

Cornelius
Davidson
Huntersville
Kannapolis
Concord



Lincoln County
Mecklenburg County
Cabarrus County

July 25, 2013
1:00-3:00 PM
Cabarrus County Planning Department
65 Church Street SE
Concord, NC 28025

Regular Meeting Agenda

- 1. Welcome and Introduction**
- 2. Administrative Matters**
 - a. Approve minutes of February 20, 2013 meeting
 - b. Approve minutes of June 5, 2013 meeting
 - c. Elect officers for 2013
- 3. MPO Projects and Prioritization Along Corridor**
- 4. Davidson East Proposed Developments**
- 5. Revisioning the COP in 2013?**
- 6. What's New Along the NC 73 Corridor**

Each community will give a brief update of what is taking place along their respective portions of the Corridor
- 7. Next Meeting Date and Location**
- 8. Wrap-Up and Adjourn**

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Lincoln County
Mecklenburg County
Cabarrus County

February 20, 2013
10:30-12 PM
Cabarrus County Planning Department
65 Church Street
Concord, NC

Regular Meeting Minutes

Attendees: Susie Morris, Cabarrus County; Andrew Bryant, Lincoln County; Sarah McAulay, Town of Huntersville; Jack Simoneau, Town of Huntersville; Zac Gordon, Town of Huntersville; Ben McCreary, Town of Davidson; Scott Cole- NCDOT- Division 10; David Keilson, NCDOT- Division 12; Linda Dosse, NCDOT- Transportation Planning Branch; Anil Panicker, NCDOT- Transportation Planning Branch; Blair Israel, Centralina COG.

Welcome and Introductions: Mr. Israel opened the meeting at 10:30 AM. All present then introduced themselves and proceeded with the news along the corridor. The request was made to add election of new officers to the agenda of the next meeting.

Minutes from June 5, 2012 COP meeting: Once a quorum had arrived, Mr. Simoneau made a motion to approve the minutes as presented. Mr. Bryant seconded and the minutes were approved.

Metropolitan Planning Organization Long-Range Transportation Plan Candidate Projects along the Corridor: No projects were put forward. A general request was made for a copy of the draft LRTP to be emailed to the COP. CCOG will follow up.

What's New along the NC 73 Corridor

Lincoln County: Mr. Bryant reported that two miles of NC 73, from McCowan's Ford Dam to NC 16 Business, have been requested to be considered for widening from two-lane to four-lanes divided. This project was submitted by Lincoln County to MUMPO for their LRTP. A new gas station at the Wal-Mart site at new NC 16 and NC 73 is now complete but has no direct access to NC 73. The waterline by NC 16 Business and NC 73 has proven problematic. A new contractor is doing new borings under the highway. The County is going through the MOU process of voting and quorum structure.

Town of Huntersville: Mr. Gordon reported that the NC 73 Poplar Tent small area plan has proceeded. A draft will be presented to the Town of Huntersville.

The Behavioral Health Hospital entrance is not lining up with the Bradford Park entrance across the street and is 1,100 feet from the Bradford Park entrance. The NC 73 segment from US 21 to NC 115 is now complete. Ms. McAulay shared that she is newly elected chair for MUMPO. The Ramah Church Road intersection alignment hits the center of the property line across the street. The Town of Davidson was interested in realigning Rama Church Road to connect to Davidson East, a few hundred feet away. Mr. Cole said that geometric alignment is

not an issue; it would only depend upon the property owners. The current signal is to be moved to Ramah from the park installs the driveway connector. Mr. Cole stated that a letter to the hospital would not be necessary, but a draft letter was created that Huntersville signed several years ago but which Mr. Gordon reported was not finalized. Mr. Simoneau said that a formal MOU is needed. He and Mr. Gordon will ask Bill Coxe and Mecklenburg County Parks & Recreation to get involved. Mr. Gordon reported that 2008 approved park bond money will be used to provide access from NC 73 to Bradford Park. Parks & Rec. could possibly sell additional bonds to handle the project. Mr. McCreary reported that the Town has an MOU already drafted.

The Renaissance Festival group now owns property on NC 73 just west of Poplar Tent Road. They have contracted with an engineering firm to study access. Improvements may be made this fall, but no permit has been issued yet by the Town of Huntersville. There may be a need for discussion between this group and the adjacent shopping center. The project as whole may cross jurisdictional boundaries.

Landscaping is being installed along the newly widened section of NC 73 from I-77 to NC 115. An encroachment agreement was issued by NCDOT. Installment of street trees and landscaping in the median is expected to be complete by March. The contract for \$235,000 is being shared by the Town of Huntersville and private developers.

