

CAPITAL REGIONAL PLANNING COMMISSION



MOVE 2046

Demographics and Travel Demand Model Update

REQUEST FOR PROPOSALS

May 15th, 2020

CAPITAL REGIONAL PLANNING COMMISSION

**333 N. 19th Street
Baton Rouge, Louisiana
(225)383-5203
www.crpcla.org**

REQUEST FOR PROPOSAL

- SUBJECT:** MOVE 2046 Demographics and Travel Demand Model Update
- PURPOSE:** The purpose of this RFP is to select a Consultant to make improvements to, calibrate, and validate the Capital Region MPO Demographics and Travel Demand Model using household travel survey data information conducted in 2019/2020 as well as collected/maintained traffic vehicle classification and traffic counts.
- SCOPE OF WORK:** See specifics under *Scope of Work* document
- BUDGET:** The source of funding for this project is Federal and State funding from the Federal Highway Administration (FHWA), and LADOT. The budget for this project in the MPO's FY 2021-2022 Unified Planning Work Program is \$350,000.
- SCHEDULE:**
- Friday, May 15, 2020 - Release of RFP
 - Wednesday, May 20, 2020 - Deadline for Questions by 5:00pm (CDT)
Questions will only be accepted in writing to the attention of Mr. Pong Wu at pwu@crpcla.org
 - Tuesday, May 26, 2020 - Responses to Questions,
Responses will be posted on the MPO's website at:
www.crpcla.org/publicnotices as soon as possible but no later than by 5:00 p.m. (CDT)
 - Wednesday, June 10, 2020 - Proposals due by 12:00 PM CDT

One electronic document (pdf) less than 5MB e-mailed to:
info@crpcla.org with attention to:

Jamie Setze, Executive Director
333 North 19th St.
Baton Rouge, LA 70802
 - June 11th thru 15th – Selection committee review of proposals and scoring/prioritization
 - June 17th TPC Meeting – TPC review and approval of the consultant recommendation
 - Week of July 5, 2020 – Notice to Proceed issued, anticipated
- COST LIABILITY** All costs incurred in the submission of proposals or in making necessary studies, designs, or benchmarks of estimates for the preparation of the proposals are the sole responsibility of the Consultant.

It is the Proposers' responsibility to visit the Capital Region Planning Commission's website regularly at www.crpcla.org/publicnotices for any updated information on this project.

Purpose/Background

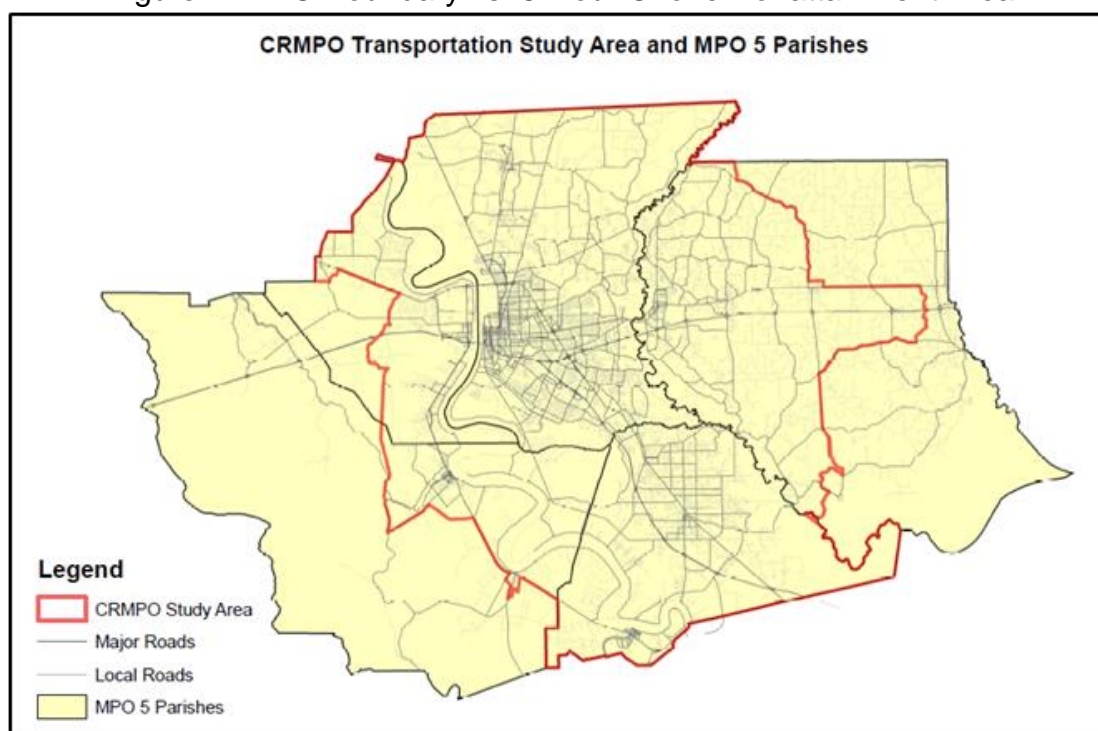
The Baton Rouge Metropolitan Planning Organization (BRMPO) is located within Capital Region five parishes' boundary. The Capital Region MPO is the area where attracts/produces economic activities that is within commuting distance for many of the surrounding communities along vary corridors, such as I-10, I-12, I-110, and, etc.

This Request for Proposals (RFP) is seeking a consulting firm to develop and update the MPO regional demographics and travel demand model including calibration/validation using MPO newly completed 2019/2020 Household Travel Survey and traffic counts; with a forecast year of 2046 as described in the SOW. The MPO regional demographics and travel demand forecasting model is crucial in the development and updating of the BRMPO's Regional Long-Range Transportation Plan (named MOVE 2046), Transportation Improvement Program (TIP), Regional Transit Element (RTE), and air quality conformity determinations. It also provides the Capital Region MPO with valuable support to various transportation planning processes such as increased needs in conducting Toll lanes, HOV lanes, and HOT lanes analysis in the Capital Area.

The Capital Region Metropolitan Planning Organization's (MPO) study area includes all of East Baton Rouge, Ascension parishes, Livingston, West Baton Rouge and a portion of Iberville parishes. While the current 8-Hour Ozone Nonattainment Area covers all Capital Region's Five Parishes, the existing travel demand model area lies within the boundary of five parishes.

A regional map for the boundaries of five-parish related nonattainment area and MPO transportation study are is shown below in Figure 1.

