or using provisions within the Town of Morrisville's zoning and land use plans.

This Kit Creek Road connector is currently under study by the Town of Morrisville. The final decision to include this connector as part of the Triangle Parkway project will be determined based on the outcome of the Town's studies and their recommendations. As stated in the Special Project Commitments, if the Town of Morrisville determines following the traffic study that they do not want this connection



constructed and transmits a letter to the NCTA requesting that this connection be removed from the project, then NCTA will remove the Kit Creek Road connector from the project.

The project is anticipated to impact approximately 3,718 linear feet of perennial stream, 3,519 linear feet of intermittent stream, and 1.79 acres of wetlands. A US Army Corps of Engineers (USACE) Individual Permit and a Section 401 Water Quality Certification from the North Carolina Department of Environment and Natural Resources, Division of Water Quality (NCDWQ) are anticipated to be needed for the project. Coordination with the regulatory agencies during NCTA Turnpike Environmental Agency Coordination (TEAC) meetings determined that payment of an in-lieu fee to the North Carolina Department of Environment and Natural Resources (NCDENR) Ecosystem Enhancement Program (EEP) would be an available and satisfactory option for off-site mitigation to satisfy any Federal Clean Water Act compensatory mitigation requirements for this project.

The proposed Hopson Road interchange will impact 3.4 acres along the forested east side of the Jenkins Road diabase dike formation, which has been designated by the North Carolina Natural Heritage Program as a Significant Natural Heritage Area (Site ID 2527). The NCTA will coordinate with the North Carolina Native Plant Society to determine the feasibility of conducting plant rescues for Earle's blazing star (*Liatris squarrulosa*) and *Marshallia* sp.1 within the designated Significant Natural Heritage Area prior to construction. This area is located approximately two miles south of the I-40/NC 147 interchange. The NCTA will coordinate with any community group or individual that would like to assist in relocating any of the species in this area. The project will not adversely impact federally protected threatened and endangered species.

3.2 Wetlands Finding

Executive Order 11990, "Protection of Wetlands," established a national policy to avoid, to the extent possible, adverse impacts on wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Based upon the above-stated consideration, it is determined that there are no practicable alternatives to the proposed new construction in wetlands, and that the proposed action includes all practicable measures to minimize harm to the wetlands that may result from such use.

In accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 401 of the Clean Water Act (33 U.S.C. 1341), impacts to the jurisdictional areas from the proposed alignment were identified and coordinated with the responsible regulatory agencies, the USACE and NCDWQ. The impacted areas are located within the Cape Fear River basin, which currently does not have riparian buffer rules regulated by the NCDWQ. Section 404 jurisdictional areas were delineated within the preferred corridor (identified as Corridor A in the EA) during the period from January 5 through February 17, 2006. A two-day field review meeting with the USACE and NCDWQ was conducted on March 29 and 30, 2006 to confirm the jurisdictional boundaries of these wetland systems. A total of 23 wetlands were determined to be jurisdictional Waters of the U.S. During the field review, two wetlands were determined by the USACE to be isolated waters. An additional field review meeting was conducted with NCDWQ on April 21, 2006 to determine the jurisdictional status of waters deemed isolated by the USACE. The NCDWQ provided letters concurring with the wetland determinations on April 18, 2006 and the isolated wetland determinations on April 26, 2006. Rapanos Determination Forms for impacted streams and wetlands were submitted to the USACE in January 2008. Section 404 and Section 401 permit applications were submitted to the USACE and NCDWQ on March 18, 2008.

The proposed project will directly impact 3,718 linear feet of perennial streams and 3,519 linear feet of intermittent streams based on revised preliminary design cut and fill slopes and clearing limits. The



proposed project will also permanently impact 1.79 acres of jurisdictional wetlands, including 1.35 acres of riverine wetland impacts, 0.38 acre non-riverine wetland impacts, and 0.06 acre isolated wetland impacts. There are no surface water impacts. Due to the location of certain stream channels within the project area, it is possible that stream relocation will be necessary as a result of construction activities.

According to a 1990 Memorandum of Agreement (MOA) between the USEPA and the USACE in determining “appropriate and practicable” measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes. The proposed project incorporates measures to avoid streams and wetlands. Bridging is proposed at Burdens Creek in the northern part of the project area.

Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of median widths, right-of-way widths, fill slopes, and/or road shoulder widths. The proposed project includes a split-diamond interchange design at Davis Drive and Hopson Road. This design minimizes perennial stream impacts by 198 feet when compared to Design Option 1, a modified cloverleaf interchange. A retaining wall is recommended along the federal property line, avoiding longitudinal perennial stream impacts to the unnamed tributary to Burdens Creek of 2,450 linear feet and avoiding 0.57 acres of impacts to wetlands. In addition, the Burdens Creek bridge is currently designed to span 370 feet in order to avoid impacting the wetlands located on the south bank of the creek. The length of bridge required to meet the necessary hydraulic opening is 270 feet. The additional 100-foot length of bridge avoids impacting 0.22 acres of wetlands. Also, the current utility routing plans for water and sewer do not impact any jurisdictional wetlands or streams. Additional elements under consideration by NCTA that would further minimize impacts to streams and wetlands include:

- NCTA intends to utilize all electronic toll collection, which would minimize the required construction footprint in comparison to providing toll plazas with cash collection. The use of electronic toll collection will reduce the amount of impervious surfaces by approximately 19,649 square feet.
- The Design Build Team will be required to review the potential of compressing the service roads closer to the main roadway to minimize impacts to streams.
- To further minimize impacts to streams and reduce right-of-way needs, the final Request for Proposals (RFP) for the Design Build Team includes incentives to reduce right-of-way needs, where feasible.
- Where possible, streams, such as the small segment of stream in the northwest quadrant of the Davis Drive interchange, will be “day-lighted”¹ to provide additional minimization of impacts to the streams.
- The NCTA will review the potential for incorporating additional stormwater management elements and Best Management Practices (BMPs) to minimize impacts to streams, such as turbidity and sheet-flow, that could potentially impact Northeast Creek, a 303(d) listed water located downstream of the project.

An off-site mitigation program based on in-lieu fee payments made to the EEP was established by the “Memorandum of Agreement Among the North Carolina Department of Environment and Natural

¹ Day-lighting is a term used when a section of culvert is left open in its natural state that otherwise would be a continuous reinforced concrete box culvert.



Resources, the North Carolina Department of Transportation, and the US Army Corps of Engineers, Wilmington District” (MOA), dated July 22, 2003. Coordination with the regulatory agencies during NCTA Turnpike Environmental Agency Coordination (TEAC) meetings determined that payment of an in-lieu fee would be an available and satisfactory option for off-site mitigation to satisfy any Federal Clean Water Act compensatory mitigation requirements for this project. A copy of the April 16, 2008 EEP mitigation acceptance letter is included in Appendix A.

3.3 Floodplain Finding

In accordance with Executive Order 11988, “Floodplain Management,” the proposed project was evaluated with respect to potential impacts on regulated floodplains/floodways.

According to Flood Insurance Rating Maps (FIRM) published by the Federal Emergency Management Agency (FEMA), the majority of the project area is not located in a flood hazard area. However, the proposed alignment of Triangle Parkway will cross several streams that have designated flood hazard areas or for which base flood elevations have been determined. The proposed project will impact approximately 12.6 acres of floodplains.

The proposed project will impact designated floodway zones in the project area by placement of new culverts, extension of existing culverts, and placement of a bridge at Burdens Creek. Hydraulic design for these structures will not create constraints to flow. Therefore, floodways upstream of the project will not be affected by placement of these structures. A Conditional Letter of Map Revision (CLOMR) request has been prepared for the proposed bridge crossing at Burdens Creek and submitted in May 2008 to FEMA for review and approval. No substantial upstream flooding is anticipated from the construction of the project. FEMA has not yet issued the CLOMR, but is expected to do so by September 2008. For confirmation, a Letter of Map Revision (LOMR) will be prepared post-construction using as-built plans and submitted for FEMA approval.

