
Congestion Management Process (CMP) Scope of Services

The consultant will support development of the CMP Status Report, which accompanies each adopted Regional Transportation Plan. The CMP Status Report forecasts congestion on the region's roadways and evaluates congestion-reducing strategies. As a federally-designated Transportation Management Area (TMA), NYMTC must maintain a CMP to forecast traffic congestion and consider congestion-reduction strategies. The CMP establishes performance measures to define transportation system congestion; a toolbox of strategies to address congestion; a methodology to evaluate and prioritize congestion-reducing projects and strategies; and a mechanism to assess the effectiveness of implemented strategies. The next CMP Status Report will be effective October 1, 2017, after which preparations will begin for the next cycle to develop a Status Report not later than October 1, 2021.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of CMP Status Report development:

1. Post-processing of outputs from the New York Best Practice Model (NYBPM);
2. Preparation of metrics and graphics to demonstrate and forecast transportation system performance;
3. Drafting of report sections for review by NYMTC's members;
4. Development of report maps, figures and tables; and visualizations for public outreach; and
5. Development of a draft and final CMP summary report.

Deliverables

Deliverables for these activities may include the following:

1. Draft and final report sections as assigned, including all required metrics and graphics, maps, figures and tables; and
2. Draft and final CMP Status Report and summary document

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: the federal congestion management process; transportation demand modelling; GIS mapping; and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated once.

Unified Planning Work Program (UPWP)

Development Scope of Services

The consultant will support the development of annual UPWPs. The UPWP defines the planning priorities in NYMTC's planning area and describes all federally-funded transportation-related planning activities anticipated within a given program year. Its successful completion each year enables federal funding assistance to undertake planning activities by NYMTC's staff and its members are effective each April 1st.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of UPWP development:

1. Development of a master timeline of federally-required planning products and analyses and projection over five program year period;
2. Formulation of detailed guidance packages for each UPWP development cycle;
3. Entry of information on core planning projects into content management system software;
4. Geocoding of planning project information for visualization;
5. Compilation of planning project information from other significant regional planning initiatives;
6. Collection and compilation of members' and staff progress reports into two six month reports each program year; and
7. Developing proposed UPWP amendments and administrative modifications.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing the five year program projection;
2. UPWP guidance package(s) as assigned;
3. Six month progress report(s) as assigned;
4. Technical memorandum detailing other regional planning initiatives as assigned; and
5. Draft and final versions of proposed UPWP amendments and administrative modifications.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: data bases and GIS mapping; and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated up to five times.

TRAVEL SURVEY DATA SUPPORT CONTRACTOR

Specifications

NYMTC is seeking a consultant firm to provide continuous, long term in house contractor to augment NYMTC staff in the Travel Surveys unit.

More than one candidate can be offered by each responding firm. The selected candidate must have:

- Strong technical skills in the development and analysis of travel surveys.
- Experience in analyzing travel surveys data using statistical software package such as SPSS.
- Good writing, editing skills and organization skills to prepare technical reports as required.
- Good verbal skills and interpersonal skills in the research, reporting and analysis of travel surveys data.

Duties and Tasks

Task # 1: Assist NYMTC's Travel Survey Manager in the research of new travel surveys to be implemented by the agency. Work with survey experts in other agencies and universities on all tasks involving survey design and implementation, including sampling design, recruitment instrument design, retrieval instrument design, pretest design, survey process and procedures, quality measures and standards, and other related tasks as directed by the Survey Manager. Prepare briefings and reports on the research performed for new travel surveys and the coordination efforts with NYMTC staff, members and others in travel surveys related matters.

Task # 2: Analyze existing travel survey data, and develop data products for users. Prepare reports based on the analysis of existing survey data as requested by NYMTC staff, its members and other data users. Produce analytical reports of and survey data describing travel patterns in the region.

Task # 3: Research and make recommendations on the design of web-based templates for users to extract and analyze the available survey data from the web. Research and make recommendations on improving the NYMTC Travel Surveys web pages. Prepare reports on the recommended updates and improvements to NYMTC's Census and Travel Surveys web pages.

Task # 4: Work with managers and staff in NYMTC's Technical Group to coordinate survey data needs, application needs, information sharing, and data integration. Prepare briefings on the coordination with other units in NYMTC's Technical Group in travel surveys related matters.

Task # 5: Attend meetings related to NYMTC's travel surveys, including Regional Household Travel survey, Regional Origin & Destination Surveys (RODS), Regional Establishment Survey (RES), and cell phone data and other available big data.

Scope of Services

This task order assignment requires development and analysis of travel surveys, statistical analyses with statistical software packages, preparation of technical reports as required, and presentation of a range of travel survey data analyses for NYMTC. Specific tasks are detailed below.

Task 1

Assist NYMTC's Travel Survey Manager in the research of new travel surveys to be implemented by the agency. Work with survey experts in other agencies and universities on all tasks involving survey design and implementation, including sampling design, recruitment instrument design, retrieval instrument design, pretest design, survey process and procedures, quality measures and standards, and other related tasks as directed by the Survey Manager. Prepare briefings and reports on the research performed for new travel surveys and the coordination efforts with NYMTC staff, members and others in travel surveys related matters.

The Consultant shall cooperate with NYMTC staffs as well as survey contract teams for individual survey project. The responsibility shall range from survey preparation to pre-test, main survey implementation and post-processes such as data quality check and publication as well as data usage training to NYMTC member agencies. The Consultant shall possess preeminent experiences and knowledge of travel survey, statistical analysis as well as geographies in NYMTC region so that s/he can assist NYMTC staff and cooperate with survey contract teams - which typically handle their own expertise in different parts such as survey design, data collection or weighting among members without having a staff to possess comprehensive knowledge of entire scopes.

Task 2

Analyze existing travel survey data, and develop data products for users. Prepare reports based on the analysis of existing survey data as requested by NYMTC staff, its members and other data users. Produce analytical reports of and survey data describing travel patterns in the region.

The Consultant shall analyze and share the survey data results in many forms:

- Analyze the results using statistical package such SPSS, SAS, Access and other spreadsheet software;
- Produce summary tables and graphic representations of the results using the above software as well as geographical information system, ArcGIS;
- Produce reports containing narrative text supported by the results of statistical analyses, tables, graphs and map (and perhaps some equations explaining the derivation of results);

- Study other survey data throughout the nation such as NHTS as well as other dataset like CTPP and LEHD which provide journey to work flows and produce analytical reports to describe regional travel patterns.
- Produce user-friendly analysis report format for NYMTC's survey web with downloadable files, and links to more technical papers and databases.

Task 3

Research and make recommendations on the design of web-based templates for users to extract and analyze the available survey data from the web. Research and make recommendations on improving the NYMTC Travel Surveys web pages. Prepare reports on the recommended updates and improvements to NYMTC's Census and Travel Surveys web pages.

The Consultant shall research different web-visualizer formats and provide necessary recommendation accordingly. Not limited but proposed detail task will include;

- Investigate other web-visualizer templates that provide Journey to Work flows such as NHTS Data Visualization (http://nhts.ornl.gov/det/ria/_Choroplth_Map.aspx) and U.S. Census OnTheMap page (<http://onthemap.ces.census.gov/>);
- Research other developing web-based analysis tools from contractors such as GeoStats and ESRI.

Research on new current technologies on travel data collection methods and **those may arise in next five years, i.e. Smartphone app data, Google Location History (GLH) data, Big Data etc.**

Task 4

Work with managers and staff in NYMTC's Technical Group to coordinate survey data needs, application needs, information sharing, and data integration. Prepare briefings on the coordination with other units in NYMTC's Technical Group in travel survey related matters.

Collaboration with other Technical Group (TG) staffs is one of the most important tasks in MPOs like NYMTC. Being responsible to provide a robust regional travel and socio-economic forecasting, TG can take advantage of better communication among TG staffs not only excel the development and calibration of NYBPM but also improve quality of other regional travel and socio-demographic data analyses. The Consultant shall provide briefings to other staffs in a timely matter when needed.

In addition to the above-listed tasks, the Consultant shall assist NYMTC with the following tasks as directed.

- Correspond a range of technical inquiries from academia, government agencies and private consultants,
- Maintain survey database achieve in different formats; Access, SPSS and ArcGIS.
- Update NYMTC survey webpage in a timely matter.
- Prepare annual report of NYMTC's data response to NYS data Center.
- Coordinate with modeling group staffs and NYBPM developers about new TAZ boundaries, delineated by travel survey units.

The Consultant shall submit monthly invoices along with a brief progress report for the Travel Survey specialist position. Progress report invoicing will provide an opportunity to identify critical issues and milestones.

Task 5

Attend meetings related to NYMTC's travel surveys, including Regional Household Travel survey, Regional Origin & Destination Surveys (RODS), Regional Establishment Survey (RES), and cell phone data and other available big data.

Deliverables

Several types of deliverables will be developed in response to requirements agreed with the client on an as-needed basis. They will most likely take the form of inputs to the Consultant's ongoing work. The Consultant's support staff will be readily available to assist the Consultant working at NYMTC's offices with any deliverable or assignments described below:

- Briefings and reports on the research performed for new travel surveys and the coordination efforts with NYMTC staff, members and others in travel surveys related matters.
- Reports based on the analysis of existing survey data (which includes documents, tables, charts and maps) as requested by NYMTC staff, its members and other data users. Analytical reports of survey data describing travel patterns in the region.
- Reports on the recommended updates and improvements to NYMTC's Travel Surveys web pages
- Briefings on the coordination work performed with other units in NYMTC's Technical Group in travel surveys related matters.
- Reports based on other requests received.

Schedule

The Consultant shall provide continuous service working primarily at NYMTC's office for a five year period over the duration of this contract.

Transportation Performance Management (TPM)

TIP Impact Analysis Scope of Services

The consultant will support preparation of a TIP Impact Analysis to be included within the TIP in fulfillment of federal TPM requirements. The TIP Impact Analysis is a description of the anticipated effect of the TIP toward achieving the performance targets identified in the metropolitan transportation plan, linking investment priorities to those performance targets. The first such analysis will be due at the end of May 2018 and every two years thereafter.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of TIP Impact Analysis development:

1. Post-processing of outputs from the New York Best Practice Model (NYBPM);
2. Preparation of metrics and graphics to demonstrate and forecast TIP impacts and linkages between investment priorities and performance targets;
3. Drafting of report sections for review by NYMTC's members; and
4. Development of report maps, figures and tables.

Deliverables

Deliverables for these activities may include the following:

1. Draft and final TIP Impact Analysis documentation, with all required metrics and graphics, maps, figures and tables.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: transportation demand modelling; data bases and GIS mapping; and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated up to three times.

Transportation Performance Management (TPM) System Performance Report Scope of Services

The consultant will support preparation of a System Performance Report to be amended into the Regional Transportation Plan in fulfillment of federal TPM requirements. The system performance report evaluating the condition and performance of the transportation system with respect to the performance as well as the progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data. The first such report will be due at the end of May 2018 and every two years thereafter.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of TPM System Performance Report development:

1. Post-processing of outputs from the New York Best Practice Model (NYBPM);
2. Preparation of metrics and graphics to demonstrate and forecast transportation system performance;
3. Drafting of report sections for review by NYMTC's members; and
4. Development of report maps, figures and tables and visualizations for public outreach.

