



22

COMMUNITY  
MITIGATION  
FUND

**APPENDIX D – TRANSPORTATION PLANNING GRANT APPLICATION**

**BD-22-1068-1068C-1068L-68403**

*Please complete entire the Application*

|   |                     |
|---|---------------------|
| <b>1. PROJECT INFORMATION</b>   |                     |
| <b>a) NAME OF MUNICIPALITY/GOVERNMENT ENTITY/DISTRICT AND VENDOR CODE</b>   |                     |
| City of Chelsea, MA   | <b>VENDOR CODE:</b> |
| <b>b) PROJECT NAME (LIMIT 10 WORDS)</b>   |                     |
| Spruce Street Transportation Planning Initiative  |                     |
| <b>c) BRIEF PROJECT DESCRIPTION (LIMIT 50 WORDS)</b>  |                     |
| A densely developed environmental justice community, the City of Chelsea encompasses a multicultural population, vibrant small businesses, and an array of critical regional infrastructure. The City proposes to undertake a comprehensive study and devise a conceptual design of multi-modal infrastructure enhancements on Spruce St., between Everett Ave. and Williams St., to mitigate casino induced operational and safety issues. |                     |

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| <b>d) CONTACT PERSON(S)/TITLE (Persons with responsibility for this grant)</b>  |
| Thomas G. Ambrosino, City Manager;<br>Alex Train, AICP, Director of Housing & Comm. Dev.;   |
| <b>e) PHONE # AND EMAIL ADDRESS OF CONTACT PERSON(S)</b>  |
| Thomas G. Ambrosino: 617-466-4100; <a href="mailto:tambrosino@chelseama.gov">tambrosino@chelseama.gov</a><br><br>Alex Train, AICP: 617-466-4192; <a href="mailto:atrain@chelseama.gov">atrain@chelseama.gov</a> |
| <b>f) MAILING ADDRESS OF CONTACT PERSON(S)</b>  |
| 500 Broadway, Room 101<br>Chelsea City Hall<br>Chelsea, MA 02150  |

**2. IMPACT DESCRIPTION/CONNECTION TO GAMING FACILITY**

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a) Please describe in detail the transportation related impact that is attributed to the operation of a gaming facility.

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Located near the City of Chelsea, Encore Casino represents a regional economic asset, with domestic and international visitors gravitating to the facility for recreation and business purposes. Due to its immediate proximity to the City of Chelsea, Encore Casino has yielded adverse transportation impacts to key arteries in Chelsea, such as Spruce St., between Everett Ave. and Williams St. Traffic volumes, which have risen since the casino opened, have accelerated physical deterioration and magnified roadway safety deficiencies, stressing a chronically overburdened roadway. These conditions have exacerbated congestion, increased harmful air emissions, and degraded safety for roadway users.

Connecting the Beacham/Williams Corridor to state highway Route 1, Spruce Street is an urban arterial facilitating multi-modal travel between the casino, Route 16, Logan Airport, and points northward in the region. The surrounding land use composition consists of commercial, light industrial, and industrial uses. Notable development sites include the Chelsea Market Basket, Chelsea Square Commerce Park, and New England Flower Market. Adjacent land uses are adjacent to the recently completed Chelsea Commuter Rail Station, served by the MBTA's Newburyport/Rockport branch, and the Mystic Mall Station, the terminus of the Silver Line 3 bus rapid transit line. Additionally, local bus service is provided throughout the project area via the MBTA Route 112 route.

The project area accommodates employees, patrons, and vendors, which traverse the corridor in personal vehicles, trucks, and shuttles. Forming a direct route between the casino and region, significant vehicular traffic relies upon Spruce Street as a "back entryway," eschewing highly congested sections of the surface network. Because of this connectivity, taxis, livery vehicles, transportation network companies (i.e. Uber, Lyfts), freight, and other drivers wishing to circumvent the tolls present on Route 1 heavily utilize the corridor. Situated on Carter St., the Route 1 last southbound off-ramp allows vehicles to disembark onto Carter St., channeling volumes to Carter St. and Spruce St., in order to access Beacham St. and, ultimately, Encore Casino. For vehicles seeking to exit the region, the Route 1 northbound on-ramp is situated on Spruce St. at Sixth St. Apart from regional auto traffic, the project area encompasses significant freight movements. A designated Critical Urban Freight Corridor interconnected with Beacham/Williams, Spruce St. services abutting food manufacturing and distribution, produce and flower distribution, commercial, retail, and light industrial uses, as well as commercial vendors servicing the casino. Lastly, the project area supports public transportation activity integral to casino operations. As the terminus for the Silver Line 3 route, the Mystic Mall station, located on Spruce St., the corridor links the casino to public transit, the corridor functions as a thoroughfare for the Encore bus fleet shuttling patrons between the casino, Chelsea Commuter Rail Station, and the Mystic Mall Silver Line terminus.

Cumulatively, these regional traffic movements have accelerated the decline of surface and drainage infrastructure, negatively affecting operations and safety. Intersections within the project area, namely the intersections of Spruce/Everett and Spruce/2<sup>nd</sup>, are outmoded, with obsolete equipment and streetscape features. Furthermore, antiquated drainage infrastructure risks hindering regional transportation movements. The geometric configuration, lane architecture, and traffic control devices present at intersections are insufficient to address the increase in traffic. Obsolete streetscape provisions, devoid of adequate pedestrian and bicycle facilities, aggravate chronic safety issues, compounded by traffic growth. Without a deliberately planned capital intervention to modernize the project area and alleviate the impacts illustrated in this application, physical and operational conditions will continually decline. Consequently, the City is proposing to embark upon a

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comprehensive multimodal transportation corridor study to diligently assess future conditions and put forth multi-modal transportation improvements to mitigate casino impacts.

**b) Please provide documentation, specificity or evidence that gives support for the determination that the operation of the gaming facility caused or is causing the impact (i.e. surveys, data, reports)**

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Prior to the opening of the Encore Casino, the City suspected that casino operations may yield adverse impacts. In order to measure these impacts, the City of Chelsea developed a robust traffic monitoring program, consisting of traffic data collection, the monitoring of various dimensions of roadway safety, and periodic inventorying of physical conditions. Through this program, the City collected traffic data on Beacham Street, slightly west of Market Street, and Williams Street at Pearl Street, a proxy for traffic attributable to Logan Airport. The City inferred traffic volumes associated with Route 1, Route 16, and points northward traversing Spruce St., the main artery connecting into the Beacham/Williams Corridor. By using the Beacham/Market location, traffic flows from northbound and southbound Route 1 exits were captured, portraying the pattern of regional traffic movements affecting the local roadway network. This location also picked up the cumulative traffic from other minor routes circulating through the City.

First, the City collected baseline data during one week in June, prior to the casino's opening date of June 23<sup>rd</sup>, 2019, for comparative assessment purposes. Then, the City gathered data for five weeks following the opening data. Reasonably, there were expectations that a sharp uptick of casino related traffic would occur during this opening month, after which conditions would normalize. To account for this, the City again collected data during the month of October 2019. The October data was comparatively analyzed against the June baseline data.

Strikingly, this independent study found that daily traffic volumes, measured as Average Daily Traffic, climbed by approximately 19%, from approximately 11,747 vehicle trips on an average day to 14,021 vehicle trips following the casino's opening. This upward trend was most pronounced during the casino's "peak hours," defined as Friday PM and Saturday PM. During Friday PM and Saturday PM, traffic volumes attributable to the casino increased by 29% and 94% respectively. Overall, the findings reveal an impact far larger than those outlined within the Environmental Impact Reports submitted to the Executive Office of Energy and Environmental Affairs by the Wynn, MA LLC.