Figure 1: MPO Boundary vs. 8-Hour Ozone Nonattainment Area



Proposal Content

Proposals should contain at least the following documentation:

1. Cover Letter - This should include a summary of the key points of the proposal and the approach to accomplishing the study. The contact person's (project manager's) name, address, telephone number, and e-mail address must be included. The Attachment A is the proposer's information Form. The cover letter is not considered part of the maximum twelve-page requirement outlined in #2 of this section.
2. Study Methodology Section - This should include the Consultant's approach to tasks to accomplish the work outlined in the Scope of Work. This Section should demonstrate an understanding of the regional transportation system, travel demand modeling, and Federal and State planning requirements. This section is limited to twelve pages in length and no less than an 11-point font size.
3. Key Personnel Section – One paragraph summaries of qualifications and experience should be submitted for all personnel assigned to the project. The assignment of personnel must specifically contain the percent of time by personnel for each task included in the Scope of Work. The key personnel section is not considered part of the maximum twelve-page requirement outlined in #2 of this section.
4. Management Plan Section - The management plan must contain a schedule of work (timeline) with milestones, and a percent of time by each task described in the Scope of Work for the Prime and each subconsultant. The management plan section is not considered part of the maximum twelve-page requirement outlined in #2 of this section.
5. Related Work Section - Work closely related to that described in the Scope of Work which has been performed by the specific personnel assigned to this project should be briefly outlined in the proposal. Specific emphasis should be placed on work undertaken in areas similar to the Capital Region metropolitan area in the previous five years. The related work section is not considered part of the maximum twelve-page requirement outlined in #2 of this section.

Schedule

- RFP Distribution Friday, May 15, 2020
- Deadline for Questions by 5:00pm (CDT), Wednesday, May 20, 2020
Questions will only be accepted in writing to the attention of Mr. Pong Wu at pwu@crpcla.org

- Responses to Questions

Tuesday, May 26, 2020

Responses will be posted on the MPO's website at www.crpcla.org/publicnotice as soon as possible but no later than by 5:00 p.m. (CDT)

- Proposals due by 12:00 PM CDT

Wed., June 10th, 2020

One electronic document (pdf) less than 5 MB e-mailed To info@crpcla.org with attention to:

Jamie Setze, Executive Director
333 North 19th Street
Baton Rouge, LA 70802

- Evaluation Committee review of proposals and scoring/Selection

June 11th thru 15th

- TPC review and approval of the consultant recommendation

June 17th TPC Meeting

- Notification of Selected Consultant (Approximate) Week of July 5th, 2020

Note: *CRPC reserves the right to amend and/or change this schedule at their discretion*

Selection Procedure

CRPC will form an advisory evaluation committee consisting of persons individually and collectively knowledgeable in the areas of Transportation/Traffic Planning to review and rank the proposals received in accordance with the criteria of evaluation described below.

CRPC may seek additional information, conduct interviews, or request best and final offers from individual Proposers.

The evaluation committee's ranking and recommendation will be forwarded to CRPC's Executive Director who will make a recommendation to the CR MPO Transportation Policy Committee for final action. The recommendation and award of a contract, if any, will be to the Proposer whose proposal is most advantageous to CRPC based on the evaluation criteria set forth below.

CRPC reserves the right to reject any and all proposals submitted or to conclude that none of the proposals are advantageous to CRPC.

Criteria for Evaluation

The proposals will be evaluated based on the following criteria with relative weights in lists below:

Item	Criteria for Evaluation	Points
A.	Demonstrated an overall understanding of the scope of work and the ability to meet the requirements of this RFP	30
B.	Qualifications and previous related experience of key personnel to be assigned to this project as well as subcontractors	20
C.	Firm's previous related work experience within the past five years which includes citing previous experience in similar studies or projects.	20
D.	References and satisfaction of previous clients	15
F	A detailed Management Plan demonstrating the ability to complete the tasks of project at Consultant established schedule and key milestones (must include dates).	15
	Total Possible Points	100

Budget

The source of funding for this project is Federal and State funding from the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and LADOT. The budget for this project in the MPO's FY 2020-2021 Unified Planning Work Program is \$350,000.

Duration of Contract

This contract will commence in July 2020 and extend through June 30,2021 in approximately 12-month period.

Compliance with Federal Regulations

The successful Proposer will be required to comply with, in addition to other provisions of the Request for Proposal, the conditions required by all applicable Federal and State regulations as detailed in the attachment B (Note: forms to be filled in I & II), including the following:

1. Equal Employment Opportunity - Successful Proposer will be required to comply with all applicable Equal Employment Opportunity Laws and Regulations.
2. Title VI Assurances - Successful Proposer will be required to comply with all requirements imposed by Title VI of the Civil Rights Act of 1964 (49 U.S.C. Section 2000d), the Regulations of DOT issued thereunder (49 C.F.R. part 21), and assurances by the MPO thereto.

SCOPE OF WORK

The Consultant, at a minimum, must satisfactorily achieve the deliverables in this section, The Consultant may also propose to achieve additional deliverables beyond those minimally required.

The Consultant is expected to provide technical expertise, oversight, and perform the primary work on the regional Travel Demand Model update including validation/calibration using MPO newly completed 2019/2020 Household Travel Survey and traffic counts, with the CRPC staff providing support and guidance.

With a thorough review and analysis of MPO's household travel survey data done in 2019-2020, the Consultant's work tasks are anticipated to include the following items, detailed on the following pages:

- **TASK 1:** Roadway Model Network Update Using Centerline-Based Roadway Network And Highway Information System
- **TASK 2:** Transit Network Update
- **TASK 3:** TAZ and Social-Economic Data Update Refinement
- **TASK 4:** External Trips and External Station Review and Update
- **TASK 5:** Trip Generation Update
- **TASK 6:** Special Generators Review and Update
- **TASK 7:** Freight Integration
- **TASK 8:** Trip Distribution Update
- **TASK 9:** Mode Choice Update
- **TASK 10:** Transit and Vehicle Assignment with Options for Tolled and/or HOV Facilities
- **TASK 11:** Model Calibration and Validation
- **TASK 12:** Model Interface Improvements
- **TASK 13:** Air Quality Conformity
- **TASK 14:** Project Documentation and Project Management

