



Environmental, Planning, and Engineering Consultants

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June 2, 2023

Frank Petise, P.E.
Bureau Chief, Transportation, Traffic and Parking
City of Stamford
888 Washington Bl
Stamford, CT 06901

Re: Broad Street Corridor Safety Improvements Design

Dear Mr. Petise:

AKRF, Inc. (“AKRF” or the “Consultant”) is pleased to present this proposal for traffic planning engineering consulting services to the City of Stamford (the “Client”) in connection with the Broad Street Corridor Safety Improvements Design. A detailed scope of work was provided on March 3, 2021 based on the tasks identified during the Broad Street Kick-Off meeting on September 29, 2020. Through work completed on Tasks 1 through 5, AKRF assisted the City in submitting a revised design to Connecticut Department of Transportation (CTDOT) incorporating a variety of safety improvements which necessitated the removal of the median along Broad Street from Atlantic Street to Grey Rock Place. As such, the roadway design now includes full curb to curb roadway replacement with limited sidewalk replacement. The following summarizes all tasks to be completed for the Broad Street Corridor Safety Improvements project including the new and modified (shown underlined below) tasks based on the concept plan approved by CTDOT:

TASK 1 – CRASH ASSESSMENT

The most recent three (3) years of available crash data records (prior to March 2020) from the UCONN Crash Data Repository along Broad Street from Bedford Street/Atlantic Street to Greyrock Place will be obtained and summarized in tabular form and compared to crash statistics noted in the LRARP Application to determine changes in vehicular safety conditions and crash patterns in the study area. AKRF will make recommendations to alter or implement additional improvement measures from the LRARP application and will document the findings in a technical memorandum to the City.

TASK 2 – CAPACITY ANALYSIS

Following the identification of preliminary improvement measures in Task 1, AKRF will conduct intersection capacity analyses to be compared with the analysis of the preliminary improvement measure evaluate and refine the preliminary improvement measures.

Traffic Volume Development

AKRF will develop turning movement volumes for the weekday AM, weekday midday, weekday PM and Saturday midday peak periods utilizing data from the 2017 Citywide Signal Optimization project and

adjusting for the Estimated Time of Completion (ETC). AKRF will coordinate with the City to confirm the growth rate and identify any proposed projects that could generate and assign traffic to the study locations.

Intersection Capacity Analyses

AKRF will perform a capacity analysis at each of the following study intersections using the Synchro 10 traffic modeling software to evaluate intersection service conditions for average delay per vehicle and level-of-service (LOS).

- Washington Boulevard and Broad Street
- Franklin Street and Broad Street
- Summer Street and Broad Street
- Bedford Street/Atlantic Street and Broad Street
- Gay Street and Broad Street
- Greyrock Place and Broad Street
- Suburban Avenue and Broad Street
- Grove Street and Broad Street

Intersection capacity analyses will be conducted for the weekday AM, weekday PM and Saturday midday peak hours to confirm current operating conditions, operating conditions with recommended improvement measures, and to recommend signal timing adjustments based on improvements. For instance, pedestrian refuge islands or curb extensions which shorten the crosswalk could reduce the necessary clearance time for the pedestrian phase.

The intersection capacity analyses will be summarized in tabular form.

TASK 3 – CONCEPTUAL PLANS

AKRF will develop conceptual improvement plans presenting the recommendations from Tasks 1 and 2 for public outreach efforts. AKRF will revise the plans at the conclusion of the public outreach process and including any comment from the City to produce one final conceptual plan set.

In addition to developing the conceptual improvement plans as noted in the original Scope of Work dated March 3, 2021, AKRF was directed by the City to develop a cost estimate per CTDOT guidelines in support of the increased funding request to CTDOT. The fee in **Table 1** below includes the agreed upon fee for the initial cost estimate as well as funds to address the comments received by CTDOT dated September 26, 2022.

TASK 4 – COMMUNITY ENGAGEMENT

AKRF will develop a presentation to be used for up to one stakeholder outreach meeting and up to two community presentations including safety trends, general operating conditions and proposed improvement measures. AKRF will attend each meeting, record stakeholder and community feedback, and summarize the information for the City.

