

**EXHIBIT A SCOPE OF SERVICES**  
**ALEXANDRIA/PINEVILLE URBANIZED AREA**  
**METROPOLITAN TRANSPORTATION PLAN (MTP) UPDATE**  
**State Project No. 972358**

The purpose of this scope is to provide professional planning services for the development of an update of the Metropolitan Transportation Plan (MTP) for the Alexandria/Pineville Urbanized Area as described in this exhibit. The short-range portion of the transportation plan shall be comprised of those transportation measures, which have already been developed by local agencies; they shall be integrated into the plan. The long-range plan will determine transportation system needs through the year 2045, with the plan delineated in three stages (i.e., 2020-2025, 2026-2035, 2036-2045). The final MTP to be recommended for adoption by the Metropolitan Planning Organization (MPO) will consist of projects drawn from a Needs Analysis. Priorities will be established for which implementation costs do not exceed projected revenues expected to be available based on historical funding. The process will be undertaken by the staff of the MPO, and the Rapides Area Planning Commission (RAPC). The STUDY TEAM will be made up of representatives of the Louisiana Department of Transportation and Development (LADOTD), RAPC staff, members of the Policy Committee (PC), and members of the Technical Advisory Committee (TAC). Exhibit "B" identifies services and technical inputs to be performed by the state and local governments.

The services to be completed by RAPC are outlined in this exhibit by task in a general chronological order; however, many of the tasks are interrelated and would be conducted concurrently.

**Task 1.0 Establish Goals, Objectives and Criteria for MTP Update**

One of the initial tasks of this study will be the establishment of goals and criteria that will be used as guidelines for the development and evaluation of alternatives for the MTP. This task will be conducted in close coordination with the STUDY TEAM.

Task 1.1 Previous MTP Review Document and Development of Draft Goals and Objectives and Criteria

RAPC will review the goals and objectives listed in the existing 2015 MTP document. A determination will be made on which goals and objectives have been completed or should be carried over into the updated document. This will guide RAPC in the development of a set of draft Goals and Objectives.

RAPC will also devise a draft set of criteria for evaluating the performance of the system alternatives. These criteria should at a minimum include the following planning factors:

- Functional classification
- Traffic flow quality
- Highway safety
- Arterial spacing
- Traffic operations
- Compatibility with existing and planned land use

## Environmental and land use impacts

The goals and criteria shall also take into consideration the coordination of all modes of transportation as described in the Metropolitan Planning Requirement under Moving Ahead for Progress in the 21st Century (MAP-21), FAST Act as well as ATIA 2019 Act.

### Task 1.2 Study Team Kick-off Meeting

RAPC will present the draft goals, objectives, and criteria to the study team for review. The goals, objectives, and criteria may be refined at this stage. RAPC will also give an overview of the planning process identified in this scope and in the MPO's Public Participation Plan guidelines and seek study team input on said process.

## **Task 2.0 Meetings and Visioning Process for the Region**

This task aims to involve and inform key participants and the public concerning the study process and findings and to obtain their input into the analysis and results. Particular attention will be given to engaging the "interested parties" specified in the Metropolitan Planning Regulations and to meeting the objectives of the MPO Public Participation Plan.

### Task 2.1 Public/Vision Meetings

RAPC will conduct six public meetings; five at the beginning and one at the end of the study. RAPC will conduct the first five visioning meeting as described below.

#### Visioning process for the region

- Conduct five (5) meetings in the region to determine the community's vision of what the region should look like 10 and 20 years in the future.
- Develop subarea and regional maps showing the outcome of the visioning meetings for use in the project selection process and inclusion in the MTP.

RAPC will be available and will make technical presentations at the final public meeting held toward the end of the project where study findings and recommendations will be presented and public comments regarding the new MTP will be obtained.

Public Meetings will be broadly advertised in accordance with the MPO Public Participation Plan and targeted invitations will be distributed to groups and individuals representing "interested parties" as defined in the metropolitan planning regulations.

### Task 2.2 Agency Consultation

RAPC will identify agency stakeholders including local governments, local transit providers, federal and state regulatory and permitting agencies, federal and state public safety and security agencies and other "interested parties" and carry out and document agency consultation meetings on the MTP development as required in the Metropolitan Planning Regulations.

