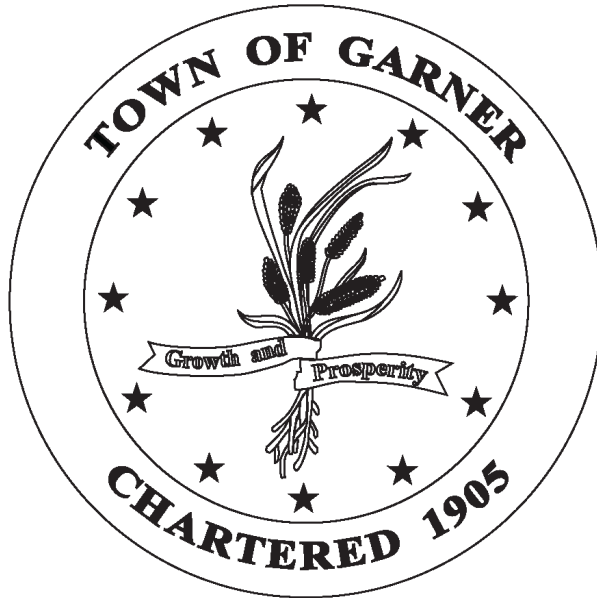


# TOWN OF GARNER



## Town Council Work Session

September 29, 2020  
6:00 p.m.

Garner Town Hall  
900 7th Avenue  
Garner, NC 27529

**Town of Garner  
Work Session Agenda  
September 29, 2020**

The Council will meet in a Work Session at 6:00 p.m. in the Council Chambers located at 900 7<sup>th</sup> Avenue.

A. CALL MEETING TO ORDER/ROLL CALL: Mayor Ken Marshburn

B. ADOPTION OF AGENDA

C. PRESENTATIONS

D. DISCUSSION/REPORTS

1. CAMPO/Transportation Update.....Page 3  
Presenter: CAMPO Staff

Capital Area Metropolitan Planning Organization (CAMPO) is the Town's regional transportation planning partner. Staff asked that a CAMPO representative provide Town Council with an overview of its long-range planning process, how it works with the Town's transportation plans, and federal and state transportation funding.

Action: Receive as information

2. NC DOT Update.....Page 4  
Presenter: John Hodges, Assistant Town Manager-Development Services

Joey Hopkins, NC DOT Division Engineer, will provide an update on active projects in the Garner area (I-40 and NC540) and new schedule info on future projects in Garner. He will also be available for questions or discussion that may arise from the CAMPO presentation.

Action: Receive as information

- 3.. Jones Sausage Road Phase 1 Design Contract.....Page 5  
Presenter: Gaby Lontos-Lawlor, Senior Planner - Transportation

The contract will include work to complete 100% design for Phase 1, which includes the roadway widening of Jones Sausage Rd, from Amazon to E Garner Rd, and raising the intersection at Jones Sausage Rd and E Garner Rd. The work will be completed by HDR, a transportation on-call consultant.

Action: Address questions surrounding the contract and the preferred schedule approach

4. CIP/Bond - Review Transportation Projects Currently in CIP.....Page 109  
Presenter: Gaby Lontos-Lawlor, Senior Planner - Transportation

This item will provide an overview of projects from the Garner Forward Transportation Plan currently in the CIP. Additionally, staff will present a progress report for the Transportation Plan.

Action: Receive as information

5. October Pending Agenda.....Page 110  
Presenter: Rodney Dickerson, Town Manager

The pending agenda items for the October Council Meetings and Work Session are provided for review and discussion.

Action: Receive as information

E. MANAGER REPORTS

F. COUNCIL REPORTS

G. ADJOURNMENT

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: September 29, 2020		
Subject: CAMPO/Transportation Update		
Location on Agenda: Reports		
Department: Planning		
Contact: Gaby Lontos-Lawlor, Senior Planner - Transportation		
Presenter: CAMPO Staff		
<p><b>Brief Summary:</b></p> <p>Capital Area Metropolitan Planning Organization (CAMPO) is the Town's regional transportation planning partner. Staff asked that a CAMPO representative provide Town Council with an overview of its long-range planning process, how it works with the Town's transportation plans, and federal and state transportation funding.</p>		
<p><b>Recommended Motion and/or Requested Action:</b></p> <p>Receive as information.</p>		
<p><b>Detailed Notes:</b></p> <p>The purpose of this discussion is to help newer Town Council members understand the role CAMPO plays in the Town's long-range transportation planning process, as well as to aid in the Town's upcoming Capital Improvement Plan/Bond Referendum discussion.</p>		
<p><b>Funding Source:</b> n/a</p>		
Cost: n/a	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
<p><b>Manager's Comments and Recommendations:</b></p>          		
<p>Attachments Yes: <input type="radio"/> No: <input checked="" type="radio"/></p>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	JT	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: August 25, 2020		
Subject: NC DOT Update		
Location on Agenda: Reports		
Department: Town Manager's Office		
Contact: John Hodges, Assistant Town Manager - Development Services		
Presenter: Joey Hopkins, P.E., Division Engineer, NC DOT		
<b>Brief Summary:</b>  Joey Hopkins, NC DOT Division Engineer, will provide an update on active projects in the Garner area (I-40 and NC540) and new schedule info on future projects in Garner. He will also be available for questions or discussion that may arise from the CAMPO presentation.		
<b>Recommended Motion and/or Requested Action:</b> Receive as information		
<b>Detailed Notes:</b>    		
<b>Funding Source:</b> NA		
<b>Cost:</b>	<b>One Time:</b> <input type="radio"/>	<b>Annual:</b> <input type="radio"/>
		<b>No Cost:</b> <input checked="" type="radio"/>
<b>Manager's Comments and Recommendations:</b>    		
<b>Attachments Yes:</b> <input type="radio"/> <b>No:</b> <input checked="" type="radio"/>		
<b>Agenda Form Reviewed by:</b>	<b>Initials:</b>	<b>Comments:</b>
<b>Department Head:</b>	JMH	
<b>Finance Director:</b>		
<b>Town Attorney:</b>		
<b>Town Manager:</b>	RD	
<b>Town Clerk:</b>		

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: September 29, 2020		
Subject: Jones Sausage Road Phase 1 Design Contract		
Location on Agenda: Discussion		
Department: Planning		
Contact: Gaby Lontos-Lawlor, Senior Planner - Transportation		
Presenter: Gaby Lontos-Lawlor, Senior Planner - Transportation		
<b>Brief Summary:</b>  The contract will include work to complete 100% design for Phase 1, which includes the roadway widening of Jones Sausage Rd, from Amazon to E Garner Rd, and raising the intersection at Jones Sausage Rd and E Garner Rd. The work will be completed by HDR, a transportation on-call consultant.		
<b>Recommended Motion and/or Requested Action:</b> Address questions surrounding the contract and the preferred schedule approach.		
<b>Detailed Notes:</b> This item was initially presented at the August 18 Town Council meeting. Staff explained that there are two schedule approaches and discussed trade-offs associated with each. One approach assumes the Town will pursue LAPP funding, the second assumes the Town will forego LAPP funding. Town Council asked that the consultant provide additional information (updated scope, schedule, and fee associated with non-LAPP approach) to aid in the selection of the preferred schedule, which are attached. Additionally, agenda materials from the August 18th presentation are attached, for reference.		
<b>Funding Source:</b> Street and Sidewalks Bond		
Cost: \$999,909	One Time: <input checked="" type="radio"/>	Annual: <input type="radio"/> No Cost: <input type="radio"/>
<b>Manager's Comments and Recommendations:</b>          		
Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	JT	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

## Planning Department Memorandum

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**TO:** Mayor and Town Council Members

**FROM:** Gaby Lontos-Lawlor; Senior Planner

**SUBJECT:** *Jones Sausage Road Phase 1 Design Contract*

**DATE:** September 29, 2020

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### **BACKGROUND**

The Planning Department initially presented the contract to Town Council at the August 18<sup>th</sup> regular Town Council meeting.

### **SCOPE AND FEE**

Attached to this memo are two sets of scopes and corresponding schedule and fee documents, to complete 100% design for Jones Sausage Road Phase 1.

1 – LAPP approach: Assuming the Town pursues LAPP funding. Town Council was presented with this information at the August 18<sup>th</sup> meeting

- Cost: \$999,909
- Estimated let date: 9/2023\*

2 – Non-LAPP approach: Assuming the Town does not pursue LAPP funding and instead pays for ROW and construction using Town funding. At the Town Council meeting in August, Council requested that the consultant prepare the fee and schedule for this approach in order to determine which option it will pursue.

- Cost: \$985,917
- Estimated let date: 5/2022\*

\*Estimates are approximate and could change depending on when the design contract is executed.

NORTH CAROLINA  
WAKE COUNTY

CONTRACT FOR ENGINEERING SERVICES

THIS CONTRACT is entered into by and between HDR Engineering, Inc. of the Carolinas, hereinafter referred to as the “Engineer” and the Town of Garner, a North Carolina municipal corporation. hereinafter referred to as the “Town”.

WITNESSETH

WHEREAS, the Town desires to procure an Engineer to perform services, and

WHEREAS, the Town has completed necessary steps for retention of professional and other services under applicable Town policies, and

WHEREAS, the Town has agreed to engage the Engineer and the Engineer has agreed to contract with the Town for performance of services as described, and according to the further terms and conditions, set forth herein.

NOW THEREFORE, in consideration of sums to be paid to the Engineer, and other good and valuable consideration the Engineer and Town do contract and agree as follows:

1. Scope of Services/Description of Project

The Town desires to engage an Engineer to provide professional services required to produce plans and contract documents for improvements to Jones Sausage Road from south of the Amazon Fulfillment Center to just south of US 70 in Garner, NC. The Engineer (HDR) will provide professional services as specified in this Scope of Services.

The Engineer will serve as the Town's professional engineering representative in those tasks of the project to which this Contract applies and will give consultation and advice to the Town during the performance of their services.

The Engineer will provide services as described in the following Exhibits, which are attached to and made part of this Contract. **Scope of Services and Schedule of Fees.**

The Engineer now has or will secure at their expense, including subconsultants, all personnel and facilities required to perform the services to be rendered under this Contract. Such personnel are not employees of, nor have they any direct contractual relationship with the Town. The Engineer is authorized to engage subconsultants, including surveyors, geotechnical and materials testing firms, to assist in the work included under this Contract to the extent such services are included herein. No subcontract work is authorized for which the Town will incur any costs beyond those agreed upon and set forth in Section 4.



## 2. Services Provided by the Town

It is understood that certain services as required may be performed and/or furnished by the Town. These services may include the following:

Assist the Engineer by placing at their disposal all available information pertinent to the project, including previous reports and other relative data;

Assist in gaining access to and making all provisions for the Engineer to enter upon public and private property as required for performance of their services described herein;

Examine all studies, reports, sketches, drawings, specifications, proposals and other documents prepared by the Engineer, obtaining advice of legal counsel and/or such other consultants as the Town deems appropriate for such examination and rendering in writing decisions pertaining thereto within a reasonable time so as not to delay the service of the Engineer;

Giving prompt written notice to the Engineer whenever the Town observes or otherwise becomes aware of any problems or changed circumstances in the project;

Furnishing the Engineer in a timely manner with copies of pertinent correspondence relating to this project, which would not have otherwise been delivered to the Engineer;

Designate in writing a person to act as the Town's representative with respect to the work to be performed under this Contract, such person(s) shall have complete authority to transmit instructions, receive information, interpret and define Town's policies and decisions with respect to materials, equipment, elements and systems pertinent to the services covered by this Contract;

The Town shall provide to the Engineer such information as is available to the Town for rendering of services hereunder. The Engineer may rely on the sufficiency of such information;

Insofar as any of the above services are necessary for the Engineer's performance of their obligations under this Contract the Town shall be responsible for providing such services in a satisfactory and timely manner so as not to delay the Engineer in their performance thereof.

## 3. Schedule/Time of Performance

The work to be performed and the services rendered under this Contract shall commence as directed by the Town. In performing the services described in this Contract, it is mutually agreed that time is of the essence. However, it is agreed that the Engineer's services are to be performed using the professional standard of care. The Engineer shall commence work upon receipt of written notice to proceed from the Town. The schedule with submittal dates prepared on 8/5/20 for Town use will be followed accordingly according to the expected durations.

- The Engineer shall provide Preliminary Plans to the Town within \_\_\_\_\_ calendar days following receipt of written notice to proceed from the Town.
- The Engineer shall provide 65% construction plans within \_\_\_\_\_ calendar days following notification of approval of the Preliminary Plans from the Town.
- Engineer shall provide all finalized right-of-way plats to the Town within \_\_\_\_\_ calendar

days following notification of approval of the 65% plans.

- Preliminary plats may be produced prior to approval of the 65% plans for use in appraisal work by the Town. The Engineer shall provide plans completed to approximately 65% state and the finalized right-of-way plats for approval by Town Council at a Project Public Hearing.
- The Engineer shall provide final completed construction plans and documents to the Town within \_\_\_\_\_ calendar days following Town Council authorization of the final design and right-of-way acquisition.

The Engineer shall not be held responsible for any delays in time of completion resulting from:

- The Town’s failure to carry out any of the responsibilities listed under Section 2 in a timely manner;
- Failure of approving agencies to provide timely approval of permit and encroachment applications;
- Additional Services;
- Any other Circumstances beyond the reasonable control of the Engineer including but not limited to natural disasters, adverse weather, epidemic or pandemic or acts of the Town, third parties, or other governmental agencies.

4. Compensation/Time of Payment

For services to be performed hereunder the Town shall pay the Engineer a lump sum not to exceed \$\_\_\_\_\_999,909.00\_\_\_\_\_.

- For all services rendered under Article I of the Scope of Services, excluding subsurface utility engineering and expenses, the Engineer shall be paid a lump sum amount of \$\_\_\_\_\_.
- For all subsurface utility engineering services rendered under Article I of the Scope of Services, the Engineer shall be compensated at unit costs established in Article I not to exceed \$\_\_\_\_\_.
- For all expenses rendered under Article I of the Scope of Services the Engineer shall be compensated at unit costs established in Article I not to exceed \$\_\_\_\_\_.
- For all Alternate Design services rendered under Article III of the Scope of Services, the Engineer shall be paid a lump sum amount for each specific service performed for a total lump sum not to exceed amount of \$\_\_\_\_\_.

Requests for payment(s) shall be made as follows:

- Fees will be invoiced monthly based upon the percentage of services performed as of the invoice date.
- The standard Town of Garner payment term is NET 30 days from the date of receipt and approval of the invoice by the Town.

5. Standard of Care

Engineer shall perform for or furnish to Town professional engineering and related services in all phases of the project to which this Contract applies as hereinafter provided. Engineer shall serve as Town's

prime design professional and engineering representative for the project providing professional engineering consultation and advice with respect thereto. Engineer may employ such Engineer's Consultants as Engineer deems necessary to assist in the performance or furnishing of professional engineering and related services hereunder. Engineer shall not be required to employ any Engineer's Consultant unacceptable to Engineer.

The standard of care for all professional engineering and related services performed or furnished by Engineer under this Contract will be the care and skill ordinarily used by members of Engineer's profession practicing under similar conditions at the same time and in the same locality.

6. Opinions of Probable Construction Cost

Engineer's Opinions of Probable Construction Cost provided for herein are to be made based on Engineer's experience and qualifications and represent Engineer's best judgement as an experienced and qualified Professional Engineer generally familiar with the construction industry. However, since Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by the Engineer. If the Town wishes greater assurance as to probable Construction Cost, Town may employ an independent cost estimator.

7. Notices

All notices, requests for payment, or other communications arising hereunder shall be sent to the following:

Town of Garner	[HDR Engineering Inc. of the Carolinas]
Attn: [REDACTED]	Attn: Jonathan Henderson, PE
Telephone: [REDACTED]	Telephone: 919-232-6600
900 7 <sup>th</sup> Avenue	Address: 555 Fayetteville Street, Suite 900, Raleigh NC
Garner, NC 27529	

8. Non-discrimination

In consideration of the signing of this Contract, the parties hereto for themselves, their agents, officials, employees and servants agree not to discriminate in any manner on the basis of race, color, creed, national origin, sex, age, handicap, or sexual orientation with reference to the subject matter of this Contract, no matter how remote.

9. Minority or Women Owned Businesses

The Town of Garner prohibits discrimination in any manner based on race, color, creed, national origin, sex, age or handicap or sexual orientation and will pursue an affirmative policy of fostering, promoting and conducting business with women and minority owned business enterprises. The Town of Garner has adopted a goal of 10% for participation by minority or women-owned businesses to reach the above stated goal.

The percentage of MWBE business participation engaged in this contract based on total contract amount is proposed to be 10%. Any variation from this amount is to be immediately conveyed to the Town by written notice.

## 10. Assignment

Neither the Town nor the Engineer will assign, sublet, or transfer their interest duties, or obligations hereunder without the prior written consent of the other. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public body which may be a party hereto, nor shall it create any rights or benefits to parties other than the Town and the Engineer, except such other rights as may be specifically called for herein.

## 11. Applicable Law/Forum/Mediation

All matters relating to this Contract shall be governed by the laws of the State of North Carolina, without regard to its choice of law provisions, and venue for any action relating to this Contract shall be Wake County Civil Superior Court or the United States District Court for the Eastern District of North Carolina, Western Division. Participation in a non-binding mediation is a condition precedent to filing any lawsuit arising out of this Contract.

## 12. Insurance

Engineer agrees to maintain, on a primary basis and at their sole expense, at all times during the life of this Contract the following coverages and limits. The requirements contained herein, as well as Town's review or acceptance of insurance maintained by Engineer is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by Engineer under this Contract.

**Commercial General Liability** - Combined single limit of \$1,000,000 each occurrence and \$2,000,000 aggregate Coverage shall not contain any endorsement(s) excluding nor limiting Product/Completed Operations, Contractual Liability or Cross Liability.

**Automobile Liability** - Limits of \$1,000,000 Combined Single Limit Coverage shall include liability for Owned, Non-Owned and Hired automobiles. In the event Engineer does not own automobiles, Engineer agrees to maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Auto Liability policy. Automobile coverage is only necessary if vehicles are used in the provision of services under this Contract and/or are brought on a Town of Garner site.

**Worker's Compensation & Employers Liability** - Engineer agrees to maintain Worker's Compensation Insurance in accordance with North Carolina General Statute Chapter 97 and Employers Liability insurance with limits of \$1,000,000 each accident, each employee and policy limit. Waivers of Indemnity are not recognized by the North Carolina Department of Insurance and will not be accepted by the Town of Garner.

**Additional Insured** - Engineer agrees to endorse the Town as an Additional Insured on the Commercial General Liability and the Automobile Liability Policy. The Additional Insured shall read "Town of Garner as its interest may appear."

**Certificate of Insurance** - Engineer agrees to provide the Town a Certificate of Insurance evidencing that all coverages, limits and endorsements required herein are maintained and in full force and effect, and Certificates of Insurance shall provide a minimum thirty (30) day endeavor to notify, when available, by Engineer's insurer. If Engineer receives a non-renewal or cancellation notice from an insurance earner affording coverage required herein, or receives notice that coverage no longer

complies with the insurance requirements herein, Engineer agrees to notify the Town within five (5) business days with a copy of the non-renewal or cancellation notice, or written specifics as to which coverage is no longer in compliance. The Certificate Holder address should read:

Town of Garner  
Town Manager  
900 7<sup>th</sup> Avenue  
Garner, NC 27529

**Umbrella or Excess Liability** - Engineer may satisfy the liability limits required above under an Umbrella or Excess Liability policy. There is no Per Occurrence limit of liability under the Umbrella or Excess Liability, however, the Annual Aggregate limits shall not be less than the highest 'Each Occurrence' limit for required policies. Engineer agrees to endorse Town of Garner as an 'Additional Insured' on the Umbrella or Excess Liability, unless the Certificate of Insurance states the Umbrella or Excess Liability provides coverage on a 'Follow-Form' basis.

**Professional Liability** - Limits of no less than \$1,000,000 each claim and in the annual aggregate.

All insurance companies must be admitted or authorized to do business in North Carolina and be acceptable to the Town of Garner. If the insurance company(s) is a permitted surplus lines insurer, the insurance company name, and NAIC number must be submitted to the Town for approval before commencing work. Engineer shall be required to provide the Town no less than thirty (30) days' notice of cancellation, or any material change, to any insurance coverage required by this Contract.

A Certificate of Insurance (COI) must be issued by an authorized representative of the insurance carrier(s). Certificates of Insurance must have the Insurance Company name and NAIC number clearly identified. The acceptance of or the review of Certificates of Insurance by the Town of Garner does not relieve Engineer of any requirements in the contract to provide specific insurance coverage required by the contract, nor does the acceptance of or review of Certificates of Insurance covenant all insurance requirements have been met.

### 13. Indemnity

To the fullest extent permitted by law, the Engineer shall indemnify, and hold harmless the Town and each of the Town's officers, officials, employees, agents and independent contractors (excluding the Engineer) from and against any and all losses, damages, costs, expenses (including reasonable attorneys' fees), obligations, duties, fines, penalties, royalties, interest charges and other liabilities (including settlement amounts) paid or incurred by any of them as a result of any claims, demands, lawsuits, actions, or proceedings (i) to the extent arising from the Engineer's material breach of this Contract, (ii) to the extent proximately caused any act of negligence or willful misconduct by the Engineer or any of its agents, employees or subcontractors relating to this Contract, including but not limited to any liability caused by an accident or other occurrence resulting in bodily injury, death, sickness or disease to any person(s) or damage or destruction to any property, real or personal, tangible or intangible, (iii) arising from the Engineer's violation of any law (including, without limitation, immigration laws), (iv) seeking payment for labor or materials purchased or supplied by the Engineer or its subcontractors in connection with this Contract, (v) any claim that the Engineer or an employee or subcontractor of the Engineer is an employee of the Town, including but not limited to claims relating to worker's compensation, failure to withhold taxes and the like, or (vi) alleging violation,

misappropriation or infringement of any copyright, trademark, patent, trade secret or other proprietary rights with respect to the Work or any products or deliverables provided to the Town pursuant to this Contract ("Infringement Claims"). If an Infringement Claim occurs, the Engineer shall either (i) procure for the Town the right to continue using the affected product or service, or (ii) repair or replace the infringing product or service so that it becomes non-infringing, provided that the performance of the overall product(s) and service(s) provided to the Town shall not be adversely affected by such replacement or modification. If the Engineer is unable to comply with the preceding sentence within thirty (30) days after the Town is directed to cease use of a product or service, the Engineer shall promptly refund to the Town all amounts paid under this Contract. Nothing herein is intended to require of a design professional any duty from which such design professional is relieved by S2019 - 92, HB 871.

#### 14. Intellectual Property

Any information data, instruments, documents, studies, reports or deliverables given to, exposed to, or prepared or assembled by the Engineer under this Contract shall be kept as confidential proprietary information of the Town and not divulged or made available to any individual or organization without the prior written approval of the Town. Such information, data, instruments, documents, studies, reports or deliverables will be the sole property of the Town and not the Engineer.

The Engineer shall maintain the right of reuse to any drawings or specifications provided or furnished by the Engineer. The Town acknowledges that such drawings or specifications are not intended or represented to be suitable for reuse by the Town or others on extensions of the project or on any other project.

All intellectual property, including, but not limited to, patentable inventions, patentable plans, copyrightable works, mask works, trademarks, service marks, and trade secrets invented, developed, created, or discovered in performance of this Contract shall be the property of the Town.

Copyright in and to any copyrightable work, including, but not limited to, copy, art, negatives, photographic designs, text, software, or documentation created as part of the Engineer's performance of this project shall vest in the Town. Work of authorship and contributions to works of authorship created by the Engineer's performance of this project are hereby agreed to be 'works made for hire' within the meaning of 17 USC 201.

#### 15. Force Majeure

Except as otherwise provided in any environmental laws, rules, regulations or ordinances applicable to the parties and the services performed under this Contract, neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by an act of war, hostile foreign actions, nuclear explosion, earthquake, hurricane, tornado, epidemic or pandemic or other catastrophic natural event or act of God. Either party to the Contract must take reasonable measures and implement reasonable protections when a weather event otherwise defined as a force majeure event is forecast to be eligible to be excused from the performance otherwise required under this Contract by this provision.

16. Advertising

The Engineer shall not use the existence of this Contract, or the name of the Town of Garner, as part of any advertising.

17. Cancellation

The Town may terminate this Contract at any time by providing thirty (30) days written notice to the Engineer. In addition, if Engineer shall fail to fulfill in timely and proper manner the obligations under this Contract for any reason, including the voluntary or involuntary declaration of bankruptcy, the Town shall have the right to terminate this Contract by giving written notice to the Engineer and termination will be effective if not cured within a reasonable time as set forth in the written notice. Engineer shall cease performance immediately upon receipt of such notice.

In the event of early termination, Engineer shall be entitled to receive just and equitable compensation for costs incurred prior to receipt of notice of termination and for the satisfactory work completed as of the date of termination and delivered to the Town. Notwithstanding the foregoing, in no event will the total amount due to Engineer under this section exceed the total amount due Engineer under this Contract. The Engineer shall not be relieved of liability to the Town for damages sustained by the Town by virtue of any breach of this Contract, and the Town may withhold any payment due to the Engineer for the purpose of setoff until such time as the Town can determine the exact amount of damages due the Town because of the breach.

Payment of compensation specified in this Contract its continuation or any renewal thereof is dependent upon and subject to the allocation or appropriation of funds to the Town for the purpose set forth in this Contract.

18. Laws/Safety Standards

The Engineer shall comply with all laws ordinances codes, rules, regulations, safety standards and licensing requirements that are applicable to the conduct of its business including those of Federal, State and local agencies having Jurisdiction and/or authority.

Engineer must comply with North Carolina Occupational Safety and Health Standards for General Industry, 29 CFR 1910. In addition, Engineer shall comply with all applicable occupational health and safety and environmental rules and regulations. Engineer shall effectively manage their safety and health responsibilities including:

A. Accident Prevention

Prevent injuries and illnesses to their employees and others on or near their job site. Engineer managers and supervisors shall ensure personnel safety by strict adherence to established safety rules and procedures.

B. Environmental Protection

Protect the environment on, near, and around their work site by compliance with all applicable environmental regulations.

C. Employee Education and Training

Provide education and training to all Engineers' employees before they are exposed to potential workplace or other hazards as required by specific OSHA Standards.

19. Applicability of North Carolina Public Records Law

Notwithstanding any other provisions of this Contract, this Contract and all materials submitted to the Town by the Engineer are subject to the public records laws of the State of North Carolina and it is the responsibility of the Engineer to properly designate materials that may be protected from disclosure as trade secrets under North Carolina law as such and in the form required by law prior to the submission of such materials to the Town. Engineer understands and agrees that the Town may take any and all actions necessary to comply with federal, state, and local laws and/or Judicial orders and such actions will not constitute a breach of the terms of this Contract. To the extent that any other provisions of this Contract conflict with this paragraph, the provisions of this section shall control.

20. Miscellaneous

The Engineer shall be responsible for the proper custody and care of any property furnished or purchased by the Town for use in connection with the performance of this Contract and will reimburse the Town for the replacement value of its loss or damage.

The Engineer shall be considered to be an independent contractor and as such shall be wholly responsible for the work to be performed and for the supervision of its employees. Nothing herein is intended or will be construed to establish any agency, partnership, or joint venture. Engineer represents that it has, or will secure at its own expense, all personnel required in performing the services under this Contract. Such employees shall not be employees of or have any individual contractual relationship with the Town.

This Contract may be amended only by written agreement of the parties executed by their authorized representatives.

21. Right of Audit and Examination of Records

The Town of Garner may conduct an audit of Engineer's financial performance and compliance records maintained in connection with the operations and services performed under this Contract. In the event of such an audit, Engineer agrees to provide the Town with reasonable access to Engineer's employees and make all such financial performance and compliance time based and reimbursable expense records available to the Town. The Town agrees to provide the Engineer with an opportunity to discuss and respond to any findings before a final audit report is issued. Records shall be made available for three (3) years after the final payment.

- a. The Town may conduct an audit of any services performed and fees paid subject to this Contract. The Town, or its designee, may perform such an audit throughout the contract period and for three (3) years after termination thereof or longer if otherwise required by law.
- b. The Engineer and its agents shall maintain all books, documents, papers, accounting records, contract records and such other evidence as may be appropriate to substantiate costs incurred under this Contract. The Town, or its designee, shall have the right to, including but not limited to: review and copy records; interview current and former employees; conduct such other investigation to verify compliance with contract terms; and conduct such other investigation to substantiate time based and reimbursable expense costs incurred by this Contract.
- c. "Records" shall be defined as data of every kind and character, including but not limited to books, documents, papers, accounting records, contract documents, information, and



materials that, in the Town's sole discretion, relate to matters, rights, duties or obligations of this Contract.

- d. Records and employees shall be available during normal business hours upon advanced written notice. Electronic mail shall constitute written notice for purposes of this section.
- e. Engineer shall provide the Town or its designee reasonable access to facilities and adequate and appropriate workspace for the conduct of audits.
- f. The rights established under this section shall survive the termination of the Contract, and shall not be deleted, circumvented, limited, confined, or restricted by contract or any other section, clause, addendum, attachment, or the subsequent amendment of this Contract.
- g. The Engineer shall reimburse the Town for any overcharges identified by the audit within ninety (90) days of written notice of the Town's findings.

22. E – Verify

Engineer shall comply with E-Verify, the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law and as in accordance with N.C.G.S. §64-25 et seq. In addition, to the best of Engineer's knowledge, any subcontractor employed by Engineer as a part of this contract shall be in compliance with the requirements of E-Verify and N.C.G.S. §64-25 et seq.

23. Iran Divestment Act Certification

Engineer certifies that, as of the date listed below, it is not on the Final Divestment List as created by the State Treasurer pursuant to N.C.G.S. § 147-86.55, et seq. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. § 147-86.59, Engineer shall not utilize in the performance of the contract any subcontractor that is identified on the Final Divestment List.

24. Companies Boycotting Israel Divestment Act Certification

Engineer certifies that it has not been designated by the North Carolina State Treasurer as a company engaged in the boycott of Israel pursuant to N.C.G.S. 147-86.81.

25. Incorporation of Documents/Complete Agreement

This Contract, and any documents incorporated below, represent the entire Contract between the parties and suspend all prior oral or written statements, agreements or Contracts.

Specifically incorporated into this Contract are the following attachments, or if not physically attached, are incorporated fully herein by reference:

- **Scope of Services**
- **Schedule of Fees**
- **Certificate of Insurance**

In cases of conflict between this Contract and any of the above incorporated attachments or references, the terms of this Contract shall prevail.

THIS CONTRACT is entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

IN WITNESS WHEREOF, the Engineer has executed the foregoing with the signature(s) of its duly authorized officer(s). under seal, and the Town has executed with the signature of its Town Manager, attested by its (Assistant/Deputy) Clerk, with the official seal affixed, the day and year first above written.

**ENGINEER: HDR  
ENGINEERING INC.  
OF THE CAROLINAS**

**TOWN OF GARNER**

By:

By:

\_\_\_\_\_  
Jonathan Henderson, PE  
Vice President

\_\_\_\_\_  
Rodney Dickerson  
Town Manager

(If corporate)

ATTEST:

ATTEST:

By:

By:

\_\_\_\_\_  
Name  
Title

\_\_\_\_\_  
Stella Gibson  
Town Clerk

THIS INSTRUMENT APPROVED  
AS TO FORM

(Affix Corporate Seal)

\_\_\_\_\_  
Town Attorney

(Affix Town Seal)

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*JSR Phase 1 Design Contract*  
*LAPP Approach*

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## **ARTICLE I – Scope of Services**

### **I.1 Description of the Project**

The Town desires to engage an Engineer to provide professional services required to produce plans and contract documents for improvements to Jones Sausage Road from south of the Amazon Fulfillment Center to just south of US 70 in Garner, NC. The Engineer (HDR) will provide professional services as specified in this Scope of Services.