In addition to spurring the deterioration of surface conditions, the documented increase in traffic volume occurred in tandem with disconcerting roadway safety trends. Encircled by a 2017-2019 Highway Safety Improvement Pedestrian Crash Cluster, the project area contains a high rate of dangerous crashes. Similarly, a 2017-2019 HSIP Intersection Crash Cluster, ranking amongst the top five dangerous intersections in the City, Spruce/2<sup>nd</sup> has experienced an uptick in vehicular crashes. According to the City's safety analysis, baseline roadway safety trends were examined for the two years preceding the opening of Encore Casino, between January 1<sup>st</sup>, 2017 and January 1<sup>st</sup>, 2019. During this baseline period, 51 crashes affected the project area. Predominantly, these crashes occurred at the intersections of Spruce/Everett (23 crashes) and Spruce/2<sup>nd</sup> (17 crashes). Principally, the crashes resulted in property damage only, with 25% of the crashes yielding physical injuries. Sideswipe crashes, rear end crashes, and perpendicular crashes predominated the intersections.

Subsequently, the City analyzed crash statistics between January 2<sup>nd</sup>, 2019 and January 1<sup>st</sup>, 2021 to decipher safety impacted attributed to the casino. During this period, regional transportation patterns were muted, due to the COVID-19 pandemic. Despite the subdued traffic flows, the corridor experienced a net increase in crashes, combined with an increase crashes involving physical injuries. During this period, the project area encompassed 59 total crashes. A majority of these crashes occurred at Spruce/Everett (20 crashes) and Spruce/2<sup>nd</sup> (25 crashes). The intersection of Spruce/2<sup>nd</sup>, which shoulders traffic originating from Route 16 and Route 1, experienced a 47% increase in crashes

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compared to the baseline period. Moreover, across the project area, crashes involving injuries rose, accounting for 27% of the total crashes.

As traffic volumes were artificially depressed, due to the pandemic, the City anticipates that safety issues will become increasingly prevalent as conditions normalize. Chronic congestion, poorly regulated turning movements, and numerous points of conflict, such as proximate curb cuts and considerable freight volumes, overburden the outmoded intersections in the project area. The intersection is devoid of appropriate traffic control devices, and lacks pedestrian safety measures, yet borders dense shopping center, charter school, and office park, which cumulatively generate significant pedestrian volumes that conflict with intersection operations.

The Spruce St. corridor is enveloped by a 2017-2019 HSIP Pedestrian Crash Cluster, symbolizing the endemic deficiencies that remain unaddressed, degrading functionality, safety, and user comfort.

Environmentally, the rise of traffic volumes operationally and physically taxed an already heavily congested roadway, inhibiting intersection operations and generating higher concentrations of polluting air emissions and impacting adjacent industrial and commercial uses throughout the project area. Operations and safety at key intersections, such as Spruce Street/2nd and Spruce/Everett exhibit disconcertingly growing safety issues.

Overall, the physical decline of the corridor has outpaced the City's ability to extend the useful life of this asset through routine maintenance. Congestion impacts continue to degrade the surrounding industrial and commercial areas, while hampering the ability of employees of the broader region, especially those employed at the casino, to utilize the roadway in a safe and effective manner. As outlined, the evident operational, safety, and physical conditions of the project area warrant comprehensive study and improvement.

### **c) How do you anticipate your proposed remedy will address the identified impact.**

As illustrated above, a breadth of operational, physical, and safety issues beset the project area. These include obsolete signal systems, antiquated surface infrastructure, and a lack of safe pedestrian and bicycle provisions. In order to remedy the increase in vehicular traffic, as well as the pervasive safety issues hampering safe, efficient travel, the City proposes to conduct a comprehensive transportation corridor study. Through this study, the City seeks to diligently analyze existing conditions, extrapolate future conditions, and devise surface and subsurface infrastructure improvements to alleviate these roadway stressors. The recommendations will be visualized in an illustrative corridor plan, depicting conceptually designed measures to allay the impacts outlined in this application. Additionally, the planning process will entail significant stakeholder engagement, including ongoing coordination with the MBTA, MAPC, City of Everett, surrounding abutters, and community based organizations to ensure a range of user needs are incorporated into the plan. Furthermore, the City will consult with Encore Casino, in the context of the corridor study and parallel Silver Line Gateway Extension Feasibility Study (MassDOT), to understand shifting casino transportation needs and trends.



**3. PROPOSED USE OF TRANSPORTATION PLANNING FUNDS (Please attach additional sheets/supplemental materials if necessary.)**

a) Please identify the amount of funding requested. In determining the funding request, please round up to the nearest hundred dollars.

In total, the City is seeking \$167,600 for the purposes of carrying out a transportation planning study of Spruce Street, between Everett Avenue and Williams Street.

b) Please identify the manner in which the funds are proposed to be used. Please provide a detailed scope, budget, and timetable for the use of funds

Overseen by the Department of Housing & Community Development, in consultation with pertinent state agencies and the City of Everett, the City intends on retaining an interdisciplinary consulting firm to undertake the planning study. Presently, the City contacts with numerous firms on comparable assignments. As such, a number of firms were canvassed during the development of this scope of work and budget to ensure accuracy, feasibility, and technical fidelity. Upon completion of the procurement phase, the City will embark upon the scope of work outlined below, which has been adapted from a scope of work supplied by Weston & Sampson Engineers.

**TASK 1 – PROJECT MANAGEMENT & MEETINGS**

Throughout the lifecycle of the study, the City will oversee, participate in, and document meetings around project activity status, coordination, and design content review. Furthermore, the City will provide general project management, financial management, and contract administration services, including, but not limited to, the preparation of monthly progress reports, development and monitoring of the project budget, formulation of the civic engagement plan, and oversight of the consultant’s performance against the project schedule. The study will commence through the coordination of a formal project-kick off meeting, involving the City, consultant team, and key stakeholders.

**TASK 2 - REVIEW OF EXISTING ROADWAY & TRAFFIC CONDITIONS**

*2.1 Site Visit*

Following the issuance of a Notice to Proceed, the consultant will visit the project site to perform a one-day visual inspection of existing roadway and traffic conditions. GIS information provided by the City will be utilized as a base plan for this field review and validation exercise. The limits of the review will include Spruce Street between Williams Street and Everett Avenue and approximately 200 feet along both the north and southern legs of 2nd Street. The field review will include an inventory of the following items:

- Roadway pavement conditions
- Sidewalk surface conditions including a review for conformance ADA/AAB requirements
- Sidewalk ramp conditions including a review for conformance with ADA/AAB requirements
- Existing signs
- Existing pavement markings

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- Existing Traffic signal equipment (no traffic signal cabinets will be opened unless city staff are on site to perform the work)
- Drainage structure locations
- Curbing conditions
- Verify roadway and sidewalk widths
- Trees and other landscape features
- Streetscape features
- Existing utility pole and overhead wire locations

As part of the site visit, the traffic engineer will observe the traffic operations during one peak hour along the roadway and at the intersections along the corridor to obtain a better understanding of the operating conditions. These observations will be used during the traffic analysis phase of the project to validate the existing conditions traffic model.

### *2.2 Data Collection*

Data collection will include traffic, pedestrian, bicycle volumes, transit and rail options and schedules. Travel patterns, journey to work data, points of congestion, and deficiencies will also be catalogued. Below is a list of a sample of the data that will be reviewed, in addition to other key datasets. Furthermore, the City will transmit a compilation of data from recent studies performed in the area. All data collection will be coordinated by the City Project Manager in order to fully understand both existing and future conditions along the corridor, as this will be the building block of the overall project process

### Transportation

- Reports and documents (i.e., MassDOT, City of Chelsea, MBTA)
- Planned or programmed future projects in the area
- Existing roadway, intersection and signal plans (including timing and phasing information)
- Transit stops, routes, and schedule
- Traffic volumes (i.e. turning Movement Counts)
- Vehicle classifications and speeds
- Crash data and reports

The City's consultant will collect traffic volume and turning movement data along the corridor. This will include a combination of Manual Turning Movements counts and Automatic Traffic Recorders., Data collected will include vehicle volumes, pedestrian volumes, bicycle volumes, and vehicle classifications. Transportation data collection will be collected for traditional peak periods (i.e. A.M. and P.M. rush hour), as well as peak casino periods. All counts will be collected utilizing video camera equipment and will include vehicles, pedestrians, and bicycles.

