

Scope of Work submitted to City of Alpharetta Department of Public Works for Task Order #8: Windward Parkway Concept Design SR 9 to Union Hill Road

Submitted to:

Pete Sewczwicz
Director of Public Works
City of Alpharetta Department of Public Works
1790 Hembree Road
Alpharetta, Georgia 30009

Email: psewczwicz@alpharetta.ga.us
Phone: (678) 297-6219

Submitted by:

Tetra Tech, Inc.
1899 Powers Ferry Road
Suite 400
Atlanta, Georgia 30339

Email: brian.watson@tetrattech.com
Phone: (770) 738-6030

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A. Introduction

The City of Alpharetta (City) has requested conceptual design for the widening of Windward Parkway from 4 lanes to 6 lanes from the intersection of SR 9 to Union Hill Road. The conceptual design will also include the widening of Union Hill Road to 4 lanes from Windward Parkway to McGinnis Ferry Road. The current road layout has 2 lanes in each direction with multiple right turn lanes. The proposed layout will eliminate the right turn lanes to create an additional lane in each direction. A 4' bicycle lane will also be included in both directions along Windward Parkway.

The conceptual layout will not include the section of Windward Parkway in the area of SR 400. It is our understanding that this area is being design under a separate contract. Coordination with the design consultant to connect to this work will be included in this work.

The future greenway crossing of Union Hill Road will be considered as part of the conceptual design. A tunnel crossing will be evaluated near Union Hill Park where the future path will connect.

This project is being performed in accordance with the City of Alpharetta/Tetra Tech On-Call Engineering Contract (16-1009) executed August 19, 2016.

B. Scope of Work

This project includes the conceptual design of the proposed road widening as described above. Below is a description for each task including in this work.

Task 1. Underground Utility Locates (Optional):

Provide underground power, water, gas, and communications utility location within the project limits. Underground utilities shall be researched and marked by a third-party consultant utilizing Radio Frequency technique with field location and measurement of the markings provided by RAI personnel. The marked locations provided by said third-party consultant shall be field located and measured within reasonable survey tolerances under Task 2. A description of work performed under this task is listed below.

- A. Physical Markings - Paint and/or flags will be placed on the ground directly above all traceable underground utilities within the specified area. Each utility will be marked with a specific color. Underground utilities will be located utilizing radio frequency techniques. This technique is capable of locating metallic utilities and other utilities with tracer wires. Non-metallic utilities and utilities without tracer wires will not be physically marked on the ground. Utilities not located utilizing this technique may exist, but not be marked, and may be disturbed upon excavation. Also, we will not locate underground storage tanks, irrigation systems, traffic control wires and cables as well as sewer and storm drain lines.

- B. Site Sketch - A detailed sketch of the subject site will be provided in electronic format. Said sketch will detail the approximate locations of all underground utilities. This sketch may be added to an existing drawing of the site, or to an aerial photograph of the site. Notes will be placed on the sketch indicating possible existence of underground utilities and improvements that were not marked on the ground. This sketch will be used in conjunction with the field surveyed locations from Task 2 to prepare an accurate database.
- C. Utility Owner Information -The owner of each respective utility affecting the subject site will be determined and documented, including names, addresses and phone numbers. The sources of this information will be from a "one call" Ticket and other sources as may be required.
- D. Limitations - UtiliSurvey, LLC, will expend reasonable efforts to determine the actual location of all existing underground utilities within the project area. It is expressly understood by both parties that utilities may exist within the subject area, but not be marked or located, especially if no above ground evidence of the utility exists. We locate underground utilities solely as an accommodation and our markings/locates shall not be used for excavation. We accept no liability for ANY underground utilities that are not locate or marked by us.

Task 2. Utility Mapping Survey (Optional):

- A. Field survey the underground utility locations marked under Task 1 above. In addition, gravity storm and sanitary sewer systems will be surveyed with pipe invert, size and material information. The survey data will be placed on the Georgia State Plane Coordinate System (NAD 83) and the Vertical Datum for the topographic survey will be NAVD 88. The survey will collect the following information:
- Utility locations as marked under Item B above.
 - Location and sizes of storm sewer systems, manhole, catch basin, drop inlet, curb inlet with rim and invert elevations, if accessible; pipe size; inverts and material, if accessible as needed.
 - Sanitary sewer systems; manhole rims and inverts, pipe sizes and materials, if accessible and as needed.
 - Location of valves, meters and other gas main appurtenances, if accessible and surface evident.
 - Location of overhead electric lines, telephone lines and appurtenances.

Task 3. Aerial LiDAR and Imagery (Optional):

In order to provide an accurate survey database to build the concept upon that can also be used to progress the design once approved, we recommend that aerial LiDAR data be collected and utilized given the length of the project corridor. This task would include the acquisition of LiDAR data at approximately 20 points per meter and imagery to support 1"= 50' mapping and 3" pixel resolution orthophotography. The project also includes the extraction of planimetric and DTM features in order to supply final deliverables meeting GDOT CADD Standards. The full scope of the project is outlined below.

