

Consultant's Scope of Services

The Town Council voted in November 2001 to hire a consultant to design the Trinity Road widening and extension with three alignment alternatives. The firm estimates that it will complete preliminary planning and analysis by June 2002. The scope of work includes design, project management, bid preparation and administration, such as:

1. Surveying

- Horizontal and vertical control surveys
- Topographic surveys (includes identifying any buildings or other man-made features as well as trees and shrubs by size and type)
- Surface utility location and infrastructure
- Subsurface utility location and infrastructure
- Property surveys and R/W monumentation

2. Geotechnical

- Soil boring for rock.
- Suitability of material to be used as roadway embankment including detailed descriptions of techniques to stabilize unsuitable material for use. (Detailed report including station limits/locations for all unsuitable material.)
- Slope stability analyses to determine the maximum cut, fill, and bent slopes to be used on the project.
- Existing pavement core samples (2 – minimum) and analysis.
- CBR and pavement design including alternatives to reduce pavement depth but maintain required strength.
- Ground water presence and corrective action recommendations if necessary.
- Boring Locations in AutoCAD format.
- Two submittals (draft report and final report) The draft report is subject to review N.C. Department of Transportation and the Town of Cary. The final report shall include changes to address comments from the draft report from NCDOT and the Town of Cary.)

3. Design

(A) Preliminary Planning and Analysis

- Attend a kick-off meeting with Town of Cary officials prior to beginning survey, geotechnical work, or design.
- Consultant shall perform an environmental liability assessment (ELA) of applicable public databases to access onsite and adjacent features, which may present environmental liability concerns to the Town of Cary. Available databases meeting Town of Cary minimum criteria will be assessed, a list of which is available from Mike Babuin, environmental specialist for the Town of Cary, at (919) 462-3931. This assessment will comply with ASTM standards for a Phase I environmental assessment. A field reconnaissance will be conducted to augment the data base search to assess the potential for such liability. A report summarizing the findings with the attached results of data base searches shall be prepared. Recommendations on the next phase, if needed, shall be provided in the report.
- The consultant shall determine the probable impacts to streams (including 100 foot buffers) and wetland areas as well as potential impacts to the site and surrounding areas resulting from erosion control and sedimentation issues and storm water management issues.
- Perform traffic counts at all intersecting roadways along the proposed corridor through the project limits. At a minimum perform 16-hour traffic counts at the Cary Towne Boulevard, East Chatham Street, and NC 54/Chapel Hill Road intersections. Also perform a detailed traffic analysis of the corridor in order to justify the proposed number of lanes and typical sections to be designed and

constructed for the proposed design year. This study shall be submitted to the Town of Cary for review and approval by Town Council and staff.

- Develop preliminary functional plans for each alternate using the 102-foot back of curb to back of curb, typical median divided roadway section as well as other alternative typical sections, such as a smaller median divided and/or undivided typical section, and examine the differences. The alternate and typical section determination should include right-of-way and property impacts as well as cost differences. Perform an analysis of each alternate including functionality and detailed cost estimates. Preliminary functional plans including all alternates, typical sections, and cost estimates shall be submitted to the Town of Cary for review and approval by Town Council and Staff prior to the first public workshop. (Allow at least 60 days prior to the first Public Workshop, for the Cary Town Council and staff to review the alternates, typical sections, and cost estimates.)
- Attend all staff, board, committee and council meetings where this project is an agenda item. Two full Town Council meetings are envisioned.
- Hold the first Public Information Workshop for citizen input after preliminary functional plans are complete. Two public information workshops are envisioned. (The other will be near final design.)
- Furnish public workshop plans, maps, typical sections/alternative typical sections, handouts, and other pertinent information for each alternate. It may be necessary to create an easy to follow, self-running, PowerPoint or other pictorial presentation illustrating the information that will be presented at the Public Workshop for citizens entering the workshop. Furnish and display all current and projected traffic volumes as well as turning movements at all intersections on the public workshop plans. Indicate all existing and proposed R/W lines and property lines as well as potential property impacts on aerial mapping for each alternate. The Town of Cary will provide aerial mapping. Also include owner's name, address, deed book and page number for each property. (Allow at least 30 days to receive citizen input and comments after the first public workshop.)
- The Cary Town Council will determine the alternate and the typical section(s) that will be ultimately utilized after the first public workshop prior to beginning the design of the functional and preliminary review plans. (Allow at least 60 days after the first public workshop, for the Cary Town Council to review and determine the alternate and typical section(s) that will be utilized for design.)

(B) Functional Plans

- Submit all design assumptions and/or exceptions for approval by the Town of Cary and the NCDOT.
- All submittals must adhere to the current version of the N.C. Division of Highways – Department of Transportation “Municipal/Developer Submittals Guidelines – for Plan Reviews and encroachments.”
- Develop functional plans for the alternate and typical section(s) that were approved by the Town Council after the first Public Information Workshop.
- Functional plans shall be submitted to the Town of Cary for review and approval by Town staff prior to attending an NCDOT scoping meeting.
- Set-up and attend a scoping meeting with Town of Cary, NCDOT, and railroad officials prior to beginning the design of preliminary review plans. (Furnish mapping of the proposed alignment and a handout of known project information for each attendee.)

(C) Preliminary Review Plans (25% Plans) – Submit eight complete sets for review by the Town of Cary and the NCDOT.

- This submittal must adhere to the current version of the N.C. Division of Highways – Department of Transportation “Municipal/Developer Submittals Guidelines – for Plan Reviews and Encroachments.”
- Preliminary plans and profiles for Trinity Road as well as for all other intersecting streets and access roads.