Additionally, the transportation consultant will aggregate, process, and review crash data and reports along the corridor and at intersections. Consultations with the Chelsea Police Department will occur. As part of this phase, the consultant will coordinate a Roadway Safety Audit, where a variety of parties will complete a site investigation and identify roadway hazards. Under this task, the consultant shall determine if there are crash trends or areas of concern that need to be taken into consideration during the design of improvement alternatives.

### Land Use & Data Development

- Local zoning and development regulations and zoning districts
- Existing uses
- Property delineation, public lands, and ROW information (Local and MassDOT)

#### Natural Resources

- Conservation Resource Area Plan
- Wetland & Surface Waters
- Endangered Species
- Cultural and Historical concerns
- Climate factors (i.e flood projections, urban heat index maps)

**Deliverable:** Summary of data, Road Safety Audit Report, field notes, and meeting notes

### **TASK 3 – TRAFFIC ANALYSIS**

The consultant will develop a corridor level transportation model in Synchro to determine LOS, delays, travel times, and queues for both existing and alternative future corridor geometry and volume conditions. This will include the Existing 2022 conditions and for future 2032 Design Year conditions. Traffic projections will be developed for future the 2032 Design Year and will be incorporated into future corridor conditions analysis. The first step in assessing future conditions is the forecasting of future traffic volumes on area roadways. To develop the 2032 baseline traffic volume forecast, two components of traffic growth will be considered. First, an annual average traffic-growth rate percentage will be determined based on historical traffic volume data and discussions with City staff. Over the last several years, many areas across the region have experienced moderate growth or no growth at all, so it might be reasonable to utilize a 1-2% background growth rate to account for other regional growth outside the corridor.

Second, any planned (submitted to the City) or approved specific developments in the area that would generate a significant volume of traffic on the study area roadways will need to be included. The traffic associated with any other potential future development projects will be accounted for in the traffic forecast associated with general background growth. The 2032 baseline traffic volume conditions will be modeled to provide an operational analysis of future 2032 No-Build scenario conditions along roadways and at the Spruce Street and 2nd Street intersections throughout the corridor. The 2032 No-Build analysis will be developed by adding the future traffic growth to the Existing 2022 conditions. The following traffic model scenarios will be analyzed using Synchro Software:

#### Existing and No-Build Conditions

- Existing 2022 Weekday AM Peak Hour
- Existing 2022 Weekday PM Peak Hour
- Existing 2022 Saturday Midday Peak Hour
- Future 2032 No-Build Weekday AM Peak Hour
- Future 2032 No-Build Weekday PM Peak Hour
- Future 2032 No-Build Saturday Midday Peak Hour

**Deliverable:** Traffic modeling results and summary memorandum

#### **TASK 4 – PRELIMINARY ALTERNATIVES ANALYSIS**

The consultant will collaborate with the City to develop two roadway alternatives along Spruce Street between Williams Street and Everett Avenue. Both alternatives will be developed to strike a balance between operations and safety for all roadway users. This may include a combination of any of the following roadway design features: exclusive turn lanes, center dual-use turn lanes, shared-use lanes, exclusive bicycle lanes, wide multi-use sidewalks. At the signalized intersections the design features may include exclusive turn lanes, shared-use lanes, permitted and protected phasing using Flashing Yellow Arrow, bicycle lanes, crosswalks, exclusive pedestrian phasing or current pedestrian phasing with Lead Pedestrian Interval.

Build conditions will include two alternatives using the following time periods:

- Future 2032 Build Weekday AM Peak Hour
- Future 2032 Build Weekday PM Peak Hour
- Future 2032 Build Saturday Midday Peak Hour

**Deliverable:** Traffic Analysis Report. The results of the traffic analysis including existing and future conditions will be documented in a traffic memorandum and will include the following:

- Introduction
- Description of Existing Conditions
- Traffic Volume and Speed Data Summary
- Crash Data Summary
- Traffic Projections
- Analysis Results
- Appendix

#### **TASK 5 – BASEMAP DEVELOPMENT**

Existing Citywide LiDAR data to be provided by the City and shall be use to initiate basemap development. The LiDAR point cloud will be used to map surface features for the work zone and near abutting intersections. The basemap shall be built in NAVD88 vertical datum. Plan features, text, and symbology shall be 1"=20' scale and framed for plan presentation. City GIS data will be imported including tax lot lines, owner information, addresses, street names, and building layout data. Curb line and surface features will be mapped via LiDAR data.

City utility GIS will be used to acquire basic attributes of municipal utility infrastructure. The Murray Industrial Park plans from the late 1970s provide the best-available depiction of the very complex underground utility conditions in this work zone. These plans, along with actual surveyed features taking primacy, will be interrogated to present key executive location and nature of utility layout in the work zone. Plans from infrastructure improvements in Williams Street, Second Street, and Everett Avenue will also be reviewed to present executive accounting and layout of utilities in the work zone. Depth data for key sections of sewer and drain mainline will be interrogated from available record/study sources and presented on plan for use in concept and preliminary design development. Sources of data used will be referenced in notes associated with the plan. A site walk will be performed to validate surface features and data presentation.

**Deliverable:** Draft and final basemap

#### **TASK 6 – UTILITY ASSESSMENT**

The consultant will acquire and review reports and assessments prepared relevant to municipal utility infrastructure for consideration in design development. Based on available reports, assessments, capital plan recommendations, and professional opinion based on age/material/configuration, provide recommendations for retaining, rehabilitating and replacing municipal infrastructure. Municipal infrastructure components in the project area may include:

- Sanitary Sewer
- Water
- Storm Water/Drain:
- Regional Drain (Carter Street Pump Station Force Main):
- Municipal Fiber
- Fire Alarm Wire
- Underground Electric
- Traffic Signal System – Electrical and Telecommunications

As part of this investigation, the consultant shall consider other utility conditions in the work zone including:

- MWRA water and sewer interceptors – Transmission mains and interceptors cross this work zone in the alignments of 2nd and 3rd Streets. Assess their general character and relevance to the project.
- Private buried power, gas, and telecommunications – Consider known assets and their relevance to municipal utility work.
- Utility Poles and overhead wire – Identify matters of pole ownership and custodian, pole placement and it's relevance to conceptual roadway & utility alignments, and preliminary identification of utilities observed on poles. The project will not aspire to assess undergrounding, but the information gathered and communicated here would be relevant to a future undergrounding review.

A key aspect of this phase will be to consider utility implementation risks to a comprehensive program of surface improvements. Presently, known and unknown risks affect the project area. Unless properly managed, such risks could erode project viability. Analyzing key risks will be essential, including:

- Historic land uses including underground storage tanks and building foundations known to exist in the section of roadway subject to widening (widened from 40 to 60 feet).
- Future regional transportation plans, cross-sections, and footprints of land acquisition activity.
- Around bypass and handling of existing flows.
- Around floodplain resilience and coordination with broader area initiatives.

**Deliverable:** This task will culminate with the delivery of a Utility Assessment Technical Memorandum describing the results of this review and assessment.

### **TASK 7 – PRELIMINARY ENVIRONMENTAL & SUBSURFACE DATA REVIEW**

Areas of impacted soil from industrial operations and regional land filling (urban fill) are likely to be encountered within the project area. Construction in this area will require special soil handling and management. Due to the low elevation and proximity to the Island End River, shallow groundwater within trenches is anticipated to be encountered and prospect of groundwater contamination is likely.

The consultant will compile subsurface soil and groundwater data gathered in closely proximate work areas including Williams Street, 2nd Street, Everett Avenue, and Spruce Street. This will include boring logs, probes, and laboratory analytical from around the work zone and near extent. The data will be reviewed to assess probable physical character of soils which will inform suitability for bearing and backfill. It is anticipated the work zone will contain underlying strata of bulky urban fill debris, soft marine clays, and peat. The proximate/historic data will also be reviewed for indication of probable contamination and the regulatory implications will be assessed.