### Task 2.3 Study Team Meetings

STUDY TEAM meetings will be conducted throughout this process to review the findings of both the public meetings and the agency consultations.

## **Task 3.0 Review Current Land Use Planning Efforts**

This task will involve obtaining and assessing the current state of land use and community planning in the region.

### Task 3.1 Collect Existing Land Use Plans

Contact and meet with each of the local governments to obtain existing land use and/or community plans and efforts. Also discuss any future efforts that may be relevant.

### Task 3.2 Review Land Use Plans

Review those plans and identify common elements and their effect on the transportation system.

### Task 3.3 Identify Land Use Areas on Concern

Identify land uses that will be affected by various transportation related decisions. Utilize the information gathered to develop maps depicting general themes, special areas or planning efforts in the region.

### Task 3.4 Develop Project Selection Criteria

Develop a set of transportation project selection criteria that complements land use planning efforts and the results of the visioning process.

- Review the MAP-21/Fast Act/ATIA Act required planning goals for Metropolitan Transportation Plans
- Develop a final set of screening, selecting, and prioritization criteria from the information developed during the visioning meetings and this task

## **Task 4.0 Update Street and Highway Networks to 2020 Base Year Including ADT**

This task is to update the database and travel demand model network that will assist in analyzing future transportation networks, identification of anticipated transportation system deficiencies, and provide support for project prioritization.

### Task 4.1 Review Existing Models Base Year Network

RAPC will review the existing base model for use in this MTP and model update. The existing

model data files will be reviewed for zonal data, trip tables, network descriptions and traffic assignments. This information will be reviewed to determine additional planning data needs.

#### Task 4.2 Update Street and Highway Network to 2020 Base Year

The existing base year network will be reviewed along with current aerial photographs, DOTD GIS databases, and local GIS databases to update the network attributes to a new 2020 base year highway network. RAPC, with the assistance of the STUDY TEAM, will develop and update these attributes. These attributes will include, but not necessarily be limited to, number of lanes, presence of left turn lanes at major intersections, posted speeds, functional classification, one-way or two-way operation, directional capacity for peak hour and 24-hour time periods. RAPC will identify coding schemes for each attribute.

Detailed coding of descriptive fields for number of lanes and functional classification will allow reporting of network characteristics (i.e. vehicle miles traveled, vehicle hours traveled, v/c ratios, etc.) by categories identical to the LADOTD functional classification system.

The highway network will include all roadways in the Study Area classified as collectors and above. In certain sections of the Study Area, based on zone and network density, other significant roadways will be added for continuity purposes. Future networks will be developed by RAPC modifying and building upon the base year network.

#### Task 4.3 Traffic Counts

Base year (2020) traffic counts will be needed for screenlines, cutlines, cordon line crossing points, and other locations. RAPC will identify the existing locations that counts are needed and count these locations.

While the screenline/cutline comparisons for calibrating the regional model will be in terms of a 24-hour time period, the counts should be directional and in 15 minute or 1 hour intervals for use in Time of Day analyses.

#### Task 4.4 Verification and Checks

RAPC will verify the 2020 network attributes for plausibility and conduct field checks and utilize applicable travel data as necessary to ensure the accuracy of the network description.

### **Task 5.0 Update TAZ Demographic Data to 2020 Base Year**

This task will involve developing a new 2020 base year demographic data set for use in the model.

#### Task 5.1 Development of Base Year (2020) Demographic Data

Input demographic data for the transportation models will be obtained and/or estimated for the base year (2020) by RAPC. Data from the 2010 Census and latest

American Community Survey will be the starting point for population. RAPC will obtain employment data from InfoUSA. Other planning data from the local governments, such as building permits, will also be reviewed.

#### Task 5.2 Demographic Model Input

Planning variables will be developed for each traffic zone, and will include the following typical input data:

- Population
- Retail employment
- Total employment
- Occupied dwelling units
- Total dwelling units
- School attendance

Data will also be updated for "special generators" (i.e., Airport, Hospitals, Universities, etc.) as defined by RAPC.