The purpose of this 1.0 ± mile project is to enhance mobility and connectivity for pedestrian, bicycle, and vehicular traffic while improving safety throughout this important corridor. The project includes location surveys, subsurface utility engineering, geotechnical services, roadway design, water resources design (including storm water), erosion control, SCM investigations/design, traffic analyses, traffic management, signing and delineation, utility design, utility coordination, landscape/planting design, right of way/easement exhibits, public involvement, signal design, and bidding/contract documentation services for Phase I (south of Amazon Fulfillment Center to East Garner Road). Environmental Documentation (and tasks associated with it) are included for both Phase I and Phase II (East Garner Road to just south of US 70).

### **I.2 Description of Services**

The Engineer shall provide the engineering services required to design and prepare construction plans, specifications and bid documents for the proposed improvements in accordance with the following:

#### **I.2.1 Survey**

All survey services for this project shall be performed in accordance with, and shall conform to, accepted Surveying and Engineering general practices and procedures with the detailed scope of work as set forth and described below.

The Engineer will provide base mapping data to these limits along with the footprint of structures within 100' of these limits.

#### **(-L-) Line Alignment**

- Jones Sausage Road from Partlo Street to 1000' North of East Garner Elementary School Entrance- 3,300' x 300' corridor (150' each side of the existing road).

#### **(-Y-) Line Alignments**

- -Y- East Garner Road from 1,500' East and 500' West of the intersection of East Garner Road and Jones Sausage Road – 2,000' x 200' corridor (100' each side of the existing road centerline).

I.2.1.a Property Research/Document Retrieval

The Engineer shall obtain current deeds, maps, plats, and easement documents of record according to the current information of the online Town of Garner Tax Records in the IMAPS GIS database, for all parcels adjacent to the project and for which right of way acquisition shall be required. Thorough investigations should be made of private developments along the corridor, through the Town Planning Department and other means, to properly represent existing, dedicated easements in the project plans. The Engineer shall obtain NCDOT record plans, and other right of way information to assist in the establishment of existing right of way for the roads within the project limits. Engineer shall provide a copy of all property information compiled during this task to the Town. There are approximately 50 parcels in the project limits. A complete title opinion is not included in this scope of services. Property owners are to be notified by the Town of Garner and obtain a Right of Entry to all properties 30 days before commencement of surveys.

I.2.1.b Establish Horizontal and Vertical Control Network

The Engineer shall provide a horizontal and vertical traverse throughout the entire Project. Horizontal Control shall be referenced to North Carolina Geodetic Survey datum, NAD83 2011 adjustment. Control shall consist of a “random baseline traverse” monumented by 18” lengths of #5 rebar with stamped aluminum caps set flush with the ground, or MAG pavement nails where appropriate. Each control point shall have x, y, and z coordinate values.

Vertical Control shall be based upon United States Geodetic Survey NAVD 88 datum. The Engineer shall set benchmarks at 500 to 800-foot intervals throughout the Project. Railroad spikes or Bench Ties to be placed in the base of trees shall be utilized where possible and shall be placed outside of the proposed construction limits. The benchmark locations and descriptions shall be shown on the final plans.

I.2.1.c ~~Photogrammetry~~

~~The Engineer will perform aerial photogrammetry to provide the base DTM and Planimetric Mapping for the project.~~

- ~~1. Photo Control—Establish survey control on the site and set and obtain coordinates on aerial targets (1 foot wide by 2 foot long chevrons or similar), and/or photo identifiable points.~~
- ~~2. Aerial Image Acquisition—The use a fixed wing aircraft equipped with an UltraCam Falcon Prime (UCFp) sensor, or similar, to collect imagery at a ground sample distance (GSD) of 5cm. The imagery will be controlled using the above mentioned survey points along with the Airborne Global Positioning System Applanix POS-AV© with IMU.~~

3. ~~Processing—Aerial Triangulation (AT): will be performed on all acquired imagery with a preliminary simultaneous bundle adjustment carried out using a minimal amount of control points along the block perimeter. Additional control points will be treated as check points during this initial run and the solution will be checked to make sure there are no blunders or gross errors in the photo or ground control measurements. The final adjustment will be a simultaneous bundle adjustment of the entire project data including all ground control points with no points held out as check points.~~
4. ~~Topographic Mapping—Stereocompilation will include any visible features at a 1"=40' scale including driveways, parking lots, buildings, utilities, vegetation (items that were not extracted from the mobile LiDAR dataset). Breaklines and masspoints will also be collected in the soft topo areas to support a Digital Terrain Model (DTM) suitable for 1-foot contours.~~
5. ~~Obscured and Obstructed Features—Based on the provided Area of Interest there is the possibility that some areas will be obscured and/or obstructed resulting in limited terrain and planimetric feature collection. These areas will be outlined with an "obscured area" polygon, and additional ground survey may be required to supplement the data.~~
6. ~~Orthophotography—Collected imagery will be rectified to the new surface model, and the individual 3-inch GSD ortho image files will be processed to ensure a seamless appearance, and will be tonally balanced to produce a uniform contrast and tone across the entire project area. The orthophotography will be delivered in tiled TIF/TFW and ECW/EWW formats.~~

#### I.2.1.d Pavement Digital Terrain Model

The Engineer will use Mobile Scanning technology to collect the hard surface DTM's and Planimetrics. This data will be processed based on the Survey Control and merged into the photogrammetric mapping for delivery. Accuracies for the mobile data will be  $\pm 0.05'$ .

#### I.2.1.e Planimetric Mapping

The Engineer shall map the majority of basic planimetric mapping from the photogrammetry services. The Engineer will perform a walk thru/classification of features to aid with labeling features as well as perform supplemental ground surveys to locate obscured or missing items. Said information shall include, but is not limited to the following:

1. Drives - location, type, and width
2. Buildings - location, type, size, and front corners if within 100 feet of existing right of way.
3. Parking Lots - location and layout

4. Landscape areas, woods lines, and all trees in landscaped areas greater than 6" dia, and all ornamental trees shall be located by species and size.
5. Signs - location, type, and size
6. Fences - location, type, and size
7. Utilities\*
  - a. Storm drainage - location, size, type, top and invert elevations, inlet and outlet location both inside and one structure outside planimetric limits.
  - b. Gravity sanitary sewer - location, size, type, top and invert elevations.
  - c. Water - location, valves (including top of nut elevations where accessible), meters, hydrants, wells (as surveyed and/or identified by Wake County records), and associated appurtenances.
  - d. Gas - location, valves, meters, vents and associated appurtenances.
  - e. Telephone – above ground appurtenances such as poles, pedestals, manholes and vaults (to include subsurface footprint).
  - f. Overhead utilities - location, poles, guys, markers, pedestals, pole number, equipment, vertical clearance at grade crossings, and type to include power, telephone, cable TV, traffic signal and other telecommunications and communication lines.
  - g. Underground utilities - location, pedestals, markers, and type to include power, telephone, cable TV, traffic signal and other telecommunications and communication lines.
  - h. Owner names, addresses, phone numbers and contact persons shall be provided for all utilities when available.

\* Locations of non-gravity underground utilities will be based on above ground structures and “Quality Level B” horizontal subsurface utility location. Gravity utility (drainage and sanitary sewer) location will be based on above ground appurtenances and visual inspection and depth measurements to determine invert elevations that may be accomplished from the surface. The Engineer will not enter the manhole to determine inverts. Confined space investigation shall be considered Additional Services (Article II).

All final DTM and survey control shall be provided to the Engineer in MicroStation V8i and GEOPAK.

#### I.2.1.f Centerline Staking

Upon approval of final alignment by the Town of Garner, just prior to the bid phase of the Project, three points of the approved design centerline alignment will be staked with semi-permanent stakes, one point near the

beginning of the project, one near the mid-point of the project, and one near the end of the project.

I.2.1.g Boundary Ties and Existing Boundary Mapping

Locate the existing right of way and recorded easements as available by reference in the online Wake County Tax Records and/or IMAPS GIS database for all roadways within the project limits. NCDOT record plans will be used to establish right of way for the NCDOT roads within the project and Town of Garner roadway plans or existing plats will be used to establish right of way on Town owned or maintained roads. A complete title opinion or obtaining a Right of Way Abstract from NCDOT or the Town of Garner is not included in this scope of services.

Recon and locate a sufficient number of property corners on approximately 50 properties to accurately show the affected property boundary limits in accordance with the recorded deeds and plats.

Complete boundary surveys required on any parcel shall be considered Additional Services (Article II).

I.2.1.h Right-of-Way and Easement Monumentation

During land acquisition by the Town, the Engineer shall stake the proposed right-of-way and easements as required by the Standards of Practice for Land Surveying in North Carolina, set forth and published by NCBELS. The right-of-way shall be temporarily staked using semi-permanent materials to allow Town Real Estate staff to adequately meet with each property owner. Following completion of acquisition of the proposed rights-of-way, including any changes required due to the land acquisition process, the right-of-way shall be permanently monumented by placing 18-inch lengths of #5 rebar at all breaks in the right-of-way and at intersections of the proposed right-of-way with existing property lines. Permanent Drainage Easements shall also be monumented with #5 rebar. All other easements shall be monumented with semi-permanent materials, such as wooden stakes or flags. Revisions to the right of way and easements staking are included in this item. Refer to Item 4 in Article III, Alternate Services, for re-staking points on a unit basis.

The Engineer shall prepare recordable exhibits of affected individual properties (note: the exhibits will not meet the requirements of NC GS 47-30) for use in the conveyance of easements and rights-of-way necessary for the construction of the Project.



It is estimated that fifty (50) individual property exhibits shall be required to fully map the property impacts throughout the project. Exhibits shall be prepared at a suitable scale to clearly represent the proposed right of way, permanent and temporary drainage, utility and construction easements required for the project. The exhibits shall be provided on legal size (8-1/2” x 14”) paper and Adobe Acrobat (PDF) format. This scope includes two (2) preliminary submittals (bond plots for review) and one (1) final submittal on legal size (8-1/2” x 14”) paper. Exhibits shall be prepared at a maximum scale of 1” = 20’ preferred, 1” = 30’ if required.

I.2.1.i Subsurface Utility Designation and Location Services

The Engineer shall provide “Quality Level B” horizontal subsurface utility location data for a not-to-exceed linear footage of underground utilities. This includes Utility Research, Utility designating, Surveying and Mapping of the existing utilities within the project limits. Quality Level “B” subsurface utility location data requested beyond the Level “B” linear footage as stated below for Level “B” footage will be considered Additional Services and will require a supplemental agreement. Mobilization (travel time) and mileage will be considered additional cost. This service shall be provided based on the unit cost of \$1.00 per linear foot for Level “B” underground. Utility records research and site visit revealed estimated lengths as follows:

Length (Feet)	Description
10,850	Telephone
14,650	Telephone fiber optic
5,150	Electric (U/G)
11,300	Natural gas
11,450	Water
7,700	Cable TV
2,600	Sanitary Force Main
	Unknown
63,700	Total (Level “B” Total U/G Utilities)

I.2.1.j Subsurface Utility Location (Vacuum Excavation)

The Engineer shall provide “Quality Level A” vacuum excavation services for up a maximum 6 feet deep at the unit cost of \$850.00 per test pit. The Engineer shall determine test hole locations once drainage and utility designs are complete and potential conflicts are noted. Precise horizontal and vertical information of the specified utility shall be

provided to the Town as Certified Vacuum Excavation Reports for the specified test hole locations. An estimate of 10 test holes are included for this project.

It is understood that particular test hole locations may require a depth of vacuum excavation greater than the maximum noted above. Any vacuum excavation deeper than the maximum listed above and will be paid at the unit price of \$65.00 per linear foot of vacuum excavation beyond the maximum. An estimate of two (2) additional feet are included in this estimate.

Test hole locations may require traffic control for lane closures in order to provide a safe work zone for the work to be performed. The Engineer shall provide traffic control services for lanes closures at the unit cost of \$1,500.00 per day. It is estimated that two (2) days (\$3,000) of traffic control may be needed.

I.2.1.k Survey Delivery Items

The Engineer shall compile and plot all planimetric, subsurface utility information, and property line information at a scale of 1 inch equals 40 feet. This mapping shall be delivered in MicroStation file format for use in the development of final design plans. Drawing element symbology and text sizes shall follow North Carolina Department of Transportation standards.

The Engineer shall provide Digital Terrain Model in a 3-D digital radial break-line survey format with x, y, and z digital coordinate information for each survey point, break-line, and triangular irregular network (TIN) line.

The Engineer shall provide field data collector files, copies of field notes, x, y, z ASCII point files, deeds, and plat information in a survey notebook format.

The Engineer shall provide the Town with one electronic copy of all deeds and plats obtained during the courthouse research.

Any re-establishment and/or staking of more than three points of the initial control traverses and alignments lost due to project delays, periods of inactivity, vandalism or construction associated with this project, so long as these causes are outside the control of the Engineer, shall be considered additional services and compensated in accordance with Article II of this contract.

### I.2.2 Traffic Data Collection and Capacity Analysis Report

During this phase the Town will provide any existing traffic data for the project and the Engineer will prepare traffic projections for future traffic (assume 2045) by applying an annual growth rate to existing traffic volumes, with input from the Town. The Engineer will prepare capacity analyses on both existing and future traffic, and prepare a Capacity Analysis Report. A cursory capacity analysis and traffic estimate was prepared in the Feasibility Study. To the extent possible, information from this document will be used. Refinements and enhancements will be completed only with no detailed forecast or detailed report provided.

#### I.2.2.a. Traffic Data Collection

The Engineer will provide turning movement counts (TMCs) as follows:

- ~~\_\_\_\_\_ at \_\_\_\_\_ 13-hour TMCs (6:00 AM – 7:00 PM), including pedestrian counts.~~

#### I.2.2.b. Capacity Analysis Report

The Engineer will perform a capacity analysis report. This report will include current turning movement counts (as provided by the Town), traffic conditions, design year traffic projections, and analyses of intersections of East Garner Road / Jones Sausage Road and US 70 / Jones Sausage Road using the design year traffic. Each of the major tasks involved in the development of this report are described below.

~~**Field Visits:** The Engineer will visit the site and collect all the relevant data (lanes, signal phases, grades, turn lane storages etc.) for capacity analyses.~~

**Coordination and Meetings:** The Engineer will coordinate with the Town and the NCDOT to gather relevant available information/plans/data. Two meetings will be held, one with the Town and one with the NCDOT Division 5 Traffic Engineer and NCDOT District Engineer.

**Existing Conditions Analysis** – The Engineer will re-evaluate and analyze current traffic conditions for the 2018 no-build conditions. The analysis will be based on the traffic count data and will utilize the latest version of Synchro and Simtraffic software.

**Design Year Analysis** – The Engineer will re-evaluate and analyze design year (2045) traffic conditions for the build conditions, as well as a 2045 no-build condition. The Engineer will evaluate the need for additional turn lanes, recommend associated storage lengths, and optimize signal timing.

**Capacity Analysis Report** – The Engineer will update the prepare a cursory Capacity Analysis memorandum, which was prepared as part of the work completed for the Feasibility Study, that will describe the study area, methodology, existing and design year traffic analyses, and

recommendations. The report's technical appendix will include traffic count data, travel model output, traffic forecast calculations, and Synchro/Simtraffic output. The Engineer will utilize the latest NCDOT congestion management guidelines and the Town of Garner's Guidelines for the capacity analyses. An electronic version of the draft and final report will be submitted to the Town. Documentation from the feasibility study will be used to the greatest extent possible.

**Crash Analysis** – As part of the traffic analysis report, the Engineer will analyze crash data in the Jones Sausage Road Corridor. Crash data has been collected from September 2013 to August 2018. Data will be summarized by accident type, location, severity, day/night, and wet/dry. The Accident Rate, Severity Rate, and Fatality Rate will be calculated and compared to Town-wide rates and other similar Town streets if information is available. An accident location diagram/exhibit will be created. Any trends or problem areas will be identified.

#### I.2.3 Natural Resource Investigation

The Engineer will conduct a site/natural resources investigation to identify existence of streams, wetland areas or buffer zones. A preliminary jurisdictional determination request will be made on behalf of the Town to the US Army Corps of Engineers (USACE) and Division of Water Resources (DWR). The Engineer will coordinate with representatives from both agencies to verify the extent and locations of jurisdictional resources. A letter report will be prepared to document the findings of the investigations.

#### I.2.4 Pre-Design (15% Plans)/Preliminary Design (25% Plans)

During this phase the Engineer will prepare pre-design and preliminary design plans. Other tasks include natural resource investigation and report (see Task I.2.3).

Prior to developing 25% plans, the Engineer will prepare a preliminary design (15% design) based on aerial photography, QL2 Lidar data and GIS data. The purpose of the pre-design (15% Plans) is to get early input from the Town while waiting on final surveys. This preliminary design submittal will be based on the Engineer's recommended alignment and design concept and shall include proposed design criteria, a horizontal and vertical alignment, edges of pavement, intersection locations, high/low point labels and typical section(s). Preliminary right of way and easements will be set to aid in the review process. Cross-sections will not be prepared at this stage of design.

Pre-Design (15% Plans) will be prepared for the entire project corridor (Phase I & Phase II) from the northern limits to the future US 70 intersection, inclusive of a future grade separation over the NS Railroad. The purpose of this predesign is to determine the proposed profile of Garner Road to accommodate the future grade separation to the south. In addition, the 15% design submittal will include a

preliminary structure recommendation for the future grade separation, including a bridge typical section and preliminary horizontal and vertical clearance information. Pre-Design plans will be prepared as Roll-Plots at a 1" – 100' scale. One round of review by Town and a separate review by NCDOT is assumed.

The Engineer will prepare Pre-Design layout designs based on the 15% design for up to one alternative to be presented at a Pre-design public meeting, including:

1. A PowerPoint Presentation discussing the purpose and limits of the project.
2. Background information and general scope of the project.
3. Preliminary Project Schedule.
4. Estimated Preliminary Project Costs
5. Two personnel from Engineer staff to attend the Pre-design public meeting

After completion of the 15% Pre-Design plans, the Engineer will also help assist Town staff with the LAPP application and submittal. In addition, LAPP check-ins will also occur in the following two years/cycles.

The Engineer will obtain hydraulic survey data sufficient to determine requirements for all hydraulic related structures. This includes, but is not limited to, mapping of existing drainage patterns; outfall locations, dimensions, condition, and slopes.

Once all supplemental hydraulic field reconnaissance is complete, the Engineer will develop preliminary roadway drainage design plans for the Preferred Alternate. This design will be based on the 25% roadway design plans and includes the approximate locations and spacing of curb and gutter inlets, hydrologic and hydraulic analysis and recommendations for all cross pipes within project; pre/post runoff calculations for outfalls; nitrogen loading analysis and calculations; and a feasibility study/matrix presenting options to include Low Impact Development (LID) into the project utilizing Stormwater Control Measures (SCM's) such as dry/wet ponds, bioretention areas, etc.

All design shall be in conformance with AASHTO design criteria and standards except as may be modified by the Town. Preliminary design plans shall consist of preliminary roadway plans and preliminary cross sections. The design shall include preliminary line, grade, cross sections, and intersection layout. Preliminary design plans shall be developed to the stage at which approximately 25% of the roadway design for the Project is complete. The Engineer shall submit two (2) hard copy sets of plans and one (1) electronic set in PDF format to the Town, six (6) hard copy sets to NCDOT for review, and one (1) hard copy each to all private utilities involved in the project.

Preliminary Design (25% Plans), as well as all subsequent plans, will be prepared for only the portion of the project from the northern project limits to just south of Garner Road, excluding the future railroad grade separation and US 70 intersection.

The 25% design will include the necessary coverage for raising the Garner Road intersection and tying down to existing Jones Sausage Road to the south, inclusive of any necessary Y-line or driveway adjustments. One round of review by Town and a separate review by NCDOT is assumed.

The Engineer shall prepare preliminary roadway plans on plan and profile sheets at a scale of 1" = 40' horizontal and 1" = 10' vertical. The Engineer shall prepare preliminary half-size cross sections at a scale of 1" = 10'.

The Engineer shall update design assumptions and typical roadway sections for a 50 mile per hour design speed. The Engineer shall also develop an Opinion of Probable Construction Cost to be submitted to the Town along with the preliminary design plans.

I.2.5 Storm Drainage, Hydraulic Design, Erosion Control Plans and Permits

Upon approval of 25% plans, the Engineer shall perform final drainage studies, designs and field reconnaissance in accordance with the requirements of the Town. Hydraulic redlines will be approved prior to 65% plan submittal.

The Engineer will conduct a site investigation to identify existence of streams, wetland areas or buffer zones. The Engineer will obtain hydraulic survey data sufficient to determine requirements for all hydraulic related structures.

Since streams, wetlands and buffers are present on the project, the Engineer will prepare the environmental permit drawings and permit applications (Preconstruction Notification or PCN) for the project as listed below.

1. Section 404 (US Army Corp of Engineers)
2. Section 401 (NC Dept. of Environmental Quality)
3. Neuse Buffer Certification (NC Dept. of Environmental Quality)

All review fees and/or permitting fees required by will be paid by the Town or reimbursed to the Engineer at cost. It is assumed that the permit will be a nationwide or general permit.

The Engineer will develop final roadway drainage design plans. This design includes the final locations and spacing of curb and gutter inlets to minimize risk of hydroplaning; hydrologic and hydraulic analysis and final recommendations for all cross pipes within project; stability analysis of all ditches and outfalls; pre/post runoff calculations for outfalls; and development of SCM final design details. In addition, a drainage summary sheet will be developed to provide quantities for all drainage related structures. A stormwater management plan is anticipated (preliminary and final).

It is estimated that four (4) stormwater SCM devices will be included in the final design of the project. The anticipated locations are two (2) on each side of the northern tie with Jones Sausage Road where the curb and gutter section meets the open shoulder section, and then two (2) additional on the southern end of Jones Sausage Road for the curb and gutter outfalls. To meet pre/post discharge requirements, the system will have to be split due to a crest south of Denison Way.

1. Jones Sausage Typical Section – 0.65 miles of 4 lane divided with curb and gutter with curb and gutter median
2. Garner Road Typical Section – 0.65 miles of 2 lane shoulder section with no curb and gutter
3. No major structures over 72” in diameter will be required.

#### I.2.6 Geotechnical Subsurface Investigations

The Engineer shall provide geotechnical engineering services conforming to accepted engineering general practices and procedures and be performed in accordance with the following:

The Engineer will contact North Carolina One-Call (NC One-Call) to locate public underground utilities in the vicinity of the investigation. Additionally, if subsurface utility plans of underground public utilities are available, this information will be helpful in planning test locations. We anticipate coordination and on-site meetings with public utility locators and town personnel may be required prior to mobilization and during testing operations. The fieldwork can be performed during week days or during night-time hours as required due to traffic control concerns.

The Engineer shall perform geotechnical subsurface investigations necessary for completion of the final construction documents. The assumed roadway improvement length is approximately 3,000 linear feet and minimal grade changes are anticipated for boring estimating purposes. These investigations shall include a total of twelve (12) soil test borings along the proposed widening areas. Soil borings shall be laid out approximately every 250-300 feet and shall primarily be advanced to 10 to 15 feet or to auger refusal (assumed average of 12.5 feet, or a total of approximately 150 linear feet). Hand auger borings may be used to supplement the SPT borings depending on site conditions and the presence of overhead utilities that may hinder the use of a drill rig.

A total of ten (10) pavement core samples shall be obtained along the existing pavement section to determine pavement section thickness and composition. Pavement core samples shall be obtained at approximate 400 to 500 foot intervals; a few additional cores are planned at existing turn lane location. Below the existing pavement sections, the Geotechnical Staff Professional will perform Dynamic Cone Penetrometer (DCP) testing on existing subgrades to a depth of approximately 3 feet (or to refusal if shallower) in general accordance with the NCDOT

Geotechnical Engineering Unit (GEU) procedures for Pavement and Subgrade Investigations. After DCP testing, sampling will be performed by augering the top 3-5 feet of subgrade below the pavement investigation core to sample subgrade.

The Engineer shall mark boring and coring locations in the field in accordance with the preliminary design plans. A Geotechnical Staff Professional will perform a site reconnaissance and lay out borings along the proposed alignment with a handheld GPS unit and/or by making tape measurements from known site features.

Subsurface conditions will be evaluated utilizing a truck and/or an all-terrain vehicle (ATV) drill rig equipped with hollow stem augers. The same drill rig and/or portable core rig and a diamond impregnated core barrel will be used for pavement core borings. Standard penetration testing shall be performed at regular intervals in accordance with the American Association of State Highway Transportation Officials (AASHTO T-206-87). Traffic Control will be required and provided by a sub-contractor to allow the drill rig to operate safely at the proposed test locations. If required, nighttime lane closures (includes a light tower rental) will be performed. The required lane closures will be performed in accordance with MUTCD requirements.

After completion of both pavement and roadway investigations, the test locations will be abandoned in accordance with NCDOT (GEU) hole abandonment requirements. Where safe to do so, borings advanced outside of the existing pavement will remain open for approximately 24 hours to obtain a stabilized groundwater reading and will then be backfilled with auger cuttings or sand with a 12 inch thick bentonite plug near the surface covered with approximately 6 inches of soil for re-vegetation. In the pavement areas, immediately after drilling, the Engineer's drilling subcontractor will backfill the holes with auger cuttings or sand, and patch the cored hole with cold patch asphalt.

Boring collar elevations will be determined from the Microstation survey information provided by the Department. Northing and Easting (NAD83) coordinates will be provided on the logs.

Representative split spoon and bulk samples will be obtained to verify visual field classification and determine soil index properties. Ten (10) split spoon samples will be analyzed in the Engineer's laboratory for natural moisture, Atterberg limits, and grain size. In addition, two (2) bulk samples will be obtained and analyzed in the Engineer's laboratory for natural moisture, Atterberg limits, grain size, standard proctor compaction, and soaked California Bearing Ratio Analysis (CBR). All laboratory testing shall be performed in accordance with the latest AASHTO procedures.



After completion of the field investigation, the Engineer will prepare an engineering report which will include:

Roadway Inventory Report:

1. Title Sheet
2. Legend Sheet
3. Roadway Title Sheet
4. Inventory text report describing areas explored, subsurface conditions, including groundwater, and areas of special geotechnical interest
5. Plan Sheets with boring/test locations in plan view
6. Profiles and Cross sections as required
7. Soil laboratory test results

Preliminary Geotechnical Recommendations for Right of Way (if required):

1. Preliminary Geotechnical Recommendations for Right of Way letter on Engineer letterhead. Recommendations for cut and fill slopes and ditches will be provided to aid in the preparation of the Right of Way plans.

Pavement Design Investigation and Pavement Design Recommendations:

1. Pavement Investigation Data Sheets
2. Dynamic Cone Penetrometer Test Results
3. Pavement Core Photos
4. DCP Correlations to CBR values
5. Pavement Design Recommendations based on the latest NCDOT Pavement Design Procedure and traffic information to be provided by the Engineer. The design is anticipated to consist of an overlay recommendation for the existing section along with a recommended new pavement section for the widened portion.

Final Roadway Recommendations (written report with accompanying graphics report, if required)

1. Roadway Recommendations Report
2. Title Sheet
3. Legend
4. Roadway Title Sheet
5. Profile and/or Cross sections, showing applicable recommendations (i.e. unsuitable material, undercut)

Deliverables:

1. Roadway Inventory Report
2. Preliminary Geotechnical Recommendations for Right of Way, if required

3. Pavement and Design Investigation and Recommendations
4. Final Roadway Recommendations Report
5. Scanned supportive documents, including laboratory results and calculations

The Engineer will submit one (1) electronic version of the completed report in .PDF format for Town review. The Engineer will respond to one (1) set of comments from the Town, after which the Engineer shall submit one (1) hard copy of the report and one (1) electronic version in .PDF format to the Town upon completion. The Engineer will conduct a meeting to present the findings and recommendations of the geotechnical investigations to Town staff.

#### I.2.7 Utility Coordination

##### I.2.7.a Coordination of Utilities

Following initial base map preparation and prior to development and submittal of 25% plans, the Engineer shall coordinate with private utility companies whose facilities (both existing and proposed) may be affected by the design of the Project to determine locations of major facilities that could adversely affect horizontal alignment development. Such information shall be shared with the Town for determination of costs and benefits of shifting the alignment versus relocating the private utility facilities based upon analysis and recommendation of the Engineer.

Following the completion of the Preliminary (25%) Design Phase of the Project, the Engineer shall conduct a “kick-off” meeting with all private utilities to review the proposed design. The Engineer shall furnish information pertaining to proposed construction to all involved utility companies and agencies.

To facilitate timely preparation of private utility relocation plans, the Engineer shall submit draft drainage design plans to all private utilities at approximately 50% completion of final construction plans. This shall occur such that development of private utility relocation plans may be developed sufficient enough to show any necessary easements on the 65% plans submittal.

The Engineer shall coordinate the resolution of utility conflicts with the respective owners and shall inform the Town’s Project Manager of all correspondence regarding same. The design and adjustment of privately owned utilities shall be the responsibility of the respective owners, with coordination provided by the Engineer. The Engineer shall prepare utilities by others plans illustrating existing and proposed private utility locations.

The Engineer shall conduct a minimum of three (3) coordination meetings with private utility owners. The Town's Project Manager shall be informed of/invited to these coordination meetings. Items to address at these meetings shall include, but not be limited to, phasing coordination with proposed roadway traffic control plans, joint pole usage, potential conflict with signal lines, and accommodation of signals attachments on private utility poles.

#### I.2.7.b Street Lighting

The Engineer shall coordinate development of street lighting plans with Duke Energy Progress. This coordination shall include use of Duke Energy Progress standard roadway lighting equipment and verification of proposed pole locations with representatives from Duke Energy Progress. Plan sheets shall include identification of pole locations; location, size and type of underground conduit necessary to accommodate future installation; and necessary details and special provisions as provided by Duke Energy Progress. Proposed street lighting design by Duke Energy Progress will be shown on the final Utility by Others Plans.

#### I.2.7.c Utility Design

The Engineer shall show the location of all existing and proposed utilities on the final design plans and shall indicate proposed underground utilities to be constructed as part of the Project. Engineer to perform preliminary and final design services for the relocation of water main and sanitary sewer main along Garner Road and Jones Sausage Road, as required for the roadway improvements. Existing water main and gravity sanitary sewer not in conflict with the roadway improvements will remain in place. Construction drawings and water and sanitary sewer technical specifications, special provisions, estimated quantities will be prepared and conform to the Owner's Public Utilities Handbook, latest edition.