- A. Acquisition of simultaneous helicopter LiDAR and digital imagery dataset resulting in point density of approximately 20 points per meter and 0.25' pixel imagery.
- B. The LiDAR and imagery will be post processed base station recording at 1 sec epochs during aerial data acquisition.
- C. Control to be utilized in calibration consisting of 8 XYZ points.
- D. Classification of data within the corridor.
- E. Compilation of Linear Road Features from LiDAR data within the project area to include:
 - a. Lane Lines
 - b. Edge of Pavement (Shoulder)
 - c. Curbs
 - d. Sidewalks
- F. Compilation of non-Road planimetric and DTM features within the corridor from aerial imagery and supplemented with LiDAR derivatives. Compilation of planimetrics will follow Georgia DOT CADD standards.
- G. Generation of 1' contour data utilizing classified bare earth LiDAR and compiled breakline data.
- H. Project Deliverables
 - a. Georgia DOT-formatted CADD files, including:
 - i. Planimetrics
 - ii. DTM
 - iii. 1' Contours
 - b. Color orthophotography with 3" pixel resolution delivered in TIFF/TFW format
 - c. Calibrated, bare earth classified LIDAR in LAS format. Classifications will include
 - i. Class 1-Default
 - ii. Class 2-Ground
 - d. LiDAR Accuracy report

Task 4. Conceptual Design:

A conceptual horizontal road widening layout will be prepared based on input from the City as well as evaluations from the available topographic data, aerial imagery, available utility mapping and site visits. The road corridor is heavily developed and has several utilities, trees, parking areas and topographical components that will need to be considered. This section also has several traffic signals and a bridge that will need to be addressed. For this reason, it is our recommendation to complete the survey database as described in Tasks 1-3 above to be used for the conceptual layout. The horizontal layout will have significant conflicts with utilities and other features, some of which could have an impact on the layout. This approach provides a better opportunity to identify these conflicts and design constraints at the concept stage so that a better understanding of the impacts from the proposed widening can be conveyed to all the stakeholders.

Site visits will be performed to review the proposed layout against on site conditions and document areas containing constraints or special consideration. Information gathered will be used in the layout of the proposed improvements. The horizontal layout prepared will be evaluated against available topographic data (GIS or LiDAR, if performed) to identify walls and significant slopes they may have an impact on properties or project costs. Intersections will be reviewed for proposed signal modifications required to accommodate the improvements.

The proposed deliverable will be aerial imagery overlaid with the proposed roadway widening limits shown. The corridor will be studied in detail to identify significant conflicts and areas that may have design and/or permitting challenges. The proposed improvements along Windward Parkway from Westside Parkway to SR 400 performed by another consultant will be incorporated into the conceptual plan as well. The proposed conceptual layout will be designed to connect to these improvements. A memo style report containing a summary of proposed improvements and any design constraints identified will also be provided.

If the City chooses to have the survey database prepared as outlined in Tasks 1-3, it is anticipated that the conceptual plan produced under this task would be close to a 30% design which could be built upon for final design and construction drawings when appropriate.

C. Project Cost

The costs are based on our current understanding of the project requirements and best estimates of level of effort required to perform the basic services and may be subject to change upon agreement between City of Alpharetta and Tetra Tech. This project will be billed on a Lump Sum basis at a Firm Fixed Price of \$172,975.

Task #	Description	Fee
Task 1	Underground Utility Locates (Optional)	\$17,970
Task 2	Utility Mapping Survey (Optional)	\$29,040
Task 3	Aerial LiDAR and Imagery (Optional)	\$34,485
Task 4	Conceptual Design	\$91,480
TOTAL		\$172,975

D. Project Schedule

The approximate duration noted for each task is based on our current understanding and best estimates of time required to perform the basic services and may be subject to change upon agreement between City of Alpharetta and Tetra Tech.

Task #	Description	Estimated Duration
Task 1	Underground Utility Locates (Optional)	3 weeks
Task 2	Utility Mapping Survey (Optional)	4 weeks
Task 3	Aerial LiDAR and Imagery (Optional)	4 weeks
Task 4	Conceptual Design	15 weeks

E. Assumptions

The scope of services and project costs shown above were developed with the following assumptions and exclusions:

- City of Alpharetta will provide GIS parcel and Right-Of-Way information available to be used for project corridor.
- If the optional survey work is not performed, the City will provide GIS topographic data for use.
- GIS stream data will be utilized for the database.
- City of Alpharetta will provide proposed improvements at SR 400 performed by others.
- City of Alpharetta will organize and perform stakeholder meetings as needed.