#### Task 5.3 Verification of Base Year Demographic Data

RAPC will review the demographic data for accuracy and reasonableness and will work with the STUDY TEAM to conduct field checks of any questionable zones to ensure the reliability of the data variables.

### **Task 6.0 Extend TAZ Data Forecast Years to 2025, 2035, and 2045**

This task will involve forecasting the socioeconomic data developed in Task 4 above to the Planning Horizon (2045) and intermediate (2025 and 2035) years.

#### Task 6.1 Forecast Socioeconomic Variables to 2025, 2035 and 2045

RAPC will develop a methodology for forecasting the base year (2025) socioeconomic data to the Planning Horizon (2045) and intermediate (2025 and 2035) years. The method will be coordinated with the STUDY TEAM.

### **Task 7.0 Recalibrate and Revalidate Model with Updated Network, Data and ADT Using Current Trip Rates and Equations**

Once the Travel Demand Forecasting Model is updated, it will be calibrated so that the link traffic volume estimates produced by the model fall within reasonable variances of the actual ground counts and travel data.

#### Task 7.1 Develop Base Year (2020) Assignment

The trip assignment model is the last model in the process and loads the trips onto the network based upon the shortest path between zones and how congested that route

becomes. In a capacity restraint assignment, as a particular link's traffic approaches the link's capacity, any additional traffic is diverted to another link, the second shortest path, third shortest, etc. The trip tables developed in the trip distribution process will be summed together and, based on auto occupancy factors, be used to create total and hourly vehicle trip matrices. These matrices will be loaded/assigned to the 2020 network.

### Task 7.2 Calibrate Model Components

Each model component (Generation, Distribution and Assignment) will be calibrated against known data sources in terms of percentage of trips by trip purpose, person trips per household, average trip length by trip purpose, etc. These sources will include the National Cooperative Highway Research Report 365 (NCHRP365), the Nationwide Personal Transportation Study (NPTS), The Institute of Transportation Engineers (ITE) Trip Generation Rates, and the Census Transportation Planning Package (CTPP).

### Task 7.3 Validate Models

A model validation process will be used to compare the traffic volumes estimated by the forecasting model to observed traffic on the transportation system. The assignment results (link traffic volumes) of the base year model runs will be compared to actual base year traffic counts at screenlines, cutlines, cordon line crossings, and other locations as required to determine model validation adjustments. If the total crossing assigned volume is not within  $\pm 10\%$  of the ground counts, then reasonable adjustments will be made to network attributes and/or model factors until the desired precision is achieved. Special attention will be paid to Principal Arterial links in order to reach closer to tolerances on those higher volume facilities. An iterative process of model adjustments and traffic assignments will be used in order to attain acceptable estimates of existing traffic volume assignments. The results of this task will be the validated traffic forecasting model for use in making future year traffic forecasts.

## **Task 8.0 Develop E+C Network, Travel Forecasts and Identify Deficiencies**

Following completion of validation of the model to base year conditions, future travel will be projected for the Existing Plus Committed (E+C) network for the year 2045. The process of trip generation, distribution, and assignment will be accomplished by using the input planning variables forecasted for the years 2025, 2035, and 2045.

### Task 8.1 Develop Existing plus Committed Network

The first step in identification of roadway needs is the assignment of future (year 2045) traffic volumes to the Existing plus Committed (E+C) network. RAPC will compile information on the location and physical characteristics of committed roadway improvements for the study area in coordination with LADOTD and the local governmental agencies, from which information on committed improvements will be obtained. The E+C network will be coded for input to the forecast model. The E+C network will include existing classified roadways and those committed by LADOTD, MPO, and local agencies for implementation.

### Task 8.2 Assign 2045 Traffic to E+C Network

The year 2045 vehicle trips will be assigned to the E+C network. This assignment will be analyzed to determine future traffic demands and the adequacy, or capacity, of the existing plus committed roadway network to accommodate these projected traffic demands. Future travel demands will be compared to the capacity of the roadway network to identify sections or locations, which are projected to operate at unacceptable levels of service.