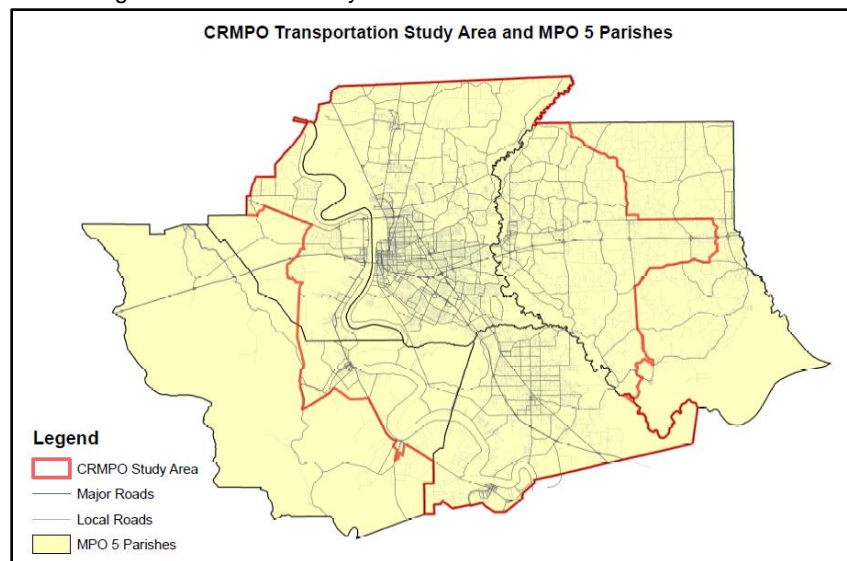
TASK 1: Development of Model Network

Background

The current model network was created two decades ago when GIS based street centerline layer didn't exist in CRPC planning region. The model network needs to be updated with GIS street centerline file and populating it with network variables from the previous model roadway network. The GIS centerline layer will be provided by CRPC staff. The model network needs to be updated with 2020 traffic counts, which will be completed in-house by CRPC staff and reviewed by the Consultant. As an option for improvement of roadway condition, MPO will plan to conduct tolled corridor and/or HOT lanes study in the Capital Region. The model currently doesn't include the ability to model toll lanes, HOV lanes, and HOT lanes.

The MPO transportation study area is located within Capital Five-Parish boundary which is identified as 8-Hour Ozone Nonattainment Area and is responsible for modeling and demonstrating air quality conformity for the entire Five Parishes. The portion of the 8-Hour Ozone Nonattainment Area that is outside of the transportation study boundary need to be included in the Travel Demand Model Update for air quality conformity determination purposes and must be included in the model's network update. Additional and specific air quality conformity tasks are detailed in Task 13.

Figure 1: MPO Boundary vs. 8-Hour Ozone Nonattainment Area



Tasks

- 1.1. Review existing network structure and recommend best practices for improvement, including a development of modeling best practices for potential toll lanes, HOV Lanes and HOT lanes analysis.

- 1.2. Develop 2020 base year model network, which will include all federal aid eligible roads as well as local roads for transit routes and potential extension. A review for accuracy of the model network's state highways; routes with transit services; and appropriate drive, bike, and walk access links within the MPO region and expanded air quality planning region must be conducted.
- 1.3. Transfer of attributes from previous modeling network to the updated GIS centerline-based model network
- 1.4. Construct future year networks in ten-year increments (2020, 2022, 2026, 2036, 2046) for both the MPO and expanded air quality regions to 2046.
- 1.5. Evaluate seasonal and daily adjustment factors to determine the most appropriate method for calculating 2020 Average Annual Weekday Traffic (AAWDT) and adjust the available traffic counts to estimate 2020 AAWDT.
- 1.6. Evaluate available datasets for network speed and travel time (INRIX, NPMRDS and MPO data) and calibrate travel speeds using actual posted speed limits, free flow, and congested travel speed data from these datasets, as applicable. Make recommendations on using additional data sets for calibrating roadway speeds in the model network.

Deliverables

- 1.1. Calibrated and validated 2020 base year using national standards.
- 1.2. Network attribute list
- 1.3. Future year model networks in 10-year increments as well as in air quality attainment years (2020, 2022, 2026, 2036, and 2046), with appropriate interim year estimated traffic counts, speed, and capacity data.
- 1.4. Report documenting the methodology for developing and checking the road network, determining adjustment factors, placing centroids, developing centroid connectors, recommendations, and other decisions made in this Task.

TASK 2: Development of Transit Network

Background

The MPO's transit network was updated during the 2016-2017 model update using shapefiles from the Capital Area Transit System (CATS) in East Baton Rouge Parish. Though the transit trips only take small percentage of total trips in MPO region, additions to the transit network have been made for some planning efforts, but not all the changes have been made to the network and route system; these route changes must be included in the 2046 Travel Demand Model Update. Additionally, the model does not reflect all physical stops, rather approximations of stops for the purposes of the model because of the limited numbers of local roads in roadway network.

Tasks

- 2.1. Evaluate the use of real stops, provided by the region's transit agency, in the model rather than approximations of those stops.
- 2.2. Evaluate the potential of using TransCAD's General Transit Feed Specification (GTFS) conversion tools to develop the transit network route system in the model. Consultant will provide a recommendation on the use of this tool.
- 2.3. Using the agreed method from Task 2.2, review the transit network route system updated in-house and add physical stops for all fixed-route services and associate the transit network with the 2020 base year network in a manner that allows for multimodal trip assignment (including walk, drive, and bike mode access to transit links).
- 2.4. Update the service hours of the various transit agencies and their route frequencies
- 2.5. Review planned transit expansions in the region and include those routes in future year networks.

Deliverables

- 2.1. Calibrated and validated base year (2020) and functioning future year transit networks in 10-year increments (2020, 2022, 2026, 2036, and 2046) with appropriate interim year vehicle count, ridership, and capacity estimates.
- 2.2. Validated 2020 transit ridership.
- 2.3. Report documenting the transit network development, recommendations, and all other processes and decisions involved in the completion of this Task.

TASK 3: TAZ Update Refinement Review

Background

The last household travel survey in Capital Area MPO was in 1970. For MPO's MOVE 2046 long range transportation plan update, CRPC has recently completed a new Household Travel Survey in 2019/2020. The household travel survey helps completing a refinement to the Traffic Analysis Zones (TAZs) in the TRAVEL DEMAND MODEL. The refined TAZs are being completed for both the CRPC modeling and Air Quality modeling areas, discussed in more detail in Task 13. The Louisiana State Census Data Center's parish population and employment projections will be used as parish-level control totals for Ascension, East Baton Rouge Iberville, Livingston, and West Baton Rouge Parishes.

Tasks

- 3.1. Review and update new TAZ and Land Use Allocation Model, the average household size and income for each TAZ obtained from 2019/2020 CRPC Household Travel Survey and make recommendations for improvements.
- 3.2. Work with CRPC staff to create a 2020 TAZ layer compatible with TransCAD.

