I-485 (Charlotte Outer Loop) From I-77 to SR 3642 (Rea Road) South of Charlotte Mecklenburg County Federal Project No. IMNHF-0485(8) WBS Element 39929.1.1 S.T.I.P. PROJECT R-4902

#### ADMINISTRATIVE ACTION REVISED CATEGORICAL EXCLUSION

U. S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION AND N. C. DEPARTMENT OF TRANSPORTATION

submitted pursuant to 42 U.S.C. 4332(2) (c)



**APPROVED:** 

7/18/12 Date

Gregory J. Thorpe, Ph.D., Manager FOC Project Development and Environmental Analysis Unit, NCDOT

<u>1-14-12</u> Date

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John F. Sullivan III, P.E, Division Administrator RW Federal Highway Administration

# I-485 (Charlotte Outer Loop) From I-77 to SR 3624 (Rea Road) South of Charlotte Mecklenburg County Federal Project No. IMNHF-0485(8) WBS Element 39929.1.1 S.T.I.P. PROJECT R-4902

### **REVISED CATEGORICAL EXCLUSION**

**JULY 2012** 

Documentation Prepared in Project Development and Environmental Analysis Unit by:

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# **PROJECT COMMITMENTS**

## I-485 (Charlotte Outer Loop) From I-77 to SR 3624 (Rea Road) South of Charlotte Mecklenburg County Federal Aid Project IMNHF-0485(8) WBS Element 39929.1.1 STIP Project No. R-4902

#### Project Development and Environmental Analysis Branch

The Noise Study Areas identified in this document have been evaluated in detail based upon the project design files. The Final Design Noise Report dated April 4, 2012 includes detailed analyses of three noise walls and recommends they be incorporated into the project's final design.

#### NCDOT Division 10

NCDOT Division 10 will coordinate with Charlotte-Mecklenburg County Parks and Recreation Department prior to construction regarding temporary closures of McAlpine Creek and McMullen Creek greenways during construction.

NCDOT Division 10 will coordinate prior to construction with the Town of Pineville Volunteer Fire Department and the Charlotte-Mecklenburg Emergency Management agency (MEDICS) to allow Pineville Fire Department/MEDICS to plan for and mitigate any potential disruption in access and/or increase response time.

NCDOT Division 10 will coordinate prior to construction with the Charlotte-Mecklenburg County School System to allow Transportation Department to make any necessary plans regarding bus routes in the project area.

NCDOT Division 10 will coordinate prior to construction with Charlotte Area Transit System (CATS) to allow for necessary planning regarding mass transit routes/schedules and commuter programs in the project area.

This project involves construction activities on or adjacent to FEMA-regulated streams. Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

#### NCDOT Hydraulics Unit

The Hydrautics Unit will coordinate with Charlotte-Mecklenburg Storm Water Services and NC Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood Insurance Program, to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement with FMP, dated 6/05/08, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

R-4902 Categorical Exclusion July 2012 GREEN SHEET Page 1 of 1

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## I-485 (Charlotte Outer Loop) From I-77 to SR 3624 (Rea Road) South of Charlotte Mecklenburg County Federal Aid Project IMNHF-0485(8) WBS Element 39929.1.1 S.T.I.P. PROJECT R-4902

**INTRODUCTION:** A Categorical Exclusion for the subject project was approved June 29, 2011. The proposed improvements included widening I-485 (Charlotte Outer Loop) from I-77 to US 521 (Johnston Road). In October 2011, the project terminus was extended approximately 2.4 miles east to SR 3624 (Rea Road). The revised recommended project description is to widen I-485 (Charlotte Outer Loop) from I-77 to SR 3624 (Rea Road) and is described below.

## I. DESCRIPTION OF THE PROPOSED ACTION

The North Carolina Department of Transportation (NCDOT) and Federal Highway Administration (FHWA) propose widening I-485 (Charlotte Outer Loop) to a basic six-lane divided facility from I-77 to SR 3624 (Rea Road) in Mecklenburg County. The project is approximately 9.2 miles in length and is shown in Figure 1. Figure 2 shows the proposed improvements on an aerial photograph. The proposed improvements also include the following:

- Construction of a flyover structure at the US 521 (Johnston Road) interchange to carry traffic from northbound US 521 to westbound I-485 (Charlotte Outer Loop).
- Construction of a westbound auxiliary lane from US 521 (Johnston Road) to NC 51 (Pineville-Matthews Road).
- Resurfacing of the existing outside shoulder on I-485 (Charlotte Outer Loop) within the proposed project limits.
- Widening of all existing structures on I-485 (Charlotte Outer Loop) within the proposed project limits, except for the bridges over I-77.
- Installation of conduit for future Travel Information devices (cameras and dynamic message signs) within the proposed project limits.

The project is included in the *NCDOT 2012-2018 State Transportation Improvement Program* (STIP) as project No. R-4902. The current schedule includes right of way acquisition in fiscal year (FY) 2012 and construction in FY 2012. The STIP includes funding for right of way acquisition of \$100,000, and \$63,000,000 for construction.

The construction cost estimate for the proposed project was updated in April 2012. The proposed improvements will be constructed within the existing right of way therefore acquisition of additional right of way is not anticipated. The current estimated cost for the proposed project is \$132,000,000.

## II. NEED AND PURPOSE FOR PROJECT

### A. <u>Need for Project</u>

I-485 (Charlotte Outer Loop) is the primary circumferential freeway in the Charlotte metropolitan area. I-485 (Charlotte Outer Loop) between I-77 and SR 3624 (Rea Road) serves as a crucial east-west connector for local commuters and functions as a bypass for regional traffic to I-85, I-77, US 521 and US 74.

This segment of I-485 (Charlotte Outer Loop) is one of the most congested freeways in the state of North Carolina. In 2007 average annual daily traffic (AADT) volumes ranged from 100,000 to 124,000 vehicles per day (vpd) within the project limits. Trucks made up 7% of the vehicles within the proposed project limits. Of those trucks, approximately 4 % are dual axle type and 3% are tractor trailers. Based on 2007 AADT, volumes exceed the capacity of existing I-485 (Charlotte Outer Loop) and it operates at a level of service (LOS) F in the peak hour. Traffic volumes are expected to double by the design year (2030). If no improvements are made this segment of I-485 (Charlotte Outer Loop) is expected to operate at a more congested LOS F as traffic density increases and average speed decreases.

### B. <u>Purpose of Project</u>

The purpose of this project is to increase system capacity and improve efficiency on I-485 (Charlotte Outer Loop) for local and regional traffic.

#### C. <u>Description of Existing Facility</u>

#### 1. Functional Classification

I-485 (Charlotte Outer Loop) is classified as a rural principal arterial interstate in the North Carolina functional classification system and is a National Highway System Route.

#### 2. Physical Description of the Existing Facility

I-485 (Charlotte Outer Loop) is a six-lane divided facility (including auxiliary lanes) with three 12-foot lanes in each direction from I-77 to South Boulevard (SR 3998).

From South Boulevard (SR 3998) to SR 3624 (Rea Road), I-485 (Charlotte Outer Loop) is a four-lane divided facility with two 12-foot lanes in each direction.

Within the proposed project limits, cable guard rail exists within a 70-foot grassed median. Photos showing the existing facility are presented in Figure 3 in Appendix A.

#### 3. Right of Way and Access Control

The existing right of way width varies from 350 to 380 feet along I-485 (Charlotte Outer Loop) within the proposed project limits. Access to I-485 (Charlotte Outer Loop) is fully controlled and is limited to the five interchanges within the proposed project limits: I-77, South Boulevard (SR 3998)/ North Polk Street (SR 4982), NC 51 (Pineville-Matthews Road), US 521 (Johnston Road), and SR 3624 (Rea Road). Nations Ford Road (SR 1126), Westinghouse Boulevard (SR 1128), Park Street (SR 3687), Carmel Road, and Elm Lane (SR 3624) cross I-485 via grade separated bridge crossings, but no access is provided to I-485 (Charlotte Outer Loop).

## 4. Speed Limit

The posted speed limit on I-485 (Charlotte Outer Loop) is 65 mph within the proposed project limits.

# 5. Intersections/Interchanges

There are five interchanges and five grade-separated crossings along I-485 (Charlotte Outer Loop) within the proposed project limits. These locations are described below and are shown in Figure 2:

- I-77, Exit 67-three-level fully directional interchange; ramps in all quadrants, flyover ramps in all quadrants for access to northbound and southbound I-77 from east and west bound I-485 (Charlotte Outer Loop) and for access to east and westbound I-485 (Charlotte Outer Loop) from I-77
- Nations Ford Road (SR 1126) grade separated crossing; two-lane bridge over I-485 (Charlotte Outer Loop)
- Westinghouse Boulevard (SR 1128) grade separated crossing; two-lane bridge over I-485 (Charlotte Outer Loop)
- South Boulevard (SR 3998)/North Polk Street (SR 4982), Exit 65-partial cloverleaf interchange; ramps in all four quadrants, loop in northeast quadrant for access to westbound I-485 (Charlotte Outer Loop) from northbound South Boulevard, loop in southeast quadrant for access to northbound South Boulevard from eastbound I-485 (Charlotte Outer Loop)
- NC 51 (Pineville-Matthews Road), Exit 64-partial cloverleaf interchange; with ramps in all quadrants, loop in northwest quadrant for access to southbound NC 51 from westbound I-485, loop in southeast quadrant for access to northbound NC 51 from eastbound I-485 (Charlotte Outer Loop)
- Park Road (SR 3687) grade separated crossing; two-lane bridge over I-485 (Charlotte Outer Loop)
- Carmel Road- grade-separated crossing; two-lane bridge over I-485 (Charlotte Outer Loop)
- US 521 (Johnston Road), Exit 61- partial cloverleaf interchange, with ramps in all quadrants, loop in northwest quadrant for access to southbound US 521 (Johnston Road) from westbound I-485 (Charlotte Outer Loop), and loop in southwest quadrant for access to eastbound I-485 (Charlotte Outer Loop) from southbound US 521 (Johnston Road)
- Elm Lane (SR 3649) grade separated crossing; two-lane bridge over I-485 (Charlotte Outer Loop)
- Rea Road (SR 3624), Exit 59 partial cloverleaf interchange, with ramps in all quadrants, loops in northeast and southwest quadrant for access to westbound and eastbound I-485 (Charlotte Outer Loop) from northbound and southbound Rea Road

## 6. <u>Railroads</u>

Norfolk Southern Railway's north/south Charlotte to Columbia, South Carolina R-line crosses I-485 (Charlotte Outer Loop) via a grade separated bridge west of the South Boulevard (SR 3998)/North Polk Street (SR4982) interchange (Exit 65). The location is shown on Figure 2, sheet 5, in Appendix A

# 7. Structures

The project study area contains twenty three bridges, including nine bridges over streams and fourteen bridges over highways. Information about each structure is presented in Appendix A of this document.

### 8. Bicycle and Pedestrian Facilities/Greenways

### a. Bicycle Facilities

I-485 (Charlotte Outer Loop) is not a designated bicycle route nor is it listed in the STIP as needing incidental bicycle accommodations. Bike lanes exist along two facilities that intersect I-485 (Charlotte Outer Loop) within the proposed project limits, Carmel Road and US 521 (Johnston Road).

### b. Pedestrian Facilities

There are no sidewalks along I-485 (Charlotte Outer Loop) within the proposed project limits. Sidewalks are provided for a short distance on US 521 (Johnston Road) north of the interchange with I-485 (Charlotte Outer Loop). There are existing sidewalks on Nations Ford Road (SR 1126) and Park Road (SR 3687), both of which are grade separated facilities that cross I-485 (Charlotte Outer Loop).

#### c. <u>Greenways</u>

Two greenway facilities are present within the proposed project limits. Lower McAlpine Creek Greenway and McMullen Creek Greenway run under I-485 (Charlotte Outer Loop) adjacent to the bridge structures over McAlpine and McMullen Creeks. These greenways are identified on Figure 2, sheets 8 and 9.

The City of Charlotte Bicycle Master Plan (approved September 9, 2008) includes Little Sugar Creek Greenway currently under development and design in progress. The greenway segment in the design phase is outside the project limits, but is planned to parallel Little Sugar Creek and eventually cross under I-485 (Charlotte Outer Loop). Also, greenway corridors along Sugar Creek and Kings Branch intersect I-485 (Charlotte Outer Loop) are proposed for future greenway development.

#### 9. Utilities

High voltage transmission lines cross I-485 (Charlotte Outer Loop) between US 521 (Johnston Road) and McAlpine Creek. Two substations are located northeast of the I-77/I-485 (Charlotte Outer Loop) interchange, immediately adjacent to the ramp which carries westbound I-485 (Charlotte Outer Loop) traffic onto north and south bound I-77. Neither of these substations are located within existing right of way for the proposed project improvements. The exact locations of these features are presented in Figure 2, sheet 1 in Appendix A.

#### 10. School Buses

Charlotte Mecklenburg County Public School System bus routes utilize segments of I-485 (Charlotte Outer Loop) within the proposed project limits. Forty one buses travel westbound and twenty four buses travel eastbound for a total of 65 total trips per day.

## 11. Airports

There are no airports located within the proposed project limits. Charlotte-Douglas International Airport is located approximately 12 miles to the northwest of the study area.

#### 12. Public Transportation

The Charlotte Area Transit System (CATS) operates public transportation (bus service and light rail service) for both the City of Charlotte and the Town of Pineville within the project study area (see Figure 4). There are seven individual CATS bus routes that provide transit service to or that traverse the project area on Nations Ford Road (SR 1126), Westinghouse Boulevard (SR 1128), South Boulevard (SR 3998), I-485 (Charlotte Outer Loop), North Polk Street (SR 3687), Carmel Road, and US 521 (Johnston Road).

#### 13. Park and Ride Lots

There are no park and ride facilities located within the proposed project limits, but two facilities are located within the project study area. These facilities are described as follows:

#### a. South Boulevard LYNX Blue Line Station

The South Boulevard LYNX Blue Line station is located immediately west of South Boulevard (SR 3998) north of I-485 (Charlotte Outer Loop) exit 65 and includes a 1,200 space underground parking facility and a bus transfer station.