Engineer will perform water and sanitary sewer permitting through the Town public utilities and planning departments. Water and sewer relocation plan and profile drawings shall be produced depicting proposed vertical and horizontal locations of relocated Town of Garner-owned utilities. Permitting for water line and sewer line designs will be processed through the City of Raleigh Public Utilities Department. The preliminary and final design services will include the following tasks:

**Task 1 – Construction Drawing and Technical Specification Development**

1. The project will include the design of approximately 1,000 LF of 12” water main, 200 LF of 4” force main and 200 LF of 8” sanitary sewer main and associated appurtenances.
2. The public sewer line and water line relocations will be shown on both plan and profile sheets. Plan and profile drawings will be at a horizontal scale of 1" = 40' and vertical scale of 1" = 10'.
3. Meet with Owner and other stakeholders (up to two meetings) to review the exact project requirements and to obtain any remaining background material from the Owner.
4. The water and sanitary sewer infrastructure will be designed to the Owner’s Public Utility’s Handbook, latest edition.
5. Engineer will provide 22” x 34” plan and profile drawings in MicroStation format.
6. Engineer will provide 30%, 65%, and final drawings. One review meeting for each percent complete (i.e., 30%, 65%, and final) submittal will be included to review overall comments.
7. 30% Construction Drawings (Plan) and preliminary technical specification Table of Contents (TOC)
8. 65% Construction Drawings (Plan and Profile) and preliminary water and sanitary sewer technical specifications, and estimated quantities
9. Final Construction Drawings (Plan and Profile) and final water and sanitary sewer technical specifications and estimated quantities

**Task 2 – Subsurface Utility Exploration**

1. Engineer will provide up to two Level A subsurface utility explorations (SUE) for the water main and sanitary sewer force main along Garner Road, and Jones Sausage Road. These two Level A test holes are not included within the number specified in section I.2.1.k.

**Task 3 – Permitting**

Engineer will provide permitting activities necessary to complete water and sanitary sewer design including the following:

1. Public Gravity Sewer Application
2. Public Water Application and Engineer’s Report Application
3. All permitting fees shall be paid by the Owner.

**Exclusions & Assumptions**

1. Kick-off meetings and coordination meetings will be one hour teleconference/Skype meetings with Town of Garner, City of Raleigh Public Utilities Department (CORPUD), NCDOT, and other utility owners.

2. Utility relocations will be limited to the roadway corridor and rerouting outside of historic districts will not be required.
3. CORPUD will provide Engineer with preliminary shut-off plan recommendations for Engineer to include in the final design plans
4. CORPUD will provide any additional information regarding existing material, type, and location of any water utility piping and appurtenances if discovered through on-going coordination with staff.
5. CORPUD appurtenances (air release/vacuum valves) that may be needed because of high points created by vertical water utility adjustments will not require any detailed hydraulic design analysis or associated surge analysis. Any of this detailed hydraulic analysis required by CORPUD and/or Town of Garner will require additional scope and fee. Engineer will provide standard details for these appurtenances as needed for any potential vertical changes that could create a high point.
6. Water line specifications will consist of CORPUD standard specifications and NCDOT specifications with Special Provisions and these will be referenced by notes in the construction drawings. Supplemental technical specifications will be prepared if required, but these will be limited to standard sanitary sewer and waterline appurtenances.
7. Water system modeling or related hydraulic analysis to determine pipe sizes and pressures are not included in this scope of work.
8. Construction phase services were not included as part of this scope of work.
9. Additional topographic survey services are not included with this scope of work.
10. Utility relocations will match existing pipe sizes.
11. No corrosion mitigation system will be developed.

#### 1.2.8 Final Design Phase

The Engineer shall develop final plans and project special provisions in sufficient form and detail for the Town to let construction contracts. All final designs for the Project shall conform to the appropriate current AASHTO specifications, the current practices of NCDOT, and the requirements of the Town.

Plans shall be developed using MicroStation V8i and GEOPAK software. Final design plans shall include roadway and sidewalk design and details, storm drainage details, construction traffic control plans, pavement marking plans, erosion control notes and details, utilities by others plans, utility construction plans (if required), signal designs (if required), signing plans, landscape/planting plans, and material quantities; and shall identify existing right-of-way, proposed right-of-way, permanent and temporary drainage easements, slope easements, utility easements, and temporary construction easements sufficient to encompass all improvements.

I.2.8.a 65% Plans

After the first Public Meeting (as described in section I.2.4) and receipt of all applicable comments, the final roadway plans shall be developed from the approved preliminary (25%) design plans to a stage where they are approximately 65% complete. All existing roadways, structures, utilities, and other items affected by the project shall be shown in addition to the proposed construction. The plans shall include horizontal geometrics, pavements, drainage layout and calculations, right-of-way easements, property lines, typical sections, traffic control plans, preliminary signing and pavement marking plans, preliminary signal design plans, erosion control notes and details, utility relocation plans, and special details.

The Engineer shall show any proposed traffic signal poles, controller cabinet bases, easements and pertinent equipment as specified by the Town on the final plans (if needed). All drainage and erosion control calculations shall be submitted with the 65% design plans by the Engineer for Town approval.

The Engineer shall furnish two (2) hard copy sets of 65% plans and one (1) electronic set in PDF format to the Town. Sufficient copies of the plans and other design data shall be submitted to the Town to allow detailed review. Based on comments received from Town during scoping, one round of review by Town assumed, and two separate reviews by NCDOT are assumed.

Upon incorporation of comments and completion of the 65% plans and approval by the Town, the Engineer shall furnish one (1) electronic set of construction drawings in PDF format and one (1) hard copy set, (1) public meeting map, an updated Opinion of Probable Construction Cost (including estimated right-of-way acquisition costs based upon cost data provided by the Town), bid quantities, and project special provisions.

The Engineer will prepare preliminary layout designs for up to one alternatives to be presented at a 65% public meeting, including:

1. A PowerPoint Presentation discussing the purpose and limits of the project.
2. Background information and general scope of the project.
3. Preliminary Project Schedule.
4. Estimated Preliminary Project Costs.
5. Two personnel from Engineer staff to attend the Pre-design public meeting

#### I.2.8.b Traffic Signal Design Plans

*Traffic Signal Upgrade Designs* - Based on proposed roadway plans, the Engineer will design the traffic signal upgrade design for the East Garner Road at Jones Sausage Road intersection in conformance to NCDOT and Town standards. Based on the traffic control plans, up to two temporary traffic signals may be required. Signal plans will be prepared in English units and will include the preparation of the following items:

*Intersection Layout Plan* - This plan will include the overall layout of the East Garner Road at Jones Sausage Road intersection showing the items proposed for construction. Items on the plans will include intersection striping and marking location (not to be considered a pavement marking plan); identification of conduit runs; vehicular and pedestrian signal head placement; pole and push button location; location of controller cabinet and pull boxes; phasing diagram; a timing chart; a table of operation; a stop bar location diagram; and signal head and sign legends. It is assumed that the signal upgrades are roadway geometric improvements, sidewalks and cross walks on all sides, FYAs for the side street left-turn movements and four phase pedestrian signals. Modification to one or both school flashing beacons will be evaluated depending on the construction impact. New strain metal pole will be designed.

*Intersection Timing and Phasing Plans* - The proposed isolated signal timing will be shown on the signal plan.

*Electrical Details Plan* - This plan will include details for the signal monitor programming detail, load resistor installation detail, back-up protection notes and details, and equipment information notes. The Engineer will also provide a field connection hook-up chart and electrical detail notes.

*Plan Submittal and Review* - The Engineer will coordinate with the Town and NCDOT to present initial design concepts and recommendations and seek input and initial approval. The Engineer will make adjustments and revisions to design parameters as requested in the initial conference.

Following completion of the 65% roadway design plans, the Engineer will prepare and submit 90% signal upgrade plan and electrical/programming details as applicable to the Project. Upon receipt of 90% review comments, the Engineer will revise the plans if needed. The Engineer will sign, seal, and submit the 100% signal and electrical plans for incorporation into the final construction plans and contract documents.

*The following services are not anticipated in this Agreement, but may be provided as Additional Services in ARTICLE II of this Agreement.*

1. *Cable Routing Plans and Fiber Optic Slice Details*
2. *Utility Make Ready Plans*
3. *Coordination Signal Timing Services*
4. *Emergency Vehicle Preemption Design*
5. *Audible Pedestrian Signal Design*
6. *Pedestrian signal design for temporary signals.*

#### I.2.8.c Construction Traffic Control, Pavement Marking, and Signing Plans

The Engineer shall prepare construction traffic and pedestrian control plans, which shall indicate how vehicular and pedestrian traffic is to be maintained during construction of the Project. NCDOT Roadway Standard Drawings shall be referenced in the traffic control plans, but shall not be detailed as a part of the traffic control plans. The **Public Rights-Of-Way Accessibility Guidelines (PROWAG)** will be referenced when developing the pedestrian traffic control plan. Development of these plans shall consider required phasing of the private utility companies' relocation designs, if any, during construction. These plans shall be prepared concurrently with the final design plans so as not to delay submission of all final construction documents.

The Engineer shall develop pedestrian safety plans, permanent pavement marking plans, and permanent signing plans. The Engineer is responsible for warning and regulatory signs and the Town is responsible for street name signing. No special sign designs, other than standard warning, regulatory, and construction signs shown in the current version of the M.U.T.C.D., are required for this project.

#### I.2.8.d Erosion Control Plans

The Engineer shall show erosion control measures and special details not shown in the Erosion Control Manual on a separate set of reproducibles in the roadway plans. Following an initial review by the Town, the Engineer shall submit erosion control plans to the Regional Engineer for NCDENR for review and approval of the erosion control plans prior to approval of the final roadway plans by the Town. The Town will be responsible for signing and notarizing the NCDENR Financial Responsibility Form and reimbursing the Engineer for the actual review fees required for the project.

The following are itemized tasks associated with the erosion control design:

1. Watershed Investigation & Analysis
2. Conduct a pre-design meeting with Town staff.
3. Conduct a site visit to evaluate existing conditions and available outfalls (assume 2 staff members).



4. Provide coordination with Roadway design to determine any ROW or easement needs for sediment control devices (e.g. sediment basins, diversion channels, etc.).
5. Attend field inspection meetings (assume 1 staff member).
6. Design clearing & grubbing phase erosion control plans.
7. Design intermediate/final phase erosion control plans.
8. Calculate matting requirements for ditches and slopes.
9. Provide title sheet, special details, notes, and project special provisions (erosion control).
10. It is assumed that zero (0) culvert construction sequences will be included in the erosion control plans.

#### I.2.8.e Landscape Plans

The Engineer's Landscape Architect (LA) will prepare plans for implementing landscape treatments as appropriate along the project corridor. The LA will receive and incorporate DWG files of existing conditions from the Engineer including existing trees, planting areas, fences, ROW, easements, property lines, utilities, guy wires, building outlines, etc. The LA will receive and incorporate 25% DWG files of the road improvement project including title block, new pavements, proposed easements, temporary and permanent drainage facilities, utilities, stations, and elevations. One meeting will be held with the Engineer to review 25% plans and discuss planting strategy, locations, slope and easement limitations, and budget. The LA will meet with Town staff to discuss planting locations, species, and maintenance and operations concerns. The LA will prepare 25% planting plan and detail sheets showing schematic locations of canopy and understory trees, shrubs, groundcover, lawn and mulch areas, including SCM's.

The LA will prepare rendered plan drawings for inclusion in the first public meeting PowerPoint presentation and associated meeting materials as well as up to two rendered sections at selected stations along the corridor to show screening and planting character. The LA will submit 25% planting and detail sheets and cost estimate to the Engineer (PDFs).

Based on feedback from the Town and 1st public meeting, the LA will prepare a 65% planting plan and detail sheets showing revised location of canopy and understory trees, shrubs, groundcover, lawn and mulch areas, including proposed SCM's. The LA will prepare an updated preliminary cost estimate and draft specifications.

Based on feedback from the Town and 2<sup>nd</sup> public meeting, the LA will prepare 100% planting plan and detail sheets to address plan revisions and review comments as well as a final cost estimate and specifications. The

LA will submit 100% planting and detail sheets, cost estimate and specifications (PDFs) and a DWG of planting layers to the Engineer.

I.2.8.f Final Construction Plans and Contract Documents

The Engineer shall complete the final construction plans, incorporating and resolving all remaining comments from the Town staff review in such detail as to allow the Town to let the proposed work to contract. The plans shall include roadway and sidewalk design details, traffic control plans, signing and pavement marking plans, signal plans, erosion control notes and details, utility relocation plans (if needed), utilities by others plans, landscape plans, quantity summaries, and special detail drawings required together with general notes. The Engineer shall furnish one (1) hard copy sets of 100% final construction plans and one (1) electronic set in PDF format to the Town for approval/signatures. Based on comments received from Town during scoping, one round of review by Town is assumed, and two separate reviews by NCDOT are assumed.

After plans are executed by Town staff, the Engineer shall furnish to the Town one (1) CD with electronic plans (in PDF format) and one (1) set of sealed project plans and contract documents which shall include, but not be limited to, contract proposal bid forms, quantities, specifications, special provisions, bond forms, and other necessary documents including a quantity takeoff notebook. The Project Schedule of Prices shall be prepared in Microsoft Excel format for distribution to potential bidders.

The Engineer shall prepare and furnish to the Town a final Opinion of Probable Construction Cost based on the final bid items in the contract proposal. This task shall include any required addendum(s) to address project questions and clarifications throughout the bidding process, including plan sheet and contract revisions. Any revisions resulting from the addendum(s) shall require an updated Opinion of Probable Construction Cost.

The Engineer will participate in a pre-construction meeting to be conducted by the Town. The Engineer will take minutes of the meeting and provide to the participants.

I.2.8.g Plan Scale

The Engineer shall furnish all roadway plan sheets drawn to a 1" = 40' horizontal scale and 1"=10' vertical scale. Cross-sections will be prepared at a scale of 1"=10' on half-size plan sheets.

## I.2.9 Meetings, Coordination, and Project Management

### I.2.9.a Coordination with NCDOT

The Engineer shall coordinate all services rendered with NCDOT with respect to present and known future highway improvements which may conflict with the Project. The Engineer shall prepare an Encroachment Agreement and submit to NCDOT for approval.

### I.2.9.b Meetings and Coordination

The Engineer shall make available, at reasonable times, responsible staff members to meet with Town staff to review the content and progress of the Project. The Engineer shall also make available responsible staff members to attend up to 36 monthly progress meetings, (1) Project Kickoff Meeting, (4) Town staff design review meetings, (2) Public Meetings, (2) property owner meetings, (1) Town Council Presentation, (1) Pre-Bid Meeting to be conducted by the Town, and (1) Pre-Construction Meeting to be conducted by the Town. The Engineer shall also make available responsible staff members to attend meetings to review the plans with NCDOT and other permitting agencies as required (See I.4). The Engineer shall compile notes of the above meetings as requested by the Town and provide to all invited attendees.

The Engineer shall provide (1) electronic Microsoft Power Point presentation and, (1) PDF color project map for use at each of the following meetings: (2) Public Meetings and the (1) Town Council presentation. The Engineer shall provide responsible staff members to present project information at each of these meetings.

It is assumed that Town staff will provide all other materials necessary for the required meetings. Items the Town will supply include but are not limited to sign-in sheets, comment forms, and meeting notifications.

The Engineer shall provide routine project management and administration activities, including monthly progress reports, project letters/correspondence, and subconsultant coordination through the anticipated project duration. The Engineer shall also make available any information to assist Town staff in keeping the Town's project web site updated throughout the project. The Engineer shall provide two detailed schedules (LAPP vs no LAPP) to assist the Town Staff/Council in determining the most appropriate course of action.

#### I.2.10 MicroStation/GEOPAK

The Engineer shall prepare all plan sheets through a computer aided drafting and design system. At the time of delivery of project plans for bidding, the Engineer shall furnish to the Town the final MicroStation/GEOPAK (Version 8i) design files, as represented by the final construction plans, excluding any extraneous working files.

For purposes of this subsection, the Town shall indemnify and hold harmless the Engineer, its related entities, subconsultants, successors and assigns, and for the foregoing, its directors, officers and employees from all liability, costs and legal fees arising out of the use of any documents or electronic data produced by Engineer and subconsultants that are not final and complete, or the use of documents or electronic data for any use other than the original intended purpose.

#### I.2.11 Short Form Community Impact Assessment (CIA)

The scope sections below are for the proposed improvements to Jones Sausage Road from south of the Amazon Fulfillment Center to just south of US 70 in Wake County. The scope provides a description of the variables used in determining the scope and associated man-day estimate for the CIA, and any additional information that is needed to provide an analysis of potential project related community impacts.

##### I.2.11.a Coordination with NCDOT

The Engineer will obtain the current CIA Template and Guidance, Demographic Tool, and other pertinent forms and tools from the Connect NCDOT website or from the NCDOT Community Studies (CS) staff before starting the data-gathering process.

##### I.2.11.b Direct Community Impact Area

Based on the current guidance, the Engineer will delineate an area to be assessed for direct impacts, called the Direct Community Impact Area (DCIA).

The draft DCIA will be mapped and forwarded to the Town and CS for review and approval, before further analysis is conducted.

##### I.2.11.c Demographic Data Pull and Examination

The Engineer will determine a Demographic Study Area (DSA), based on current guidance. The draft DSA will be mapped and forwarded to the Town and CS for review and approval, before further analysis is conducted.

Using the CS Demographic Tool current at the start of the report process, the Engineer will compile data for the DSA, to be examined and documented following the current guidance. The general locations of any identified Title VI, EJ and LEP populations should be noted for

observation on the field visit.

I.2.11.d Field Visit to Inspect Project Area

Following current guidance, prior to the field visit the Engineer will prepare and send an e-mail to the Town, NCDOT Division, and NCDOT District staff. Copy CS on the email.

The Engineer will conduct a field visit to the proposed project location. The Engineer will use the field visit input form obtained from CS as a starting point for observational notes. The Engineer will take photos of the project area and any notable community characteristics.

Notify the Town, CS and Public Involvement if the field visit or additional research suggests that expanded community coordination may be appropriate.

I.2.11.e Local Officials Input

The Engineer will contact local officials using the local input forms provided by NCDOT CS and available on the Connect website as guidance. The Engineer will contact the Town, CS and Public Involvement to discuss whether expanded community coordination is necessary if the interviews or other research reveals notable concerns.

I.2.11.f Community Impact Assessment Project Documentation

The Engineer will map and document community characteristics, assess impacts, and develop recommendations according to the current CIA Template and Guidance.

I.2.11.g Community Impact Assessment Deliverables

Draft Community Impact Assessment

The draft CIA will be submitted to CS in Word format. The Engineer will coordinate the schedule for an initial two week duration review of the draft report with the Town, CS and the NCDOT Project Planning Engineer to adhere to the overall project delivery schedule.

The Engineer will revise the reviewed draft report according to comments and schedule a second one week duration review to confirm that comments have been adequately addressed. The Engineer will submit a “clean” revised report and a “track changes” version that shows: (1) text added, deleted, or moved in response to comments in comment boxes; and (2) how the Engineer addressed each comment in a comment box. It is not necessary to show text insertions, deletions, or edits in the “track changes” version; the Engineer may simply accept those changes.

Final Community Impact Assessment

The Engineer will provide CS with a digital copy of the complete final report in both Word and Adobe Portable Document Format.

I.2.11.h Community Impact Assessment Project AdministrationScope of Services

The Engineer will review this Scope of Work and prepare a task list and fee. A broad assessment of complexity and potential community controversy based on preliminary information provided by CS and Town representatives, along with variables including the length of the project, number of jurisdictions, proximity of alternatives/study area size, and development density shall be used to estimate fees for Task Orders.

Project Management

The Engineer will provide adequate staff with proper expertise to complete the project. The primary author of the report must be pre-qualified by CS.

I.2.12 Railroad Coordination

With the proposed grade separated rail crossing, coordination with the Rail Division and Structures Management Unit (SMU) of NCDOT is anticipated for the project in addition to any coordination with Norfolk Southern and/or North Carolina Railroad Company. Included with this coordination is the development of figures displaying current design(s) and clearances as required by the Rail Division and Norfolk Southern. Impacted areas of right-of-way will be calculated and tabulated.

Assume two (2) railroad coordination meetings. In advance of either of the railroad coordination meetings, the Engineer will attend one preparatory meeting with the Town to review any necessary figures or project information.

I.2.13 Kickoff ActivitiesI.2.13.a Cultural Resources

The Engineer will incorporate cultural resources (Historic Architecture and Historic Archaeology) studies from the NCDOT Human Environment Section and North Carolina state Historic Preservation Office (NC HPO) into most recent plans.

The Engineer will coordinate with the Town and NCDOT to schedule and attend a meeting with the NC HPO to review eligibility or preliminary effects determinations. Attendance at two meetings are assumed in Raleigh, with the Engineer providing updated handouts, provision of maps and displays,

agendas and meeting minutes. Two Engineer staff are expected at each meeting.

The Engineer will prepare the Archaeology request (including figures) for NCDOT HES to complete the necessary reviews.

This scope of work does not include any additional local historic effects coordination, which may be deemed necessary once HPO coordination commences. The scope does not include the Cultural Surveys themselves (see Contract Exclusions).

#### I.2.13.b Start of Study

As part of the study process, the Engineer will send project kickoff letters/Start of Study letters and a study area map requesting various NCDOT units and local government officials/staff provide comments and/or concerns on the proposed project. The following is a list of units that could be included in the process:

1. Town of Garner
2. Wake County
3. NCDOT Division and Central Units
4. Capital Area Metropolitan Planning Organization (CAMPO)
5. State Environmental Review Clearinghouse
6. Local and Federal Officials (USFWS, USACE, USEPA)

#### I.2.14 Geoenvironmental

The Engineer proposes to conduct a Limited Environmental Records Review (LERR), consisting of an environmental records review and site reconnaissance, of the Project Study Area. The main purpose of the LERR is to identify properties within the Project Study Area that are or may be contaminated, and may therefore result in increased project costs and future liability as the project progresses. Hazardous material impacts may include, but are not limited to, active and abandoned underground storage tank (UST) sites, hazardous waste sites, regulated landfills and unregulated dumpsites.

The LERR will be conducted in accordance with the standard of care of the ASTM International (ASTM) Practice E 1527-13. Although it is similar to an ASTM 1527-13 compliant Phase I Environmental Site Assessment, it does not qualify the user for “All Appropriate Inquiry” protections.

The LERR will be conducted by performing the following activities:

1. Utilize a database research firm to provide a regulatory database search of the Project Study Area and surrounding properties that will include: federal standards, state standards, federal supplemental, state supplemental, and local and brownfields databases within the regulatory minimum-search distance of the Project Study Area, as defined by the ASTM Standard. If available, the database

report will also include Sanborn, city directory, and historical topographical maps.

2. Conduct a historical land-use review of reasonably ascertainable records including review of aerial photographs, USGS 7.5-minute topographic maps, fire-insurance maps, local street-directories, property tax records, building department records, recorded land title/deed records, and zoning/land-use records.
3. Review regional and local geology/soil conditions.
4. Perform a site reconnaissance of the Project Study Area and surrounding properties. The site reconnaissance will be conducted to identify potential RECs located on or adjacent to the Project Study Area. Observations will be recorded by the Environmental Professional on a Site Reconnaissance Questionnaire.

Subsequent to review of the stated data sources and completion of the site reconnaissance, the Engineer will prepare a LERR Report to summarize our findings, opinions, conclusions, and recommendations, as they apply to the proposed roadway improvement project.

#### I.2.15 Project-Level Air Quality Analysis

The Engineer will prepare a Qualitative Project-Level Air Quality Analysis for the Jones Sausage Road Project in Wake County. The project is expected to include widening and new location with a proposed grade separated railroad bridge for the existing and future rail lines over Jones Sausage Road. Wake County is in attainment for all regulated particulates, including CO and PM<sub>2.5</sub>; thus, no hotspot analyses are required. The Engineer will confirm current attainment status during the project assessment. A federal Categorical Exclusion is anticipated for this project.

For this analysis, the Engineer will include a qualitative MSAT Analysis in accordance with the Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (October 18, 2016), can be found on the FHWA Air Quality website: [http://www.fhwa.dot.gov/environment/air\\_quality/air\\_toxics/policy\\_and\\_guidance/msat/2016msat.pdf](http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/2016msat.pdf)

##### I.2.15.a Air Quality Analysis

The Engineer will prepare a Draft and Final Air Quality Memo that includes a Qualitative MSAT Analysis. A Professional Engineer registered in North Carolina is not required to sign the report. “Streamlined Air Quality Text”, per NCDOT guidance, will be prepared by the Engineer for inclusion in the environmental document. In addition, the Final Air Quality Report shall be accompanied by a matrix that details how each comment on the draft report has been addressed.

##### I.2.15.b Deliverables

The Engineer will provide the following deliverables:

1. Draft Air Quality Memo (1 digital copy)
2. Final Air Quality Memo with NCDOT comments response matrix (2 hard copies; 1 digital copy)
3. Streamlined Project-Level Air Quality Text (1 digital copy)



### I.2.16 Preliminary Hydraulics Report

The Engineer will prepare a Preliminary Hydraulic Technical Report for the project. The purpose of the report is to identify existing and/or proposed drainage structures (defined as those requiring flow conveyance greater than 30 sq. ft.) and determine what the proposed project impact will be on each structure. Hydrologic and hydraulic analyses will be performed to determine the hydraulic performance for existing and future conditions. A recommendation will be made for the retention and/or extension of the structure, supplementation of the structure to provide additional conveyance or total replacement of the structure. The items addressed in the report will include, at a minimum, the items specified below. One (1) major crossing (Mahlers Creek or Tributary) is anticipated in the project corridor.

#### I.2.16.a Research/Data Collection

1. Complete a Preliminary Design Report (PDR) form for each major drainage structure.
2. Review existing reports/data for existing structures and upstream and downstream structures.
3. Obtain and review NRTR if available.
4. Determine FEMA involvement by reviewing community FIS and FIS maps.
5. Obtain effective hydraulic model from FRIS if available.
6. Contact appropriate maintenance personnel/property owners to determine flood history and past performance of structure (historical high water, roadway overtopping, and debris potential).

#### I.2.16.b Field Review at each Crossing Site

1. Conduct field visit at each crossing.
2. Note jurisdictional streams (information to be provided by others).

#### I.2.16.c Preliminary Design Calculations and Structure Sizing

1. Delineate drainage areas.
2. Determine appropriate hydrology method for anticipated watershed land use and compute discharges. If in detailed FIS, compare FEMA discharges to computed discharges and evaluate appropriate discharges to use for design.
3. Assess hydraulic adequacy of existing structures.
4. Determine preliminary size for each proposed major drainage structure.

#### I.2.16.d Assimilate Data and Prepare the Preliminary Hydraulic Technical Report

1. Write a brief description of the overall project.
2. Provide site map showing all sites and overall project limits.
3. Describe the existing conditions at each crossing site. Describe upstream and downstream hydraulic structures. Discuss the impact that the proposed structure will have on the adjacent floodplain and upstream properties. Identify if an MOA/CLOMR will be required and if there is anything special about the site that will significantly affect design and construction.
4. Note the locations of existing utility lines (sewer, telephone, and power if appropriate).

5. Recommend proposed structure at each site. Recommend location for replacement structure, if warranted.
6. Describe and identify adequacy of the proposed roadway alignment (horizontal and vertical) and determine if crossings will be hydraulically controlled.
7. Sketch plan and profile view(s) to scale. Include photographs of crossing site.
8. Assess environmental considerations (such as stream classification) and permit requirements (Buffer, CAMA Permit etc.). Identify whether hazardous spill basins are required. Address stormwater management considerations.
9. Format report to group data by site, with existing conditions/structure and proposed recommendations etc. together for each site.

I.2.16.e Deliverables

1. Electronic copy of the draft Preliminary Hydraulic Technical Report will be provided to the Town of Garner for review.
2. Paper copy and one (1) electronic copy of the Final Preliminary Hydraulic Technical Report will be provided to the Town of Garner for their records.

I.2.17 Noise Analysis

The Engineer will prepare a Preliminary Traffic Noise Analysis for the Jones Sausage Road project in Wake County. The project is expected to include widening and new location with a proposed grade separated railroad bridge for the existing and future rail lines over Jones Sausage Road. The Traffic Noise Analysis will be prepared in accordance with 23 CFR 772, the 2016 NCDOT Traffic Noise Policy and the 2016 NCDOT Traffic Noise Manual. A Federal Type III CE is anticipated for this project.

I.2.17.a Obtain Existing Project Information and Coordinate

The Engineer's traffic noise staff will review existing project information provided by the Town and NCDOT to gain a perspective of the noise sensitive land uses and potential noise impacts in the vicinity of the project.

I.2.17.b Project Area Reconnaissance and Land Use

The Engineer will review the data requirements necessary to perform the traffic noise analysis (Section 8.5 of the Traffic Noise Manual) to determine if a Project Area Reconnaissance will be needed. It is assumed a Project Area Reconnaissance will be conducted for this project.

The Engineer will identify noise-sensitive land uses in the vicinity of the project. Noise sensitive land uses will be classified per the Noise Abatement Criteria (NAC) specified in the NCDOT Traffic Noise Policy. If applicable, equivalent receptors will be calculated per NCDOT Traffic Noise Manual at up to one location. The Engineer will coordinate with the applicable local government to identify all noise-sensitive land uses with an approved building permit. Based on a review of project mapping, it is estimated that approximately 75 receptors will be included in the noise modeling.

I.2.17.c Project initiation Meeting and Noise Analysis Work Plan

The Engineer will meet with Garner and NCDOT Noise staff to determine specific parameters of the analysis, such as ambient noise monitoring locations, receptor numbers, likely abatement analysis locations and Noise Study Area limits. The Project Area Reconnaissance will be completed prior to the meeting. A Noise Analysis Work Plan will be prepared. The draft Noise Analysis Work Plan (Section 8.6 of the Traffic Noise Manual) will be discussed during the meeting and finalized after the meeting. This meeting will confirm that the Engineer is providing the level of detail desired by the Garner and NCDOT review staff.

I.2.17.d Existing Base Year Noise Levels

The Engineer will evaluate the existing base year (year 2018) loudest-hour equivalent noise levels, Leq(h) for all noise-sensitive land use receptors within the study area with a combination of noise measurements and computer modeling.

I.2.17.e Ambient Noise Levels

Following approval of the Noise Analysis Work Plan and after obtaining a right-of-entry letter, the Engineer will collect ambient noise measurements. Short-term existing ambient Leq(h) noise level data will be obtained in one-minute increments for 20-minute periods at those locations identified in the Noise Analysis Work Plan, with at least two (2), and preferably three (3), simultaneous measurements per representative area. Based on a review of project mapping, it is estimated that ambient noise will be measured at approximately five (5) locations. A record of any unusual events and the time at which they occurred during the measurement period shall be documented. In accordance with NCDOT Traffic Noise Manual, short-term ambient noise measurement data will be obtained in a geometric array of integrating sound level analyzers. If applicable, one long-term existing ambient Leq(h) noise level data location(s) will be obtained for up to 24 hours. The need for, and locations of, long-term measurements will be determined on a case-by-case basis and will be identified in the Noise Analysis Work Plan. All integrating sound level analyzers (meters) used to obtain existing ambient noise monitoring data shall meet ANSI and IEC Type I or Type II specifications. Simultaneous traffic will be counted and classified during each short-term noise measurement session for which data is obtained in the vicinity of existing traffic noise sources. A traffic noise modeler or reviewer who is prequalified by NCDOT will be present during all data collection in the field.

I.2.17.f Baseline TNM Model

Using acceptable and NCDOT-prescribed TNM modeling methodologies, the field-collected traffic data will be used to create a validated TNM 2.5 model of the traffic noise environment during the ambient noise monitoring sessions. TNM model validation will be acceptable when the Leq(h) modeled noise levels

are within  $\pm 3.0$  dB(A) of the ambient data  $Leq(h)$  for all noise monitoring receptor locations for which traffic was dominant. All TNM validation models must be approved by NCDOT prior to predicting existing and future noise levels. Garner and NCDOT will provide comments on the submitted TNM validation files within 10 business days. This scope of work assumes that TNM model validation will be needed at up to 5 sites.