Once data is in hand, the consultant will perform a preliminary review of the files available at the Massachusetts Department of Environmental Protection (MassDEP) website, which lists disposal sites regulated under the Massachusetts Contingency Plan (MCP) and identify any Activity and Use Limitation (AUL) that are relevant. Weston & Sampson will review available information for these sites, as well as previous assessments reports proximate the project area to identify potential impacts to soil and groundwater and data gaps.

**Deliverable:** Environmental Summary Memorandum. The result of the preliminary environmental and subsurface data review will be reported in a technical memorandum. The memorandum will include figures identifying available boring/probe locations and tables summarizing the results. The memorandum will also include brief summary of the data, probable implications on the excavation and handling of excavated materials, and recommendations future sampling program.

#### **TASK 8 - PRELIMINARY DESIGN SCOPE OF WORK, ESTIMATE, SCHEDULE (10% DESIGN LEVEL)**

Under this task, the consultant shall refine the alternatives and set forth a recommended alternative, which will undergo review by the City and key stakeholders. Upon selecting a preferred alternative, the project will culminate with the conceptual design of the selected alternative. Under this task, the consultant shall plot improvements that include reconstruction of the roadway and sidewalks along Spruce Street from its intersection with Williams Street, running approximately 1,600 ft to intersection with Everett Avenue, and will include reconstruction of the intersection of Spruce Street and 2nd Street.

The designs will expand on the recommendations of the corridor study to visualize how those recommendations fit into the current cross section of Spruce Street. The preliminary designs will include lane arrangement between Williams Street and Everett Avenue with appropriate travel and approach lanes to each intersection and bike lanes as appropriate.

The project team will hold up to five (5) stakeholder meetings and two (2) community meetings to discuss the plans and how they fit into the corridor and fit the needs of the corridor and neighborhood. We will gather information from this meeting and see how the plans may be updated to included comments from the group. This will culminate in the basis for a preliminary design for further refinement by the project team.

**Deliverables:** Under this task, the consultant will prepare preliminary design plans, cost estimates, permit memorandum, and an anticipated design, permitting, and construction schedule.

The plan set will include construction plans and profile sheets showing pavement rehabilitation details within the project area, sidewalk details, roadway layout information, traffic signal layout, and typical roadway cross sections for review and discussion.

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We will provide preliminary design plans to the City staff for review and comment at two important milestones of the design process, including during the development of alternatives and prior to final submission of preliminary design plans. Accompanying the design plans will be a permit memorandum, portraying the local, state, and federal permits necessary to execute the project. We will prepare the preliminary plans at a 1-inch equals 20-foot scale on a base map prepared using City Lidar imagery.

- Preliminary horizontal/vertical geometrics
- Typical cross sections
- Construction plans
- Top line cross sections at 50-foot intervals and crucial locations
- Preliminary utility plan drawings for water, sewer, and sewer
- Preliminary indication of pavement markings, signage, traffic signal layout
- Conceptual Landscaping and streetscape designs

The consultant will prepare a draft and final preliminary probable opinion of construction cost (OPCC) based on major construction items using MassDOT Average Weighted Bid Prices, costs from recent construction projects within the City, and our experience on other projects within the City.

The project schedule will be indicative of engineer's opinion of tasks, sequence, and duration of events required for implementation. The product will be a Gantt Chart schedule with notation indicating critical milestones.

**c) Please provide documentation (e.g. - invoices, proposals, estimates, etc.) adequate for the Commission to ensure that the funds will be used for the cost of mitigating the impact.**

The City commits that all funds will be used solely for costs associated with developing a transportation plan to mitigate the adverse impacts detailed above. Specifically, the City will use funds to cover the costs of a construction contract, police details, and construction engineering services. For the Commission's review and reference, the City has attached a proposal and itemized fee solicited from Weston & Sampson Engineers outlining the proposed use of funds. Weston & Sampson is one of numerous transportation planning and engineering firms utilized by the City on comparable projects. The City may elect to retain a different firm, in order to achieve the most economical, technically sound project.

**d) Please describe how the mitigation request will address the impact indicated. Please attach additional sheets/supplemental materials if necessary.**

Through this transportation planning project, the City will comprehensively analyze existing and future conditions, particularly projected transportation demand associated with the casino. The subsequent findings will inform the planning and conceptual design of modernized roadway and intersection infrastructure that will mitigate the adverse operational and safety impacts of casino traffic and shuttle use. Through a thoughtfully crafted planning program, in close collaboration with key stakeholders, the City seeks to develop attainable, appropriately planned roadway provisions to mitigate the operational, safety, and reliability impacts of the casino. The planning effort will embrace "complete streets" principles, whereby the City will plot the future of the corridor in a balanced manner that serves all roadway users.

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The recommendations emerging from the planning study will, upon implementation, allow the City to safely and efficiently manage the recent growth of traffic. Recommendations will center on cross-section design, traffic control devices, and intersect will optimize travel time, reduce delays, and decrease potential damage incurred to vehicles, due to substandard roadway conditions, with the goal of improving operations and safely accommodate various roadway users. Safety deficiencies and conflicts will be addressed through the analysis of various geometric design and traffic control devices, such as the delineation traveling lanes, segregation of conflicts, and reconfiguration of intersection. The plan will further put forward multimodal treescape enhancements, such as crosswalks, sidewalks, and street trees. Additionally, the plan will explore the feasibility of a segregated cycle track, connecting into the Beacham/Williams multi-modal pathway, to safely accommodate bicycle and pedestrian traffic and improve air quality. Furthermore, the plan will consider lighting to enhance roadway safety during evening hours, including the casino's peak hours, which have experienced a rise in traffic.

At key intersections, the plan will assess options to overhaul outmoded intersection equipment and systems to will be efficiently manage congestion. The City will put forth intelligent transportation system recommendations to optimize the safe flow of traffic by responding to changes in traffic patterns. Traffic signal recommendations will be accompanied by the preliminary design depicting alternative layouts of the two intersection, in order to fully ameliorate the concentration of crashes. Advancing a plan to alleviate congestion, modernize substandard infrastructure for the benefit of all users by providing complete streets infrastructure, and instituting green space, the plan will highlight strategies to allay the adverse effects to air quality caused by traffic and idling vehicles will be mitigated in a designated environmental justice community. Lastly, the plan will address underground utility enhancements, which would result in a variety of benefits. These will center on improvements to the project area's drainage system, in order to enlarge capacity of the system, accounting for the current and projected flooding. The plan will strive to allay localized flooding and maintain operations along the corridor during different weather events, thus reducing the chance of traffic delays throughout the corridor.

**e) How will you provide the data for reporting? How will you measure the effectiveness of the proposed project in mitigating the impacts?**

The City will provide a range of data as part of the quarterly reports and final report submission. This will include copies of all deliverables outlined above, accompanied by key performance metrics that relate to the mitigation of casino impacts. Additionally, the City will relay draft preliminary design plans, cost estimates, and related materials to Commission staff. As part of this submission, the City will develop a memorandum to the Commission detailing the specific features of the plan as they relate to the mitigation of casino impacts. Additionally, a set of performance metrics would be developed. Upon implementation of the plan, the key metrics, such as intersection level of service, could be routinely monitored to ascertain the efficacy of the final constructed product.



f) For joint grant requests, please state the amount requested for the joint request. Please also state the amount of any Regional Planning Incentive Award requested and provide separate detail on the use of these additional funds.

N/A

#### 4. CONSULTATION WITH MASSDOT/REGIONAL PLANNING AGENCY (RPA)/NEARBY COMMUNITIES

a) Please provide details about the Applicant's consultation with MassDOT to determine the potential for cooperative regional efforts regarding planning activities.