#### b. Carolina Place Mall

Carolina Place Mall, located on NC 51 (Pineville-Matthews Road) south of I-485 (Charlotte Outer Loop), is designated as a CATS park and ride lot for commuters. CATS Routes 58 (Pineville) and 20 (Sharon Road) originate/terminate from this location. See Figure 1 in Appendix A for location of Carolina Place Mall.

#### 14. Lighting

Interchange lighting is provided at the I-77/I-485 (Charlotte Outer Loop) interchange. No other lighting is currently provided within the proposed project limits.

#### 15. Noise Abatement

Noise walls are located in the existing right of way from McAlpine Creek to NC 51 (Pineville-Matthews Road) along both sides of I-485 (Charlotte Outer Loop) within the proposed project limits. Noise walls are shown on Figure 2, sheets 7-9 and sheets 12 and 13.

#### D. <u>Traffic Volumes and Capacity</u>

#### 1. Existing and Future Traffic Volumes

Traffic volumes on I-485 (Charlotte Outer Loop) in the year 2010 range from 115,000 vehicles per day (vpd) to 137,000 vpd in the study area. Future design year (2030) traffic volumes are estimated to range from 182,000 vpd to 204,000 vpd between I-77 and SR 3624 (Rea Road). Figures 5a and 5b, in Appendix A, display existing and future average daily volumes along the corridor.

# 2. Existing and Future Levels of Service

### a. General Information

Freeway element and intersection analyses were performed for this project. Traffic operations analysis for individual elements (basic freeway segments and ramp merge/diverge areas) was conducted using Highway Capacity Software 2000 (HCS 2000, version 4.1f). Synchro Version 7 (Build 757) was used to determine the level of service (LOS), corresponding delay, and capacity at signalized intersections. Highway Capacity Software 2000 (HCS 2000, version 4.1f) was used to determine the LOS, corresponding delay, and capacity at unsignalized intersections.

A copy of the Final Traffic Operations Technical Memorandum, 2010 can be found in the administrative file and is appended by reference.

### b. Existing Levels of Service

The existing freeway operations analysis indicates that I-485 (Charlotte Outer Loop) currently operates at a Level of Service (LOS) of F. The project was broken into segments during the analysis and these segments and corresponding LOS are shown in Figure 6a in Appendix A.

#### c. Future Levels of Service (No Build Scenario)

A No-Build traffic analysis was performed to determine the level of service in the year 2030 if no improvements were made to I-485 (Charlotte Outer Loop) between I-77 and Rea Road (SR 3624). Under a no build scenario, I-485 (Charlotte Outer Loop) will operate at a more congested LOS F by 2030.

#### d. Future Levels of Service- Build Scenario (Preferred Alternative)

The addition of one lane will improve the operation of I-485 (Charlotte Outer Loop) by reducing the density of traffic during peak AM and PM travel times in certain locations and as a result, LOS is improved. These locations and the LOS are identified in Figure 6b in Appendix A. The percent improvements in vehicular densities range from 0% to 75 %. See Appendix B for the listing of densities, speed, and percent improvements for all of the freeway components analyzed along the proposed project limits.

#### E. Crash History

During a three year period between February 1, 2009 and January 31, 2012, 1076 vehicular crashes occurred on I-485 (Charlotte Outer Loop) within the proposed project limits. The most frequent type of crash (56%) consisted of rear end crashes. This was followed by sideswipe crashes in the same direction (13%) and vehicles hitting fixed objects (13%). These accidents are primarily the result of heavy stop and go traffic during peak travel times.

Two fatal crashes were reported between February 1, 2009 and January 31, 2012. The total non-fatal injury crash rates and night crash rates on I-485 (Charlotte Outer Loop) within the proposed project limits are less than the 2008-2010 statewide rates for similar urban interstate facilities. Current crash rates exceed the statewide crash rates and the critical crash rates in the total and nighttime crash type categories. A summary of the accident rates for the analyzed section of I-485 (Charlotte Outer Loop), statewide average rates and the critical rates for similar urban interstate facilities are provided in Table 1.

Crash Type	Number of Crashes	Crash Rate <sup>1</sup>	Statewide Rate <sup>2</sup>	Critical Rate <sup>3</sup>
Total	1078	126.86	101.82	107.57
Fatal	2	0.24	0.43	0.86
Non-Fatal Injury	218	25.65	29.43	32.55
Nighttime	284	33.42	26.07	29.01
Wet Conditions	213	25.07	26.34	29.29

#### Table 1 Crash Rates per 100 million vehicle miles (100MVM)

<sup>1</sup> Crashes per 100 million vehicle miles

<sup>2</sup> 2008-2010 Statewide Crash Rate for Urban Interstate Routes

<sup>3</sup> Based on the statewide crash rate (95% level of confidence

### F. <u>Transportation and Land Use Plans</u>

#### 1. NCDOT State Transportation Improvement Program (STIP)

There are three projects in the vicinity of STIP project R-4902 included in the NCDOT 2012-2018 STIP. Those projects are presented in Table 2 and are shown in Figure 7, Appendix A.

STIP Number	County	Project Description	Project Schedule	
R-2248	Mecklenburg	I-485 (Charlotte Western Outer Loop), West of I-77 to I-85 North	Construction- In progress	
U-3411	Mecklenburg	NC 160 (West Boulevard) Relocation, East of I-485 (Charlotte Outer Loop) to Horseshoe Lane, multi lanes on new location	Construction In Progress	
U-3321	Mecklenburg, Gaston	Garden Parkway, I-85 west of Gastonia to NC 160 in Mecklenburg County, multi lanes on new location	Planning and Design In Progress NC Turnpike Authority Project	

#### **Table 2 Nearby STIP Projects**

#### 2. NCDOT Strategic Highway Corridor

I-485 (Charlotte Outer Loop) is identified as a segment of Strategic Highway Corridor 16, connecting Spartanburg, South Carolina to Petersburg, Virginia. The NCDOT created the Strategic Highway Corridors initiative in collaboration with the N. C. Department of Commerce and the N. C. Department of Environment and Natural Resources. The purpose of this initiative is to protect and maximize the mobility and connectivity on a core set of highway corridors throughout North Carolina, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible and fostering economic prosperity through the quick and efficient movement of people and goods. The Strategic Highway Corridors policy was adopted by the North Carolina Board of Transportation in September 2004.

#### 3. Department of Defense Strategic Highway Network

This segment of I-485 (Charlotte Outer Loop) serves as an access-controlled reliever facility to US 74, which is a part of the Department of Defense Strategic Highway Network (STRAHNET).

#### 4. Mecklenburg-Union MPO Long-Range Transportation Plan

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) is responsible for overseeing the development of a transportation system in Mecklenburg and Union Counties. MUMPO's 2035 Long Range Transportation Plan (LRTP), adopted May 3, 2010, plans for the widening of I-485 to six lanes by 2025 and to eight lanes by 2035.

#### 5. Charlotte Region Fast Lanes Study

The Charlotte Region Fast Lanes Study has been undertaken to examine the feasibility of Fast Lanes on major highways in the area. Study partners include the North Carolina Department of Transportation, the South Carolina DOT, the Mecklenburg-Union Metropolitan Planning Organization, the Cabarrus-Rowan MPO, the Gaston Urban Area MPO, the Rock Hill-Fort Mill Transportation Study, the Lake Norman Rural Planning Organization (RPO), the Rocky River RPO, and the Town of Mooresville. This study was undertaken due to the recognition that traditional approaches to congestion (e.g. widening existing roads) likely will not be sufficient to solve existing or future problems.

Fast Lanes, or managed lanes, offer enhanced operational conditions within separated lanes and provide greater efficiency, free-flow speeds, or reduced congestion. Fast Lane alternatives include High Occupancy Vehicle (HOV) lanes, High Occupancy Toll (HOT) lanes, and Special Use lanes. HOV lanes are reserved for buses, carpools, and vanpools. HOT lanes allow buses, carpools, and vanpools to travel at no charge; single-occupant vehicles are also allowed, but must pay a toll. Special Use lane alternatives include express bus lanes with limited entrances and exits, bus-only lanes, and truck-only lanes.

A Final Corridor Screening Report for the Charlotte Region Fast Lanes Study was completed in February 2008. That report identified the five highway corridors that met the screening criteria and recommended those corridors for detailed study. I-485 (Charlotte Outer Loop) in Mecklenburg County, which includes the segment of I-485 (Charlotte Outer Loop) studied under STIP Project R-4902, was among the five corridors recommended for further evaluation under Phase 2 of the Fast Lanes Study. The Phase 1 report indicates this segment of I-485 (Charlotte Outer Loop) meets the congestion, HOV demand, and physical threshold criteria.

The Phase 2 Analysis for the Charlotte Region Fast Lanes Study was completed and the Fast Lanes Study Final Report was completed in July 2009. The Phase 2 Analysis evaluated the five corridors with respect to trip time savings for managed lane users, levels of congestion in the general purpose and managed lanes, mobility (number of vehicle and person trips per hour, forecasted revenues, and estimated capital costs).

I-485 (Charlotte Outer Loop) was originally constructed to accommodate two additional travel lanes in each direction within the existing median. Design exceptions may be necessary to accommodate the proposed typical section included in the Fast Lanes Study.

#### 6. Local Land Use Plans

The proposed project is not expected to change any local land use plans or to change the existing land use patterns.

### G. <u>System Linkage</u>

## 1. Existing Road Network

## a. Commuting Patterns

I-485 (Charlotte Outer Loop) is the primary circumferential freeway in the Charlotte metropolitan area. I-485 (Charlotte Outer Loop) between I-77 and SR 3624 (Rea Road) serves as a crucial east-west connector for local commuters and functions as a bypass for regional traffic to I-85, I-77, US 521 (Johnston Road), and US 74.

## b. Local Thoroughfare Plan

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) Thoroughfare Plan, adopted November 17, 2004, classifies I-485 (Charlotte Outer Loop) as a Freeway-Expressway (see Figure 8 in Appendix A). Intersecting facilities are classified in the MUMPO Thoroughfare Plan as follows:

- I-77: Freeway-Expressway
- Nations Ford Road (SR 1126): Class II Minor Thoroughfare
- Westinghouse Boulevard (SR 1128): Class II Major Thoroughfare
- South Boulevard (SR 3998)/North Polk Street (SR 4982): Class II Major Thoroughfare
- NC 51 (Pineville-Matthews Road): Class II Major Thoroughfare
- Park Road (SR 3687): Class II Minor Thoroughfare
- Carmel Road: Class II Minor Thoroughfare
- US 521 (Johnston Road): Class II Major Thoroughfare, Limited Access Facility
- Elm Lane (SR 3649): Class II Minor Thoroughfare
- Rea Road (SR 3624): Class II Minor Thoroughfare

## c. Motor Freight Service

I-485 (Charlotte Outer Loop) is a federally designated truck route. Truck traffic accounts for 7% of the existing traffic volumes within the proposed project limits. In addition, the following intersecting facilities within the project study area are designated truck routes; I-77, South Boulevard, and US 521 (Johnston Road) south of I-485 (Charlotte Outer Loop).

## H. Benefits of Proposed Project

The proposed improvements will provide relief from present and future congestion and provide a higher level of efficiency on I-485 (Charlotte Outer Loop) for local and regional traffic. When constructed, the additional lanes should result in a slight reduction in travel time for motorists using this segment of I-485 (Charlotte Outer Loop). In addition, the project will also improve a facility that is consistent with the goals of the National Highway System (NHS), North Carolina Intrastate System, and the Strategic Highway Corridor Initiative.

### III. PROPOSED IMPROVEMENTS

#### A. <u>Alternatives</u>

### 1. No Build Alternative

The no build alternative would not provide relief from existing traffic congestion and would result in the further deterioration of traffic conditions as volumes increase. For this reason, the no-build alternative does not meet the purpose and need of this project.

### 2. Improve Existing Facility (NCDOT-recommended alternative)

The NCDOT recommended alternative proposes improvements to existing I-485 (Charlotte Outer Loop) from I-77 to SR 3624 (Rea Road). This alternative includes construction of one additional travel lane in each direction within the existing median. Proposed improvements to I-485 (Charlotte Outer Loop) are presented are shown in Figure 2 in Appendix A. The proposed improvements also include:

- Construction of a flyover structure at the US 521 (Johnston Road) interchange to carry traffic from northbound US 521 to westbound I-485 (Charlotte Outer Loop).
- Construction of a westbound auxiliary lane from US 521 (Johnston Road) to NC 51 (Pineville-Matthews Road).
- Construction of a twenty two foot wide paved shoulder within the median from I-77 to US 521 (Johnston Road)
- Resurfacing of the existing outside shoulder on I-485 (Charlotte Outer Loop) within the proposed project limits.
- Widening of all existing structures on I-485 (Charlotte Outer Loop) within the proposed project limits.
- Installation of conduit for future Travel Information devices (cameras and dynamic message signs) within the proposed project limits.

## B. Roadway Cross Section and Alignment

A basic six-lane median-divided freeway is proposed along I-485 (Charlotte Outer Loop) (see Figure 9a, typical sections). Providing a basic six-lane freeway throughout the project will require constructing one additional lane in each direction within the existing median along the proposed project limits from I-77 to SR 3642 (Rea Road). A twenty two foot wide paved shoulder is also proposed within the median from I-77 to US 521 (Johnston Road). In addition, a west-bound auxiliary lane from US 521 (Johnston Road) to NC 51 (Pineville-Matthews Road) is proposed.

#### C. <u>Right of Way and Access Control</u>

Project improvements are proposed within existing right of way and the acquisition of additional right of way is not anticipated. Full control of access will be maintained on I-485 (Charlotte Outer Loop).

#### D. Speed Limit

The posted speed limit of 65 mph will be maintained on I-485 (Charlotte Outer Loop).

### E. Design Speed

The proposed design speed is 70 mph for I-485 (Charlotte Outer Loop).

# F. <u>Anticipated Design Exceptions</u>

No design exceptions are anticipated.

