CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION (CAMPO)

US 401 CORRIDOR STUDY

ATTACHMENT A: DRAFT SCOPE OF SERVICES (Rev. 4-12-22) – WSP USA, INC

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Introduction

The following is a scope of work that describes work tasks to be performed by the WSP USA, Inc. team, hereinafter the "Consultant", for the US 401 corridor study from US 421 near the Town of Lillington in Harnett County north to Banks Road in Wake County for the Capital Area Metropolitan Planning Organization (CAMPO), hereinafter the "Client". The Client and Consultant will enter a contract, hereinafter "Contract", wherein the terms of this "Scope of Work" are incorporated therein by reference.

Overview

The study will focus on planning and design for the study area to determine the proposed ultimate cross-section and alignments of US 401 by:

- Developing a vision for the study area that includes three distinct segments, which are defined as (1) US 401 Fuquay-Varina Bypass on the new location, (2) Fuquay-Varina section, and (3) Southern section – from the proposed Bypass into Lillington through a comprehensive and engaging stakeholder involvement process.
- Analyzing a variety of short and long-term solutions which will include cost-benefit analysis.
- Development of a package of realistic and implementable prioritized projects that can be programmed into the appropriate Metropolitan Transportation Plan (MTP) time horizon and are designed and segmented such that the NCDOT SPOT technical score for each individual project is maximized.
- Development of a Public Engagement Plan (PEP) to detail the goals for public communications and engagement, target audiences, as well as tools and techniques to effectively communicate with and inform the public and stakeholders.

Study Vision, Goals and Performance Measures

Study Vision

The Consultant will develop a vision for the study area, through a comprehensive and engaging stakeholder involvement process, to provide functional designs that provide adequate capacity for the future conditions while accommodating the appropriate modes of travel as prioritized by the public and stakeholders. The study vision will reflect the diversity of communities, land uses, and transportation aspects within the study area and beyond. This deliverable will be part of Subtask B1.

Goals

The Consultant will develop a set of goals for the corridor which will reflect direct actionable and measurable outcomes of the Study Vision. These will be developed in conjunction with public and stakeholder involvement. The Consultant will further outline performance measures for each goal. This deliverable will be part of Subtask B1.

Performance Measures

The Consultant will set specific performance measures which may include roadway design criteria, land use, market/economic analysis, capacity as well as multimodal connectivity (where needed), access, mobility, and safety. These measures, based on public and Core Technical Team (CTT) member input, will be used to track progress towards goals, and help define or prioritize projects. The consultant will work with the Client to develop a weighting system that reflects the priorities based on feedback received from the public. This deliverable will be part of Subtask B2.

Task A – Project Management

Project Management will consist of project coordination and administration; attendance at project meetings; participation in external client meetings; schedule development and updates, invoicing, and performance of quality control.

Subtask A1 – Project Administration

The Consultant Project Manager (PM) and task managers will supervise, coordinate and monitor the Project for general conformance with vision, goals, standards, and policies established at the beginning of the project. The Consultant will provide the management, schedule, coordination, and direction to its team and subconsultants to supply the required services. The Consultant will coordinate with the various team functional groups to provide timely delivery of qualified products. The Consultant will notify the Client of any subconsultant or task lead changes.

Project administration efforts will continue throughout the life of the contract and will include the following:

- Project control and administration, including set-up of the new task order in our accounting system
- Creation and execution of new subconsultant agreements and subconsultant invoice tracking
- Resource allocation to facilitate simultaneous production of project tasks
- Day to day communication among task leaders
- Coordination in development of change orders and modifications if necessary
- Coordination and oversight to ensure compliance with contract provisions
- Monthly Project activity/milestone design schedule
- Monthly progress reports and invoices

Subconsultant Participation

- Stewart Engineering
- HR&A Advisors
- SpanishSpeaking, LLC

Subtask A1 Deliverables

- Project Management Plan
- Quality Assurance/Control Plan
- Monthly invoices including progress reports with tracking and, as necessary, consider changes to scope, schedule and budget

Subtask A2- Client Coordination meetings

The Consultant will prepare, facilitate, and document up to twenty-one (21) client coordination meetings. These meetings are intended to provide coordination between the Consultant and client to review system-wide components, schedule, risks, and oversight direction based on prior action items. These project coordination meetings will be up to one (1) hour each and include participation by the Project Manager, Deputy Project Manager(s), and additional consultant or sub-consultant staff as needed with a total number of Consultant attendees not exceeding four (4) personnel.

Subtask A2 Deliverables

- Up to twenty-one (21) monthly client coordination meetings (agendas, meeting materials, and minutes) – the final number will match the number of months of the project.

Subtask A3 – Internal Team Coordination Meetings

The Consultant will conduct up to twenty (20) monthly internal team coordination meetings. These meetings are intended to provide internal team coordination between the subconsultants, Task Leads, and other staff. It is assumed the meetings will be one (1) hour each and the attendees will vary based on the agenda.

Subconsultant Participation

- Stewart
- HR&A Advisors
- SpanishSpeaking, LLC

Subtask A3 Deliverables

- Meeting minutes will be shared with the participants

Task B – Stakeholder Engagement

Subtask B1 – Stakeholder Oversight Team Coordination meetings

The client will establish a Stakeholder Oversight Team (SOT) comprising of local, regional and state agencies, and key community stakeholder representatives to participate in guiding the US 401 Corridor Study during the course of the project.

The Consultant will prepare, facilitate, and document up to six (6) SOT meetings. These meetings are intended to provide regular coordination opportunities between the Client and the SOT throughout the project. These SOT meetings will be up to two (2) hours each and include participation by the Project Manager, Deputy Project Manager(s), and additional consultant or sub-consultant staff as needed with a total number of attendees not exceeding five (5) personnel. The Consultant will prepare the meeting agendas, presentation materials, and facilitate the committee meetings. The Consultant may use its subscription to PollEverywhere, a live polling tool during the meetings to collect SOT input. The Client will be responsible for issuing invitations to participating committee members and providing meeting accommodations or web meeting platform.

Subtask B1 – Deliverables

- Study vision and goals
- Up to six (6) SOT meetings (agendas, meeting materials, and minutes)

Subtask B2 – Core Technical Team Coordination Meetings

The client will establish a Core Technical Team (CTT) comprised of a subset of the members in the Study Oversight Team to participate in guiding the US 401 Corridor Study during the course of the project.

The Consultant will prepare, facilitate, and document up to twelve (12) CTT meetings. These meetings are intended to provide regular coordination opportunities between the Client and the CTT throughout the project. These project coordination meetings will be up to two (2) hours each and include participation by the Project Manager, Deputy Project Manager(s), and additional consultant or sub-consultant staff as needed with a total number of attendees not exceeding four (4) personnel. The Consultant will prepare committee meeting agendas, presentation materials, and facilitate the committee meetings. The Client will be responsible for issuing invitations to participating committee members and providing meeting accommodations or web meeting platform.

Conceptboard Engagement (CTT):

The Consultant will use Conceptboard, an online visual collaboration workspace, to share content and information with the CTT to seek their feedback remotely.