4.0 COORDINATION AND COMMENTS

4.1 Circulation of the Environmental Assessment

The EA was approved by the NCTA, NCDOT, and FHWA on February 20, 2008. The approved EA was circulated to the following federal, state and local agencies for review and comments. An asterisk (*) indicates a written comment was received from the agency. Copies of the correspondence received are included in Appendix B.

U.S. Army Corps of Engineers

U.S. Environmental Protection Agency*

U.S. Department of Interior - U.S. Fish and Wildlife Service*

Advisory Council on Historic Preservation

N.C. Department of Administration – State Clearinghouse*

N.C. Department of Environment and Natural Resources, Raleigh Regional Office*

N.C. Department of Environment and Natural Resources, Division of Forest Resources



N.C. Department of Environment and Natural Resources, Division of Water Quality*
N.C. Department of Cultural Resources
N.C. Wildlife Resources Commission*
Durham City/County Planning
Town of Morrisville*
Town of Cary
Wake County Planning Department
Capital Area Metropolitan Planning Organization
Durham-Chapel Hill-Carrboro Metropolitan Planning Organization

4.2 Agency Comments Received on the Environmental Assessment

Many of the agency comments regarding the project and EA were similar and involved the following issues:

- Sediment and erosion impacts from the project
- Avoidance and minimization of impacts to wetlands and streams
- Mitigation of impacts to wetlands and streams
- Kit Creek Road connector

The common agency comments and applicable responses are summarized by topic below. For specific comments and responses see the tables provided in Appendix B.

Sediment and Erosion Impacts from the Project

Burdens Creek and Kit Creek are Class C; NSW waters of the State. The agencies are concerned with sediment and erosion impacts that could result from this project. They recommend that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to these waters. They request that road design plans provide treatment of the stormwater runoff through best management practices as detailed in the most recent version of [NCDWQ Stormwater Best Management Practices](#).

Response: The final Design Build RFP requires the development of an erosion control plan. The Erosion and Sediment Control/Stormwater Pollution Prevention Plan will be implemented and maintained over the life of the project. This plan will incorporate the requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit to Discharge Stormwater. NCDOT's BMPs for the Protection of Surface Waters and Sedimentation Control guidelines will also be followed during project construction. Incentives are provided in the final Design Build RFP to reward the Design Build Team for careful implementation and monitoring of sediment and erosion control measures.

Avoidance and Minimization of Impacts to Wetlands and Streams

Comments were received regarding the need to demonstrate avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical.

Response: Avoidance and minimization measures were discussed at the October 17, 2007 TEAC meeting. Thirty percent hydraulic plans were reviewed at the November 14, 2007 TEAC meeting. The



draft permit drawings were reviewed at the TEAC meeting held on December 5, 2007. In response to comments received from the USEPA in a letter dated April 2, 2008, a meeting was held on May 23, 2008 to further discuss USEPA's comments and to review avoidance and minimization measures utilized on the project. The meeting included USEPA, USACE, NCDWQ, NCTA, NCDOT, and FHWA. A copy of USEPA's letter and minutes of the meeting are provided in Appendix B. The Design Build Team will consider additional options to reduce impacts to wetlands and streams as part of the final design of the project.

In addition, the Design Build Team will avoid and minimize impacts to wetlands and streams, to the extent practicable, resulting from the relocations of utilities. If necessary, the Design Build Team will obtain permit modifications. The Design Build Team will be responsible for the relocation of the water and sewer lines. Measures to avoid impacts were incorporated into the current preliminary routing plans. These plans include reasonable relocation opportunities for water and sewer lines that do not result in additional impacts to wetlands or streams. However, detailed utility relocation plans have not been prepared, but will be completed by the Design Build Team. Relocation of the existing water and sewer lines and overhead electrical high-voltage lines are not anticipated to increase wetland or stream impacts from those listed in the 404/401 permit application. To minimize impacts from relocating the water and sewer lines, new lines could be placed by boring underneath streams or wetlands in place of ditching. The Design Build Team will not be responsible for relocating utilities owned by private companies. A list of private utility companies that may be impacted by the project can be found in Appendix B. The private companies will be responsible for relocating their utilities and coordinating the relocations with the Design Build Team. Any impacts associated with the relocation of private utilities is unknown because the relocation plans have not been prepared. As a result of these important discussions, the prospective Design Build Teams will be evaluated in part on their ability to further avoid and minimize jurisdictional impacts.

Additional information regarding avoidance and minimization measures incorporated to date can be found in Section 3.2 of this FONSI.

Mitigation of Impacts to Wetlands and Streams

Comments were received regarding the need to mitigate impacts greater than one acre to wetlands and the need to mitigate impacts greater than 150 linear feet to any single perennial stream.

Response: As stated in the EA, coordination with the regulatory agencies during December 15, 2006, January 17, 2007, and February 14, 2007 TEAC meetings determined that payment of an in-lieu fee to EEP would be an available and satisfactory option for off-site mitigation to satisfy any Federal Clean Water Act compensatory mitigation requirements for this project. NCTA has received agreement from EEP to provide compensatory mitigation through the in-lieu fee program. All impacts, corresponding mapping, and mitigation information were included in the 401 Water Quality Certification Application submitted by NCTA to NCDWQ and USACE on March 18, 2008. The decision to use the EEP for mitigating impacts to jurisdictional wetlands and streams was discussed at the January 2007 and February 2007 TEAC meetings, and there was no opposition to this approach. A copy of the April 16, 2008 EEP mitigation acceptance letter is included in Appendix A.

Kit Creek Road Connector

Comments were received from the Town of Morrisville regarding their interest in the re-establishment of the Kit Creek Road connection from Church Street to Davis Drive. The Town's interest in reconnecting Kit Creek Road is based not only on enhancing the connectivity of roads and general traffic circulation,



but also based on public safety concerns for emergency vehicle access. The Town of Morrisville is preparing a traffic study of the area and will provide additional information when the study is complete.

Response: Based on the information provided to NCTA regarding the need for emergency access and the previous NCDOT commitment, the construction of the Kit Creek Road connector is currently included with this project. If the Town of Morrisville determines following the traffic study that they do not want this connection constructed and transmits a letter to NCTA requesting that this connection be removed from the project, then NCTA will remove the Kit Creek Road connector from the project.

U.S. Environmental Protection Agency - Region 4 Letter Dated April 2, 2008

In addition, the US Environmental Protection Agency – Region 4 Office provided comments on the EA by letter on April 2, 2008. This comment letter and attachments are provided in Appendix B. In response to these comments, three meetings with USEPA were held to clarify and discuss their comments. The first two meetings were held on May 5, 2008 and May 21, 2008; they included USEPA and FHWA. The third meeting was held on May 23, 2008; it included USEPA, USACE, NCDWQ, NCTA, NCDOT, and FHWA. Minutes of these meetings are provided in Appendix B.

In summary, the majority of the USEPA Region 4 Office comments on the EA included concerns with air quality, stream impacts, avoidance and minimization, stream mitigation, utility impacts, and BMPs. There were also several comments concerning the traffic studies performed, the multi-modal alternatives considered, and FHWA's decision to utilize an EA versus an Environmental Impact Statement (EIS). FHWA reviewed additional information, such as the supporting project technical reports and additional agency correspondence, with USEPA representatives on May 5, 2008 and May 21, 2008 to clarify several of these comments. Based on their review of the information and further discussions related to the document, air quality, traffic, and multi-modal alternatives, the comments were resolved with no further actions or information required.