Piedmont Natural Gas is installing a northwest to southeast line just east of Bradford Farm, reported Mr. Gordon. The Rama Creek sewer line is under construction and scheduled to be complete by 2015. An area plan is being undertaken in conjunction with that from NC 115 east to Davidson-Concord Road along the NC 73 corridor. A future transit stop in this area will serve Huntersville east development.

Cabarrus County: Ms. Morris reported that the City of Concord has received a plan for Crystal Creek, an approximately 200 unit subdivision in the area of Moorecrest and Skybrook. A general request was made in recent weeks regarding a development for the intersection of NC 73 and Poplar Tent Road, possibly a gas station/convenience store. A Catholic School project in Kannapolis is currently active, with building inspections underway.

Mr. Cole reported that I-85 widening continues including the diverging diamond at NC 73. Transmission line issues are being resolved. Also, a left turn lane at NC 73 and Chadburn is scheduled for construction this summer. Mr. Cole's role in the COP will be transitioned to Sean Epperson (smepperson@ncdot.gov), with Mr. Cole serving as a backup.

Next Meeting Date and Location: The next meeting date and location were not determined. The meeting was adjourned by Mr. Israel at 12:00 PM.

Cornelius
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Lincoln County
Mecklenburg County
Cabarrus County

June 5, 2013
9:30-11:00 AM
Cabarrus County Planning Department
65 Church Street
Concord, NC

Regular Meeting Minutes

Attendees: Susie Morris, Cabarrus County; Sarah McAulay, Town of Huntersville; Jack Simoneau, Town of Huntersville; Zac Gordon, Town of Huntersville; Scott Cole- NCDOT-Division 10; David Keilson, NCDOT-Division 12; Susie Morris, Cabarrus County; Wayne Herron, Town of Cornelius; Sean Epperson, NCDOT-Division 10; Bill Thunberg, Lake Norman Transportation Commission; Bjorn Hansen, Centralina COG; Bob Cook- via teleconference, MUMPO; Bill Coxe- via teleconference, Town of Huntersville.

Welcome and Introductions: Ms. Morris opened the meeting at 9:30 AM. All present then introduced themselves. Mr. Hansen stated there was no quorum present, so the group would not be able to take action on items.

Minutes from February 20, 2013 COP meeting: No action was taken.

Election of Officers: No action was taken.

Metropolitan Planning Organization Long-Range Transportation Plan (LRTP) Candidate Projects along the Corridor: Mr. Hansen reviewed the current list of projects being considered along the corridor by the two MPOs. He stated the funding projections typically used by MPOs was very uncertain due to proposed changes in the NCDOT project ranking and funding formulas. Mr. Simoneau asked about how intersection projects would be considered in these lists, specifically Poplar Tent and NC 73. Mr. Hansen said these projects have historically not been considered in LRTP lists, and were typically addressed through MPO-controlled funds, such as STP-DA or CMAQ. Mr. Simoneau stressed the need to address the intersection sooner than a corridor widening would occur. The group decided to have the chairman send a letter to the Kannapolis, Concord, and County representatives to the Cabarrus-Rowan MPO asking them to consider such a project as a part of the next Transportation Improvement Program (TIP) development in 2014.

Davidson East Proposed Developments: The group did not address this issue.

Revising the COP in 2013: Mr. Hansen stated that Mr. Simoneau, Mr. Cole, and he presented at the May meeting of the Lake Norman Transportation Commission (LNTC). The LNTC members had expressed concern over whether area communities were reviewing development proposals with the intent of ensuring compliance with the corridor plan recommendations. The three of them explained how the COP worked, and the meeting schedule. Mr. Thunberg stated that the LNTC was willing to help increase participation by elected officials in the affected communities. This initiated a conversation about increasing

attendance at COP meetings, as this is the official forum for such discussions. The group decided to hold a meeting in July to review Davidson East proposed developments, and a general discussion of how to advance initiatives along the corridor. Ms. McCaulay stated the COP should not be integrated into the LNTC. Once a July meeting was set the LNTC would help encourage identified elected officials to attend the next meeting.

What's New along the NC 73 Corridor: The meeting ran long and the group did not get to this item.

Next Meeting Date and Location: The next meeting date and location would be identified through a poll of members for availability in mid-July.

The meeting was adjourned by Ms. Morris at 11:00 AM.

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Lincoln County
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MEMORANDUM

To: NC 73 COP members
From: Bjorn Hansen, Staff contact
Date: July 16, 2013
RE: Candidate projects along NC 73 for area MPO Long-Range Transportation Plans

The Mecklenburg-Union MPO and Cabarrus-Rowan MPO have each been developing their project lists and prioritizations for their 2040 Long-Range Transportation Plans, now referred to as Metropolitan Transportation Plans, or MTPs. These plans will be completed in the next 6-9 months. The candidate projects along the corridor are below.