Subtask B2 Deliverables

- Performance Measures
- Up to twelve (12) CTT meetings (agendas, meeting materials, and minutes)

Task C – Public Engagement

Assumptions:

- There will be four (4) phases of public engagement.
- WSP will develop project content, including visuals such as infographics, and materials for activities as listed in the SOW.
- WSP will provide a demographic analysis as described in Subtask D4 Environmental and Community Analysis and Agency Engagement.
- CAMPO will electronically distribute outreach content including social media, flyers, digital toolkit, and press releases.
- CAMPO will be responsible for media inquiries and notifications.
- CAMPO will be responsible for costs associated with mailing print materials to individuals upon request; mass mailings are not anticipated.
- CAMPO will be responsible for costs associated with social media and/or print advertising, should CAMPO choose to use paid advertising.
- WSP will develop and maintain the project website.
- WSP will provide Spanish translations as described under Subtask C3 Spanish-Language Engagement. CAMPO will provide translations for additional languages, as requested by the public.
- Translation services at public meetings will only be provided if requested by a member of the public 7 days prior to the public meeting so arrangements can be made.
- ESRI StoryMaps will be used for public engagement throughout the project. All of the existing analyses mapping for the project will be done and used during the first Phase of public engagement.

A successful public engagement process will provide engagement opportunities throughout the project to achieve consensus of project recommendations and outcomes. It will build on the previous public engagement efforts completed in the U.S. 401 corridor to confirm previous public input, vision, and

goals, as we move forward with recommendations. This scope accounts for three (3) phases of public engagement as follows:

- Phase 1: Educate the public after a review of previous studies and data collection to seek input on vision, goals, and corridor challenges. The Consultant will use public feedback from previous studies in the corridor to build upon that feedback and confirm that information is still accurate.
- Phase 2: Educate the public about Phase 1 public input, alternative options, and seek input on the final recommended alternatives.
- Phase 3: Introduce the three (3) alternatives advanced, educate the public about Phases 1 and 2 of the study and public input received, describe the analysis completed to propose the three alternatives for the Future U.S. 401 corridor, and solicit feedback from existing participants and engage with new participants along the NC 210 corridor, where Alternatives W and Z are located.
- Phase 4: Present the recommendations to the public.

The Consultant will tailor engagement strategies for each phase to address project objectives and target audiences by incorporating digital methods complemented by traditional methods as described in the following sections under Task C Public Engagement.

Subtask C1 – Public Engagement

C1.1 Task Coordination

One member of the Public Engagement team will participate in up to three (3) one (1) hour pre-planning public engagement meetings with CAMPO to plan and prep for public engagement prior to each phase. For Phase 3 community engagement, two (2) members of the Public Engagement team will participate in up to three (3) one (1) hour pre-planning public engagement meetings with CAMPO to plan and prep for public engagement prior to the beginning of Phase 3.

C1.2 Develop a Public Engagement Plan

The Consultant will develop a Public Engagement Plan (PEP) to detail public engagement efforts throughout the project. Prior to developing the PEP, the Consultant will review previous studies in the corridor including recommendations and how public input influenced the recommendations. The PEP will detail:

- the goals for engagement,
- target audiences and stakeholders,
- the SOT invitation list,
- how each phase will be publicized,
- the tools and techniques to effectively engage the public and stakeholders; and,
- a schedule to detail when activities are anticipated to occur.

The plan will align with CAMPO's Public Involvement Plan practices to ensure collaboration between the two plans. Additionally, performance measures will be included based on CAMPO's Public Involvement Plan. The Consultant will have a meeting with CAMPO to review and discuss the PEP prior to finalizing. The PEP will have the flexibility to be modified, in agreement with CAMPO, as the project progresses based upon tools and techniques that work best or to practice safe social distancing as guidance changes. CAMPO will provide comments in one document and the Consultant will revise up to one time prior to finalizing.

For Phase 3 Public Engagement, the Consultant will revise the Public Engagement Plan (PEP) to reflect the public engagement efforts for the revised Phase 3 of engagement and the new Phase 4 of engagement. The Consultant will include a demographic analysis of the area surrounding N.C. 210 in the updated PEP. The Consultant will have a meeting with CAMPO to review and discuss the PEP prior to finalizing. CAMPO will provide comments in one document and the Consultant will revise up to one time prior to finalizing.

C1.3 Public Outreach

The following methods will be used to increase public awareness for the project and participation opportunities.

a. Social Media:

CAMPO will use CAMPO's social media accounts to share project information and promote public participation. The Consultant will provide three (3) unique posts for each of the four (4) phases of public engagement, and up to five (5) additional posts for use outside of specific engagement phases in order to provide ongoing communication about the project. CAMPO will review, approve, and post content on Facebook, Instagram, Twitter, and Nextdoor. In sum, the Consultant will provide content and graphics for 14 customized social media postings. CAMPO will distribute social media posts from the CAMPO accounts. The Consultant will revise materials up to one time.

To increase social media reach, CAMPO will identify related organizations to request their participation in sharing CAMPO's US 401 social media posts. These organizations may include local municipalities, counties, community groups, and other local stakeholders. CAMPO will provide the stakeholders with the schedule of social media posts as part of the digital toolkit.

b. Flyer:

The Consultant will develop up to four (4) flyers that can be distributed along the corridor to physical locations such as businesses and community/government buildings. The Consultant will revise each flyer up to one time. CAMPO will distribute the flyers electronically to stakeholders and project partners. The Consultant will print up to 300 flyers for each round.

c. Yard Sign:

The Consultant will design one yard sign to be used throughout the lifespan of the project to promote the project website. It will have English on one side and Spanish on the opposite side. The Consultant team will produce and disperse up to 16 signs at key intersections and/or large community centers/libraries. These signs will be placed when conducting the targeted outreach along the corridor to stakeholders. The Consultant will collect the signs at the conclusion of each public comment period so that signs are only in the right-of-way for approximately 3-4 weeks.

d. Digital Toolkit:

A digital communications toolkit will be developed by the Consultant for easy distribution to CTT, SOT, community ambassadors, partners, and other organizations to easily share information about the project. The digital toolkit will include files such as digital versions of print materials, sample social media messaging, logos and brand graphics, outreach links (survey, website), a digital flyer that may be used by recipients to promote the project on screens at local facilities such as libraries, buses, etc., and a roadside signage image file. CAMPO will distribute the toolkit, as needed.

e. E-blasts:
CAMPO will distribute e-mails to share project information with the general public using CAMPO's public email list through PublicInput. CAMPO will also distribute information to the SOT and partner agencies. E-blasts will be developed by the Consultant and revised up to one time.

f. Media:
Press Release: Consultant will develop up to four (4) press releases to announce project updates and public participation opportunities. Consultant will revise each press release up to one time. CAMPO will be responsible for identifying appropriate media outlets and distributing the press releases.

Media Requests/Interviews: CAMPO will be responsible for any requested media interview.

Videos: Public meeting presentations will be recorded during the meeting and streamed live using CAMPO's Facebook page to include residents not able to attend at the time of the meeting. The videos may be posted to CAMPO's YouTube site and will use YouTube's closed captioning tool to provide accessibility for individuals with visual impairments.

g. Stakeholder Outreach:
SOT Engagement: During the SOT meetings, the Consultant will provide information about upcoming outreach and engagement to seek the SOT's help in distributing information.