TASK 5 – BOUNDARY AND TOPOGRAPHIC SURVEY

Once authorized by the City, AKRF will retain Freeman Companies to complete a Boundary and Topographic Survey of Broad Street including the intersections of Bedford Street/Atlantic Street, Gay Street and Greyrock Place to facilitate the design of the safety improvements. The topographic survey will include the following:

- Boundary and right-of-way survey
- Spot elevations on an approximately twenty-five (25) foot grid to generate contours at one (1) foot intervals.

- Utility information based upon utility company mark outs, available mapping and physical field evidence.
- Storm and sanitary rim/grate elevations including invert, pipe size and flow direction based on record data.
- Horizontal location of major site features such as buildings, fences, paved areas, area lighting, curbing and striping.

TASK 6 – DESIGN DEVELOPMENT PLANS (60% PLANS)

Based on the CTDOT approved Concept Plan, AKRF will prepare Design Development (DD) Plans (60% construction document level) for the proposed improvement measures for review and comment by the City’s Transportation, Traffic & Parking Department (i.e. Traffic Department) and the CTDOT. We assume that internal circulation to other City Departments, such as Engineering, Land Use Bureau, will be completed by the Traffic Department with one set of coordinated comments provided to AKRF for each submission. The DD plans will depict limits and geometry for the proposed roadway, curb, and sidewalk, limits of existing median removal and full depth pavement reconstruction, proposed grading and drainage, utility relocations/modification, location for any proposed signage, lighting, and new pedestrian ramps to accommodate ADA accessibility. The DD Plans will be developed in accordance with CTDOT standards and specifications, and reference standard pay items numbers for proposed improvements, where applicable. Quantity estimates will also be provided as part of the DD plan submission. Upon completion of the DD plans, AKRF will submit and coordinate with the City’s Traffic Department and CTDOT for review and comment. We assume two (2) rounds of comments from each agency. We anticipate the DD plans would include the following sheets:

1. **Existing Conditions Plan** – Based on the completed survey.
2. **Highway Plan** – Depicts limits and proposed geometry of roadway, sidewalk, and curb, including a mathematized alignment data that is sufficient to define alignment and layout in the field. The drawing will also include existing and proposed surface physical features such as pedestrian ramps, tree pits, bus stops, utility poles, etc. AKRF will complete a turning movements analysis of the proposed roadway geometry to confirm the proposed geometry can accommodate commercial trucks and emergency vehicles in coordination with the City and CTDOT.
3. **Highway Profile** – Depicts proposed roadway centerline, top of curb, and bottom of curb elevations and slopes. The design will follow the CTDOT and AASHTO guidelines.
4. **Typical Sections** – Depicts cross section from right-of-way to right-of-way, indicating the widths and depths/thickness of sidewalk, curb, roadbed, median, travel lane, bus lane, bike lane, and physical features such as utility poles, planters, trees pits, etc. This plan will also indicate the proposed type of materials.
5. **Autoturn** – Depicts analysis of all turning movements of the largest design vehicle at each intersection to inform the geometric layout of the proposed curb bump outs.
6. **Grading Plan** – Depicts proposed grades of roadway, sidewalk, and curb, including pedestrian ramp improvements to meet ADA requirements.
7. **Drainage Plan** – Depicts removal of existing catch basins and installation of new catch basins, with associated connections to City sewer system, to accommodate the removal of median and installation of bump-outs that may impede existing gutter flow and/or curb realignments.
8. **Utility Plan** – Depicts all necessary utility relocations necessary to accommodate the full roadway reconstruction and new curb bump-out configurations including fire hydrants, light poles, signal poles, pedestrian signals, utility manholes, pull boxes, loop detectors and all underground utility modifications required to facilitate the relocations.

9. **Striping and Signage Plan** – Depicts proposed travel lanes and crosswalk striping improvements at the intersections along with required signage. Striping and signage to be designed in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and CTDOT Standards.
10. **Maintenance and Protection of Traffic (MPT) Plan** – Depicts all temporary striping, signage and cone placement needed to redirect traffic and pedestrians as necessary to provide an adequate work zone for the contractor while minimizing the impact to the public during construction. MPT plans will be designed in accordance with the MUTCD, CTDOT standards as well as the City of Stamford standards.