### G. Intersections/Interchanges

## US 521 (Johnston Road)

The proposed improvements include the construction of a flyover structure to provide northbound US 521 (Johnston Road) access to westbound I-485 (Charlotte Outer Loop) and will tie into the existing ramp in the northwest quadrant. The existing ramp was constructed to accommodate the flyover structure and will require minor improvements. The left turn movement from US 521 onto the westbound I-485 (Charlotte Outer Loop) ramp will be eliminated; however southbound traffic on US 521 (Johnston Road) will not be affected. The proposed improvements are shown in Figure 2. The proposed typical sections for US 521 (Johnston Road) and proposed flyover structure are shown in Figure 9b in Appendix A.

### H. <u>Railroad Crossings</u>

No changes are anticipated for the existing NS RR Bridge over I-485 (Charlotte Outer Loop) located just west of the I-485 (Charlotte Outer Loop) and South Boulevard interchange.

#### I. <u>Structures</u>

The project study area contains 23 structures, including eleven bridges over highways, nine bridges over streams, and three reinforced concrete box culverts carrying streams under I-485 (Charlotte Outer Loop). The proposed treatment of each structure is presented below:

## 1. <u>Bridges</u>

Existing bridges on I-485 (Charlotte Outer Loop) over I-77, Sugar Creek, Westinghouse Boulevard, NC 51 (Pineville-Matthews Road), Little Sugar Creek, McMullen Creek, and McAlpine Creek will be retained. Of these, all will be widened with the exception of the bridges on I-485 (Charlotte Outer Loop) over I-77. All existing bridges that carry roadways over I-485 (Charlotte Outer Loop) will require installation of concrete barriers or guardrails for median pier protection.

A new flyover structure is proposed at the existing US 521 (Johnston Road) interchange with I-485 (Charlotte Outer Loop). This structure will provide access to westbound I-485 (Charlotte Outer Loop) for northbound US 521 (Johnston Road) traffic.

## 2. Culverts

All existing concrete box culverts and pipe culverts will be retained. All existing drainage structures were designed and constructed to accommodate future in median widening. Existing drainage structures will not require lengthening and no supplemental conveyance is anticipated.

### J. <u>Utilities</u>

The City of Charlotte and the Town of Pineville have utilities that are located along intersecting roads streets within the proposed project limits. The current project scope does not include cross street improvements, with the exception of US 521 (Johnston Road), but it is anticipated that relocation of some existing utilities will be necessary during construction. Other subsurface utilities are also located along the project such as telephone, power, cable, gas and force main sewer.

The proposed Intelligent Transportation Systems (ITS) equipment and measures will require installation of additional utilities. The ITS measures are discussed in Section III N of this document.

### K. <u>Noise Abatement</u>

Based on the final traffic noise analysis performed for the project, and in accordance with the NCDOT Traffic Noise Abatement Policy, 44 potential traffic noise impact areas were identified within the project limits. Three noise barriers are recommended for this project. The locations and details are discussed in the Traffic Noise Analysis section of this document.

#### L. Work Zone, Traffic Control and Construction Phasing

This project is located within a Transportation Management Area (TMA). A TMA is defined as an area with a population greater than 200,000 and the impact of this project is expected to be high. In addition, impacts to high traffic generators on the intersecting streets are anticipated during construction. The use of extensive public outreach is recommended prior to and during construction of this project.

This proposed project will create an impact to motorists and the transportation network surrounding I-485 (Charlotte Outer Loop) and will require a Transportation Management Plan (TMP). Proactive mitigation of traffic is necessary and will include work zone ITS equipment to provide motorists with alternate routes, Enhanced Incident Management (IMAP), additional signing for alternate routes, and other advanced technology devices in work zones to provide and notify motorists of current conditions in the area.

Currently, I-485 (Charlotte Outer Loop) average daily traffic volumes exceed the minimum traffic volume limits used when considering time restrictions during construction and as many lanes as possible will need to be maintained during construction. Temporary pavement, alternative delivery techniques such as accelerated construction and early completion incentives, and other traffic management techniques will be considered during construction.

## M. HOV and HOT Lanes

A 22 foot wide, full depth paved shoulder is proposed within the median from I-77 to US 521 (Johnston Road) for this project. This paved shoulder is proposed to be converted as part of a future project to include managed lanes from I-77 to US 74. A managed lane project is not currently included in the 2012-2018 State Transportation Improvement Plan (STIP) and funding is not currently allocated. A new project that includes the addition of one managed lane in each direction to I-485 from I-77 to US 74 is in the process of being added to the next edition of the STIP.

#### N. Intelligent Transportation Systems Measures

ITS conduit will be installed as a part of this proposed project to facilitate future ITS measures that will be included in the new managed lane project from I-77 to US 74 that is discussed in the previous section above.

## IV. ENVIRONMENTAL EFFECTS OF PROPOSED ACTION

### A. <u>Natural Resources</u>

The Natural Resources and Technical Report (NRTR) was approved in August 2008. An NRTR Addendum for the extension of the project limits to Rea Road (SR 3624) was approved in January 2012. Both reports are located in the project file and are appended by reference.

### 1. Physical Resources

### a. General Information

The project study area is located in the Southern Outer Piedmont ecoregion (45b) of the Piedmont physiographic province of North Carolina (USEPA 2001). Topography in the project vicinity is generally characterized as gently rolling, well rounded hills and low long ridges with a few feet of elevation difference between the hills and valleys. Elevations within the study area range from approximately 540 to 680 feet above mean sea level (MSL).

The study area is dominated by urban disturbed lands and mixed hardwood forest with impervious surfaces covering approximately 22 percent of the study area. The project vicinity is urban to suburban in nature.

## b. Water Resources

Water resources within the project study area are within sub-basin 03-08-34 of the Catawba River Basin (USGS Hydrologic Unit 03050103). Thirty streams were identified in the project study area. The location of each water resource is shown in Figure 2 in Appendix A. Drainages within the project study area are all part of the Lower Catawba River watershed. No lakes or ponds are located within the study area.

All surface waters identified within the study corridor limits have been assigned a primary water resource classification of "C". There are no anadromous fish present or essential fish habitat identified.

Three stream segments within the project study area are included on the 2010 303(d) list of impaired water bodies. Little Sugar Creek (S9) from Archdale Road to NC 51 is listed for copper, ecological/biological integrity for benthos and fish, and fecal coliform. McMullen Creek is listed for ecological/biological integrity for benthos. McAlpine Creek (S3) from NC 51 to US 521 is listed for ecological/biological integrity for both benthos and fish, and fecal coliform. Sugar Creek from SR 1156 to NC 51 is listed for ecological/biological integrity for both benthos and fish, and fecal coliform. No High Quality Waters (HQW), water supply (WS-I or WS-II) areas or Outstanding Resource Waters (ORW's) are located within the study area. No stream that flows through the project study area is designated as a National Wild and Scenic River or a state Natural and Scenic River. There are no trout streams designated by the North Carolina Wildlife Resource Commission (NCWRC).

#### c. Permitted Discharges

There is one permitted discharge within one mile of the project study area. McAlpine Creek Wastewater Treatment Plant, Permit No. NC0024970, is owned by the Charlotte Mecklenburg Utility Department. This large municipal facility is located on McAlpine Creek, approximately 2,050 feet southwest (downstream) from the project study area boundary and discharges 64,000,000 gallons per day (DWQ 2007c). This facility is shown in Figure 2 in Appendix A.

### 2. <u>Terrestrial Community Impacts</u>

Table 3 summarizes acreages of terrestrial communities located within the project study area. The terrestrial communities within the project study area were delineated on an aerial photograph base and verified in the field. The totals presented in Table 3 represent the total coverage area within the project study area of each community type. The actual project impacts will be substantially less than acreages presented in Table 3.

Plant Community	Coverage (acres)
Mesic Mixed Hardwood Forest	104.9
Piedmont / Low Mountain Alluvial Forest	22.7
Pine/Mixed Hardwood Forest	46.4
Agricultural Land	3.8
Maintained/Disturbed Land	342.7
Impervious Surface	211.7
Total:	732.2

#### Table 3 Terrestrial Communities in the Project Study Area

## 3. Jurisdictional Topics

Section 404 of the Clean Water Act (CWA) and Section 401 require regulation of discharges into "Waters of the United States." Although the principal administrative agency of the CWA is the U.S. Environmental Protection Agency (EPA), the USACE has major responsibility for implementation, permitting, and enforcement of provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

Water bodies such as rivers, lakes, and streams are subject to jurisdictional consideration under Section 404. However, by regulation, wetlands are also considered "Waters of the United States."

#### 4. Impacts to Jurisdictional Areas

Jurisdictional areas are present within the project study area. Tables 4 and 5 provide a summary of jurisdictional areas within the project study area and the impacts of the proposed project.

#### a. Impacts to Jurisdictional Wetlands

Table 4 summarizes acreage of wetlands located within the project study area and the impacts of the proposed project.

Wetland	TOTAL	Hydrologic Classification	Wetland Quality Rating	Wetland Impacts (Ac.) Within Slope Stakes/ + 25 Ft
W1	0 11	Rinarian	62	
W2a	0.67	Riparian	82	0.04/0.15
W2b	0.51	Riparian	82	0.02/0.13
W3	0.01	Riparian	43	0.0/0.0
W4	0.03	Riparian	49	0.0/0.0
W5	2.18	Riparian	69	0.0/0.0
W6	0.62	Riparian	69	0.0/0.0
W7	0.03	Riparian	49	0.0/0.0
W8	0.03	Riparian	62	0.0/0.0
WA	0.05	Riparian	29	0.0/0.0
WB	0.07	Riparian	53	0.0/0.0
WC	0.01	Riparian	42	0.0/0.0
WD	0.03	Riparian	35	0.0/0.0

Table 4 Jurisdictional Wetland Areas for the Project Study Area

<sup>a</sup> The number of wetland segments may be greater than the number of wetlands due to the project study area shape.

#### b. Impacts to Jurisdictional Streams

Potential impacts to streams located in the project study area have been analyzed based on the general characteristic of flow (perennial or intermittent). Table 5 summarizes the jurisdictional streams delineated within the project study area and the linear feet of impacts from the proposed project.

Map ID	Length	Perennial	Stream Impacts (linear ft)
Stream No. <sup>a</sup>	Area (ft)	Intermittent	within slope stake/+ 25 it
S1a	467	Perennial	0.0/0.0
S1b	6	Perennial	0.0/0.0
S2a	28	Perennial	0.0/0.0
S2b	87	Perennial	0.0/0.0
\$3	434	Perennial	0.0/0.0
S4	498	Perennial	0.0/0.0
S5	76	Intermittent	0.0/0.0
S6a	163	Intermittent	0.0/0.0
S6b	815	Intermittent	0.0/802.0
S7a	237	Intermittent	0.0/0.0
S7b	286	Intermittent	0.0/0.0
S8a	27	Perennial	0.0/0.0
S8b	85	Perennial	0.0/0.0
S9	651	Perennial	0.0/0.0
S10	25	Perennial	0.0/0.0
S11	491	Perennial	0.0/0.0
S12	35	Perennial	0.0/0.0
S13a	459	Perennial	0.0/0.0
S13b	484	Perennial	0.0/0.0
S13c	1064	Perennial	0.0/0.0
S13d	195	Perennial	0.0/0.0
S14a	8	Perennial	0.0/0.0
S14b	1217	Perennial	0.0/0.0
S14c	5	Perennial	0.0/0.0
S15	63	Intermittent	0.0/0.0
S16	164	Perennial	0.0/0.0
S17	113	Perennial	0.0/0.0
S18a	331	Perennial	0.0/0.0
S18b	1095	Perennial	0.0/0.0
S18c	417	Perennial	0.0/0.0
S19	184	Intermittent	0.0/0.0
S20a	364	Perennial	0.0/0.0
S20b	667	Perennial	0.0/0.0
S21	24	Intermittent	0.0/0.0
S22	37	Intermittent	0.0/0.0
S23a	82	Perennial	0.0/0.0
S23b	68	Intermittent	0.0/0.0
SA	1084	Perennial	0.0/0.0
SB	111	Intermittent	0.0/0.0
SC	539	Intermittent	0.0/0.0
SD	67	Perennial	0.0/0.0
SE	652	Perennial	0.0/0.0
SF	229	Perennial	0.0/0.0
SG	757	Perennial	0.0/0.0

Table 5 Jurisdictional Surface Water Characteristics for the Project Study Area

<sup>a</sup> The number of stream segments may be greater than the number of streams due to the Project Study Area shape.

## 5. Permits and Certifications Required

#### a. Sections 404 and 401 of the Clean Water Act

Impacts to jurisdictional resources will be limited because all proposed improvements are to be completed within the existing right of way, and therefore it is anticipated that construction of the project may be authorized under a United States Army Corps of Engineers (USACE) Nationwide Permit. As such, it is not anticipated that an Individual Section 404 Permit will be needed for this project. The USACE holds the final discretion as to what permit will be required to authorize project construction. In addition to the Section 404 permit, other required authorizations will likely include a corresponding Section 401 Water Quality Certification from the NC Department of Natural Resources Division of Water Quality (NCDWQ).

### b. Mitigation

Mitigation has been defined in National Environmental Policy Act (NEPA) regulations to include efforts which: a) avoid; b) minimize; c) rectify; d) reduce or eliminate; or e) compensate for adverse impacts to the environment [40 CFR 1508.20 (a-e)]. Mitigation of wetland impacts is recommended in accordance with Section 404(b)(1) Guidelines of the CWA (40 CFR 230), Federal Highway Administration (FHWA) step-down procedures (23 CFR 777.1 *et seq.*), mitigation policy mandates articulated in the USACE/EPA Memorandum of Agreement (MOA), Executive Order 11990 (42 FR 26961) (1977), and USFWS mitigation policy directives (46 FR 7644-7663) (1981).

The NCDOT will attempt to avoid and minimize impacts to streams and wetlands to the greatest extent practicable during project design and construction. The NCDOT will investigate potential on-site stream and wetland mitigation opportunities once a final design has been approved and actual construction limits have been evaluated and determined. If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP). In accordance with the "Memorandum of Agreement among the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), July 22, 2003, the EEP will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.