Presentations to Key Stakeholder Groups and Member Organizations: The Consultant will present to the TCC and Executive Board at the end of the "Development of Solutions" Phase II and at the end of "Project Adoption and Presentation" Phase IV. Municipal/County Board presentations will be given to the municipal/county boards along the corridor as necessary.

CAMPO will be responsible for any costs associated with requested mailings and/or advertising.

C1.4 Engagement Techniques

The following techniques may be used to engage the public and solicit public input.

a. Public Meetings:
Five (5) public meetings will be held to educate and seek public feedback as follows:

- Phase 1: One (1) virtual public meeting. The goal will be to educate the public after data collection, confirm previous public input from other studies, and seek input.
- Phase 2: One (1) public meeting (to be determined with CAMPO (and based on state and local guidance concerning social distance guidelines) if the meeting will be held in-person or virtually). The goal of this phase is to educate the public about Phase 1 public input, recommended final alternatives, and seek input on the final recommended alternatives.
- Phase 3: Two (2) public meetings (to be determined with CAMPO and based on state and local guidance concerning social distance guidelines if the meeting will be held in-person or virtually). The meetings will be held to educate and seek public feedback. If meetings are held in-person, one meeting will be held for Wake County, and the second will be held for Harnett County.
- Phase 4: One (1) public meeting (to be determined with CAMPO (and based on state and local guidance concerning social distance guidelines) if the meeting will be held in-person or virtually). Present the public with the final recommendations.

The Consultant will prepare public meeting materials for each public meeting, including up to four (4) presentations (one per each phase), up to 15 display boards, up to four handouts (11x17, front and back), and up to three (3) surveys (as described below in b. Surveys). If in-person public meetings are scheduled, the presentation and/or materials from the meetings will be available on the project website for the public to participate remotely. The Consultant will provide CAMPO with digital files of public meeting materials so CAMPO can print upon public or stakeholder request. The Consultant will revise materials up to one time based on feedback from CAMPO.

CAMPO and the Consultant will determine the format for each public meeting (an open house style where information is available for the public to view at their leisure or presentation style where a presentation is given at a specific time) prior to each phase based on the goals for engagement and the information available. If meetings include a presentation, meetings may be live streamed. If public meetings are open house style, the materials will be posted to the website to provide the public with flexibility to review and provide input. The ESRI Story map tool may be used to aid in public engagement.

CAMPO's online meeting platform subscription will be used for live virtual meetings. CAMPO will determine and secure meeting space for in-person public meetings. Up to four (4) Consultant staff will attend each meeting.

Videos: Public meeting presentations can be recorded during the meeting and streamed live using CAMPO's Facebook page to include residents not able to attend at the time of the meeting. The videos may be posted to CAMPO's YouTube site and will use YouTube's closed captioning tool to provide accessibility for individuals with visual impairments.

b. Surveys:

The Consultant will develop online surveys to solicit public input during the first three (3) public engagement periods. CAMPO will use their PublicInput subscription, an online survey platform. WSP will provide content and graphics for up to three (3) surveys that will be developed in PublicInput by CAMPO. WSP will provide an update mid-way through each engagement period on performance of surveys and coordinate with CAMPO to identify gaps in target populations' involvement. WSP will conduct analysis of the results. The Consultant will revise the surveys up to one time per survey based on feedback from CAMPO.

c. Pop-Up Events: Pop-up events may be used, depending on social distancing guidance, to reach populations who typically do not attend public meetings, such as the Spanish-language community. The Consultant will perform "door to door outreach" or pop-up events as described under C3.3 Targeted Outreach. If pop-up events are chosen over "door to door outreach", the Consultant may host a pop-up event at two locations in the same day along the corridor; one at a Hispanic business and one at a popular destination along the corridor. The Consultant will use materials developed for the public meetings at the pop-up events.

d. ESRI Storymaps: The Consultant will use ESRI StoryMaps to relay project information. StoryMaps may be used as a tool for online public engagement to walk the public through project information before seeking their feedback. StoryMaps will also be used to develop the project materials, interim reports, and final report.

C.1.5 Public Engagement Summary

The Consultant will provide a written summary of all public engagement activities following each engagement phase for a total of four (4) summaries. The summaries will include graphics and charts to illustrate public input. All summaries will be combined into one document to be included in the final project report. The Consultant will revise each summary up to one time based on feedback from CAMPO.

Subtask C1 Deliverables

- (1) Public Engagement Plan (including revisions to account for an additional Phase 3 round of community engagement)
- (1) Review of the previous public engagement activities in the corridor – this will be presented through a memo and StoryMaps
- (Up to 4) Presentations
- (Up to 25) Display boards
- (17) Social Media Posts
- (4) Flyers
- (4) Digital Toolkits
- (3) Surveys
- (4) Handouts (using web content)
- (4) Summaries with an analysis of public input and survey results
- ESRI Storymaps for use in outreach and engagement

Subtask C2 – Project Website

The Consultant will develop a project website, similar to the layout and structure of the Triangle Bikeway Study, to convey project information and to collect public input. The website will include:

- A project overview,
- Anticipated schedule,
- A crowdsourcing map to collect public input on areas of concern; and,
- Information about public input and solutions that are developed.

The Consultant will use the website to host virtual engagement opportunities throughout the project to collect public input and inform the public. The ESRI Story Map will be linked from the project website. The Consultant will provide updates on information received via the website throughout the project to add additional project content, and/or public meeting materials. The Consultant will work with CAMPO to provide accessible information for persons with disabilities (provide content readable by screen readers). The Consultant will analyze crowdsource comments. At the conclusion of the project all the web files will be transferred to CAMPO.

C2.1 Project Branding

The Consultant will work with CAMPO to develop project branding that best represents the project purpose. Branding will make project materials easy to identify. Branding will be used on all project materials, including the website, meeting materials, and project documentation. The Consultant will provide one round of concepts based on client input and will revise the brand up to one time following a review of concepts. The Consultant will provide a memo of the brand standards to CAMPO for use in project activities.

Subtask C2 Deliverables

- (1) Website (hosted for 24 months)
- (1) Crowdsource Map
- Branding files
- (1) Analysis of crowdsource comments to be included in the phase summary
- Web files as the conclusion of the project

Subtask C3 – Spanish-Language Engagement

C3.1 Translation

The Consultant will be responsible for translating project materials, including advertising/promotional flyers, into Spanish. This includes up to 7,200 words for the duration of the project.

C3.2 Public Meeting Interpretation

The Consultant will provide up to one (1) interpreter for four (4) public meetings, as requested prior to a meeting by attendees. The Consultant will provide up to ten (10) sets of communication interpretation equipment to be used during the public meetings for interpretation services. If interpreters are not needed for the public meetings, the hours and time may be repurposed to provide up to one (1) interpreter for up to four (4) Spanish language stakeholder interviews or focus groups as determined in collaboration with CAMPO.