Existing loudest-hour noise levels will be assessed for all noise-sensitive land use receptors identified in Task 13.1.1 as the greater of field-monitored equivalent noise levels, or the hourly-equivalent noise levels predicted by TNM assessment of existing base-year peak-hour traffic volumes and speeds into the validated existing-condition TNM model(s).

I.2.17.g Design Year Noise Levels

The Engineer will use TNM@2.5 to predict 2045 design year loudest-hour equivalent traffic noise levels at all noise-sensitive land use receptors identified in Task 10.1.1. Design year 2045 TNM models will incorporate the build-condition design elements (these elements will be based on the best design information available at the time of the modeling), as defined in the NCDOT Traffic Noise Manual, into the validated existing-condition TNM models. The following alternatives will be assessed in the Final Design Traffic Noise Analysis: No-Build Alternative and one Build Alternative.

TNM-predicted design year 2045 loudest-hour noise levels will be assessed for all noise-sensitive land use receptors identified in Task I.2.17.b.

Design Year 2045 traffic noise impacts will be assessed per the NCDOT Noise Abatement Criteria and Substantial Increase criteria (the increase in predicted design year loudest-hour equivalent noise levels over existing base year loudest-hour equivalent noise levels).

The Engineer will prepare 2045 Design Year noise contours to assist land use planning efforts by local governments. It is anticipated that noise contours will be needed at five locations.

I.2.17.h Noise Abatement

The Engineer will assess potential noise abatement measures defined by the NCDOT Traffic Noise Policy for all traffic noise impacts, if any, resulting from the project. In accordance with NCDOT Traffic Noise Manual, the Engineer will use TNM@2.5 to model and assess noise barrier(s) as a potential abatement measure per applicable NCDOT Traffic Noise Policy criteria. For the purposes of this scope of work, noise abatement will be considered for up to 7 Noise Study Areas (NSA's) for one Build Alternative.

The results of this assessment shall be included in the Traffic Noise Report, with a discussion of the applicability of each potential abatement measure, based upon known project design and right of way limitations. The Engineer will use TNM@2.5 to model and assess all noise barrier(s) that are likely to be considered for implementation as a potential abatement measure, per applicable NCDOT Traffic Noise Policy criteria. The noise barrier(s) will represent optimized design(s) that will preliminarily indicate feasibility and reasonableness of noise abatement for predicted traffic noise impacts.

I.2.17.i Traffic Noise Report

The Engineer will prepare a Draft and Final Traffic Noise Report. The Traffic Noise Report will contain the elements and follow the guidelines prescribed in the NCDOT Traffic Noise Manual. A qualitative discussion of construction noise shall be included in the report. The Final Traffic Noise Report shall be signed by a NCDOT-approved noise modeler and reviewer and sealed by a Professional Engineer registered in North Carolina. “Streamlined Traffic Noise Text”, per NCDOT guidance, will be prepared by the Engineer for inclusion in the environmental document. In addition, the Final Traffic Noise Report shall be accompanied by a matrix that details how each comment is addressed in the Final Traffic Noise Report.

I.2.17.j Deliverables

The Engineer will provide the following deliverables to Garner & NCDOT:

1. Noise Analysis Work Plan
2. All TNM Validation Files to satisfy Existing Base Year conditions
3. All TNM Models (electronic copy)
4. Draft Traffic Noise Report (1 electronic copy)
5. Revised Traffic Noise Report with NCDOT comments response matrix
6. Final deliverables, including:
  - a. Electronic copy of all final deliverables placed on the project’s SharePoint Connect site, including:
    - i. Pdf of final, complete report with appendices
    - ii. MS Word version of the body of the report
    - iii. TNM files and CADD files
  - b. Electronic copy of report with appendices on CD or DVD

I.2.17.k Assumptions

1. Engineer will use 2018 as the existing base year and 2045 as the build year for this project.
2. One round of comment/response on the Workplan, model validations and draft TNR is budgeted for this scope of work.
3. No public involvement support is budgeted for this scope of work

**I.2.20 NEPA Class of Action**

It is anticipated that the Class of Action for the project will be a Type III “Categorical Exclusion” (CE). Technical information, methodologies, and results of analysis will be assembled and summarized in the environmental document. A draft CE document (including pertinent figures) will be submitted to the Town for an initial review, then to NCDOT for review. Document comments will be addressed and then a signed document will be being provided for final review and signature by FHWA.

The CE document will consist of the following sections, per current NCDOT and FHWA guidelines:

1. Project Description
2. Description of Need and Purpose
3. Categorical Exclusion Action Classification (Type III)
4. Proposed Improvements
5. Special Project Information
6. Project Impact Criteria Checklists
7. Additional Documentation as Required from Section F
8. Project Commitments

**ARTICLE II - Additional Services**

- II.1 It is not anticipated between the Town and Engineer that the Engineer shall perform any services under the Agreement except as set forth in Articles I and III. If requested in writing by the Town and accepted by the Engineer, the Engineer shall furnish or obtain from others Additional Services, which are not included under Article I. The Additional Services shall be paid for by the Town at rates to be agreed upon by the Town and the Engineer in writing. Equitable adjustments shall be made to the time of completion for the Additional Services.

**ARTICLE III - Alternate Services****III.1 Visualization**

The Engineer will develop visualizations to a level of detail suitable to communicate design intent for the preferred alternative. The visualizations will be of a quality and detail necessary for static rendering from a driver’s perspective.

The visualizations will only include the following:

1. Mainline roads and cross-section elements, i.e. pavement, curb and gutter, median, bike lanes, sidewalks, side slopes.
2. -Y- line intersections
3. Retaining walls and decorative walls
4. High mast lighting
5. Realistic materials assignments for all road elements
6. Realistic pavement markings
7. Trees and foliage

The Engineer will apply realistic atmospheric and lighting conditions, and generate high resolution static renderings suitable for presentations and web media. This subtask includes up to 2 renders total (includes drafts, and final renders).

Deliverables:

Draft and final versions of visualizations in PDF or PPT format.

III.2 Re-staking

~~The Engineer will re-stake right of way and easement points at the direction of the Town. This service will be provided at a unit cost rate of \$ \_\_\_\_\_ per parcel.~~

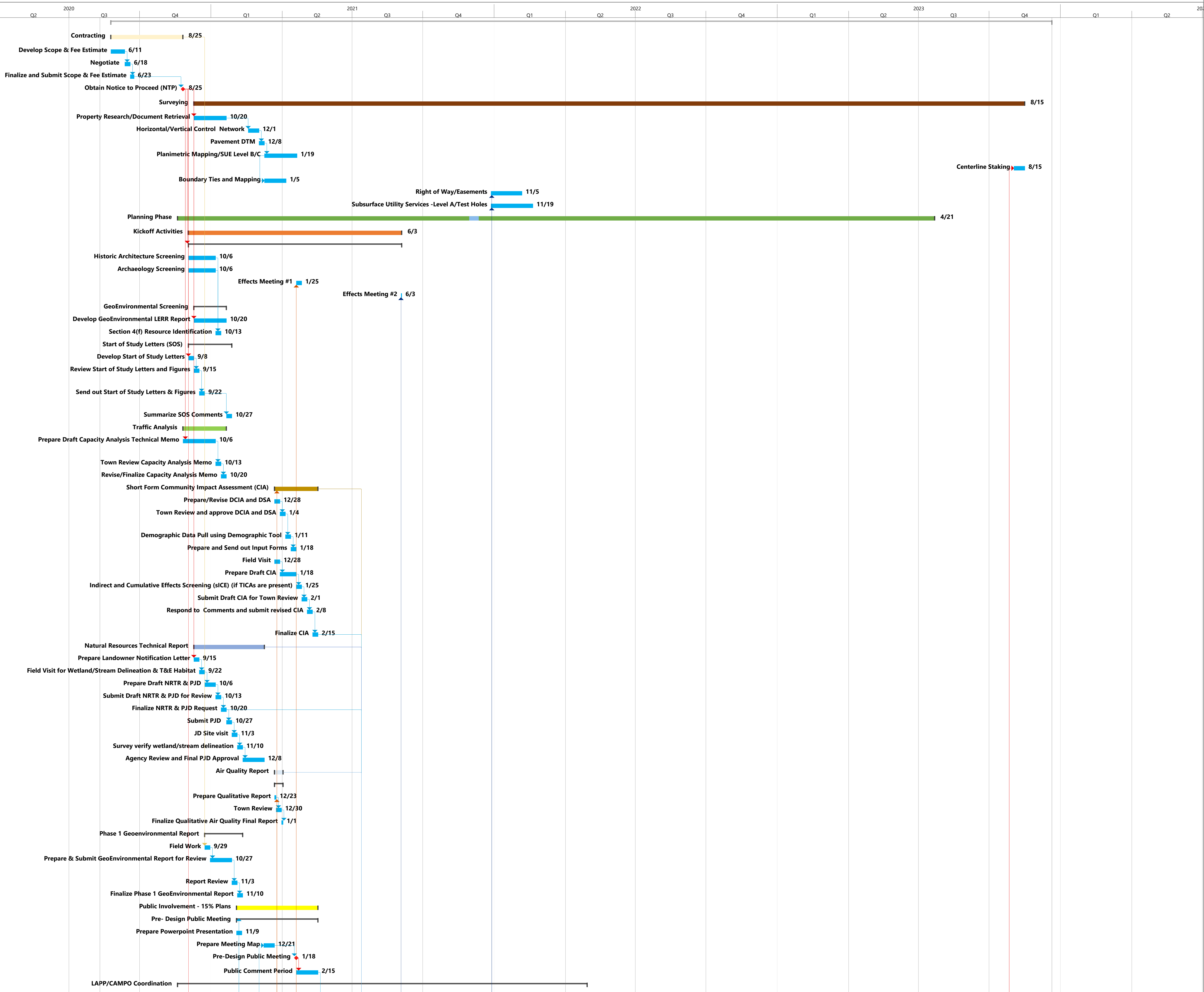
III.3 Right of Way Exhibits Preparation

~~The Engineer shall prepare recordable exhibits of affected individual properties (note: the exhibits will not meet the requirements of NC GS 4730) for use in the conveyance of easements and rights of way necessary for the construction of the Project.~~

~~It is estimated that \_\_\_\_\_ individual property exhibits shall be required to fully map the property impacts throughout the project. Exhibits shall be prepared at a suitable scale to clearly represent the proposed right of way, permanent and temporary drainage, utility and construction easements required for the project. The exhibits shall be provided on legal size (8 1/2" x 14") paper and Adobe Acrobat (PDF) format. This scope includes two (2) preliminary submittals (bond plots for review) and one (1) final submittal on legal size (8 1/2" x 14") paper. Exhibits shall be prepared at a maximum scale of 1" = 20' preferred, 1" = 30' if required.~~

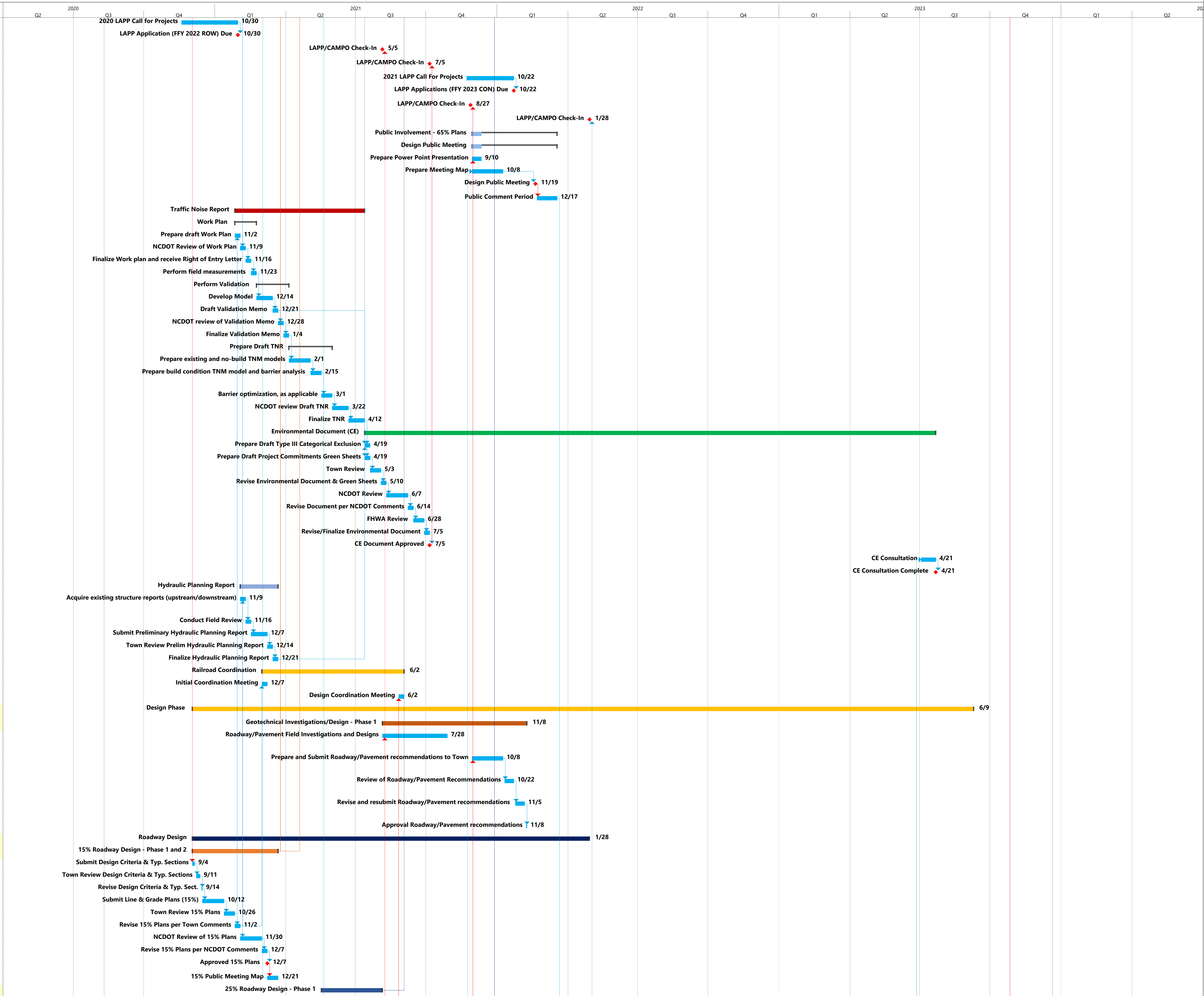
~~The first submittal of right of way exhibits shall be included with the 65% design submittal. The second preliminary submittal shall occur after completion of the initial round of negotiations with property owners. Final submission of right of way exhibits shall be completed in conjunction with property settlements by Town Attorney's Office. Upon the completion of recording each property exhibit, one copy is to be retained by the Wake County Register of Deeds, one copy by the Town of Garner, and one copy by the Engineer bearing Wake County's recordation information and the Register of Deeds signature. Property owner information, to include but not be limited to, owner's name, parcel number, tax identification number and property acquisition areas shall be provided at such times as requested by the Town. The aforementioned property owner information shall be provided to the Town in electronic format.~~

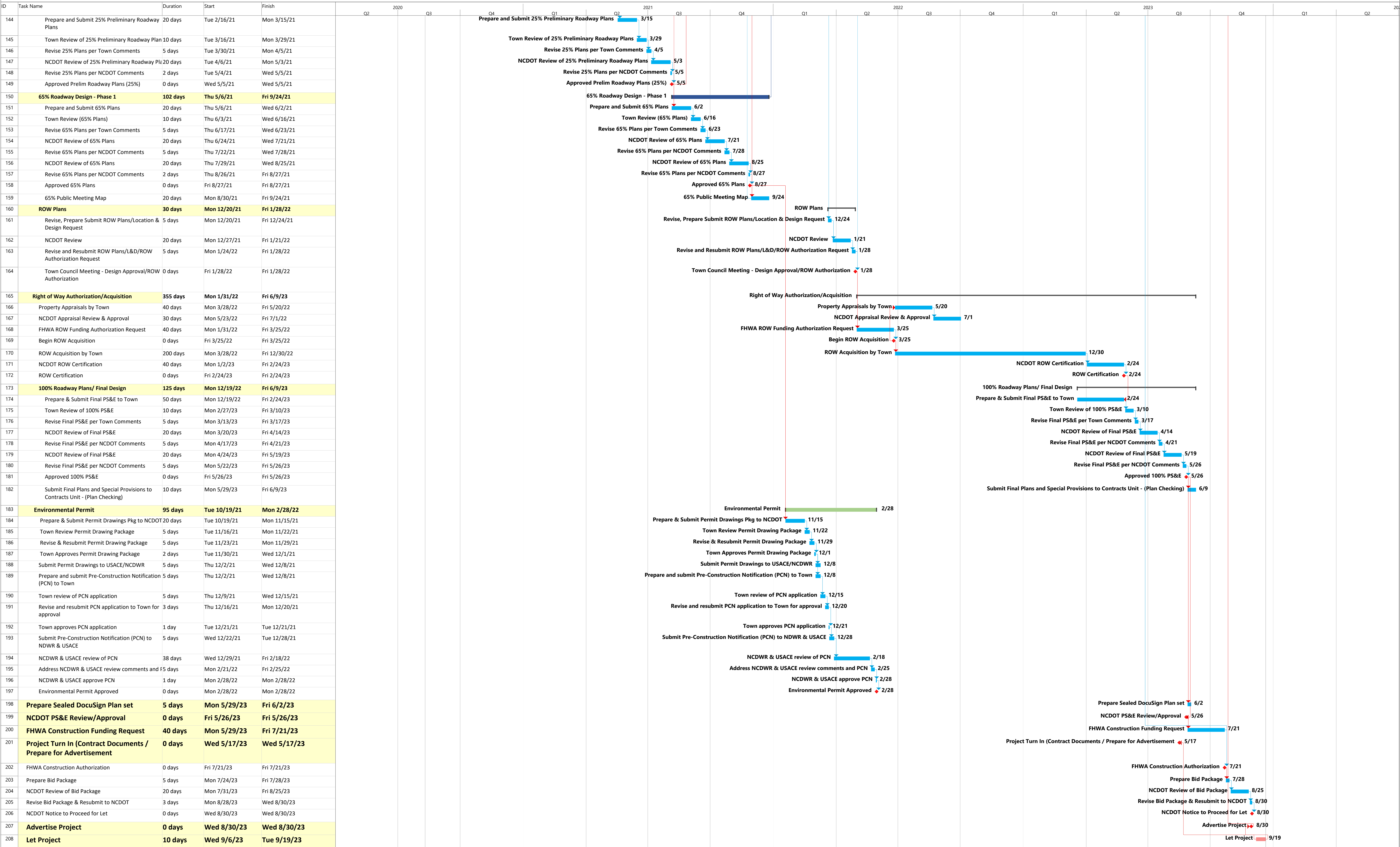
ID	Task Name	Duration	Start	Finish
0	<b>Jones Sausage Road Improvements</b>	<b>867 days</b>	<b>Mon 5/25/20</b>	<b>Tue 9/19/23</b>
1	<b>Contracting</b>	<b>67 days</b>	<b>Mon 5/25/20</b>	<b>Tue 8/25/20</b>
2	Develop Scope & Fee Estimate	14 days	Mon 5/25/20	Thu 6/11/20
3	Negotiate	5 days	Fri 6/12/20	Thu 6/18/20
4	Finalize and Submit Scope & Fee Estimate	3 days	Fri 6/19/20	Tue 6/23/20
5	Obtain Notice to Proceed (NTP)	45 days	Wed 6/24/20	Tue 8/25/20
6	<b>Surveying</b>	<b>765 days</b>	<b>Wed 9/9/20</b>	<b>Tue 8/15/23</b>
7	Property Research/Document Retrieval	30 days	Wed 9/9/20	Tue 10/20/20
8	Horizontal/Vertical Control Network	10 days	Wed 11/18/20	Tue 12/1/20
9	Pavement DTM	5 days	Wed 12/2/20	Tue 12/8/20
10	Planimetric Mapping/SUE Level B/C	30 days	Wed 12/9/20	Tue 1/19/21
11	Centerline Staking	10 days	Wed 8/2/23	Tue 8/15/23
12	Boundary Ties and Mapping	20 days	Wed 12/9/20	Tue 1/5/21
13	Right of Way/Easements	30 days	Mon 9/27/21	Fri 11/5/21
14	Subsurface Utility Services -Level A/Test Holes	40 days	Mon 9/27/21	Fri 11/19/21
15	<b>Planning Phase</b>	<b>698 days</b>	<b>Wed 8/19/20</b>	<b>Fri 4/21/23</b>
16	<b>Kickoff Activities</b>	<b>197 days</b>	<b>Wed 9/2/20</b>	<b>Thu 6/3/21</b>
17	<b>Cultural Resources Screening</b>	<b>197 days</b>	<b>Wed 9/2/20</b>	<b>Thu 6/3/21</b>
18	Historic Architecture Screening	25 days	Wed 9/2/20	Tue 10/6/20
19	Archaeology Screening	25 days	Wed 9/2/20	Tue 10/6/20
20	Effects Meeting #1	5 days	Tue 1/19/21	Mon 1/25/21
21	Effects Meeting #2	1 day	Thu 6/3/21	Thu 6/3/21
22	<b>GeoEnvironmental Screening</b>	<b>30 days</b>	<b>Wed 9/9/20</b>	<b>Tue 10/20/20</b>
23	Develop GeoEnvironmental LERR Report	30 days	Wed 9/9/20	Tue 10/20/20
24	Section 4(f) Resource Identification	5 days	Wed 10/7/20	Tue 10/13/20
25	<b>Start of Study Letters (SOS)</b>	<b>40 days</b>	<b>Wed 9/2/20</b>	<b>Tue 10/27/20</b>
26	Develop Start of Study Letters	5 days	Wed 9/2/20	Tue 9/8/20
27	Review Start of Study Letters and Figures	5 days	Wed 9/9/20	Tue 9/15/20
28	Send out Start of Study Letters & Figures	5 days	Wed 9/16/20	Tue 9/22/20
29	Summarize SOS Comments	5 days	Wed 10/21/20	Tue 10/27/20
30	<b>Traffic Analysis</b>	<b>40 days</b>	<b>Wed 8/26/20</b>	<b>Tue 10/20/20</b>
31	Prepare Draft Capacity Analysis Technical Memo	30 days	Wed 8/26/20	Tue 10/6/20
32	Town Review Capacity Analysis Memo	5 days	Wed 10/7/20	Tue 10/13/20
33	Revise/Finalize Capacity Analysis Memo	5 days	Wed 10/14/20	Tue 10/20/20
34	<b>Short Form Community Impact Assessment (CIA)</b>	<b>40 days</b>	<b>Tue 12/22/20</b>	<b>Mon 2/15/21</b>
35	Prepare/Revise DCIA and DSA	5 days	Wed 12/22/20	Mon 12/28/20
36	Town Review and approve DCIA and DSA	5 days	Tue 12/29/20	Mon 1/4/21
37	Demographic Data Pull using Demographic Tool	5 days	Tue 1/5/21	Mon 1/11/21
38	Prepare and Send out Input Forms	5 days	Tue 1/12/21	Mon 1/18/21
39	Field Visit	5 days	Tue 12/22/20	Mon 12/28/20
40	Prepare Draft CIA	15 days	Tue 12/29/20	Mon 1/18/21
41	Indirect and Cumulative Effects Screening (sICE) (if TICAs are present)	15 days	Tue 1/19/21	Mon 1/25/21
42	Submit Draft CIA for Town Review	5 days	Tue 1/26/21	Mon 2/1/21
43	Respond to Comments and submit revised CIA	5 days	Tue 2/2/21	Mon 2/8/21
44	Finalize CIA	5 days	Tue 2/9/21	Mon 2/15/21
45	<b>Natural Resources Technical Report</b>	<b>65 days</b>	<b>Wed 9/9/20</b>	<b>Tue 12/8/20</b>
46	Prepare Landowner Notification Letter	5 days	Wed 9/9/20	Tue 9/15/20
47	Field Visit for Wetland/Stream Delineation & T&E Habitat	5 days	Wed 9/16/20	Tue 9/22/20
48	Prepare Draft NRTR & PJD	10 days	Wed 9/23/20	Tue 10/6/20
49	Submit Draft NRTR & PJD for Review	5 days	Wed 10/7/20	Tue 10/13/20
50	Finalize NRTR & PJD Request	5 days	Wed 10/14/20	Tue 10/20/20
51	Submit PJD	5 days	Wed 10/21/20	Tue 10/27/20
52	JD Site visit	5 days	Wed 10/28/20	Tue 11/3/20
53	Survey verify wetland/stream delineation	5 days	Wed 11/4/20	Tue 11/10/20
54	Agency Review and Final PJD Approval	20 days	Wed 11/11/20	Tue 12/8/20
55	<b>Air Quality Report</b>	<b>9 days</b>	<b>Tue 12/22/20</b>	<b>Fri 1/1/21</b>
56	<b>Qualitative Report</b>	<b>9 days</b>	<b>Tue 12/22/20</b>	<b>Fri 1/1/21</b>
57	Prepare Qualitative Report	2 days	Tue 12/22/20	Wed 12/23/20
58	Town Review	5 days	Thu 12/24/20	Wed 12/30/20
59	Finalize Qualitative Air Quality Final Report	2 days	Thu 12/31/20	Fri 1/1/21
60	<b>Phase 1 GeoEnvironmental Report</b>	<b>35 days</b>	<b>Wed 9/23/20</b>	<b>Tue 11/10/20</b>
61	Field Work	5 days	Wed 9/23/20	Tue 9/29/20
62	Prepare & Submit GeoEnvironmental Report for Review	20 days	Wed 9/30/20	Tue 10/27/20
63	Report Review	5 days	Wed 10/28/20	Tue 11/3/20
64	Finalize Phase 1 GeoEnvironmental Report	5 days	Wed 11/4/20	Tue 11/10/20
65	<b>Public Involvement - 15% Plans</b>	<b>75 days</b>	<b>Tue 11/3/20</b>	<b>Mon 2/15/21</b>
66	<b>Pre- Design Public Meeting</b>	<b>75 days</b>	<b>Tue 11/3/20</b>	<b>Mon 2/15/21</b>
67	Prepare Powerpoint Presentation	5 days	Tue 11/3/20	Mon 11/9/20
68	Prepare Meeting Map	10 days	Tue 12/8/20	Mon 12/21/20
69	Pre-Design Public Meeting	0 days	Mon 1/18/21	Mon 1/18/21
70	Public Comment Period	20 days	Tue 1/19/21	Mon 2/15/21
71	<b>LAPP/CAMPO Coordination</b>	<b>378 days</b>	<b>Wed 8/19/20</b>	<b>Fri 1/28/22</b>





ID	Task Name	Duration	Start	Finish
72	2020 LAPP Call for Projects	53 days	Wed 8/19/20	Fri 10/30/20
73	LAPP Application (FFY 2022 ROW) Due	0 days	Fri 10/30/20	Fri 10/30/20
74	LAPP/CAMPO Check-In	0 days	Wed 5/5/21	Wed 5/5/21
75	LAPP/CAMPO Check-In	0 days	Mon 7/5/21	Mon 7/5/21
76	2021 LAPP Call For Projects	45 days	Mon 8/23/21	Fri 10/22/21
77	LAPP Applications (FFY 2023 CON) Due	0 days	Fri 10/22/21	Fri 10/22/21
78	LAPP/CAMPO Check-In	0 days	Fri 8/27/21	Fri 8/27/21
79	LAPP/CAMPO Check-In	0 days	Fri 1/28/22	Fri 1/28/22
80	Public Involvement - 65% Plans	80 days	Mon 8/30/21	Fri 12/17/21
81	Design Public Meeting	80 days	Mon 8/30/21	Fri 12/17/21
82	Prepare Power Point Presentation	10 days	Mon 8/30/21	Fri 9/10/21
83	Prepare Meeting Map	30 days	Mon 8/30/21	Fri 10/8/21
84	Design Public Meeting	0 days	Fri 11/19/21	Fri 11/19/21
85	Public Comment Period	20 days	Mon 11/22/21	Fri 12/17/21
86	Traffic Noise Report	120 days	Tue 10/27/20	Mon 4/12/21
87	Work Plan	20 days	Tue 10/27/20	Mon 11/23/20
88	Prepare draft Work Plan	5 days	Tue 10/27/20	Mon 11/2/20
89	NCDOT Review of Work Plan	5 days	Tue 11/3/20	Mon 11/9/20
90	Finalize Work plan and receive Right of Entry Letter	5 days	Tue 11/10/20	Mon 11/16/20
91	Perform field measurements	5 days	Tue 11/17/20	Mon 11/23/20
92	Perform Validation	30 days	Tue 11/24/20	Mon 1/4/21
93	Develop Model	15 days	Tue 11/24/20	Mon 12/14/20
94	Draft Validation Memo	5 days	Tue 12/15/20	Mon 12/21/20
95	NCDOT review of Validation Memo	5 days	Tue 12/22/20	Mon 12/28/20
96	Finalize Validation Memo	5 days	Tue 12/29/20	Mon 1/4/21
97	Prepare Draft TNR	40 days	Tue 1/5/21	Mon 3/1/21
98	Prepare existing and no-build TNM models	20 days	Tue 1/5/21	Mon 2/1/21
99	Prepare build condition TNM model and barrier analysis	10 days	Tue 2/2/21	Mon 2/15/21
100	Barrier optimization, as applicable	10 days	Tue 2/16/21	Mon 3/1/21
101	NCDOT review Draft TNR	15 days	Tue 3/2/21	Mon 3/22/21
102	Finalize TNR	15 days	Tue 3/23/21	Mon 4/12/21
103	Environmental Document (CE)	529 days	Tue 4/13/21	Fri 4/21/23
104	Prepare Draft Type III Categorical Exclusion	5 days	Tue 4/13/21	Mon 4/19/21
105	Prepare Draft Project Commitments Green Sheets	5 days	Tue 4/13/21	Mon 4/19/21
106	Town Review	10 days	Tue 4/20/21	Mon 5/3/21
107	Revise Environmental Document & Green Sheets	5 days	Tue 5/4/21	Mon 5/10/21
108	NCDOT Review	20 days	Tue 5/11/21	Mon 6/7/21
109	Revise Document per NCDOT Comments	5 days	Tue 6/8/21	Mon 6/14/21
110	FHWA Review	10 days	Tue 6/15/21	Mon 6/28/21
111	Revise/Finalize Environmental Document	5 days	Tue 6/29/21	Mon 7/5/21
112	CE Document Approved	0 days	Mon 7/5/21	Mon 7/5/21
113	CE Consultation	15 days	Mon 4/3/23	Fri 4/21/23
114	CE Consultation Complete	0 days	Fri 4/21/23	Fri 4/21/23
115	Hydraulic Planning Report	35 days	Tue 11/3/20	Mon 12/21/20
116	Acquire existing structure reports (upstream/downstream)	5 days	Tue 11/3/20	Mon 11/9/20
117	Conduct Field Review	5 days	Tue 11/10/20	Mon 11/16/20
118	Submit Preliminary Hydraulic Planning Report	15 days	Tue 11/17/20	Mon 12/7/20
119	Town Review Prelim Hydraulic Planning Report	5 days	Tue 12/8/20	Mon 12/14/20
120	Finalize Hydraulic Planning Report	5 days	Tue 12/15/20	Mon 12/21/20
121	Railroad Coordination	132 days	Tue 12/1/20	Wed 6/2/21
122	Initial Coordination Meeting	5 days	Tue 12/1/20	Mon 12/7/20
123	Design Coordination Meeting	5 days	Thu 5/27/21	Wed 6/2/21
124	Design Phase	723 days	Wed 9/2/20	Fri 6/9/23
125	Geotechnical Investigations/Design - Phase 1	133 days	Thu 5/6/21	Mon 11/8/21
126	Roadway/Pavement Field Investigations and Designs	60 days	Thu 5/6/21	Wed 7/28/21
127	Prepare and Submit Roadway/Pavement recommendations to Town	30 days	Mon 8/30/21	Fri 10/8/21
128	Review of Roadway/Pavement Recommendations	10 days	Mon 10/11/21	Fri 10/22/21
129	Revise and resubmit Roadway/Pavement recommendations	10 days	Mon 10/25/21	Fri 11/5/21
130	Approval Roadway/Pavement recommendations	1 day	Mon 11/8/21	Mon 11/8/21
131	Roadway Design	368 days	Wed 9/2/20	Fri 1/28/22
132	15% Roadway Design - Phase 1 and 2	79 days	Wed 9/2/20	Mon 12/21/20
133	Submit Design Criteria & Typ. Sections	3 days	Wed 9/2/20	Fri 9/4/20
134	Town Review Design Criteria & Typ. Sections	5 days	Mon 9/7/20	Fri 9/11/20
135	Revise Design Criteria & Typ. Sect.	1 day	Mon 9/14/20	Mon 9/14/20
136	Submit Line & Grade Plans (15%)	20 days	Tue 9/15/20	Mon 10/12/20
137	Town Review 15% Plans	10 days	Tue 10/13/20	Mon 10/26/20
138	Revise 15% Plans per Town Comments	5 days	Tue 10/27/20	Mon 11/2/20
139	NCDOT Review of 15% Plans	20 days	Tue 11/3/20	Mon 11/30/20
140	Revise 15% Plans per NCDOT Comments	5 days	Tue 12/1/20	Mon 12/7/20
141	Approved 15% Plans	0 days	Mon 12/7/20	Mon 12/7/20
142	15% Public Meeting Map	10 days	Tue 12/8/20	Mon 12/21/20
143	25% Roadway Design - Phase 1	57 days	Tue 2/16/21	Wed 5/5/21