- 3.3. Identify methodology and assumptions for developing household size and income disaggregation models to estimate the univariate distribution of households by size and by income group for each TAZ. And, iterative proportional factoring process to develop bi-variate distributions of households by income and size for each TAZ.
- 3.4. Update centroid connectors as needed in for all the TRAVEL DEMAND MODEL TAZs ensuring they load onto the network correctly following approval.

Deliverables

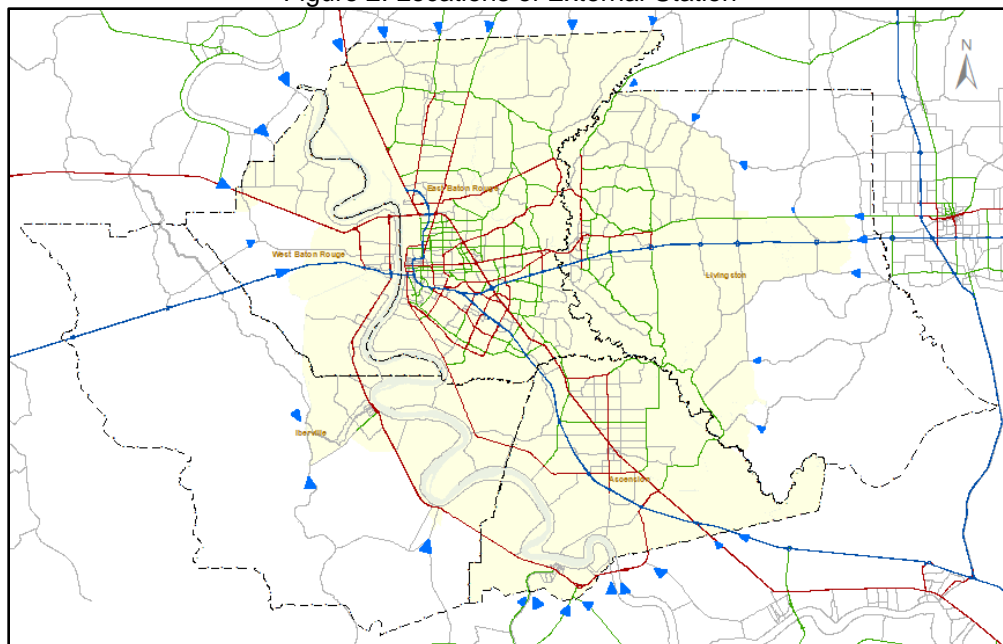
- 3.1. Land Use Allocation Model
- 3.2. TAZ layer file in TransCAD with all socioeconomic data necessary for a fully functional base year model run and future year model runs.
- 3.3. Centroid connectors placed within all the model's TAZs.
- 3.4. Report documenting the process and reasoning for decisions and recommendations involved in the completion of this Task.

TASK 4: External Trips and External Station Review and Development

Background

For the current CRPC TRAVEL DEMAND MODEL, external trips were estimated using traffic count data, which was adjusted as needed to represent an “average weekday when school is in session”. The split between Internal-External (IE)/External-Internal (EI) trips were calculated using the External Travel Study two decades ago. The TRAVEL DEMAND MODEL includes 32 external stations. Since 2018, MPO has hired traffic count consultants to collect traffic at these external stations. The Consultant will use the adjusted modeling year traffic volumes through the region being collected at the TRAVEL DEMAND MODEL’s external stations.

Figure 2: Locations of External-Station



Tasks

- 4.1. Review existing external stations, trip structure, and available data sources. Make recommendations on improvements to external trips in the model.
- 4.2. Update and validate the TRAVEL DEMAND MODEL's external-external (EE) matrix for new 2020 base EE trips using accepted national industry standards.
- 4.3. Develop, document, and implement a process to develop future EE/EI/IE matrices. Use process to create future year external trip matrices and compare against corresponding external stations in the current CRPC model and the Statewide model. Perform a reasonableness check on the 2046 EE/EI/IE matrices.
- 4.4. The Consultant will project EI and IE trips based on the number of households for the IE trips and employment for the EI trips and validate using the 2019/2020 CRPC Household Travel Survey. The Consultant will also need to produce EI and IE trips for the 2047 network and calibration using projections from the appropriate sources for future years.
- 4.5. Compare 2020 base year EE trips at the external stations using available traffic count data from adjusted 2020.

Deliverables

- 4.1. Validated 2020 external trip matrices.
- 4.2. New 2046 external trip matrices compared against the CRPC and LADOTD models checking for reasonableness.
- 4.3. Validated EI/IE trips for each trip purpose.
- 4.4. Future external trip table development process and use of that process to create 2020, 2022, 2026, 2036 and 2046 matrices.
- 4.5. Report documenting the process and reasoning for the decisions and recommendations involved with this Task.

TASK 5: Trip Generation

Background

The primary data source for estimating trip production and attraction rates is the household-based travel diary survey. Previous CRPC Travel Demand Model was based on the regional household travel survey that was done in 1970 and NHTS that includes only limited data for the capital region Five Parishes. The CRPC 2046 TRAVEL DEMAND MODEL will use the data from the 2019/2020 CRPC Household Travel Survey to re-estimate trip production and attraction rates. A review of the trip purposes in the TRAVEL DEMAND MODEL as well as the capacities of functionally classified modeling network specifically to more accurately reflect the current and future system should be undertaken, such as toll roads or HOV lanes or HOT lanes. Additionally, a creation of the trip production and attraction rates and recommendations for improvements should be

conducted.

Task

- 5.1. Review assumptions in the 2046 TRAVEL DEMAND MODEL for conducting trip production and attraction rates based on 2019/2020 CRPC Household Travel Survey and provide recommendations.
- 5.2. Review trip purposes in the TRAVEL DEMAND MODEL and provide recommendations for improvements.
- 5.3. Review of system capacity in the TRAVEL DEMAND MODEL, and recommendations for improvements.
- 5.4. Review of trip production rates and recommendations for improvements.
- 5.5. Review of trip attraction rates and recommendations for improvements.
- 5.6. Review of current TRAVEL DEMAND MODEL's Bureau of Public Roads (BPR) curves and recommendations for improvements.

Deliverables

- 5.1. Recommend and create assumptions for trip production and attraction rates in the TRAVEL DEMAND MODEL.
- 5.2. Recommend and create trip purposes for use in the TRAVEL DEMAND MODEL.
- 5.3. Recommend capacity improvements for the TRAVEL DEMAND MODEL, specifically for potential toll roads, HOV lanes and HOT lanes.
- 5.4. Recommend BPR curve improvements for the TRAVEL DEMAND MODEL.
- 5.5. Report documenting the recommendations, process and reasoning for the decisions involved with this Task.