The meeting on May 23, 2008 provided an additional opportunity for USEPA, NCTA, and FHWA to review the project in relation to avoidance and minimization, stream impacts, utility impacts and BMPs. Representatives from USACE, NCDWQ, and NCDOT also participated in this meeting. The USEPA representatives provided a checklist with specific questions regarding each comment for discussion. The minutes of the May 23, 2008 meeting document NCTA's response to each of the issues in the checklist (See Appendix B). The following items have been incorporated into the project based on this meeting:

- The Design Build Team will be required to review the potential of compressing the service roads closer to the main roadway to minimize impacts to streams.
- To further minimize impacts to streams and reduce right-of-way needs, the RFP for the Design Build Team includes incentives to reduce right-of-way needs, where feasible, as well as evaluation criteria to encourage the prospective Design Build Teams to further avoid and minimize jurisdictional impacts.
- Where possible, streams, such as the small segment of stream in the northwest quadrant of the Davis Drive interchange, will be “day-lighted” to provide additional minimization of impacts to the streams.
- The NCTA will review the potential for incorporating additional stormwater management elements (e.g. retention/detention basins, pre-formed scour holes, or level spreaders) and BMPs to minimize



impacts to streams, such as turbidity and sheet-flow that could potentially impact Northeast Creek, a 303(d) listed water located downstream.

4.3 Public Coordination and Comments

Following circulation of the Environmental Assessment for comments, a Local Elected Officials Meeting, a Pre-Hearing Open House, and a Combined Corridor/Design Public Hearing were held for the project. The public notice, postcard, and handout from the hearing are included in Appendix C. The Local Elected Officials Meeting was held on March 24, 2008 at the Morrisville Town Hall, located at 100 Town Hall Drive in Morrisville. The purpose of the meeting was to provide Triangle area local elected officials a preview of the information to be presented at the Pre-Hearing Open House and Combined Corridor/Design Public Hearing the following evening, as well as to provide them with an opportunity to exchange information with NCTA regarding the Triangle Parkway project. Nine local officials and citizens attended the meeting. The minutes from this meeting are included in Appendix C.

The Pre-Hearing Open House and Combined Corridor/Design Public Hearing was held on March 25, 2008, at Sigma Xi, 3106 East NC Highway 54 in the Research Triangle Park. Approximately 103 people attended the Pre-Hearing Open House and Combined Public Hearing. Twenty people spoke at the hearing, and 57 written comments were submitted at and after the hearing, including a petition with 318 signatures. The official public hearing transcript, public comment letters, and petition provided as a result of the hearing are located in Appendix C. Also in Appendix C, a table of responses is provided for all the written and oral public hearing comments.

A number of people expressed specific opposition to the Triangle Parkway project. Reasons for opposition included concern that mass transportation and multi-modal projects would be discouraged by the project and that High Occupancy Vehicle (HOV) lanes on existing freeway facilities would be a better option for relieving congestion. Another comment suggested that the project does not achieve the purpose of reducing congestion on NC 55 and NC 54.

In addition, a number of citizens and organizations expressed support for the Triangle Parkway project. Reasons for support included reduced commute times for Triangle employees and better connectivity to nearby communities, which will help the Research Triangle Foundation continue recruiting high-tech businesses. A few citizens noted that the project appears to be well-planned, with minimal impacts to homeowners.

Group meetings were held with USEPA and National Institute of Environmental Health Sciences (NIEHS) employees on February 13, 2008 and Cisco employees on March 5, 2008 and April 7, 2008. (USEPA, NIEHS, and Cisco are all located in RTP in the vicinity of the project.) The purpose of these meetings was to provide USEPA/NIEHS and Cisco employees an opportunity to exchange information with NCTA regarding the Triangle Parkway project. At the February 13, 2008 meeting with USEPA and NIEHS employees, approximately 100 employees attended. Ten people asked questions and/or commented on the project during the meeting and 20 comment sheets were received at and after the meeting. At the March 5, 2008 meeting with Cisco employees, approximately forty employees attended in person and others participated via Cisco TV. Seventeen questions and/or comments on the project were asked during the meeting and one comment sheet was received. Fifteen additional written comments were received after the meeting via email. A follow-up meeting with Cisco employees was held on April 7, 2008 with four representatives for Cisco to discuss their concerns regarding the closure of the temporary connection between NC 540 and Davis Drive. The representatives presented five alternatives for review by NCTA. The comments received from these meetings are incorporated in this



final document in combination with the public hearing comments. The minutes from these three group meetings are in Appendix C.

Many of the public comments regarding the project and EA were similar and involved concerns with the following issues:

- Closure of the NC 147 spur connection to T.W. Alexander Drive
- Davis Drive spur/Kit Creek Road access
- First Environments Early Learning Center (FEELC) childcare facility
- Toll collection and fees
- Kit Creek Road connector
- Air quality
- Construction
- Bike and pedestrian accommodations

The common public comments and applicable responses are summarized by topic below. For specific comments and responses see the tables provided in Appendix C.

NC 147 Spur

A number of people expressed opposition to the closure of the NC 147 spur. The NC 147 spur, shown in Figure 2-4 and Figure 3, is the section of NC 147 from T.W. Alexander Drive to I-40. Reasons for opposition included concern for increased congestion on surrounding roadways and intersections and longer commute distances and times. There were numerous requests for NCTA to consider alternative interchange designs to allow the spur to remain in place or mitigate the closure by eliminating the proposed toll on the Triangle Parkway project from Hopson Road to NC 147. Also, representatives of the USEPA facility in RTP requested prompt turnover of the abandoned NC 147 spur for future Federal Government access into the Burdens Creek Air Quality Research Site.

Response: NCDOT planned, designed, and constructed the NC 147/I-40 interchange to provide all movements for NC 147, I-40, and the future Triangle Parkway. This interchange was constructed with the intent that the NC 147 spur connection to T.W. Alexander Drive would eventually be closed to provide the connection for Triangle Parkway. In addition, NCTA's professional engineering design staff and consultants have completed an independent assessment of the existing NC 147 spur. They have found that maintaining the NC 147 spur as part of the Triangle Parkway project is unfeasible and unsafe for multiple reasons, including:

- The Triangle Parkway is proposed as a freeway facility with full control of access. As such, guidance developed by the American Association of State Highway Transportation Officials (AASHTO) recommends an urban interchange spacing of one mile for safety and operation. Minimum spacing of urban interchanges is determined by assessing weaving volumes, ability to sign, signal progression along cross streets, and lengths of speed-change lanes. Urban interchanges less than a mile apart can be constructed if designed with grade-separated ramps or by adding collector-distributor roads. The short distance between the NC 147 spur and I-40 and the high traffic volumes projected on Triangle Parkway and I-40 result in the determination that maintaining the NC 147 spur is unfeasible and unsafe.



- If the NC 147 spur was maintained, it would create a weaving section (or distance for traffic to change lanes) of approximately 720 feet between it and the existing I-40/NC 147 interchange. The [AASHTO-Geometric Design of Highways and Streets](#) and [NCDOT Highway Design Manual](#) require a minimum weaving section of 2,000 feet.
- The proposed alignment and grade of the Triangle Parkway is such that a horizontal curve is required in the area of the NC 147 spur. This horizontal curve will require the roadway section to be super-elevated, or banked, to allow vehicles to maintain a safe traveling speed while operating in the curve section. The super-elevation for this roadway section would negatively impact the existing access point to T.W. Alexander Drive.
- Providing access for only one of the four possible movements at this location is non-standard and would be confusing to users unfamiliar with the area.

The NCTA has agreed to keep the NC 147 spur between I-40 and T.W. Alexander Drive open as long as possible during construction of the Triangle Parkway. This will be accomplished through the use of a detour when the existing NC 54 bridge over Triangle Parkway is replaced. The addition of this detour has resulted in additional cost to the project, but NCTA believes it is a reasonable expense in order to address concerns expressed by the traveling public.