The City has consulted with local and regional stakeholders on the project. Previously, the City consulted with MassDOT on improvements to the Spruce Street corridor as part of the Transportation Improvement Program. Additionally, the City has conferred with MassDOT through the Silver Line Extension Feasibility Study. The City sits on the steering committee and, due to its proximate nature, the project area is interlinked with the alternatives undergoing analysis. The City will coordinate closely with MassDOT throughout the planning initiative, including consulting with District 6 and the Office of Transportation Planning.

b) Please provide details about the Applicant's consultation with the Regional Planning Agency serving the community and nearby communities to determine the potential for cooperative regional efforts regarding planning activities.

As a member of various MAPC transportation, land use, and climate resilience task forces, the City coordinates routinely with the MAPC. The City has notified the MAPC as to its intention to undertake a comprehensive transportation planning study of this corridor. The City anticipates that the MAPC will be a key partner in the group of stakeholders engaged through the project. Relatedly, the MAPC is actively participating in the MassDOT Silver Line Extension Feasibility Study, involving roadway and public transportation assets in the vicinity of the project area.

#### 5. MATCHING FUNDS FROM GOVERNMENTAL OR OTHER ENTITY

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**a) Please demonstrate that the governmental or other entity will provide significant funding to match or partially match the assistance required from the Community Mitigation Fund.**

The City will contribute in-kind matching funds to support the project. The City will provide key personnel to oversee the project, including a Project Manager, Assistant City Engineer, Public Works Commissioner, and Director of Housing and community Development. Additionally, the City commits to financially supporting the necessary civic engagement activities augmenting the project.

**b) Please provide detail on what your community will contribute to the planning projects such as in-kind services or additional planning funds.**

Please see above. Additionally, the City has secured a FY'22 Housing Choice Grant, in the amount of \$75,000, to conduct an economic development plan of the surrounding sites, including the Market Basket and nearby office park. The City will synchronize these planning initiatives to capture synergies between future land uses and the transportation improvements vital to mitigating casino impacts.

**6. RELEVANT EXCERPTS FROM HOST OR SURROUNDING COMMUNITY AGREEMENTS AND MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA) DECISION**

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**a) Please describe and include excerpts regarding the transportation impact and potential mitigation from any relevant sections of any Host or Surrounding Community Agreement.**

The "Surrounding Community Arbitration Between Wynn, MA LLC and The City of Chelsea" filed with the Massachusetts Gaming Commission provides information on Wynn LLC's studies of five specific intersections listed in the Chelsea "Best and Final Offer". The arbitration concluded that "studies conducted by Ms. Pyke and her firm (Howard Stein Hudson) of the five specific intersections listed in the Chelsea BAFO were conducted in accordance with MEPA and accepted engineering practices, and establish that the impact posed by the Wynn casino on traffic at those intersections will, at worst, be limited. The findings of this study state that only twelve additional vehicles at Williams Street and Spruce Street were to be expected as generated by the opening of the Encore Casino. The findings of the City of Chelsea's traffic consultants however, show significantly higher traffic volumes. Funds committed under this initial arbitration have been insufficient to mitigate the impacts caused by the casino. Therefore, the City respectfully petitions the Commission

The City has analyzed traffic data associated with the casino, with plans to conduct further data collection and analysis. Establishing a baseline condition and forecasted conditions, the City has comparatively analyzed traffic network conditions upon the commencement of gaming facility operations. While this corridor was excluded from the MEPA process, a deliberation that preceded the advent of ridesharing companies like Uber and Lyft, this corridor facilitates taxi, livery, and rideshare (TNC) trips, shuttling between the casino, Route 1, and points northward. However, considerable increases in vehicular and freight traffic were captured in the MEPA process, but no locations in the project area were encompassed by the MEPA process, which focused on Route 16 and other arterials. Additionally, the City's Surrounding Community Agreement does not set forth measures in this project area. Due to the corridor's deteriorating physical and operational conditions, a redesign process and subsequent construction program is imperative.

**b) Please provide a demonstration that such mitigation measure is not already required to be completed by the licensee pursuant to any regulatory requirements or pursuant to any agreements between such licensee and applicant.**

The City hereby certifies that the mitigation measures outlined in this application are not required to be completed by the licensee pursuant to any regulatory requirements, agreements, or memorandums of understanding.

**c) Please also briefly summarize and/or provide page references to the most relevant language included in the most relevant MEPA certificate(s) or comment(s) submitted by the community to MEPA.**

N/A – this project area did not appear in the project MEPA certificate.

**d) Please explain how this transportation impact was either anticipated or not anticipated in that Agreement or such MEPA decision.**

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Although the City anticipated impacts to the local roadway network, the City was unable to memorialize all mitigation measures in the Surrounding Community Agreement. After failing to reach consensus with the gaming facility, an arbiter ultimately imposed the Surrounding Community Agreement, which did not wholly address the impacts besetting the community. Furthermore, despite echoing the City's interests throughout the MEPA process, the initiative proposed herein was not captured in the process.

**e) If transportation planning funds are sought for mitigation not required under MEPA, please provide justification why funding should be utilized to plan for such mitigation.**

As evidenced by the findings narrated over in this application, the original MEPA process was unduly narrow and did not foresee the full extent of impacts affecting the City's roadway network. Focused primarily on state highways, public transportation, and principal arterials, the MEPA process did not encompass secondary arterials, such as Spruce Street, in surrounding communities. Further, the MEPA process did not envision the impacts of Transportation Network Company traffic (i.e. Uber, Lyft), as it predated the inception of such technology. As a result, the Spruce Street corridor was omitted from this process, despite shouldering regional traffic volumes connected to Route 1 and the north shore. Furthermore, evolving development patterns, concentrating development activity on the north shore, have altered the casino-related transportation movements, as the casino has developed into a regional entertainment destination.

**7. INTERNAL CONTROLS/ADMINISTRATION OF FUNDS**

**a) Please provide detail regarding the controls that will be used to ensure that funds will only be used to plan to address this transportation impact.**

The City, through its Department of Planning and Development, will utilize the funds to commission a qualified transportation planning and engineering consultant to perform the Spruce Street planning study. The City will be aided by the Department of Public Works, who will augment the project team with engineering expertise. In addition to a project management team that specializes in transportation planning, design, and construction, the City maintains robust internal controls, expertise, and administrative staffing necessary to attain compliance with all grant terms and applicable laws.

This project will include the procurement of a professional services contract. All procurement activities shall occur under the oversight of the City's Chief Procurement Officer subject to M.G.L. c. 30B and City procedures. Under M.G.L. Ch. 30B, the City of Chelsea shall abide by the established uniform procedures of procurement when contracting for supplies, services, and real property. All contracting procedures for this project have been established adhere to all federal and state mandated internal financial and administrative controls.

Financially, the City's organizational structure is rooted in a system of checks and balances. No one employee, nor single department, may unilaterally authorized the issuance of payment or disbursement of funds. Under City policy, approvals of invoices and disbursements of funds cannot occur without an active purchase order and contract, approved by the Chief Procurement Officer. All invoices must be collectively approved by the Project Manager, Director of the Department, and the City Auditor, to ensure conformance with professional financial practices. Project documents will be submitted to the Commission. Copies of all professional services invoices will be transmitted to the Commission for verification when the City submits to the Commission its quarterly progress reports.

**b) Will any non-governmental entity receive funds? If so, please describe. If non-governmental entities will receive any funds, please describe what reporting will be required and how the applicant will remedy any misuse of funds.**

The City anticipates that funds will be utilized to compensate a private or public consulting firm, which will render the planning services outlined herein. The City's Project Manager will examine all itemized invoices, which shall include the consultant's staff assignment, staff hours, hourly rates, and percentage complete of deliverables. These invoices shall be comparatively assessed against the project scope, schedule, and budget. In addition to the periodic invoices, the consultant shall submit a narrative quarterly report to the City, detailing the progress, obstacles, and outlook for the project. The City reserves the right to remedy the misuse of funds by any of its contractors through comprehensive process of legal recourse specified in its standard contract terms and conditions. These terms and conditions will be provided to the Commission.