Deliverables

Deliverables for these activities may include the following:

1. Draft and final report sections as assigned, including all required metrics and graphics, maps, figures and tables.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: federal transportation performance management requirements; transportation demand modelling; GIS mapping; and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated up to three times.

Transportation Improvement Program (TIP) Management and Maintenance Scope of Services

The consultant will support TIP management and maintenance through a variety of member actions including TIP amendments and administrative modifications.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of TIP management and maintenance:

1. Preparation and distribution of amendment and administrative modification materials internally to NYMTC members and externally for inclusion in the Statewide TIP;
2. Maintenance of TIP and related project data bases and GIS files; and
3. Preparation of the Annual Listing of Obligated Projects, as required by federal regulation, including visualization of the obligated project information.

Deliverables

Deliverables for these activities may include the following:

1. Executed TIP amendment and administrative modification packages; and
2. Draft and final Annual Listing of Obligated Projects.

Experience

Consultant staff assigned to this scope of services will need experience with data bases and GIS mapping; and distribution lists.

Schedule

Over the duration of this contract, this scope of services may be activated up to ten times.

Transportation Improvement Program (TIP)

Development Scope of Services

The consultant will support the development and management of NYMTC's TIP. The federally-mandated TIP defines all of the federally-funded transportation projects proposed for planning, design and implementation in the NYMTC planning area over a five-year period. The TIP documents NYMTC's medium-range transportation improvements that are eligible for federal funding -- projects that will strengthen and enhance our bridges, highways, transit services, bikeways and walkways. The TIP is derived from and consistent with NYMTC's Regional Transportation Plan. NYMTC follows a two years development cycle for the TIP; a new TIP will be in place as of October 1, 2016, after which TIP adoptions will precede the start of federal fiscal years on October 1, 2018; October 1, 2020; and October 1, 2022.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of TIP development:

1. Preparation and execution of a public outreach program for each TIP cycle;
2. Entry of proposed project lists into relevant data bases;
3. Review of project information to ensure compliance with federal guidelines and to facilitate related GIS mapping;
4. Research of relevant project information for the regional emissions analysis and entry of this information into the Project Information Management System;
5. Drafting of document sections for review by NYMTC's members; and
6. Development of report maps, figures and tables.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing the TIP public outreach program and schedule; and
2. Draft and final TIP document sections, including project listings, as assigned, with all required metrics and graphics, maps, figures and tables.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: public outreach; data bases and GIS mapping; air quality and emissions analysis; and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated up to three times.

Transportation Conformity Determinations Scope of Services

The consultant will support the development of the Transportation Conformity Determinations which are required to accompany newly adopted Plans and TIPs, as well as significant amendments of projects which are classified as “non-exempt” under the Clean Air Act Amendments of 1990. The NYMTC Transportation Conformity Determination quantitatively demonstrates how the NYMTC Plan and TIP projects impact future mobile source emissions milestones set in the New York State Implementation Plan for Air Quality. Conformity Determinations are developed annually or otherwise as needed.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of Transportation Conformity:

1. Research of relevant project information for the regional emissions analysis and entry of this information into the Project Information Management System; and
2. Research of additional project information as needed to assist with the coding of projects into the New York Best Practice Model.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing the number and types of projects researched and coded.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: transportation demand modelling; project planning and design; and data bases and GIS mapping.

Schedule

Over the duration of this contract, this scope of services may be activated up to ten times.

TRANSCRIPTION & TRANSLATION SERVICES

Specifications

The proposing firm shall provide resumes and references for relevant staff designated to work on this project. Some skills relevant to the project should include:

- Good interpersonal skills
- Good knowledge of major foreign languages
- Good verbal and written communication skills
- Strong transcription experience
- Good understanding of relevant Federal regulations
- Strong GIS and GIS-related technical skills

Scope of Services

Task 1: Demographic Analysis for Limited English Proficiency (LEP)

The Consultant shall work closely with NYMTC to implement the requirement to collect necessary 2010 U.S. Census datasets and prepare demographic/planning area profile maps that establish an analytical basis for Title VI compliance. Per FTA guidance, NYMTC's planning process should guard against discrimination against members of minority groups, including those persons for whom English is not their primary language and who have a limited ability to speak, understand, read, or write English (labeled as Limited English Proficient (LEP) Persons). LEP includes people who reported to the U.S. Census that they do not speak English well or do not speak English at all.

NYMTC must "take responsible steps to ensure meaningful access to the benefits, services, information, and other important portions of their programs and activities for individuals who are Limited English Proficient (LEP)." NYMTC can demonstrate compliance with Title VI and LEP requirements by preparing maps and charts showing locations of LEP populations throughout the region and incorporating guidance in the region's Public Involvement Plan (PIP) regarding how to include LEP populations in the public involvement activities so that they can meaningfully participate in the decision-making process.

The decennial Census, which was designed to measure the count of the population and housing, includes data on the number of persons who indicated that they spoke English "very well," "well," "less than well," and "not at all" which can be accessed various levels of census geography, including census tracts. After obtaining census data on the LEP population in the NYMTC planning area, the Consultant team shall analyze it to determine the number and proportion of LEP persons in the NYMTC planning area; along with the languages most frequently spoken by LEP populations. The geographic identification of concentrations of LEP populations will be determined by examining census tracts where the proportion of LEP persons exceeds the proportion of LEP persons in the service area as a whole.

Geographic information system (GIS) maps created from this data will help visualize concentrations of LEP persons speaking different languages within the NYMTC planning area as they relate to specific public outreach activities detailed in the PIP. Although this schedule and scope of work does not permit an extensive outreach effort, NYMTC's regular public outreach programs could be used to perform ground truth verification of LEP persons where there are concerns of census data undercounting their number in certain areas within the planning area.

The Consultant team shall prepare maps and charts based Federal requirements and on data collected from decennial census. As per FTA's guidance, the Consultant team shall create the following maps:

1. A base map of the NYMTC metropolitan area that includes each Census tract or traffic analysis zone, major streets and highways, fixed transit facilities and major activity centers or transit trip generators.
2. Maps showing the distribution of population with LEP by total population and then classified by major language or language group.
3. Demographic maps that plot the basemap information and also shades those Census tracts or traffic analysis zones where the percentage of the total minority and low-income population residing in these areas exceeds the average minority and low-income population NYMTC region.
4. Maps identifying tracts where the total minority population percentage and the total low-income population percentage exceed the systemwide average for the region should be highlighted.

In addition the collecting and analyzing 2010 Census datasets, the Consultant team shall perform a literature and best practices review for agencies located in the NYMTC region that receive Federal assistance and are required to conduct complementary Title VI analyses and create complementary LEP Plans. The information collected during this literature review shall be cataloged in a spreadsheet; highlighting the elements, datasets, and policies that were used to identified LEP populations, as well as any additional information pertinent and readily available for inclusion within this tasks corresponding technical memorandum.

Task Deliverables

1. Draft Technical Memorandum #1 – presenting the results of the demographic maps and analysis for review by NYMTC staff and NYMTC members
2. Final Technical Memorandum #1
3. GIS files and related geodatabase used to create maps for the analysis, in formats suitable for hard-copy publication and for posting on the NYMTC web site.
4. Excel database summarizing regional Title VI reports

Task 2 – Development of Translation/Transcription Policy and Procedures and Organizational Implementation Plan

The Consultant team proposes a structured approach to collecting appropriate research and soliciting input to develop a proposed translation and transcription process that considers current policies of member agencies, best industry practices and guidance documents. The

process shall result in a recommendation that includes a policy statement, related operational procedures and description of affected public information. To achieve this, the Consultant team shall:

1. Meet with the NYMTC project manager and staff to identify stakeholders and interested parties as they relate to translation and transcription processes. Primary objective for this meeting includes gathering existing NYMTC policy and procedural documentation and identifying data needs such as current meeting locations;
2. Review the translation and transcription policies of NYMTC member organizations;
3. Review NYMTC's PIP, relevant operating procedures and relevant Federal regulations and guidance;
4. Work with NYMTC staff in inventorying NYMTC publications, public affairs function, web site, and social media initiatives;
5. Explore best practices for MPOs regarding transcription and translation policies, along with the dissemination of these policies and their related procedures; and
6. Synthesize the collected research with demographic information developed in Task 1 in order to recommend a translation/transcription process that will best serve the NYMTC region.

After completing the review of member agency translation and transcription policies, the Consultant team shall develop an implementation plan outlining policy and operating procedures to address the needs of LEP population. The Consultant team shall utilize the "four-factor" framework in U.S. Department of Transportation's (DOT) LEP Guidance outlines for applications of the policy:

1. The greater the number or proportion of LEP persons from a particular language group served or encountered in the eligible service population, the more likely language services are needed.
2. Recipients should assess, as accurately as possible, the frequency with which they have or should have contact with LEP individuals from different language groups seeking assistance, as the more frequent the contact, the more likely enhanced language services will be needed.
3. The more important the activity, information, service, or program, or the greater the possible consequences of the contact to the LEP individuals, the more likely language services are needed.
4. A recipient's level of resources and the costs imposed may have an impact on the nature of the steps it should take in providing meaningful access for LEP persons.

The Consultant team shall assist NYMTC in developing an implementation plan which typically includes the following five elements:

Identifying LEP individuals who need language assistance: The Consultant team shall work with NYMTC to identify the number and proportion of LEP individuals eligible to be served and the frequency of encounters. This shall include providing a plan for collecting and

maintaining information gathered from LEP population, and help identify the native language and geographic concentrations of the planning area where the population is concentrated. This will entail creating a LEP service provision log to record, maintain, address and monitor interactions with LEP individuals which will help NYMTC develop a broad profile of LEP service provision requirements by language, geography, and service needs to effectively address assistance requirements at NYMTC.

Providing language assistance measures: The implementation plan shall list oral and written language assistance products and methods that NYMTC has implemented and the ways in which they are made available to the staff. The Consultant team shall provide instructions to the staff who communicate orally or in written form with LEP population. It shall develop policies to ensure NYMTC staff competency in translation services. Products include brochures, maps, outreach material targeted towards LEP population. NYMTC will need to survey its staff to identify who have prior training or are well versed with the identified LEP languages and are also oriented to provide the necessary LEP services as required.

Training staff: The implementation plan shall provide information regarding Federal resources for training NYMTC staff who are likely to communicate with LEP population and also review any existing training material within the agency. The Consultant shall provide information on State and Federal training programs to NYMTC, in-turn to provide training to the identified staff persons as part of this implementation plan.

Providing notice to LEP persons: The Consultant team shall inventory NYMTC's the existing public service announcements and community outreach platforms and incorporate or review notice of language assistance in to these community outreach platforms. The Consultant shall request outreach material – published, media, and in-person interaction of services – from NYMTC after jointly identifying such material which qualifies the requirements of LEP service provision.