Road	From	To	Type	Jurisdiction
NC 73	Davidson-Concord Road, SR2693	Poplar Tent Road	widening	Davidson & Huntersville
NC 73	Old Statesville Road, NC115	Davidson-Concord Road	widening	Cornelius & Huntersville
I-77 at NC 73	Interchange	Interchange	interchange improvement/grade separation	Huntersville
NC 73	West Catawba Avenue, SR5544	Northcross Drive	widening	Huntersville
NC 73	Vance Road Extension	West Catawba Avenue	widening	Huntersville
NC 73	Business NC 16	Vance Road Extension	widening	Huntersville and Lincoln County
NC 73	US 29	Cabarrus County line	Widening	Concord and Kannapolis

The MPO project lists must be fiscally-constrained, and the assumptions of available funds is uncertain due to the recently proposed Strategic Mobility Fund, which would make 40 percent of all STIP funds for projects that compete statewide, with the remaining 60 percent available at the Funding Region and Division levels. Projects on NC 73 would compete at the Regional level, but Interstate and certain US route projects not funded at the statewide tier would compete for funding at the Regional level as well. The full plan on how to implement this new formula will not be finalized for several months, but would be used for the next STIP development process in 2014-2015.

Action Requested: Information only

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**Lincoln County
Mecklenburg County
Cabarrus County**

MEMORANDUM

To: NC 73 COP members

From: Bjorn Hansen, Staff contact

Date: July 10, 2013

RE: COP MOU/Bylaws Revisions and Advancing a New Corridor Study

The Council of Planning has operated for over seven years under the initial MOU and bylaws. The Gaston Urban Area MPO now represents all of Lincoln County for transportation planning, and will be renamed the Southwest Piedmont Metropolitan Planning Organization. This will necessitate a change in the MOU to allow them to be a signatory to the COP.

This may be the appropriate time to consider how the COP is structured, its linkages with other area organizations such as the Lake Norman Transportation Commission (LNTC), and how to initiate a study for identifying low-cost improvements along the corridor.

A copy of the 2011 scope of work for a reimagined corridor study is attached.

Action Requested: Discussion and feedback

NC 73 Corridor Study

Lincoln, Mecklenburg, and Cabarrus Counties

NO TIP PROJECTS ARE AFFECTED BY THIS STUDY

Scope of Work

NC 73 from US 321 in Lincoln County to I-85 in Cabarrus County has been designated as a Strategic Highway Corridor. The North Carolina Department of Transportation (NCDOT) continues to support the Strategic Highway Corridors initiative to ensure preservation of transportation corridors considered to be vital to the State's interest. This will be accomplished by preserving mobility and connectivity to travel destinations within and just outside of North Carolina through a combination of land use planning, access management, and targeted capacity expansion.

In several areas of the corridor, NC 73 is presently experiencing substantial congestion and urbanization. Improving traffic flow in these areas to the desired level of service may not be economically feasible. In many cases, proper specific access management regulations and corridor-wide strategic mobility analysis has not been thoroughly investigated. In an effort to be proactive in maintaining and enhancing the mobility function of the facility, the eight communities along the corridor are jointly updating their 2004 corridor study of NC 73 (2004 Study) through the three counties to help refine land use and transportation recommendations as part of the NCDOT's Strategic Highway Corridors program.

The eight communities along the corridor have collectively participated in the NC 73 Council of Planning (COP) since 2005, which has provided a forum for organized communication between the NCDOT, area chambers of commerce, transportation planning organizations, and the participating communities. It is the intention of the COP for an update of the corridor plan to be a joint effort between the NCDOT and the COP to implement the NCDOT's Strategic Highway Corridors program in a high-growth area without the expectation of wide-scale road widenings in the short term. The 2004 Study relied on the then adopted future land use plans along the corridor as a baseline and then designed a road that would serve those land use patterns. While successful in planning, subsequent implementation efforts have largely been isolated and compartmentalized.

The purpose of the Strategic Highway Corridors program is to create a vision for a distinct set of roadways and corridors of statewide and regional significance that will provide direction to long-term decision making related to transportation funding, project planning, design, access management, and land use planning. The goals for the corridor vision are to improve mobility and connectivity, foster

Draft Date: April 15, 2010

economic prosperity, promote environmental stewardship, and protect the State's transportation investment.

The North Carolina Department of Transportation (NCDOT) was a signatory on the original plan, as were the eight communities and the two MPOs and one RPO. The signatories will remain unchanged for this update.