C3.3 Targeted Outreach

The Consultant will identify Hispanic businesses, organizations, and community centers along the corridor to be targeted for outreach. Spanish-speaking outreach specialists will provide direct outreach to inform the business, organizations, and patrons of those businesses/organizations about the project and encourage them to participate in the survey on the spot or at a later time. The outreach specialists will provide targeted outreach at four periods in the project along the corridor and surrounding areas. These targeted outreach periods may include “door-to-door” outreach, intercept surveys, or pop-up events at identified establishments. The Consultant and CAMPO will discuss the best approach for Hispanic outreach prior to each phase based on goals, previous success, and social distancing guidance.

C3.4 Documentation

The Consultant will develop a summary of outreach/LEP activities.

Subtask C3 Deliverables

- Translation of up to 7,200 words
- Summary of outreach/LEP activities to be included in each public engagement summary.

Task D – Planning and Environmental Analysis

Segments of the Corridor

Considering the varying nature of traffic, land use, and priorities along the corridor, the Consultant proposes to divide the corridor into three segments for the purpose of this study. This will enable the

Consultant to focus on the requirements of each segment individually. The Consultant proposes the following extents for each segment.

Segment 1 – US 401 Fuquay-Varina Bypass

This segment pertains to the planned greenfield bypass for US 401 passing through east and south of Fuquay Varina. The currently planned segment starts on US 401 between Banks Rd and Hilltop Road, crosses NC 42 and NC 55 amongst other roads, and merges back into US-401 with a possible extension to Piney Grove – Wilbon Rd. Being a greenfield bypass, the concerns on this segment are different from the other segments of the corridor. The Consultant will primarily focus on developing a conceptual alignment, location and type of intersections or interchanges, conceptual cross sections, impact on surrounding land uses, and phasing of the project.

Segment 2 – Fuquay-Varina – Banks Road to Harnett/Wake County Line

This segment pertains to US-401 starting from 150 feet north of Banks Road to the boundary of Wake and Harnett counties. This segment passes through Fuquay-Varina and its suburbs, where there is a high potential for future development. For this segment, the consultant will primarily focus on the capacity, safety, multimodal, and efficiency aspects along this segment.

Segment 3 – Southern Section – Harnett/Wake County Line to Lillington

This segment pertains to US-401 starting from the boundary between Wake and Harnett counties and ending at the intersection with NC 210 (Gateway to Lillington). This segment is primarily rural, albeit with high forecasted growth in the area. The segment runs parallel to a railroad line with two at-grade crossings, which impact the safety along the corridor. The consultant will primarily focus on preparing the segment for future increase in traffic, safety improvements, and the interaction with the segment with surrounding land uses.

Only the primary focus areas are mentioned for each segment and this list of concerns is not exhaustive.

Report Format

The Consultant will create the final report for this study in ESRI StoryMaps platform. All the deliverables mentioned in this and subsequent tasks and subtasks will be made using the ESRI StoryMaps platform. The final report will be available via StoryMaps and PDF for CAMPO use. The final report will also be available for use on the project website and the main CAMPO website.

SubTask D1 – Developing the Hierarchy

The Consultant will create a hierarchical outline of the report where chapters and sub-chapters will be organized in a tabular format and an overview of what each tab will contain. The Client will review this outline and the overview of constituent contents. The Consultant will make the changes to the outline based on the comments received. Once the hierarchy and contents are approved, the Consultant will create the basic structure of the project on StoryMaps format. Once the Consultant starts developing the pages on StoryMaps based on the approved hierarchy, any changes that impact more than one tab will incur additional costs.

Decisions to be made

- Hierarchy of chapters and sub-chapters which will form tabs and sub-tabs in the report
- Overview of content to be included within each sub-chapter
- Overall Organization and flow of information

SubTask D1 – Deliverables

- Preliminary list of chapters and sub-chapters that the document will contain based on the scope and other project considerations for client's comments, changes and tentative approval.
- Tentative final list of chapters and sub-chapters on which the StoryMaps document will be created.

The deliverable for this task is kept tentative because there may be minor changes in the order or structure of the document later. Any changes from the approved structure will be discussed with the Client before implementation.

Subtask D2 – Developing the Graphical Language

The Client will provide branding guidelines (either general agency guidelines or those specific to the project). The Consultant will develop up to two (2) mock pages on StoryMaps which will reflect the most appropriate graphical language based on the Consultant's design sensibilities, Client's branding guidelines and the options and features available on StoryMaps. The client will select the preferred option and provide comments or changes if any on the preferred option. The consultant will incorporate the comments provided by the client up to the extent permissible by StoryMaps. Once the Consultant starts developing the pages on StoryMaps based on the approved graphical language, any changes that impact more than one tab will incur additional costs.

Decisions to be made

- Type of StoryMap used
- Placement and direction of text
- Background and foreground color scheme
- Font type, size and color
- Base Map type

SubTask D2 – Deliverables

- Two (2) preliminary mock pages on StoryMaps for Client's approval and comments
- Final mock page and a list of decisions made on the aforementioned list.

The StoryMaps report will be supplemented with a short executive summary in a standard PDF format not exceeding 10 letter sized pages.

Subtask D3 – Existing and Previous Plans review

The key purpose of this subtask is to review planning and transportation improvements recommended by major studies conducted in the area in the past five years. For this purpose, the consultant will make

a list of studies, reports and documents pertinent to the area and send it to the Client to review. This list will include but will not be limited to 2045 CAMPO MTP, Harnett County Northwest Area Study, previous NCDOT studies including the US 401 EIS, and Wake Transit Plan. CAMPO is currently preparing the 2050 MTP. The consultant will refer to the 2050 MTP after it is adopted by CAMPO. The client will include additional material to the list if required and finalize the list of studies. The consultant will study these documents and examine the relevancy of their recommendations in terms of its applicability, integration with other recommendations and other current and future challenges. The goal of this review is to not perform analysis, design or development of recommendations that has already been proposed in previous studies.

Subtask D3 Deliverables

- List of reports and documents reviewed
- List of relevant recommendations to be acknowledged in this study

Subtask D4 – Environmental and Community Analysis and Agency Engagement

The consultant will analyze natural and community environmental conditions to conduct a red flag analysis along the corridor to inform alternatives developed in the design stage. The Consultant will perform this subtask using a desktop analysis, using the screening tool from NCDOT's Project ATLAS program, will review and backcheck the data gathered, and update data using ancillary GIS data as needed. The Consultant will further conduct one (1) field visit to verify data collected and identify community indicators not documented through standard shapefiles, such as community cohesion. The Consultant will create a map depicting relevant environmental conditions along the three segments of the corridor.

As an initial task, the Consultant will also carry out a demographic analysis and environmental justice (EJ), Limited English Proficiency (LEP), and Language Assistance (LA) screening using NCDOT's Demographic Snapshot Tool and CAMPO's Communities of Concern (CoC) data inventory. The consultant will refer to Longitudinal Employment-Household Dynamics (LEHD) data to understand the relationship between employment and demographics within the study area and will refer to Triangle Regional Model for future population and employment figures in the area. These findings will be presented through mapping and represented in the PIP.