TASK 7 – CONSTRUCTION DOCUMENTS (100% PLANS)

Following review and comments from the City and CTDOT, AKRF will advance the DD Plans to a 100% Construction Document level and submit for final approval to the City and CTDOT. AKRF will also prepare the required bid forms, listing CTDOT standard pay items and associated quantities, for inclusion in the full bid package.

TASK 8 – BID SUPPORT

AKRF will support the City through the bid process. AKRF will attend the pre-bid meeting and respond to contractor request for information (RFIs) and will assist the City in the review of contractor bids. AKRF assumes bid period is 6-8 weeks. Construction Administration and Inspections are not included under this task. AKRF will provide a separate Scope of Work and fee upon request.

TASK 9 – CONSTRUCTION ADMINISTRATION

Based on the expanded scope and discussions with the City, Construction Administration services are not included under this revised proposal.

~~AKRF will provide construction support services including review of construction submittals to ensure that they meet the intent of the contract documents. Services will include:~~

- ~~• Review submittals, samples, shop drawings, as built drawings, schedules and other submissions for conformance to the contract documents.~~
- ~~• Respond to RFIs to clarify design intent~~
- ~~• Assist in review of contractor pay requisitions.~~

~~Site visits/inspections are not included under this task. If construction inspection is required a separate Scope of Work and fee will be provided.~~

TASK 10 – MEETINGS

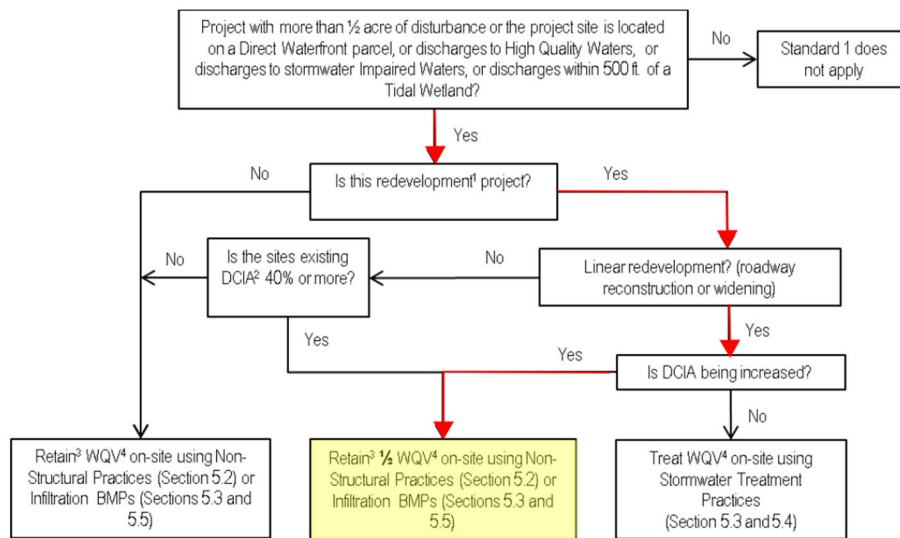
Based on the expanded scope and anticipated agency review AKRF will attend up to ten meetings with the City, in addition to the community engagement noted in Task 3 of the March 3, 2021 Scope of Work.

TASK 11– STORMWATER MANAGEMENT STRATEGY AND PLANNING

On October 12, 2022, AKRF had a discussion with the City’s Engineering Department to confirm two key threshold assumptions with respect to stormwater management requirements for the expanded project scope as dictated by the City’s drainage manual:

- Per Section 2.2 of the manual, the project does not qualify for the following exemption: “*Routine maintenance to existing City roads that is performed to maintain the existing width, line, and grade.*”
- Per the flowchart in Section 2.4 of the manual, along with the proposed earth disturbance and proposed creation of Directly Connected Impervious Area (DCIA), the project is required to include stormwater management practices (SMPs). SMPs would include infiltration and/or green infrastructure for a minimum of half of the site, to the maximum extent achievable. The flowchart is included below for reference.