The purpose of this study is to identify a range of lower-cost, site-specific projects and policies that can improve, maintain, and enhance traffic operations along the corridor. The eight members of the COP identified the following transportation-related issues along the NC 73 Corridor:

- Incorporating the NCDOT "Complete Streets" initiative on a Strategic Highway Corridor.
- Developing consistent and mutually agreed upon (NCDOT and local) access management and development regulations along the corridor.
- Ensuring consistency between local small area plan designs and NCDOT designs and policies.

These issues will be addressed through dialogue and analysis of existing plans and regulations to identify mutually-agreed upon regulations. These regulations will ideally result in similar situations being treated equally along the corridor. For example, commercial developments requesting curb cuts at an intersection will be treated equally along the corridor, as it relates to providing access consistent with the adopted corridor plan.

1.0 Project Management Plan

The purpose of this task is to:

- Outline the management approach for the team's activities.
- Designate appropriate project management meetings.
- Define project documentation and communication protocol.
- Specify monthly progress reporting requirements.

1.1 Project Schedule

The Consultant shall prepare and submit to the Department's Project Manager a detailed project schedule within two weeks of Notice to Proceed (NTP), indicating scheduling of monthly working meetings and key deliverable dates. The detailed schedule will build upon an initial set of key milestones established as part of project scoping. This schedule will be updated as needed throughout the project. For purposes of scoping, a 14-month schedule (maximum) has been assumed for this project.

Deliverable:

- Project Schedule (electronic delivery, PDF format)
- Kickoff Meetings
- Consultant Team Kickoff Meeting

Draft Date: April 15, 2010

A consultant team kickoff meeting will be scheduled to take place in advance of the client kickoff meeting. The meeting is intended to:

- Provide a framework for the exchange of project information between team members.
- Determine what prior information, reports, and plans can be used “off the shelf” to expedite plan development.
- Establish consultant team communication protocols.
- Review the project scope and task assignments.
- Review the project schedule.
- Review status report and invoice formats.
- Establish a Steering Committee and membership.

As part of the kickoff meeting, the consultant task managers will conduct a field review of the NC 73 corridor.

1.2 Client Kickoff Meeting

A client project kickoff meeting will be scheduled to take place within two weeks from notice to proceed. The meeting will include the participation of the Steering Committee. The meeting is intended to:

- Provide a framework for the exchange of pertinent project information.
- Establish communication protocols between the Consultant and the Department’s project manager and other staff.
- Approve the monthly status report format.
- The Consultant will have key staff in attendance at the kickoff meeting, including:
 - Project Manager
 - Task Managers

The Consultant will take minutes of the meeting and submit to the Department Project Manager for approval. Once approved, the Consultant will electronically distribute the minutes to meeting attendees.

Deliverable:

- Kickoff Meeting Minutes (electronic delivery, PDF format)

1.3 NCDOT Project Manager Coordination

The Consultant Project Manager and Task Managers (as required) will meet on a monthly basis with the Department Project Manager to review study progress and to preview upcoming work activities. These meetings may be conducted in person or via teleconference and/or videoconference as convenient for the attendees. For purposes of scoping, 14 meetings (maximum) are assumed. The Consultant will take minutes of the meeting and submit to the Department Project Manager for approval. Once approved, the Consultant will electronically distribute the minutes to meeting attendees.

Deliverables:

- Project Management Meeting Agendas (electronic delivery, PDF format)
- Project Management Meeting Minutes (electronic delivery, PDF format)

1.4 Steering Committee Coordination

Steering Committee meetings will address ongoing project activity issues, key decision discussions, presentations of pertinent information and evaluations, and recommendations for the Committee's consideration. A list of the Steering Committee members will be provided by NCDOT and the COP and given to the consultant. Monthly Steering Committee meetings are assumed, not including the client kickoff meeting. For purposes of scoping, Steering Committee meetings are assumed to be held in a location along the NC 73 corridor. The COP will coordinate the meeting dates and time, and will arrange for the meeting facilities. One Steering Committee meeting will be scheduled before each Citizens Informational Workshop (see section 2.3), one meeting will occur to present the findings of Phase II, and one meeting will occur to present the findings of Phase III (land use regulations). The Consultant will take minutes of the meetings and submit to the Department Project Manager for approval. Once approved the Consultant will electronically distribute the minutes to meeting attendees.

Deliverables:

- Steering Committee Meeting Agendas (electronic delivery, PDF format)
- Presentation Materials (PowerPoint)
- Steering Committee Meeting Minutes (electronic delivery, PDF format)

1.5 Progress Reporting

The Consultant Project Manager, in coordination with the Task Managers, will prepare monthly progress reports. The monthly reports will document those activities completed during the time period of consideration, as well as a forecast of activities to be completed during the next month. These progress reports will accompany monthly invoices and serve as support for the work billed for during the period.