Monitoring and Updating the LEP Plan: The implementation plan shall establish a process to obtain feedback from LEP population, and from the NYMTC staff serving them and making changes to the plan based on the feedback received. It shall provide for monitoring for instances when activities will necessitate the provision of information and notices in additional languages. LEP service log shall have provisions to record customer feedback, and public meetings and interactions with LEP populations will seek feedback on effectiveness of such events in resolution or addressing the needs of LEP individuals.

In addition to general implementation policies and procedures, the Consultant team shall explore options available to create awareness of the new policy and procedures in order to reach stakeholders and interested parties. For example, incorporating the approved policy and procedures into NYMTC's PIP shall provide a vehicle for distributing the new guidance to those implementing planning projects. Similarly, the Consultant team shall recommend approaches for disseminating the new policy and procedures to other stakeholders and interested parties, as identified in the research process.

Task Deliverables

1. Draft Technical Memorandum #2 – presenting a proposed translation/transcription policy and operating procedures for NYMTC, as well as an organizational implementation plan for enacting policies and ensure feedback from LEP populations is obtained.

2. Final Technical Memorandum #2

Task 3 – Roster of Accessible Meeting Locations within the NYMTC Planning Area

The Consultant team shall coordinate with NYMTC member organizations and other relevant agencies and organizations in the New York metropolitan area to establish a roster of accessible meeting locations throughout the NYMTC planning area, with particular attention to the demographic analysis undertaken in Task 1.

Locations selected must:

1. Be readily accessible to the vast majority of residents within the county (or borough). Proximity to public transportation and accessibility by alternative means of transportation than single occupant vehicles will be a consideration.
2. Comply with ADA guidelines.
3. Be spatially balanced and reflect the results of the Task 1 demographic analysis.

In addition, the Consultant team proposes to display these selected locations on a map of the region that also integrates the demographic information developed in Task 1. This visual tool shall help NYMTC and its members:

1. Ensure that the locations selected for planning meetings optimize public participation, including LEP populations identified in Task 1; and
2. Determine, consistent with the policies developed in Task 2, when it is appropriate and necessary to provide translation and transcription services at a public meeting.

The Consultant shall use the same GIS used in Task 1 in order to deliver a resource tool that shall enable planners to identify convenient, accessible locations for public meetings, and further, to link to those locations for additional information. The Consultant team shall:

1. Work with NYMTC staff to develop a list of NYMTC member organizations and other relevant agencies and organizations that currently hold public meetings, in order to collect and collate existing information on accessible locations;
2. Draft a letter (or e-mail) for distribution by NYMTC to each of the identified organizations and agencies, explaining the project and requesting their list of accessible meeting locations, with contact information, where available; This shall perhaps have a table with criteria regarding accessibility (transit accessibility, handicapped parking, accessibility provisions to the building, ease of navigation, etc), capacity to accommodate attendees,
3. Augment this information by researching additional venues that provide accessible meeting locations, with particular attention to those in areas identified as having populations with LEP, per the Task 1 demographic analysis;
4. Recommend a GIS approach to development of a map and related geodatabase to highlight accessible locations and related translation/transcription needs for meetings held in those locations; and A map can be provided from this information and could be provided with an overlay of LEP population.

5. Organize the collected information by county and, where possible, by language or cultural identification, and will present this information in a detailed list and map form. This will be tied to LEP population solicited feedback about accessibility issues regarding selected locations or locations that are presently being used for these purposes. This will be a way to ground-truth the GIS methodology and evaluate it qualitatively based on customer feedback.

Upon completion and final approval of technical memorandum 3, the Consultant team shall combine the final technical memoranda into a single Draft Report for submission to NYMTC staff for review. Upon the receipt and resolution of final comments and edits provided by NYMTC staff, the Consultant team shall submit the project's Final Report.

Task Deliverables

1. Draft Technical Memorandum #3 – mapping proposed and selected locations for accessible public meeting locations for review by NYMTC staff and NYMTC members
2. Final Technical Memorandum #3
3. GIS files and related geodatabase summarizing accessible meeting locations
4. Draft Final Report
5. Final Report

Schedule

This task assignment shall be for a 12-month duration, with four optional 12-month extensions.

Strategic Business Planning Scope of Services

The consultant will support the development of NYMTC's biennial Strategic Business Plan. The target date for the completion of the next Plan is January 1, 2018 and then every two years thereafter. The next Business Plan will also include an updated Information Technologies section.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of strategic business planning:

1. In-reach to NYMTC's members and key staff managers;
2. Projection of workload based on the master timeline;
3. Production of draft components and recommendations for discussion with the members and key staff managers; and
4. Production of a final Business Plan with implementation agenda, including all tables and graphics.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing projection of workload based on the master timeline; and
2. Draft and final Business Plan with implementation agenda, including all tables and graphics.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: strategic planning; organizational planning and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated up to three times.

September 11th Memorial Program for Regional Transportation Planning Scope of Services

The consultant will support the development of the September 11th Memorial Program for Regional Transportation Planning, an annual allocation of federal funds for academic and/or local community planning projects. The Memorial Program provided assistance to students for projects in both academic and public policy arenas as a way to educate and motivate those who are interested in transportation technology and planning. Funded through the UPWP, the September 11th Memorial Program for Regional Transportation Planning is managed through a partnership with the University Transportation Research Center.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of the September 11th Memorial Program:

1. Development of student/public notices on the program;
2. Solicitation of planning project topics from NYMTC's staff and members;
3. Convening of project review committees and assembly of committee rating information;
4. Ranking of project proposals based on committee ratings;
5. Preparation of final materials and information for consideration and action by NYMTC's Program, Finance and Administration Committee; and
6. Organizing the annual September 11th Memorial Program Brown Bag Lunch presentation, including public notices and announcements.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing planning project topics solicited for each program cycle; and
2. Final materials and information for consideration and action by NYMTC's Program, Finance and Administration Committee Six month progress report(s) as assigned.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: public outreach and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated up to five times.

Socioeconomic and Demographic Forecasts Contractor

NYMTC is seeking a consultant firm to provide continuous, long term in house contractor to augment NYMTC staff in the Socioeconomic and Demographic Forecasts unit.

The selected candidate must have:

- Strong technical skills in the development and analysis of demographic and socioeconomic forecasts for large metropolitan region, and knowledge of demographic and economic models.
- Familiarity with NYMTC's socioeconomic demographic (SED) models, and models developed by vendors, such as Global Insight (GI) and REMI.
- Experience in collecting and analyzing demographic, socioeconomic, and land use data using software such as SPSS, GIS, and Access.
- Experience in demographic, socioeconomic, and land use data monitoring and maintaining of the data base as NYMTC is required to do under Federal Regulations.
- Good writing, editing skills and organization skills to prepare technical reports as required.
- Good verbal skills and interpersonal skills in giving presentations and holding meetings with NYMTC members as well as the public.

The selected candidate shall perform the following duties and tasks:

- Socioeconomics and Demographics Forecasts — Develop and analyze socioeconomic and demographic forecasts for the NYMTC region. Provide the necessary forecast data to the Models Section for Best Practice Model (BPM), and to the Planning Group for the update of the Regional Transportation Plan (RTP).
- Forecasting Working Group (FWG) — Assist in holding meeting of the FWG, which periodically reviews various forecasts, and brings members of the FWG representing many agencies in the NY-NJ-CT area to reach a consensus on the most recent population and employment forecasts. (The adopted forecasts by PFAC are critical inputs to NYMTC's Best Practice Models, and the Regional Transportation Plan, and they are used by the Council members in all of their transportation studies and project development.)
- Preparing reports on NYMTC forecasts for the public review process, participating in the public review meetings, and preparing written reply to the public comments.
- Monitoring of Demographic and Socioeconomic Data – Prepare and produce publications, such as: data tables on Regional Demographic Statistics, County, Regional Data Profiles, and Project Development Inventory.
- Data Base – Oversee data collection activities to ensure that data are available

to meet all federal requirements under Federal Regulations. Support the demographic and socioeconomic data needs of the Models Group, the Planning Group, the Council members, and the general public, and maintain current database for them.

- Agency Representation—when directed by NYMTC, the selected candidate will represent the Council Staff with Council members, other agencies and consultants in matters involving data bases, data collection efforts, and forecasting.

Scope of Services

Task 1 – In-Field Demographer/Economist

The Task Order Assignment Mini-Bid Request identified several duties and tasks to be undertaken by the selected Demographer/Economist, including:

- Socioeconomics and Demographics Forecasts — Develop and analyze socioeconomic and demographic forecasts for the NYMTC region. Provide the necessary forecast data to the Models Section for Best Practice Model (BPM), and to the Planning Group for the update of the Regional Transportation Plan (RTP).
- Forecasting Working Group— Assist in holding meeting of the FWG, which periodically reviews various forecasts, and brings members of the FWG representing many agencies in the NY-NJ-CT area to reach a consensus on the most recent population and employment forecasts. (The adopted forecasts by PFAC are critical inputs to NYMTC’s Best Practice Models, and the Regional Transportation Plan, and they are used by the Council members in all of their transportation studies and project development.)
- Reporting – Preparing reports on NYMTC forecasts for the public review process, participating in public review meetings, and preparing written replies to the public comments.
- Monitoring of Demographic and Socioeconomic Data – Prepare and produce publications, such as: Regional Demographic Statistical Report, County, Regional Data Profiles, and Project Development Inventory.
- Data Base – Oversee data collection activities to ensure that data are available to meet all federal requirements under MAP-21 and other applicable regulations. Support the demographic and socioeconomic data needs of the Models Group, the Planning Group, the Council members, and the general public, and maintain current database for them.
- Agency Representation—When directed by NYMTC, represent the Council Staff with Council members, other agencies and consultants in matters involving data bases, data collection efforts, and forecasting.

The socioeconomic and demographic forecasts are critical inputs to the NYBPM, and therefore to several critical elements of NYMTC’s research program, the Regional

Transportation Plan and the Transportation Improvement Program. Work must be performed efficiently but with great quality to gain consensus and support program investments. The data are critical to NYMTC's compliance with FAST Act guidelines for regional planning as well as to understanding the region's major future challenges. The process for building support for the projections requires considerable sensitivity to the varied concerns of stakeholders such as the member county governments, the Forecasting Working Group, and the Program, Finance and Administration Committee (PFAC).

The selected Consultant Team shall be primarily stationed at NYMTC's offices. Occasional trips are expected to member agency offices and to attend other outside meetings. These assumptions shall be incorporated into proposed resource allocation estimate of staffing hours by staff title (see below) and in the cost proposal.

Deliverables: Several types of deliverables shall be developed by the Demographer/Economist and an itemized list is presented in the Task Order Mini-Bid. These include:

- Data extraction, SED model runs and analyses for various scenarios,
- Analytical reports on demographic and socioeconomic trends in the New York metropolitan region,
- Data files in Access, Excel, and GIS formats containing socioeconomic data at the census tract and TAZ levels,
- Updates to Project Development Inventory,
- Arrange Forecasting Working Group meetings and prepare minutes,
- Answers to data requests, and
- Maintain Forecasting Web page.