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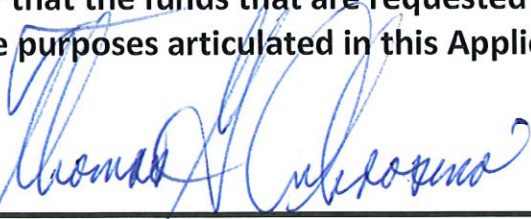
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***No Community is eligible for more than one  
Transportation Regional Planning Incentive Award.***

**8. CERTIFICATION BY MUNICIPALITY/GOVERNMENTAL ENTITY**

On behalf of the aforementioned municipality/governmental entity I hereby certify that the funds that are requested in this application will be used solely for the purposes articulated in this Application.



Date: 1/31/22

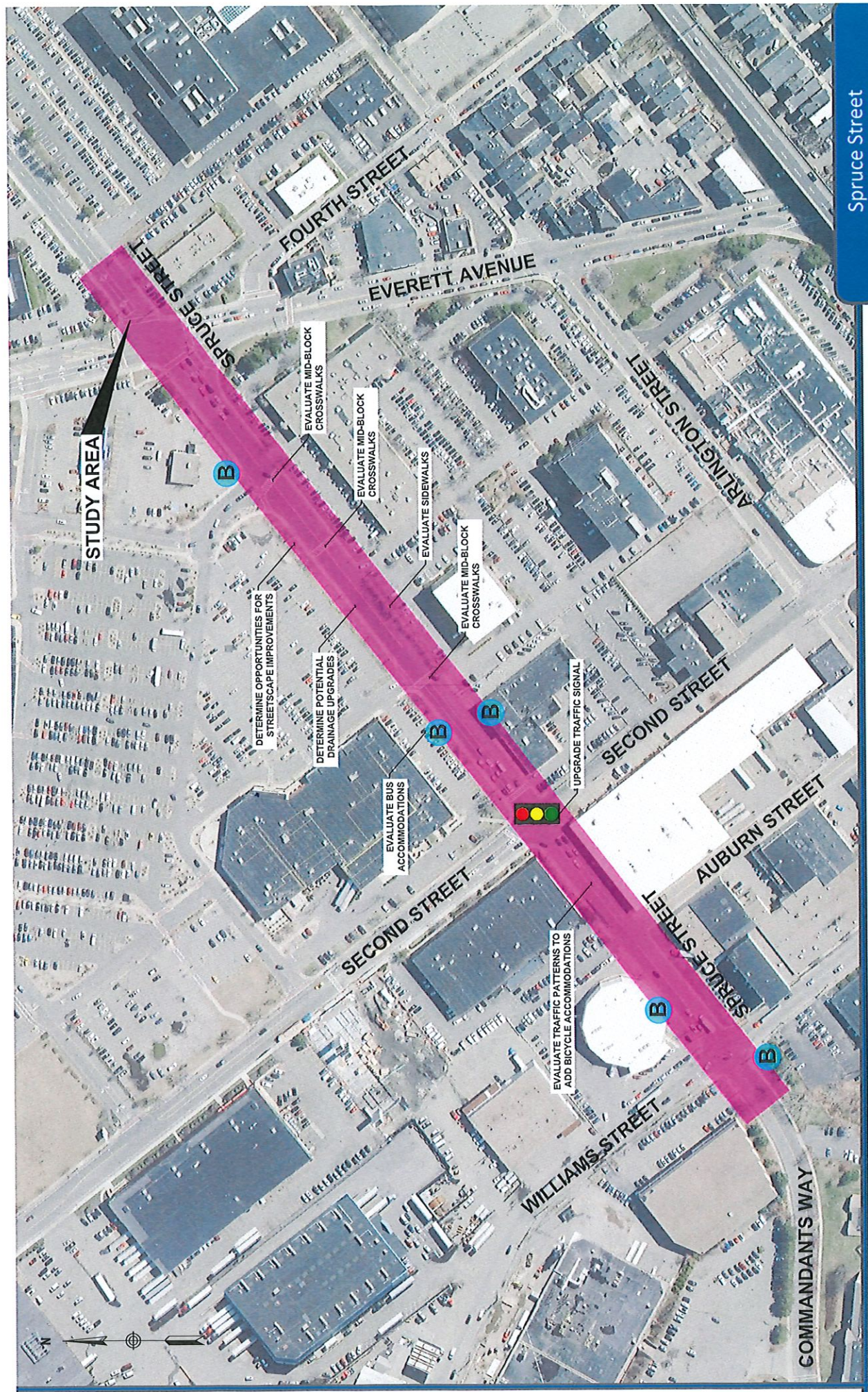
**Signature of Responsible Municipal  
Official/Governmental Entity**



(print name)



Title:



January 18, 2022

**Legend**

- Study Limits
- Bus Stop

**TEC**  
The Engineering Corp.

TEC, Inc.  
146 Dazcomb Road | 189 Ocean Blvd  
Andover, MA 01810 | Hampton, NH 03842  
E: 978-794-1792 | F: 603-601-8154



**SCOPE OF WORK  
SPRUCE STREET ENGINEERING SERVICES  
DRAFT SCOPE & FEE JANUARY 27, 2022**

**TASK 1 – PROJECT MANAGEMENT & MEETINGS**

Coordinate, participate in, and document meetings around project activity status, coordination, and design content review. Provide monthly progress reports to the City.

**TASK 2 - REVIEW OF EXISTING ROADWAY & TRAFFIC CONDITIONS**

Site visit

Two Weston & Sampson engineers, one highway and one traffic, will visit the project site to perform a one-day visual inspection of existing roadway and traffic conditions. GIS information provided by the city will be utilized as a base plan for this field review. The limits of the review will include Spruce Street between Williams Street and Everett Avenue and approximately 200 feet along both the north and southern legs of 2<sup>nd</sup> Street. The field review will include an inventory of the following items:

- 1.) Roadway pavement conditions
- 2.) Sidewalk surface conditions including a review for conformance ADA/AAB requirements
- 3.) Sidewalk ramp conditions including a review for conformance with ADA/AAB requirements
- 4.) Existing signs
- 5.) Existing pavement markings
- 6.) Existing Traffic signal equipment (no traffic signal cabinets will be opened unless city staff are on site to perform the work)
- 7.) Drainage structure locations
- 8.) Curbing conditions
- 9.) Verify roadway and sidewalk widths
- 10.) Trees and other landscape features
- 11.) Streetscape features
- 12.) Existing utility pole and overhead wire locations

As part of the site visit, the traffic engineer will observe the traffic operations during one peak hour along the roadway and at the intersections along the corridor to obtain a better understanding of the operating conditions. These observations will be used during the traffic analysis phase of the project to validate the existing conditions traffic model.

Data Collection

Data collection will include traffic, pedestrian, bicycle volumes, transit and rail options and schedules. Travel patterns, journey to work data, points of congestion, and deficiencies will also be catalogued. Below is a list of some of the data that will be reviewed that we anticipate may be provided by the City from recent studies performed in the area through the City. It is not all inclusive and will be further addressed during the initial kick-off meeting with the client. All data collection will be coordinated with city staff in order to fully understand both existing and future conditions along the corridor, as this will be the building block of the overall project process

#### Transportation

- Reports and documents (i.e., MassDOT, City of Chelsea, MBTA)
- Planned or programmed future projects in the area
- Existing roadway, intersection and signal plans (including timing and phasing information)
- Transit stops, routes, and schedule
- Traffic volumes (i.e. turning Movement Counts)
- Vehicle classifications and speeds
- Crash data and reports

#### Land Use & Data Development

- Local zoning and development regulations and zoning districts
- Existing uses
- Property delineation, public lands, and ROW information (Local and MassDOT)

#### Natural Resources

- Town Plan of Conservation and Development
- Wetland & Surface Waters
- Endangered Species
- Cultural and Historical concerns
- Other environmental constraints

Weston & Sampson will collect traffic volume data along the corridor. This will include a combination of Manual Turning Movements counts and Automatic Traffic Recorders., Data collected will include vehicle volumes, pedestrian volumes, bicycle volumes, and vehicle classifications.