Deliverable:

- Monthly Progress Reports (electronic delivery, PDF format)

1.6 Project/Quality Control Plan

A project/quality control plan will be established at the outset of the project. The plan will be submitted to the Department's Project Manager for review and approval at the time of the project kickoff meeting.

The primary components of the plan will include:

- Communication plan.
- Listing of major work elements and the responsible staff.

Draft Date: April 15, 2010

- Identification of important quality control (QC) points on the task's schedule.
- Individuals responsible for QC reviews of various elements.

Project records will be maintained in the Consultant's office, including:

- Quality control plan file.
- Contract file – original contracts, financial data, and related items.
- Invoice file – copies of all invoices, both from the prime consultant and subconsultants.
- Correspondence file – copies of all letters, meeting notices, minutes, and verbal communication summaries regarding administrative matters.
- Project task files – individual files for each task of the project containing the data, analysis, draft materials, communications, and QA/QC related information.

Deliverable:

- Project/Quality Control Plan (electronic delivery, PDF format)

2.0 Public Involvement Program

2.1 Project Brochure

The consultant will prepare a general study brochure.

2.2 Mailing Lists and Phone and Mail Contact

2.2.1 Mailing Lists

An initial mailing list will be prepared by the consultant, in consultation with the COP, and will be used for advance notification for the first round of Citizens Informational workshops (see section 2.3). This initial list will be updated and maintained by the Consultant for the purpose of providing public information concerning progress on the project and for notifying the public of informational meetings. The list will be maintained for the duration of this project.

2.2.2 Phone and Mail Contact

The Consultant will respond to telephone calls, mail, and e-mail received from citizens and public officials.

All telephone and mail contact will be handled by responsible project personnel having expertise in the area of concern. All mail and phone contacts should be responded to within two business days and will be coordinated with the NCDOT and COP as necessary. Records of communication will be maintained in a contacts file.

2.3 Citizens Informational Workshops

The Consultant will be responsible for conducting two (2) rounds of Citizens Informational Workshops to inform the public of the progress of the study and to obtain public input. The workshops will be informal in nature to encourage one-

on-one discussions of the project with the public. The Consultant will make a formal project presentation at these workshops.

The two (2) rounds of Citizens Informational Workshops will be as follows:

1. The first round of workshops to initiate public input will be held at the beginning of the study to inform the public of the planned activities and to receive comment and input.
2. The second round of workshops will be held to inform the public of the results of the Phase II analysis and the NCDOT's recommendations and to receive input from the public prior to proceeding to Phase III. The COP will be responsible for locating and arranging facilities within the study area for each workshop.

The consultant, with assistance from the COP, will be responsible for developing the mailing list and newsletter for the first workshop. The consultant, with assistance from the COP, will be responsible for providing the mailing list (see section 2.1.1) and newsletter for the second workshop. The newsletter for the second workshop will be reviewed by the NCDOT Public Involvement and Community Studies division. The consultant will release a press notice, through the NCDOT Public Affairs Office, regarding each workshop.

The Consultant will prepare project handouts/brochures and comment sheets for both workshops. The handouts/brochures for the workshops will be developed to relate to the workshop being held and will be approved by the NCDOT Project Manager prior to public distribution.

The Consultant will prepare an informal comment exercise at each workshop. The workshop agenda and format will be developed jointly between the NCDOT, COP, and Consultant. The Consultant will prepare a workshop summary that will document the workshop advertisement, location, and events, and will summarize the comments received at each workshop. After each workshop, the Consultant will update the project mailing list.

2.4 Small Group Meetings

The Consultant, in consultation with the COP and NCDOT, will hold up to eight (8) small group meetings with local organizations or citizens groups throughout the course of the project. The COP is available to present at any additional meetings, if requested.

The small group meetings will be held in response to requests made by organizations or groups who would like information about the project. The requesting entity will be responsible for arranging an appropriate meeting facility and for coordinating with the Consultant and the NCDOT for a mutually agreeable date and time.

The Consultant will prepare appropriate handouts and displays for each meeting. The content of these materials will vary depending upon when the meetings are held and the topics on which the requesting entity would like more information.

The Consultant will prepare minutes for all small group meetings.

Deliverable:

- Meeting handouts and displays (electronic delivery, PDF format)
- Meeting minutes (electronic delivery, PDF format)

2.5 Environmental Justice Research Activities

The Consultant will identify areas of minority and low-income populations within the corridor study area. These areas will be determined from a latest-available data Census screening using Census Tract and County level information and Windshield Review only. This information will be presented on a map that will include appropriate graphics and will be compiled in a report format.