Early identification of sensitive environment resources and initiating early coordination with applicable resource agencies is critical to streamlining the National Environmental Policy Act compliance process for projects that are recommended by this study. The Consultant will prepare a list of Agencies to be contacted for this purpose and send it to Client for review and approval. Initial engagement of environmental resources agencies will begin with notifying applicable resource agencies of the planning study from the list approved by the Client and request that they verify data collected and provide input on pertinent resources within the US 401 Corridor study area.

Each of the projects identified through the course of the study will be screened for their potential to affect environmental resources with emphasis on the regulated resources such as threatened and endangered species and their habitat, wetlands and streams, historic resources, and Environmental Justice populations. An environmental screening package containing a project description project

problem statement and project maps with pertinent environmental resource information will be prepared and distributed to applicable resources agencies.

Subtask D4 - Deliverables

The Consultant will create one (1) map for each of the following characteristics:

- Wetlands, creeks & streams, and floodplains
- Protected species critical habitat
- High Quality Waters, Outstanding Resource Waters, and Water Supply Watersheds
- Voluntary Agricultural Distracts (VAD) and farmland soils
- NCSHPO listed historic structures and districts
- Community Resources (schools, places of worship, parks/recreation centers, etc)
- Potential EJ communities (Census Block Groups identified during screening) and LEP/LA groups
- Communities of Concern
- Population growth 2013 – 2045
- Employment growth 2013 – 2045
- LEHD map 2017

The Consultant will provide the following deliverables in addition to the maps:

- List of Agencies to be contacted for review and approval by the Client.
- Data request letters for applicable Agencies
- Environmental Screening package for applicable Agencies

Subtask D5 – Land Use Analysis

The Consultant will collect and analyze existing land use inventory based on tax parcel data for Wake and Harnett counties. The Consultant will also develop an overview of the land use policies and ordinances in each of the jurisdictions in the Study Area and describe existing as well as projected land use patterns. The Consultant will gather data on availability and projections of public water and sewer facilities. The Consultant will also examine the availability and projections for public school facilities along with existing and planned school bus routes along the corridor.

Committed Development included as part of the CommunityViz model utilized to create Traffic Analysis Zone (TAZ) forecasts will be reviewed and updated based on current information available from local jurisdictions. Updates of associated land use scenarios and TAZ data will be created to be utilized as part of model runs in stage two of task E2 if needed. The land use suitability analysis included in the regional CommunityViz model will be updated as part of the process. Land use and transit service recommendations surrounding future access points will be included in the plan. Special attention will be given to transit supportive/commercial mixed-use areas and environmentally sensitive areas in the study area.

Subtask D5 – Deliverables

- One (1) map showing existing and planned Land use inventory
- Overview of land use policies and ordinances
- Overview of committed development
- One (1) map showing Land use suitability analysis

- One (1) map showing Land use recommendations

Subtask D6 – Market and Economic Analysis

The Consultant will perform a high-level socioeconomic analysis and real estate market scan of the corridor, with a particular focus on three (3) segments (US 401 Fuquay-Varina Bypass on the new location, and Southern section – from the proposed Bypass into Lillington) of the CAMPO US 401 corridor to assist in advising how multimodal corridor designs can stimulate desired development along the corridor. This task will include a review of prior market studies that have been conducted for the area to understand the baseline market conditions and future development expectations.

The Consultant will also conduct a real estate market scan to advise on potential developments outcomes within the corridor, with a focus on three (3) segments (US 401 Fuquay-Varina Bypass on the new location, and Southern section – from the proposed Bypass into Lillington) of the corridor under different transportation alternatives, including a review of recent trends in inventory, rents, and vacancy for residential, commercial office, and retail uses; residential analysis identifying how transportation investments affect the potential for residential uses at a high level; office analysis identifying how transportation investments affect the potential for office uses at a high level; and a retail gap analysis which identifies the potential viability of additional retail and restaurant uses under different transportation alternatives. The goal of this analysis will be to test the feasibility of proposed levels of development for priority development nodes within the corridor.

Subtask D6 – Deliverables

- A briefing document identifying the details of the findings of the market assessment including an estimate of development potential for the three segments.

Task E – Capacity and Safety Analysis

Subtask E1 – Existing and Planned Transportation Network

The consultant will obtain the details of existing and planned transportation network in the study area across five modes (roadway, rail, bicycle, pedestrian, transit) from publicly available sources including but not limited to NCDOT's functional classification map, CAMPO 2045 MTP, NCDOT STIP projects, Fuquay Varina 2035 Community Transportation Plan and the Triangle Regional Model. The consultant will use this data to prepare maps and in conjunction with the deliverables of subtasks D1 and D2, identify locations to address potential gaps in the networks.

The consultant will separately analyze the tentative alignments of the Fuquay-Varina Bypass as mentioned in the Triangle Regional Model, CAMPO 2045 MTP and other local plans.

Subtask E1 – Deliverables

The consultant will create one (1) map for each of the following characteristics

- Existing and Planned roadway network
- Existing and Planned bicycle and pedestrian network
- Existing and Planned transit network

Summary

- Summary of findings corresponding to each map mentioned here above.
- Evaluation of tentative alignments of Fuquay Varina Bypass mentioned in local and regional plans.

Subtask E2 – Travel Demand Modeling

The consultant will use Triangle Regional Model v6.2 as the primary tool to analyze existing and future year travel demand along the corridor. For this purpose, the consultant will use the official 2016 network for current year analysis. For future year analyses, CAMPO will provide the 2045 Existing plus Committed (E+C) network with additional projects as deemed necessary by CAMPO (referenced as E+C+A). The consultant will use 2025 or 2035 (pre-determined by the Client) official output if required for any intermediate year analysis. The consultant will use the updated TRM (v6.2) after it is officially adopted and made available for public use to update the analyses done in the first stage of this subtask.

Regional Tier:

Travel demand modeling will be used at two stages in this project. The first stage will be to determine existing (2016) and future (2045) travel demand and characteristics of the corridor. The analysis at this stage will include AM and PM peak volume to capacity ratios, distribution between automobile and truck volumes. The outputs from TRM base year will be analyzed in correlation with the 2016 Streetlight Data. The Client will provide the Consultant the means to access and extract the required information from the Streetlight Data portal. The results from the first stage will guide the traffic study, design recommendations, and alignment options.

Local tier:

In order to determine the origins and destinations of the trips using this corridor, and to differentiate between the trips that pass through the corridor from the ones that begin or end along the corridor, the Consultant will perform six (6) select link analyses for PM peak period in 2045 E+C+A network along the corridor. Six links, each located ideally at the ends of the three segments, will be selected for this analysis. For each pair of links located on the same segment, two Select Link Analysis will be performed, one capturing the traffic using both the links (through traffic) and one determining the traffic using either one of the two links (through and to/from traffic). The former will be subtracted from the latter to determine the traffic starting or terminating along the corridor. The goal of this analysis is to understand the distribution and behavior of traffic along the three segments of the corridor.

Recommendations stage:

In this stage, the Consultant will use preliminary recommendations to model up to two (2) alternatives using the TRM 2045 (E+C+A) network as base and analyze the outputs to help determine the final set of recommendations. The analysis at this stage will include AM and PM peak volumes along the corridor.