TASK 6: Special Generators Review and Update

Background

The model currently uses Special Generators for LSU, BRCC, BRSU, and etc. An evaluation of the Special Generators must be undertaken to determine if they are still necessary and if any additional should be considered. If it is determined the Special Generators should be retained, then supporting data will need to be updated accordingly. It is also expected the Consultant will make recommendations for other types of Special Generators to obtain accurate VMT within the region, if necessary.

Tasks

- 6.1. Review and evaluate current Special Generators in the TRAVEL DEMAND MODEL.
- 6.2. Recommend continuation, removal, or additions of Special Generators.
- 6.3. Recommendations on other types of Special Generators for the TRAVEL DEMAND MODEL, as applicable.

Deliverables

- 6.1. Recommend and created Special Generators for the TRAVEL DEMAND MODEL.
- 6.2. Report documenting the recommendations, process and reasoning for the decisions involved with this Task.

TASK 7: Freight Integration

Background

The current TRAVEL DEMAND MODEL includes a truck component where truck volumes are estimated within the model. Since 2018, the MPO conducted vehicle class counts along major roadways and external stations surrounding the transportation study boundary. The NPMRDS includes database of truck along the major corridors as well within MPO region. The truck information, including origin, destination, IE/EI/EE, and duration of trips must be incorporated into the existing truck component of the TRAVEL DEMAND MODEL. Additionally, an evaluation and review of a more robust freight component, along with recommendations is necessary.

Tasks

- 7.1. Use the NPMRDS data and data from related sources to create new and more robust truck component for the TRAVEL DEMAND MODEL.
- 7.2. Create truck trip table and components and preload truck trips onto network
- 7.3. Calibrate with counted vehicle class data and external stations data

Deliverables

- 7.1. A new freight truck (2-axle freight trucks and up) component of the travel model.
- 7.2. Truck Trip Tables and trucks preloaded onto the networks.
- 7.3. Report documenting the truck recommendation and how it was implemented in this Task.

TASK 8: Trip Distribution

Background

The CRPC TRAVEL DEMAND MODEL uses a standard four-step gravity model equation and applies friction factors to represent the effects of impedance between TAZs.

Tasks

- 8.1. Review and document industry standard practices in Trip Distribution modeling for similar-sized study areas and recommend a structure for the CRPC TRAVEL DEMAND MODEL.
- 8.2. Recommend and jointly establish calibration targets for model trip distribution.
- 8.3. Upon approval, implement the trip distribution model recommendations and calibrate according to recommendation for all trip purposes.

Deliverables

- 8.1. Trip distribution review and improvement recommendations.
- 8.2. Jointly established and approved calibration recommendations.
- 8.3. A calibrated and validated trip distribution model.
- 8.4. Report documenting the recommendations, assumptions, methodology, findings, and products of this Task.

TASK 9: Mode Choice

Background

The CRPC TRAVEL DEMAND MODEL does not include a more complicated mode choice step, which would estimate transit usage based on a detailed representation of the region's transit service. Because very small percentage of trips are associated with transit and non-motorized trips, the current algorithms used in this model provide limited information about transit usage in the region but cannot be used to perform detailed transit forecasts. The mode choice model has to be added and calibrated to reproduce observed mode shares (drive alone, shared ride (i.e. carpool or vanpool), transit (walk access and drive access), and non-motorized (walk and bicycle trips) in the region using 2019/2020 CRPC Household Travel Survey and related sources.

Tasks

- 9.1. Explore and recommend use of available datasets to better represent non-motorized modes in the mode choice model. Datasets may include, but are not limited to: 2019/2020 CRPC Household Travel Survey; American Community Survey (ACS); Census Transportation Planning Products (CTPP); Geaux Ride; National Household Travel Survey (NHTS); parameters from national research reports; built environment and land use; and bicycle and pedestrian infrastructure.
- 9.2. Review and document industry standard practices in mode choice and multi-type transit modeling for similar-sized study areas and recommend a structure for the CRPC's mode choice model. The Consultant will implement the mode choice model recommendation following approval by the CRPC.

- 9.3. Review non-motorized trips percentage taken off the top of all trips to see if they are an accurate representation of non-motorized trips in the region or if the percentage needs to be adjusted for CRPC Travel Demand Model Update.
- 9.4. Review walk and bike access to transit to ensure non-motorized transportation links are accurately modeled.
- 9.5. Recommend and jointly establish calibration targets for the mode choice model and calibrate the mode choice model.
- 9.6. Upon approval, develop and produce the recommended improvements for existing and future modes in the model, including any additional modes identified in the recommendations.
- 9.7. Use industry best practices to test and evaluate the model choice model.

Deliverables

- 9.1. Document industry standards for mode choice model for similar sized areas and recommend a methodology.
- 9.2. Jointly established and approved calibration targets for the mode choice model.
- 9.3. Calibrated mode choice model for existing and recommended modes.
- 9.4. Non-motorized trips as a macro in the model's output reports.
- 9.5. Bike access links in the model to enable the bike mode access to transit links to be more accurately modeled.
- 9.6. Document the state of the practice of multi-type transit mode and assignment and identifying additional data or information needed to perform multi-mode transit assignment.
- 9.7. Document the methodology for determining impedance functions; reasonableness of auto occupancy factors; and the assumptions, methodology, findings and products of the mode choice task.
- 9.8. Report documenting recommendations and all steps in this work Task.

TASK 10: Vehicle and Transit Assignment

Background

In trip assignment, the CRPC TRAVEL DEMAND MODEL includes four time of day periods:

AM: AM Period (6:00am-9:00 AM),
MD: Mid-Day Period (9:00 AM - 3:00 PM),
PM: PM Period (3:00PM - 6:00 PM) and
NT: Night Period (6:00PM - 6:00AM).

In the model output files, peak period vehicle assignment is available as a full time-of-day period. Vehicle trips are available by type for each of four periods. Both auto and truck volumes are preloaded on the road network prior to constrained traffic assignment.

Tasks

- 10.1 The Consultant will review assignment in the existing model, including volume delay functions and generalized cost function, and make recommendations for improvements that represent best practices for similar sized urban areas.
- 10.2 The Consultant will review the existing peak periods in the TRAVEL DEMAND MODEL and make a recommendation on assignment time periods and loading factors including the potential for off-peak periods
- 10.3 The Consultant will recommend calibration targets for the assignment model.
- 10.4 Upon approval, the Consultant will develop an assignment procedure to assign all vehicle and transit trips to the base year (2020), interim years (2022,2026,2036) and 2046 model networks.
- 10.5 The Consultant will assign all trips to the base year, interim years, and 2046 model networks and perform a vehicle and transit peak periods and 24-hour assignments.
- 10.6 Roadway volumes resulting from traffic assignment need to compare against traffic count data and transit ridership need to compare against transit count data. This process of traffic assignment validation, ensures that the model is reasonably representing observed traffic patterns. Additional and specific Model Calibration and Validation tasks are detailed in Task 11.
- 10.7 The Consultant shall review and, if necessary update the existing road and transit impedances.