The Consultant shall submit monthly invoices along with a brief progress report for the Demographer/Economist position. Progress report invoicing will provide an opportunity to identify critical issues and milestones.

Task 2 – Back-Up Support Services

The selected Consultant shall be able to provide back-up support services if additional staff for demographic and economic services may prove useful in case of unusual high volumes of work or critical deadlines.

The Consultant shall identify additional in-house staff with economic, demographic, planning and statistical skills who are appropriately qualified. It is desirable to have experience with NYMTC's NYBPM, and be available for questions and technical support and select analysis tasks. These home-based Consultant staff shall be available for deployment to provide assistance. Descriptions for these additional staff resources, representative of the capabilities of the Consultant's Planning and Economics Departments, appear in a description of the "Demographic & Economic Support Staff" below. The Consultant's technical and cost proposals assume the allocation of a small level of additional part-time staffing.

Deliverables: Several types of deliverables shall be developed in response to requirements agreed with the client. They will most likely take the form of inputs to the Demographer/Economist's ongoing work. The Consultant Team support staff will be readily available to assist the Demographer/Economist with any deliverable or assignments.

Cost Estimate and Labor Resource Allocation

The Consultant's estimate of hours and costs required for the Demographic and Economic Specialist position and Back-Up Support Services team are detailed by staff assignment, title, and firm. The estimate of the total cost is also summarized.

The budget provides an estimate of direct non-salary costs to support potential travel-related expenses for Demographic and Economic Services. Other additional direct non-salary costs, not identified by this task order supplemental agreement, may result from the conduct of normal work activities by the selected Demographic and Economic Services professional. Other unanticipated direct non-salary costs, which may come up as additional costs, will be reimbursed, provided that they are in the conduct of normal work activities and with prior authorization from the designated NYMTC representative.

Invoicing Terms

The Consultant shall invoice monthly for staff augmentation and back-up support services for this Task Order Supplemental Agreement.

Schedule

Continuous services shall be required for SED Forecasts Contractor over the duration of this 5 year contract. It is anticipated that the Contractor will commence work within five days of selection and shall work primarily at NYMTC's offices.

2050 SOCIOECONOMIC AND DEMOGRAPHIC MODELS ENHANCEMENTS AND DEVELOPMENT OF THE FUTURE FORECASTS

Specifications

NYMTC will need consultant services periodically to update NYMTC's socioeconomic demographic forecasts. The Consultant shall enhance the existing 2050 Socioeconomic and Demographic (SED) forecasting model(s) for 31-county New York Metropolitan Region. Enhancements shall include but not be limited to production of high, low and baseline forecasts at the county level utilizing new macroeconomic assumptions. The SED forecasts are critical inputs to the NYMTC's Best Practice Model(BPM) and the Regional Transportation Plan, and are used by the member agencies for their transportation studies and project development. The Consultant shall work with NYMTC central staff and member agencies to help facilitate forecast approvals through NYMTC's process.

Scope of Services

All analysis and forecasting will be undertaken for the New York Metropolitan Region (31 counties) at the county and subregional levels, and for the 28 counties of the BPM at the Transportation Analysis Zone (TAZ) level. The five subregions comprise the following counties, with county omissions from the BPM noted:

New York City:	Bronx, Kings, New York, Queens, and Richmond
Long Island:	Nassau and Suffolk
Mid-Hudson:	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester (Sullivan and Ulster omitted from BPM)
New Jersey:	Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren
Connecticut:	Fairfield, Litchfield, and New Haven (Litchfield omitted from BPM)

This task order proposes to undertake the following tasks necessary for completion of long term forecasts at the regional, county and Transportation Analysis Zone (TAZ) level in order to comply with federal requirements for submission of the Regional Transportation Plan (RTP) and the air quality conformity analysis:

- At the data collection and analysis level,
 - analyze existing trends and key factors for forecasting
- At the modeling level,
 - enhance the existing methodology for county level population, employment, households, and labor force forecasting models for the 31-county New York Metropolitan Region
 - apply existing methodology for modeling at the Transportation Analysis Zone (TAZ) level and link the TAZ level forecasts to NYMTC's Best Practice models
 - estimate, calibrate, validate and test county level population employment, households, and labor force forecasting models for the 31-county New York Metropolitan Region
 - link the enhanced multiple models' operability for simulation purposes and for export to GIS applications,
- At the forecasting and analysis level,
 - produce regional, subregional, and county level forecasts of all major demographic and socioeconomic variables by type for a base year and future years at 5-year intervals,
 - produce TAZ level forecasts of 16 variables for the base year and the future years,
 - evaluate and compare forecasting results with other forecasts
 - conduct model training and prepare User's Manual
- At the communication level,
 - meetings and in-person presentations of SED forecasts, and review and consensus building of forecasts
 - project website and web applications

Experience

NYMTC requires substantial experience and expertise, and Consultant must demonstrate that experience through past and present project attestations and successfully reachable, verifiable references. The qualifications and current/prior experience of the proposer are of great importance to NYMTC. Direct, relevant, prior experience in software and model development, data base management, and GIS are highly desirable; present such experience with projects of similar scale and scope as the one proposed in this task order. Provide a list of projects currently in progress and those completed within the last seven years which are relevant to this effort. Indicate proposed key personnel who are, or have worked, on such projects. Include names, addresses and phone numbers of contact points with the listed clients.

The Consultant's proposed project team shall include key personnel with a minimum of 3 years experience with project management and demographics.

Schedule

Over duration of this 5 year contract up to two 2050 SED model updates will be needed. The Consultant shall be available to begin work within two weeks after notice to proceed.

Deliverables

- Collected new base year data for county / TAZ level forecasts
- Enhanced forecasting county level models
- Updated county level forecasts
- Updated TAZ level forecasts
- Draft Report
- Final Report

Regional Transportation Plan Development Scope of Services

The consultant will support the development of NYMTC's Regional Transportation Plan during its four year development cycle. The Plan is a federally-required planning product that lays out the region's long-term transportation needs and desires over a minimum 20-year time frame. It is a blueprint that helps guide federal funding of investments in the NYMTC planning area based on the NYMTC members' vision for the region and is developed collaboratively with members, agencies, other stakeholders and the public. The Plan covers all modes of surface transportation from a regional perspective including highways, streets, public transportation, bicycle and pedestrian facilities, goods movement and special needs transportation. In addition, it addresses key transportation activities such as operations and management of the transportation system, safety, security and regional finances. NYMTC's next Plan will be effective October 1, 2017, after which preparations will begin for the next cycle to develop a Plan effective October 1, 2021.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of Plan development:

1. Preparation and execution of a public outreach program;
2. Development of a long-range infrastructure needs assessment and related resource forecasts;
3. Research related to innovative financing measures;
4. Development of listings of projects, programs and studies and related GIS mapping;
5. Research of relevant project information for the regional emissions analysis and entry of this information into the Project Information Management System;
6. Assist with the development of the transportation performance management report for inclusion in the Plan
7. Drafting of Plan chapters for review by NYMTC's members;
8. Development of Plan maps, figures and tables;
9. Development and/or update of the Plan's various supporting elements, such as the Environmental Justice Assessment of the planning process, Environmental Mitigation and New Consultation, Pedestrian-Bicycle Element, Regional Freight Plan and Coordinated Public Transit-Human Services Plan;
10. Development of a Plan executive summary document; and
11. Preparation of draft and final Plan documents.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing the Plan public outreach program and schedule;
2. Technical memorandum describing the long-range infrastructure needs assessment, related resource forecasts and innovative financing measures, including forecasts yields;
3. Listings of projects, programs and studies by county/borough and related GIS mapping
4. Draft and final Plan chapters as assigned;
5. Draft and final supporting Plan elements, as assigned; and
6. Draft and final Plan documents, including the executive summary report.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: regional planning; public outreach; transportation finance and financial forecasting; project planning; data bases and GIS mapping; freight, non-motorized and human services transportation; and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated once.

Public Involvement Plan Development Scope of Services

The consultant will support the development of NYMTC's next federally-required Public Involvement Plan, which is targeted to be adopted by March 31, 2018 and then five years thereafter. Under Federal legislation, NYMTC's Public Involvement Plan (PIP) includes recommendations for better involving the region's residents and employers in the transportation planning process, and is routinely revised to address changing needs of the region.

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of the PIP development:

1. Preparation and execution of a public outreach program to evaluate current efforts and accept ideas for new approaches;
2. Review of federal requirements for evaluation of the current program;
3. Preparation of draft recommendations and strategies for discussion with NYMTC's members; and
4. Preparation of final materials and information for consideration and action by NYMTC's Program, Finance and Administration Committee.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing the results and recommendations of the public outreach program; and
2. Draft and final recommendations and strategies, including all tables and graphics.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: public outreach; relevant federal regulations; and document preparation, formatting and editing.

Schedule

Over the duration of this contract, this scope of services may be activated up to two times.

MODEL SOFTWARE TECHNICAL ASSISTANCE AND MODEL EXTENSIONS

Purpose and Specifications

NYMTC anticipates deploying the most recent update of its regional travel demand modeling system, the New York Best Practice Model (NYBPM), in early 2019. NYMTC and its member agencies will rely on this model for at least 3-4 years for Conformity Analysis, regional planning and other modeling applications including development of the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP) until the next generation NYBPM 2017 Base Year Update is delivered in a separate effort and becomes available for general use. During this period, ongoing model maintenance will be required, and NYMTC expects to identify useful extensions and incremental improvements to the model that can result in either further efficiencies or incorporation of useful functionality and responsiveness for planning applications of the NYBPM.

NYMTC is requesting support services from a consultant team to advise and support its contractor, UTRC research team (Cornell University) in its development, update and implementation of its Post Processor Software for Air Quality and Congestion Management Program (PPS-AQ and PPS-CMP) with respect to both the functionality of the NYBPM and its current Post Processor Software, and MOVES.

NYMTC is also requesting support services from a PSA4 consultant team to provide ongoing technical assistance, procedures modifications and model extensions, testing and model user support for the newly deployed NYBPM, as may be needed for regional planning and other non-Conformity related model applications including incorporation of new federal regulations for PBPP. Also, the selected Consultant will be requested to assist NYMTC staff to change procedures to meet the analysis demand of other NYMTC's consultants or our members in their use of the updated NYBPM, as well as corrective issues, that are identified by NYMTC, will be addressed through a series of Task Orders to be issued by NYMTC's Project Manager and will be reflected in the relevant work scope for the required service at the time. All requested Task Orders shall be jointly developed by the project manager and the consultant as the work progresses and should be consistent with this Mini-bid request.

The selected team must have modeling background knowledge and experience such as:

- Strong technical background in travel demand forecasting, GIS, statistical analysis, and data manipulation
- Experience with NYMTC's latest version of the New York Best Practice Model which is mandatory, including access to source code which is readily available upon request to all bidders.
- Skills in computer programming language such as GISDK and C++ to modify NYBPM related software.
- Extensive knowledge of TransCAD and SPSS is also needed.

Scope of Services

The Consultant Team shall work closely with NYMTC staff to effectively formulate and implement the tasks to be authorized by the NYMTC Project Manager.