Subtask E2 – Deliverables

The Consultant will create one (1) map for each of the following characteristics
Stage 1 – Maps for Existing conditions (2016 and 2045)

- AM and PM peak Volume to Capacity Ratios for 2016
- AM and PM peak auto and truck volumes for 2016
- AM and PM peak Volume to Capacity Ratios for 2045 E+C+A network
- AM and PM peak auto and truck volumes for 2045 E+C+A network

- 2045 E+C+A PM peak select-link analysis for up to 6 locations

Stage 2 – Maps for Alternative Evaluations (2045) – Using Updated TRM, contingent on the updated TRM completion by this time

- AM and PM peak Volume to Capacity Ratios for Alternative 1
- AM and PM peak Volume to Capacity Ratios for Alternative 2

Subtask E3 – Traffic Analysis

The Consultant will perform the traffic analysis for existing and two future year conditions, short-term (5-10 years) and long-term (2045).

E3.1 Data Collection

The Consultant will coordinate with the Client and Stakeholders to collect relevant data: turning counts, annual average daily traffic data, signal timing plans, where it exists, and coordinate with the Client to understand its usability for analyses. Additionally, the Consultant will also perform a field visit to verify the information gathered.

E3.2 Volume Development

Given the current coronavirus-related challenges with collecting new and reliable data, the Consultant will use previously collected turning movement counts, annual average daily traffic (AADT) data, historical growth rates, and regional model data to develop existing and future traffic volume estimates for the intersections in the study area. Additionally, the Consultant will use the Streetlight data provided by CAMPO. The Consultant will develop base year, future year no-build and build volume exhibits.

E3.3 Analysis

The Consultant will prepare and analyze the following conditions for the intersections and interchanges in the study area using Cap-X, HCS, Synchro/SimTraffic and/or SIDRA software tools:

- Base Year 2019
- Future Year 2025 or 2030 (Short-Term) No-Build and Build
- Future Year 2045 (Long-Term) No-Build and Build

The analyses will include up to seventeen (17) signalized intersection, thirteen (13) unsignalized intersections and six (6) interchanges along the study corridor. The No-Build will include all the planned projects in the study area in accordance with the future year analyzed.

Intersections:

Signalized:

1. US 401 at N Main Street/US 421
2. US 401 at Pine State Street
3. US 401 at Brightwater Drive/McKinney Parkway
4. US 401/S Main Street at Judd Parkway (South)
5. US 401/S Main Street at Vance Street
6. US 401/S Main Street at NC 42/SR 1107 (Academy Street)
7. US 401/NC 42/N Main Street at Wake Chapel Road
8. US 401/NC 42/N Main Street at N Ennis Street

9. US 401/NC 42/N Main Street at SR 1107 (Judd Parkway NE)
10. US 401/NC 42/NC 55/N Main Street at Shopping Center/Zaxby's Driveway
11. US 401/NC 42/NC 55/ N Main Street at Purefoy Road/Sunset Lake Road
12. US 401/NC 42/NC 55 at Lakestone Commons Avenue
13. US 401 at NC 55/NC 42 - part of U-5751 – will not be studied as part of this corridor study, but recommendations from the U-5751 project will be included
14. US 401 at Mill Creek Drive/Ideal Lane
15. US 401 at Dwight Rowland Road
16. US 401 at SR 1375 (Lake Wheeler Road)
17. US 401 at SR 1393 (Hilltop Needmore Road)/Hilltop Road/Air Park Road
18. US 401 at SR 2724 (Banks Road)

Unsignalized:

1. US 401 at SR 1412 (Christian Light Road)
2. US 401 at Ballard Road
3. US 401 at SR 2215 (Harnett Central Road)
4. US 401 at SR 1403 (Kipling Road)
5. US 401 at Lafayette Road
6. US 401 at Lafayette School Road
7. US 401 at Chalybeate Road (South)
8. US 401 at Chalybeate Road (North)
9. US 401 at SR 1441 (East Williams Street)
10. US 401 at Spence Mill Road
11. US 401 at Rawls Church Road
12. US 401 at SR 1414 (Piney Grove Rawls Road)
13. US 401/S Main Street at Wagstaff Road

Potential Interchanges:

1. US 401 Bypass at US 401
2. US 401 Bypass at NC 42
3. US 401 Bypass at Kennebec Road
4. US 401 Bypass at NC 55
5. US 401 at NC 55/NC 42 – part of U-5751 - will not be studied as part of this corridor study, but recommendations from the U-5751 project will be included
6. US 401 Bypass at Purefoy Road
7. US 401 Bypass at US 401

The Consultant will conduct the analysis for all the intersections and interchanges in the study area using HCS, Synchro/SimTraffic, SIDRA software tools. A future year (2045) operations-level analysis will be conducted for the intersections and interchanges along the existing alignment as well as the bypass section. This will provide a comparison point for the future year with project (transportation improvement strategies) analysis.

For new locations, a planning level analysis will be conducted using the Federal Highway Administration's (FHWA) Capacity Analysis for Planning of Junctions (Cap-X) software tool. Cap-X was developed by FHWA for the specific purposes of conducting a screening level analysis of intersections

using volume to capacity ratio and critical lane volumes. This screening level analysis will identify the locations of critical importance for advancing into a higher tier of analysis.

TransModeler, a microsimulation tool will be used on up to two (2) locations, to analyze complex areas which include unconventional grade separated roadways to further evaluate the final transportation improvements.

The Consultant will summarize the capacity analysis measures of effectiveness (MOEs) in a table. The results from the existing and future year analysis will be used to develop the short-term and long-term recommendations for the study area locations.

E3.4 Failure Year Analysis

For intersections identified as operating at poor levels of service in the analysis, additional analysis will be performed to determine their failure year. This will give stakeholders and the public an idea of the timeliness and benefits of potential improvements.

Subtask E3 – Deliverables

- Traffic models
- Traffic analysis summary and recommendations to be incorporated into the final report.

Subtask E4 – Safety Analysis

The Consultant will obtain the crash data for the US 401 corridor, from 150 feet north of Banks Road to North Main Street in Lillington, NC, with a 150-foot y-line, for the most recent five (5) year period from NCDOT Traffic Safety Unit. Additionally, the Consultant will obtain the railroad crossing safety data from NCDOT Rail Division. The Consultant will:

- Coordinate with NCDOT Traffic Safety Unit to obtain the data.
- Preparation and QC of the strip crash analysis using TEAAS.
- Review of crashes/crash history
- Perform safety review and prepare summary tables

Using this data, the Consultant will identify high crash and high severity locations along the corridor. For these locations, the Consultant will review roadway and railroad injury/fatality crashes and bike/pedestrian-related crashes. Based on existing issues/patterns, the Consultant will identify countermeasures/improvements that can be incorporated into the corridor design to improve safety.

The findings from the crash data, along with other information, will be used to determine improvements to study area intersections.