With the removal of the NC 147 spur, a potential shift in traffic to the USEPA/NIEHS Hopson Road entrance is anticipated. NCDOT has committed to allowing a policy exemption on Hopson Road to provide full-movement access at the entrance to the USEPA/NIEHS campus as a form of mitigation for the access change associated with closure of the NC 147 spur. NCDOT design policy requires a minimum of 1000 feet of control of access from the ramp intersection. The policy further states if 1000 feet of control of access can not be maintained then 350 feet of control of access should be maintained and then a raised island should then be used to eliminate left turns for the remaining 650 feet. In addition, the installation of a future signal (when warranted and approved by NCDOT) at this location will also assist in mitigating the access changes from the required closure of the NC 147 spur.

Even with the removal of the NC 147 spur, the addition of the proposed Triangle Parkway to the transportation network would provide congestion relief benefits to the existing study area transportation network. The traffic analysis shows that the proposed Triangle Parkway project reduces traffic volumes on NC 54, NC 55, Davis Drive, Page Road, and Miami Boulevard. Traffic along T.W. Alexander Drive within the study area increases by 5,400 vehicles per day north of I-40 and 6,400 vehicles per day south of I-40 in year 2030.

Although some individuals within the study area would experience longer trip lengths due to the removal of the NC 147 spur, the overwhelming majority of trip lengths within the study area will be reduced. This reduction was quantified by the overall decrease in vehicle-miles traveled (VMT) and vehicle-hours traveled (VHT) for the study area in the year 2030. The analysis conducted for the Triangle Parkway project area shows a 2030 daily VMT reduction of 70,286 (-1.85 percent) and a VHT reduction of 7,576 (-7.44 percent). The VMT and VHT analysis is documented in [North Carolina Turnpike Authority STIP Project U-4763B – Triangle Parkway Traffic Operations Technical Memorandum Northern Wake Expressway to I-40 \(January 2008\)](#).

Davis Drive Spur/Kit Creek Road Access

There were numerous comments opposing the closure of the Davis Drive spur from NC 540. A number of citizens requested that NCTA consider other designs to allow direct access to Kit Creek Road at



NC 540. The NCTA held two meetings with Cisco employees where the Regional Transportation Alliance and Cisco provided NCTA with five alternative interchange design concepts for consideration to help mitigate the closure of the Davis Drive spur. The minutes from these meetings are in Appendix C.

Response: NCDOT opened the Davis Drive spur in July 2007 as a temporary connection from NC 540 to Davis Drive pending the construction of Triangle Parkway. This connection will need to be closed with the construction of Triangle Parkway because there will not be enough room to safely include the ramps to Davis Drive/Kit Creek Road between the NC 540/Triangle Parkway interchange and the Davis Drive interchange. The weave or distance for traffic to change lanes between interchanges is too short to meet NCDOT and AASHTO design criteria.

Although the closure would result in a longer route for some, the traffic analysis indicates that the total number of VMT and VHT decreases for the project study area and the region if Triangle Parkway is constructed and the spur is closed. It is estimated that commuters utilizing the proposed Triangle Parkway/Davis Drive intersection will be required to travel approximately two additional miles once the temporary connector is closed.

First Environments Early Learning Center

There were numerous concerns regarding safety, noise, air, and construction impacts at the FEELC childcare facility, as well as the proximity of the road to FEELC. These concerns were raised at the Public Hearing, in written comments, and in the form of a petition. There was also a request that NCTA continue to investigate methods to mitigate impacts to the FEELC childcare facility, during and after construction.

Response: The specific location of the roadway was developed with an emphasis on minimizing overall impacts to the human and natural resources at this location. Specifically, the proposed roadway design minimizes impacts to wetlands, streams, and properties. The design for Triangle Parkway utilizes property reserved for this roadway by RTF and incorporates a retaining wall to avoid right-of-way impacts to the USEPA property and minimize longitudinal impacts to Burdens Creek. In addition, although there are no current plans for widening Triangle Parkway, it should be noted that if Triangle Parkway is widened to eight lanes in the future, the additional lanes will be accommodated in the median; therefore, the additional travel lanes would not be located any closer to the FEELC childcare facility.

Regarding safety and construction impacts, the proposed project is a full control of access freeway that will have fencing its entire length, which will limit direct access from the Triangle Parkway. The Design Build Team will not be allowed to maintain their construction staging areas adjacent to the FEELC childcare facility.

Both a preliminary level and a more detailed design level noise analyses were prepared for the Triangle Parkway. These analyses identified locations where noise levels would approach or exceed the NCDOT Noise Abatement Criteria or have a substantial increase from the existing noise levels. Noise mitigation was evaluated for each location predicted to have noise impacts in the design year (2030). Based on these analyses and the NCDOT Traffic Noise Abatement Policy, a noise impact would occur at the FEELC childcare facility. A noise barrier was determined to be reasonable and feasible at this location.

The NCTA received the written agreement dated April 23, 2008 from the federal landowner to construct a noise barrier adjacent to the FEELC childcare facility to mitigate noise impacts from the Triangle



Parkway project (See Appendix A). The noise barrier adjacent to FEELC will be constructed as part of the project. The actual design and dimensions of the noise barrier will be determined during final design.

Regarding the air quality concerns related to the project, an MSAT analysis was conducted in accordance with the Federal Highway Administration Interim Guidance on Air Toxic Analysis in NEPA Documents dated February 3, 2006. The approach applied in this guidance characterizes the trend in MSAT emissions and the difference in MSAT emissions between alternatives, but does not attempt to characterize health risks or microscale impacts, due to the uncertainty associated with available analysis tools.

The information that there would be increases and decreases in localized MSAT emissions is provided in the interest of public disclosure. However, as noted above, FHWA does not believe that available analysis tools are precise enough to quantify the health effects of these localized changes. Also, it is important to remember that MSAT health effects are based on annual-average exposure (for non-cancer effects) and 70-year lifetime exposure (for carcinogenic effects). Thus, the change in emissions in one localized area is not a reliable indicator of overall health impacts, because it does not represent the change in overall annual or lifetime exposure.

Coordination between Research Triangle Foundation (RTF), USEPA, NIEHS, and NCTA has been maintained throughout the development stages of this project. The RTF identified the Triangle Parkway in their 1958 Master Plan, and has subsequently continued to reserve property for Triangle Parkway while development has continued throughout the area. References to the reserved property were included in updated RTP Master Plans, as illustrated within the 1976 EIS prepared for the federal use of the property within RTP. A map on page 6-2 of the 1976 EIS shows the future Triangle Parkway, labeled as “Proposed Roadway” at that time. The route for the Triangle Parkway has been consistently shown on the RTP Master Plan since 1958. The USEPA and NIEHS facilities were constructed pursuant to a 1994 EA and 1995 FONSI. The National Environmental Policy Act (NEPA) Review for the FEELC childcare facility was a Categorical Exclusion prepared by USEPA in March 2004; the FEELC was opened in 2005. The decisions in these documents, including the location of the FEELC childcare facility, were determined by USEPA in coordination with RTF. The existence of the reserved right-of-way for the Triangle Parkway was clearly shown on the RTF Master Plan at the time USEPA made the decision to locate the FEELC childcare facility at its current location. The USEPA's EA in 1994 included a proposed childcare center at its current location; the EA did not express any concerns about the proximity of the road to the childcare center. In addition, the USEPA stated in a meeting held June 27, 2006 with NCTA (See minutes in Appendix C) that they were aware of the proposed location of the Triangle Parkway when they determined the location of the FEELC childcare facility. The USEPA's NEPA documentation for the FEELC in 2004 considered a wide range of issues associated with locating the FEELC, but did not identify any concerns associated with its proximity to the proposed Triangle Parkway.