Runoff and Pollutant Reduction Requirements Flowchart



The City’s Drainage Manual requirements apply to roadway reconstruction projects in same way it applies to private land development projects. AKRF recognizes that the City may not have completed a similar roadway reconstruction project since the manual adoption. As such, this project could establish precedents for construction specifications and maintenance responsibilities for City-owned right-of-way SMPs.

In AKRF’s experience supporting other large cities like New York City and Philadelphia to establish similar SMP/green infrastructure standards and maintenance frameworks, we understand that the administrative-policy side of the effort can be more time-intensive and variable than the actual stormwater design and construction document effort.

Under this task, AKRF will provide strategy planning services for the project’s stormwater management approach on a Time and Materials (T&M) basis within a Not-to-Exceed (NTE) allowance. As the scope of the stormwater management approach is further refined, AKRF would provide a separate fee for the full stormwater design services including the required construction documents and associated stormwater management reports for review and approval by the City Engineering Department.

Additionally, based on AKRF’s discussions with the City Engineering Department, it was noted that a Tailwater Analysis may be required to demonstrate the DCIA increase associated with the elimination of the existing median does not adversely impact the hydraulics of downstream sewers, specifically in the location of Atlantic Street and flowing to its outfall (presumably at the Rippowam River). For the purposes of this proposal, AKRF has excluded the Tailwater Analysis as it may be reasonable to assume the roughly 4,300 square foot DCIA increase has de minimis effects on the City’s drainage infrastructure. Should the final decision from the City require a Tailwater Analysis, AKRF will provide a separate proposal and fee for its completion.

TASK 12 – GEOTECHNICAL DUE DILIGENCE

As noted in Task 10, the City Drainage Manual requires inclusion of infiltration SMPs, to the maximum extent achievable. Based on the USDA NRCS Web Soil Survey’s classification of the site as Hydrologic Soil Group D (i.e. the lowest rating for anticipated infiltration capabilities) the City Drainage Manual would require field testing to assess in-situ permeability conditions.

This area of Stamford is known to have relatively high groundwater. Additionally, there may be data on file at the City, associated with nearby planned/constructed developments, which could potentially support waiving the need for field testing.

Under this task, AKRF will complete a due diligence effort to review available public and city-provided data to complete a desktop assessment of site soil conditions. If appropriate, AKRF would prepare a justification for submission to the City Engineering Department requesting a waiver of field testing. Should the findings of the due diligence analysis not support a waiver and/or should the City Engineering Department require field testing, AKRF will provide a separate scope and fee for completion of geotechnical investigations.

Assumptions and Exclusions:

1. AKRF will reference standard CTDOT specifications and/or prepare supplemental technical specifications related to the proposed improvements. It is assumed that preparation front end Procurement and Contracting Requirements would be prepared by the City. AKRF assumes the sections prepared by the City include:
 - Notice to Bidders
 - Information for Bidders (supported by AKRF)
 - Bid Forms (excluding Bid Sheet prepared by AKRF)
 - Indemnification Agreement, Agreement, Performance, and Labor & Material Payment Bond
 - Maintenance Bond
 - Wage Rates and Labor Standards
 - General Conditions
 - Insurance
 - Special Conditions
2. For each submission, AKRF will submit documents to the Traffic Department. AKRF assumes that internal circulation to other City departments such as Engineering, Land Use Bureau, etc, will be completed by the Traffic Department with one set of coordinated comments provided to AKRF for each submission.
3. AKRF assumes with the removal of the median, full depth roadway reconstruction, including all sidewalks, will be required.
4. The current scope assumes the sidewalk will be replace in-kind. Design of the GI practice within sidewalk area will be developed under the allowance budget.
5. Bid support is assumed to be up to 6 weeks from Request for Proposal.
6. AKRF assumes CTDOT standard specifications and item numbers will apply. Development of special specifications is not included.
7. Resident engineering and construction inspection services are not included but can be provided upon request.
8. Quality control testing services are not included in is proposal. The bid documents would require the contractor to provide any required quality control testing, such as concrete compressive strength and asphalt density, as part of their scope of work.
9. AKRF assumes substantial replacement of traffic signal elements will not be required. Minor improvements including additional signage, modifications to timing or phasing, etc. as well as minor pedestrian pole relocations are included.
10. AKRF assumes coordination with the utility company as well as adjacent property owners (other than as noted as part of Task 4 – Community Engagement) will not be required. All utility relocation/modification coordination will be handled by the City.