## 6. Protected Species

## a. Federally Protected Species

Species with the federal classification of Endangered (E), Threatened (T), or officially Proposed (P) for such listing, are protected under the Endangered Species Act (ESA) of 1973 (16 USC 1531 *et seq.*), as amended. Table 6 presents the federal protected species listed for Mecklenburg County, North Carolina (September 22, 2010 USFWS list). Descriptions of these federally protected species along with habitat requirements and biological conclusions for this project are presented in Table 6.

Common Name	Scientific Name	Federal Status <sup>a</sup>	Habitat Present	Biological Conclusion
Carolina heelsplitter	Lasmigona decorata	E	Yes	No Effect
Michaux's sumac	Rhus michauxii	E	Yes	No Effect
Schweinitz's sunflower	Helianthus schweinitzii	E	Yes	No Effect
Smooth coneflower	Echinacea laevigata	E	Yes	No Effect

Table of ederally Listed Opecies for meckleribility obtility, we	Table 6 Fed	derally Listed	<b>Species for</b>	Mecklenburg	County, NO
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E – Endangered

### Carolina heelsplitter (*Lasmigona decorata*) Family: Unionidae Federally Listed: 1993

# Endangered

#### **BIOLOGICAL CONCLUSION: No Effect**

The Carolina heelsplitter was historically known from several locations within the Catawba and Pee Dee River systems in North Carolina and the Pee Dee and Savannah River systems, and possibly the Saluda River system, in South Carolina. In North Carolina, the species is now known only from a handful of streams in the Rocky and Catawba River systems.

The species exists in very low abundances, usually within 6 feet of shorelines, throughout its known range. The general habitat requirements for the Carolina heelsplitter are shaded areas either in ponded portions of streams or in runs along steep banks with moderate current. The more recent habitat where the Carolina heelsplitter has been found is sections of streams with bedrock with perpendicular crevices, with sand and gravel in between the crevices, and with large buffers associated with the stream.

The species is in decline primarily as a result of impoundments and channelization projects and the general deterioration of water quality resulting from siltation and other pollutants contributed as a result of poor land use practices. In North Carolina, urban sprawl from the Charlotte metropolitan area threatens all extant populations. Exotic mollusk species may also impact this species negatively as Asiatic clam (*Corbicula fluminea*) is established in all the streams where this mussel occurs.

North Carolina Natural Heritage Program (NCNHP) records indicate no documented occurrences of the Carolina heelsplitter within 5.0 miles of the project study area (NCNHP October 2011 and January 2012). Based on a mussel report prepared by NCDOT, the lack of live native mussels found at the project site in Sugar Creek, Little Sugar Creek, McMullen Creek and McAlpine Creek is likely due the highly sediment load within the streams. Given the lack of live native mussels at the project site, the stream characteristics, and the distance to known mussel populations, it appears that the Carolina heelsplitter does not occur in Little Sugar Creek, McMullen Creek or McAlpine Creek. Therefore the expanded project will have "No Effect" on Carolina Heelsplitter.

#### Michaux's sumac (Rhus michauxii) Family: Anacardiaceae Federally Listed: 1989

#### Endangered

#### BIOLOGICAL CONCLUSION: No Effect

Michaux's sumac is a rhizomatous shrub that grows to between 0.7 ft and 3 ft in height, is dioecious, and is densely public over the entire plant. The leaflets are generally oblong to oblong-lanceolate. The bases of the leaflets are generally rounded and the edges are simply or doubly serrate. Flowers are usually borne in a terminal, erect, dense cluster, with each one being four to five parted and greenish, yellow to white in color. Flowering usually takes place in June (USFWS 1993).

Michaux's sumac typically grows in sandy or rocky open woods on acidic soils with low cation exchange capacities and may depend on disturbance to maintain its habitat. Artificial disturbances such as rights-of-way may be replacing the natural occurrence of fire as the major disturbance responsible for maintaining openings (USFWS 1993).

NCNHP records indicate no documented occurrences of Michaux's sumac within 1.0 mile of the project study area (October 2011). Potential habitat is present within the project study area along the roadside margins of I-485 and its interchanges. All habitat areas were systematically

surveyed by walking overlapping transects on October 10 and 11, 2007. No individuals were observed during the field investigation. Therefore, the project will have "No Effect". Updated surveys were conducted by NCDOT biologists on October 6, 2009 and again on October 18, 2011 and the biological conclusion remains "No Effect".

#### Schweinitz's sunflower (*Helianthus schweinitzii*) Family: Asteraceae Federally Listed: 1991

#### BIOLOGICAL CONCLUSION: No Effect

Endangered

Schweinitz's sunflower is an erect, unbranched, rhizomatous, perennial herb that grows to approximately 6 ft in height. The stem may be purple, usually pubescent, but sometimes nearly smooth. Leaves are sessile, opposite on the lower stem but alternate above; in shape they are lanceolate and average 5 to 10 times as long as wide. The leaves are rather thick and stiff, with a few small serrations. The upper leaf surface is rough and the lower surface is usually pubescent with soft white hairs. Schweinitz's sunflower blooms from late August to frost; the yellow flower heads are about 0.6 inch in diameter (USFWS 1994).

According to the U.S. Fish and Wildlife Service, the current range of this species is within 60 miles of Charlotte, North Carolina. It occurs on upland interstream flats or gentle slopes, in soils that are thin or clayey in texture. Schweinitz's sunflower is typically found on the following soil types: Iredell, Enon, Badin, Cecil, Misenheimer, Gaston, and Zion soils. It may also occur in Tatum, Cid, Secrest, Georgeville, Mecklenburg, and Uwharrie soil types. This species needs open areas protected from shade or excessive competition, reminiscent of Piedmont prairies. Disturbances such as fire maintenance or regular mowing help sustain preferred habitat (USFWS 1994).

A review of the NCNHP records indicate no documented occurrences of Schweinitz's sunflower within 1.0 mile of the project study area (NCNHP October 2011) Potential habitat is present within the project study area along the roadside margins of I-485 and its interchanges. All habitat areas were systematically surveyed by walking overlapping transects on October 10 and 11, 2007. Updated surveys were conducted on October 6, 2009 and October 18, 2011. No individuals were observed during the field and the biological conclusion is "No Effect".

#### Smooth coneflower (*Echinacea laevigata*) Family: Asteraceae Federally Listed: 1992

#### Endangered

#### BIOLOGICAL CONCLUSION: No Effect

Smooth coneflower is a rhizomatous perennial herb that can grow up to 5 ft tall from a vertical root stock. The stem is usually smooth with few leaves. The largest leaves are the basal leaves which are elliptical to broadly lanceolate in shape and can reach 7.3 inches in length. Midstem leaves, if present, typically have shorter petioles and are smaller than the basal leaves. Flower heads are typically solitary. The ray flowers are typically colored pink to purplish, are usually drooping, and are 1.8 inches to 2.9 inches in length. Disk flowers typically have tubular purple corollas, are about 0.2 inches long, and have mostly erect, short triangular teeth (USFWS 1995).

Habitat for smooth coneflower consists of mainly open woods, cedar barrens, roadsides, clearcuts, dry limestone bluffs, and power line rights-of-way. Smooth coneflower is usually found on magnesium and calcium rich soils associated with amphibolite, dolomite, limestone, gabbro, diabase, and marble. Smooth coneflower can be thought of a "piedmont prairie" species (USFWS 1995).

NCNHP records indicate no documented occurrences of smooth coneflower within 1.0 mile of the project study area (NCNHP October 2011). Potential habitat is present within the project

study area along the roadside margins of I-485 and its interchanges. All habitat areas were systematically surveyed by walking overlapping transects on October 10 and October 11, 2007. No individuals were observed during the field investigation. Updated surveys were conducted on October 6, 2009 and October 18, 2011 and the biological conclusion is "No Effect".

# B. Cultural Resources

### 1. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires federal agencies to take into account the effect of their undertakings (federally-funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

## 2. Historic Architectural Resources

The Historic Preservation Office (HPO) reviewed the project and noted there are no known historic resources within the proposed project area (correspondence dated 8-17-06, Appendix C) and have no comment on the proposed project. "No Survey Required "forms were approved on May 10, 2011 and December 28, 2011 under the NCDOT's Programmatic Agreement with the State HPO to cover the extension of the project limits eastward to SR 3624 (Rea Road). Copies of the signed forms are included in Appendix C. Therefore, compliance with Section 106 of the National Historic Preservation Act, in regards to historic architectural resources is complete and no further action is necessary.

## 3. Archaeological Resources

The Historic Preservation Office (HPO) noted that there are no known archaeological sites within the proposed project area (correspondence dated 8-17-06, Appendix C) and recommended no additional archaeological investigations. A review was completed under NCDOT's Programmatic Agreement with the State Historic Preservation Office to cover the extension of the project limits eastward to SR 3624 (Rea Road). As result, a "No Survey Required" form for archaeological resources was approved on December 2, 2011. A copy of the signed form is included in Appendix C. Therefore, compliance with Section 106 of the National Historic Preservation Act, in regards to archaeological resources is complete and no further action is necessary.

## C. Sections 4(f) and 6(f) Resources

## 1. Section 4(f) Resources

Existing greenways at Lower McAlpine Creek and McMullen Creek will not be removed but access will be restricted during construction for safety. The greenways will be reopened after construction is complete. NCDOT will coordinate with the City of Charlotte prior to construction on greenway closures.

## 2. Section 6 (f) Resources

No Section 6 (f) properties will be affected by this project.

#### D. Social Effects

#### 1. Indirect and Cumulative Effects Neighborhoods/Communities

The proposed project is not expected to separate or isolate existing neighborhoods, isolate portions of the community, create a barrier between residents and community facilities, or cause interruption in community cohesion or interactions.

### 2. Indirect and Cumulative Effects

The existing controlled access; four-lane median divided facility is being widened by one lane in each direction, within the existing median. This project is intended to increase vehicle capacity along the corridor. Vehicular access in the area is not being changed. The completion of the additional lanes should result in a slight reduction of travel time for motorists using this portion of I-485. The travel time savings as a result of the project are not expected to affect route choice or development decisions.

Employment in the area is forecasted to grow annually by approximately 2% through 2016. According to the State Demographers Office, population for Mecklenburg County is projected to grow by an average annualized rate of 1.99 % between 2000 and 2029 (the identified time horizon) from 695,370 to 1,231,225.

Although the study area is largely built out, additional development will be controlled locally by stringent growth management. Specifically, existing zoning in Charlotte and Pineville and the Charlotte-Mecklenburg Planning Department's Centers, Corridors, and Wedges Growth Framework and the Draft Sharon and I-485 Transit Station Area Plan will ensure that any further development will occur in a planned fashion.

Based on these factors, this project is not expected to result in a change in land use. Therefore, no further study is warranted.

#### 3. Relocations

The proposed project improvements will be constructed within existing right of way and no relocations are proposed.

#### 4. Title VI and Environmental Justice

Title VI and Environmental Justice considerations promote the fair treatment and involvement of all people, regardless of race, color, national origin, or income with respect to development, implementation, and enforcement of environmental law and regulations. In order to assess social impacts associated with this project, a field review and review of the demographic information, available through the US Census Bureau, were performed. The proposed project is not expected to have a disproportionately high or adverse impact on low-income or minority populations.

## 5. Limited English Proficiency

Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency", requires all recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The US Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read,

write, speak, or understand English" (67 FR 41459). Data about LEP populations was gathered in the 2000 Census.

The 2000 census data indicate there are no language groups within the study area in which more than 5% of the population or 1,000 persons speak English less than "Very Well". Therefore, demographic assessment does not indicate the presence of LEP language groups. NCDOT will include notice of Right of Language Access in public for this project. The requirements of Executive Order 13166 appear to be satisfied.

### 6. Farmland Impacts

No farmland impacts are anticipated within the proposed project limits.

### 7. Flood Hazard Evaluation

Mecklenburg County is currently participating in the National Flood Insurance Regular Program. The major streams crossed within the limits of the proposed project are: Westinghouse Branch, Sugar Creek, Kings Branch, Little Sugar Creek, McAlpine Creek, McAlpine Creek Tributary 1A, McAlpine Tributary 1, and McMullen Creek. All of the streams crossed except Westinghouse Branch are included in detailed flood studies (see Figure 2 for the 100-year flood plain limits associated with these streams).

The NCDOT Hydraulics Unit will coordinate with the Charlotte-Mecklenburg Storm Water Services for approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

This project involves construction activities on or adjacent to FEMA-regulated streams. Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment that are located within the 100-yr. floodplain were built as shown in the construction plans, both horizontally and vertically.

#### E. <u>Traffic Noise Analysis</u>

#### 1. Introduction

In accordance with Title 23 Code of Federal Regulations Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (Title 23 CFR 772) and the 2011 North Carolina Department of Transportation Traffic Noise Abatement Policy, each Type I highway project must be analyzed for predicted traffic noise impacts. In general, Type I projects are proposed Federal or Federal-aid highway projects for construction of a highway or interchange on new location, improvements of an existing highway which significantly changes the horizontal or vertical alignment or increases the vehicle capacity, or projects that involve new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas.

Traffic noise impacts are determined through implementing the current Traffic Noise Model (TNM<sup>®</sup>) approved by the Federal Highway Administration and following procedures detailed in Title 23 CFR 772 and the NCDOT Traffic Noise Analysis and Abatement Manual. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. Temporary and localized noise impacts will likely occur as a result of project construction activities. Construction noise control measures will be incorporated into the project plans and specifications.

A copy of the unabridged version of the full technical Design Noise Report entitled *I-485 Widening from I-77 South to Rea Road* can be viewed in the Project Development & Environmental Analysis Branch, Century Center Building A, 1010 Birch Ridge Drive, Raleigh.

#### 2. Traffic Noise Impacts and Noise Contours

The maximum number of receptors along the project predicted to become impacted by future traffic noise is shown in the table below. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria (NAC) or by a substantial increase in exterior noise levels.

The maximum extent of the 71- and 66- dB(A) noise level contours measured from the center of the proposed roadway is 237 feet and 386 feet, respectively.