Jones Sausage Road - T02

Page	Project No.	Project	Project Manager	QA/QC Reviewer, Technical Advisor	Sr Geotech Engineer, Sr Roadway Engineer	Senior Stormwater Engineer	Senior Environmental Engineer	Design Lead	Stormwater Engineer, Geotechnical Engineer	Highway Engineer, Traffic Engineer	Environmental Engineer	CADD Technician, Envir Scientist	0	0	0	Totals hrs	Labor Cost	Direct Expenses	Subcontractor Expense	Total
1	1	Project Management	264	0	16	20	12	190	0	16	0	88	0	0	0	606.0	\$102,911.03	\$1,141	\$0.00	\$104,052.00
2	2	Roadway Design	18	24	78	0	0	213	0	511	0	438	0	0	0	1282.0	\$168,352.92	\$839	\$0.00	\$169,192.00
3	3	Hydraulics Design, Storm Drainage, Erosion Control & Permits	0	36	0	13	0	147	248	256	0	180	0	0	0	880.0	\$120,584.07	\$391	\$0.00	\$120,975.00
4	4	Capacity Analysis	9	0	2	0	0	14	0	53	2	0	0	0	0	80.0	\$11,490.35	\$30	\$0.00	\$11,520.00
5	5	Natural Resource Investigation & Permitting	0	16	0	0	70	0	0	0	0	70	0	0	0	156.0	\$22,751.17	\$40	\$0.00	\$22,791.00
6	6	Geotechnical Investigations	0	0	32	0	0	0	160	0	0	60	0	0	0	252.0	\$35,403.46	\$20	\$20,475.00	\$55,898.00
7	7	Work Zone Traffic Control & Signals	0	10	44	0	0	182	0	0	0	145	0	0	0	381.0	\$54,410.59	\$74	\$0.00	\$54,484.00
8	8	Pavement Markings, Signing	0	16	0	0	0	44	0	0	0	4	0	0	0	64.0	\$11,016.96	\$64	\$0.00	\$11,081.00
9	9	Contract Documents and Bid Services	0	3	29	0	8	46	60	0	0	24	0	0	0	170.0	\$26,165.28	\$150	\$0.00	\$26,315.00
10	10	Public Involvement & Visualization	36	0	6	0	9	13	0	32	38	88	0	0	0	222.0	\$29,364.22	\$376	\$0.00	\$29,740.00
11	11	Surveys & SUE - M&C	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	\$0.00	\$0	\$143,850.00	\$143,850.00
12	12	Utility Coordination	0	0	0	36	0	0	167	0	0	0	0	0	0	203.0	\$30,669.61	\$92	\$0.00	\$30,761.00
13	13	Utility Design	0	10	38	0	0	138	0	0	0	200	0	0	0	386.0	\$51,785.45	\$1,777	\$0.00	\$53,563.00
14	14	Short-Form CIA	6	1	0	0	25	0	0	7	47	10	0	0	0	96.0	\$13,039.61	\$50	\$0.00	\$13,089.00
15	15	Landscape Architecture	0	0	24	0	0	64	0	64	72	0	0	0	0	224.0	\$31,444.24	\$437	\$0.00	\$31,881.00
16	16	Kickoff Activities & Railroad Coordination	22	0	2	0	24	0	0	22	40	0	0	0	0	110.0	\$16,381.99	\$185	\$0.00	\$16,567.00
17	17	Geoenvironmental	0	0	6	0	0	0	0	0	34	6	0	0	0	46.0	\$5,709.31	\$214	\$0.00	\$5,923.00
18	18	Project-Level Air Quality Analysis	2	0	0	0	10	0	0	0	12	0	0	0	0	24.0	\$3,500.18	\$22	\$0.00	\$3,522.00
19	19	Preliminary Hydraulics Report	0	3	0	0	0	18	32	0	0	8	0	0	0	61.0	\$8,922.59	\$67	\$0.00	\$8,989.00
20	20	Traffic Noise Analysis	0	8	0	0	196	0	0	256	0	8	0	0	0	468.0	\$69,429.80	\$2,878	\$0.00	\$72,308.00
21	21	NEPA Class of Action	11	3	0	8	14	0	12	21	11	8	0	0	0	88.0	\$13,297.82	\$110	\$0.00	\$13,408.00
Subtotals -- hours			368	130	277	77	368	1069	679	1238	256	1337	0	0	0	5799.0				
Selected Rate			\$201	\$230	\$201	\$186	\$172	\$158	\$143	\$129	\$115	\$100	\$0	\$0	\$0					
Fee Labor Effort			\$73,905	\$29,838	\$55,630	\$14,359	\$63,348	\$168,683	\$97,403	\$159,832	\$29,379	\$134,255	\$0	\$0	\$0	\$826,631				

Contract Values	
Fee Labor Effort	\$826,631
Fee Direct Expenses	\$8,954
Fee Subconsultants	\$164,325
<b>Total Fee</b>	<b>\$999,909</b>

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*JSR Phase 1 Design Contract  
Non-LAPP Approach*

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## **ARTICLE I – Scope of Services**

### **I.1 Description of the Project**

The Town desires to engage an Engineer to provide professional services required to produce plans and contract documents for improvements to Jones Sausage Road from south of the Amazon Fulfillment Center to just south of US 70 in Garner, NC. The Engineer (HDR) will provide professional services as specified in this Scope of Services.

The purpose of this 1.0 ± mile project is to enhance mobility and connectivity for pedestrian, bicycle, and vehicular traffic while improving safety throughout this important corridor. The project includes location surveys, subsurface utility engineering, geotechnical services, roadway design, water resources design (including storm water), erosion control, SCM investigations/design, traffic analyses, traffic management, signing and delineation, utility design, utility coordination, landscape/planting design, right of way/easement exhibits, public involvement, signal design, and bidding/contract documentation services for Phase I (south of Amazon Fulfillment Center to East Garner Road). Environmental Documentation (and tasks associated with it) are included for both Phase I and Phase II (East Garner Road to just south of US 70).

### **I.2 Description of Services**

The Engineer shall provide the engineering services required to design and prepare construction plans, specifications and bid documents for the proposed improvements in accordance with the following:

#### **I.2.1 Survey**

All survey services for this project shall be performed in accordance with, and shall conform to, accepted Surveying and Engineering general practices and procedures with the detailed scope of work as set forth and described below.

The Engineer will provide base mapping data to these limits along with the footprint of structures within 100' of these limits.

#### **(-L-) Line Alignment**

- Jones Sausage Road from Partlo Street to 1000' North of East Garner Elementary School Entrance- 3,300' x 300' corridor (150' each side of the existing road).

#### **(-Y-) Line Alignments**

- -Y- East Garner Road from 1,500' East and 500' West of the intersection of East Garner Road and Jones Sausage Road – 2,000' x 200' corridor (100' each side of the existing road centerline).

I.2.1.a Property Research/Document Retrieval

The Engineer shall obtain current deeds, maps, plats, and easement documents of record according to the current information of the online Town of Garner Tax Records in the IMAPS GIS database, for all parcels adjacent to the project and for which right of way acquisition shall be required. Thorough investigations should be made of private developments along the corridor, through the Town Planning Department and other means, to properly represent existing, dedicated easements in the project plans. The Engineer shall obtain NCDOT record plans, and other right of way information to assist in the establishment of existing right of way for the roads within the project limits. Engineer shall provide a copy of all property information compiled during this task to the Town. There are approximately 50 parcels in the project limits. A complete title opinion is not included in this scope of services. Property owners are to be notified by the Town of Garner and obtain a Right of Entry to all properties 30 days before commencement of surveys.

I.2.1.b Establish Horizontal and Vertical Control Network

The Engineer shall provide a horizontal and vertical traverse throughout the entire Project. Horizontal Control shall be referenced to North Carolina Geodetic Survey datum, NAD83 2011 adjustment. Control shall consist of a “random baseline traverse” monumented by 18” lengths of #5 rebar with stamped aluminum caps set flush with the ground, or MAG pavement nails where appropriate. Each control point shall have x, y, and z coordinate values.

Vertical Control shall be based upon United States Geodetic Survey NAVD 88 datum. The Engineer shall set benchmarks at 500 to 800-foot intervals throughout the Project. Railroad spikes or Bench Ties to be placed in the base of trees shall be utilized where possible and shall be placed outside of the proposed construction limits. The benchmark locations and descriptions shall be shown on the final plans.

~~I.2.1.c Photogrammetry~~

~~The Engineer will perform aerial photogrammetry to provide the base DTM and Planimetric Mapping for the project.~~

- ~~1. Photo Control—Establish survey control on the site and set and obtain coordinates on aerial targets (1 foot wide by 2 foot long chevrons or similar), and/or photo identifiable points.~~
- ~~2. Aerial Image Acquisition—The use a fixed wing aircraft equipped with an UltraCam Falcon Prime (UCFp) sensor, or similar, to collect imagery at a ground sample distance (GSD) of 5cm. The imagery will be controlled using the above mentioned survey points along with the Airborne Global Positioning System Applanix POS-AV© with IMU.~~

3. ~~Processing—Aerial Triangulation (AT): will be performed on all acquired imagery with a preliminary simultaneous bundle adjustment carried out using a minimal amount of control points along the block perimeter. Additional control points will be treated as check points during this initial run and the solution will be checked to make sure there are no blunders or gross errors in the photo or ground control measurements. The final adjustment will be a simultaneous bundle adjustment of the entire project data including all ground control points with no points held out as check points.~~
4. ~~Topographic Mapping—Stereocompilation will include any visible features at a 1"=40' scale including driveways, parking lots, buildings, utilities, vegetation (items that were not extracted from the mobile LiDAR dataset). Breaklines and masspoints will also be collected in the soft topo areas to support a Digital Terrain Model (DTM) suitable for 1-foot contours.~~
5. ~~Obscured and Obstructed Features—Based on the provided Area of Interest there is the possibility that some areas will be obscured and/or obstructed resulting in limited terrain and planimetric feature collection. These areas will be outlined with an “obscured area” polygon, and additional ground survey may be required to supplement the data.~~
6. ~~Orthophotography—Collected imagery will be rectified to the new surface model, and the individual 3-inch GSD ortho image files will be processed to ensure a seamless appearance, and will be tonally balanced to produce a uniform contrast and tone across the entire project area. The orthophotography will be delivered in tiled TIF/TFW and ECW/EWW formats.~~

#### I.2.1.d Pavement Digital Terrain Model

The Engineer will use Mobile Scanning technology to collect the hard surface DTM's and Planimetrics. This data will be processed based on the Survey Control and merged into the photogrammetric mapping for delivery. Accuracies for the mobile data will be  $\pm 0.05'$ .

#### I.2.1.e Planimetric Mapping

The Engineer shall map the majority of basic planimetric mapping from the photogrammetry services. The Engineer will perform a walk thru/classification of features to aid with labeling features as well as perform supplemental ground surveys to locate obscured or missing items. Said information shall include, but is not limited to the following:

1. Drives - location, type, and width
2. Buildings - location, type, size, and front corners if within 100 feet of existing right of way.
3. Parking Lots - location and layout

4. Landscape areas, woods lines, and all trees in landscaped areas greater than 6" dia, and all ornamental trees shall be located by species and size.
5. Signs - location, type, and size
6. Fences - location, type, and size
7. Utilities\*
  - a. Storm drainage - location, size, type, top and invert elevations, inlet and outlet location both inside and one structure outside planimetric limits.
  - b. Gravity sanitary sewer - location, size, type, top and invert elevations.
  - c. Water - location, valves (including top of nut elevations where accessible), meters, hydrants, wells (as surveyed and/or identified by Wake County records), and associated appurtenances.
  - d. Gas - location, valves, meters, vents and associated appurtenances.
  - e. Telephone – above ground appurtenances such as poles, pedestals, manholes and vaults (to include subsurface footprint).
  - f. Overhead utilities - location, poles, guys, markers, pedestals, pole number, equipment, vertical clearance at grade crossings, and type to include power, telephone, cable TV, traffic signal and other telecommunications and communication lines.
  - g. Underground utilities - location, pedestals, markers, and type to include power, telephone, cable TV, traffic signal and other telecommunications and communication lines.
  - h. Owner names, addresses, phone numbers and contact persons shall be provided for all utilities when available.

\* Locations of non-gravity underground utilities will be based on above ground structures and “Quality Level B” horizontal subsurface utility location. Gravity utility (drainage and sanitary sewer) location will be based on above ground appurtenances and visual inspection and depth measurements to determine invert elevations that may be accomplished from the surface. The Engineer will not enter the manhole to determine inverts. Confined space investigation shall be considered Additional Services (Article II).

All final DTM and survey control shall be provided to the Engineer in MicroStation V8i and GEOPAK.

#### I.2.1.f Centerline Staking

Upon approval of final alignment by the Town of Garner, just prior to the bid phase of the Project, three points of the approved design centerline alignment will be staked with semi-permanent stakes, one point near the



beginning of the project, one near the mid-point of the project, and one near the end of the project.

I.2.1.g Boundary Ties and Existing Boundary Mapping

Locate the existing right of way and recorded easements as available by reference in the online Wake County Tax Records and/or IMAPS GIS database for all roadways within the project limits. NCDOT record plans will be used to establish right of way for the NCDOT roads within the project and Town of Garner roadway plans or existing plats will be used to establish right of way on Town owned or maintained roads. A complete title opinion or obtaining a Right of Way Abstract from NCDOT or the Town of Garner is not included in this scope of services.

Recon and locate a sufficient number of property corners on approximately 50 properties to accurately show the affected property boundary limits in accordance with the recorded deeds and plats.

Complete boundary surveys required on any parcel shall be considered Additional Services (Article II).

I.2.1.h Right-of-Way and Easement Monumentation

During land acquisition by the Town, the Engineer shall stake the proposed right-of-way and easements as required by the Standards of Practice for Land Surveying in North Carolina, set forth and published by NCBELS. The right-of-way shall be temporarily staked using semi-permanent materials to allow Town Real Estate staff to adequately meet with each property owner. Following completion of acquisition of the proposed rights-of-way, including any changes required due to the land acquisition process, the right-of-way shall be permanently monumented by placing 18-inch lengths of #5 rebar at all breaks in the right-of-way and at intersections of the proposed right-of-way with existing property lines. Permanent Drainage Easements shall also be monumented with #5 rebar. All other easements shall be monumented with semi-permanent materials, such as wooden stakes or flags. Revisions to the right of way and easements staking are included in this item. Refer to Item 4 in Article III, Alternate Services, for re-staking points on a unit basis.

The Engineer shall prepare recordable exhibits of affected individual properties (note: the exhibits will not meet the requirements of NC GS 47-30) for use in the conveyance of easements and rights-of-way necessary for the construction of the Project.

It is estimated that fifty (50) individual property exhibits shall be required to fully map the property impacts throughout the project. Exhibits shall be prepared at a suitable scale to clearly represent the proposed right of way, permanent and temporary drainage, utility and construction easements required for the project. The exhibits shall be provided on legal size (8-1/2" x 14") paper and Adobe Acrobat (PDF) format. This scope includes two (2) preliminary submittals (bond plots for review) and one (1) final submittal on legal size (8-1/2" x 14") paper. Exhibits shall be prepared at a maximum scale of 1" = 20' preferred, 1" = 30' if required.

I.2.1.i Subsurface Utility Designation and Location Services

The Engineer shall provide "Quality Level B" horizontal subsurface utility location data for a not-to-exceed linear footage of underground utilities. This includes Utility Research, Utility designating, Surveying and Mapping of the existing utilities within the project limits. Quality Level "B" subsurface utility location data requested beyond the Level "B" linear footage as stated below for Level "B" footage will be considered Additional Services and will require a supplemental agreement. Mobilization (travel time) and mileage will be considered additional cost. This service shall be provided based on the unit cost of \$1.00 per linear foot for Level "B" underground. Utility records research and site visit revealed estimated lengths as follows:

Length (Feet)	Description
10,850	Telephone
14,650	Telephone fiber optic
5,150	Electric (U/G)
11,300	Natural gas
11,450	Water
7,700	Cable TV
2,600	Sanitary Force Main
	Unknown
63,700	Total (Level "B" Total U/G Utilities)

I.2.1.j Subsurface Utility Location (Vacuum Excavation)

The Engineer shall provide "Quality Level A" vacuum excavation services for up a maximum 6 feet deep at the unit cost of \$850.00 per test pit. The Engineer shall determine test hole locations once drainage and utility designs are complete and potential conflicts are noted. Precise horizontal and vertical information of the specified utility shall be

provided to the Town as Certified Vacuum Excavation Reports for the specified test hole locations. An estimate of 10 test holes are included for this project.

It is understood that particular test hole locations may require a depth of vacuum excavation greater than the maximum noted above. Any vacuum excavation deeper than the maximum listed above and will be paid at the unit price of \$65.00 per linear foot of vacuum excavation beyond the maximum. An estimate of two (2) additional feet are included in this estimate.

Test hole locations may require traffic control for lane closures in order to provide a safe work zone for the work to be performed. The Engineer shall provide traffic control services for lanes closures at the unit cost of \$1,500.00 per day. It is estimated that two (2) days (\$3,000) of traffic control may be needed.

I.2.1.k Survey Delivery Items

The Engineer shall compile and plot all planimetric, subsurface utility information, and property line information at a scale of 1 inch equals 40 feet. This mapping shall be delivered in MicroStation file format for use in the development of final design plans. Drawing element symbology and text sizes shall follow North Carolina Department of Transportation standards.

The Engineer shall provide Digital Terrain Model in a 3-D digital radial break-line survey format with x, y, and z digital coordinate information for each survey point, break-line, and triangular irregular network (TIN) line.

The Engineer shall provide field data collector files, copies of field notes, x, y, z ASCII point files, deeds, and plat information in a survey notebook format.

The Engineer shall provide the Town with one electronic copy of all deeds and plats obtained during the courthouse research.

Any re-establishment and/or staking of more than three points of the initial control traverses and alignments lost due to project delays, periods of inactivity, vandalism or construction associated with this project, so long as these causes are outside the control of the Engineer, shall be considered additional services and compensated in accordance with Article II of this contract.

### I.2.2 Traffic Data Collection and Capacity Analysis Report

During this phase the Town will provide any existing traffic data for the project and the Engineer will prepare traffic projections for future traffic (assume 2045) by applying an annual growth rate to existing traffic volumes, with input from the Town. The Engineer will prepare capacity analyses on both existing and future traffic, and prepare a Capacity Analysis Report. A cursory capacity analysis and traffic estimate was prepared in the Feasibility Study. To the extent possible, information from this document will be used. Refinements and enhancements will be completed only with no detailed forecast or detailed report provided.

#### I.2.2.a. Traffic Data Collection

The Engineer will provide turning movement counts (TMCs) as follows:

- ~~at 13-hour TMCs (6:00 AM – 7:00 PM), including pedestrian counts.~~

#### I.2.2.b. Capacity Analysis Report

The Engineer will perform a cursory capacity analysis report. This report will include current turning movement counts (as provided by the Town), traffic conditions, design year traffic projections, and analyses of intersections of East Garner Road / Jones Sausage Road and US 70 / Jones Sausage Road using the design year traffic and information collected in the Feasibility Study. Each of the major tasks involved in the development of this report are described below.

~~**Field Visits:** The Engineer will visit the site and collect all the relevant data (lanes, signal phases, grades, turn lane storages etc.,) for capacity analyses.~~

**Coordination and Meetings:** The Engineer will coordinate with the Town and the NCDOT to gather relevant available information/plans/data. Two meetings will be held, one with the Town and one with the NCDOT Division 5 Traffic Engineer and NCDOT District Engineer.

**Existing Conditions Analysis** – The Engineer will re-evaluate and analyze current traffic conditions for the 2018 no-build conditions. The analysis will be based on the traffic count data and will utilize the latest version of Synchro and Simtraffic software.

**Design Year Analysis** – The Engineer will re-evaluate and analyze design year (2045) traffic conditions for the build conditions, as well as a 2045 no-build condition. The Engineer will evaluate the need for additional turn lanes, recommend associated storage lengths, and optimize signal timing.

**Capacity Analysis Report** – The Engineer will update the prepare a cursory Capacity Analysis memorandum, which was prepared as part of the work completed for the Feasibility Study, that will describe the study area,

methodology, existing and design year traffic analyses, and recommendations. The report's technical appendix will include traffic count data, travel model output, traffic forecast calculations, and Synchro/Simtraffic output. The Engineer will utilize the latest NCDOT congestion management guidelines and the Town of Garner's Guidelines for the capacity analyses. An electronic version of the draft and final report will be submitted to the Town. Documentation from the feasibility study will be used to the greatest extent possible.

**Crash Analysis** – As part of the traffic analysis report, the Engineer will analyze crash data in the Jones Sausage Road Corridor. Crash data has been collected from September 2013 to August 2018. Data will be summarized by accident type, location, severity, day/night, and wet/dry. The Accident Rate, Severity Rate, and Fatality Rate will be calculated and compared to Town-wide rates and other similar Town streets if information is available. An accident location diagram/exhibit will be created. Any trends or problem areas will be identified.

#### I.2.3 Natural Resource Investigation

The Engineer will conduct a site/natural resources investigation to identify existence of streams, wetland areas or buffer zones. A preliminary jurisdictional determination request will be made on behalf of the Town to the US Army Corps of Engineers (USACE) and Division of Water Resources (DWR). The Engineer will coordinate with representatives from both agencies to verify the extent and locations of jurisdictional resources. A letter report will be prepared to document the findings of the investigations.

#### I.2.4 Pre-Design (15% Plans)/Preliminary Design (25% Plans)

During this phase the Engineer will prepare pre-design and preliminary design plans. Other tasks include natural resource investigation and report (see Task I.2.3).

Prior to developing 25% plans, the Engineer will prepare a preliminary design (15% design) based on aerial photography, QL2 Lidar data and GIS data. The purpose of the pre-design (15% Plans) is to get early input from the Town while waiting on final surveys. This preliminary design submittal will be based on the Engineer's recommended alignment and design concept and shall include proposed design criteria, a horizontal and vertical alignment, edges of pavement, intersection locations, high/low point labels and typical section(s). Preliminary right of way and easements will be set to aid in the review process. Cross-sections will not be prepared at this stage of design.

Pre-Design (15% Plans) will be prepared for the entire project corridor (Phase I & Phase II) from the northern limits to the future US 70 intersection, inclusive of a future grade separation over the NS Railroad. The purpose of this pre-design is to determine the proposed profile of Garner Road to accommodate the future grade

separation to the south. In addition, the 15% design submittal will include a preliminary structure recommendation for the future grade separation, including a bridge typical section and preliminary horizontal and vertical clearance information. Pre-Design plans will be prepared as Roll-Plots at a 1" – 100' scale. One round of review by Town and a separate review by NCDOT is assumed.

The Engineer will prepare Pre-Design layout designs based on the 15% design for up to one alternative to be presented at a Pre-design public meeting, including:

1. A PowerPoint Presentation discussing the purpose and limits of the project.
2. Background information and general scope of the project.
3. Preliminary Project Schedule.
4. Estimated Preliminary Project Costs
5. Three personnel from Engineer staff to attend the Pre-design public meeting

The Engineer will obtain hydraulic survey data sufficient to determine requirements for all hydraulic related structures. This includes, but is not limited to, mapping of existing drainage patterns; outfall locations, dimensions, condition, and slopes.

Once all supplemental hydraulic field reconnaissance is complete, the Engineer will develop preliminary roadway drainage design plans for the Preferred Alternate. This design will be based on the 25% roadway design plans and includes the approximate locations and spacing of curb and gutter inlets, hydrologic and hydraulic analysis and recommendations for all cross pipes within project; pre/post runoff calculations for outfalls; nitrogen loading analysis and calculations; and a feasibility study/matrix presenting options to include Low Impact Development (LID) into the project utilizing Stormwater Control Measures (SCM's) such as dry/wet ponds, bioretention areas, etc.

All design shall be in conformance with AASHTO design criteria and standards except as may be modified by the Town. Preliminary design plans shall consist of preliminary roadway plans and preliminary cross sections. The design shall include preliminary line, grade, cross sections, and intersection layout. Preliminary design plans shall be developed to the stage at which approximately 25% of the roadway design for the Project is complete. The Engineer shall submit two (2) hard copy sets of plans and one (1) electronic set in PDF format to the Town, six (6) hard copy sets to NCDOT for review, and one (1) hard copy each to all private utilities involved in the project.

Preliminary Design (25% Plans), as well as all subsequent plans, will be prepared for only the portion of the project from the northern project limits to just south of Garner Road, excluding the future railroad grade separation and US 70 intersection. The 25% design will include the necessary coverage for raising the Garner Road

intersection and tying down to existing Jones Sausage Road to the south, inclusive of any necessary Y-line or driveway adjustments. One round of review by Town and a separate review by NCDOT is assumed.

The Engineer shall prepare preliminary roadway plans on plan and profile sheets at a scale of 1"= 40' horizontal and 1" = 10' vertical. The Engineer shall prepare preliminary half-size cross sections at a scale of 1" = 10'.

The Engineer shall update design assumptions and typical roadway sections for a 50 mile per hour design speed. The Engineer shall also develop an Opinion of Probable Construction Cost to be submitted to the Town along with the preliminary design plans.

#### I.2.5 Storm Drainage, Hydraulic Design, Erosion Control Plans and Permits

Upon approval of 25% plans, the Engineer shall perform final drainage studies, designs and field reconnaissance in accordance with the requirements of the Town. Hydraulic redlines will be approved prior to 65% plan submittal.

The Engineer will conduct a site investigation to identify existence of streams, wetland areas or buffer zones. The Engineer will obtain hydraulic survey data sufficient to determine requirements for all hydraulic related structures.

Since streams, wetlands and buffers are present on the project, the Engineer will prepare the environmental permit drawings and permit applications (Preconstruction Notification or PCN) for the project as listed below.

1. Section 404 (US Army Corp of Engineers)
2. Section 401 (NC Dept. of Environmental Quality)
3. Neuse Buffer Certification (NC Dept. of Environmental Quality)

All review fees and/or permitting fees required by will be paid by the Town or reimbursed to the Engineer at cost. It is assumed that the permit will be a nationwide or general permit.

The Engineer will develop final roadway drainage design plans. This design includes the final locations and spacing of curb and gutter inlets to minimize risk of hydroplaning; hydrologic and hydraulic analysis and final recommendations for all cross pipes within project; stability analysis of all ditches and outfalls; pre/post runoff calculations for outfalls; and development of SCM final design details. In addition, a drainage summary sheet will be developed to provide quantities for all drainage related structures. A stormwater management plan is anticipated (preliminary and final).

It is estimated that four (4) stormwater SCM devices will be included in the final design of the project. The anticipated locations are two (2) on each side of the

northern tie with Jones Sausage Road where the curb and gutter section meets the open shoulder section, and then two (2) additional on the southern end of Jones Sausage Road for the curb and gutter outfalls. To meet pre/post discharge requirements, the system will have to be split due to a crest south of Denison Way.

1. Jones Sausage Typical Section – 0.65 miles of 4 lane divided with curb and gutter with curb and gutter median
2. Garner Road Typical Section – 0.65 miles of 2 lane shoulder section with no curb and gutter
3. No major structures over 72” in diameter will be required.

#### I.2.6 Geotechnical Subsurface Investigations

The Engineer shall provide geotechnical engineering services conforming to accepted engineering general practices and procedures and be performed in accordance with the following:

The Engineer will contact North Carolina One-Call (NC One-Call) to locate public underground utilities in the vicinity of the investigation. Additionally, if subsurface utility plans of underground public utilities are available, this information will be helpful in planning test locations. We anticipate coordination and on-site meetings with public utility locators and town personnel may be required prior to mobilization and during testing operations. The fieldwork can be performed during week days or during night-time hours as required due to traffic control concerns.

The Engineer shall perform geotechnical subsurface investigations necessary for completion of the final construction documents. The assumed roadway improvement length is approximately 3,000 linear feet and minimal grade changes are anticipated for boring estimating purposes. These investigations shall include a total of twelve (12) soil test borings along the proposed widening areas. Soil borings shall be laid out approximately every 250-300 feet and shall primarily be advanced to 10 to 15 feet or to auger refusal (assumed average of 12.5 feet, or a total of approximately 150 linear feet). Hand auger borings may be used to supplement the SPT borings depending on site conditions and the presence of overhead utilities that may hinder the use of a drill rig.

A total of ten (10) pavement core samples shall be obtained along the existing pavement section to determine pavement section thickness and composition. Pavement core samples shall be obtained at approximate 400 to 500 foot intervals; a few additional cores are planned at existing turn lane location. Below the existing pavement sections, the Geotechnical Staff Professional will perform Dynamic Cone Penetrometer (DCP) testing on existing subgrades to a depth of approximately 3 feet (or to refusal if shallower) in general accordance with the NCDOT Geotechnical Engineering Unit (GEU) procedures for Pavement and Subgrade



Investigations. After DCP testing, sampling will be performed by augering the top 3-5 feet of subgrade below the pavement investigation core to sample subgrade.

The Engineer shall mark boring and coring locations in the field in accordance with the preliminary design plans. A Geotechnical Staff Professional will perform a site reconnaissance and lay out borings along the proposed alignment with a handheld GPS unit and/or by making tape measurements from known site features.