11. AKRF assumes all existing tree will remain. Should any tree removal or tree planting is required, all approval/permits will be handled by the City.
12. AKRF assumes all proposed work will be within the existing right-of-way/easements. This proposal does not include work associated with land acquisition or donation.
13. Drainage improvement design is limited to additional catch basins and catch basin relocations associated with the median removal and new bump-outs. Redesign of major sewer lines is not included in this proposal.
14. Preparation of additional design drawings, sketches, or bulletins during construction period necessitated by changes to the Project design resulting from field conditions, scope changes, or other unavoidable situations is not included as part of this proposal. Furthermore, additional services consisting of a redesign to the contract documents or project representation above beyond the services called for under this proposal is considered an additional service and we will submit for City review, a detailed scope breakdown and associated fee prior to conducting the additional service.
15. Construction Administration services are not included under this proposal.

FEE ESTIMATE

AKRF will complete the revised Tasks 1 through 10 in the above Scope of Work on a lump sum basis for a fee of \$338,000 as shown in **Table 1** below in accordance with the Terms and Conditions of our existing contract with the City dated May 13, 2021. Tasks 11 and 12 will be undertaken as directed by the City with Not-to-Exceed Allowance tasks billed on a time-and-materials basis in accordance with the Hourly Rates included in **Table 2**.

Table 1
Estimated Budget by Task Breakdown

Task	Fee Type	Additional Fee Requested	Total Cost
Task 1 – Crash Assessment	Lump Sum	\$0	\$8,000
Task 2 – Capacity Analysis	Lump Sum	\$0	\$13,000
Task 3 – Conceptual Plans	Lump Sum	\$14,000	\$24,000
Task 4 – Community Engagement	Lump Sum	\$0	\$6,000
Task 5 – Boundary and Topographic Survey	Lump Sum	\$0	\$20,000
Task 6 – Design Development Plans	Lump Sum	\$133,000	\$178,000
Task 7 – Construction Documents	Lump Sum	\$47,000	\$77,000
Task 8 – Bid Support	Lump Sum	\$0	\$2,000
Task 9 – Construction Administration	Lump Sum	-\$10,000	\$0
Task 10 – Meetings	Lump Sum	\$4,000	\$10,000
Lump Sum Subtotal Total		\$188,000	\$338,000
Task 11 – Stormwater Management Strategy Planning	NTE Allowance	-	\$15,000
Task 12 – Geotechnical Due Diligence	NTE Allowance	-	\$5,000
Allowance Subtotal			\$20,000
TOTAL			\$358,000

Table 2 - AKRF Hourly Rate Schedule

Employee Category	Hourly Rate
Senior Officer	\$230
Officer	\$230
Senior Technical Director	\$225
Technical Director	\$210
Senior Professional	\$190
Professional II	\$155
Professional I	\$145
Technical II	\$135
Technical I	\$110
Notes: Out of pocket expenses will be billed at 1.10 times actual cost. These rates are effective through December 31, 2023.	

If this scope is acceptable, please acknowledge acceptance below as authorization to proceed. Thank you for the opportunity to submit this proposal and we look forward to working with you on this project. If you have any questions please call myself at 646-388-9740 or Marissa Tarallo at 646-388-9728.

Sincerely,
AKRF, Inc.



Michael Beattie, PE, PTOE
Vice President



Marissa Tarallo, PE, PTOE
Vice President

Cc: Wendy Ho, P.E., LEED AP, Justin Seeney, P.E. and Joseph Tyros, P.E.; AKRF

ACKNOWLEDGED AND ACCEPTED:

Signature: _____ **Title:** _____
For: _____ **Date:** _____