	Traffic Noise	Impacts	
Residential (NAC B)	Churches/Schools, etc. (NAC C & D)	Businesses (NAC E)	Total
42	2	0	44

**Predicted Traffic Noise Impacts** 

#### 3. No Build Alternative

The Traffic Noise Analysis also considered traffic noise impacts for the "no-build" alternative. If the proposed project does not occur, 30 receptors are predicted to experience traffic noise impacts and the future traffic noise levels will increase by approximately 2 dBA. Based upon research, most people barely detect noise level changes of 2-3 dBA. A 5-dBA change is more readily noticeable. Therefore, most people working and living near the roadway would not notice this predicted increase if the proposed construction does not occur.

## 4. Traffic Noise Abatement Measures

Measures for reducing or eliminating the traffic noise impacts were considered for all receptors predicted to receive traffic noise impacts along the proposed project. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, establishment of buffer zones, noise barriers and noise insulation (NAC D only). For each of these measures, benefits versus costs (reasonableness), engineering feasibility, effectiveness and practicability and other factors were included in the noise abatement considerations.

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and/or environmental factors. Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway. Costs to acquire buffer zones for impacted receptors will exceed the NCDOT maximum allowable dollar value of \$38,550 per benefited receptor, causing this abatement measure to be unreasonable.

#### 5. Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb and reflect highway traffic noise. For this project, earthen berms are not found to be a viable abatement measure because the additional right of way, materials and construction costs are estimated to exceed the NCDOT maximum allowable base quantity of 7,200 cubic yards of earthen berms per benefited receptor, as defined in the 2011 NCDOT Traffic Noise Abatement Policy.

A noise barrier evaluation was conducted at three Noise Study Areas along this project utilizing the Traffic Noise Model (TNM 2.5) software developed by the FHWA. The first potential barrier location evaluated with TNM is located at -L- Sta. 146+22.16 LT 207.39' (-NW1- STA 10+00.00) to -L- Sta. 169+69.29 LT 224.47' (-NW1- STA 34+40.00). The preliminary design of an optimized concrete wall at this location is approximately 2,340 feet long with an exposed height ranging from 4 to 25 feet. This barrier has an exposed area of 32,805 square feet and will benefit 35 receptors at an average of 937 square feet per benefited receptor. This quantity of noise wall is below the maximum allowable quantity of 2,570 square feet. Based upon reasonableness criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is cost-effective and, therefore, is recommended for construction, contingent upon completion of the project design and the public involvement process.

The second potential barrier location evaluated with TNM is located at -L- Sta. 187+89.31 LT 116.86' (-NW2- STA 10+00.00) to -L- Sta. 212+90.76 LT 184.89' (-NW2- STA 35+78.16). The preliminary design of an optimized concrete wall at this location is approximately 2,578 feet long with an exposed height ranging from 8 to 22 feet. This barrier has an exposed area of 39,365 square feet and will benefit 25 receptors at an average of 1,575 square feet per benefited receptor. This quantity of noise wall exceeds / is below the maximum allowable quantity of 2,570 square feet. Based upon reasonableness criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is cost-effective and, therefore, is recommended for construction, contingent upon completion of the project design and the public involvement process.

The third potential barrier location evaluated with TNM is located at -LDB- Sta. 374+00.00 RT 70.00' (-NW3- STA 10+00.00) to -LDB- Sta. 404+55.52 RT 115.17' (-NW3- STA 40+60.00). The preliminary design of an optimized concrete wall at this location is approximately 3,060 feet long with an exposed height ranging from 5 to 21 feet. This barrier has an exposed area of 51,705 square feet and will benefit 51 receptors at an average of 1,014 square feet per benefited receptor. This quantity of noise wall is below the maximum allowable quantity of 2,570 square feet. Based upon reasonableness criteria defined in the NCDOT Traffic Noise Abatement Policy, this barrier is cost-effective and, therefore, is recommended for construction, contingent upon completion of the project design and the public involvement process.

#### 6. Summary

Based on this Design Noise Report, traffic noise abatement is recommended and three noise walls will be included in the final design plans for the proposed project, pending approval by the Federal Highway Administration. Modifications to the locations and dimensions of the proposed noise walls may occur to improve their respective optimal noise reduction capabilities and to address possible design highway design modifications. Public balloting of owners and tenants of all receptors predicted to receive at minimal 5 dB(A) is complete and indicates a public preference for construction of the proposed noise walls. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772.

In accordance with NCDOT Traffic Noise Abatement Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Categorical Exclusion (CE). For development occurring after this date, local governing bodies are responsible to insure that noise compatible designs are utilized along the proposed facility.

### F. <u>Air Quality Analysis</u>

An Air Quality Analysis was completed for the proposed project in May 2012. Additional details of the methodology and analysis supporting the information provided in this section are provided in the air quality analysis report: *Air Quality Analysis,* which is located in the project file and appended by reference.

A project level Quantitative Mobile Source Air Toxics (MSAT) analysis was prepared for this project in April 2012. The full technical memorandum, *Mobile Source Air Toxics Air Quality Analysis,* provides details on input parameters, assumptions, and calculation procedures for developing MSAT total emissions. The full analysis is located in the project file and is appended by reference.

#### 1. Introduction

Air pollution originates from various sources. Emissions from industry and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving the ambient air quality. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing facility.

The Federal Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS). These standards were established to protect the public from known or anticipated effects of air pollutants. The most recent amendments to the NAAQS contain criteria for sulfur dioxide (NO<sub>2</sub>), particulate matter (PM), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), and lead (Pb).

The primary pollutants from motor vehicles are unburned hydrocarbons, nitrous oxides, carbon monoxide, and particulates. Hydrocarbons and nitrogen oxides can combine in a complex series of reactions catalyzed by sunlight to produce photochemical oxidants such as ozone and NO<sub>2</sub>. Because these reactions take place over a period of several hours, maximum concentrations of photochemical oxidants are often found far downwind of the precursor sources.

## 2. Attainment Status

The project is located in Mecklenburg County, which is within the Metrolina nonattainment are for ozone ( $O_3$ ) and the Charlotte nonattainment area for carbon monoxide (CO) as defined by the EPA. The 1990 Clean Air Act Amendments (CAAA) designated these areas as moderate nonattainment for area for CO. However, due to improved monitoring data, this area was redesignated as maintenance for CO on September 18, 1995. This area was designated moderate nonattainment for  $O_3$  under the eight-hour ozone standard effective June 15, 2004. Section 176(c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Mecklenburg County. The Mecklenburg-Union Metropolitan Planning Organization 2035 Long Range Transportation Plan (LRTP) and the 2012-2018 State Transportation Improvement Plan (TIP) conform to the intent of the SIP. The USDOT made a conformity determination of both the LRTP and the TIP on December 16, 20111. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. There are no significant changes in the project's design or scope, as used in the conformity analyses.

#### 3. Carbon Monoxide Microscale Analysis

Because the project is located within the Charlotte nonattainment area for carbon monoxide (CO), a microscale air quality analysis was performed to determine future CO concentrations resulting from the proposed highway improvements. "CAL3QHC – A Modeling Methodology for Predicting Pollutant Concentrations near Roadway Intersections" was used to predict CO concentration near sensitive receptors. Carbon monoxide vehicle emission factors were calculated for the years 2010, 2015, and 2030 using EPA publication "Mobile Source Emission Factors", and the MOBILE6 mobile source emissions computer model. The background CO concentration for the project area was estimated to be 2.6 parts per million (ppm). Consultation with the North Carolina Department of Environment & Natural Resources' Air Quality Section indicated the an ambient CO concentration of 2.6 ppm is suitable for calculations in Mecklenburg County.

The worst case air quality scenario was determined in the vicinity of the I-485 and NC 51 Interchange. The predicted 1-hour average CO concentrations for the evaluation years of 2010, 2015, and 2030 are 6.50, 5.70, and 5.50 ppm, respectively. Comparison of the predicted CO concentrations with the NAAQS (maximum permitted for 1-hour averaging period = 35 ppm; maximum permitted for 8-hour averaging period = 9 ppm) indicates no violation of these standards. Since the results of the worst case 1-hour CO analysis for the build scenario is less than 9 ppm, it can be concluded that the 8-hour CO level does not exceed the standard.

## 4. Mobile Source Air Toxics Analysis

Recently, concerns for air toxics impacts are more frequent on transportation projects during the NEPA process. Transportation agencies are increasingly expected by the public and other agencies to address MSAT impacts in their environmental documents as the science emerges. Mobile Source Air Toxics (MSAT's) analysis is a continuing area of research where, while much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health impacts from MSAT's are limited. These limitations impede FHWA's ability to evaluate how mobile source health risks should factor into project-level decision making under the National Environmental Policy Act (NEPA).

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, and the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

Also, EPA has not established regulatory concentration targets for the six relevant MSAT pollutants appropriate for use in the project development process. FHWA has several research projects underway to more clearly define potential risks from MSAT emissions associated with transportation projects. While this research is ongoing, FHWA requires each NEPA document to qualitatively address MSATs and their relationship to the specific highway project through a tiered approach, depending on specific project circumstances. What we know about mobile source air toxics is still evolving. As the science progresses FHWA will continue to revise and update this

guidance. To that end, we expect that a number of significant improvements in model forecasting and air pollution analysis guidance with the MOVES model and the issuance of the PM 2.5 Hot Spot Modeling Guidance.

This project includes the development of a Quantitative Mobile Source Air Toxics (MSAT) Analysis to comply with the interim guidance issued by FHWA concerning MSATs. Project-level air quality modeling was developed through the use of MOBILE6.2 and EMIT software. Findings of the analysis indicate that the project meets both the AADT and sensitive receptors thresholds for the Tier 3 analysis. Tier 3 projects are those where there is a higher potential for detrimental MSAT effects. The full technical memorandum also provides details on input parameters, assumptions, and calculation procedures for developing MSAT total emissions.

## 5. Burning of Debris

During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project, burned or otherwise disposed of by the Contractor. Any burning done will be done in accordance with applicable local laws and ordinances and regulations of the North Carolina State air quality implementation plan (SIP) for air quality in compliance with 15 NCAC 2D.0520.

### 6. Summary

Vehicles are a major contributor to decreased air quality because they emit a variety of pollutants into the air. Changing traffic patterns are a primary concern when determining the impacts of a new highway facility or the improvement of an existing highway facility. New highways or the widening of existing highways increase localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion and because vehicle emissions will decrease in areas where traffic shifts to the new roadway. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly. This project is not anticipated to create any adverse effects on the air quality of the surrounding area.

A microscale hot-spot analysis that predicted future carbon monoxide concentrations resulting from the proposed highway improvements indicated that no violations of the applicable NAAQS CO concentrations are anticipated. Additionally, this project will not add substantial new vehicle capacity or create a facility that is likely to meaningfully increase vehicle emissions. Therefore, it is not anticipated to create any adverse effect on the air quality of this nonattainment area.

## G. <u>Hazardous Materials</u>

The following is a summary of the *Hazardous Materials Evaluation Report*, prepared by the NCDOT Geotechnical Engineering Unit (January 2011 and amended November 2011). Copies of these reports are located in the project file and are appended by reference.

Geographical Information System (GIS) technology was utilized to identify potential contaminated sites. The proposed widening is within the existing right of way and a field reconnaissance was not conducted. One possible UST site, four manufacturing facilities, an asphalt plant, and a dry cleaning facility were identified within the project study area. One manufacturing facility, the General Tire and Rubber plant, has been identified as an inactive Superfund site. None of these sites is located within the proposed project limits and there are no environmental impacts anticipated.

No additional contaminated properties were observed during the GIS records search. If any USTs or any potential source of contamination is discovered during construction activities, NCDOT should be notified of their presence immediately upon discovery. An assessment will be conducted to determine the extent of any contamination, to identify the potential impacts, and to make recommendations for further actions.

### H. <u>Construction Impacts</u>

NCDOT Best Management Practices for Construction and Maintenance Activities will be adhered to during construction to minimize potential adverse effects caused during construction.

## V. COMMENTS AND COORDINATION

## A. <u>Public Involvement</u>

### 1. Scoping Meeting

On March 29, 2007, a scoping meeting was held to exchange information about the project. Federal, state and local agency representatives were invited to participate in the scoping. Representatives from NCDOT, FHWA, Town of Pineville, and the Mecklenburg Union Metropolitan Planning Organization (MUMPO) attended the meeting.

### 2. Local Officials Meeting

A local officials meeting was held prior to the Citizens Information Workshop (CIW) on June 19, 2007 in the Town of Pineville's meeting facility, The Hut. Meeting participants included elected officials and staff from the City of Charlotte, Town of Pineville, and representatives from the Mecklenburg Union Metropolitan Planning Organization (MUMPO).

Aerial photographs of the project study area were displayed that showed the project study area, the project terminals, and other major points of interest.

A summary of the information included in the CIW packet and a description of the proposed project as shown on the photos. The following questions and comments were received from meeting attendees:

- Accelerate the project schedule.
- Could additional funding accelerate the project schedule?
- Would all travel lanes be open during construction?
- Schedule of the remainder of the I-485 loop?
- Requested a signal on northbound Johnston Road (US 521) accessing westbound I-485 on ramp where there is currently a flashing yellow light.
- Traffic backs up on EB I-485 from exit ramp near the Carolina Place Mall.
- Will HOV lanes will be included
- Noted traffic volumes suggest more than one additional lane is needed and asked why proposed improvements do not include more lanes.

## 3. Citizens Informational Workshop (CIW)

A Citizens Informational Workshop (CIW) was held June 19, 2007 in the Town of Pineville's meeting facility, The Hut. Approximately 40 citizens were in attendance. Media representatives from local television affiliate WNCN and *The Charlotte Observer* were present.

A project information packet was provided to attendees and aerial maps were displayed. The aerial mosaics showed the project study area, the project terminals, and landmarks within the study area. A map showing other nearby proposed NCDOT projects was also displayed.