### Task 8.3 Assign 2035 and 2045 Traffic to E+C Network

An assignment of each of the intermediate years (2035 and 2045) vehicle trips will be made on the E+C network. These interim assignments will help identify the probable order and magnitude of deficiencies that can be expected in light of forecast development.

## **Task 9.0 Test Existing Plan Projects and Develop Alternative Projects**

Roadway network alternatives for addressing identified long-range (year 2045) needs will be developed and evaluated in this task. This process of alternatives development will result from a team effort involving RAPC and the other members of the STUDY TEAM.

### Task 9.1 Test Existing Plan Projects

RAPC will code all projects remaining in the existing MTP into the 2045 planning horizon year. These projects will be tested to see how well they address the deficiencies identified in Task 7.

### Task 9.2 Formulate Alternative Networks

Based on assignment results from above, new roadways and facilities will be considered as well as improvements and/or changes to the existing network and land use. Indicators which will help choose needed network additions/improvements include regional VMT, VMT by functional classification, screenline changes, reasonableness of changes in travel patterns, and average speed or speed by functional classification. This task, along with coordination with LADOTD, will help determine which proposed roadway alternatives yield the best return on investment and provide a basis for the Metropolitan Transportation Plan. RAPC will produce a maximum of three scenarios for evaluation. Each alternative will be executed independently and compared to the 2045 E+C forecast. The results will reveal which combination of strategies best address the identified deficiencies.

### Task 9.3 Assign Future Traffic (2045) to Alternative Networks

Future year 2045 traffic assignments will be made for the alternative networks for use in the evaluation of their operational performance and to determine their ability to satisfy projected deficiencies.



#### Task 9.4 Alternative Network Evaluation

RAPC will evaluate the alternative network traffic assignments for review with the STUDY TEAM. A matrix type evaluation process will be used to compare alternatives. This matrix will relate alternatives, and individual elements of alternatives, to evaluation criteria established in Task 1.0. Based on this analysis, a preferred roadway network alternative will be recommended, reviewed with LADOTD and the local agencies and finalized as the Recommended Long-Range Transportation Needs Analysis for the year 2045. This Needs Analysis will take into consideration the Metropolitan Planning Requirements described in MAP-21.

#### **Task 10.0 Safety Element**

This task will involve working with the MPO's safety coordinator and coalition members to identify potential safety improvements throughout the region. The plan will include input from the State Highway Safety Plan, the Central Louisiana Highway Safety Plan, and local safety partners. The plan will use state and local crash data from the last three years and will develop crash rates based on the methodology set forth in the highway safety manual to identify priority areas.

#### **Task 11.0 Transit Element**

To accomplish a transit element for inclusion in the MTP, the MPO will work within its existing Human Services Coordination Plan committee to accomplish the following tasks.

- Meet with public transportation providers (rural and urban) and discuss current and future ridership estimates, ridership socioeconomic characteristics, funding, routing, and fare structures.
- Evaluate effectiveness of rural transportation services and make recommendations.
- Develop a set of criteria for recommending potential new fixed routes. This would involve identifying the goals and objectives of the service plan for the fixed route transit provider.
- Conduct a GIS analysis to determine and recommend potential new fixed transit routes.
  - Collect latest Census ACS data regarding socioeconomic characteristics of the population being served by the fixed route transit system.
  - Overlay the current fixed routes in the GIS.
  - Conduct a bandwidth analysis within .25 miles of the current route system to determine the number and other socioeconomic characteristics of the population being served.
  - Develop, in cooperation with the Transit provider, a list of likely destinations for transit riders (including job location data from the Census' Bureaus' LHED data).
  - Develop, in cooperation with the Transit provider, a map showing target transit rider subareas within the region.
  - Develop a set of alternative routes based on a review of the target ridership subarea analysis and the routing selection criteria.
  - Develop a discussion of the alternative routing recommendations with maps for inclusion in the MTP. This would include alternative routing or extensions



of current routes, changes to hours of operation, etc.