Subsurface conditions will be evaluated utilizing a truck and/or an all-terrain vehicle (ATV) drill rig equipped with hollow stem augers. The same drill rig and/or portable core rig and a diamond impregnated core barrel will be used for pavement core borings. Standard penetration testing shall be performed at regular intervals in accordance with the American Association of State Highway Transportation Officials (AASHTO T-206-87). Traffic Control will be required and provided by a sub-contractor to allow the drill rig to operate safely at the proposed test locations. If required, nighttime lane closures (includes a light tower rental) will be performed. The required lane closures will be performed in accordance with MUTCD requirements.

After completion of both pavement and roadway investigations, the test locations will be abandoned in accordance with NCDOT (GEU) hole abandonment requirements. Where safe to do so, borings advanced outside of the existing pavement will remain open for approximately 24 hours to obtain a stabilized groundwater reading and will then be backfilled with auger cuttings or sand with a 12 inch thick bentonite plug near the surface covered with approximately 6 inches of soil for re-vegetation. In the pavement areas, immediately after drilling, the Engineer's drilling subcontractor will backfill the holes with auger cuttings or sand, and patch the cored hole with cold patch asphalt.

Boring collar elevations will be determined from the Microstation survey information provided by the Department. Northing and Easting (NAD83) coordinates will be provided on the logs.

Representative split spoon and bulk samples will be obtained to verify visual field classification and determine soil index properties. Ten (10) split spoon samples will be analyzed in the Engineer's laboratory for natural moisture, Atterberg limits, and grain size. In addition, two (2) bulk samples will be obtained and analyzed in the Engineer's laboratory for natural moisture, Atterberg limits, grain size, standard proctor compaction, and soaked California Bearing Ratio Analysis (CBR). All laboratory testing shall be performed in accordance with the latest AASHTO procedures.

After completion of the field investigation, the Engineer will prepare an engineering report which will include:

Roadway Inventory Report:

1. Title Sheet
2. Legend Sheet
3. Roadway Title Sheet
4. Inventory text report describing areas explored, subsurface conditions, including groundwater, and areas of special geotechnical interest
5. Plan Sheets with boring/test locations in plan view
6. Profiles and Cross sections as required
7. Soil laboratory test results

Preliminary Geotechnical Recommendations for Right of Way (if required):

1. Preliminary Geotechnical Recommendations for Right of Way letter on Engineer letterhead. Recommendations for cut and fill slopes and ditches will be provided to aid in the preparation of the Right of Way plans.

Pavement Design Investigation and Pavement Design Recommendations:

1. Pavement Investigation Data Sheets
2. Dynamic Cone Penetrometer Test Results
3. Pavement Core Photos
4. DCP Correlations to CBR values
5. Pavement Design Recommendations based on the latest NCDOT Pavement Design Procedure and traffic information to be provided by the Engineer. The design is anticipated to consist of an overlay recommendation for the existing section along with a recommended new pavement section for the widened portion.

Final Roadway Recommendations (written report with accompanying graphics report, if required)

1. Roadway Recommendations Report
2. Title Sheet
3. Legend
4. Roadway Title Sheet
5. Profile and/or Cross sections, showing applicable recommendations (i.e. unsuitable material, undercut)

Deliverables:

1. Roadway Inventory Report
2. Preliminary Geotechnical Recommendations for Right of Way, if required
3. Pavement and Design Investigation and Recommendations
4. Final Roadway Recommendations Report

5. Scanned supportive documents, including laboratory results and calculations

The Engineer will submit one (1) electronic version of the completed report in .PDF format for Town review. The Engineer will respond to one (1) set of comments from the Town, after which the Engineer shall submit one (1) hard copy of the report and one (1) electronic version in .PDF format to the Town upon completion. The Engineer will conduct a meeting to present the findings and recommendations of the geotechnical investigations to Town staff.

#### I.2.7 Utility Coordination

##### I.2.7.a Coordination of Utilities

Following initial base map preparation and prior to development and submittal of 25% plans, the Engineer shall coordinate with private utility companies whose facilities (both existing and proposed) may be affected by the design of the Project to determine locations of major facilities that could adversely affect horizontal alignment development. Such information shall be shared with the Town for determination of costs and benefits of shifting the alignment versus relocating the private utility facilities based upon analysis and recommendation of the Engineer.

Following the completion of the Preliminary (25%) Design Phase of the Project, the Engineer shall conduct a “kick-off” meeting with all private utilities to review the proposed design. The Engineer shall furnish information pertaining to proposed construction to all involved utility companies and agencies.

To facilitate timely preparation of private utility relocation plans, the Engineer shall submit draft drainage design plans to all private utilities at approximately 50% completion of final construction plans. This shall occur such that development of private utility relocation plans may be developed sufficient enough to show any necessary easements on the 65% plans submittal.

The Engineer shall coordinate the resolution of utility conflicts with the respective owners and shall inform the Town’s Project Manager of all correspondence regarding same. The design and adjustment of privately owned utilities shall be the responsibility of the respective owners, with coordination provided by the Engineer. The Engineer shall prepare utilities by others plans illustrating existing and proposed private utility locations.

The Engineer shall conduct a minimum of three (3) coordination meetings with private utility owners. The Town’s Project Manager shall be informed

of/invited to these coordination meetings. Items to address at these meetings shall include, but not be limited to, phasing coordination with proposed roadway traffic control plans, joint pole usage, potential conflict with signal lines, and accommodation of signals attachments on private utility poles.

#### I.2.7.b Street Lighting

The Engineer shall coordinate development of street lighting plans with Duke Energy Progress. This coordination shall include use of Duke Energy Progress standard roadway lighting equipment and verification of proposed pole locations with representatives from Duke Energy Progress. Plan sheets shall include identification of pole locations; location, size and type of underground conduit necessary to accommodate future installation; and necessary details and special provisions as provided by Duke Energy Progress. Proposed street lighting design by Duke Energy Progress will be shown on the final Utility by Others Plans.

#### I.2.7.c Utility Design

The Engineer shall show the location of all existing and proposed utilities on the final design plans and shall indicate proposed underground utilities to be constructed as part of the Project. Engineer to perform preliminary and final design services for the relocation of water main and sanitary sewer main along Garner Road and Jones Sausage Road, as required for the roadway improvements. Existing water main and gravity sanitary sewer not in conflict with the roadway improvements will remain in place. Construction drawings and water and sanitary sewer technical specifications, special provisions, estimated quantities will be prepared and conform to the Owner's Public Utilities Handbook, latest edition.

Engineer will perform water and sanitary sewer permitting through the Town public utilities and planning departments. Water and sewer relocation plan and profile drawings shall be produced depicting proposed vertical and horizontal locations of relocated Town of Garner-owned utilities. Permitting for water line and sewer line designs will be processed through the City of Raleigh Public Utilities Department. The preliminary and final design services will include the following tasks:

#### **Task 1 – Construction Drawing and Technical Specification Development**

1. The project will include the design of approximately 1,000 LF of 12" water main, 200 LF of 4" force main and 200 LF of 8" sanitary sewer main and associated appurtenances.

2. The public sewer line and water line relocations will be shown on both plan and profile sheets. Plan and profile drawings will be at a horizontal scale of 1" = 40' and vertical scale of 1" = 10'.
3. Meet with Owner and other stakeholders (up to two meetings) to review the exact project requirements and to obtain any remaining background material from the Owner.
4. The water and sanitary sewer infrastructure will be designed to the Owner's Public Utility's Handbook, latest edition.
5. Engineer will provide 22" x 34" plan and profile drawings in MicroStation format.
6. Engineer will provide 30%, 65%, and final drawings. One review meeting for each percent complete (i.e., 30%, 65%, and final) submittal will be included to review overall comments.
7. 30% Construction Drawings (Plan) and preliminary technical specification Table of Contents (TOC)
8. 65% Construction Drawings (Plan and Profile) and preliminary water and sanitary sewer technical specifications, and estimated quantities
9. Final Construction Drawings (Plan and Profile) and final water and sanitary sewer technical specifications and estimated quantities

### **Task 2 – Subsurface Utility Exploration**

1. Engineer will provide up to two Level A subsurface utility explorations (SUE) for the water main and sanitary sewer force main along Garner Road, and Jones Sausage Road. These two Level A test holes are not included within the number specified in section I.2.1.k.

### **Task 3 – Permitting**

Engineer will provide permitting activities necessary to complete water and sanitary sewer design including the following:

1. Public Gravity Sewer Application
2. Public Water Application and Engineer's Report Application
3. All permitting fees shall be paid by the Owner.

### **Exclusions & Assumptions**

1. Kick-off meetings and coordination meetings will be one hour teleconference/Skype meetings with Town of Garner, City of Raleigh Public Utilities Department (CORPUD), NCDOT, and other utility owners.
2. Utility relocations will be limited to the roadway corridor and rerouting outside of historic districts will not be required.
3. CORPUD will provide Engineer with preliminary shut-off plan recommendations for Engineer to include in the final design plans

4. CORPUD will provide any additional information regarding existing material, type, and location of any water utility piping and appurtenances if discovered through on-going coordination with staff.
5. CORPUD appurtenances (air release/vacuum valves) that may be needed because of high points created by vertical water utility adjustments will not require any detailed hydraulic design analysis or associated surge analysis. Any of this detailed hydraulic analysis required by CORPUD and/or Town of Garner will require additional scope and fee. Engineer will provide standard details for these appurtenances as needed for any potential vertical changes that could create a high point.
6. Water line specifications will consist of CORPUD standard specifications and NCDOT specifications with Special Provisions and these will be referenced by notes in the construction drawings. Supplemental technical specifications will be prepared if required, but these will be limited to standard sanitary sewer and waterline appurtenances.
7. Water system modeling or related hydraulic analysis to determine pipe sizes and pressures are not included in this scope of work.
8. Construction phase services were not included as part of this scope of work.
9. Additional topographic survey services are not included with this scope of work.
10. Utility relocations will match existing pipe sizes.
11. No corrosion mitigation system will be developed.

#### 1.2.8 Final Design Phase

The Engineer shall develop final plans and project special provisions in sufficient form and detail for the Town to let construction contracts. All final designs for the Project shall conform to the appropriate current AASHTO specifications, the current practices of NCDOT, and the requirements of the Town.

Plans shall be developed using MicroStation V8i and GEOPAK software. Final design plans shall include roadway and sidewalk design and details, storm drainage details, construction traffic control plans, pavement marking plans, erosion control notes and details, utilities by others plans, utility construction plans (if required), signal designs (if required), signing plans, landscape/planting plans, and material quantities; and shall identify existing right-of-way, proposed right-of-way, permanent and temporary drainage easements, slope easements, utility easements, and temporary construction easements sufficient to encompass all improvements.

**I.2.8.a 65% Plans**

After the first Public Meeting (as described in section I.2.4) and receipt of all applicable comments, the final roadway plans shall be developed from the approved preliminary (25%) design plans to a stage where they are approximately 65% complete. All existing roadways, structures, utilities, and other items affected by the project shall be shown in addition to the proposed construction. The plans shall include horizontal geometrics, pavements, drainage layout and calculations, right-of-way easements, property lines, typical sections, traffic control plans, preliminary signing and pavement marking plans, preliminary signal design plans, erosion control notes and details, utility relocation plans, and special details.

The Engineer shall show any proposed traffic signal poles, controller cabinet bases, easements and pertinent equipment as specified by the Town on the final plans (if needed). All drainage and erosion control calculations shall be submitted with the 65% design plans by the Engineer for Town approval.

The Engineer shall furnish two (2) hard copy sets of 65% plans and one (1) electronic set in PDF format to the Town. Sufficient copies of the plans and other design data shall be submitted to the Town to allow detailed review. Based on comments received from Town during scoping, one round of review by Town assumed, and one review by NCDOT.

Upon incorporation of comments and completion of the 65% plans and approval by the Town, the Engineer shall furnish one (1) electronic set of construction drawings in PDF format and one (1) hard copy set, (1) public meeting map, an updated Opinion of Probable Construction Cost (including estimated right-of-way acquisition costs based upon cost data provided by the Town), bid quantities, and project special provisions.

The Engineer will prepare preliminary layout designs for up to one alternatives to be presented at a 65% public meeting, including:

1. A PowerPoint Presentation discussing the purpose and limits of the project.
2. Background information and general scope of the project.
3. Preliminary Project Schedule.
4. Estimated Preliminary Project Costs.
5. Two personnel from Engineer staff to attend the Pre-design public meeting

#### I.2.8.b Traffic Signal Design Plans

*Traffic Signal Upgrade Designs* - Based on proposed roadway plans, the Engineer will design the traffic signal upgrade design for the East Garner Road at Jones Sausage Road intersection in conformance to NCDOT and Town standards. Based on the traffic control plans, up to two temporary traffic signals may be required. Signal plans will be prepared in English units and will include the preparation of the following items:

*Intersection Layout Plan* - This plan will include the overall layout of the East Garner Road at Jones Sausage Road intersection showing the items proposed for construction. Items on the plans will include intersection striping and marking location (not to be considered a pavement marking plan); identification of conduit runs; vehicular and pedestrian signal head placement; pole and push button location; location of controller cabinet and pull boxes; phasing diagram; a timing chart; a table of operation; a stop bar location diagram; and signal head and sign legends. It is assumed that the signal upgrades are roadway geometric improvements, sidewalks and cross walks on all sides, FYAs for the side street left-turn movements and four phase pedestrian signals. Modification to one or both school flashing beacons will be evaluated depending on the construction impact. New strain metal pole will be designed.

*Intersection Timing and Phasing Plans* - The proposed isolated signal timing will be shown on the signal plan.

*Electrical Details Plan* - This plan will include details for the signal monitor programming detail, load resistor installation detail, back-up protection notes and details, and equipment information notes. The Engineer will also provide a field connection hook-up chart and electrical detail notes.

*Plan Submittal and Review* - The Engineer will coordinate with the Town and NCDOT to present initial design concepts and recommendations and seek input and initial approval. The Engineer will make adjustments and revisions to design parameters as requested in the initial conference.

Following completion of the 65% roadway design plans, the Engineer will prepare and submit 90% signal upgrade plan and electrical/programing details as applicable to the Project. Upon receipt of 90% review comments, the Engineer will revise the plans if needed. The Engineer will sign, seal, and submit the 100% signal and electrical plans for incorporation into the final construction plans and contract documents.

*The following services are not anticipated in this Agreement, but may be provided as Additional Services in ARTICLE II of this Agreement.*

1. *Cable Routing Plans and Fiber Optic Slice Details*



2. *Utility Make Ready Plans*
3. *Coordination Signal Timing Services*
4. *Emergency Vehicle Preemption Design*
5. *Audible Pedestrian Signal Design*
6. *Pedestrian signal design for temporary signals.*

#### I.2.8.c Construction Traffic Control, Pavement Marking, and Signing Plans

The Engineer shall prepare construction traffic and pedestrian control plans, which shall indicate how vehicular and pedestrian traffic is to be maintained during construction of the Project. NCDOT Roadway Standard Drawings shall be referenced in the traffic control plans, but shall not be detailed as a part of the traffic control plans. The **Public Rights-Of-Way Accessibility Guidelines (PROWAG)** will be referenced when developing the pedestrian traffic control plan. Development of these plans shall consider required phasing of the private utility companies' relocation designs, if any, during construction. These plans shall be prepared concurrently with the final design plans so as not to delay submission of all final construction documents.

The Engineer shall develop pedestrian safety plans, permanent pavement marking plans, and permanent signing plans. The Engineer is responsible for warning and regulatory signs and the Town is responsible for street name signing. No special sign designs, other than standard warning, regulatory, and construction signs shown in the current version of the M.U.T.C.D., are required for this project.

#### I.2.8.d Erosion Control Plans

The Engineer shall show erosion control measures and special details not shown in the Erosion Control Manual on a separate set of reproducibles in the roadway plans. Following an initial review by the Town, the Engineer shall submit erosion control plans to the Regional Engineer for NCDENR for review and approval of the erosion control plans prior to approval of the final roadway plans by the Town. The Town will be responsible for signing and notarizing the NCDENR Financial Responsibility Form and reimbursing the Engineer for the actual review fees required for the project.

The following are itemized tasks associated with the erosion control design:

1. Watershed Investigation & Analysis
2. Conduct a pre-design meeting with Town staff.
3. Conduct a site visit to evaluate existing conditions and available outfalls (assume 2 staff members).
4. Provide coordination with Roadway design to determine any ROW or easement needs for sediment control devices (e.g. sediment basins, diversion channels, etc.).
5. Attend field inspection meetings (assume 1 staff member).

6. Design clearing & grubbing phase erosion control plans.
7. Design intermediate/final phase erosion control plans.
8. Calculate matting requirements for ditches and slopes.
9. Provide title sheet, special details, notes, and project special provisions (erosion control).
10. It is assumed that zero (0) culvert construction sequences will be included in the erosion control plans.

#### I.2.8.e Landscape Plans

The Engineer's Landscape Architect (LA) will prepare plans for implementing landscape treatments as appropriate along the project corridor. The LA will receive and incorporate DWG files of existing conditions from the Engineer including existing trees, planting areas, fences, ROW, easements, property lines, utilities, guy wires, building outlines, etc. The LA will receive and incorporate 25% DWG files of the road improvement project including title block, new pavements, proposed easements, temporary and permanent drainage facilities, utilities, stations, and elevations. One meeting will be held with the Engineer to review 25% plans and discuss planting strategy, locations, slope and easement limitations, and budget. The LA will meet with Town staff to discuss planting locations, species, and maintenance and operations concerns. The LA will prepare 25% planting plan and detail sheets showing schematic locations of canopy and understory trees, shrubs, groundcover, lawn and mulch areas, including SCM's.

The LA will prepare rendered plan drawings for inclusion in the first public meeting PowerPoint presentation and associated meeting materials as well as up to two rendered sections at selected stations along the corridor to show screening and planting character. The LA will submit 25% planting and detail sheets and cost estimate to the Engineer (PDFs).

Based on feedback from the Town and 1st public meeting, the LA will prepare a 65% planting plan and detail sheets showing revised location of canopy and understory trees, shrubs, groundcover, lawn and mulch areas, including proposed SCM's. The LA will prepare an updated preliminary cost estimate and draft specifications.

Based on feedback from the Town and 2<sup>nd</sup> public meeting, the LA will prepare 100% planting plan and detail sheets to address plan revisions and review comments as well as a final cost estimate and specifications. The LA will submit 100% planting and detail sheets, cost estimate and specifications (PDFs) and a DWG of planting layers to the Engineer.

#### I.2.8.f Final Construction Plans and Contract Documents

The Engineer shall complete the final construction plans, incorporating and resolving all remaining comments from the Town staff review in such detail as to allow the Town to let the proposed work to contract. The plans shall include roadway and sidewalk design details, traffic control plans, signing and pavement marking plans, signal plans, erosion control notes and details, utility relocation plans (if needed), utilities by others plans, landscape plans, quantity summaries, and special detail drawings required together with general notes. The Engineer shall furnish one (1) hard copy sets of 100% final construction plans and one (1) electronic set in PDF format to the Town for approval/signatures. Based on comments received from Town during scoping, one round of review by Town is assumed and one review by NCDOT.

After plans are executed by Town staff, the Engineer shall furnish to the Town one (1) CD with electronic plans (in PDF format) and one (1) set of sealed project plans and contract documents which shall include, but not be limited to, contract proposal bid forms, quantities, specifications, special provisions, bond forms, and other necessary documents including a quantity takeoff notebook. The Project Schedule of Prices shall be prepared in Microsoft Excel format for distribution to potential bidders.

The Engineer shall prepare and furnish to the Town a final Opinion of Probable Construction Cost based on the final bid items in the contract proposal. This task shall include any required addendum(s) to address project questions and clarifications throughout the bidding process, including plan sheet and contract revisions. Any revisions resulting from the addendum(s) shall require an updated Opinion of Probable Construction Cost.

The Engineer will participate in a pre-construction meeting to be conducted by the Town. The Engineer will take minutes of the meeting and provide to the participants.

#### I.2.8.g Plan Scale

The Engineer shall furnish all roadway plan sheets drawn to a 1" = 40' horizontal scale and 1"=10' vertical scale. Cross-sections will be prepared at a scale of 1"=10' on half-size plan sheets.

### I.2.9 Meetings, Coordination, and Project Management

#### I.2.9.a Coordination with NCDOT

The Engineer shall coordinate all services rendered with NCDOT with respect to present and known future highway improvements which may conflict with the Project. The Engineer shall prepare an Encroachment Agreement and submit to NCDOT for approval.

I.2.9.b Meetings and Coordination

The Engineer shall make available, at reasonable times, responsible staff members to meet with Town staff to review the content and progress of the Project. The Engineer shall also make available responsible staff members to attend up to 24 monthly progress meetings, (1) Project Kickoff Meeting, (4) Town staff design review meetings, (2) Public Meetings, (2) property owner meetings, (1) Town Council Presentation, (1) Pre-Bid Meeting to be conducted by the Town, and (1) Pre-Construction Meeting to be conducted by the Town. The Engineer shall also make available responsible staff members to attend meetings to review the plans with NCDOT and other permitting agencies as required (See I.4). The Engineer shall compile notes of the above meetings as requested by the Town and provide to all invited attendees.

The Engineer shall provide (1) electronic Microsoft Power Point presentation and, (1) PDF color project map for use at each of the following meetings: (2) Public Meetings and the (1) Town Council presentation. The Engineer shall provide responsible staff members to present project information at each of these meetings.

It is assumed that Town staff will provide all other materials necessary for the required meetings. Items the Town will supply include but are not limited to sign-in sheets, comment forms, and meeting notifications.

The Engineer shall provide routine project management and administration activities, including monthly progress reports, project letters/correspondence, and subconsultant coordination through the anticipated project duration. The Engineer shall also make available any information to assist Town staff in keeping the Town's project web site updated throughout the project. The Engineer shall provide two detailed schedules (LAPP vs no LAPP) to assist the Town Staff/Council in determining the most appropriate course of action.

I.2.10 MicroStation/GEOPAK

The Engineer shall prepare all plan sheets through a computer aided drafting and design system. At the time of delivery of project plans for bidding, the Engineer shall furnish to the Town the final MicroStation/GEOPAK (Version 8i) design files,

as represented by the final construction plans, excluding any extraneous working files.

For purposes of this subsection, the Town shall indemnify and hold harmless the Engineer, its related entities, subconsultants, successors and assigns, and for the foregoing, its directors, officers and employees from all liability, costs and legal fees arising out of the use of any documents or electronic data produced by Engineer and subconsultants that are not final and complete, or the use of documents or electronic data for any use other than the original intended purpose.

#### I.2.11 Short Form Community Impact Assessment (CIA)

The scope sections below are for the proposed improvements to Jones Sausage Road from south of the Amazon Fulfillment Center to just south of US 70 in Wake County. The scope provides a description of the variables used in determining the scope and associated man-day estimate for the CIA, and any additional information that is needed to provide an analysis of potential project related community impacts.

##### I.2.11.a Coordination with NCDOT

The Engineer will obtain the current CIA Template and Guidance, Demographic Tool, and other pertinent forms and tools from the Connect NCDOT website or from the NCDOT Community Studies (CS) staff before starting the data-gathering process.

##### I.2.11.b Direct Community Impact Area

Based on the current guidance, the Engineer will delineate an area to be assessed for direct impacts, called the Direct Community Impact Area (DCIA).

The draft DCIA will be mapped and forwarded to the Town and CS for review and approval, before further analysis is conducted.

##### I.2.11.c Demographic Data Pull and Examination

The Engineer will determine a Demographic Study Area (DSA), based on current guidance. The draft DSA will be mapped and forwarded to the Town and CS for review and approval, before further analysis is conducted.

Using the CS Demographic Tool current at the start of the report process, the Engineer will compile data for the DSA, to be examined and documented following the current guidance. The general locations of any identified Title VI, EJ and LEP populations should be noted for observation on the field visit.

##### I.2.11.d Field Visit to Inspect Project Area

Following current guidance, prior to the field visit the Engineer will

prepare and send an e-mail to the Town, NCDOT Division, and NCDOT District staff. Copy CS on the email.

The Engineer will conduct a field visit to the proposed project location. The Engineer will use the field visit input form obtained from CS as a starting point for observational notes. The Engineer will take photos of the project area and any notable community characteristics.

Notify the Town, CS and Public Involvement if the field visit or additional research suggests that expanded community coordination may be appropriate.

I.2.11.e Local Officials Input

The Engineer will contact local officials using the local input forms provided by NCDOT CS and available on the Connect website as guidance. The Engineer will contact the Town, CS and Public Involvement to discuss whether expanded community coordination is necessary if the interviews or other research reveals notable concerns.

I.2.11.f Community Impact Assessment Project Documentation

The Engineer will map and document community characteristics, assess impacts, and develop recommendations according to the current CIA Template and Guidance.

I.2.11.g Community Impact Assessment Deliverables

Draft Community Impact Assessment

The draft CIA will be submitted to CS in Word format. The Engineer will coordinate the schedule for an initial two week duration review of the draft report with the Town, CS and the NCDOT Project Planning Engineer to adhere to the overall project delivery schedule.

The Engineer will revise the reviewed draft report according to comments and schedule a second one week duration review to confirm that comments have been adequately addressed. The Engineer will submit a “clean” revised report and a “track changes” version that shows: (1) text added, deleted, or moved in response to comments in comment boxes; and (2) how the Engineer addressed each comment in a comment box. It is not necessary to show text insertions, deletions, or edits in the “track changes” version; the Engineer may simply accept those changes.

Final Community Impact Assessment

The Engineer will provide CS with a digital copy of the complete final report in both Word and Adobe Portable Document Format.

#### I.2.11.h Community Impact Assessment Project Administration

##### Scope of Services

The Engineer will review this Scope of Work and prepare a task list and fee. A broad assessment of complexity and potential community controversy based on preliminary information provided by CS and Town representatives, along with variables including the length of the project, number of jurisdictions, proximity of alternatives/study area size, and development density shall be used to estimate fees for Task Orders.

##### Project Management

The Engineer will provide adequate staff with proper expertise to complete the project. The primary author of the report must be pre-qualified by CS.

#### I.2.12 Railroad Coordination

With the proposed grade separated rail crossing, coordination with the Rail Division and Structures Management Unit (SMU) of NCDOT is anticipated for the project in addition to any coordination with Norfolk Southern and/or North Carolina Railroad Company. Included with this coordination is the development of figures displaying current design(s) and clearances as required by the Rail Division and Norfolk Southern. Impacted areas of right-of-way will be calculated and tabulated.

Assume two (2) railroad coordination meetings. In advance of either of the railroad coordination meetings, the Engineer will attend one preparatory meeting with the Town to review any necessary figures or project information.

#### I.2.13 Kickoff Activities

##### I.2.13.a Cultural Resources

The Engineer will incorporate cultural resources (Historic Architecture and Historic Archaeology) studies from the NCDOT Human Environment Section and North Carolina state Historic Preservation Office (NC HPO) into most recent plans.

The Engineer will coordinate with the Town and NCDOT to schedule and attend a meeting with the NC HPO to review eligibility or preliminary effects determinations. Attendance at two meetings are assumed in Raleigh, with the Engineer providing updated handouts, provision of maps and displays, agendas and meeting minutes. Two Engineer staff are expected at each meeting.

The Engineer will prepare the Archaeology request (including figures) for NCDOT HES to complete the necessary reviews.

This scope of work does not include any additional local historic effects coordination, which may be deemed necessary once HPO coordination commences. The scope does not include the Cultural Surveys themselves (see Contract Exclusions).

I.2.13.b Start of Study

As part of the study process, the Engineer will send project kickoff letters/Start of Study letters and a study area map requesting various NCDOT units and local government officials/staff provide comments and/or concerns on the proposed project. The following is a list of units that could be included in the process:

1. Town of Garner
2. Wake County
3. NCDOT Division and Central Units
4. Capital Area Metropolitan Planning Organization (CAMPO)
5. State Environmental Review Clearinghouse
6. Local and Federal Officials (USFWS, USACE, USEPA)

I.2.14 Geoenvironmental

The Engineer proposes to conduct a Limited Environmental Records Review (LERR), consisting of an environmental records review and site reconnaissance, of the Project Study Area. The main purpose of the LERR is to identify properties within the Project Study Area that are or may be contaminated, and may therefore result in increased project costs and future liability as the project progresses. Hazardous material impacts may include, but are not limited to, active and abandoned underground storage tank (UST) sites, hazardous waste sites, regulated landfills and unregulated dumpsites.

The LERR will be conducted in accordance with the standard of care of the ASTM International (ASTM) Practice E 1527-13. Although it is similar to an ASTM 1527-13 compliant Phase I Environmental Site Assessment, it does not qualify the user for “All Appropriate Inquiry” protections.

The LERR will be conducted by performing the following activities:

1. Utilize a database research firm to provide a regulatory database search of the Project Study Area and surrounding properties that will include: federal standards, state standards, federal supplemental, state supplemental, and local and brownfields databases within the regulatory minimum-search distance of the Project Study Area, as defined by the ASTM Standard. If available, the database report will also include Sanborn, city directory, and historical topographical maps.
2. Conduct a historical land-use review of reasonably ascertainable records including review of aerial photographs, USGS 7.5-minute topographic maps, fire-insurance maps, local street-directories, property tax records, building department records, recorded land title/deed records, and zoning/land-use records.



3. Review regional and local geology/soil conditions.
4. Perform a site reconnaissance of the Project Study Area and surrounding properties. The site reconnaissance will be conducted to identify potential RECs located on or adjacent to the Project Study Area. Observations will be recorded by the Environmental Professional on a Site Reconnaissance Questionnaire.

Subsequent to review of the stated data sources and completion of the site reconnaissance, the Engineer will prepare a LERR Report to summarize our findings, opinions, conclusions, and recommendations, as they apply to the proposed roadway improvement project.

#### I.2.15 Project-Level Air Quality Analysis

The Engineer will prepare a Qualitative Project-Level Air Quality Analysis for the Jones Sausage Road Project in Wake County. The project is expected to include widening and new location with a proposed grade separated railroad bridge for the existing and future rail lines over Jones Sausage Road. Wake County is in attainment for all regulated particulates, including CO and PM<sub>2.5</sub>; thus, no hotspot analyses are required. The Engineer will confirm current attainment status during the project assessment. A federal Categorical Exclusion is anticipated for this project.

For this analysis, the Engineer will include a qualitative MSAT Analysis in accordance with the Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (October 18, 2016), can be found on the FHWA Air Quality website: [http://www.fhwa.dot.gov/environment/air\\_quality/air\\_toxics/policy\\_and\\_guidance/msat/2016msat.pdf](http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/2016msat.pdf)

##### I.2.15.a Air Quality Analysis

The Engineer will prepare a Draft and Final Air Quality Memo that includes a Qualitative MSAT Analysis. A Professional Engineer registered in North Carolina is not required to sign the report. “Streamlined Air Quality Text”, per NCDOT guidance, will be prepared by the Engineer for inclusion in the environmental document. In addition, the Final Air Quality Report shall be accompanied by a matrix that details how each comment on the draft report has been addressed.

##### I.2.15.b Deliverables

The Engineer will provide the following deliverables:

1. Draft Air Quality Memo (1 digital copy)
2. Final Air Quality Memo with NCDOT comments response matrix (2 hard copies; 1 digital copy)
3. Streamlined Project-Level Air Quality Text (1 digital copy)

#### I.2.16 Preliminary Hydraulics Report

The Engineer will prepare a Preliminary Hydraulic Technical Report for the project. The purpose of the report is to identify existing and/or proposed drainage structures (defined as those requiring flow conveyance greater than 30 sq. ft.) and determine what the proposed project impact will be on each structure. Hydrologic and hydraulic analyses

will be performed to determine the hydraulic performance for existing and future conditions. A recommendation will be made for the retention and/or extension of the structure, supplementation of the structure to provide additional conveyance or total replacement of the structure. The items addressed in the report will include, at a minimum, the items specified below. One (1) major crossing (Mahlers Creek or Tributary) is anticipated in the project corridor.