Deliverable:

- Areas of minority and low income populations identified on a corridor map.

3.0 Identification of Corridor Segments for Preservation and Targeted Improvements

Phase II initiates the project scoping process by clearly defining the sections of the corridor appropriate for mobility and safety preservation and enhancement through targeted development regulations and limited capital improvements. The development regulations and ordinances required, as well as the details for the targeted capital improvements will be developed in Phase III.

3.1 Definition of Study Area

The NC 73 study area has already been defined by the NCDOT and COP. Typically with large corridor studies of this type, the study area is divided into sub-areas having various levels of geographic focus and data detail. An appropriate segmentation of the study area has previously been evaluated and will be utilized by the Consultant.

Activities for this task include:

- Review of the existing conditions data collected and documented by the NCDOT.
- Development of study area segmentation, as appropriate.
- Presentation and review of the study area segmentation with the NCDOT and Steering Committee.

Deliverables:

- Graphic depiction of study area recommended segmentation (electronic delivery, PDF format)

3.2 Data Collection

The Consultant will perform a windshield survey of the NC 73 corridor to spot-verify and collect additional information on major natural features identified through the digital information collection process. The survey also will identify any other significant features that may not have been included in the digital files.

The Consultant will review environmental resource data collected by the NCDOT as part of Phase I. As needed, the Consultant will collect additional digital information on environmental resources from the COP members and the NC Center for Geographic Information and Analysis (NCCGIA).

The Consultant, with assistance from the participating communities and the NCDOT, will compile GIS-based information along the corridor. At a minimum, this information will include:

- Road conditions (already maintained by the NCDOT)
- Historic traffic counts (already maintained by the NCDOT)
- Curb cut locations (already maintained by the COP)
- Parcel maps
- Existing land uses and zoning
- Planned NCDOT projects
- Hydraulic, topographical, and other relevant environmental data
- Public parks, refuges, and historic resources

The Consultant will review digital land use data collected by the COP members as part of Phase I. As needed the Consultant will collect from the local governments within the corridor study area, NCCGIA (through NCDOT), the U.S. Census Bureau, and other sources additional digital GIS layers including those related to existing parcels, land use, land cover, and zoning.

The NCDOT will provide any statewide plans that may affect the NC 73 Corridor such as Bicycle Routes or other special designations.

3.3 Project Goals and Objectives

The Steering Committee, along with the NCDOT, will define the Project Goals and Objectives. These will be provided to the Consultant in a timely manner.

3.4 Definition of Alternatives

One objective of the Phase II analysis is to establish a level of improvement that addresses the identified needs and constraints of the NC 73 Corridor through Lincoln, Mecklenburg, and Cabarrus Counties and is consistent with the broad objectives of NCDOT's Strategic Highway Corridors program. The strategies and projects identified in Phase II will be high return on investment projects and policies and provide a wide range of improvement strategies with varying physical and operational features. Alternatives will be defined by cost, benefit, and impacts. Each project or policy will have a matrix of physical and operational characteristics (when possible). Larger capital projects will have sketch plans for

purposes of order-of-magnitude cost estimates and impact assessments. All alternatives/concepts will utilize the existing NC 73 alignment. New location alternatives will not be considered as part of this study.

Deliverable:

- Definition of Alternatives including ordinance language, policies, graphical typical sections, key characteristics matrix, and sample plan view (electronic delivery).

3.5 Environmental Screening

3.5.1 Environmental Constraints and Opportunities Mapping

The NCDOT will provide maps of major environmental features and constraints to assist in the understanding of the resources along the corridor. The GIS information will include the information from NCCGIA, supplemented with information from the COP members.

Various factors that might limit or discourage the development of a highway will be mapped at a common scale on aerial photography and/or other available mapping using ArcGIS.

Factors to be mapped include, but are not limited to, those listed above and any relevant land use, demographic, economic, and traffic information collected by others as a part of this project.

3.5.2 Corridor Land Use

Prepare Existing Land Use Map

Using available digital data, the Consultant will prepare appropriate scale maps showing parcel boundaries and existing land use. Other features to be displayed include major roads, rail/transit right-of-way, and other major transportation facilities; major water features (i.e., lakes and rivers), and major utility easements and facilities. Where such data is not available, the Consultant will examine county aerial photography and digitize areas to generally depict large scale commercial and residential areas as well as other major institutions (i.e., community college, hospital campuses, etc) adjacent to NC 73.