The majority of citizens in attendance voiced support for the project, but more lanes are needed and the project should be completed sooner than currently scheduled. Residents of Park Crossing subdivision noted excessive traffic noise from I-485 (Charlotte Outer Loop) and requested noise walls similar to the exiting walls for neighborhoods near Park Road (SR 3687) and Carmel Road. Citizens were concerned about how the proposed improvements would effect or add to the congestion on the existing roads in the vicinity of the interchanges. Citizens inquired if changes were planned for the existing ramps due to ramp backups extending onto I-485 (Charlotte Outer Loop) at NC 51 (Pineville-Matthews Road), South Boulevard (SR 3998), and US 521 (Johnston Road).

### 4. Ballantyne Breakfast Club Meeting Presentation

NCDOT engineers were invited to give a presentation and discuss the project to The Ballantyne Breakfast Club meeting held February 2, 2008 at the Ballantyne Golf Resort. The meeting was open to the public. Approximately 200 local citizens, local officials, local government staff, and a newspaper reporter (*The Charlotte Observer*) were present at this meeting.

A project information packet was provided to attendees. Aerial photographs of the project study area were displayed. The aerial mosaics showed the project study area, the project terminals, and landmarks within the study area. A Power Point presentation showing a project overview of the project was shown. After the presentation, NCDOT representatives conducted a Q&A session taking questions from those in attendance.

Questions are summarized below:

- Project schedule should be accelerated.
- Noise walls needed for Park Crossing neighborhood.
- Add more than one additional lane in each direction.
- Why is Community House Road bridge over I-485 not included in this project?
- Status of the shoulder study to determine shoulder usage during peak hours?

#### B. <u>Design Public Hearing</u>

A design public hearing was held September 15, 2011 in the Hixon Building within the Ballantyne Business Park. The scope of the proposed project at this meeting included widening I-485 (Charlotte Outer Loop) from I-77 to US 521 (Johnston Road).

A public meeting will be held in June 4, 2012 at the Town of Pineville's meeting facility, The Hut. Citizens will be given the opportunity to learn about the project's design features and submit comments. NCDOT will include notice of Right of Language Access for meetings on this project.

#### C. <u>NEPA/Section 404 Merger Process</u>

The impacts from the proposed project are anticipated to be minimal. The proposed project was screened by NCDOT, Division of Water Quality (DWQ), USACE and FHWA. Coordination with DWQ and USACE concluded this project did not need to enter the NEPA/Section 404 Merger Process.
## D. Additional Agency Coordination

Letters were sent to the following federal and state environmental agencies and regional and local Governments at the beginning of project studies. Responses were received by those indicated by an asterisk \*:

U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Geological Survey
N.C. Department of Administration, State Publications Clearinghouse\*
N.C. Department of Environment and Natural Resources
N.C. Wildlife Resources Commission\*
N.C. Department of Public Instruction
Mecklenburg-Union Metropolitan Planning Organization\*
Mecklenburg County Board of Commissioners
Mayors of Pineville and Charlotte
N.C. Department of Environment and Natural Resources, Natural Heritage Program\*
N.C. Department of Environment and Natural Resources, Division of Water Quality\*
Mecklenburg County Land Use and Environmental Services Agency (LUESA)\*

## VI. CONCLUSION

On the basis of planning and environmental studies, it is concluded that no substantial adverse environmental impacts will result from the implementation of the project. The project is therefore considered to be a Categorical Exclusion due to its limited scope and lack of substantial environmental consequences.

## Appendix A

Figures



























NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT











Looking south along Mc Alpine Creek Greenway under I-485 (Bridge Nos. 672 and 673)



Looking north along Mc Mullen Creek Greenway under I-485 (Bridge Nos.670 and 671)

Figure 3 Sheet 1 of 2



Noise Walls along westbound I-485 just west of Carmel Road Bridge



Looking east along I-485 at US 521 (Johnston Road) Interchange

**Charlotte Area Transit System (CATS) Public Transportation Service** 



Figure 4















Figure 6a Sheet 2 of 4









Figure 6b Sheet 2 of 4







By: J.TORTORELLA

## MUMPO Thoroughfare Plan (adopted November 17, 2004)





				<u> </u>
0	0.4	0.8	1.2	1.6

CLASSIFICATION	EXISTING	PROPOSED
FREEWAY-EXPRESSWAY CLASS II MAJOR THOROUGHFARE MINOR THOROUGHFARE INTERCHANGE GRADE SEPARATION RAILROAD	8	






## Appendix B

Traffic Density

Components
Freeway
Analyzed
rovement for
Percent Imp
d, and

			Density	(pc/mi/ln)		Percent	Me	an Speed for	all vehicles (n	(hqn	Per	ent
	Eastbound 1-485	2030 N	Vo Build	2030	Build	Improvement	2030 N	o Build	2030	Build	Improv	'ement
Node #	Description	AM	ΡM	AM	PM	AM PM	AM	PM	AM	PM	AM	PM
	I-485 EB Diverge to I-77 (Before Diverge) <sup>1</sup>	2580	3243	1935	2432	25.0% 25.0%	NA	NA	64.7	NA	NA	NA
90E	I-485 EB Diverge to I-77 (Ramp Mainline)	Under	Over	Under	Over	NA NA	NA	NA	NA	NA	NA	NA
	I-485 EB Diverge to I-77 (After Diverge)	29.2	44.8	13.6	17.2	53.4% 61.6%	63.5	52.4	68.2	68.2	7.4%	30.2%
91F	I-485 EB Merge from SB I-77 (Ramp Mainline)	Under	Under	Under	Under	NA NA	NA	NA	NA	NA	NA	NA
	I-485 EB Merge from SB I-77	30.3 30.3	43.1 43.1	7.4 7.4	20.9 20.9	75.6% 51.5%	57.7 57.7	9.8 9.8	65.3 65.3	2.3 2.3	13.2%	-76.5%
92E	I-485 EB Merge from NB I-77	54.9 54.9	62.6 62.6	24.5	25.1	55.4% 59.9%	NA NA	NA NA	59.0	54.8	NA	NA
400E	I-485 EB Diverge to SB South Blvd.	51.3 45.2	50.4 48.3	40.8	48.8	15.4% 1.11%	61.9 58.0	61.3 57.4	64.9	64.1	8.26%	8.00%
	I-485 EB Diverge to NB South Blvd. (Before Diverge) <sup>1</sup>	2907	3817	2180	2862	25.0% 25.0%	NA	NA	59.6	NA	NA	NA
500E	I-485 EB Diverge to NB South Blvd. (Ramp Mainline)	Under	Under	Under	Under	NA NA	NA	NA	NA	NA	NA	NA
	I-485 EB Diverge to NB South Blvd. (After Diverge) <sup>1</sup>	3950	5455	2633	3637	33.3% 33.3%	NA	NA	NA	NA	NA	NA
600E	I-485 EB Weave between South Blvd. On-Ramp and SB	117 50	C1 71C	50 05	L1 011	44 00/ 44 80/	F0 8C	20.00	00.21	2220	10.00/	/00.00
700E	NC 51 Off-Ramp	QC.711	214.13	cn.co	110.11	44.0% 44.8%	16.80	07.06	40.04	00.00	19.0%	ZU.8%
800E	I-485 EB Diverge to NB NC 51	66.8	101.5	37.9 37.9	45.6 45.6	43.3% 55.1%	50.9	50.7	56.6 56.6	52.7 52.7	11.2%	3.9%
900E	I-485 EB Merge from NC 51	63.5	96.9	41.9 43.8	57.7 68.9	32.5% 34.7%	NA	NA	35.9 26.1	NA NA	NA	NA
1000E	I-485 EB Diverge to US 521	69.2	104.2	41.1 38.0	54.2 47.3	42.8% 51.3%	55.3	51.5	59.4 59.5	54.3 53.2	7.5%	4.4%
1100E	I-485 EB Merge from SB US 521	58.2	73.0	37.1 37.1	45.7 45.7	36.3% 37.4%	NA	NA	51.8 51.8	24.9 24.9	NA	NA
1200E	I-485 EB Merge from NB US 521	67.5	85.2	45.5 46.5	55.6 57.9	31.9% 33.4%	NA	NA	28.8 22.3	NA NA	NA	NA
<sup>1</sup> Since de	snsity in pc/mi/ln was not able to be calculated, the vp in unit	s of pc/h/ln w	as listed for th	iis point.								
			Density	(pc/mi/ln)		Percent	Me	an Speed for	all vehicles (n	(hqn	Perc	ent
	Westbound 1-485	2030 N	Vo Build	2030	Build	Improvement	2030 N	o Build	2030	Build	Improv	'ement
Node #	Description	ΜV	ΡM	AM	ΡM	MM MV	WV	Md	AM	MA	ΜN	PM
1200W	I-485 WB Diverge to NB US 521	<i>L</i> 6	77.5	46.8 52.5	42.2 47.5	48.8% 42.1%	60.0	59.6	59.2 60.5	62.0 62.5	-0.2%	4.4%
1100W	I-485 WB Diverge to SB US 521	60.1	39.9	17.8 17.8	12.6 12.6	70.4% 68.4%	50.6	50.1	55.2 55.2	56.2 56.2	9.1%	12.2%
1000W	I-485 WB Merge from US 521	87.1	56.6	56.2 62.8	37.2 39.3	31.7% 32.4%	NA	NA	NA NA	NA NA	NA	NA
900W	I-485 WB Diverge to NB NC 51	111.4	74.3	61.4 55.3	45.1 43.0	47.6% 40.7%	59.6	60.3	58.5 56.9	62.8 62.6	-3.2%	4.0%
800W	I-485 WB Diverge to SB NC 51	9.66	65.2	44.7 44.7	36.7 36.7	55.3% 43.7%	50.9	51.1	53.0 53.0	56.9 56.9	4.1%	11.4%
700W	I-485 WB Weave between NC 51 On-Ramp and South	209.96	117.69	116.22	65.92	44.6% 44.0%	30.71	37.04	36.99	44.08	20.4%	19.0%
000 M	BIVG. UII-Kämp I 1965 W/D Marries from ND Courth DIvid (Dafore Marries)	2722	2020	LC7C	6676	<u> 20 сс ус сс</u>	NI A	N N	NIA NIA	NIA NIA	MA	VI V
11002	1-403 WD MELEE ITOIII IND SOULLI DIVU. (DELOIE MELEE)		0060	/ COC	CC07	0/C.CC 0/C.CC	NA	NA	NA NA	NA NA	NA N	NA
MOOC	1-485 WB Merge from NB South BIVG. (Kamp Mainline)	Under 2020	Under	Under	Under	DE DO DE DO	NA	NA	NA NA		NA	NA V
MOON	1-402 WE INCIGE TIGHT INE BOURD DIVE. (ALLEL MULE)	2020 V 20 60 6	76.4 54.1	28.4	1617	33 10% 36 70%	NA NA	AN TOC	2005	50 6	NA	188%
	1-485 WB Diverge to 1-77 (Refore Diverge)	2020 2772	7465	7344	1972	20.0% 20.0%	VIT VIT	NA NA	55.2	65.1	NA	NA
92W	I-485 WB Diverge to I-77 (Ramn Mainline)	42.5	33.2	42.5	33.2	0.0% 0.0%	54.5	61.6	54.5	61.6	0.0%	0.0%
	I-485 WB Diverge to I-77 (After Diverge)	NA	29.3	17.5	13.6	NA 53.6%	NA	63.5	68.1	68.1	NA	7.2%
01117	I-485 WB Merge from NB I-77 (Ramp Mainline)	Over	Over	Over	Over	NA NA	NA	NA	NA	NA	NA	NA
M 16	I-485 WB Merge from NB I-77 (After Merge)	NA	33.7	33.8	22.8	NA 32.3%	NA	61.3	61.8	67.9	NA	10.8%
0011/	I-485 WB Merge from SB I-77 (Ramp Mainline)	Under	Under	Under	Under	NA NA	NA	NA	NA NA	NA NA	NA	NA
* 00	I-485 WB Merge from SB I-77 (After Merge)	NA	29.3	29.1	22.0	NA 24.9%	NA	65.1	66.0	69.4	NA	6.6%
<sup>1</sup> Since de	ensity in pc/mi/ln was not able to be calculated, the $v_{\rm p}$ in unit	s of pc/h/ln w	as listed for th	us point.								
			Density	(pc/mi/ln)		Percent	Me	an Speed for	all vehicles (n	(hqn	Per	ent
Š	stbound 1-485 (US 521 Flyover)	2030 N	Vo Build	2030	Build	Improvement	2030 N	o Build	2030	Build	Improv	'ement
Node #	Description	AM	PM	AM	PM	AM PM	AM	PM	AM	PM	AM	PM
1000W	I-485 WB Merge from US 521	87.1	56.6	56.2 62.8	37.2 39.3	31.7% 32.4%	NA	NA	NA NA	NA NA	NA	NA
1000W-	US 521 Flyover at US 521 WB On-Ramp	NA	AN	34.3	22.8	NA NA	NA	NA	51.0	53.9	NA	NA
1000W-2	US 521 Flyover (Ramp Mainline)	NA	AN S	28.5	18.1	NA NA	NA	NA	55.1 26 2	55.1	NA	NA
1000W-2	2 US 521 Flyover at US 521 EB On-Ramp	NA	NA	44.6	33.3	NA NA	NA	NA	51.9	52.2	NA	NA

# Densities, Spee

Wes	stbound I-485 (US 521 Flyover
Node #	Description
1000W	I-485 WB Merge from US 521
1000W-1	US 521 Flyover at US 521 WB On-Ramp
1000W-2	US 521 Flyover (Ramp Mainline)
1000W-2	US 521 Flyover at US 521 EB On-Ramp

# Appendix C

Correspondence



North Carolina Department of Cultural Resources State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor Lisbeth C. Evans, Secretary Jeffrey J. Crow, Deputy Secretary

August 17, 2006

MEMORANDUM

TO: Gregory Thorpe, Ph.D., Director Project Development and Environmental Analysis Branch NCDOT Division of Highways

FROM: Peter Sandbeck PUL for Parker Sundkick

SUBJECT: I-485 From US 521 (Johnston Road) to I-77, South of Charlotte, R-4902, Mecklenburg County, ER06-2129

Thank you for your letter of July 28, 2006, concerning the above project.