While not all the details of the work to be required are known at this point, the types of skills and experience required for the assignment are clear, and include the following:

- In-depth knowledge and solid technical skills in travel demand forecasting, statistical analysis, and data manipulation; specifically those related to the NYBPM 2010 Base Year Update Model and its new features.
- Access to and ability to modify updated NYBPM methods, scripts and core program source coding.
- Complete understanding of and the ability to modify NYMTC's Socioeconomic and Demographic (SED) data procedures and highway and transit network data.
- Comprehensive knowledge of and the ability to refine the newly developed components like time of day model and visitor model, commercial vehicle, and external procedures in the updated NYBPM.

Track 1 – Ongoing Technical Assistance

Understanding and Approach

As the NYBPM, is being improved and updated by the Consultant, is rolled out and put into use by NYMTC and its member agencies, ongoing technical assistance will be required. In this task, the Consultant shall provide technical modeling support and assistance to model users as needed for the duration of the agreement (2 years). This support may include general model enhancements, model and data maintenance, model procedure modifications or refinements, and technical support for specific planning applications. It shall also include responses to and documentation of technical support type inquiries from NYBPM user, NYMTC or member agencies, on an as needed basis.

It is anticipated that the majority of the work (hours) related to this Assignment shall be performed the Consultant's offices, with coordination and progress meetings, as well as specific designated tasks, to be completed on-site at NYMTC's offices if needed. The overall level of effort for technical assistance and user support in Track 1 is 800 hours.

Deliverables

- Modified procedures and other deliverables based on NYBPM related software.
- Documented responses to technical support inquiries from NYBPM users.
- Draft and final documentation of modifications made to the NYBPM related software.

Track 2 – Task Orders: Model Extensions

Understanding and Approach

It is anticipated that there will be a number of model improvements that will be identified by NYMTC as necessary or desirable to implement in the course of the work in this Task Assignment. These will include corrective procedures or additional functionality that are

seen to have the potential to increase the efficiency of using the NYBPM and/or enhance its functionality and utility in planning applications. The Consultant shall meet with NYMTC early on in this Assignment to review and mutually evaluate possible model modifications that may have been noted as potentially useful as part of NYMTC's final acceptance testing of the NYBPM. The Consultant shall establish a framework that can be used to help NYMTC estimate the level of effort and potential benefit of possible extensions, including both an initial set and those that may be subsequently identified as the NYBPM becomes regularly used by NYMTC and its member agencies. The Consultant Team shall devise an approach for each Task Order, including what, if any, additional data may be needed, what type and level of calibration is appropriate or needed, and what coding or scripting work is required, bearing in mind how the model enhancement is most likely to be used by NYMTC and member agencies in planning applications.

In the discussion of approach that follows, the benefits and methods are described for a set of possible improvements that the Consultant proposes for initial consideration in the development of the Track 2 Task Orders, organized around sixteen possible Tasks corresponding to specific areas of model improvement and associated technical expertise:

1. Truck and Commercial Vehicle Model
2. External Model and Out-of-Region SED Analysis Methods
3. Highway, transit and non-motorized network links and attribution.
4. Enhancement and update of nonresident/visitor sub-model
5. Update and improvement of Graphical User Interface (GUI) with new functionality
6. Updated model's temporal resolution
7. Enhancement and improvement of destination choice model by time of day pattern and the new advanced Daily Activity Pattern (DAP) model
8. Improvement and update of pricing elements
9. Improvement of zoning system and enhancement of Micro Analysis Zones (MAZ) and related SED data allocation at zonal level
10. Improvement of the vehicle choice model
11. Subarea Demand Extraction Process for DTA Applications
12. Support for Subarea, Corridor, or Policy Oriented Studies
13. Coordination, tech support for PPS-AQ / PPS-CMP development, update and improvement
14. Improvement of special generator model airport-related trips
15. Improvements and update related to the change of version in hardware and software and computer reconfiguration
16. Incorporation of new federal regulations for Performance Based Planning and Programming (PBPP)

NYMTC recognizes that other objectives and modeling improvements will of course be identified and considered over time, for which Task Orders will be developed, and that each of the above preliminary concepts proposed here will need to be evaluated, possibly

modified or further specified and re-estimated if they are selected by NYMTC to be implemented by Task Order.

Deliverables

- Draft and final documentation on modified procedures and/or data files and other deliverables based on NYBPM related software
- Draft and Final documentation on any modifications done on the NYBPM related software.
- Draft and final updated user's manual and procedures.

Schedule

The selected consultant will perform work on a continuous as needed basis over the duration of this contract.

MODEL DEVELOPMENT TECHNICAL SUPPORT CONTRACTOR

Specifications:

NYMTC is seeking a consultant firm to provide continuous, long term in house contractor to augment NYMTC staff in the Model Development unit. The proposing firm shall provide a resume for each proposed candidate. More than one candidate can be offered by each responding firm. The selected candidate must have:

- Experience and expertise using TransCAD, TransCAD for the Web application and GISDK scripting language.
- Knowledge and experience in computer programming.
- Good knowledge of NYBPM.
- Knowledge and experience with Air Quality analysis and MOVES.
- Excellent background in travel demand forecasting models.
- Strong computing, analytical, and communication skills.
- Excellent interpersonal skills.
- Strong written and verbal communication skills.

Duties and Tasks:

- Provide assistance in NYBPM update and improvement including networks (highway and transit) update; review of applicable tech memos and testing results
- Upgrade of NYBPM to the latest TransCAD version in order to expedite model run time and enhance performance, review of tech memos and testing results
- Implement and test new and improved version of the NYBPM Highway Model software, Graphical User Interface, model graphics, and reports
- Enhance and test transit component of NYBPM in order to better replicate transit travel in the region and to complement Model's functionality that is currently used for the Conformity Analysis, the Regional Transportation Plan, and other studies in the region
- Implement improvements to the Project Information Management System including creation of the reporting system and future connection to E-STIP, review of tech memos and testing
- Develop, test and implement new state of the art practices in transportation–emission modeling Post Processor software for conformity analysis
- Support the maintenance of NYBPM
- Conduct testing of all deliverables before they can be accepted by NYMTC
- Analyze the needs and requirements of NYMTC region in terms of travel demand modeling and goods movements analysis

Scope of Services

Task 1. Provide assistance in updating/improving the NYBPM networks and development of new version of NYBPM

Participate and actively assist in model design and software implementation plans to ensure that the plan meets the planning and analytical needs of the region including incorporation of new federal regulations for PBPP.

Provide assistance in creating and implementing new approaches to transportation networks. The highway network is the basis of the NYBPM. To ensure reliable estimates of travel demand, it is important that the network accurately represents the actual transportation system. Under this task, the Consultant shall work with NYMTC staff and other consultants to update/improve and test the NYBPM networks, specifically:

- Verify highway network coding, review project files from various sources, and code the projects through standard NYBPM procedures;
- Review and examine the highway and transit networks to ensure that necessary updates are incorporated;
- Test highway and transit networks, identify discrepancies, and work with other consultants to solve the problems; and
- Review technical memoranda, attend network update meetings, keep a record of updating status, and prepare technical memoranda.

Task 2. Upgrade the NYBPM to the latest TransCAD version

TransCAD is the primary software platform for the NYBPM. As such, any upgrades to TransCAD may require updating selected NYBPM modules either for consistency purposes or to take advantage of enhanced processes. Under this task, the Consultant shall assist NYMTC staff in the transition of upgrading, specifically:

- Consult with Caliper on the newly available features in the latest TransCAD version and provide NYMTC staff with hands-on training when necessary;
- Test the NYBPM in the latest TransCAD version, and work with Caliper to resolve problems encountered; and
- Review technical memoranda, keep a record of testing results, and prepare technical memoranda.

Task 3. Implement and test new and improved NYBPM components

Extensive testing and evaluation is required before the new and improved model components can be incorporated into the NYBPM. Under this task, the Consultant shall work with NYMTC staff and other consultants to implement and test the new and improved components of NYBPM, specifically:

- Development of a nonresident/visitor sub-model;
- Improvement and update of the model's temporal resolution;
- Development of a realistic destination choice model by time-of-day pattern;
- Incorporation of advanced Daily Activity Pattern (DAP) model;
- Enhancement of mode choice methods;
- Improvement of pricing elements and Long-Term Choice Model;
- Creation an additional level of Micro Analysis Zones (MAZ);
- Incorporation of a Vehicle Choice Model;
- Implementation and testing of the new and improved components, for streamlining and auditing the various NYBPM processes. In addition, we will work with other consultants to solve problems encountered, and assist NYMTC's staff in becoming familiar with the interface and procedures;
- Review the modeling outputs, including graphics and reports, and work with NYMTC staff to identify deficiencies and potential remedies and further needs; and
- Review technical memoranda, keep a record of testing results, encountered problems, and prepare technical memoranda.

Task 4. Enhance and test transit component of NYBPM

The NYBPM has an extremely detailed transit network that contains all transit modes. An improved transit module and better connection with the highway module enables analyses of the complex transportation system of adjoining highway and transit systems in the region. Under this task, the Consultant shall work with NYMTC staff and other consultants to enhance and test the transit component of the NYBPM, specifically:

- Update and verify transit route system and operation and fare information;
- Implement and test improved components, and identify problems; and
- Review technical memoranda, keep record of testing results, encountered problems, and prepare technical memoranda.

Task 5. Enhance and test the Project Information Management System (PIMS)

Information for the improvement projects needs to be collected and incorporated into the network for emissions analysis. Improving user friendliness and potential enhancement of the application can help NYMTC to better organize and gather project information from various agencies in the region. Under this task, the Consultant shall work with NYMTC staff to test the PIMS and identify potential areas for improvement and enhancement, specifically:

- Assist in identifying potential interface improvements, and required data input;
- Test the application and identify problems; and
- Review technical memoranda, keep record of testing results, encountered problems, and prepare technical memoranda.

Task 6. Enhance and test advanced practices in post-processors

The PPS-AQ and the NYBPM provide an integrated platform that links travel demand data to Air Quality Conformity and CMP application for highway system performance measures. PPS-AQ and CMP post processes highway and transit NYBPM loaded networks to account for known travel demand model deficiencies such as speed/volume consistency and capacity constraint deficiencies. Under this task, the Consultant shall work with NYMTC staff to implement and test the new post processors:

- Run PPS-AQ for required pollutants and time periods for conformity analysis;
- Apply PPS-AQ quality control procedures and check outputs results for reasonability;
- Run CMP for future-year scenarios and review outputs for reasonableness and accuracy; and
- Review technical memoranda, keep a record of testing results, encountered problems, and prepare technical memoranda.

Task 7. Support the maintenance of NYBPM and test-related deliverables

The NYBPM needs regular maintenance to ensure reliable performance. Under this task, the Consultant shall work with NYMTC staff to test the improved NYBPM, specifically:

- Perform general maintenance work of the NYBPM;
- Implement and test all deliverables, identify problems, and work with other consultant to solve the problem; and
- Review technical memoranda, keep a record of testing results, encountered problems, and prepare technical memoranda.