### **Task 12.0 Bicycle and Pedestrian Element**

RAPC shall collect information pertaining to existing and proposed bicycle and pedestrian projects throughout the region. An analysis of the accessibility of existing facilities will be accomplished. Guidance from resources such the *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities* and LADOTD's Complete Street Policy will be reviewed and recommendations will be made for the area.

### **Task 13.0 Freight Element**

RAPC shall collect information pertaining to the movement of freight throughout the region. An analysis of the accessibility of existing and proposed generators of freight will be accomplished, as will an analysis on the percentage of truck traffic on identified corridors. National trends and policy will be analyzed and recommendations made for the area.

### **Task 14.0 Develop Staged Improvement Plan**

The recommended transportation plan elements will be selected from the Needs Analysis and listed in priority order for the following time intervals: 2020-2025 (Stage I), 2026-2035 (Stage II), 2036-2045 (Stage III).

#### Task 14.1 Development of Implementation Costs

Order-of-magnitude estimates of implementation costs will be developed for each improvement identified in the Needs Analysis. These cost estimates (in 2020 constant dollars) will be prepared for all logical route segments or projects. Typical implementation costs by type of improvement will be those previously developed by LADOTD, RAPC, and local governmental agencies. Implementation costs will be in terms of "total project cost" as defined in the Metropolitan Transportation Regulations including anticipated construction cost to which industry standard multipliers (agreed on by the STUDY TEAM) will be applied for items such as preliminary engineering, construction engineering, indirect costs, contingencies and rights-of-way.

These constant dollars will then be converted to 'Year-of-Expenditure' project cost to conform to the MAP-21 requirements. Constant year dollars will be inflated using an annual compound inflation factor agreed upon by the STUDY TEAM.

#### Task 14.2 Financial Assessment

RAPC will prepare an assessment of the estimated funding availability, which can reasonably be expected to be available from all sources during the plan period. The calculations of available revenue will include a rate-of-growth (ROG) factor as agreed upon by the STUDY TEAM. The Needs Analysis and financial assessment will then be used to prepare a realistic staging program based on anticipated funding levels.

### Task 14.3 Staged Improvement Plan

If the projected funding levels exceed the cost of the Needs Analysis the improvements will be prioritized and allocated to the following time intervals: Stage 1 (2020-2025), Stage II (2026-2035), Stage III (2036-2045). However, if the cost of the Needs Analysis exceeds the projected funding, the improvements will be prioritized and allocated to the three stages until the cost of the Staged Improvement Program is not greater than the funding expected to be available.

#### Task 14.3.1 Stage 1 (2020-2025)

The Stage I (2020-2025) roadway needs shall be those previously identified by LADOTD and local agencies. These improvements shall consist primarily of committed improvements and Transportation System Management (TSM) actions including traffic operational improvements, ride sharing, High Occupancy Vehicle (HOV) lanes and other traffic management concepts.

#### Task 14.3.2 Stages II & III

An evaluation of the Years 2035 & 2045 traffic assignments on the E+C Network will be used to designate the remaining improvements in the Needs Analysis to the appropriate Stage. This designation will be made based on the order and magnitude of forecast deficiencies. Working meetings of the STUDY TEAM will be held to reach consensus on the recommended staging. The final staged transportation plan will be the product of RAPC, LADOTD, and local agency input.

#### Task 14.3.3 Identification of Unmet Needs

Projects described in the Needs Analysis that will not be implemented, due to funding constraints, if any, will be listed as Unfunded Needs.

### Task 14.4 Operations and Maintenance

An analysis of operations and management requirements related to the existing and proposed transportation system will be performed in accordance with the Metropolitan Transportation Regulations through agency consultation with local and state agencies. Attention will be given to operational strategies that have the potential to optimize the performance of the existing system or proposed improvements.

### Task 14.5 Plan Network Assignment

A financially constrained network comprised of the E+C Network and all improvements in the three Stages, less Unfunded Needs, if any, will be prepared. Using TransCAD, the Year 2045 traffic will be assigned to the Plan Network and evaluated using the performance criteria described in Task 1.0. Any remaining deficiencies will be identified.

The product of Task 14.0 will be the Recommended Alexandria/Pineville Urbanized Area

Staged Improvements that will be included in the MTP and presented to the MPO for adoption.