Turning movements counts will be collected during the weekday AM peak hour (6:00-9:00am), weekday PM peak hour (3:00-7:00pm) and Saturday midday peak hour (11:00-2:00pm) at the intersection of Spruce Street and 2<sup>nd</sup> Street. All counts will be collected utilizing video camera equipment and will include vehicles, pedestrians, and bicycles.

Automatic Traffic Recorder volume data collection with speed data will be collected for a 72-hour period (Thursday-Saturday) on the segment of Spruce Street between 2<sup>nd</sup> Street and Everett Avenue.

Crash Data & Reports - Weston & Sampson will review crash data and reports provided by the City along the corridor and at intersections to determine if there are crash trends or areas of concern that need to be taken into consideration during the design of improvement alternatives.

### **TASK 3 – TRAFFIC ANALYSIS**

We will develop a corridor level transportation model in Synchro to determine LOS, delays, travel times, and queues for both existing and alternative future corridor geometry and volume conditions. This will include the Existing 2022 conditions and for future 2032 Design Year conditions. Traffic projections will be developed for future the 2032 Design Year and will be incorporated into future corridor conditions analysis. The first step in assessing future conditions is the forecasting of future traffic volumes on area roadways. To develop the 2032 baseline traffic volume forecast, two components of traffic growth will be considered. First, an annual average traffic-growth rate percentage will be determined based on historical traffic volume data and discussions with City staff. Over the last several years, many areas

across the region have experienced moderate growth or no growth at all, so it might be reasonable to utilize a 1% background growth rate to account for other regional growth outside the corridor.

Second, any planned (submitted to the Planning Department) or approved specific developments in the area that would generate a significant volume of traffic on the study area roadways will need to be included. The traffic associated with any other potential future development projects will be accounted for in the traffic forecast associated with general background growth. The 2032 baseline traffic volume conditions will be modeled to provide an operational analysis of future 2032 No-Build scenario conditions along roadways and at the Spruce Street and 2nd Street intersections throughout the corridor. The 2032 No-Build analysis will be developed by adding the future traffic growth to the Existing 2022 conditions. The following traffic model scenarios will be analyzed using Synchro Software:

#### Existing and No-Build Conditions

- Existing 2022 Weekday AM Peak Hour
- Existing 2022 Weekday PM Peak Hour
- Existing 2022 Saturday Midday Peak Hour
- Future 2032 No-Build Weekday AM Peak Hour
- Future 2032 No-Build Weekday PM Peak Hour
- Future 2032 No-Build Saturday Midday Peak Hour

Weston & Sampson will work with the City to develop two roadway alternatives along Spruce Street between Williams Street and Everett Avenue. Both alternatives will be developed to strike a balance between operations and safety for all roadway users. This may include a combination of any of the following roadway design features: exclusive turn lanes, center dual-use turn lanes, shared-use lanes, exclusive bicycle lanes, wide multi-use sidewalks. At the signalized intersections the design features may include exclusive turn lanes, shared-use lanes, permitted and protected phasing using Flashing Yellow Arrow, bicycle lanes, crosswalks, exclusive pedestrian phasing or current pedestrian phasing with Lead Pedestrian Interval.

Build conditions will include two alternatives using the following time periods:

- Future 2032 Build Weekday AM Peak Hour
- Future 2032 Build Weekday PM Peak Hour
- Future 2032 Build Saturday Midday Peak Hour

The results of the traffic analysis including existing and future conditions will be documented in a traffic memorandum and will include the following:

- Introduction
- Description of Existing Conditions
- Traffic Volume and Speed Data Summary
- Crash Data Summary
- Traffic Projections
- Analysis Results
- Appendix

#### TASK 4 – INITIATE BASEMAP DEVELOPMENT

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Existing Citywide LiDAR data to be provided by the City and shall be use to initiate basemap development. The LiDAR point cloud will be used to map surface features for the work zone and near abutting intersections. The basemap shall be built in NAVD88 vertical datum. Plan features, text, and symbology shall be 1"=20' scale and framed for plan presentation. City GIS data will be imported including tax lot lines, owner information, addresses, street names, and building layout data. Curb line and surface features will be mapped via LiDAR data.

City utility GIS will be used to acquire basic attributes of municipal utility infrastructure. The Murray Industrial Park plans from the late 1970s provide the best-available depiction of the very complex underground utility conditions in this work zone. These plans, along with actual surveyed features taking primacy, will be interrogated to present key executive location and nature of utility layout in the work zone. Plans from infrastructure improvements in Williams Street, Second Street, and Everett Avenue will also be reviewed to present executive accounting and layout of utilities in the work zone. Depth data for key sections of sewer and drain mainline will be interrogated from available record/study sources and presented on plan for use in concept and preliminary design development. Sources of data used will be referenced in notes associated with the plan. A site walk will be performed to validate surface features and data presentation. This should be considered preliminary basemap development, with detailed buildout of below grade features and validation in subsequent phases of work. See "Exceptions" section of this scope of work for details related to exceptions.

## TASK 5 – UTILITY ASSESSMENT

Acquire and review reports and assessments prepared relevant to municipal utility infrastructure for consideration in design development. Based on available reports, assessments, capital plan recommendations, and professional opinion based on age/material/configuration, provide recommendations for retaining, rehabilitating and replacing municipal infrastructure. Municipal infrastructure components in the project area may include:

- Sewer – Includes small diameter separated sewer as well as large diameter (54" diameter approx.) combined sewer. The large brick sewer is part of legacy combined sewer systems. It has an atypical looped configuration which flows from Second Street toward Williams Street before doubling-back to Second Street where it discharges to an MWRA interceptor. Weston & Sampson will assess the large brick sewer in the context the past decade's combined sewer separation program progress and review opportunity to abandon the large diameter brick sewer, which poses a risk of in maintenance and collapse (it collapsed during road work north of Everett Avenue around 2013). Make recommendations for field investigations to validate opportunity for abandonment and characterize scope required to remove inflow sufficient to abandon. Assess opportunity for rehabilitation or replacement of the smaller VC sewer. Assess impact of large drain interceptor on prospective transfer of services from the large sewer subject to abandonment to the small sewer (each are on opposite sides of the drain).
- Drain – Includes small local collector drain as well as large interceptor drain (up to 96" diameter). The drain was installed in the late 1970's, is constructed of corrugated metal. The pipe has been subject to at least one documented collapse and is critical to watershed stormwater management. Assessment was performed around 2016 of sediment levels and opportunity for rehabilitation. Refresh review of the recommendations and renew limited consideration of alternatives for rehabilitation including pros and cons and comparative cost. Assess for coordination with the capital plan. Work with the City to determine scale of investment feasible for this asset. Work with the City's modeling contractor to review the results of their area pump

station needs assessment, and consider how that determination impacts proposed approach to drain rehabilitation or replacement in this project area.

- Water – Includes distribution pipe installed during the 1970s. Assess age, material, size, and configuration of known area water main. Request information on area break history to inform review. Recommend plan for water main, valve, and hydrant rehabilitation or replacement.
- Carter Street Pump Station Force Main – Assess the existing 24" discharge of the Carter Street Pump Station to the drain culvert in Spruce Street and the implications of that interconnection on the requirements and provisions of drain rehabilitation work.
- Municipal Fiber & Fire Alarm Wire – Review and characterize municipal telecommunications in the work zone.

Consider other utility conditions in the work zone including:

- MWRA water and sewer interceptors – Transmission mains and interceptors cross this work zone in the alignments of 2<sup>nd</sup> and 3<sup>rd</sup> Streets. Assess their general character and relevance to the project.
- Private buried power, gas, and telecommunications – Consider known assets and their relevance to municipal utility work.
- Utility Poles and overhead wire – Identify matters of pole ownership and custodian, pole placement and it's relevance to conceptual roadway & utility alignments, and preliminary identification of utilities observed on poles. The project will not aspire to assess undergrounding, but the information gathered and communicated here would be relevant to a future undergrounding review.