I.2.16.a Research/Data Collection

1. Complete a Preliminary Design Report (PDR) form for each major drainage structure.
2. Review existing reports/data for existing structures and upstream and downstream structures.
3. Obtain and review NRTR if available.
4. Determine FEMA involvement by reviewing community FIS and FIS maps.
5. Obtain effective hydraulic model from FRIS if available.
6. Contact appropriate maintenance personnel/property owners to determine flood history and past performance of structure (historical high water, roadway overtopping, and debris potential).

I.2.16.b Field Review at each Crossing Site

1. Conduct field visit at each crossing.
2. Note jurisdictional streams (information to be provided by others).

I.2.16.c Preliminary Design Calculations and Structure Sizing

1. Delineate drainage areas.
2. Determine appropriate hydrology method for anticipated watershed land use and compute discharges. If in detailed FIS, compare FEMA discharges to computed discharges and evaluate appropriate discharges to use for design.
3. Assess hydraulic adequacy of existing structures.
4. Determine preliminary size for each proposed major drainage structure.

I.2.16.d Assimilate Data and Prepare the Preliminary Hydraulic Technical Report

1. Write a brief description of the overall project.
2. Provide site map showing all sites and overall project limits.
3. Describe the existing conditions at each crossing site. Describe upstream and downstream hydraulic structures. Discuss the impact that the proposed structure will have on the adjacent floodplain and upstream properties. Identify if an MOA/CLOMR will be required and if there is anything special about the site that will significantly affect design and construction.
4. Note the locations of existing utility lines (sewer, telephone, and power if appropriate).
5. Recommend proposed structure at each site. Recommend location for replacement structure, if warranted.
6. Describe and identify adequacy of the proposed roadway alignment (horizontal and vertical) and determine if crossings will be hydraulically controlled.
7. Sketch plan and profile view(s) to scale. Include photographs of crossing site.

8. Assess environmental considerations (such as stream classification) and permit requirements (Buffer, CAMA Permit etc.). Identify whether hazardous spill basins are required. Address stormwater management considerations.
9. Format report to group data by site, with existing conditions/structure and proposed recommendations etc. together for each site.

I.2.16.e Deliverables

1. Electronic copy of the draft Preliminary Hydraulic Technical Report will be provided to the Town of Garner for review.
2. Paper copy and one (1) electronic copy of the Final Preliminary Hydraulic Technical Report will be provided to the Town of Garner for their records.

I.2.17 Noise Analysis

The Engineer will prepare a Preliminary Traffic Noise Analysis for the Jones Sausage Road project in Wake County. The project is expected to include widening and new location with a proposed grade separated railroad bridge for the existing and future rail lines over Jones Sausage Road. The Traffic Noise Analysis will be prepared in accordance with 23 CFR 772, the 2016 NCDOT Traffic Noise Policy and the 2016 NCDOT Traffic Noise Manual. A Federal Type III CE is anticipated for this project.

I.2.17.a Obtain Existing Project Information and Coordinate

The Engineer's traffic noise staff will review existing project information provided by the Town and NCDOT to gain a perspective of the noise sensitive land uses and potential noise impacts in the vicinity of the project.

I.2.17.b Project Area Reconnaissance and Land Use

The Engineer will review the data requirements necessary to perform the traffic noise analysis (Section 8.5 of the Traffic Noise Manual) to determine if a Project Area Reconnaissance will be needed. It is assumed a Project Area Reconnaissance will be conducted for this project.

The Engineer will identify noise-sensitive land uses in the vicinity of the project. Noise sensitive land uses will be classified per the Noise Abatement Criteria (NAC) specified in the NCDOT Traffic Noise Policy. If applicable, equivalent receptors will be calculated per NCDOT Traffic Noise Manual at up to one location. The Engineer will coordinate with the applicable local government to identify all noise-sensitive land uses with an approved building permit. Based on a review of project mapping, it is estimated that approximately 75 receptors will be included in the noise modeling.

I.2.17.c Project initiation Meeting and Noise Analysis Work Plan

The Engineer will meet with Garner and NCDOT Noise staff to determine specific parameters of the analysis, such as ambient noise monitoring locations, receptor numbers, likely abatement analysis locations and Noise Study Area limits. The Project Area Reconnaissance will be completed prior to the meeting. A Noise Analysis Work Plan will be prepared. The draft Noise Analysis Work

Plan (Section 8.6 of the Traffic Noise Manual) will be discussed during the meeting and finalized after the meeting. This meeting will confirm that the Engineer is providing the level of detail desired by the Garner and NCDOT review staff.

I.2.17.d Existing Base Year Noise Levels

The Engineer will evaluate the existing base year (year 2018) loudest-hour equivalent noise levels, Leq(h) for all noise-sensitive land use receptors within the study area with a combination of noise measurements and computer modeling.

I.2.17.e Ambient Noise Levels

Following approval of the Noise Analysis Work Plan and after obtaining a right-of-entry letter, the Engineer will collect ambient noise measurements. Short-term existing ambient Leq(h) noise level data will be obtained in one-minute increments for 20-minute periods at those locations identified in the Noise Analysis Work Plan, with at least two (2), and preferably three (3), simultaneous measurements per representative area. Based on a review of project mapping, it is estimated that ambient noise will be measured at approximately five (5) locations. A record of any unusual events and the time at which they occurred during the measurement period shall be documented. In accordance with NCDOT Traffic Noise Manual, short-term ambient noise measurement data will be obtained in a geometric array of integrating sound level analyzers. If applicable, one long-term existing ambient Leq(h) noise level data location(s) will be obtained for up to 24 hours. The need for, and locations of, long-term measurements will be determined on a case-by-case basis and will be identified in the Noise Analysis Work Plan. All integrating sound level analyzers (meters) used to obtain existing ambient noise monitoring data shall meet ANSI and IEC Type I or Type II specifications. Simultaneous traffic will be counted and classified during each short-term noise measurement session for which data is obtained in the vicinity of existing traffic noise sources. A traffic noise modeler or reviewer who is prequalified by NCDOT will be present during all data collection in the field.

I.2.17.f Baseline TNM Model

Using acceptable and NCDOT-prescribed TNM modeling methodologies, the field-collected traffic data will be used to create a validated TNM 2.5 model of the traffic noise environment during the ambient noise monitoring sessions. TNM model validation will be acceptable when the Leq(h) modeled noise levels are within  $\pm 3.0$  dB(A) of the ambient data Leq(h) for all noise monitoring receptor locations for which traffic was dominant. All TNM validation models must be approved by NCDOT prior to predicting existing and future noise levels. Garner and NCDOT will provide comments on the submitted TNM validation files within 10 business days. This scope of work assumes that TNM model validation will be needed at up to 5 sites.

Existing loudest-hour noise levels will be assessed for all noise-sensitive land use receptors identified in Task 13.1.1 as the greater of field-monitored equivalent noise levels, or the hourly-equivalent noise levels predicted by TNM assessment of existing base-year peak-hour traffic volumes and speeds into the validated existing-condition TNM model(s).

I.2.17.g Design Year Noise Levels

The Engineer will use TNM@2.5 to predict 2045 design year loudest-hour equivalent traffic noise levels at all noise-sensitive land use receptors identified in Task 10.1.1. Design year 2045 TNM models will incorporate the build-condition design elements (these elements will be based on the best design information available at the time of the modeling), as defined in the NCDOT Traffic Noise Manual, into the validated existing-condition TNM models. The following alternatives will be assessed in the Final Design Traffic Noise Analysis: No-Build Alternative and one Build Alternative.

TNM-predicted design year 2045 loudest-hour noise levels will be assessed for all noise-sensitive land use receptors identified in Task I.2.17.b.

Design Year 2045 traffic noise impacts will be assessed per the NCDOT Noise Abatement Criteria and Substantial Increase criteria (the increase in predicted design year loudest-hour equivalent noise levels over existing base year loudest-hour equivalent noise levels).

The Engineer will prepare 2045 Design Year noise contours to assist land use planning efforts by local governments. It is anticipated that noise contours will be needed at five locations.

I.2.17.h Noise Abatement

The Engineer will assess potential noise abatement measures defined by the NCDOT Traffic Noise Policy for all traffic noise impacts, if any, resulting from the project. In accordance with NCDOT Traffic Noise Manual, the Engineer will use TNM@2.5 to model and assess noise barrier(s) as a potential abatement measure per applicable NCDOT Traffic Noise Policy criteria. For the purposes of this scope of work, noise abatement will be considered for up to 7 Noise Study Areas (NSA's) for one Build Alternative.

The results of this assessment shall be included in the Traffic Noise Report, with a discussion of the applicability of each potential abatement measure, based upon known project design and right of way limitations. The Engineer will use TNM@2.5 to model and assess all noise barrier(s) that are likely to be considered for implementation as a potential abatement measure, per applicable NCDOT Traffic Noise Policy criteria. The noise barrier(s) will represent

optimized design(s) that will preliminarily indicate feasibility and reasonableness of noise abatement for predicted traffic noise impacts.

I.2.17.i Traffic Noise Report

The Engineer will prepare a Draft and Final Traffic Noise Report. The Traffic Noise Report will contain the elements and follow the guidelines prescribed in the NCDOT Traffic Noise Manual. A qualitative discussion of construction noise shall be included in the report. The Final Traffic Noise Report shall be signed by a NCDOT-approved noise modeler and reviewer and sealed by a Professional Engineer registered in North Carolina. “Streamlined Traffic Noise Text”, per NCDOT guidance, will be prepared by the Engineer for inclusion in the environmental document. In addition, the Final Traffic Noise Report shall be accompanied by a matrix that details how each comment is addressed in the Final Traffic Noise Report.

I.2.17.j Deliverables

The Engineer will provide the following deliverables to Garner & NCDOT:

1. Noise Analysis Work Plan
2. All TNM Validation Files to satisfy Existing Base Year conditions
3. All TNM Models (electronic copy)
4. Draft Traffic Noise Report (1 electronic copy)
5. Revised Traffic Noise Report with NCDOT comments response matrix
6. Final deliverables, including:
  - a. Electronic copy of all final deliverables placed on the project’s SharePoint Connect site, including:
    - i. Pdf of final, complete report with appendices
    - ii. MS Word version of the body of the report
    - iii. TNM files and CADD files
  - b. Electronic copy of report with appendices on CD or DVD

I.2.17.k Assumptions

1. Engineer will use 2018 as the existing base year and 2045 as the build year for this project.
2. One round of comment/response on the Workplan, model validations and draft TNR is budgeted for this scope of work.
3. No public involvement support is budgeted for this scope of work

I.2.20 NEPA Class of Action

It is anticipated that the Class of Action for the project will be a Type III “Categorical Exclusion” (CE). Technical information, methodologies, and results of analysis will be assembled and summarized in the environmental document. A draft CE document (including pertinent figures) will be submitted to the Town for an initial review, then to

NCDOT for review. Document comments will be addressed and then a signed document will be being provided for final review and signature by FHWA.

The CE document will consist of the following sections, per current NCDOT and FHWA guidelines:

1. Project Description
2. Description of Need and Purpose
3. Categorical Exclusion Action Classification (Type III)
4. Proposed Improvements
5. Special Project Information
6. Project Impact Criteria Checklists
7. Additional Documentation as Required from Section F
8. Project Commitments

## **ARTICLE II - Additional Services**

- II.1 It is not anticipated between the Town and Engineer that the Engineer shall perform any services under the Agreement except as set forth in Articles I and III. If requested in writing by the Town and accepted by the Engineer, the Engineer shall furnish or obtain from others Additional Services, which are not included under Article I. The Additional Services shall be paid for by the Town at rates to be agreed upon by the Town and the Engineer in writing. Equitable adjustments shall be made to the time of completion for the Additional Services.

## **ARTICLE III - Alternate Services**

### III.1 Visualization

The Engineer will develop visualizations to a level of detail suitable to communicate design intent for the preferred alternative. The visualizations will be of a quality and detail necessary for static rendering from a driver's perspective.

The visualizations will only include the following:

1. Mainline roads and cross-section elements, i.e. pavement, curb and gutter, median, bike lanes, sidewalks, side slopes.
2. -Y- line intersections
3. Retaining walls and decorative walls
4. High mast lighting
5. Realistic materials assignments for all road elements
6. Realistic pavement markings
7. Trees and foliage

The Engineer will apply realistic atmospheric and lighting conditions, and generate high resolution static renderings suitable for presentations and web media. This subtask includes up to 2 renders total (includes drafts, and final renders).

Deliverables:

Draft and final versions of visualizations in PDF or PPT format.

III.2 Re-staking

~~The Engineer will re-stake right-of-way and easement points at the direction of the Town. This service will be provided at a unit cost rate of \$ \_\_\_\_\_ per parcel.~~

III.3 Right of Way Exhibits Preparation

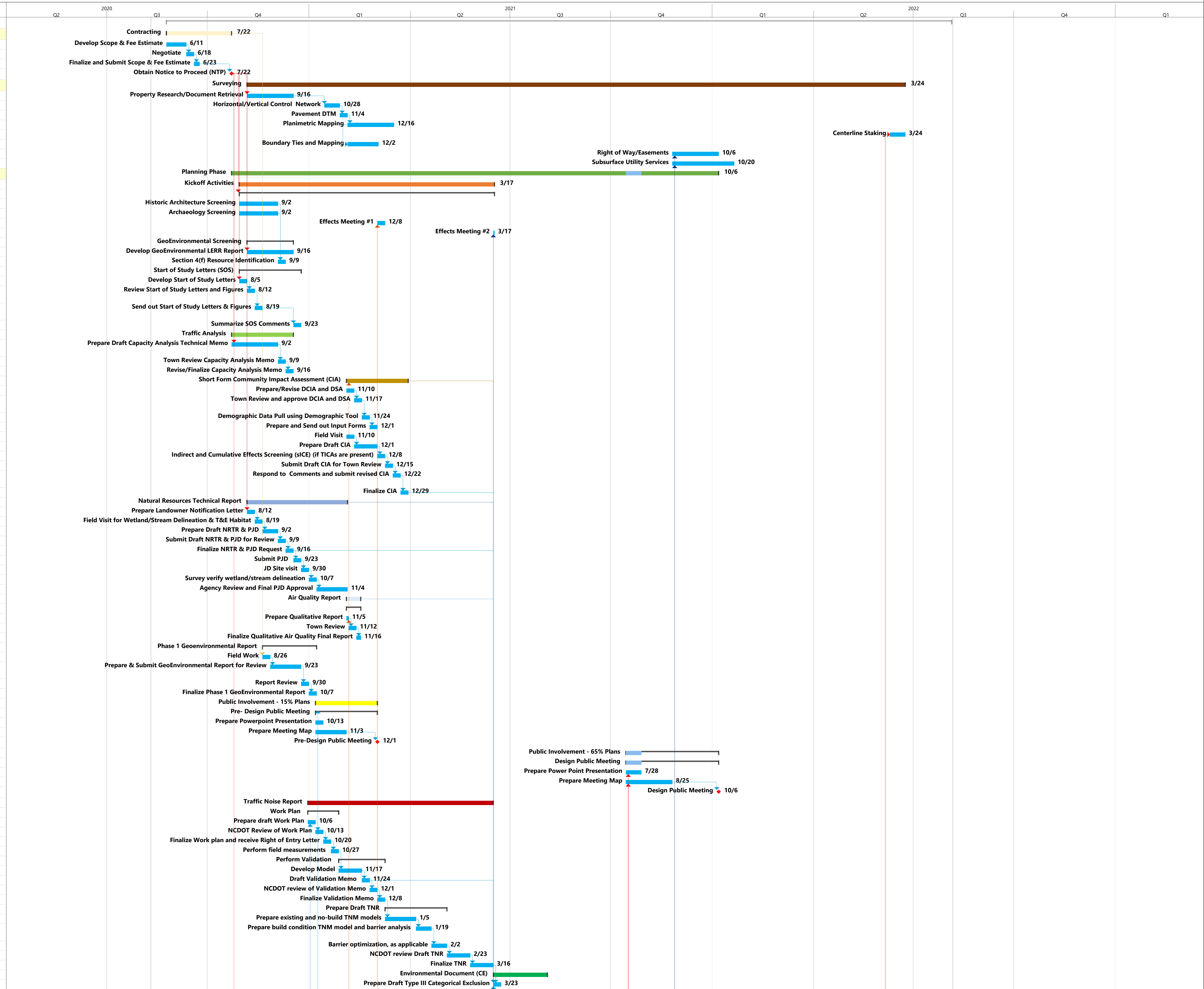
~~The Engineer shall prepare recordable exhibits of affected individual properties (note: the exhibits will not meet the requirements of NC GS 4730) for use in the conveyance of easements and rights of way necessary for the construction of the Project.~~

~~It is estimated that \_\_\_\_\_ individual property exhibits shall be required to fully map the property impacts throughout the project. Exhibits shall be prepared at a suitable scale to clearly represent the proposed right of way, permanent and temporary drainage, utility and construction easements required for the project. The exhibits shall be provided on legal size (8-1/2" x 14") paper and Adobe Acrobat (PDF) format. This scope includes two (2) preliminary submittals (bond plots for review) and one (1) final submittal on legal size (8-1/2" x 14") paper. Exhibits shall be prepared at a maximum scale of 1" = 20' preferred, 1" = 30' if required.~~

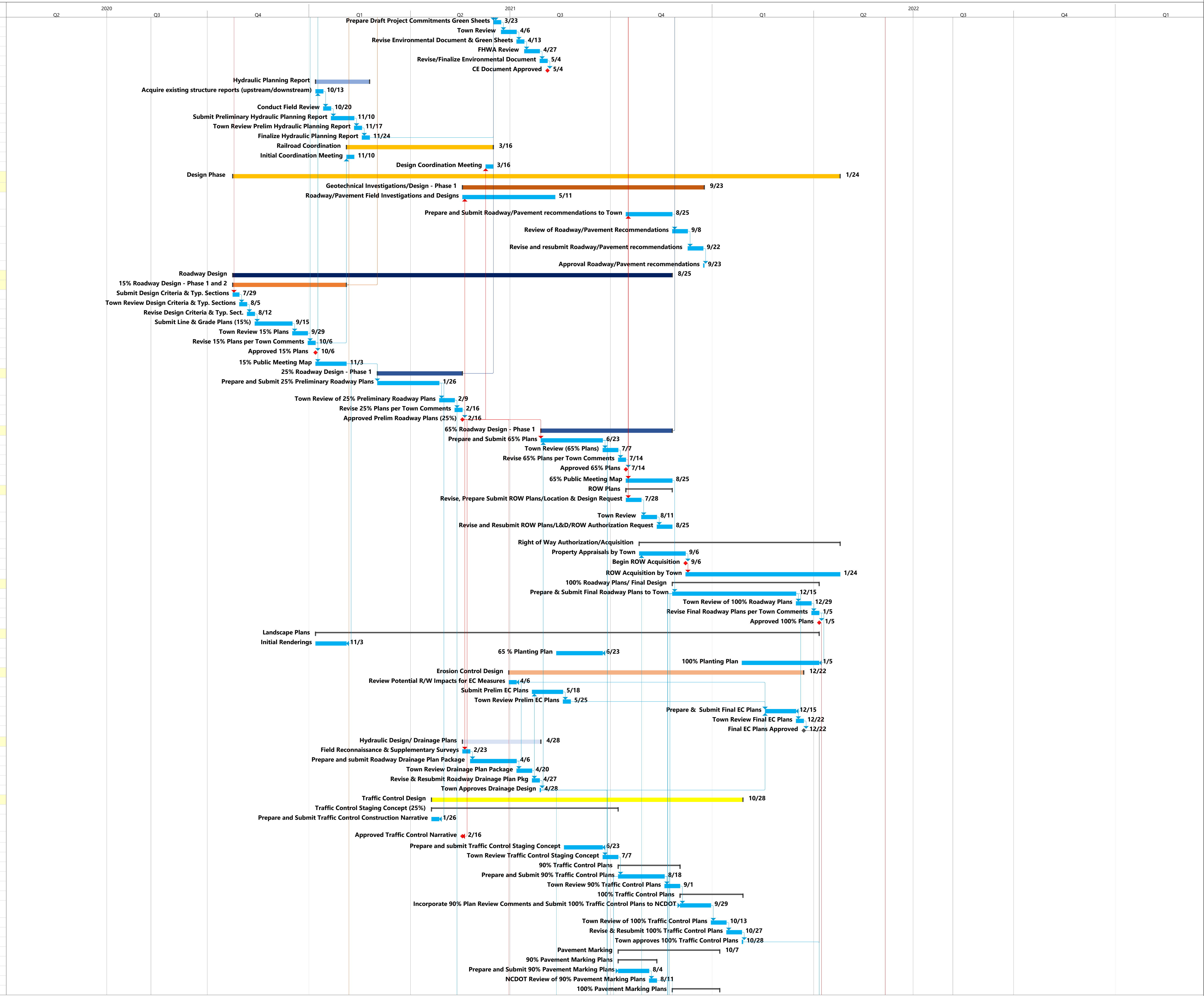
~~The first submittal of right of way exhibits shall be included with the 65% design submittal. The second preliminary submittal shall occur after completion of the initial round of negotiations with property owners. Final submission of right of way exhibits shall be completed in conjunction with property settlements by Town Attorney's Office. Upon the completion of recording each property exhibit, one copy is to be retained by the Wake County Register of Deeds, one copy by the Town of Garner, and one copy by the Engineer bearing Wake County's recordation information and the Register of Deeds signature. Property owner information, to include but not be limited to, owner's name, parcel number, tax identification number and property acquisition areas shall be provided at such times as requested by the Town. The aforementioned property owner information shall be provided to the Town in electronic format.~~

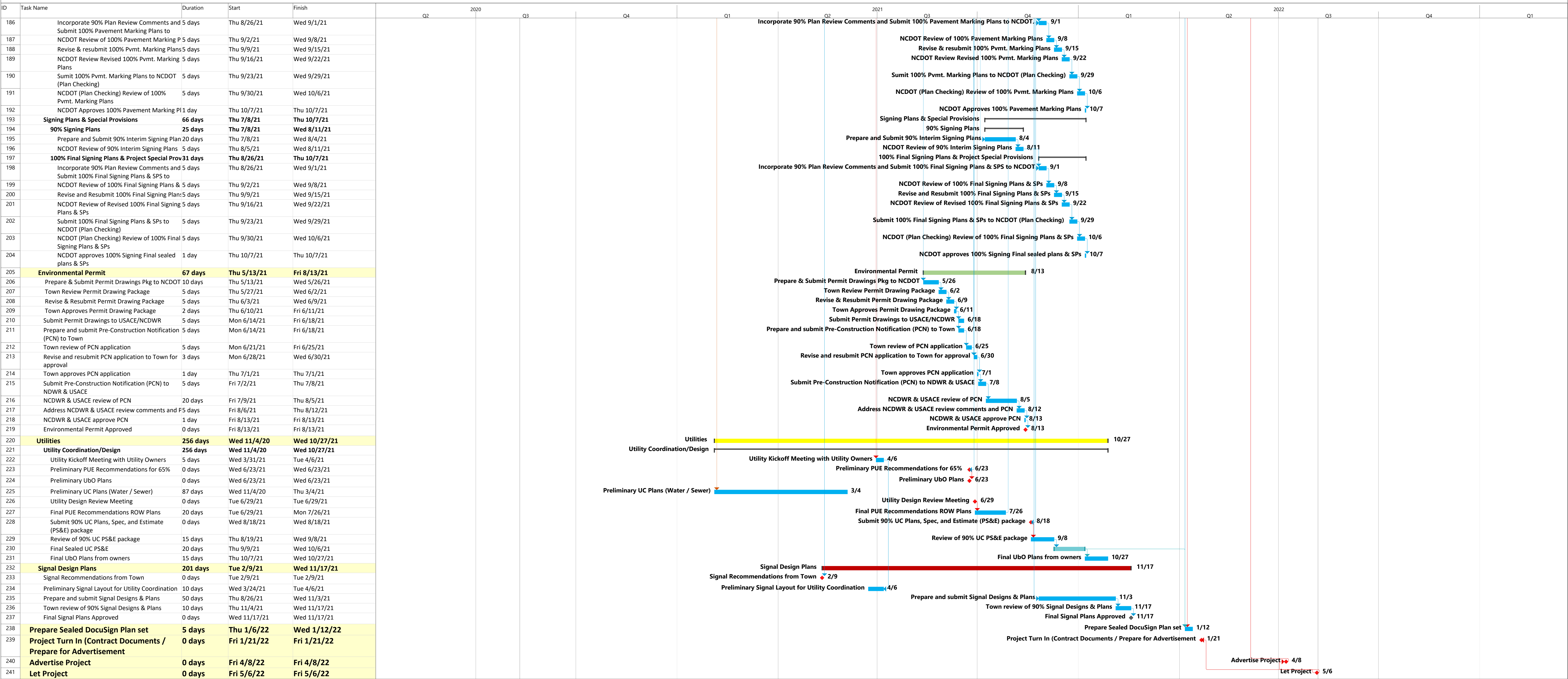


ID	Task Name	Duration	Start	Finish
0	<b>Jones Sausage Road Improvements</b>	<b>509 days</b>	<b>Mon 5/25/20</b>	<b>Fri 5/6/22</b>
1	<b>Contracting</b>	<b>43 days</b>	<b>Mon 5/25/20</b>	<b>Wed 7/22/20</b>
2	Develop Scope & Fee Estimate	14 days	Mon 5/25/20	Thu 6/11/20
3	Negotiate	5 days	Fri 6/12/20	Thu 6/18/20
4	Finalize and Submit Scope & Fee Estimate	3 days	Fri 6/19/20	Tue 6/23/20
5	Obtain Notice to Proceed (NTP)	21 days	Wed 6/24/20	Wed 7/22/20
6	<b>Surveying</b>	<b>426 days</b>	<b>Thu 8/6/20</b>	<b>Thu 3/24/22</b>
7	Property Research/Document Retrieval	30 days	Thu 8/6/20	Wed 9/16/20
8	Horizontal/Vertical Control Network	10 days	Thu 10/15/20	Wed 10/28/20
9	Pavement DTM	5 days	Thu 10/29/20	Wed 11/4/20
10	Planimetric Mapping	30 days	Thu 11/5/20	Wed 12/16/20
11	Centerline Staking	10 days	Fri 3/11/22	Thu 3/24/22
12	Boundary Ties and Mapping	20 days	Thu 11/5/20	Wed 12/2/20
13	Right of Way/Easements	30 days	Thu 8/26/21	Wed 10/6/21
14	Subsurface Utility Services	40 days	Thu 8/26/21	Wed 10/20/21
15	<b>Planning Phase</b>	<b>315 days</b>	<b>Thu 7/23/20</b>	<b>Wed 10/6/21</b>
16	Kickoff Activities	165 days	Thu 7/30/20	Wed 3/17/21
17	<b>Cultural Resources Screening</b>	<b>165 days</b>	<b>Thu 7/30/20</b>	<b>Wed 3/17/21</b>
18	Historic Architecture Screening	25 days	Thu 7/30/20	Wed 9/2/20
19	Archaeology Screening	25 days	Thu 7/30/20	Wed 9/2/20
20	Effects Meeting #1	5 days	Wed 12/2/20	Tue 12/8/20
21	Effects Meeting #2	1 day	Wed 3/17/21	Wed 3/17/21
22	<b>GeoEnvironmental Screening</b>	<b>30 days</b>	<b>Thu 8/6/20</b>	<b>Wed 9/16/20</b>
23	Develop GeoEnvironmental LERR Report	30 days	Thu 8/6/20	Wed 9/16/20
24	Section 4(f) Resource Identification	5 days	Thu 9/3/20	Wed 9/9/20
25	<b>Start of Study Letters (SOS)</b>	<b>40 days</b>	<b>Thu 7/30/20</b>	<b>Wed 9/23/20</b>
26	Develop Start of Study Letters	5 days	Thu 7/30/20	Wed 8/5/20
27	Review Start of Study Letters and Figures	5 days	Thu 8/6/20	Wed 8/12/20
28	Send out Start of Study Letters & Figures	5 days	Thu 8/13/20	Wed 8/19/20
29	Summarize SOS Comments	5 days	Thu 9/17/20	Wed 9/23/20
30	<b>Traffic Analysis</b>	<b>40 days</b>	<b>Thu 7/23/20</b>	<b>Wed 9/16/20</b>
31	Prepare Draft Capacity Analysis Technical Memo	30 days	Thu 7/23/20	Wed 9/2/20
32	Town Review Capacity Analysis Memo	5 days	Thu 9/3/20	Wed 9/9/20
33	Revise/Finalize Capacity Analysis Memo	5 days	Thu 9/10/20	Wed 9/16/20
34	<b>Short Form Community Impact Assessment (CIA)</b>	<b>40 days</b>	<b>Wed 11/4/20</b>	<b>Tue 12/29/20</b>
35	Prepare/Revise DCIA and DSA	5 days	Wed 11/4/20	Tue 11/10/20
36	Town Review and approve DCIA and DSA	5 days	Wed 11/11/20	Tue 11/17/20
37	Demographic Data Pull using Demographic Tool	5 days	Wed 11/18/20	Tue 11/24/20
38	Prepare and Send out Input Forms	5 days	Wed 11/25/20	Tue 12/1/20
39	Field Visit	5 days	Wed 11/4/20	Tue 11/10/20
40	Prepare Draft CIA	15 days	Wed 11/11/20	Tue 12/1/20
41	Indirect and Cumulative Effects Screening (SICE) (if TICAs are present)	5 days	Wed 12/2/20	Tue 12/8/20
42	Submit Draft CIA for Town Review	5 days	Wed 12/9/20	Tue 12/15/20
43	Respond to Comments and submit revised CIA	5 days	Wed 12/16/20	Tue 12/22/20
44	Finalize CIA	5 days	Wed 12/23/20	Tue 12/29/20
45	<b>Natural Resources Technical Report</b>	<b>65 days</b>	<b>Thu 8/6/20</b>	<b>Wed 11/4/20</b>
46	Prepare Landowner Notification Letter	5 days	Thu 8/6/20	Wed 8/12/20
47	Field Visit for Wetland/Stream Delineation & T&E Habitat	15 days	Thu 8/13/20	Wed 8/19/20
48	Prepare Draft NRTR & PJD	10 days	Thu 8/20/20	Wed 9/2/20
49	Submit Draft NRTR & PJD for Review	5 days	Thu 9/3/20	Wed 9/9/20
50	Finalize NRTR & PJD Request	5 days	Thu 9/10/20	Wed 9/16/20
51	Submit PJD	5 days	Thu 9/17/20	Wed 9/23/20
52	JD Site visit	5 days	Thu 9/24/20	Wed 9/30/20
53	Survey verify wetland/stream delineation	5 days	Thu 10/1/20	Wed 10/7/20
54	Agency Review and Final PJD Approval	20 days	Thu 10/8/20	Wed 11/4/20
55	<b>Air Quality Report</b>	<b>9 days</b>	<b>Wed 11/4/20</b>	<b>Mon 11/16/20</b>
56	<b>Qualitative Report</b>	<b>9 days</b>	<b>Wed 11/4/20</b>	<b>Mon 11/16/20</b>
57	Prepare Qualitative Report	2 days	Wed 11/4/20	Thu 11/5/20
58	Town Review	5 days	Fri 11/6/20	Thu 11/12/20
59	Finalize Qualitative Air Quality Final Report	2 days	Fri 11/13/20	Mon 11/16/20
60	<b>Phase 1 GeoEnvironmental Report</b>	<b>35 days</b>	<b>Thu 8/20/20</b>	<b>Wed 10/7/20</b>
61	Field Work	5 days	Thu 8/20/20	Wed 8/26/20
62	Prepare & Submit GeoEnvironmental Report for Review	20 days	Thu 8/27/20	Wed 9/23/20
63	Report Review	5 days	Thu 9/24/20	Wed 9/30/20
64	Finalize Phase 1 GeoEnvironmental Report	5 days	Thu 10/1/20	Wed 10/7/20
65	<b>Public Involvement - 15% Plans</b>	<b>40 days</b>	<b>Wed 10/7/20</b>	<b>Tue 12/1/20</b>
66	<b>Pre-Design Public Meeting</b>	<b>40 days</b>	<b>Wed 10/7/20</b>	<b>Tue 12/1/20</b>
67	Prepare Powerpoint Presentation	5 days	Wed 10/7/20	Tue 10/13/20
68	Prepare Meeting Map	20 days	Wed 10/7/20	Tue 11/3/20
69	Pre-Design Public Meeting	0 days	Tue 12/1/20	Tue 12/1/20
70	<b>Public Involvement - 65% Plans</b>	<b>60 days</b>	<b>Thu 7/15/21</b>	<b>Wed 10/6/21</b>
71	<b>Design Public Meeting</b>	<b>60 days</b>	<b>Thu 7/15/21</b>	<b>Wed 10/6/21</b>
72	Prepare Power Point Presentation	10 days	Thu 7/15/21	Wed 7/28/21
73	Prepare Meeting Map	30 days	Thu 7/15/21	Wed 8/25/21
74	Design Public Meeting	0 days	Wed 10/6/21	Wed 10/6/21
75	<b>Traffic Noise Report</b>	<b>120 days</b>	<b>Wed 9/30/20</b>	<b>Tue 3/16/21</b>
76	<b>Work Plan</b>	<b>20 days</b>	<b>Wed 9/30/20</b>	<b>Tue 10/27/20</b>
77	Prepare draft Work Plan	5 days	Wed 9/30/20	Tue 10/6/20
78	NCDOT Review of Work Plan	5 days	Wed 10/7/20	Tue 10/13/20
79	Finalize Work plan and receive Right of Entry Letter	5 days	Wed 10/14/20	Tue 10/20/20
80	Perform field measurements	5 days	Wed 10/21/20	Tue 10/27/20
81	<b>Perform Validation</b>	<b>30 days</b>	<b>Wed 10/28/20</b>	<b>Tue 12/8/20</b>
82	Develop Model	15 days	Wed 10/28/20	Tue 11/17/20
83	Draft Validation Memo	5 days	Wed 11/18/20	Tue 11/24/20
84	NCDOT review of Validation Memo	5 days	Wed 11/25/20	Tue 12/1/20
85	Finalize Validation Memo	5 days	Wed 12/2/20	Tue 12/8/20
86	<b>Prepare Draft TNR</b>	<b>40 days</b>	<b>Wed 12/9/20</b>	<b>Tue 2/2/21</b>
87	Prepare existing and no-build TNM models	20 days	Wed 12/9/20	Tue 1/5/21
88	Prepare build condition TNM model and barrier analysis	10 days	Wed 1/6/21	Tue 1/19/21
89	Barrier optimization, as applicable	10 days	Wed 1/20/21	Tue 2/2/21
90	NCDOT review Draft TNR	15 days	Wed 2/3/21	Tue 2/23/21
91	Finalize TNR	15 days	Wed 2/24/21	Tue 3/16/21
92	<b>Environmental Document (CE)</b>	<b>35 days</b>	<b>Wed 3/17/21</b>	<b>Tue 5/4/21</b>
93	Prepare Draft Type III Categorical Exclusion	5 days	Wed 3/17/21	Tue 3/23/21