Subtask E4 – Deliverables

- Raw crash data obtained from NCDOT
- Crash analysis summary to include in the final report

Subtask E5 – Modeling Analysis for Additional Corridors

The Consultant will conduct modelling and analysis on two (2) new alignments (an eastern alignment and a western alignment that use existing roadways), as follows:

The Consultant will assist CAMPO in developing the alignments to be studied:

- The Consultant will provide GIS shapefiles showing the location of two (2) new alignments to CAMPO. This includes identifying two (2) new alignments and developing a shapefile that shows appropriate curves for both alignments depending on the design speed.

The Consultant will assist CAMPO with setting up the model for the new alignments. CAMPO will be responsible for model runs and model results.

- The Consultant will provide the number of lanes, speed, location, and types of interchanges and intersections to CAMPO along with the alignments' shapefiles. CAMPO will be responsible for making changes to the model to incorporate the new alignments with appropriate intersections and centroid connectors to the new alignments. CAMPO will also be responsible for running the model and summarizing results.

The Consultant will assist CAMPO with collecting data for each alignment to match the Phase 2 data collected for the other alignments.

- The Consultant will collect and analyze GIS data for the two (2) new alignments for all the parameters against which the previous alignments were evaluated and place the new alignments in the ranking matrix.

The Consultant will develop the following maps to show the public and stakeholders:

- One (1) map showing the overall location of two (2) new alignments without showing all of the constraints.
- One (1) map each for three (3) sections of both new alignments showing the location of Voluntary Agricultural Districts (VADs), new and upcoming developments, cemeteries, historic properties, environmental concerns, and other details as shown in the section-wise maps in previously.

Subtask E6 – Further Development of Additional Alignments

The Consultant will undertake further analysis and development of two (2) new alignments (an eastern alignment and a western alignment that use existing roadways) and the expanded study area that accompanies these new alignments to the level of detail outlined above in Subtask D1-D6 and Subtasks E1-E4. This includes:

- Data collection for expanded study area
- Conduct bike/ped analysis, transit analysis, land use analysis, environmental/ community analysis, and other conditions assessments for the new alignments not already undertaken as part of Task D and E.
- Collect and analyze additional data for any new intersections and new segments to understand how the new alignments will impact traffic and safety. This will include traffic volume development and analysis and intersection/ interchange analysis of baseline and future year.
- Develop typical sections, interchanges, and intersections of new alignments.

Task F – Design Development

The Consultant will work with CAMPO and the CTT to develop a methodology for selecting a preferred alignment. This methodology will include a combination of the alignment rankings matrix used to get from eleven (11) alignments to the three (3) alignments advanced, as well as input from the CTT, CAMPO, and NCDOT.

Subtask F1 – Conceptual Designs

The Consultant will develop conceptual plans in accordance with but not limited to:

- NCDOT Roadway Design Manual
- 2018 NCDOT Roadway Standard Drawings
- 2018 Standard Specifications for Roads and Structures
- A Policy on Geometric Design of Highways and Streets AASHTO 2011
- NCDOT Complete Streets Planning and Design Guidelines 2018

The Consultant will develop conceptual design (curb lines, lane lines, edges of pavement, right of way, bike/pedestrian facilities) for the US 401 Corridor using Open Road Designer software for the following:

- Segment 1 - US 401 Fuquay-Varina Bypass with potential interchanges and tie-ins to NC 55, NC 42 and Future NC 751.
- Segment 2 - Fuquay-Varina section that improves mobility along the corridor with intersection improvements at key locations.
- Segment 3 – South from Harnett/Wake County line that improves mobility along the corridor, creating a gateway into Lillington.

The Consultant will prepare Design Assumptions to review and approve before starting the conceptual design plans. The Consultant will use only pertinent publicly available information obtained from online sources or the Client to prepare the conceptual designs. The Consultant will prepare functional design plans using approved design assumptions to meet as stated above the guidelines at a scale of 1” =100’ horizontal and 1” =20’ vertical. All cross-sections will be computer generated in 100’ increments for standard roadway sections.

The Consultant will submit 34x22 full-size sets of the conceptual designs in soft copy pdf format. CAMPO shall review the conceptual designs and provide comments for consultant to address. There will be up to two (2) review cycles at the end of which the Consultant will revise plans per CAMPO and CTT comments and provide a conceptual construction per mile estimate at approval. The approved conceptual drawings will be used to generate 2D photoshop-rendered plans with appropriate aesthetics at the scale of 1” = 200’. These concepts will be linked to their corresponding map segments on the StoryMaps platform.

Subtask F1 – Deliverables

The Consultant will make the following submittals to the Client.

- Design Assumptions

- Typical Sections
- Plan Sheets with Horizontal Design for all Alignments
- Conceptual Construction Phasing Concept – Narrative Format
- Conceptual Construction Cost Estimate
- 2D photoshop-rendered plans at forty (40) key locations at 1" = 200' from approved conceptual designs.
- Up to Four (4) Typical Cross-section Renderings (2D)

Subtask F2 – Bicycle and Pedestrian Facilities

The Consultant will conduct a plan review of local and regional bicycle and pedestrian facilities in the study area. The review will include an inventory of major alternative transportation facilities, modes, or plans (bicycle, pedestrian, greenway, etc.) on or adjacent to US 401 and along up to 3 additional viable new-location alternatives or segments. Key destinations and bicycle and pedestrian priority areas will be defined in tandem with the existing conditions analysis.

- Segment 1 - US 401 Fuquay-Varina Bypass

The Consultant will focus on the potential of bike-ped networks -associated with this corridor brought upon by future land use demand in this segment.

- Segment 2 - Fuquay-Varina section

Considering the high potential for bike-ped facilities in this segment, especially in Downtown Fuquay-Varina, the Consultant will focus on the current gaps in the network, land use recommendations and complete streets principles for developing recommendations in this segment.

- Segment 3 – Southern Section

Although primarily rural, high future growth may create a need of basic bike-ped network on which the Consultant will focus for this section.

After a recommended set of roadway improvements is defined, the Consultant will determine short term and long-term recommendations to accompany and complement recommended roadway improvements. Interim improvements that support local mobility will be identified including priority complete street elements along US 401 and key connecting roadways. Regional needs, including connectivity between the planned Neills Creek Greenway and the towns of Lillington, Angier and Fuquay-Varina will also be documented. Recommended policies and suggested updates to local plans will be included in the draft and final report.

Subtask F2 – Deliverables

The consultant will make the following submittals

- Summary of plan review of local and regional bicycle and pedestrian facilities in the study area
- One (1) map showing inventory of major alternative transportation facilities, modes, or plans (bicycle, pedestrian, greenway, etc.) on or adjacent to US 401
- One (1) map showing short term and long-term bike-ped recommendations to accompany and complement recommended roadway improvements
- Summary of recommended policies and suggested updates to local plans

Subtask F3 – Transit

The Consultant's approach for transit planning along the US 401 corridor would focus on three key considerations: destinations, transfer opportunities, and transit priority improvements.

Destinations – Current development patterns are not conducive for transit use and so attention will be paid to destinations with development opportunities that could include density, mixed-use, and affordable housing. The Consultant will review opportunities to provide safe and accessible bicycle and pedestrian connections between these existing and potential destinations and bus stops with existing aerials and GIS layers, planned infrastructure improvements, and land use plans.