Deliverables

- 10.1 Best practice recommendations for assignment methodology for similar sized urban areas.
- 10.2 Daily, Peak and off-peak period time period and loading factor recommendations.
- 10.3 Jointly established and approved calibration targets for the assignment model.
- 10.4 Validated base year, interim year, and 2046 24-hour and peak periods traffic assignments for vehicles and transit.
- 10.5 Memo documenting the recommendations, assumptions, methodologies, findings and products of this Task.

TASK 11: Model Calibration and Validation

Background

The CRPC TRAVEL DEMAND MODEL must be calibrated and validated by the Consultant with industry best practices and standards. This will be accomplished through an iterative process with CRPC staff. Overall vehicle trip activity needs to be validated by comparing count data to model results on all links where count data is available using two statistics: the Model Volume as compared to Count Volume and the Model VMT as

compared to Count VMT. These statistics will be reviewed at the facility type, area type, parish level and regional level. In addition, the comparison of modeled volumes and observed traffic counts on screenlines extend across a series of roadway links and form a logical basis for evaluating regional travel movements in the model

Tasks

- 11.1 Assemble the updated TRAVEL DEMAND MODEL, with implemented improvements as documented in the previous 10 Tasks, execute model runs, and summarize results.
- 11.2 Provide recommendation to improve the model's sensitivity showing that the model provides appropriate sensitivity to variables that are important in the forecasting and planning process.
- 11.3 The Consultant will ensure that the model meets best practice calibration targets for all models steps at peak hours, off peak hours, and 24-hour assignments.
- 11.4 Calibrate base year (2020) VMT, trip length, travel time, mode shares, and volume distribution; adjust trip generation and distribution models as necessary.
- 11.5 Perform and document transit reasonableness check to ensure proper distribution of boardings by route or route groups and provider for base, interim, and out-year projections.
- 11.6 The Consultant will present information to and obtain feedback for and consensus on the TRAVEL DEMAND MODEL deliverables from Tasks 1 through 10.
- 11.7 The Consultant will calibrate/validate travel speeds in the model using industry best practices as described in the background
- 11.8 The Consultant will assemble the full 2046 TRAVEL DEMAND MODEL and demonstrate reasonableness of the outputs. Make changes based on the outcomes of those checks.

Deliverables

- 11.1 Calibrated base year (2020) network, including model files.
- 11.2 Working calibrated components for daily and peak periods in the Base Year (2020) network.
- 11.3 Perform reasonableness checks for interim years (2022, 2026 and 2036) and out year (2046) forecasts.
- 11.4 Completed sensitivity test and supporting methodology demonstrating the changes in modeled trips based on the model data inputs for interim model years and 2046 network.
- 11.5 Documentation of the assumptions, methods, findings, and products of the model calibration/validation Tasks.
- 11.6 Updated Report documenting recommendations and changes made to any previous deliverable(s) during calibration.

TASK 12: Model Interface Improvements

Background

The CRPC TRAVEL DEMAND MODEL uses a model interface developed previously. Staff is generally satisfied with the interface; however, because of added functions such as toll way, HOV lanes analysis, and enlarged area for air conformity, etc., there are a variety of components and capabilities staff would like to have added. Staff would like the Consultant to consider the merits of upgrading the existing interface or adopting a new interface for the Scenario Manager and make a recommendation. The TRAVEL DEMAND MODEL needs to include a summary report that summarizes model runs. This reporting tool is useful for comparing model runs and it should be reviewed for any potential improvements.

Tasks

- 12.1 Improve the Scenario Manager for the TRAVEL DEMAND MODEL's interface.
- 12.2 The Consultant shall review the existing TRAVEL DEMAND MODEL interface and make recommendations for improvements. The review should include an evaluation of the flow chart graphical interface recently introduced to TransCAD.
- 12.3 Upon approval of recommendations, the Consultant will update the existing or create a new model interface and statistic reports that successfully run on the CRPC computers using the most recent version of TransCAD8.
- 12.4 The Consultant will provide instructions as well as documentation on the model statistics tool. This will include, but is not limited to how the tool was created or improved, and the details of report.

Deliverables

- 12.1 New or updated model interface and statistics reports, including non-motorized report.
- 12.2 Model GISDK Source Code.
- 12.3 Documentation on how to use and interpret the statistics reporting tool.
- 12.4 Report documenting the recommendations, assumptions, methodologies, findings and products of this Task. The report must include a description of the process to run and manage model runs in TransCAD including the names of all input and output files as well as a description of the contents of the file.

TASK 13: Air Quality Conformity

Background

The CRPC MPO Transportation Study Area is located within the Capital Area's Five Parishes Boundary that was identified as 8-Hour Ozone Nonattainment Area, see Figure

1. The pollutant of concern in this region is ozone and its pre-cursors, volatile organic compounds (VOC) and nitrogen oxides (NOx), which are predominately a summertime issue. The model must account for changes from the average weekday school in-session scenario to a summertime scenario for the entire region to accurately reflect the ozone pre-cursors.

The portion of the 8-Hour Ozone Nonattainment Area that is not within the CRPC MPO Boundary is included in the TRAVEL DEMAND MODEL for air quality conformity determination purposes. This “donut” area significantly impacts traffic and emissions in the region as a whole. A review of the methodology for capturing this data along with recommendations, including the necessary data, is needed.

Tasks

- 13.1 Review methodology for air quality inputs and outputs, including how the nonattainment area is represented geographically in the model, if MPO Transportation Study Modeling Area can be set as sub-area against the whole area for conformity model.
- 13.2 Review air quality related inputs to the model and their relationship to the outputs.
- 13.3 Work with CRPC staff to ensure compatibility with CRPC model.
- 13.4 Work with CRPC staff with input from the Louisiana Department of Environmental Quality (LADEQ) to create model outputs to be used with EPA’s MOVES2014a model or the most current version.

Deliverables

- 13.1 Develop post-processing routine to create the necessary inputs for the MOVES2014a or most current model.
- 13.2 Strategy for updating the post processing routines if MOVES is updated by EPA after model delivery or new inputs are required.
- 13.3 Documentation of the necessary inputs and expected outputs, how to interface with and export data, and how to interpret each output field.