ID	Task Name	Duration	Start	Finish
94	Prepare Draft Project Commitments Green Sheets	5 days	Wed 3/17/21	Tue 3/23/21
95	Town Review	10 days	Wed 3/24/21	Tue 4/6/21
96	Revise Environmental Document & Green Sheets	5 days	Wed 4/7/21	Tue 4/13/21
97	FHWA Review	10 days	Wed 4/14/21	Tue 4/27/21
98	Revise/Finalize Environmental Document	5 days	Wed 4/28/21	Tue 5/4/21
99	CE Document Approved	0 days	Tue 5/4/21	Tue 5/4/21
100	<b>Hydraulic Planning Report</b>	<b>35 days</b>	<b>Wed 10/7/20</b>	<b>Tue 11/24/20</b>
101	Acquire existing structure reports (upstream/downstream)	5 days	Wed 10/7/20	Tue 10/13/20
102	Conduct Field Review	5 days	Wed 10/14/20	Tue 10/20/20
103	Submit Preliminary Hydraulic Planning Report	15 days	Wed 10/21/20	Tue 11/10/20
104	Town Review Prelim Hydraulic Planning Report	5 days	Wed 11/11/20	Tue 11/17/20
105	Finalize Hydraulic Planning Report	5 days	Wed 11/18/20	Tue 11/24/20
106	<b>Railroad Coordination</b>	<b>95 days</b>	<b>Wed 11/4/20</b>	<b>Tue 3/16/21</b>
107	Initial Coordination Meeting	5 days	Wed 11/4/20	Tue 11/10/20
108	Design Coordination Meeting	5 days	Wed 3/10/21	Tue 3/16/21
109	<b>Design Phase</b>	<b>392 days</b>	<b>Fri 7/24/20</b>	<b>Mon 1/24/22</b>
110	<b>Geotechnical Investigations/Design - Phase 1</b>	<b>157 days</b>	<b>Wed 2/17/21</b>	<b>Thu 9/23/21</b>
111	Roadway/Pavement Field Investigations and Designs	60 days	Wed 2/17/21	Tue 5/11/21
112	Prepare and Submit Roadway/Pavement recommendations to Town	30 days	Thu 7/15/21	Wed 8/25/21
113	Review of Roadway/Pavement Recommendations	10 days	Thu 8/26/21	Wed 9/8/21
114	Revise and resubmit Roadway/Pavement recommendations	10 days	Thu 9/9/21	Wed 9/22/21
115	Approval Roadway/Pavement recommendations	1 day	Thu 9/23/21	Thu 9/23/21
116	<b>Roadway Design</b>	<b>284 days</b>	<b>Fri 7/24/20</b>	<b>Wed 8/25/21</b>
117	<b>15% Roadway Design - Phase 1 and 2</b>	<b>73 days</b>	<b>Fri 7/24/20</b>	<b>Tue 11/3/20</b>
118	Submit Design Criteria & Typ. Sections	4 days	Fri 7/24/20	Wed 7/29/20
119	Town Review Design Criteria & Typ. Sections	5 days	Thu 7/30/20	Wed 8/5/20
120	Revise Design Criteria & Typ. Sect.	5 days	Thu 8/6/20	Wed 8/12/20
121	Submit Line & Grade Plans (15%)	24 days	Thu 8/13/20	Tue 9/15/20
122	Town Review 15% Plans	10 days	Wed 9/16/20	Tue 9/29/20
123	Revise 15% Plans per Town Comments	5 days	Wed 9/30/20	Tue 10/6/20
124	Approved 15% Plans	0 days	Tue 10/6/20	Tue 10/6/20
125	15% Public Meeting Map	20 days	Wed 10/7/20	Tue 11/3/20
126	<b>25% Roadway Design - Phase 1</b>	<b>55 days</b>	<b>Wed 12/2/20</b>	<b>Tue 2/16/21</b>
127	Prepare and Submit 25% Preliminary Roadway Plans	40 days	Wed 12/2/20	Tue 1/26/21
128	Town Review of 25% Preliminary Roadway Plans	10 days	Wed 1/27/21	Tue 2/9/21
129	Revise 25% Plans per Town Comments	5 days	Wed 2/10/21	Tue 2/16/21
130	Approved Prelim Roadway Plans (25%)	0 days	Tue 2/16/21	Tue 2/16/21
131	<b>65% Roadway Design - Phase 1</b>	<b>85 days</b>	<b>Thu 4/29/21</b>	<b>Wed 8/25/21</b>
132	Prepare and Submit 65% Plans	40 days	Thu 4/29/21	Wed 6/23/21
133	Town Review (65% Plans)	10 days	Thu 6/24/21	Wed 7/7/21
134	Revise 65% Plans per Town Comments	5 days	Thu 7/8/21	Wed 7/14/21
135	Approved 65% Plans	0 days	Wed 7/14/21	Wed 7/14/21
136	65% Public Meeting Map	30 days	Thu 7/15/21	Wed 8/25/21
137	<b>ROW Plans</b>	<b>30 days</b>	<b>Thu 7/15/21</b>	<b>Wed 8/25/21</b>
138	Revise, Prepare Submit ROW Plans/Location & Design Request	10 days	Thu 7/15/21	Wed 7/28/21
139	Town Review	10 days	Thu 7/29/21	Wed 8/11/21
140	Revise and Resubmit ROW Plans/L&D/ROW Authorization Request	10 days	Thu 8/12/21	Wed 8/25/21
141	<b>Right of Way Authorization/Acquisition</b>	<b>130 days</b>	<b>Tue 7/27/21</b>	<b>Mon 1/24/22</b>
142	Property Appraisals by Town	30 days	Tue 7/27/21	Mon 9/6/21
143	Begin ROW Acquisition	0 days	Mon 9/6/21	Mon 9/6/21
144	ROW Acquisition by Town	100 days	Tue 9/7/21	Mon 1/24/22
145	<b>100% Roadway Plans/ Final Design</b>	<b>95 days</b>	<b>Thu 8/26/21</b>	<b>Wed 1/5/22</b>
146	Prepare & Submit Final Roadway Plans to Town	80 days	Thu 8/26/21	Wed 12/15/21
147	Town Review of 100% Roadway Plans	10 days	Thu 12/16/21	Wed 12/29/21
148	Revise Final Roadway Plans per Town Comment	5 days	Thu 12/30/21	Wed 1/5/22
149	Approved 100% Plans	0 days	Wed 1/5/22	Wed 1/5/22
150	<b>Landscape Plans</b>	<b>326 days</b>	<b>Wed 10/7/20</b>	<b>Wed 1/5/22</b>
151	Initial Renderings	20 days	Wed 10/7/20	Tue 11/3/20
152	65 % Planting Plan	30 days	Thu 5/13/21	Wed 6/23/21
153	100% Planting Plan	50 days	Thu 10/28/21	Wed 1/5/22
154	<b>Erosion Control Design</b>	<b>191 days</b>	<b>Wed 3/31/21</b>	<b>Wed 12/22/21</b>
155	Review Potential R/W Impacts for EC Measures	5 days	Wed 3/31/21	Tue 4/6/21
156	Submit Prelim EC Plans	20 days	Wed 4/21/21	Tue 5/18/21
157	Town Review Prelim EC Plans	5 days	Wed 5/19/21	Tue 5/25/21
158	Prepare & Submit Final EC Plans	20 days	Thu 11/18/21	Wed 12/15/21
159	Town Review Final EC Plans	5 days	Thu 12/16/21	Wed 12/22/21
160	Final EC Plans Approved	0 days	Wed 12/22/21	Wed 12/22/21
161	<b>Hydraulic Design/ Drainage Plans</b>	<b>51 days</b>	<b>Wed 2/17/21</b>	<b>Wed 4/28/21</b>
162	Field Reconnaissance & Supplementary Surveys	5 days	Wed 2/17/21	Tue 2/23/21
163	Prepare and submit Roadway Drainage Plan Package	30 days	Wed 2/24/21	Tue 4/6/21
164	Town Review Drainage Plan Package	10 days	Wed 4/7/21	Tue 4/20/21
165	Revise & Resubmit Roadway Drainage Plan Pkg	5 days	Wed 4/21/21	Tue 4/27/21
166	Town Approves Drainage Design	1 day	Wed 4/28/21	Wed 4/28/21
167	<b>Traffic Control Design</b>	<b>202 days</b>	<b>Wed 1/20/21</b>	<b>Thu 10/28/21</b>
168	<b>Traffic Control Staging Concept (25%)</b>	<b>121 days</b>	<b>Wed 1/20/21</b>	<b>Wed 7/7/21</b>
169	Prepare and Submit Traffic Control Construction Narrative	5 days	Wed 1/20/21	Tue 1/26/21
170	Approved Traffic Control Narrative	0 days	Tue 2/16/21	Tue 2/16/21
171	Prepare and submit Traffic Control Staging Conc	25 days	Thu 5/20/21	Wed 6/23/21
172	Town Review Traffic Control Staging Concept	10 days	Thu 6/24/21	Wed 7/7/21
173	<b>90% Traffic Control Plans</b>	<b>40 days</b>	<b>Thu 7/8/21</b>	<b>Wed 9/1/21</b>
174	Prepare and Submit 90% Traffic Control Plans	30 days	Thu 7/8/21	Wed 8/18/21
175	Town Review 90% Traffic Control Plans	10 days	Thu 8/19/21	Wed 9/1/21
176	<b>100% Traffic Control Plans</b>	<b>41 days</b>	<b>Thu 9/2/21</b>	<b>Thu 10/28/21</b>
177	Incorporate 90% Plan Review Comments and Submit 100% Traffic Control Plans to NCDOT	20 days	Thu 9/2/21	Wed 9/29/21
178	Town Review of 100% Traffic Control Plans	10 days	Thu 9/30/21	Wed 10/13/21
179	Revise & Resubmit 100% Traffic Control Plans	10 days	Thu 10/14/21	Wed 10/27/21
180	Town approves 100% Traffic Control Plans	1 day	Thu 10/28/21	Thu 10/28/21
181	<b>Pavement Marking</b>	<b>66 days</b>	<b>Thu 7/8/21</b>	<b>Thu 10/7/21</b>
182	<b>90% Pavement Marking Plans</b>	<b>25 days</b>	<b>Thu 7/8/21</b>	<b>Wed 8/11/21</b>
183	Prepare and Submit 90% Pavement Marking	120 days	Thu 7/8/21	Wed 8/4/21
184	NCDOT Review of 90% Pavement Marking Pls	5 days	Thu 8/5/21	Wed 8/11/21
185	<b>100% Pavement Marking Plans</b>	<b>31 days</b>	<b>Thu 8/26/21</b>	<b>Thu 10/7/21</b>





Jones Sausage Road - T02

Page	Project No.	Project	Project Manager	QA/QC Reviewer, Technical Advisor	Sr Geotech Engineer, Sr Roadway Engineer	Senior Stormwater Engineer	Senior Environmental Engineer	Design Lead	Stormwater Engineer, Geotechnical Engineer	Highway Engineer, Traffic Engineer	Environmental Engineer	CADD Technician, Envir Scientist	0	0	0	Totals hrs	Labor Cost	Direct Expenses	Subcontractor Expense	Total
1	1	Project Management	238	0	16	16	12	162	0	12	0	72	0	0	0	528.0	\$90,402.19	\$1,093	\$0.00	\$91,495.00
2	2	Roadway Design	18	24	78	0	0	213	0	503	0	434	0	0	0	1270.0	\$166,918.42	\$839	\$0.00	\$167,757.00
3	3	Hydraulics Design, Storm Drainage, Erosion Control & Permits	0	36	0	13	0	147	248	256	0	180	0	0	0	880.0	\$120,584.07	\$391	\$0.00	\$120,975.00
4	4	Capacity Analysis	9	0	2	0	0	14	0	53	2	0	0	0	0	80.0	\$11,490.35	\$30	\$0.00	\$11,520.00
5	5	Natural Resource Investigation & Permitting	0	16	0	0	70	0	0	0	0	70	0	0	0	156.0	\$22,751.17	\$40	\$0.00	\$22,791.00
6	6	Geotechnical Investigations	0	0	32	0	0	0	160	0	0	60	0	0	0	252.0	\$35,403.46	\$20	\$20,475.00	\$55,898.00
7	7	Work Zone Traffic Control & Signals	0	10	44	0	0	182	0	0	0	145	0	0	0	381.0	\$54,410.59	\$74	\$0.00	\$54,484.00
8	8	Pavement Markings, Signing	0	16	0	0	0	44	0	0	0	4	0	0	0	64.0	\$11,016.96	\$64	\$0.00	\$11,081.00
9	9	Contract Documents and Bid Services	0	3	29	0	8	46	60	0	0	24	0	0	0	170.0	\$26,165.28	\$150	\$0.00	\$26,315.00
10	10	Public Involvement & Visualization	36	0	6	0	9	13	0	32	38	88	0	0	0	222.0	\$29,364.22	\$376	\$0.00	\$29,740.00
11	11	Surveys & SUE - M&C	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	\$0.00	\$0	\$143,850.00	\$143,850.00
12	12	Utility Coordination	0	0	0	36	0	0	167	0	0	0	0	0	0	203.0	\$30,669.61	\$92	\$0.00	\$30,761.00
13	13	Utility Design	0	10	38	0	0	138	0	0	0	200	0	0	0	386.0	\$51,785.45	\$1,777	\$0.00	\$53,563.00
14	14	Short-Form CIA	6	1	0	0	25	0	0	7	47	10	0	0	0	96.0	\$13,039.61	\$50	\$0.00	\$13,089.00
15	15	Landscape Architecture	0	0	24	0	0	64	0	64	72	0	0	0	0	224.0	\$31,444.24	\$437	\$0.00	\$31,881.00
16	16	Kickoff Activities & Railroad Coordination	22	0	2	0	24	0	0	22	40	0	0	0	0	110.0	\$16,381.99	\$185	\$0.00	\$16,567.00
17	17	Geoenvironmental	0	0	6	0	0	0	0	0	34	6	0	0	0	46.0	\$5,709.31	\$214	\$0.00	\$5,923.00
18	18	Project-Level Air Quality Analysis	2	0	0	0	10	0	0	0	12	0	0	0	0	24.0	\$3,500.18	\$22	\$0.00	\$3,522.00
19	19	Preliminary Hydraulics Report	0	3	0	0	0	18	32	0	0	8	0	0	0	61.0	\$8,922.59	\$67	\$0.00	\$8,989.00
20	20	Traffic Noise Analysis	0	8	0	0	196	0	0	256	0	8	0	0	0	468.0	\$69,429.80	\$2,878	\$0.00	\$72,308.00
21	21	NEPA Class of Action	11	3	0	8	14	0	12	21	11	8	0	0	0	88.0	\$13,297.82	\$110	\$0.00	\$13,408.00
		Subtotals -- hours	342	130	277	73	368	1041	679	1226	256	1317	0	0	0	5709.0				
		Selected Rate	\$201	\$230	\$201	\$186	\$172	\$158	\$143	\$129	\$115	\$100	\$0	\$0	\$0					
		Fee Labor Effort	\$68,684	\$29,838	\$55,630	\$13,613	\$63,348	\$164,265	\$97,403	\$158,283	\$29,379	\$132,247	\$0	\$0	\$0	\$812,687				

Contract Values	
Fee Labor Effort	\$812,687
Fee Direct Expenses	\$8,905
Fee Subconsultants	\$164,325
<b>Total Fee</b>	<b>\$985,917</b>

## Planning Department Memorandum

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**TO:** Mayor and Town Council Members

**FROM:** Gaby Lontos-Lawlor; Senior Planner

**SUBJECT:** *Jones Sausage Road Phase 1 Design Contract*

**DATE:** August 18, 2020

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### **BACKGROUND**

The *Jones Sausage Road Feasibility Study*, completed in Winter 2020, provided a preliminary design for the improvements to the Jones Sausage Road corridor, and high-level construction cost estimates. The cost estimates were split into two phases, to detail work and costs associated with each Phase separately.

Phase 1 (North) includes the widening of Jones Sausage Road from the roadway improvements at the Amazon Fulfillment Center to E Garner Rd; Phase 2 will realign Jones Sausage Road south of E Garner Road, grade separation over the railroad, and continuation of Jones Sausage Road to US 70.

The design contract presented tonight includes work associated with completing 100% design for Phase 1. The design contract, scope, fee and schedules are included as attachments to this memorandum. There are two schedules provided, briefly explained below, and which staff will explain in further detail during the presentation.

### **SCOPE AND FEE**

Staff has worked with HDR, the transportation on-call consultant to develop a scope of work and estimated fee for Jones Sausage Road Phase 1 Design. The scope of work and fee developed by the consultant are provided as an attachment to this memorandum.

The estimated fee identified by the consultant for the tasks detailed in the scope is \$999,909. This can be covered by the amount that Town Council initially allocated towards the Jones Sausage Road project (\$1,300,000), in the Street and Sidewalks Bond.

The scope and fee, included in the agenda packet, assumes that the Town will pursue federal funding through the LAPP program, overseen by the Capital Area Metropolitan Planning Organization (CAMPO).

## **SCHEDULE APPROACH**

Two schedules have been provided:

### ***1 – LAPP Schedule***

This approach assumes that the Town will pursue federal funding through the LAPP program. If the Town secures federal funding it would help offset the overall cost of the project. However, this approach would also require a longer time frame in order to complete Phase 1 improvements. This is because projects utilizing federal funds are subject to multiple reviews and checkpoints with the North Carolina Department of Transportation (NCDOT) throughout design, right-of-way, and construction phases, which can slow down the overall time required to complete a project. The projected let date (commencement of the construction process) under this approach is September 2023.

An additional factor that should be considered is the budget/funding challenge NCDOT is currently facing. NCDOT has delayed numerous projects due to its cash reserve dropping below the federally mandated balance – such as the delays to the ongoing Ackerman/Hebron Church Rd/White Oak Rd Roundabout project. Additionally, the COVID-19 pandemic has created a funding crisis, due to significant traffic volume decrease. At this time, there is uncertainty over what the full impact will be to LAPP program funds. Because of these complications, staff has identified an alternate approach for Town Council to consider.

### ***2 – Non-LAPP Schedule***

If the Town forgoes LAPP funding, the overall cost will have to be assumed by the Town. However, this approach would allow for a shorter timeline and help avoid complications due to NCDOT funding challenges. The projected let date under this approach is June 2022.

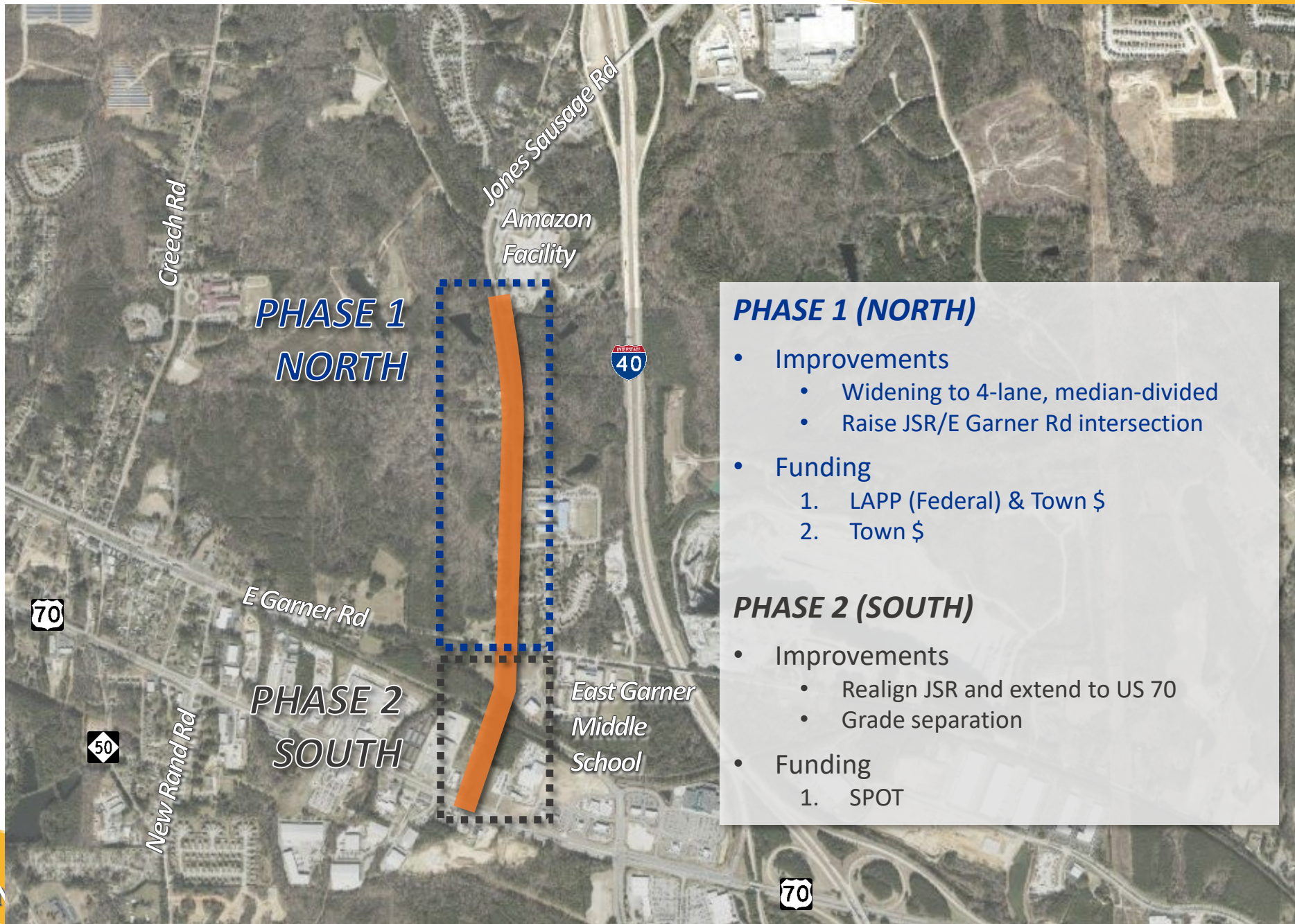
The cost estimate provided in the *Jones Sausage Road Feasibility Study*, to complete right-of-way and construction of Phase 1 was \$3,896,000.00. Originally, it was assumed that improvements at the Jones Sausage Road/E Garner Road intersection would be completed as part of Phase 2. However, since completion of the *Feasibility Study* it has been determined that improvements at that intersection should be included in Phase 1. As such, the Town would need to assume and plan for a higher amount than was calculated for Phase 1.

## **COUNCIL ACTION**

- Council agreement on the preferred approach to complete Phase 1 Jones Sausage Road improvements
- Council authorization for Town Manager to execute design contract with HDR and have consultant commence work

# Jones Sausage Road Project Status

Town Council Regular Meeting  
August 18, 2020



**PHASE 1  
NORTH**

- PHASE 1 (NORTH)**
- Improvements
    - Widening to 4-lane, median-divided
    - Raise JSR/E Garner Rd intersection
  - Funding
    1. LAPP (Federal) & Town \$
    2. Town \$

**PHASE 2  
SOUTH**

- PHASE 2 (SOUTH)**
- Improvements
    - Realign JSR and extend to US 70
    - Grade separation
  - Funding
    1. SPOT





**PHASE 1  
NORTH**

- PHASE 1 (NORTH)**
- Improvements
    - Widening to 4-lane, median-divided
    - Raise JSR/E Garner Rd intersection
- PHASE 2 (SOUTH)**
- Improvements
    - Realign JSR and extend to US 70
    - Grade separation

**PHASE 2  
SOUTH**

# Phase 1 Improvements

- Fee = \$999,909
- 100% design for Phase 1
- 15% design for Phase 2
- Finalize cost estimate
- Environmental analysis for Phase 1 & 2

# Funding Approach Considerations

- NCDOT funding uncertainty
  - Cash balance
  - Revenue crisis due to COVID-19
  - Impacts to LAPP Program

# Funding Approach

	LAPP	Non-LAPP
Feasibility Study	\$109,919	
Design	\$999,909	\$999,909*
ROW	\$200,200†	\$1,001,000
Construction	\$579,000†	\$2,895,000
<b>TOTAL</b>	<b>\$1,889,028</b>	<b>\$4,005,919</b>
Construction Begins	9/2023	6/2022

\*Amount needs to be reduced to exclude LAPP program tasks that do not apply

†Assumes Town pays 20%

# Requested Action

- Select preferred approach (LAPP/non-LAPP)
- Authorize Town Manager to execute Jones Sausage Rd Phase 1 Design contract

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: September 29, 2020		
Subject: CIP/Bond - Transportation Projects Currently in CIP		
Location on Agenda: Discussion		
Department: Planning		
Contact: Gaby Lontos-Lawlor, Senior Planner - Transportation		
Presenter: Gaby Lontos-Lawlor, Senior Planner - Transportation		
Brief Summary:  This item will provide an overview of projects from the Garner Forward Transportation Plan currently in the CIP. Additionally, staff will present a progress report for the Transportation Plan.		
Recommended Motion and/or Requested Action: Receive as information		
Detailed Notes:		
Funding Source: n/a		
Cost: n/a	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input checked="" type="radio"/>
Manager's Comments and Recommendations:          		
Attachments Yes: <input type="radio"/> No: <input checked="" type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:	JT	
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		

Town of Garner  
Town Council Meeting  
Agenda Form

Meeting Date: September 29, 2020		
Subject: October Pending Agenda		
Location on Agenda: Reports		
Department: Town Manager's Office		
Contact: Rodney Dickerson, Town Manager		
Presenter: Rodney Dickerson, Town Manager		
Brief Summary:  The pending agenda items for the October Council Meetings and Work Session are provided for review and discussion.		
Recommended Motion and/or Requested Action: Receive as information		
Detailed Notes:		
Funding Source: NA		
Cost:	One Time: <input type="radio"/>	Annual: <input type="radio"/> No Cost: <input type="radio"/>
Manager's Comments and Recommendations:		
Attachments Yes: <input checked="" type="radio"/> No: <input type="radio"/>		
Agenda Form Reviewed by:	Initials:	Comments:
Department Head:		
Finance Director:		
Town Attorney:		
Town Manager:	RD	
Town Clerk:		



## Town Manager's Office Memorandum

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TO: Mayor and Town Council

FROM: Rodney Dickerson, Town Manager

DATE: September 23, 2020

SUBJECT: October Pending Agenda Items

The following items are currently planned for the October Council Meetings and Work Session. These items are subject to change.

### Monday, October 5 – Regular Meeting

#### Presentations

1. Introduction of Megan Huff -Miss Garner, Hailey Wagner -Garner's Outstanding Teen
2. PAAL Proclamation

#### Consent

1. Set 2021 Council meeting schedule
2. Set public hearing for Garner Transit Study (Final Report)
3. Set 2021 Holiday Schedule

#### Public Hearings

1. JS Commerce Park
2. Sam's Xpress Car Wash

#### Old/New Business

1. Appointments to GVFR Board
2. Update on Fee-in-Lieu Calculation

#### Reports

1. Capital Projects Status Report – Period ending FY21 Q1



## Tuesday, October 20 – Regular Meeting

### Presentations

#### Consent

1. Budget Amendments
2. Nuisance abatements

#### Public Hearings

1. Ridgemoor South Townhomes
2. 3300 Waterfield Drive
3. UDO-19-02 Chapter 160D (tentative)

#### Old/New Business

1. Lake Drive Improvements Design Presentation and Public Comment
2. DFI RFP for Downtown Development Site

#### Reports

1. Quarterly Financial Report

## Tuesday, October 27 – Work Session

### Discussion

1. BRT Branding and Design Update
2. Review the Recommended Capital Improvement Plan (CIP) in preparation for the November 2021 Bond Referendum
3. Council Meeting Procedures

### Pending Items

1. Planning Pipeline Tool