Consider utility implementation risks such as around:

- Historic land uses including underground storage tanks and building foundations known to exist in the section of roadway subject to widening (widened from 40 to 60 feet).
- Around bypass and handling of existing flows.
- Around floodplain resilience and coordination with broader area initiatives.

Provide a Utility Assessment Technical Memorandum describing the results of this review and assessment.

## **TASK 6 – PRELIMINARY ENVIRONMENTAL & SUBSURFACE DATA REVIEW**

Areas of impacted soil from industrial operations and regional land filling (urban fill) are likely to be encountered within the project area. Construction in this area will require special soil handling and management. Due to the low elevation and proximity to the Island End River, shallow groundwater within trenches is anticipated to be encountered and prospect of groundwater contamination is likely.

Weston & Sampson will compile subsurface soil and groundwater data gathered in closely proximate work areas including Williams Street, 2<sup>nd</sup> Street, Everett Avenue, Spruce Street [north]. The team will gather boring logs, probes, and laboratory analytical from around the work zone and near extent. The data will be reviewed to assess probable physical character of soils which will inform suitability for bearing and backfill. It is anticipated the work zone will contain underlying strata of bulky urban fill debris, soft marine clays, and peat. The proximate/historic data will also be reviewed for indication of probable contamination and the regulatory implications will be assessed.

Weston & Sampson will perform a preliminary review of the files available at the Massachusetts Department of Environmental Protection (MassDEP) website, which lists disposal sites regulated under the Massachusetts Contingency Plan (MCP) and identify any Activity and Use Limitation (AUL) that are relevant. Weston & Sampson will review available information for these sites, as well as previous assessments reports proximate the project area to identify potential impacts to soil and groundwater and data gaps.

The result of the preliminary environmental and subsurface data review will be reported in a technical memorandum. The memorandum will include figures identifying available boring/probe locations and tables summarizing the results. The memorandum will also include brief summary of the data, probable implications on the excavation and handling of excavated materials, and recommendations future sampling program.

**TASK 7 - PRELIMINARY DESIGN SCOPE OF WORK, ESTIMATE, SCHEDULE (10% DESIGN LEVEL)**

Roadway work shall include reconstruction of the roadway and sidewalks along Spruce Street from its intersection with Williams Street running approximately 1,600 ft to intersection with Everett Avenue and will include reconstruction of the intersection of Spruce Street and 2<sup>nd</sup> Street including the installation of all new traffic signal equipment.

The designs will expand on the recommendations of the Corridor Study and will show how those recommendations fit into the current cross section of Spruce Street. The Preliminary Designs will include lane arrangement between Williams Street and Everett Avenue with appropriate travel and approach lanes to each intersection and bike lanes as appropriate. We will indicate rough locations of proposed signal equipment at Second Avenue for basic spatial arrangement only. Sidewalk treatments and tree plantings will be shown on these plans as well as any site amenities such as benches, trash receptacles, bike stands and the like. The work also includes the preliminary layout and indication of construction requirements of water, sewer, and stormwater infrastructure improvements proposed.

The project team will then meet with the City and local shareholders to discuss the plans and how they fit into the corridor and fit the needs of the corridor and neighborhood. We will gather information from this meeting and see how the plans may be updated to included comments from the group. This will culminate in the basis for a Preliminary Design for Spruce Street between Williams and Everett Avenue for further refinement by the Team.

After the kickoff meeting to discuss design details, preliminary construction plans and details will be developed and submitted to the City for review and approval. These plans will include construction plans and profile sheets showing pavement rehabilitation details within the project area, sidewalk details, roadway layout information, traffic signal layout, and typical roadway cross sections for review and discussion.

Geometry design shall closely conform to horizontal lay of bounding existing conditions; be designed around appropriate criteria for speed and roadway type; support positive draining surfaces without degrading access to businesses along the roadway while addressing local flooding as appropriate; and include creation of top line cross sections every 50 feet and at crucial locations such as driveways to indicate how the proposed roadway elevations will meet existing grade.

.....

We will provide preliminary design plans to the City staff for review and comment at two important milestones of the design process, including during the development of alternatives and prior to final submission of preliminary design plans. We will prepare the preliminary plans at a 1-inch equals 20-foot scale on a base map prepared using City Lidar imagery.

- Cover Sheet
- Preliminary horizontal/vertical geometrics
- Typical cross sections
- Construction plans
- Top line cross sections at 50-foot intervals and crucial locations
- Preliminary utility plan drawings for water, sewer, and sewer
- Preliminary indication of pavement markings, signage, traffic signal layout
- Conceptual Landscaping and streetscape designs

Prepare a preliminary probable opinion of construction cost (OPCC) based on major construction items using MassDOT Average Weighted Bid Prices, costs from recent construction projects within the City, and our experience on other projects within the City. OPCC items will be based on item numbers and descriptions found in the latest MassDOT Nomenclature Book. Other project items such as traffic control, pavement marking and signing, and loam and seed will be based on percentage of construction cost.

Prepare a preliminary construction schedule indicating engineer's opinion of tasks, sequence, and duration of events required for implementation. The product will be a Gantt Chart schedule with notation indicating critical milestones.

Prepare a Permit Assessment Technical Memorandum indicating the engineering team option of permits that may be required to deliver the 10% design scope of work. Estimate timeline for permit acquisition.

#### Exclusions:

- 1.) No wetland impacts are anticipated, and the project is located outside identified buffer zones. The project is within the flood plain. Permitting is not included in this scope of work.
- 2.) It is assumed that Spruce Street will not be significantly widened requiring permanent Right of Way takings. Any conceptual easements for sidewalks, or traffic signals will be noted on the plans and a separate scope of work and fee will be negotiated with the city to provide Right-of-Way plans at that time.
- 3.) Since the project does not involve federal funds, it is assumed that NEPA review will not be required.
- 4.) In addition, the project does not involve MassDOT funding, so coordination with MassDOT Office is not anticipated to be necessary.
- 5.) Preparation of a Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent for coverage under the CGP is not included in the scope of work.
- 6.) Preparation of specifications is not included in this scope of work.
- 7.) It is assumed that the city will provide Lidar imagery for the Preliminary Designs and that no on the ground topographic survey will be performed under this this scope of work.
- 8.) No soil exploration will be performed at this time. This scope of work does not include preparation of any MCP submittals. This scope also does not include any construction

administration activities to verify soil and groundwater are management appropriately during construction.

- 9.) The scope does not include opening of manholes and destructive or non-destructive testing of utility infrastructure.
- 10.) No on the ground survey will be performed in this contract. AutoCAD Civil 3D pipe networks, private utility requests & detailed utility presentation, and lot line validation with registry of deeds plans will not be provided. Detailed interrogation and presentation of buried utility data will similarly not be provided in this contract. Utility profiles will not be prepared as part of this contract.

DRAFT



**PROPOSED FEE**

Estimated labor hours by task and fee are presented by Task in the table below. Billing rates shall be consistent with the 2022 Weston & Sampson billing rate table. Weston & Sampson proposes a lump sum fee of \$167,600 for the scope of work.

| Task              | Description   | Hours        | Value               |
|-------------------|---|--------------|---------------------|
| 1                 | Project Management & Meetings                               | 48           | \$9,300.00          |
| 2                 | Review of Existing Roadway & Traffic Conditions             | 50           | \$7,000.00          |
| 3                 | Traffic Analysis  | 123          | \$17,600.00         |
| 4                 | Initiate Basemap Development                                | 128          | \$16,500.00         |
| 5                 | Utility Assessment  | 209          | \$31,600.00         |
| 6                 | Preliminary Environmental & Subsurface Data Review          | 57           | \$7,900.00          |
| 7                 | Preliminary Design Scope, Estimate, & Schedule (10% Design) | 598          | \$77,700.00         |
| <b>Subtotals:</b> |   | <b>1,213</b> | <b>\$167,600.00</b> |

Typical Weston & Sampson amendments to the City's terms and conditions should apply. Weston & Sampson would complete work within 7-months of Notice to Proceed.