Toll Collection and Fees

A number of citizens expressed opposition to toll roads, citing that toll roads are not accessible and are archaic. Several people suggested identifying other funding sources, such as the businesses benefiting from the construction of the project. There was opposition specifically related to tolls on NC 540 and the Triangle Parkway.

Response: North Carolina's rapid growth has placed increasing demands on our already stressed transportation infrastructure. According to NCDOT's 2006 Mid-Cycle Update: North Carolina Statewide Multimodal Transportation Plan, there is a \$65 billion gap between long-term needs and forecasted



revenue over a 25-year planning horizon. That trend is expected to continue in the coming years with an estimated 42 percent increase in population by 2030.

The NCTA 2006 Annual Report to the Joint Legislative Transportation Oversight Committee (JLTOC) notes the advantages and "...reality of these projects taking shape and delivering them to the motoring public years or decades sooner than would be possible through traditional means ..." [NCTA is] "...proving that financing projects with tolls avoids the vastly inflated [construction] costs from project delay and reduces the risk of being able to build at all. In addition, with the NCTA's paying both construction and maintenance costs for the life of the projects, hundreds of millions of highly competitive public dollars will be returned to the TIP for other critical highway needs."

Thus, North Carolina faces an important choice: find new sources of funding that could speed construction of some critical highway projects, or wait years, perhaps even decades, until traditional funds are available to build non-toll roads.

It also is important to note that tolling serves as a demand management tool, in addition to providing needed project financing. The traffic forecasting for this project shows that, with tolling, the Triangle Parkway project will actually result in a small decrease in both VMT and VHT.

For additional information, please refer to House Bill 644 that amended the North Carolina General Statutes §§ 136-89.180 through §§ 136-89.197 and House Bill 253, which authorized the NCTA to develop, construct, operate, and maintain up to nine toll facilities.

Toll Comments/Questions

Twenty-eight people submitted general comments or questions related to tolling. Of these, six expressed support for the use of tolls as a method of alternative funding for transportation. Supporters cited tolling as an expeditious way to achieve development and implementation of important projects, such as Triangle Parkway, especially given the continuous inflation of construction costs. A majority of the remaining toll comments were related to how tolls would be collected and the amount of the toll fees.

Response: The exact amount of the toll fees has not yet been finalized, although it is anticipated that the tolls will cost between \$0.10 and \$0.15 per mile. Preliminarily, NCTA is considering different pricing for different types of vehicles. These fees will be determined based on the findings of the Triangle Expressway Comprehensive Traffic and Revenue Study, which is available on NCTA's website at: <http://www.ncturnpike.org/pdf/ClientTriangleExpresswayComprehensivTrafficandRevenueStudy.pdf>.

The toll collection on Triangle Parkway is currently planned for all electronic collection, which will not require any stopping or slowing down to pay the toll. The toll fee will be based on the distance traveled and the vehicle classification.

The NCTA is currently reviewing various methods for the payment of toll fees. One of the options under review includes opening accounts and the use of a transponder. Video tolling will also likely be implemented for those who occasionally travel on Triangle Parkway. Ensuring convenient opportunities are available to the public will remain a consideration in the NCTA's studies for toll collection opportunities.

Kit Creek Road Connector

Approximately half of the comments received regarding the Kit Creek Road connector supported the connector, while the other half opposed the connector. Reasons for support included the need for Kitts Creek subdivision access to NC 540 and Davis Drive, and anticipation that the connector will not



experience heavy traffic volumes because there will be no easy outlet for traffic on the Church Street side of Kitts Creek. Reasons for opposition included concern about the safety of a major residential development in the middle of the proposed connector that may carry up to 20,000 vehicles per day in the year 2030. Some of the citizens opposing the connector also expressed concern about the adverse impacts to homes and properties. In addition, these citizens also provided other recommendations, such as constructing the connector as a pedestrian/bike-only facility for residents in the area to link to greenways and Triangle Transit (TT) bus stops or connecting the roadway back as it was prior to the construction of the NC 540 project.

Response: NCTA has included the reconnection of Kit Creek Road in the project to accommodate a commitment made by the NCDOT to the Town of Morrisville in a letter dated March 11, 2003. In response to the comments received regarding the concerns and potential impacts associated with this connection, the Town of Morrisville is preparing a study to review the transportation needs and is considering citizens' comments and the Kitts Creek subdivision concerns regarding this connector. The study will consider the traffic and emergency services implications of closing the Barbee Road (Town proposed closure) and NC 54/Church Street (NCDOT proposed closure) at-grade railroad crossings. The town anticipates that both railroad crossings will be closed within two years, although the NC 54/Church Street crossing will remain a right-in/right-out only crossing until the Hopson Road grade separation over the railroad is completed. If the Town of Morrisville determines following the traffic study that they do not want this connection constructed and transmits a letter to the NCTA requesting that this connection be removed from the project, then NCTA will remove the Kit Creek Road connector from the project.

NCTA recommends that interested parties contact the Town Manager, Mayor, or Town of Morrisville Planning Department to further discuss any concerns related to the Kit Creek Road connector. It should be noted that if the decision is made to not build the Kit Creek Road connector, impacts to the human and natural environment would be further minimized. Contact information is as follows:

John Whitson
Manager, Town of Morrisville
260 Town Hall Drive, Suite B
Morrisville, NC 27560
Phone: (919) 463-6150
Fax: (919) 481-2907
Email: jwhitson@ci.morrisville.nc.us

Jan Faulkner
Mayor, Town of Morrisville
137 Walton's Creek Road
Morrisville, NC 27560
Phone: (919) 481-0122
Email: jfaulkner@ci.morrisville.nc.us

Ben Hitchings
Planning Director, Town of Morrisville
260 Town Hall Drive, Suite B
Morrisville, NC 27560
Phone: (919) 463-6194
Fax: (919) 481-2907
Email: bhitchings@ci.morrisville.nc.us



Air Quality

There were several concerns expressed regarding the air quality modeling and analysis conducted for the project. These concerns included ozone and that a quantitative analysis and an in-depth discussion at a local level was not done for MSATs. Concern was also expressed that FHWA guidelines are not stringent enough regarding MSATs.

Response: USEPA's conformity rule does not require, and FHWA does not perform, dispersion modeling for ozone concentrations as part of highway project air quality analyses. Ozone is a regional-scale pollutant, and one would not expect measurable microscale ozone impacts from individual highway projects. Instead, ozone impacts of highway projects are determined through the regional transportation conformity process, using the budget test (or interim emissions tests, if they apply) to evaluate the impact of the transportation plan and STIP as a whole on ozone precursor emissions. This project is included in conforming 2030 Long Range Transportation Plans and 2007-2013 Metropolitan Transportation Improvement Programs (MTIP) for the eight-hour Ozone Standard in compliance with 40 CFR 51 and 93.

The MSAT analysis was conducted in accordance with the Federal Highway Administration Interim Guidance on Air Toxic Analysis in NEPA Documents dated February 3, 2006. The approach applied in this guidance characterizes the trend in MSAT emissions and the difference in MSAT emissions between alternatives, but does not attempt to characterize health risks or microscale impacts, due to the uncertainty associated with available analysis tools. In late 2007, the U.S. District Court in the Southern District of Maryland upheld this approach in ruling on a challenge to the Inter-County Connector project, stating that "the Defendants' methodology was reasonable and should be upheld . . . Defendant's failure to consider Plaintiffs' approach to the health effects analysis, which could be ascertained, if at all, only through uncertain modeling techniques, did not preclude informed decision-making under NEPA."

FHWA has concerns about using dispersion techniques (i.e., noise barrier construction, retaining walls, and guardrails) in an attempt to affect the concentration of a pollutant in the ambient air. More information on the effectiveness and reliability, plus the design specifications required to influence a beneficial change, is needed. Reducing lane, median, and/or shoulder widths may require safety design compromises that need to be investigated. Such changes would also affect the design capacity of the facility and adversely affect vehicle operating speeds and MSAT emissions.