Task 8. Analyze the needs and requirements of the NYMTC region for travel demand modeling and goods movement analysis

Maintaining an effective travel demand model requires containing an effective freight components to enable NYMTC to conduct scenario analysis and policy studies. Under this task, the Consultant shall work with NYMTC staff to:

- Identify regional needs and develop requirements and standards for freight and travel demand model components;
- Review and evaluate various models in terms of their capabilities and needed customizing and improvements to meet NYMTC needs;
- Conduct research to address concerns with the freight and travel demand models;
- Understand the relationships among economic activities and freight traffic in the NYMTC region;
- Analyze the freight activities among various modes and major facilities;
- Identify regional needs and requirements for goods movement analysis; and
- Review technical memoranda, keep a record of researching results, and prepare technical memoranda.

Task 9. NYBPM updates and next generation programs

Although the NYBPM is still one of the most sophisticated travel demand tools in use, it is widely recognized that it continuously needs updating. As part of the NYBPM Base Update, conversion the model will undergo an overhaul using new data, and possibly new procedures, which are state-of-the-practice. It is critical that the next generation NYBPM caters specifically to the needs of the region and all its stakeholders, needs that are evolving with time. Lessons can certainly be learned from the application of the current NYBPM, which the Consultant have a considerable amount of experience doing, and have provided NYMTC valuable input to improve the model. A good part of the effort would involve learning from other activity based models that have been developed around the globe. The Consultant shall perform the following tasks:

- Assist NYMTC to provide a realistic timeline for future model development and data needs assessment and in prioritizing the improvements needed to the model to best fit the region's needs and keeping in mind the available resources to complete the task within the expected timeframe;
- Continue to work with experts in the field to understand the state-of-the-practice;
- Continue to work with practitioners and users of the NYBPM to synthesize their experience and suggestions;
- Shall coordinate with stakeholders and consultants during the recent upgrade of the NYBPM, and will continue to do so; and
- Contribute to the development of technical documentation for the upgrade to the NYBPM and the adopted Postprocessor. The Consultant shall continue to do so during this very important transition to the next generation of NYBPM.

Schedule and Deliverables

Continuous services shall be required for Model Development Technical Support over the duration of this 5 year contract. It is anticipated that the Consultant will commence work within five days of selection and shall work primarily at NYMTC's offices.

MODEL APPLICATION CONSULTANT SUPPORT FOR CONFORMITY DETERMINATION

Specifications

NYMTC is requesting periodic support services from a consultant team for the conformity analysis. The support services for the TIP/RTP conformity determinations will include changes/modifications to procedures on NYBPM and the Post Processor Software (PPS). Also, the selected Consultant may be requested to assist if NYMTC staff needs to change procedures to meet the analysis demand of our NYMTC members. In addition, any modification of the SED TAZ level data for use with NYBPM will also be covered under this task assignment.

The selected team must have modeling background knowledge and experience such as:

- Strong technical background in travel demand forecasting, statistical analysis, and data manipulation
- Experience with NYMTC's Best Practice Model (NYBPM) which is mandatory including access to source code which is readily available upon request to all bidders.
- Skill and experience in computer programming language GISDK to modify NYBPM related software.
- Strong background on NYMTC's Socio Economic Demographic (SED) data process and capability to make changes on the SED procedures.

Duties and Tasks

The Work Assignment will be done through the issuing of task orders as needed under this project through PSA4. Each task order shall have a detailed scope of services, schedule and budget (featuring hours by task/person) and should include descriptions of NYMTC staff involvement. The task orders could include the following work items:

1. Provide technical support services on NYBPM and related software packages for TIP/RTP Conformity Analysis Modeling.
2. Provide and support the maintenance of Model Networks for Conformity Analysis and improve the network coding procedures for both highway and transit.
3. The Consultant shall assist NYMTC to ensure that the quality control of NYBPM and Post-Processor software procedures applied are maintained with the latest assumptions.
4. The Consultant shall assist NYMTC to develop appropriate information to facilitate the ICG review and to respond to specific issues that may be of concern.
5. Provide support to NYMTC staff as needed in the use of the NYBPM applications and air quality software for Conformity Process and other Model Applications.

Scope of Services (Detailed)

Task 1 -- Support TIP/RTP Conformity Analysis Modeling (2 Rounds in Year 1)

Understanding and Approach

NYMTC typically conducts conformity analysis twice a year, for either TIP/RTP updates, and/or TIP Amendments. In this task, the Consultant shall provide technical modeling support to ensure that all the latest assumptions are adequately incorporated in the NYBPM. The Consultant understands that this may include re-evaluation of certain procedures, and further

streamlining and modification of the NYBPM Update version in order to perform the new rounds of conformity analysis effectively and to meet all the requirements for regional emission analysis.

It is anticipated that about 20 percent of the work (hours) related to this task will be performed on-site at NYMTC's offices, and about 80 percent could be completed off-site at the Consultant's offices.

Deliverables

- Modified procedures and other deliverables based on NYBPM related software.
- Documentation of modifications made to the NYBPM related software.

Task 2 – Support Maintenance of Model Networks for Conformity Analysis; Improve Procedures and Transit Coding

Understanding and Approach

An essential aspect of the work required for successful conformity analysis is the efficient and accurate maintenance of the transportation networks that are used in the NYBPM. The Consultant shall work with NYMTC staff to provide the support needed to streamline the network coding procedures used to represent and analyze the collection of TIP/RTP projects that comprise each of the scenarios to be modeled.

It is anticipated that about 50 percent of the work (hours) related to this task will be performed on-site at NYMTC's offices, and about 50 percent could be completed off-site at the Consultant's team offices.

Deliverables

- Advisory services related to the preparation and the performance of conformity analysis.
- Modified procedures and networks.
- Documentation on any modifications done on the NYBPM network procedures and assumptions.

Task 3 – Support Quality Control of NYBPM and Post-Processor Outputs

Understanding

In conjunction with the NYBPM, NYMTC currently uses MOVES, the EPA Air Quality model, Post Processor Software (PPS) and other Off-Model analysis procedures in order to produce regional emission analysis for TIP/RTP conformity. As part of the work in this task, the Consultant shall assist NYMTC to ensure that the software and procedures applied are maintained with latest assumptions. It is anticipated that this could require special research and modifications of procedures in order to fulfill certain conformity regulations.

It is anticipated that about 50 percent of the work (hours) related to this task will be performed on-site at NYMTC's offices, and about 50 percent could be completed off-site at the Consultant's offices

Deliverables

- Advisory services related to the preparation and the performance of conformity analysis.

- Modified procedures and other deliverables based on NYBPM and the PPS related software.
- Documentation on any modifications done on the NYBPM and the PPS procedures.

Task 4 – Support ICG Review of Conformity Modeling; Special Research Response

Understanding

The Air Quality Interagency Agency Consultation Group (ICG) closely reviews the assumptions, data, and analysis methods used by NYMTC for regional emission analysis of the TIP/RTP, and must approve before being adopted. As has been the case in prior conformity analyses, the ICG has often required additional research or needed specific analyses performed to inform their review. The Consultant shall assist NYMTC to develop appropriate information to facilitate the ICG's review and to respond to specific issues that may be of concern to this oversight body.

It is anticipated that about 50 percent of the work (hours) related to this task will be performed on-site at NYMTC's offices, and about 50 percent could be completed off-site at the Consultant's offices.

Deliverables

- Documentation on any modifications made to NYBPM or other conformity related software.
- On-site training and technical support.

Task 5 - Provide support to NYMTC staff as needed in the use of the NYBPM applications and air quality software for Conformity Process and other Model Applications

Understanding and Approach

Provide ongoing support to NYMTC staff as needed in the use of the NYBPM applications and air quality software. The consultant will assist in: tabulating the PIMS project information into coding categories for conformity model runs; coding highway, transit, and off-model projects into BPM networks; tabulating BPM Model run results using the SPSS to analyze VMT and VHT; running the post processing model, PPS-AQ/MOVES for BPM scenario runs; performing quality control checks on model results; producing the emission tables and Appendices for various pollutants; and producing outputs for CMP and MAP 21 requirements.

It is anticipated that about 80 percent of the work (hours) related to this task will be performed on-site at NYMTC's offices, and about 20 percent could be completed off-site at the Consultant's offices.

Deliverables

- Updated Highway and Transit networks
- Updated Scenario Manager files
- Model Run Result Summary
- PPS-AQ/MOVES Result Summary
- Tables and charts for the documents.

Schedule

The selected consultant will perform work on as needed basis over the duration of this contract.

MODEL APPLICATION CONTRACTOR SERVICES

Specifications

NYMTC is seeking a consultant firm to provide continuous, long term in house contractor to augment NYMTC staff in the Model Application unit. The proposing firm shall provide resumes of the proposed candidates with the following skills:

- Strong technical background in travel demand forecasting, statistical analysis, and data manipulation.
- Experience with NYMTC's Best Practice Model is highly desirable.
- Skills in computer programming.
- Background in TransCAD and other transportation GIS packages.
- Experience in conformity analysis and post processing software.

Duties and Tasks

- Tabulate the PIMS project information into coding categories for conformity model runs.
- Assist in coding highway, transit, and off-model projects into BPM networks.
- Run the BPM model for various milestone years.
- Tabulate BPM Model run results using the SPSS to analyze VMT and VHT.
- Assist in running the post processing model, PPS-AQ/MOVES for all BPM scenario runs.
- Perform quality control checks on model results.
- Assist in producing the emission outputs and result summary for various pollutants.
- Assist in producing outputs for the MAP 21 requirements

Deliverables

- Updated Highway and Transit networks
- Updated Scenario Manager files
- Model Run Time Log Book
- Model Run Result Summary
- PPS-AQ/MOVES Result Summary
- Tabulation for the Conformity Document
- Tables and charts for the MAP 21 PBPP requirements

Schedule

The Model Application Contract Services shall be provided continuously over the duration of this contract. The person assigned to this task shall work full time primarily at NYMTC's offices without any home base office support. It is anticipated that attending of the outside meetings may occasionally occur. Substitute or new consultant staff can only be offered with prior approval from NYMTC's Consultant Manager.

MANAGEMENT SUPPORT FOR ADOPTION OF NYMTC SOCIOECONOMIC AND DEMOGRAPHIC FORECASTS

Scope of Services

NYMTC will require periodic services of consultant to assist NYMTC staff to coordinate and moderate the complex process of consensus building needed to gain approval of Socioeconomic and Demographic forecasts through its metropolitan planning process. Initial forecasts are to be developed, through an interactive process, of a new Zonal Allocation Program (ZAP) and Socioeconomic and Demographic (SED) forecasting model(s) for 31-county New York Metropolitan Region for a 35-40 year period under a separate contract. The SED forecasts are critical inputs to the NYMTC's Best Practice Models and the Regional Transportation Plan, and are used by the member agencies for their transportation studies and project development. The Management Support Consultant shall work with the primary consultant(s) to help facilitate forecast approvals through NYMTC's process.

The New York Metropolitan Region consists of five subregions which include the following counties:

- New York City: Bronx, Kings, New York, Queens and Richmond;
- Long Island: Nassau and Suffolk;
- Mid-Hudson: Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester;
- Connecticut: Fairfield, Litchfield, and New Haven;
- New Jersey: Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren.