- Preliminary typical sections
- Preliminary geotechnical analysis and pavement design (Draft geotechnical report shall be submitted for review by the Town of Cary and NCDOT at this time.)
- Preliminary cross sections in critical areas that could affect the alignment
- Preliminary slope limits
- Preliminary retaining wall locations (if applicable)
- Preliminary earthwork summary
- All existing information labeled
- Preliminary construction schedule
- Property owner contact forms (if necessary)
- Preliminary hydraulic design (submit the preliminary hydraulic design calculations of all major drainage structures; i.e. bridges and/or box culverts.)
- Determine all permits and approvals that will be necessary from all appropriate agencies.
- After the approval of the preliminary review plans by NCDOT and the Town of Cary make all necessary revisions and submit two full size sets to the Town of Cary.

(D) Bridge plans for the bridge or bridges over Walnut Creek and Alternate 3, (if selected) the bridge alternate over the Norfolk Southern and CSX Railroad right-of-way and East Chatham Street – Two submittals of eight complete sets of plans for review by the Town of Cary and the NCDOT Once at the time of the preliminary review plans (25% plans) submittal and once at the time of the final roadway construction plans (100% Plans) submittal.

- Submittals must adhere to the current version of the N.C. Division of Highways – Department of Transportation “Municipal/Developer Submittals Guidelines – for Plan Reviews and Encroachments.”
- Design of the Structure shall be in accordance with the NCDOT Structure Design Manual and Bridge Policy and will be subject to review and approval by the NCDOT Structure Design Unit.
- Length of the bridge/bridges over Walnut Creek will be based on the required floodway/hydraulic study of the waterway.
- Length of the bridge alternate will be based on the required cross section to span the Norfolk Southern and CSX Railroad tracks and any future train track additions as well as any future East Chatham Street widening. (Alternate 3, if selected.)

(E) Right of Way Plans – (75% Plans) – Submit eight complete sets of plans for review by the Town of Cary and the NCDOT. Submit two complete sets of easement maps for review by the Town of Cary.

i. Plans

- This submittal must adhere to the current version of the N.C. Division of Highways – Department of Transportation “Municipal/ Developer Submittals Guidelines – for Plan Reviews and Encroachments.”
- Proposed plan and profile for all roadways including intersecting streets and access roads
- Proposed drainage design and calculations (Submit two copies of all calculations and other relevant information for review by the Town of Cary and NCDOT.)
- Proposed culvert plans (if applicable)
- Existing and proposed R/W, property lines, and easements; also include owner’s name, address, deed book and page number
- Typical sections
- Cross sections
- Slope and construction limits
- Proposed retaining wall locations and design (if applicable)
- Proposed guardrail

- Traffic control plan and construction phasing plan (Traffic shall be maintained to all businesses along Trinity Road between East Chatham Street and NC 54/Chapel Hill Road during construction of either the at grade railroad crossing or the bridge alternate.)
- Erosion control plans
- Proposed utility relocation (if applicable)
- Preliminary traffic signal design/upgrade plans at the intersections of Cary Towne Boulevard, East Chatham Street, NC 54/Chapel Hill Road, and the proposed connector road (if applicable).
- Preliminary summary of all quantities and cost estimate
- Begin obtaining all necessary approvals, including acquiring all federal, state, local, and railroad permitting, including NCDOT encroachment agreements.
- Hold second public information workshops for citizens. Furnish and show all current and projected traffic volumes as well as turning movements at all intersections.
- Furnish public workshop plans, maps, typical sections, handouts, and other pertinent information. Again it may be necessary to create an easy to follow, self-running, PowerPoint or other pictorial presentation illustrating the information that will be presented at the public workshop for citizens entering the workshop. Indicate all existing and proposed right-of-way lines, easements, and property impacts. Also include owner's name, address, deed book and page number for each property.
- Set-up and attend a combined field inspection meeting with Town of Cary and the NCDOT officials.
- After receiving final approval of the right of way plans, send all utility companies adequate copies of the right of way Plans so they may begin their coordination and design/relocation plans.

ii. Easement maps

- Format is a plat or plats, suitable for recording. The Town of Cary must approve the plat format prior to beginning plat work. An example of an acceptable format may be obtained from the Town of Cary Engineering Department.
- PIN numbers for all parcels from which R/W or easements will be acquired; also include owner's name, address, deed book and page number
- Areas of all R/W's or easements to be acquired and residual parcel areas to the nearest square foot.
- R/W and easements to be clearly labeled and identified with a metes and bounds description for each area provided to the Town via diskette or Internet.

(F) Final Roadway Construction Plans (100% Plans) – Submit eight complete sets for review by the Town of Cary and the NCDOT. Following the approval of the Final Roadway Construction Plans submit five additional complete sets, one set of plans on mylar, and one set of plans in electronic format approved by the Town of Cary.

- This submittal must adhere to the current version of the N.C. Division of Highways – Department of Transportation “Municipal/Developer Submittals Guidelines – for Plan Reviews and Encroachments.”
- Final plan and profile for all roadways
- General notes
- Typical sections
- Standard and special details
- Summary of all quantities and detailed cost estimate
- Final drainage design
- Final culvert plans (if applicable)
- Final retaining wall locations and design (if applicable)
- Final cross sections
- Final traffic signal design/upgrade plans

- Final traffic control and construction phasing plans
- Final pavement marking and traffic sign plans
- Final erosion control plans
- Final landscaping plans
- Obtain all necessary approvals, including acquiring all federal, state, and local permitting, including NCDOT encroachment agreements.

4. Bid Preparation & Administration

- Specifications, proposal, and contract documents preparation
- Detailed engineers estimate as well as bid preparation.
- Provide approved specifications, bid documents and contract documents in electronic format approved by the Town of Cary.
- Schedule and supervise the bid advertisement, bid opening and award, attend the pre-construction conference, and be available to answer questions regarding issues that may arise during the bid process.