### **Task 15.0 Assessment of Environmental Impacts of the Staged Improvement Program**

An analysis of the generalized environmental impacts of the packaged set of staged improvements proposed for inclusion in the MTP will be performed to identify components of the plan that may not be consistent with the environmental objectives of the plan. This analysis, subject to the availability of data, is anticipated to include:

- A geographic information system (GIS) comparison of the relationship of proposed projects to environmentally sensitive locations
- A generalized assessment of transportation system impacts such as air quality and energy consumption using standard analysis tools such as the FHWA STEAM program
- Agency consultation on issues of concern as described in the Metropolitan Planning Regulations as to adjustments to the staged improvements that might mitigate the identified potential impacts

### **Task 16.0 Metropolitan Transportation Plan Preparation and Printing**

The Metropolitan Transportation Plan (MTP), less the staged improvements listing, will be developed during this Task. This includes ensuring that the new MTP is compliant with all of the new planning requirements found in MAP-21.

#### Task 16.1 Develop the Planning Elements of the MTP in Compliance with MAP-21/FAST Act/ATIA Act

During this subtask, RAPC will review the following to ensure that the new MTP Will be in compliance with the new requirements as set forth in MAP-21:

- Planning requirements
- Total project cost
- Year of expenditure dollars
- Bike Element
- Pedestrian Element
- Agency coordination requirements
- Public outreach requirements
- Environmental mitigation requirements
- Operations and maintenance strategy requirements
- Safety and Security requirement
- Public transportation element developed earlier
- Performance Measures
- Stormwater Mitigation

#### Task 16.2 Develop a discussion of the five key travel purposes and their impact on the region.

The discussion shall include: journey to work; goods movement and trade;

tourism, entertainment, and recreation; economic generators; and community travel.

#### Task 16.3 Conduct research on other alternative modes or commuting options for the region

This would include at a minimum, developing a discussion of the potential for rideshare and other Travel Demand Management type programs.

#### Task 16.4 Draft Plan

Upon completion of the study process, a draft plan will be prepared by RAPC for review and comment by LADOTD, the MPO TAC and Policy Committees, other governmental agencies, and the general public. RAPC will have printed and electronic copies available on the MPO website as per the Public Participation Plan. This draft report will document data gathering, analyses, findings and the recommended transportation plan, and will contain appropriate text, tables, and graphics. Included in the report will be a financial analysis with a description of the procedures used to calculate estimated project implementation costs and projected funding resources. The report will also document compliance with all of the metropolitan planning factors required by MAP-21/FAST Act.

#### Task 16.5 Final Plan

Following approval of the draft report by the MPO Policy Committee, RAPC will create the report. Copies of the final report will be provided to LADOTD, the MPO TAC and Policy Committees, other government agencies, and the general public. RAPC will have printed and electronic copies available on the MPO website as per the Public Participation Plan.

### **Task 17.0 Project Administration and Coordination**

This task will provide effective management, quality control, scheduling, work plan, invoicing, progress reports and other project administrative functions. This task also provides for coordination among the consulting team, LADOTD, and other project participants.

#### Task 17.1 Project Management and Quality Control

The staff of the Rapides Area Planning Commission is under the direction of Mr. John Miller, who will be responsible for contracting and overseeing the project on behalf of the commission. Under the coordination and direction of Mr. Miller, the RAPC Transportation Division staff members will be assigned to the project. These individuals will be responsible for the preparation of all GIS maps, public meeting facilitation, tabulation of statistics, research, plan documentation, and any other work necessary for the completion of the plan.

#### Task 17.2 Monthly Invoicing and Progress Reports

Progress reports and invoices will be prepared by RAPC and submitted to LADOTD on an agreed upon schedule. The progress reports will include a narrative of project activities undertaken by RAPC within the previous period.

### Task 17.3 Coordination

Coordination will continue throughout the duration of the study. This will assure communication and coordination among LADOTD, RAPC, and the STUDY TEAM, and others who will be involved with study activities. This will also ensure that all assignments are clearly defined and delivered on time and consistent with client expectations.