The primary Consultant(s) will produce a region-wide forecast for the 31 county region for every 5 year interval. The Management Support Consultant shall participate in the FWG and project progress meetings and provide support to NYMTC staff on reconciling forecasts produced by the primary consultant(s). The Management Support Consultant will also help moderate the FWG meeting to reach consensus on these forecasts.

Duties and Tasks

- Attend regular Steering Committee Meetings, Biweekly Progress Meetings, and Forecasting Working Group (FWG) Meetings;
- Review and provide comments on all Technical Memoranda developed by the primary SED consultant(s);
- Provide a critical independent professional analysis of the socioeconomic and demographic forecasts for the NYMTC region;
- Review and comment on the proposed Modeling Methodology;
- Participate in the public review meetings and prepare written replies to public comments after consultation with and input from NYMTC staff members, as appropriate;

- Review and comment on forecasts and consensus issues;
- Participate in the SED forecasts development meetings with the members, other agencies, and consultants as required;
- Assist in reaching consensus among the FWG members on county level forecasts;
- Review and comment on the TAZ allocation methodology;
- Assist in testing and validation of the developed forecasting models.

Deliverables

- a. Comments and recommendations on the 2050 SED forecasts methodology and reconciliation process
- b. Comments on technical memoranda as needed
- c. Written replies to public comments if needed
- d. Draft & Final Agendas and Notes or Minutes for meeting as needed
- e. Monthly Progress Reports
- f. Meeting Presentation Materials as needed

Experience

NYMTC requires substantial experience and expertise, and Consultants must demonstrate that experience through past and present project attestations and successfully reachable, verifiable references. The qualifications and current/prior experience of the proposer are of great importance to NYMTC. Direct, relevant, prior experience in software and model development, data base management, and GIS are highly desirable; present such experience with projects of similar scale and scope as the one proposed in this task order. Provide a list of projects currently in progress and those completed within the last seven years which are relevant to this effort. Indicate proposed key personnel who are, or have worked, on such projects. Include names, addresses and phone numbers of contact points with the listed clients.

The Consultant's proposed project team shall include key personnel with a minimum of 3 years experience with project management and demographics.

Schedule

Over duration of this 5 year contract Management Support for adoption of NYMTC SED forecasts will be needed up to two times. The Consultant shall be available to begin work within two weeks after notice to proceed.

TASK ASSIGNMENT MINI-BID REQUEST #

TITLE: IT Specialists Senior Level

I. Task Assignment Purpose

The New York Metropolitan Transportation Council is releasing this Task Assignment Mini-Bid Request to seek two staff augmentation **IT Specialists Senior Level** from pre-selected Tier II PSA4 firms. The Task Assignment Mini-Bid request process is only open to the Tier II PSA4 firms who have been previously selected for the Consultant Planning Services For NYMTC (Contracts #). No other prime firms are allowed to participate in this solicitation.

This request will not include a pre-mini-bid conference unless requested in writing from any of the four Tier II firms within 5 business days of the issue date of this mini-bid request.

Task Assignment Duration: Twenty-four months with three optional twelve month (one-year) renewals.

The selected firm should provide documentation of experience in this area for key staff and the firm.

Proposals shall have a detailed scope of services, schedule (assume 15 days after contract execution as **Day 1**) and budget (featuring hours by task/person) and should include descriptions of Consultant staff involvement.

II. Specifications/Scope of Work for the Task Assignment

A. Specifications:

NYMTC is requesting support services from a PSA4 consultant team for the two staff augmentation IT Specialists Senior Level that will start after contract execution.

The selected team must have the following background knowledge and experience such as:

- Strong technical background in networking, hardware and software with at least 60 months hands-on experience coupled with Windows 2008 r2 server, Windows 2012 Data Center, and Web support.
- 84 months experience with a Helpdesk support software package such as HP Service Manager and adhering to Service Level Agreements.
- 60 months supporting web application projects including installation, and testing.
- 60 months support desktop and server application support.

- 80 months Performing routine LAN administration, and Windows based server installation and configuration including adding and deleting users, changed access rights, Active directory, Redundant Array of Independent Disks (RAID), Home folder, scripts, roaming profile, Domain Name Server (DNS), Windows Internet Name Service (WINS) , Network Interface Controller (NIC) Transmission Control Protocol/Internet Protocol (TCP/IP) V4-V6, Internet Connection Sharing.
- Experience with all network printers, preferably Xerox, HP and Lexmark.
- 80 months MS SQL server installation, configuration, querying, Administration and Data warehouse administration.
- 80 Months developing and administering NAS, backup and recovery procedures for network systems.
- 60 month Webcast/Webinar, and setup access,
- 84 months HP desktop, Dell laptop, network printer troubleshooting and supporting the Microsoft Office suite
- 84 months Vendor Liaison – Interface with Internal users with External users / Vendors to determine users needs
- 36 months Basic knowledge of Cisco Routers, MRV, Catalyst Switch and VOIP.
- Troubleshoot technical problems, including performance issues.
- 36 months Work closely with 3rd party vendors when requesting quotes and writing purchase orders and managing their work on ongoing projects.
- 36 months implementing Best Practice Methodologies specific to our BPM environment.

Computer Resources Environment: Software used by staff for related work include: Web servers, IIS 7.0 and IIS 8, ASP.NET, SQL Server 2008 and SQL Server 2012, .net Framework 2.0 and 3.5 and 4.0, Windows server 2008r2 and Windows Server 2012 Data Center, MS Office 2007, 2010 and 2013. Currently there are no DOT IT staff assigned to support NYMTC management and development needs. A professional service contract is in place to assist NYMTC staff with server and application support needs.

Server Environment: IBM System x3650 M3 NAS Server, Dell Power Edge 1850 Domain Controller, IBM xSeries 346 Print Server, BPM Windows 2008 r2 Server

Existing Computer Management Applications and Routines:

B. Duties and Tasks

Support various web-application projects, including software installation, testing, and programming.

Support various in-house applications.

Support and maintain wide-area network.

Support and maintain NYMTC Best Practice Model (BPM) network.

Support and maintain NYMTC Best Practice Model (BPM) applications.

Support TIP, RTP, CMP software applications.

Support and maintain telephone, fax and network equipment.

Support various other equipment including Voice Over Internet Protocol (VOIP) telephones, faxes; printers, overhead projector and sound equipment.

C. Schedule

After OSC approves adding this Task Assignment to the parent agreement, NYMTC shall issue a notice to proceed (NTP). The selected Tier II firm has ten business days to provide the selected persons. The two staff augmentation IT services shall be provided on a 24 month basis, and with the Task Assignment term starting from contract supplemental agreement execution and ending twenty-four months after or until funds have been expended in the task assignment, whichever is later. The persons assigned to this task assignment shall work primarily 5 Days per week at NYMTC's offices, excluding state and federal holidays.

Grant Program Solicitations Scope of Services

The consultant will support the annual solicitation of project proposals from the public and/or the NYMTC members for funding consideration under various federal funding programs and the selection of projects for funding. Currently the programs for which NYMTC has direct project solicitation responsibility include Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities; the Transportation Alternative set-aside of the Surface Transportation Block Grant Program; and the Congestion Mitigation/Air Quality Improvement Program. NYMTC also supports the preparation of project proposals for various discretionary federal funding programs, such as Transportation Investment Generating Economic Recovery (TIGER) and Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE).

Tasks

Working with and through the NYMTC project manager, the consultant will undertake some or all of the following activities in support of grant program solicitations:

1. Preparation and execution of a public outreach and education program as appropriate;
2. Review of project proposals received for completeness and against eligibility criteria;
3. Loading of project information into relevant data bases and/or content management software;
4. Convening of project review committees and assembly of committee rating information;
5. Ranking of project proposals based on committee ratings; and
6. Preparation of final materials and information for consideration and action by NYMTC's Program, Finance and Administration Committee.
7. Support activities could also include preparation of relevant TIP and Plan actions once project selection has been finalized.

Deliverables

Deliverables for these activities may include the following:

1. Technical memorandum describing the TIP public outreach and education program, and schedule; and
2. Technical memorandum describing the ranking of project proposals based on committee ratings and a summary of the methodology/criteria employed.

Experience

Consultant staff assigned to this scope of services will need experience with some or all of the following: public outreach and education; and data bases and GIS mapping.

Schedule

Over the duration of this contract, this scope of services may be activated up to ten times.

GEOGRAPHIC INFORMATION SYSTEM (GIS) SUPPORT CONTRACTOR

Specifications

NYMTC is seeking a consultant firm to provide continuous, long term in house contractor services to support the GIS related activities for NYMTC planning purposes.

The selected candidate must have the following technical skills and experiences:

- Strong Python/ C++ / Java/Visual Basic programming skills;
- Suitable experience in Application development using ArcObjects within ArcGIS 9.x, ArcGIS Engine and ArcGIS Server;
- Appropriate experience in GIS Database Design for Transportation data using GeoDatabase, MS-Access, ArcSDE, Oracle and SQL Server;
- Strong GIS Programming skills with ArcGIS;
- Working knowledge of graphical representation of data to produce GIS applications and maps using TransCAD and ArcGIS;
- Strong technical background to conduct statistical analysis and data manipulation in addition to graphical representation of data;
- Strong communication and presentation skills.

The selected candidate shall perform the following duties and tasks:

1. Produce complex maps to support TIP, RTP, CMP, BPM and other NYMTC outreach processes.
3. Support various web-application projects, including software installation, testing, and programming.
4. Prepare training material and provide training at NYMTC's office to other GIS users (NYMTC staff)
5. Collect and maintain GIS data (Transportation, Demographic, Environmental, ITS) from other sources.
6. Develop and maintain NYMTC region GIS data.
7. Develop and maintain GIS web section with the associated applications on NYMTC's website (WWW.NYMTC.ORG).
8. Maintain inventory, metadata, and file structures on the server
9. Analyze GIS database including GPS and NPMRDS data.

Scope of Services

Task 1 – Produce Complex Maps to Support TIP, RTP, CMP, NYBPM and Other NYMTC Outreach Processes.

In support of the planning and decision-making in the New York region, NYMTC produces an array of information in the form of various reports and brochures on a regular basis. The agency's mapping products have been used widely by members, stakeholders in the region, and the general public. Maps and charts, equally familiar to the technical experts and the public, provide invaluable communication tools that bring together agencies, commercial companies, partners, and the public. The Consultant provides presentation-quality mapping services for a variety of transportation projects ranging from local to statewide to national planning efforts. The Consultant shall maintain comprehensive GIS software platforms to manage a variety of geographic formats and offer cartographic expertise as well as full production capabilities. The Consultant shall have a GIS team which has developed numerous mapping interfaces and products that effectively visualize planning data and modeling results, creating maps with plots, tables, and charts for presentation purposes, including large-scale graphics illustrating existing and projected traffic volumes and levels of service for base and future years.