Construction

There were a number of comments received regarding construction-related impacts, such as air quality (including sustainable practice, open burning, dust suppression, and reduction of harmful emissions from construction equipment), noise reduction measures, blasting, clearing of trees, and considerations for mitigation for the impact to the Significant Natural Heritage Area.

Response: Impacts associated with construction are considered short-term impacts; however, the final RFP for the Design Build Team includes requirements and incentives to minimize the potential for these temporary impacts. The project will follow NCDOT's Best Management Practices for Construction and Maintenance Activities (BMP-CMA) and Protection of Surface Waters (BMP-PSW). Sedimentation control guidelines will also be enforced. In addition, NCTA requires the Design Build Team to follow NCDOT standards and specifications, including the BMP requirements outlined in the NPDES Permit, to ensure construction impacts are minimized. The RFP disallows open burning and provides guidelines pertaining to idling emission, and the locations of the staging areas.



NCTA has committed to minimize clearing of trees and vegetation throughout the project area as much as possible. In addition, NCTA has committed to coordinate with adjacent property owners regarding blasting and the relocation of utilities. A stringent provision is included in the final Design Build RFP for blasting controls and monitoring impacts from blasting.

The North Carolina Native Plant Society has shown interest in performing plant rescues within the designated Significant Natural Heritage Area prior to construction. NCTA will coordinate the construction of the project with them to determine the feasibility of relocating any of the species in this area.

Bike and Pedestrian Accommodations

Approximately five citizens or organizations submitted comments regarding the bicycle and pedestrian facilities, including requests for accommodating these facilities on the proposed project. Most of the comments requested new or replacement sidewalks, bicycle lanes, or multi-use trails to maintain existing connectivity.

Response: Because Triangle Parkway will be a freeway-type facility, it is not compatible with or safe for bicycle and pedestrian traffic. However, bicycle and pedestrian accommodations were considered for the connecting roadways in accordance with the [North Carolina Bicycle Facilities Planning and Design Guidelines](#) and the NCDOT [Planning and Designing Local Pedestrian Facilities](#).

These guidelines state that existing facilities disturbed from road improvements will be replaced. New facilities can be constructed at the request of the municipality if a cost sharing arrangement is agreed upon based on the NCDOT cost sharing formula. The bridge on Kit Creek Road over the Triangle Parkway will accommodate a future sidewalk on the north side of the bridge to connect to the RTP sidewalk. The section of Davis Drive at Triangle Parkway will accommodate a future sidewalk on the south side and will be constructed with sidewalk on the north side to connect to the existing multi-use path. The section of Hopson Road at Triangle Parkway will accommodate a future sidewalk on the south side and will be constructed with sidewalk on the north side. The bridge on NC 54 over Triangle Parkway will include sidewalks on both sides of the bridge and the reconnection of the existing jogging trail.

The sections of Davis Drive and Hopson Road proposed to be widened as part of the project will be constructed with 14-foot outside lanes to accommodate bicycles and the section of NC 54 to be reconstructed as part of the project will have 14-foot outside lanes to accommodate bicycles. Also, Kit Creek Road will be constructed with four-foot paved shoulders in each direction to accommodate bicycles and will accommodate a future sidewalk along its north side.

4.4 Certification of Public Hearing Held

In accordance with 23 U.S.C. 128, the NCTA certifies that a public hearing for the subject project has been held and the social, economic, and environmental impacts, consistency with local community planning goals and objectives, and comments from individuals have been considered in the selection of the preferred alternative for the project. A transcript of the public hearing (See Appendix C) was prepared and forwarded to the FHWA along with the certification.



5.1 Design Noise Report

Noise impacts at the FEELC childcare facility located on the USEPA/NIEHS campus were evaluated in the October 2007 Traffic Noise Technical Memorandum for Triangle Parkway. A noise barrier at this location was identified in the Technical Memorandum as being preliminarily reasonable and feasible, subject to further detailed noise analysis and public involvement.

A Design Noise Report was prepared and the detailed noise analysis and barrier design are documented in the Design Noise Report STIP U-4763B (March 2008) which is incorporated by reference. The Design Noise Report determined that a noise barrier would meet NCDOT's definition of reasonable and feasible and, therefore, is recommended for construction. The federal property owner has agreed to the installation of the barrier. The approved noise ballot can be found in Appendix A. The noise barrier adjacent to the FEELC childcare facility will be constructed as part of the project. The actual design and dimensions of the noise barrier will be determined during final design.

5.2 Table 5-1 Preferred Alternative - Impact Summary

Chapter 5, Page 5-2, Table 5-1 in the EA was updated to include the 23 parcels impacted by the project, and the Urban/Disturbed Land was updated to reflect the improvements within the NC 147 median. The updated information is shown in Table 2 on Page 4 in this document.

5.3 Toll Collection Locations

Chapter 3, Page 3-2, Section 3.1.3 and Figures A-1 through A-6 of the EA indicated preliminary locations for toll collections. These toll collection locations are subject to change. Changes in toll collection locations will not result in any additional impacts or a substantial change in fees. The use of an electronic toll collection system will allow the NCTA greater latitude in locating the toll collection facilities therefore resulting in lower impacts to the human and natural environment.

5.4 Unnamed Tributary to Burdens Creek – Hollow Creek

The EA references the stream on the east side of the project between Hopson Road and I-40 as the "Unnamed Tributary to Burdens Creek" based on the information from the USGS quad maps. However, based on the survey deed research and a review of older master plans prepared by RTF, this creek has a local name and has been previously referred to as "Hollow Creek." Therefore, the Unnamed Tributary to Burdens Creek referenced in the EA and Hollow Creek referenced on design plans and other project-related materials are the same stream.

5.5 Box Culvert Sizes

Chapter 3, Page 3-10 (second-to-last bullet) in the EA lists two 29-foot x 7-foot reinforced concrete box culverts (RCBC). This was a typographical error and should read: two (2) 9-foot x 7-foot RCBC.

5.6 Appendix D, NCDENR Scoping Comments

Appendix D – in the EA included a duplicate page of the NCDENR scoping comments. The duplicated page of the NCDENR Division of Environmental Health scoping comments is to be replaced with

page 2 of 2 from the NCDENR Division of Environmental Health scoping comments. It is provided in Appendix A, Page A-9 of this FONSI.

5.7 Environmental Justice

The EA finds that the construction of the Preferred Alternative will not have a disproportionately high and adverse impact on minority and low-income populations (EA, p. 5-29). To clarify the basis for this finding, the following additional explanation has been developed.

The Triangle Parkway project has the potential for adverse impacts on minority and low-income populations in two ways: (1) the impacts that result from building and operating any new road - e.g., taking of land, noise impacts, air impacts, etc.; and (2) the impacts that result specifically from tolling. The first category of impacts mainly involves people who are living in the immediate vicinity of the project. The second category involves people who are potential users of the road - a much broader geographic area, since many of the users will live outside the immediate vicinity of the project. In determining the existence of a minority or low-income population, it is important to consider both of these types of impacts and, by extension, both of these geographic areas. For the first category, FHWA has considered the potential for disproportionate impacts on minority and low-income populations in the "project area", as defined in Figure I-1 in the EA. For the second category, FHWA has considered the potential for disproportionate impacts on minority and low-income populations in a much broader area - the "Demographic Area" as defined in Figure 4-1 (labeled as Census Block Groups) (See EA, p. 4-1).