Transfer Opportunities – Improved transit service along US 401 should connect to the other planned regional transit projects to further connect to other locations within Orange, Durham, Johnston, and Wake Counties. There will be an opportunity at Purser Drive in Garner to transfer to the existing GoRaleigh 7 (South Saunders) route and the planned Wake BRT: Southern Corridor, Town of Garner local bus service, Triangle Commuter Rail, and BRT to Clayton. The Consultant will review regional transit plans and identify transfer opportunities both along the corridor and between municipalities in the study area and other municipalities outside the study area (ex. Fuquay-Varina transit connection to Apex then Cary, etc.)

Transit Priority Improvements – Implementation of any transit enhancements along the corridor would consider both operational service aspects and the physical infrastructure required to provide safe and accessible stops. Opportunities for transit priority improvements – ex. queue jump lanes, in-lane bus stops, signal preemption – would be considered as cross-sections are developed. The Consultant will identify transit priority improvement locations that could provide the most benefit to bus speed and reliability.

Subtask F3 – Deliverables

The consultant will make the following submittals

- Summary of recommendations outlining connections between existing and potential bus stops and destinations. Map deliverable for this item will be merged with that in subtask F2.
- Summary of review of regional transit plans affecting the corridor study area and potential connections to other municipalities.
- Summary of recommended transit improvements along the corridor.

Subtask F4 – Railroad Crossings

The US 401 corridor crosses Norfolk Southern "VF" and "NS" rail lines three times within the project study area, with two at-grade crossings and one railroad overpass. The Consultant will evaluate both at-grade railroad crossings, one grade-separated crossing and seven intersections in proximity to railroad crossings along the US 401 corridor and provide recommendations to address any existing issues. These recommendations will be specific to roadways and will cater to safety aspect of railroad crossings. These recommendations will feed into traffic analyses and functional design. These include intersection of US 401 with Harnett Central Road, Lafayette Road, Lafayette School Road, Chalybeate Road, Rawls Church Road, Piney-Grove Rawls Road, and Wake Chapel Road.

The Consultant will also contact Norfolk Southern to inform them of the project. Recommendations received from Norfolk Southern will be evaluated and potentially incorporated while developing the roadway and other recommendations along the corridor.

Subtask F4 – Deliverables

The consultant will make the following submittals

- Summary of recommendations received from Norfolk Southern and their potential impact on US 401 corridor study

Summary of roadway specific safety recommendations at two (2) at-grade railroad crossings, one (1) grade-separated crossing and seven (7) intersections near the railroad line.

Subtask F5 – Preferred Alternative

The Consultant will work with CAMPO and the CTT through a workshop style meeting to develop a methodology for selecting a preferred alignment. The methodology developed will include a combination of the alignment rankings matrix used to get from eleven (11) alignments to the three (3) alignments advanced, as well as input from the public, CTT, CAMPO, and NCDOT. The preferred alignment could be taken as a single alignment or combining portions of various alignments that have already been advanced through the current study process.

Subtask F5 – Deliverable

The consultant will make the following submittal(s)

- Documentation of methodology used in determining the preferred alignment.
- Map and materials that show the preferred alignment.

Task G – Implementation Plan and Final Report

The Consultant will compile the final improvement strategies into a concise Implementation Plan that clearly describes the steps needed to implement recommended strategies, the timeframe(s) in which each step occurs, responsible agency, estimated costs, and potential resources. Proposed cross-sections and estimated right-of-way needs will be provided for recommended capital projects. Any recommended amendments to local land use policies will be identified and described for each jurisdiction. The final plan will include short and long-range multimodal concepts and strategies, a phasing plan, documentation of agency and public outreach efforts, and an implementation matrix by time frame and segment. This report will be prepared using ESRI StoryMaps platform.

Subtask G1 – Transportation Solutions

The plan will include transportation solutions that are crafted to meet the short-, mid-, and long- term needs of the corridor and its constituents. Visualization products will be included as appropriate to best communicate the intent of each solution, including plan view renderings, typical cross sections, microsimulation results, and concept designs. Any associated changes to policy documents, or other plans will be identified to reflect the proposed solutions.

Subtask G2 – Cost Benefit Analysis

For the recommended improvements, the Consultant will develop preliminary construction cost estimates based on current NCDOT bid averages including adjustments for construction cost escalation. The selected solutions will include tables describing the impact on environmental features and property impacts.

Subtask G3 – Land Use Vision

The Consultant will demonstrate how changes to the corridor could emerge because of the transportation investments; this will integrate the transportation and land use plans. While we cannot foresee exactly what developments will emerge, we can set the stage for quality placemaking, TOD and walking environments that will enrich the experience of and functionality of the corridor. The land use plan will include recommended land use, development and place making policies that can be used to guide physical change and ensure transportation improvements are made concurrent with the demand for them that is created by development in the corridor.

Subtask G4 – Environmental and Community Resources and Agency Engagement

A summary of the potentially affected environmental and community resources as well as pertinent agency input associated with each of the proposed transportation solutions will be included in the Implementation plan. Early identification of potentially affected resources, particularly red and yellow flag issues, is important to streamlining the environmental review process in subsequent phases of project planning and development. Doing so will allow more flexibility in adjusting project definitions and addressing issues that may have long leads times in the resolution process. Similarly, early engagement of environmental resource agencies allows for the development of appropriate agency coordination plans in subsequent phases of project planning and development.

Subtask G5 – Prioritization and Funding

Using the performance measures as a base, the Consultant will create a prioritization plan for the corridor. This will include implementation of solutions and how they are proposed to be funded. This will include potential local, regional and state funding including submitting solutions for SPOT approval. The goal is to submit solutions for the projects that implementable and reasonably valued.

Subtask G6 – Final Report

The final report will be developed using ESRI StoryMaps. This format will be useful to allow for viewing via the project website, mobile device, or hard copy. This format can be translated easily into PDF to be used as necessary by CAMPO.

Task G Deliverables:

- Final study deliverables, white papers, and graphics describing the transportation and land use vision for the project that will include a prioritized list of short-, mid-, and long-term improvements between the existing year and 2045, along with policy recommendations and an implementation and phasing plan for transforming that vision into reality (the Client will be responsible for any revisions to the 3D visualizations and massing diagrams developed in this Task). The project materials will clearly describe the steps needed to implement recommended

strategies, the timeframe(s) in which each step occurs, responsible agency, estimated costs, and potential resources.

- Hard and digital copies of final study deliverables

Summary of Costs by Task

Task Number	Task Name	Original Contract Value	Revised Contract Value
DE	Direct Expense	$2,443.74	$1,500.00
A	Project Management	$18,126.56	$2,500.00
B	Stakeholder Engagement	$14,940.52	$0.00
C	Public Engagement	$54,747.16	$37,000.00
D	Planning & Environmental Analysis	$69,365.89	$22,000.00
E	Capacity & Safety Analysis	$46,934.54	$18,000.00
F	Design Development	$74,264.94	$9,000.00
G	Implementation Plan	$18,268.05	$0.00
		$299,092.40	**$389,092.40**

Process for Project Completion