Under this task, the Consultant shall continue to provide mapping support for the NYMTC technical groups, including the TIP, RTP, CMP, UPWP, NYBPM, PBPP, as well as other business areas and outreach processes, with creating and updating maps for NYMTC's quarterly and annual publications, as well as coordinating the data collection and preparation for any ad hoc mapping requests that should arise. Specific tasks include:

- Developing maps in accordance with requirements for different business areas;
- Developing NYMTC map templates;
- Developing an automated mapping program to meet repetitive mapping needs;
- Making mapping easier for non-GIS users; and
- Enabling maps to be viewed and printed from the NYMTC GIS web site.

Task 2 – NYBPM Network GIS Conflation and Attribute Update

NYMTC has an innovative travel demand model, NYBPM. Data maintenance is a major issue that all MPOs need to address for managing travel demand models. The Consultant shall have developed Network maintenance applications to manage GIS networks for MPOs or other similar transportation planning entities, allowing users to manage transportation projects, network features, and their associated attributes in an interactive viewing and editing environment. The Consultant shall have developed software to interface ArcGIS with travel demand forecasting models in order to ease the process of model network and attribute editing. The selected Consultant shall have applications which demonstrate their experience in efficiently using GIS to help manage transportation model files, especially in TransCAD, which NYMTC uses. Though different agencies have different user requirements for developing the applications, it is desirable that GIS functionality developed for other agencies be transferable to NYMTC.

The Consultant shall create geo-databases of vehicle class counts and traffic survey data to be utilized in the NYBPM for its validation and update.

Specific tasks for the Consultant include:

- Editing and conflating the NYBPM network in GIS;
- Updating model network attributes;
- Preparing data needed for model validation;
- Visualizing model outputs;
- Developing efficient model data management mechanism; and
- Developing higher level of integration between GIS web and NYBPM/TransCAD activity.

Task 3 – Support Various Web-Application Projects

NYMTC has several projects that involve web applications, including the development of the Socioeconomic and Demographic forecasts and the TIG project. A wealth of information is collected and maintained by NYMTC, from hub-bound travel data to locations of people with limited English proficiency. Web applications shall help improve access to current data, historical data, and forecast data for NYMTC staff, member agencies, and the public, helping to improve planning decisions and make the case for increased transportation funding.

The selected Consultant shall have experience developing, hosting, and maintaining custom Internet mapping systems to meet project needs. The Consultant shall have undertaken previous web GIS development tasks using ArcGIS Server, ArcIMS, TransCAD for the web, Google, Flash, etc. The Consultant shall have experience in building web applications for a wide range of clients. The Consultant has an excellent understanding of the user needs and functional requirements for web-based GIS applications. Figure 3 shows a map interface for the LA Metro Congestion Fee Calculator.

The Consultant shall work closely with the NYMTC project team to define the functional requirements to develop web applications.

The Consultant shall perform the following tasks with support, when necessary.

- Participating in user needs and requirement analysis;
- Helping with software programming;
- Conducting application testing;
- Preparing software documentation; and
- Installing web-based application software and provide training.

Task 4 – Provide Training to NYMTC GIS Users

The Consultant shall provide GIS training related to specific GIS applications and in general web-enabled GIS technology. Training is always a critical component of any software and model development project. General web GIS training will keep NYMTC staff abreast of the latest advancement and best practices in GIS.

Project-specific training shall be provided to NYMTC staff to become familiarized with the GIS functions, as well as to establish an understanding and appreciation of the underlying data that supports the agency and maximize the benefits of using these GIS data and applications.

Training shall be conducted as a combined presentation/demonstration and hands-on/question and answer session. These sessions usually will last between one to two hours, depending on the topics being covered and the number of NYMTC staff involved. Additionally, more extensive training related to system support and web mapping shall be provided to specific user groups in order to help NYMTC staff maintain these applications, if needed. The trainings shall be conducted at NYMTC's offices using NYMTC's computer systems to ensure that the training occurs in the actual environment in which NYMTC staff will use the system. A user document with detailed instructions shall be provided and distributed to users prior to the training.

Specifically, the Consultant shall carry out the following tasks:

- Provide training on development and use of web applications on an annual or semiannual basis;
- Provide user tips to all NYMTC GIS users;
- Provide project-oriented training for those NYMTC staff with particular needs (e.g., creating maps for quarterly reports, linear referencing transportation data, geocoding new projects, etc.); and
- Provide user manuals for specific applications.

Task 5 – Collect and Maintain GIS Data from Other Sources

NYMTC staff have been collecting and assembling different data from different agencies. Value added data on transportation, demographic, environmental, ITS, etc. are shared with members and other stakeholders in a series reports. The purpose of this task is to collect data from other agencies that own data related to regional transportation planning and then integrate these data with the NYMTC GIS data. Data gaps shall be identified to guide the data collection activities that will require different approaches and methods for successful completion.

The Consultant shall have experience working with the local and regional data sets used in transportation planning. The Consultant familiarity and knowledge of data shall facilitate the data collection and integration process. Data already in a GIS format shall be integrated easily into NYMTC's enterprise GIS system. Other data shall require additional processing to be usable for NYMTC. The Consultant shall have experience collecting and integrating geospatial data from disparate sources.

The Consultant shall update the RTP maps with data from various agencies, which requires coordination with various agencies such as the New York City DOT, regional planning offices, New York City Planning, NYCDOT, etc.

The Consultant shall carry out the following tasks:

- Collect data from business areas within NYMTC and outside agencies, including, but not limited to, NYSDOT, other regional planning agencies, local transit service providers, counties, cities, neighboring states, and Federal sources;
- Document, clean up, and integrate data acquired from outside sources into the NYMTC system;
- Establish specific policies and protocols for data sharing and distribution;

- Increase coordination with member agencies to benefit from their data repositories; and
- Develop a data sharing program with other agencies.

Task 6 – Develop and Maintain NYMTC Region GIS Data

One of the main challenges for developing an effective GIS system is to enable business units to exchange information that supports their respective business processes. Teams or divisions within an MPO such as NYMTC – transportation planning, modeling, program development, and others – rely on data from other teams; information that is required to answer one specific question often is found in different departments and on different computer systems. For example, when the transportation planning team wants to analyze future impacts on the transportation system, they need data on population, employment, TIP projects, and transportation model forecasts, which typically are managed by different groups within the agency, as is the case with NYMTC. An enterprise GIS can reduce secondary data collection processes and avoid redundant data repositories. The selected Consultant shall understand the technical, institutional, and cultural issues related to enterprise transportation GIS as demonstrated via previous relevant project experience.

Data models and databases evolve over time; therefore, GIS databases should be designed with future evolution in mind. This seems to be appropriate to the situation of the New York region, where various initiatives are underway to collect more transportation data to support better decision-making and improve services. It will be one of the Consultant duties to develop a well-defined data model as a roadmap for NYMTC's data development and management. It is essential that a well-defined table structure live within a defined database structure. All data development will be through NYMTC's current MS SQL Server. Additionally, through as much automation as possible, The Consultant shall maintain the SQL Server database using strict database management protocols.

Specifically, the Consultant shall carry out the following tasks:

- Develop transportation-related data;
- Manage and update the agency wide data model in diagram format;
- Maintain an agency wide data dictionary with associated data integrity rules; and
- Develop quality assurance/quality control (QA/QC) protocols for the development and maintenance of NYMTC data.

Task 7 – Develop and Maintain GIS Web Section with the Associated Applications

NYMTC utilized web-enabled GIS mapping when an ArcIMS-based GIS element was implemented to NYMTC's web site. Since then, web-based GIS have become a popular tool for data dissemination. A multitude of useful information can be found on NYMTC's web site. NYMTC has the goal of deploying all future systems in a standardized environment to maximize consistency and minimize the breadth of skills required for architecting and maintaining the systems. Any proposed web applications shall be developed using the standardized environment. The applications also shall be developed with technology evolution in mind. The Consultant shall work closely with ongoing NYMTC web site development efforts to maintain the applications in the GIS web section. The Consultant shall integrate geospatial technologies with existing transportation applications and business processes. A Consultant has developed a web application for NYMTC for its Travel Time and Travel Speed Analyses project wherein the Consultant accessed the ArcGIS server

through to publish the GPS travel data and develop an interactive web application for NYMTC's web site.

The Consultant shall carry out the following tasks:

- Identify data needs and availability related to NYMTC's web site;
- Deploy and configure the ArcGIS Server with other required components;
- Develop custom web applications to support focused tasks and user groups; and
- Integrate the variety of web-based GIS applications that NYMTC has planned to facilitate updates and uniformity.

Task 8 – Maintain Inventory, Metadata, and File Structures on the Server

An essential element of any database or model development is a data dictionary to provide a reference for the various elements of the data structure. The Consultant shall have experience in geographic data compilation, transformation, and integration, including developing and implementing data models for complete geodatabase solutions. The Consultant data design process shall take into account not only proper normalization within tables, but data management tasks such as access and permissions management.

The following tasks will be carried out to maintain an efficient management strategy:

- Developing a comprehensive data inventory and directory structure that is intuitive and easy to navigate;
- Creating a data dictionary that provides a quick and complete reference to the types of data that NYMTC maintains in its inventory;
- Developing and maintaining metadata documentation that will help future users assess the completeness and currency of the data;
- Developing documentation that describes how the data structures work within their specific software environments; and
- Providing training on GIS metadata and use of GIS data standards.

Task 9 –Analyze GIS database, Including GPS Data

The NYBPM input and output data is a significant component of the planning data at NYMTC. The model requires a variety of data, including socioeconomic and demographic data, along with many other data sets such as highway and transit networks (base case and alternatives), origin/destination demand matrices, network skims such as travel time and speed, and even files containing model parameters and choice set definitions.

The Consultant shall have developed previous GIS applications to support modeling development and application efforts, including GIS interface with modeling software such as TransCAD; customized tools that take model socioeconomic data as inputs and use external data sources (e.g., Census) to delineate traffic analysis zones (TAZ) with built-in routines that automatically will split and validate the socioeconomic data upon splitting the TAZ boundaries; tools to take in TIP projects and code them in the model network; tools that allow users to find out the best locations for centroids based on density parameters from land use and parcel layers, and customized GIS tool to code transit network on a highway network. The Consultant shall also have developed scripts in TransCAD to ease model updating. Global

positioning system (GPS) data is becoming an economical and efficient way of getting data on travel time and travel speed.

The Consultant shall have capability to provide NYMTC with GIS support for the Travel Time and Travel Speed Analyses project, using GPS data and manual speed data to derive travel information along the streets of NYMTC region. A GPS speed calculation and conflation tool was developed and used in NYMTC called the “NYMTC GPS Tool” to effectively calculate travel time and speed using GPS data at various road segments. The Consultant shall use this tool for analysis and also produce maps to substantiate the results.

The selected Consultant shall perform the following tasks:

- Maintain the GPS database and processed data;
- Analyze/mapping the travel characteristic data to support modeling and planning projects; and
- Develop a web-based map application to be utilized by public to view the speed and travel time data.

Schedule and Deliverables

Continuous services shall be required for GIS Support over the duration of this 5 year contract. It is anticipated that the Consultant will commence work within five days of selection and shall work primarily at NYMTC’s offices.