Impacts of the Road

FHWA has considered the potential for disproportionate impacts to minority and low-income populations from building and operating the road - e.g., relocations, visual impacts, noise impacts, and air quality impacts. For this type of impact, FHWA has considered the "project area", because that is the area where the impacts of the road itself could be felt (See Figure I-1). There are minority and low-income households present in the project area, but they are not meaningfully greater than the general population. The "project area" is predominantly located in RTP, which includes businesses and research and development facilities. However, as noted in FHWA's guidance on environmental justice, "while the minority or low-income population in an area may be small, this does not eliminate the possibility of a disproportionately high and adverse effect ... It is important to consider the comparative impact of an action among different population groups." See <http://www.fhwa.dot.gov/environment/ejustice/facts/index.htm>. Therefore, while the minority and low-income population in the project area is small, an analysis has been conducted to assess the potential for disproportionate impacts. This analysis shows that, out of the 23 properties being impacted by right-of-way acquisition, only one will be a minority or low-income household; ongoing discussions with the owners of that property may eliminate or reduce even that one impact. The noise, visual, and air quality impacts of the road will affect all of those who live and work in the vicinity of the project. While some minority and low-income households will be impacted - primarily along Kit Creek Road at the northeast quadrant of the NC 540/Triangle Parkway interchange - the vast majority of impacted areas are not predominantly minority or low-income. Based on this information, FHWA has concluded that the road itself will not have disproportionately high and adverse impacts on minority and low-income populations in the Triangle Parkway "project area."



Impacts of Tolling

FHWA also has considered the potential for disproportionate impacts to minority and low-income populations resulting from all-electronic tolling. When assessing the potential impacts of tolling, FHWA considers potential users of the facility, not just those who live nearby. Therefore, as noted above, FHWA has used the Demographic Area - a broader region that encompasses many of the potential regular users of Triangle Parkway - for purposes of assessing the potential for tolls to cause a disproportionate impact on minority or low-income users. There are minority and low-income households present in the Demographic Area, but as with the project area, they are not meaningfully greater than the general population. Within the Demographic Area, 77.4 percent of the population is white. Of the remaining 22.6 percent, African Americans comprise 9.6 percent and Hispanics or Latinos comprise 3.1 percent. By comparison, African Americans comprise 21.4 percent of the population of North Carolina as a whole and Hispanics/Latinos comprise 4.7 percent of the State's population. While the number of minority and low-income households in the Demographic Area may be relatively low compared to the statewide average, it is clear that a minority and low-income population does exist in this area. Therefore, an analysis has been conducted to assess the potential for disproportionate impacts on this population. The EA shows the following three principal travel patterns among the counties included in the CAMPO and DCHC MPO jurisdictional areas that would be most likely to use Triangle Parkway (EA, p. 1-4, Table 1-1):

- commuters from Wake County to Durham County (43,351 workers);
- commuters within Durham County (84,262 workers); and
- commuters from Durham County to Wake County (13,929 workers).

Given that Wake and Durham County workers would likely be the majority users of the facility, it is important to consider the demographic profile of Wake and Durham Counties in assessing the potential for disproportionate impacts on minority and low-income populations. The data in the EA shows that Wake County had a median household income of \$54,988, well above the North Carolina statewide average of \$39,184. The median household income in Durham County was \$43,337, still above the North Carolina statewide average (EA, p. 4-9, Table 4-8). It also is appropriate to consider the Demographic Area as a whole - since many of the users of the facility will be drawn from the Demographic Area. The data in the EA show that the Demographic Area - perhaps the area that best encompasses the range of potential users - had a median household income of \$91,844, more than double the statewide average. In addition, the data in the EA shows that Wake County had 7.8 percent of individuals below poverty level, well below the North Carolina statewide average of 12.3 percent. Durham County had 13.4 percent of individuals below poverty level, which is similar to the North Carolina statewide average. Also, the data in the EA shows that the Demographic Area had 2.8 percent of individuals below the poverty level, less than a fourth of the statewide average (EA, p. 4-9, Table 4-8). This data indicates that the financial burden of tolls charged for using Triangle Parkway will fall upon households with above-average incomes. Therefore, to the extent that there is a disproportionate impact, it is a disproportionate impact on high-income households, not low-income households. Lastly, it also is important to note that the project will also have benefits for the users of existing, non-toll roads, because the new capacity provided by Triangle Parkway will divert traffic off existing parallel routes, primarily NC 55 and NC 54, which will relieve congestion on those roads. Therefore, those who choose not to pay the toll will nonetheless receive a benefit - in the form of less congestion on existing non-toll roads. Based on this information, FHWA has concluded that tolling on Triangle Parkway will not have disproportionately high and adverse impacts on minority and low-income populations in the Triangle Parkway Demographic Area.



Based upon the project studies and corresponding evaluations documented in the EA and upon review of comments received from federal, state, and local agencies and the public, it is the finding of the North Carolina Turnpike Authority, North Carolina Department of Transportation, and Federal Highway Administration that this project will not have a significant adverse impact upon the human or natural environment. Impacts to the human and natural environment are summarized in Table 3.

In relation to the context and intensity of adverse impacts generated with this project, there are no significant impacts to natural, ecological, cultural, or scenic resources expected. The proposed project is consistent with local plans and will not have disproportionately high and adverse impacts on minority and low-income populations. In view of the completed evaluations, it has been determined a Finding of No Significant Impact is applicable for this project. Therefore, neither an Environmental Impact Statement nor further environmental analysis will be required.

TABLE 3 IMPACTS

Section of EA	Significant Impact?
5.1.1 Land Use	No. The project is not expected to disrupt or change land use patterns or result in new land use patterns. The project is consistent with area land use plans and long range transportation plans.
5.1.2 Community	No. The project is compatible with the local communities in the project area. The project conforms to the RTP Master Plan and the corridor has been reserved since 1958.
5.1.3 Farmland	No. The project area does not include active farms and is zoned and restricted to research type facilities. The project also would not cross or disrupt the operation of any existing farms. The Preferred Alternative would not impact farmland located within Durham or Wake Counties.
5.1.4 Historic Cultural Resources	No. There are no eligible historic architectural or archaeological resources within the project area.
5.1.5 Section 4(f) Resources	No. There are no Section 4(f) resources located within the project area.
5.1.6 Wild and Scenic Rivers	No. There are no streams or rivers in Durham or Wake County that qualify for listing as wild and scenic river systems in accordance with the Wild and Scenic Rivers Act (Public Law 90-542).
5.1.7 Hazardous Materials	No. There are no hazardous material sites or underground storage tanks anticipated to be impacted by the project.



TABLE 3 IMPACTS

Section of EA	Significant Impact?
5.1.8 Emergency Services	<p>No.</p> <p>There are no emergency service facilities or operations located in the project area; therefore, construction of the project would not require property or the relocation of any buildings from emergency service facilities. Because Triangle Parkway will offer an additional travel option and potentially change travel patterns in the Triangle region, it should enhance emergency service access within the study area.</p>
5.1.9 Relocation and Right-of-Way Impacts	<p>No.</p> <p>There are only two residential relocations currently anticipated from the construction of the project. Therefore, the project will not result in a significant impact to the human environment.</p>
5.1.10 Utilities	<p>No.</p> <p>NCTA will coordinate utility relocations with local governments and utility providers to minimize impacts and reduce service interruptions. Relocations of private utilities are the responsibility of the utility owners and will be completed in coordination with the Design Build Team.</p> <p>The preliminary routing plans for water and sewer lines do not impact any jurisdictional wetlands or streams. In addition, the Design Build Team will be required to avoid and minimize impacts to wetlands and streams, to the extent practicable, resulting from the relocations of utilities and the Design Build Team will obtain permit modifications if necessary.</p>
5.1.11 Transportation Services	<p>No.</p> <p>The project will improve transportation services in the area by reducing congestion on north-south routes, such as NC 55 and NC 54.</p>
5.1.12 Access Changes	<p>No.</p> <p>There will be access changes required at several locations within the project area. The access changes include access from NC 540 to Davis Drive/Kit Creek Road and access from NC 147 to T.W. Alexander Drive. These changes in access were planned and anticipated when the access was temporarily allowed by the construction of NC 540 and I-40. Also, the Kit Creek Road connector would provide direct access between Davis Drive and Church Street through the Kitts Creek subdivision. Access to several businesses along Davis Drive and Hopson Road (Eisai, Inc., the JDL property, Davis Park and Keystone properties) will change because of the construction of the interchanges at Davis Drive and Hopson Road. The NCTA will coordinate the changes in access with the businesses during the right-of-way phase in order to mitigate the impacts.</p> <p>The project is 3.4 miles in length and will reduce vehicle-miles traveled (VMT) in the entire project study area by over 70,000 VMT per day in year 2030. Additionally, vehicle-hours traveled (VHT) will be reduced within the study area by over 7,575 VHT per day in year 2030. Therefore, even with the changes in access, the overall long-term effects of the Triangle Parkway project on traffic patterns will be beneficial to the Triangle region.</p>