TASK 14: Project Documentation and Project Management

Background

The TRAVEL DEMAND MODEL documentation is a valuable resource for staff to understanding the concepts of the model. Documentation for this update should include the general structure with improvements outlined below.

Tasks

All reports produced by the Consultant must be provided as both Microsoft Word for draft

documents and Word and PDFs for final documents.

- 14.1 The Consultant will prepare monthly progress reports. Additional Task technical reports and documentation must be submitted and approved at the completion of defined milestones prior to payment.
- 14.2 The Consultant will prepare a final model calibration/validation report based on the scope of work and the necessary documentation. The model calibration/validation report will detail changes and updates made to the TRAVEL DEMAND MODEL. This report will also explain the new processes developed as part of this project.
- 14.3 The Consultant will produce a complete set of all data and text files to run the model that must be used for conducting a thorough review of the updated TRAVEL DEMAND MODEL.
- 14.4 Document travel model file structure and provide a flow chart illustrating the model process.

Deliverables

- 14.1 Prepare a project management plan.
- 14.2 Establish and maintain a project schedule with key milestones.
- 14.3 Monthly progress and Task reports.
- 14.4 Early in the project, the consultant will participate in a TAC and TPC meetings with committee members to present new modeling functions to be added for the regional transportation analysis and familiarize members with project schedule and key milestones
- 14.5 A complete set of documentation as outlined in this scope of work and additional documents identified in Tasks 1 through 14.
- 14.6 Model Calibration/Validation report.
- 14.7 Complete set of all data, instructions, text files required to run the TRAVEL DEMAND MODEL and post-process for analyzing output data; contact person for potential modeling issues and questions.
- 14.8 TRAVEL DEMAND MODEL Technical Documentation Report in Word and PDF formats.
- 14.9 TRAVEL DEMAND MODEL User's Guide in Word and PDF formats.

ATTACHMENT A: PROPOSER'S INFORMATION SHEET

ATTACHMENT B: FEDERAL REGULATIONS

- I - CERTIFICATION REGARDING LOBBYING
- II - DEBARMENT AND SUSPENSION CERTIFICATION
- III - FEDERALLY REQUIRED CONTRACT CLAUSES

ATTACHMENT A: PROPOSER'S INFORMATION SHEET

All firms proposing as prime contractors or subcontractors on CAPITAL REGIONAL PLANNING COMMISSION (CRPC) projects are required to submit this form. Please complete this form and return it with your proposal.

If you have any questions about this form, please call Pong Wu, Sr. Transportation Planner, (225) 383-5203, or email PWu@crpcla.org

1. GENERAL INFORMATION

Name of Firm:
Street Address:
City, State, ZIP:
Mailing Address:
City, State, Zip:

Telephone Number:
Fax Number:
E-mail address:
Web Address:
Year Firm was established:

Check all that apply:

Is this firm a prime consultant? _____
Is this firm a sub-consultant? _____ Identify specialty: _____
Is this firm a certified DBE? _____ If so, by whom? _____
Is this firm currently debarred? _____
Is this firm currently the subject of debarment proceedings? _____

2. FINANCIAL INFORMATION

Firm's annual gross receipts (average of last 3 years):

_____ <\$500,000
_____ \$500,000 - 1,500,000
_____ \$1,500,000 - \$5,000,000
_____ >\$5,000,000

Information will be maintained as confidential to the extent allowed by federal and state law.

The undersigned swears that the above information is correct. Any material misrepresentation may be grounds for terminating any contract which may be awarded.

Name, Title

ATTACHMENT B: FEDERAL REGULATIONS - Please see following pages for

- I - CERTIFICATION REGARDING LOBBYING
- II - DEBARMENT AND SUSPENSION CERTIFICATION
- III - FEDERALLY REQUIRED CONTRACT CLAUSES

I: CERTIFICATION REGARDING LOBBYING

The undersigned Contractor certifies, to the best of his or her knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96). Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, *et seq.*)]
- 3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date: _____

II: DEBARMENT AND SUSPENSION CERTIFICATION

Choose one alternative:

- ☐ The Proposer, _____, certifies to the best of its knowledge and belief that it and its principals:
1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;
 2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or Contract under a public transaction; violation of federal or state antitrust statutes or commission or embezzlements, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 3. Are not presently indicated for or otherwise criminally or civilly charged by a government entity (federal, state, or local) with commission of any of the offenses enumerated in Paragraph 2 of this certification; and
 4. Have not within a three-year period preceding this Proposal had one or more public transactions (federal, state or local) terminated for cause or default.

OR

- ☐ The Proposer is unable to certify to all of the statements in this certification, and attaches its explanation to this certification. (In explanation, certify to those statements that can be certified to and explain those that cannot.)

The Proposer certifies or affirms the truthfulness and accuracy of the contents of the statements submitted on or with this certification and understands that the provision of Title 31 USC § Sections 3801 are applicable thereto.

Executed in (City) _____, **state of** _____

Printed Name: _____

Authorized Signature

Date

III: FEDERALLY REQUIRED CONTRACT CLAUSES

- A. CIVIL RIGHTS REQUIREMENTS**
- B. DISADVANTAGED BUSINESS ENTERPRISE (DBE)**
- C. GOVERNMENT-WIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT)**
- D. LOBBYING**
- E. ADA ACCESS**
- F. NO OBLIGATION BY THE FEDERAL GOVERNMENT**
- G. RECORDS AND REPORTS**
- H. TERMINATION**
- I. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS**
- J. BREACHES AND DISPUTE RESOLUTION**
- K. CLEAR AIR**
- L. CLEAN WATER REQUIREMENTS**
- M. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**
- N. ENERGY CONSERVATION REQUIREMENTS**
- O. RECYCLED PRODUCTS**
- P. GOVERNING LAW**
- Q. SEVERABILITY**
- R. PATENT RIGHTS**
- S. RIGHTS IN DATA AND COPYRIGHTS**

A. CIVIL RIGHTS REQUIREMENTS

Civil Rights – The following requirements apply to the underlying contract:

- 1) *Nondiscrimination* – In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
- 2) *Equal Employment Opportunity* – The following equal employment opportunity requirements apply to the underlying contract:
 - a) *Race, Color, Creed, National Origin, Sex* – In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor,” 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, “Equal Employment Opportunity,” as amended by Executive Order No. 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
 - b) *Age* – In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
 - c) *Disabilities* – In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, “Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act,” 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
- 3) The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

B. DISADVANTAGED BUSINESS ENTERPRISE (DBE)

- 1) This contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, *Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs*. The national goal for participation of Disadvantaged Business Enterprises (DBE) is 10%. The agency's overall goal for DBE participation is 0.03%. A separate contract goal has not been established for this procurement.
- 2) The contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this DOT-assisted contract. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as CRMPO deems appropriate. Each subcontract the contractor signs with a subcontractor must include the assurance in this paragraph (see 49 CFR 26.13(b)). The successful bidder/offeror will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.
- 3) The contractor is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 30 days after the contractor's receipt of payment for that work from the CRMPO.
- 4) The contractor must promptly notify the CRMPO whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without prior written consent of the CRMPO.