Deliverable:

- Existing Land Use Map (electronic delivery, PDF format)

Prepare Existing Zoning Map

Using available digital data, the Consultant will prepare maps at an appropriate scale for displaying existing zoning. Districts may be collapsed to show general categories: low-, medium-, and high-density residential, commercial, industrial, vacant, etc. Other features to be displayed include major roads, rail/transit right-of-way, and other major transportation facilities; major water features (i.e., lakes and rivers), and major utility easements and facilities.

Deliverable:

- Existing Zoning Map (electronic delivery, PDF format)

Review Adopted Local Plans

The Consultant will review the current, adopted land use, transportation, and other relevant plans provided by COP members and will identify the key features and recommendations of each. The purpose of this review is to generally gain an understanding the vision each community has for the future and the related policies aimed at achieving those visions. This review will be useful in interpreting the land use plan maps that accompany each plan.

3.5.3 Agency Coordination

Meetings with Planning Staffs

The Consultant will conduct) phone interviews with the planning directors and/or key planning staff (one interview per jurisdiction) to discuss their plan(s), to include applicable transportation planning organizations. The purpose of these interviews is threefold: (1) to clarify specific plan details, (2) verify map data displayed on existing land use map, and (3) collect additional information critical to understanding the communities' visions for the future.

Deliverable:

- Meeting minutes for file (electronic delivery, PDF format)

3.6 Traffic Analysis

The Consultant will perform all traffic operations analysis using Synchro + SimTraffic Version 7.0 software and HCS2010.

3.6.1 Review Traffic Forecasts

The NCDOT will provide existing AADT. The consultant will collect AM and PM peak hour turning movement volumes for the existing intersections listed below. The Consultant will prepare figures depicting the existing AADT volumes and the existing AM and PM peak-hour turning movement volumes.

List to be developed in consultation with NCDOT and COP members.

The NCDOT will utilize design year 2035 AADT volumes from the Metrolina Regional Travel Demand Model for corridor traffic volumes, and the existing and future intersections listed above. For this study, it assumed that the traffic forecast volumes are demand volumes and will not change relative to proposed facility type improvement.

Along with the traffic forecasts, the NCDOT will provide truck percentages, directional distribution percentages, and peak-hour factor.

The Consultant will review the existing count data and design year traffic forecasts for completeness and will coordinate any necessary modifications with the NCDOT.

3.6.2 Develop Design Hour Traffic

Using the appropriate peak-hour factor (K) and directional distribution percentage (D) provided by the NCDOT, the Consultant will generate future AM and PM peak hour turning movement volumes for the intersections listed in Subtask 3.5.1 for a design year (2035).

The Consultant will provide figures and graphics depicting the future AADT volumes and the future AM and PM peak hour turning movement volumes for a No-build Condition and up to two (2) Build Alternatives per studied intersection or segment.

Deliverable:

- Figures depicting existing AADT and AM and PM peak-hour turning movement volumes (electronic delivery, PDF format)
- Figures depicting 2035 AM and PM peak hour turning movement volumes for the design year for No-build Condition and up to two (2) Build alternatives (electronic delivery, PDF format).

3.6.3 Conduct Operations Analysis

The study would identify turn-lane recommendations for congestion and safety issues due to existing and projected deficiencies. These intersections, up to 20, will be defined as a part 3.5.1. The recommended improvements to these intersections will be modeled, based on funding scenarios defined by the NCDOT and COP members.

AM and PM peak hour operations analysis will be conducted for the existing conditions, a 2035 No-build Condition and up to two (2) Build 2035 Alternatives for the design year. Roadway geometrics, laneage, and storage should be recommended for each Build Alternative intersection or segment.

For each alternative an individual element analysis will be performed that will assess operating conditions for each unsignalized intersection, signalized intersection, ramp merge and diverge area and weaving area (where required). The Synchro software package will be used to analyze unsignalized and signalized intersection. All analyses should be performed using NCDOT Congestion Management Analysis Guidelines and similar criteria.

In order to compare corridor operations, the Consultant will provide a complete corridor evaluation using output from the SimTraffic module of the Synchro software package. The corridor evaluation will summarize measures of effectiveness including, but not limited to average travel speeds and total travel time along the entire NC 73 Corridor.

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The Consultant will provide figures showing the AM and PM peak hour intersection, and segment levels of service for existing conditions, 2035 no-build conditions, and up to two (2) build alternatives for the design year (2035). Figures will also be generated showing the evaluation of overall corridor performance.

Deliverable:

- Existing Condition AM and PM peak hour intersection and segment Levels of Service. (electronic delivery, PDF format)
- No-Build Alternative AM and PM peak hour intersection and segment Levels of Service. (electronic delivery, PDF format)
- Build Alternative (up to two (2) alternatives) AM and PM peak hour intersection and segment Levels of Service. (electronic delivery, PDF format)
- Peak Hour corridor evaluations for the Existing, No-build, and Build conditions (electronic delivery, PDF format).