TABLE 3 IMPACTS

Section of EA	Significant Impact?
	<p>The closure of the NC 147 spur will be inconvenient for some users. The closure of the NC 147 spur will result in less than a 0.5-mile difference in distance traveled (an additional 1,200 VMT per day) by those who would use the NC 147 spur. The overall benefit from the project will be positive given the total reduction of 70,000 VMT in the entire study area in year 2030.</p>
<p>5.1.13 Noise</p>	<p>No.</p> <p>Design year (2030) traffic noise levels from the project are expected to approach or exceed the NCDOT noise abatement criteria or substantially increase over existing noise levels for 16 receptors. Where feasible and reasonable, the NCTA has proposed mitigation to minimize these impacts. Based on the <u>NCDOT Traffic Noise Abatement Policy</u>, a noise barrier has been determined feasible and reasonable at the First Environments Early Learning Center childcare facility.</p>
<p>5.1.14 Air Quality</p>	<p>No.</p> <p>The CO hotspot analysis and regional emissions analysis determined the project is in conformity with air quality standards.</p> <p>A quantitative Mobile Source Air Toxics (MSAT) analysis was performed for the project and determined MSAT emissions in 2030 are expected to be relatively similar with the construction of the project relative to the No-Build Alternative.</p> <p>MSAT emissions for the Affected Transportation Network are predicted to decrease by 46 percent between 2006 and 2030 despite increases in VMT. MSAT emissions will be lower than present levels in the design year as a result of USEPA's vehicle and fuel regulations.</p>
<p>5.1.15 Economic Impact</p>	<p>No.</p> <p>The project will improve connectivity and reduce congestion. The project will reduce vehicle-miles traveled (VMT) in the entire project study area by over 70,000 vehicle-miles traveled per day in year 2030. Additionally, vehicle-hours traveled (VHT) will be reduced within the study area by over 7,575 vehicle-hours traveled per day in year 2030. This will result in a positive impact for users and the area's economy.</p>
<p>5.2 Environmental Justice</p>	<p>No.</p> <p>The toll may reduce the benefits of the project for some users, but even with tolling, the project provides a benefit to users of all income levels by reducing congestion on north-south routes, such as NC 55 and NC 54.</p>



TABLE 3 IMPACTS

Section of EA	Significant Impact?
5.3 Construction	<p>No.</p> <p>Since construction operations will be limited to the time needed to complete the project, both benefits and impacts to resources are considered temporary. To minimize these temporary impacts, NCTA will follow the NCDOT standards and specifications to ensure that these impacts are minimized.</p> <p>Based on coordination with the environmental review agencies and the public, several provisions have been added to the final Request for Proposals (RFP) to minimize construction impacts such as the limits on the cutting of trees in the right-of-way, the location of the staging areas for the project, the bridging of wetlands and the use of an all electronic toll system.</p> <p>The use of an all electronic toll system will reduce the construction footprint of the project because the additional pavement needed to provide cash lanes is eliminated. The elimination of the cash lanes results in the reduction of at least 12 feet of pavement at every toll collection location. There are four toll collection locations proposed for the project. The elimination of the cash lanes results in a total reduction of approximately 19,649 square feet of impervious surface.</p>
5.4 Aesthetics	<p>No.</p> <p>Overall, the project is not anticipated to have a substantial visual or aesthetic impact to community resources within the project area or in the surrounding areas.</p> <p>The NCTA will incorporate aesthetic elements into the final design of the project. Examples of possible aesthetic features are the use of brick appearance using form liners and concrete stains on bridge abutments, noise barriers and retaining walls, decorative columns for toll gantries and overhead sign structures, and decorative screening at toll system utility buildings.</p>
5.5.1 Water Resource Impacts	<p>No.</p> <p>The construction activities associated with the project will strictly follow NCDOT's Best Management Practices for Construction and Maintenance Activities (BMP-CMA) and Protection of Surface Waters (BMP-PSW). Sedimentation control guidelines will be strictly enforced during the construction stages of the project.</p>
5.5.2 Flood Hazard Evaluation	<p>No.</p> <p>The project will impact designated floodway zones in the project area by placement of new culverts, extension of existing culverts, and placement of a bridge at Burdens Creek. However, the hydraulic design for these drainage systems will not create constraints to flow; therefore, floodways upstream of the project will not be affected by placement of these structures. One Conditional Letter of Map Revision (CLOMR) request has been prepared for the proposed bridge crossing at Burdens Creek. This CLOMR is under review by FEMA.</p>
5.5.3 Biotic Resources	<p>No.</p> <p>Habitat fragmentation is not likely to be a major effect from the project. Most of the area in the project vicinity is already fragmented; there are few large areas of contiguous terrestrial forested habitats.</p>



TABLE 3 IMPACTS

Section of EA	Significant Impact?
5.5.4 Impacts to Aquatic Communities	<p>No.</p> <p>NCTA requires the development of a stormwater management plan for this project. The Erosion and Sediment Control/Stormwater Pollution Prevention Plan will be implemented and maintained over the life of the project. This plan will incorporate the requirements of NPDES General Permit to Discharge Stormwater. NCDOT's BMPs for the Protection of Surface Waters and Sedimentation Control guidelines will also be followed during project construction. These measures will help protect aquatic organisms in the project area.</p>
5.5.5 Jurisdictional Areas	<p>No.</p> <p>The proposed project will directly impact 3,718 linear feet of perennial streams and 3,519 linear feet of intermittent streams based on revised preliminary design cut and fill slopes and clearing limits. The proposed project will also impact 1.79 acres of jurisdictional wetlands, including 1.35 acres of riverine wetland impacts, 0.38 acre non-riverine wetland impacts, and 0.06 acre isolated wetland impacts. There are no surface water impacts.</p> <p>The NCTA will mitigate the impacts to jurisdictional areas listed above. Therefore, the project will not have a significant impact to jurisdictional areas.</p>
5.5.6 Permitting and Mitigation	<p>No.</p> <p>Permits will be required for roadway encroachment into jurisdictional wetlands and streams.</p> <p>An off-site mitigation program based on in-lieu fee payments made to the North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program was established by the "Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the US Army Corps of Engineers, Wilmington District", dated July 22, 2003. Coordination with the regulatory agencies during NCTA monthly Turnpike Environmental Agency Coordination meetings determined that payment of an in-lieu fee would be an available and satisfactory option for off-site mitigation to satisfy any Federal Clean Water Act compensatory mitigation requirements for this project. A copy of the April 16, 2008 EEP mitigation acceptance letter is included in Appendix A.</p>
5.5.7 Federally Protected Species	<p>No.</p> <p>No federally protected species will be affected by the project.</p>
5.5.8 Federal Species of Concern and State Listed Species	<p>No.</p> <p>The project does not impact any federal species of concern or state listed species.</p>