C. GOVERNMENT-WIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT)

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, the contractor is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the CRMPO. If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to the CRMPO, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

D. LOBBYING

Byrd Anti-Lobbying Amendment, 31 U.S.C. 1352, as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65 [to be codified at 2 U.S.C. § 1601, et seq.] – Contractors who apply or bid for an award of \$100,000 or more shall file the certification

required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

**** MUST COMPLETE AND SUBMIT APPENDIX A: 49 CFR PART 20 – CERTIFICATION REGARDING LOBBYING ****

E. ADA ACCESS

Accessibility. Facilities to be used in public transportation service must comply with 42 U.S.C. Sections 12101 *et seq.* and DOT regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 CFR Part 37; and Joint ATBCB/DOT regulations, "Americans with Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 CFR Part 1192 and 49 CFR Part 38. Notably, DOT incorporated by reference the ATBCB's "Americans with Disabilities Act Accessibility Guidelines" (ADAAG), revised July 2004, which include accessibility guidelines for buildings and facilities, and are incorporated into Appendix A to 49 CFR Part 37. DOT also added specific provisions to Appendix A modifying the ADAAG, with the result that buildings and facilities must comply with both the ADAAG and amendments thereto in Appendix A to 49 CFR Part 37.

F. NO OBLIGATION BY THE FEDERAL GOVERNMENT

The purchaser and Contractor acknowledge and agree that notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the Purchaser, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

G. RECORDS AND REPORTS

The MPO and Contractor shall maintain all books, records, and other documentation pertaining to the Scope of Services and necessary to completely substantiate all costs incurred and billed to the MPO for a period of three (3) years from the date of final payment. These records shall be made available for inspection and audit to any state or federal authority authorized to inspect such records and copies thereof shall be furnished at the expense of Contractor, if so requested.

H. TERMINATION

If the Contractor fails to deliver supplies or to perform the services within the time specified in this contract or any extension or if the Contractor fails to comply with any other provision of this contract, the MPO may terminate this contract for default. The MPO shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. The Contract will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performances set forth in this contract.

I. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS

- 1) The Contractor acknowledges that the provisions of the Program Fraud civil Remedies Act of 1986, as amended, 31 U.S.C. §3801 et seq. and U.S. DOT regulations, 'Program Fraud Civil Remedies, "49 C.F.R. Part 31, apply to its actions pertaining to the Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or cause to be made, pertaining to the underlying contract of the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.
- 2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by the FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. §1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.
- 3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

J. BREACHES AND DISPUTES

- 1) *Disputes* – Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the CRMPO's Executive Director. This decision shall be final and conclusive unless within then (10) days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the Transportation Planning Director. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the Executive Director shall be binding upon the Contractor and the Contractor shall abide by the decision
- 2) *Performance During Dispute* – Unless otherwise directed by the CRMPO, Contractor shall continue performance under this Contract while matters in dispute are being resolved.
- 3) *Claims for Damages* – Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.
- 4) *Remedies* – Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the CRMPO and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or if a court of competent jurisdiction with the State in which the CRMPO is located.
- 5) *Right and Remedies* – The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of and duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the CRMPO or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act

constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

K. CLEAN AIR

- 1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. The Contractor agrees to report each violation to the purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.
- 2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

L. CLEAN WATER REQUIREMENTS

- 1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 22 U.S.C. § 1251 et seq. The Contractor agrees to report each violation to the Purchaser and understands and agrees the Purchaser will, in turn, report each violation as required to assure notification to FTA and the Appropriate EPA Regional Office.
- 2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

M. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

- 1) *Overtime requirements* – No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- 2) *Violation; liability for unpaid wages; liquidated damages* – In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefore - shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- 3) *Withholding for unpaid wages and liquidated damages* – The MPO shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract of any other federal contract with the same prime contractor, of any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- 4) *Subcontracts* – The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring

subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

N. ENERGY CONSERVATION REQUIREMENTS

The Contract agrees to comply with mandatory standards and policies relating to energy. The laws of the State of Louisiana shall govern the construction, interpretation, the Energy Policy and Conservation Act.

O. RECYCLED PRODUCTS

The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. § 6962), including but not limited to the regulatory provisions of 40 CFR part 247, and Executive order 12873, as they apply to the procurement of items designated in Subpart B of 40 CFR Part 247

P. GOVERNING LAW

The laws of the State of Louisiana shall govern the construction, interpretation, execution and enforcement of this Agreement.

Q. SEVERABILITY

In the event any provision of the Agreement shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision of this Agreement

R. PATENT RIGHTS

The Contractor Agrees that (a) Depending on the nature of the Underlying Agreement, the Federal Government may acquire patent rights when the contractor produces a patented or patentable invention, improvement or discovery, (b) The Federal Governments rights arise when the patent or patentable information is conceived or reduce to practice with federal assistance or (c) When a patent is issued or patented information becomes available as described in the preceding section (b) of section r., the FTA will be notified immediately and a detailed report satisfactory to FTA will be provided.

S. RIGHTS IN DATA AND COPYRIGHTS

"Subject data" means recorded information whether or not copyrighted, and that is delivered or specified to be delivered as required by the underlying agreement. Examples of 'subject data' include, but are not limited to computer software, standards, specifications, engineering drawings and associated lists, process sheets, manuals, technical reports, catalog item identifications, and related information, but do not include financial reports, cost analyses, or other similar information used for performance or administration of the underlying agreement.

Upon final payment, all designs, plans, reports, specifications, drawings, subject data and other services rendered by Contractor shall become the sole property of the MPO, which shall have the royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use and authorize others to use all such materials for authorized government purposes. Other entities that may reproduce, publish, or otherwise use the designs, plans, reports, specifications, drawings, and other services rendered by Professional include, but are not limited to the Louisiana Department of Transportation ("LADOT"), the Federal Transportation Administration ("FTA"), and the Federal Highway Administration ("FHWA").