3.6.4 Conduct Conceptual Design

For each of the recommended capital improvement projects, using criteria from the NCDOT Roadway Design Manual and similar criteria, the Consultant will generate a typical section and conceptual design plan showing:

- Roadway segment detail limited to showing edge of ROW to edge of ROW
- ROW impacts
- Interchange or intersection improvements.
- Revisions to existing land access (if applicable)

Each design alternative will be clearly identified on project maps. All roads including secondary roads will be identified with route numbers and road names. General location of any significant future or planned development will be identified by location and type. Any environmentally sensitive areas (wetlands, historic sites, etc.) will be shown. All intersections and interchanges will show current and design year AADT with turning movements. The scale of the limited conceptual designs will be 1" = 200'.

The consultant will prepare an estimate of a per project improvement cost for each of the conceptual designs in current year dollars. These quantities will be provided to the Department for its use in estimating probable construction costs.

Deliverables:

- Design files for conceptual designs (Microstation V8)
- 1 sets of plans at 1" = 200' for five conceptual design alternatives
- An itemized list of quantities for both functional designs (2 hardcopies of each and 2 electronic files in Microsoft Word format)

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- Construction Staging Plan including Staging Schematics and Bullet
- Descriptions (electronic delivery, PDF format)
- Draft Final Report (electronic delivery, PDF format)
- Final Final Report (electronic delivery, PDF format)

3.7 Initial Alternatives Evaluation

A matrix evaluation will be conducted to compare the concept alternatives. Anticipated categories within which specific evaluation criteria and measures of effectiveness will be developed include the following:

- Cost
- Environmental and Community Impacts
- Constructability
- Safety
- Future Operations
- Travel Speed Considerations
- Public Input
- Compatibility with Other Projects

A summary of the design concept and scope will be provided via corridor maps and appropriate text descriptions.

3.8 Initial Alternatives Documentation

The Consultant will prepare a summary report that will document the activities and recommendations of the initial alternatives evaluation.

Deliverable:

- Draft Alternatives Report (electronic delivery)
- Final Alternatives Report (electronic delivery)

4.0 Designs and Regulatory Recommendations

The Consultant will develop functional roadway designs for intersections and roadway segments to the level of detail defined below, and will not include items such as roadway profile or cross section generation. Number and arrangement of lanes will be determined through the operations analysis conducted as part of Subtask 3.6.3.

4.1 Develop Functional Designs

Functional roadway designs will consist of the following:

- Functional horizontal alignment for the L-line, Y-lines, ramps, and service roads which identify the centerline, radius of curvature, super elevation, and proposed number of lanes
- Approximate right of way limits on the L-line, Y-lines, ramps, and service roads

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- Control of access limits on the L-line, Y-lines, and interchanges
- Major bridge and drainage structures with their approximate lengths and widths
- Typical sections for the L-line, Y-lines, ramps, and service roads

The Consultant will prepare and submit a Design Criteria Package for review and approval by the Department prior to any design work commencing.

The Consultant will submit the proposed functional designs with right-of-way limits on orthophotography. The design on the orthophotography will enable the Department to review the alternatives from a topographic and design perspective. Each design alternative will be clearly identified on the orthophotography. All roads including secondary roads will be identified with route numbers and road names. General location of any significant future or planned development will be identified. Any environmentally sensitive areas (wetlands, historic sites, etc.) will be shown. All intersections and interchanges will show current and design year ADT with turning movements. The scale of the functional designs will be 1" = 200'.

4.2 Cost Estimates

The consultant will prepare an estimate of all the major quantities based on the functional designs. These quantities will be provided to the Department for its use in estimating probable construction costs. In addition, the Consultant will provide up to 4 sets of plans for each functional design alternative with right-of-way limits for the Department's use in preparing probable right-of-way and relocation costs.

4.3 Regulatory Recommendations

The Consultant will make recommendations for land use regulation language for the communities along the corridor appropriate to preserve current safety and mobility in light of continued development pressure. These recommendations would be applicable for sections of the corridor that do not meet accepted thresholds for improvements, but will likely require improvements as a byproduct of continued growth. The recommendations will consider:

- Right-of-Way preservation
- Impact fees
- Minimum lot width
- Curb cut intervals
- Connectivity
- Any other appropriate strategies.

Deliverables:

- Ordinance language suitable for direct insertion in local codes
- Illustrations or cross-sections of recommendations/ requirements (where applicable)
- Examples of where similar regulations have been successfully implemented.