We have conducted a review of the proposed undertaking and are aware of no historic resources that would be affected by the project. Therefore, we have no comment on the undertaking as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr



Mailing Address 4617 Mail Service Center, Raleigh NC 27699-4617 4617 Mail Service Center, Raleigh NC 27699-4617 4617 Mail Service Center, Raleigh NC 27699-4617 Telephone/Fax (919)733-4763/733-8653 (919)733-6547/715-4801 (919)733-6545/715-4801

Office of Archives and History

Division of Historical Resources

David Brook, Director

Project Tracking No. (Internal Use) 11-11-0094 **NO SURVEY REQUIRED FORM PROJECT INFORMATION** *Project No:* R-4902 County: Mecklenburg WBS No: 39929.1.1 Document: CE 🛛 Federal F.A. No: IMNHF-485(8) Funding: State Federal (USACE) Permit Required?  $\boxtimes$  Yes Permit Type: No Unknown

*Project Description:* The R-4902 project consists of widening existing I-485 (Charlotte Outer Loop) from four to six lanes, from I-77 to US 521 (Johnston Road) in Mecklenburg County, a distance of 6.8 miles. The project study area has been extended to include the portion of I-485 from US 521 (Johnston Road) to SR 3624 (Rea Road), an additional 1.5 miles. An additional inside lane is to be added in each direction and will be constructed within existing ROW. The project also includes a new flyover from US 521 North to I-485 West, construction of an auxiliary lane to the outside shoulder of westbound I-485 and the widening of existing bridges. The project's primary purpose is to increase system capacity and improve efficienct on I-485 for local and regional traffic.

## SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

A map review and site file search was conducted at the Office of State Archaeology (OSA) on Thursday, December 1, 2011. Comprehensive archaeological surveys have been conducted in various locales to either side of the I-485 corridor as well as for the actual I-485 corridor, resulting in numerous archaeological sites having been recorded. Digital copies of HPO's maps (Weddington Quadrangle) as well as the HPOWEB GIS Service (http://gis.ncdcr.gov/hpoweb/) were reviewed on Friday, December 2, 2011. There are no known historic architectural resources located within the project area that may have intact archaeological deposits within the footprint of the proposed project. In addition, topographic maps, historic maps (NCMaps website), USDA soil survey maps, and aerial photographs were utilized and inspected to gauge environmental factors that may have contributed to historic or prehistoric settlement within the project limits, and to assess the level of modern, slope, agricultural, hydrological, and other erosive-type disturbances within and surrounding the archaeological APE.

## Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

All proposed project activities are to take place within the existing ROW for I-485, which in most instances measures 350' wide. This is a Federally-funded endeavor, and the entire project corridor consists of an interstate highway. Construction of I-485 started in the summer of 1989 near the intersection of NC 51 and what used to be US 521 in Pineville, opening to traffic in late 1990. Two stretches of I-485 opened in late 1994, one from US 521 north to I-77 and another from NC 51 west to Rea Road. In mid-1997, two more stretches of I-485 opened, one from I-77 west to NC 49 and another from Rea Road west to US 74 (i.e. the section of I-485 included in this project). Based on the project description and the highly disturbed nature of the interstate corridor, the project's Area of Potential Effects (APE) is considered to have an extremely low potential for containing intact archaeological materials. In addition, the Office of State Archaeology (OSA) reviewed the undertaking prior to its extension from US 521 to Rea Road, and per their memo dated August 17, 2006 (ER 06-2129), they

"have no comment on the undertaking as proposed." Such a statement should hold true for the extended study area as well. Therefore, an archaeological survey is not recommended. However, if the description of this project or design plans change prior to construction, then additional consultation will be required. As currently proposed, this interstate improvement project is unlikely to affect any significant NRHP-eligible archaeological resources. No further archaeological work is recommended.

## SUPPORT DOCUMENTATION

See attached: 🛛 Ma	ap(s) Previous Survey Info	Photos Correspondence
FINDING BY NCDO	)T CULTURAL RESOURCES PROFESSIC	DNAL - <u>NO SURVEY REQUIRED</u>
Archaeology	Historic Architecture	(Circle One)
1 a	ul J. Mohler	December 2, 2011
NCDOT Cultural Reso	ources Specialist	Date
Substation	R-4902 Extended Study Area along I-485	Prividence Art BM 6780

Figure 1: Weddington, N.C. – S.C. (USGS 1968 [PR1988]). [NB:Quad map predates the construction of I-485]

## 11-11-0094

## NO SURVEY REQUIRED FORM

## **PROJECT INFORMATION**

Project No:	R-4902		County:		Meeklenburg	
WBS No:	39929.1.1		Docume	ent:	CE	
F.A. No:			Funding	<u>z</u> :	State State	🛛 Federal
Federal (USACE) Po	ermit Required?	🛛 Yes 🗌	No	Permit Ty	pe:	

#### Project Description:

Add one additional lane in each direction on I-485 from I-77 to Rea Road. All work will be done within existing ROW.

## SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

Review of HPO quad maps, relevant background reports, historic designations roster, and indexes was undertaken on December 20, 2011. Based on this review, there were no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects (APE). All the work for this project will take place within the existing ROW of the interstate within the existing medians. The project does not intersect any historic sites of districts.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

Using HPO GIS website and Mecklenburg County GIS Tax Data provide reliable information regarding the structures in the APE. These combined utilities are considered valid for the purposes of determining the likelihood of historic resources being present.

#### SUPPORT DOCUMENTATION

See attached: Maps

## FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL

NO SURVEY REQUIRED FOR HISTORIC ARCHITECTURE

Dec 28, 201

REC	enster Gesent	V	COLORI CO	D
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FEB 3 2009

North Carolina Department of Environment and Natural Respercifies of Natural Environment

Beverly Eaves Perdue, Governor

Dee Freeman, Secretary January 26, 2009

Mr. Paul Petitgout Environmental Services, Inc. 9401-C Southern Pine Boulevard Charlotte, NC 28273

## SUBJECT: On-Site Determination for Applicability to the Mitigation Rules [15A NCAC 2H .0506(h)], Interstate 485 Improvements, TIP No. R-4902, Federal Aid Project No. IMNHF-485(8), WBS Element No. 39929.1.1, Mecklenburg County

Dear Mr. Petitgout:

Polly Lespinasse of the Division of Water Quality (DWQ) met with you on January 21, 2009, in order to provide verification of potential jurisdictional features previously identified by your consulting firm for the above referenced project. These features were evaluated for applicability to the mitigation rules set forth in [15A NCAC 2H .0506(h)]. The maps containing the project corridor were provided in the jurisdictional verification package received by this office on January 21, 2009. The jurisdictional features are approximated on these maps.

Due to the size of the project, a selection of sites was identified and visited to represent stream determinations conducted by your firm. Changes were made to four (4) stream determinations based on the field verifications and/or the jurisdictional forms. The changes are outlined below:

- Stream S10: This stream was originally classified as intermittent for the entire reach. Based on the site visit, this stream will be classified as a perennial stream. Perennial stream characteristics were observed in addition to the presence of biology (salamander, crayfish).
- Stream S20a and S20b: This stream was not evaluated in the field. The stream was originally classified as intermittent for the entire reach. However, the DWQ stream identification form, completed by your consulting firm, indicates that fish were observed in the stream. Due to the presence of fish, this stream will be considered perennial.
- Stream S8a and S8b: This stream was originally classified as intermittent for the entire reach. Based on the site visit, this stream will be classified as a perennial stream. Perennial stream characteristics were observed in addition to the presence of biology (salamander, fish).
- Stream S23b (inlet end of culvert): This stream was originally classified as intermittent for the entire reach. Based on the site visit, this stream will continue to be classified as an intermittent stream upstream from the inlet of the culvert.
- Stream S23a (outlet end of culvert): This stream was originally classified as intermittent for the entire reach. Based on the site visit, this stream will be classified as a perennial stream from immediately downstream of the culvert outlet. Perennial stream characteristics were observed (stream rescored from 23.5 to 31.5) in addition to the presence of biology (crayfish).

610 East Center Avenue, Suite 301, Mooresville, North Carolina 28115 Phone: 704-663-1699 \ FAX: 704-663-6040 \ Internet: www.enr.state.nc.us Mr. Paul Petitgout Page Two

Based on the site reviews of the jurisdictional determinations made by your consulting firm, DWQ will consider all sites identified in the jurisdictional verification package **and revisions identified above** as accurate.

This letter only addresses the applicability to the mitigation rules and does not approve any activity within buffers, Waters of the United States, or Waters of the State. Any impacts to wetlands, streams and buffers must comply with 404/401 regulations, water supply regulations (15A NCAC 2B .0216), applicable buffer rules, and any other required federal, state and local regulations. Please be aware that even if no direct impacts are proposed to any protected buffers, sheet flow of all new stormwater runoff as per 15A NCAC 2B .0250 is required.

Landowners or affected parties that dispute a determination made by the DWQ or Delegated Local Authority that a surface water exists and that it is subject to the mitigation rules may request a determination by the Director. A request for a determination by the Director shall be referred to the Director in writing c/o Brian Wrenn, DWQ 401 Transportation Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650.

Individuals that dispute a determination by the DWQ or Delegated Local Authority that "exempts" a surface water from the mitigation rules may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. Applicants are hereby notified that the 60-day statutory appeal time does not start until the affected parties (including downstream and adjacent landowners) are notified of this decision. DWQ recommends that the applicant conduct this notification in order to be certain that third party appeals are made in a timely manner.

To ask for a hearing, send a written petition, which conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This determination is final and binding unless you ask for a hearing within 60 days.

If you have any additional questions or require additional information please contact Polly Lespinasse at (704) 663-1699.

Sincerely,

Robert B. Krebs Surface Water Protection Regional Supervisor

cc: Steve Lund, USACE Asheville Field Office Erin Cheely, NCDOT PDEA Sonia Gregory, DWQ Wetlands Unit File Copy



	NCDENR	PDEA BRANCH AUG 2 5 2006
North Carolina Departm	nent of Environment and Natura	I Resources HEUStaff Eng
Michael F. Easley, Governor		William G. Ros SM9, Secretary
	August 22, 2006	CEIVERN
Gregory Thorpe, Director Project Development and Analysis Branch NC Department of Transportation 1548 MSC Raleigh, NC 27699-1548	AUG ENTROPICE DIVIS HIGH HIGH AUG HIGH HIGH	Take appropriate Action Prepare reply for 2006 Non or Ways LOPMEN TRANS

RE: I-485, from US 521 (Johnston Road) to I-77 South of Charlotte, Mecklenburg County, Federal Aid Project IMNHF-485-(8), WBS #39929, TIP No. R-4902

Dear Dr. Thorpe:

The Natural Heritage Program has no current records of rare species or significant natural communities within the proposed project area, as shown on the map included with your letter of July 28, 2006. However, the proposed section of the I-485 corridor project is located within two kilometers of two tracked species. These rare species are:

- Lasmigona decorata (Carolina heelsplitter) US and NC Endangered. This population is considered historical and has not been seen in recent surveys.
- Lotus helleri (Carolina birdfoot-trefoil) US: Federal Species of Concern and NC: Significantly Rare Throughout its range (SR-T). This species is associated with open, dry, often disturbed habitats, such as conditions sometimes found along roadsides.

In addition to these species, an important animal assemblage, a Colonial Wading Bird Colony, is located within two kilometers of the proposed project area.

Although our maps do not show records of natural heritage elements within the project area, we have no evidence that rare species are not present. The area simply may not have been surveyed. The use of Natural Heritage Program data should not be substituted for actual field surveys, particularly if the project area contains suitable habitat for rare species, significant natural communities, or priority natural areas. Care should be taken to survey for these species if suitable habitat is present within the proposed project areas.

Although we do not anticipate direct impacts to tracked species, we are concerned about potential secondary and cumulative impacts to a newly discovered Carolina heelsplitter population. In March 2006, the federally and state endangered mussel was collected in Six Mile Creek in Lancaster County, South Carolina, just south of the North Carolina border. We request these issues be addressed in any future environmental documents. We

1601 Mail Service Center, Raleigh, North Carolina 27699-1601 Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: www.enr.state.nc.us/ENR/ TIP No. R-4902 22 August 2006 Page 2

also recommend you contact the U.S. Fish and Wildlife Service at (828) 258-3939 for further consultation regarding potential impacts to Carolina heelsplitter.

You may wish to check the Natural Heritage Program database website at www.ncnhp.org for a listing of rare plants and animals and significant natural communities in the county and on the topographic quad map. Please do not hesitate to contact me at (828) 713-3297 if you have questions or need further information.

Sincerely,

Angie Lodgers

Angie Rodgers Western Freshwater Ecologist NC Natural Heritage Program





## North Carolina Department of Administration

Michael F. Easley, Governor

September 18, 2006

Britt Cobb, Secretary

Ms. Angela Sanderson NCDOT PDEA 1548 Mail Service Center Raleigh, NC 27699-1528

Dear Ms. Sanderson:

Re: SCH File # 07-E-4220-0044; Scoping; Proposed improvements to I-485, from US 521 (Johnston Road) to I-77 South of Charlotte, Mecklenburg County, TIP No. R-4902

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

Chryp Buggett 1576

Ms. Chrys Baggett Environmental Policy Act Coordinator

Attachments

cc: Region F

Mailing Address: 1301 Mail Service Center Raleigh, NC 27699-1301 *Telephone: (919)807-2425* Fax (919)733-9571 State Courier #51-01-00 *e-mail Chrys.Baggett@ncmail.net*  *Location Address:* 116 West Jones Street Raleigh, North Carolina

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## North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary



MEMORANDUM

TO: Chrys Baggett State Clearinghouse

FROM: Melba McGee / Project Review Coordinator

RE: 07-0044 Scoping, Improvements to I-485 from US 521 Johnston Road to I-77 South of Charlotte in Mecklenburg County

DATE: September 8, 2006

The Department of Environment and Natural Resources has reviewed the proposed project. The attached comments are a result of this review. More specific comments will be provided during the environmental review process.

Thank you for the opportunity to respond. If during the preparation of the environmental document, additional information is needed, the applicant is encouraged to notify our respective divisions.

Attachments

1601 Mail Service Center, Raleigh, North Carolina 27699-1601 Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: www.enr.state.nc.us/ENR/





## $\boxtimes$ North Carolina Wildlife Resources Commission $\boxtimes$

Richard B. Hamilton, Executive Director

TO: Melba McGee, Environmental Coordinator Office of Legislative and Intergovernmental Affairs, DENR

FROM: Marla Chambers, Western NCDOT Permit Coordinator Habitat Conservation Program, NCWRC

Marta Chamberry

- DATE: August 31, 2006
- SUBJECT: Scoping review of NCDOT's proposed improvements to I-485 from US 521 (Johnston Road) to I-77 South of Charlotte, Mecklenburg County. TIP No. R-4902. OLIA Project No. 07-0044, due 9/4/2006.

The North Carolina Department of Transportation (NCDOT) is requesting comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject project. Staff biologists have reviewed the information provided and have the following preliminary comments. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The NCDOT proposes to construct additional lanes on I-485 from US 521 (Johnston Road) to I-77 South of Charlotte. The project will likely impact McAlpine, McMullen, Sugar, and Little Sugar Creeks, all Class C waters. McAlpine, Sugar, and Little Sugar Creeks are all on the 303(d) list of impaired waters. An historic record for the Carolina heelsplitter (*Lasmigona decorata*), a federal and state Endangered mussel, exists for Sugar Creek, not far from the project. The lower McAlpine and McMullen Creek Greenway crosses the project and future greenway trails are planned for Little Sugar Creek and Sugar Creek in the project area.

Minimizing off-site sedimentation will be important for this project. Sediment and erosion control should adhere to the design standards for sensitive watersheds. NCDOT should consult with the Mecklenburg County Park and Recreation Department to ensure compatibility with the existing and planned greenway trails.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721 Telephone: (919) 707-0220 • Fax: (919) 707-0028 In addition, to help facilitate document preparation and the review process, our general information needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with the following programs:

The Natural Heritage Program <u>http://www.ncsparks.net/nhp</u> 1601 Mail Service Center Raleigh, N. C. 27699-1601

and,

NCDA Plant Conservation Program P. O. Box 27647 Raleigh, N. C. 27611 (919) 733-3610

- 2. Description of any streams or wetlands affected by the project. If applicable, include the linear feet of stream that will be channelized or relocated.
- 3. Cover type maps showing wetland acreage impacted by the project. Wetland acreage should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (USACE). If the USACE is not consulted, the person delineating wetlands should be identified and criteria listed.
- 4. Cover type maps showing acreage of upland wildlife habitat impacted by the proposed project. Potential borrow sites and waste areas should be included.
- 5. Show the extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).
- 6. Include the mitigation plan for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.
- 7. Address the overall environmental effects of the project construction and quantify the contribution of this individual project to environmental degradation.
- 8. Provide a discussion of the probable impacts on natural resources, which will result from secondary development, facilitated by the improved road access.

R-4902, I-485, US 521 to I-77 Mecklenburg County

9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages of this project. If you have any questions regarding these comments, please contact me at (704) 545-3841.

cc: Marella Buncick, USFWS Polly Lespinasse, NCDWQ Christopher Militscher, USEPA Steve Lund, USACE



Michael F. Easley, Governor William G. Ross Jr., Secretary North Carolina Department of Environment and Natural Resources

> Alan W. Klimek, P. E. Director Division of Water Quality Coleen H. Sullins, Deputy Director Division of Water Quality

August 17, 2006

MEMORANDUM

- TO: Melba McGee Department of Environment and Natural Resources
- FROM: Hannah Stallings Division of Water Quality



SUBJECT: Mecklenburg County – I-45 from US 521 (Johnston Road) to I-77 South of Charlotte Project Number 07-0044, 13727

Dave Toms of the Basinwide Planning Program Unit has advised that four surface waters along the corridor of this project, Irwin, Sugar, McAlpine, and Little Sugar Creeks, are impaired.

Please contact me at 733-5083, ext. 555, if I can be of more assistance.





## **INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS**

NCDENR Department of Environment and Natural Resources

State of North Carolina

After review of this project it has been determined that the DENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of this form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

poresul

Project Number: 07-0044 Due Date: 09,04,06

**Reviewing Office** 

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)	
	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)	
D	NPDES-permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection preapplication conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90 - 120 days (N/A)	
	Water Use Permit	Preapplication technical conference usually necessary	30 days (N/A)	
	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)	
	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Preapplication conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)	
D	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days	
	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900			
	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820.	N/A	60 days (90 days)	
D	Complex Source Permit required under 15 A NCAC 2D.0800			
The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) at least 30 days before beginning activity. A fee of \$50 for the first acre or any part of an acre.				
	The Sedimentation Pollution Control Act of 1973 must be addressed with respect to the referenced Local Ordinance.			
Ø	Sedimentation and erosion control must be addressed i given to design and installation of appropriate perimete	n accordance with NCDOT's approved program. Particular attention should be er sediment trapping devices as well as stable stormwater conveyances and outlets.		
	Mining Permit	On-site inspection usual. Surety bond filed with DENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)	
	North Carolina Burning permit	On-site inspection by N.C. Division of Forest Resources if permit exceeds 4 days	1 day (N/A)	
	Special Ground Clearance Burning Permit-22 counties in coastal N.C. with organic soils.	On-site inspection by N.C. Division of Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)	
a	Oil Refining Facilities	N/A	90 - 120 days (N/A)	

Michael F. Easley, Governor



William G. Ross Jr., Secretary North Carolina Department of Environment and Natural Resources

> Alan W. Klimek, P.E. Director Division of Water Quality

August 14, 2006

## MEMORANDUM

To: Angela Sanderson, NCDOT Project Planning Engineer

From: Polly Lespinasse, NC Division of Water Quality, Mooresville Regional Office

# Subject: Scoping Comments on Proposed Improvements to I-485 from US 521 (Johnston Road) to I-77 South of Charlotte in Mecklenburg County, Federal Aid Project No. IMNHF-485-(8), WBS #39929, TIP R-4902

Please reference your correspondence dated July 28, 2006, in which you requested comments for the above referenced project. Preliminary analysis of the project reveals the potential for multiple impacts to perennial streams and jurisdictional wetlands in the project area. More specifically, impacts to:

Stream Name	River Basin	Stream Classification(s)	Stream Index Number
Sugar Creek	Catawba	С	11-137
Little Sugar Creek	Catawba	С	11-137-8
McAlpine Creek	Catawba	С	11-137-9
McMullen Creek	Catawba	С	11-137-9-5

Further investigations at a higher resolution should be undertaken to verify the presence of other streams and/or jurisdictional wetlands in the area. In the event that any jurisdictional areas are identified, the Division of Water Quality (DWQ) requests that the North Carolina Department of Transportation (NCDOT) consider the following environmental issues for the proposed project:

## **Project Specific Comments:**

 Sugar Creek, Little Sugar Creek and McAlpine Creek are class C, 303(d) waters of the State. These creeks are on the 303(d) list for impaired use for aquatic life due to turbidity. DWQ is very concerned with sediment and erosion impacts that could result from this project. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to these creeks. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ Storm Water Best Management Practices.

## **General Project Comments:**

 The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

> NorthCarolina Naturally

North Carolina Division of Water Quality Internet: h2o.enr.state.nc.us 610 East Center Avenue, Suite 301 Mooresville, NC 28115 Phone (704) 663-1699 Fax (704) 663-6040

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- Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ Storm Water Best Management Practices, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.
- 3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.
- 4. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
- 5. DWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
- 6. If a bridge is being replaced with a hydraulic conveyance other than another bridge, DWQ believes the use of a Nationwide Permit may be required. Please contact the US Army Corp of Engineers to determine the required permit(s).
- 7. If the old bridge is removed, no discharge of bridge material into surface waters is allowed unless otherwise authorized by the US ACOE. Strict adherence to the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.
- 8. Bridge supports (bents) should not be placed in the stream when possible.
- 9. Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters.
- 10. Bridge deck drains should not discharge directly into the stream. Storm water should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of the NC DWQ *Storm Water Best Management Practices*.
- 11. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

#### Page 3

- 12. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
- 13. Placement of culverts and other structures in waters, streams, and wetlands shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
- 14. If multiple pipes or barrels are required, they should be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
- 15. If foundation test borings are necessary, it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No. 6 for Survey Activities.
- 16. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.
- 17. All work in or adjacent to stream waters should be conducted in a dry work area unless otherwise approved by NC DWQ. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.
- 18. Sediment and erosion control measures should not be placed in wetlands and streams.
- 19. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.
- 20. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.
- 21. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

- Page 4 22. In most cases, the DWQ prefers
  - 22. In most cases, the DWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed and restored to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas.
  - 23. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

Thank you for requesting our input at this time. The NCDOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Polly Lespinasse at (704) 663-1699.

cc: Steve Lund, US Army Corps of Engineers, Asheville Field Office Ron Lucas, Federal Highway Administration Chris Militscher, Environmental Protection Agency Marla Chambers, NC Wildlife Resources Commission Marella Buncick, US Fish and Wildlife Service Sonia Gregory, DWQ Central Office File Copy

## MECKLENBURG-UNION METROPOLITAN PLANNING ORGANIZATION

600 East Fourth Street Charlotte, North Carolina 28202-2853 704-336-2205 www.mumpo.org

CHARLOTTE CORNELIUS TO: Angela Sanderson, Project Planning Engineer DAVIDSON North Carolina Department of Transportation HUNTERSVILLE Robert W. Cook, AICP FROM: INDIAN TRAIL Mecklenburg-Union Metropolitan Planning Organization MATTHEWS September 14, 2006 DATE: MECKLENBURG **R-4902 Scoping Comments** SUBJECT: COUNTY

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) offers the following comments to be considered during the scoping process of the above-referenced project:

• MUMPO's 2030 Long-Range Transportation Plan calls for six lanes on I-485 from I-77 to US 521 in the 2020 horizon year and for eight lanes in the 2030 horizon year.

• I-485 currently consists of six lanes between I-77 and South Boulevard, but one of the three lanes in each direction is an auxiliary lane. Will this project add additional through lanes in this segment of the project?

• Will the project address congestion issues at the interchange with I-77? There is particular concern with the movement onto northbound I-77 and onto eastbound I-485.

• Will any ITS features, such as ramp metering, be incorporated into the design?

- A northbound Johnston Road flyover to westbound I-485 is an important part of this project. It is a component of MUMPO's LRTP and Candidate Projects List (when the roadway is widened to eight lanes). The flyover would not be beneficial during the six-lane project as the current configuration would still meter traffic at this interchange. We recommend that the flyover be incorporated into the design of this project, but not before it is carefully evaluated to ensure that it remains the most viable solution to the problem at this interchange.
- The South Corridor light rail line will terminate just north of I-485 near Exit 65. While there are no current plans for the Charlotte Area Transit System (CATS) to extend service south of I-485, the Rock Hill-Fort Mill Area Transportation Study (RFATS) is currently working on a Major Investment Study (MIS) to determine how rapid transit can be extended into South Carolina. Bus and rail modes are currently being reviewed and may use the existing rail bridge that crosses I-485 just west of I-77.

• MUMPO's LRTP calls for the construction of a four-lane bridge on Community House Road over I-485. The road is built as a four-lane cross section on both

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sides of I-485 and is located approximately 2200 feet east of US 521. We are requesting that this bridge be built as a part of this project.

- The lack of means to provide for continuous bicycle and pedestrian movement in the vicinity of limited access roadways is a major issue limiting nonmotorized mobility in the Charlotte area. Accordingly, all road crossings of I-485 should be designed to accommodate bicycles and pedestrians. Any bridge construction or reconstruction should allow for the future installation of bicycle lanes and sidewalks in addition to the space required for existing or future motor vehicle lanes. This would mean sufficient bridge widths to accommodate all modes as well as appropriate space between support piers of underpasses.
- Greenway path crossings of I-485 need to be incorporated in the design for the widening. Specifically, there are existing greenway corridors along McMullen Creek and McAlpine Creek. Additional greenways are planned along Big Sugar Creek, Little Sugar Creek and Kings Branch.

We look forward to working with NCDOT to advance this very important project. If you have any questions about these comments, please contact me at 704-336-8643 or via email at rwcook@ci.charlotte.nc.us.

cc:

Patrick Mumford, Chair, Mecklenburg-Union MPO Jim Humphrey, PE, TCC Chair, Mecklenburg-Union MPO Bill Coxe, TCC Vice-Chair, Mecklenburg-Union MPO Timothy Gibbs, AICP, Charlotte Department of Transportation Barry Mosley, MUMPO Stuart Basham, MUMPO Jonathan Parker, PE, NCDOT-Transportation Planning Branch



## MECKLENBURG COUNTY Land Use and Environmental Services Agency

September 15, 2006

Mr. Gregory J. Thorpe, Ph.D. Manager Project Development and Environmental Analysis Branch NC Department of Transportation 1548 Mail Service Center Raleigh, NC 27699-1548

Ms. Angela Sanderson Project Planning Engineer amsanderson@dot.state.nc.us

## Re: I-485, from US 521 (Johnston Road) to I-77 South of Charlotte, Mecklenburg County, Federal Aid Project IMNHF-485-(8), WBS #39929, TIP No. R-4902

Dear Mr. Thorpe / Ms. Sanderson:

Representatives of the Mecklenburg County Land Use and Environmental Services Agency (LUESA) have reviewed the above referenced project announcement and applaud your efforts to evaluate potential environmental impacts of this project as you prepare your Environmental Assessment. A survey of the LUESA staff regarding your project indicates the following information you may want to consider in relation to your project:

The parcel immediately adjacent to the project that is of potential concern is parcel 250-202-02. This parcel contains a closed Land clearing Construction Inert Debris landfill, permit 60-AP. If you require additional information regarding this issue, please contact Mr. Jack Stutts at (704.336.5438) or jack.stutts@mecklenburgcountync.gov.

If you have any additional questions, please do not hesitate to contact me at (704) 336-5597.

Respectfully,

Heidi Pruess Environmental Policy Administrator