

REQUEST FOR PROPOSALS
RAPID CITY AREA METROPOLITAN PLANNING ORGANIZATION
LONG RANGE TRANSPORTATION RESEARCH STUDY AND
LONG RANGE TRANSPORTATION PLAN UPDATE

The City of Rapid City in conjunction with the Rapid City Area Metropolitan Planning Organization (MPO) and the South Dakota Department of Transportation (SDDOT) is soliciting proposals from qualified consultants to prepare a Long-Range Transportation Research Study and an update to the Long Range Transportation Plan for the Rapid City Area Metropolitan Planning Organization.

BACKGROUND

Every five years, the Metropolitan Planning Organization (MPO) for the Rapid City Area updates its Long Range Transportation Plan (LRTP). The purpose of this plan update is to encourage and promote a safe and efficient transportation system to serve future year transportation demands. Results of the LRTP process are intended to serve the overall mobility needs of the area, while also being cost effective and consistent with state and local goals and objectives.

The Rapid City Area MPO is located in western South Dakota in Pennington and Meade Counties and includes Rapid City, the City of Summerset, the City of Box Elder, and portions of Pennington and Meade Counties. The MPO manages the transportation network and mobility needs for the defined MPO area and recognizes the inter-connectivity between network accessibility and land use development patterns. Prior decision making has focused on producing a multi-modal transportation network consisting of roads, transit service, bicycle/pedestrian facilities, and a regional airport. These modes of transportation provide a foundation for handling the flow of goods and services to and from the area, as well as establish a system for area residents to access jobs, shopping and recreational facilities.

This document presents the tasks and data requirements to identify and develop a list of transportation projects to meet anticipated future demand needs of the Rapid City Area through the year 2035. Major components of this update process include consistency with federal and state guidelines and significant attention to public participation, mapping, data development, and model validation. These components will establish a policy foundation for long range transportation decisions affecting the Rapid City Area and are described in more detail in the following list of tasks.

SAFETEA-LU REQUIREMENTS

Federal and state statutes outline the general requirements for Long Range Transportation Plan updates. These outlines are broadly defined by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU) and include the following provisions:

- A. Requires a discussion of mitigation activities and expanding the consultation requirements to include other types of planning activities affected by transportation.
- B. Requires that the following eight (8) planning factors are explicitly considered, analyzed and reflected in the planning process products:
 - 1. support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
 - 2. increase the safety of the transportation system for motorized and nonmotorized users;
 - 3. increase the security of the transportation system for motorized and nonmotorized users;
 - 4. increase the accessibility and mobility of people and freight;
 - 5. protect and enhance the environment, promote energy conservation, improve the quality of life and promote consistency between transportation improvements and State and local planned growth and economic development patterns;

6. enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
 7. promote efficient system management and operation; and emphasize the preservation of the existing transportation system.
- C. In addition to the 8 planning factors, described above, there are multiple requirements for the metropolitan long range transportation plan as specified in federal law and regulation. They require that the LRTP, at a minimum:
1. Identify transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities, and intermodal connectors) that function as an integrated system, giving emphasis to facilities that serve important national, state and regional transportation functions. [23 U.S.C.134 (i)(2)(A); 23 C.F.R. 450.322(f)(2)]
 2. Include discussion of the types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. This discussion shall be developed in consultation with federal, state, and tribal, wildlife, land management, and regulatory agencies. [23 U.S.C. 134 (i)(2)(B)(i); 23 C.F.R. 450.322(f)(7)]
 3. Include a financial plan that demonstrates how the adopted transportation plan can be implemented and indicates public and private resources that are reasonably expected to be available to carry out the plan. [23 U.S.C. 134 (i)(2); 23 C.F.R. 450.322(f)(10)]
 4. Include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods. [23 U.S.C. 134 (i)(2)(D); 23 C.F.R. 450.322(f)(3)]
 5. Include capital investment and other strategies to preserve the existing and future system and provide for multimodal capacity increases based on regional priorities and needs, [23 U.S.C. 134 (i)(2)(E); 23 C.F.R. 450.322(f)(5)]
 6. Include proposed transportation and transit enhancement activities. [23 U.S.C. 134 (i)(2)(F); 23 C.F.R. 450.322(f)(9)]
 7. Identify the projected transportation demand of persons and goods in the metropolitan planning area over the period of the plan. [23 C.F.R. 450.322(f)(1)]
 8. Identify pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g). [23 C.F.R. 450.322(f)(8)]
 9. Describe proposed improvements in sufficient detail to develop cost estimates. [23 C.F.R. 450.322(f)(6)]

PROJECT DESCRIPTION

This Rapid City Area Long Range Transportation Plan update will have three major components. The first component is to perform a long-range transportation research study to assess the needs and desires of users of the Rapid City Area transportation system. The information will be used to guide the preparation of the Long-Range Transportation Plan (LRTP) Update for the Rapid City Area MPO. The second component is to complete 25-year traffic forecasts for the Rapid City Area Metropolitan Planning Organization Study Area to identify future transportation needs by updating and validating the model. The first two components of the Long Range Transportation Plan update will be done concurrently. The third portion of the study will entail the development of the actual planning and prioritization elements within the Long Range Transportation Plan to satisfy those future needs.

SCOPE OF SERVICES REQUESTED

This Scope of Services is subdivided into six separate tasks that outline the basic requirements of the LRTP update. Unless otherwise noted, the CONSULTANT is expected to fulfill each of the defined tasks and provide written documentation in the form of technical reports and/or memorandums. The tasks to complete the LRTP update are defined as follows:

TASK 1 – PUBLIC INVOLVEMENT

The CONSULTANT will develop a public involvement strategy for the long range transportation plan update. This strategy will be consistent with the MPO's *Public Involvement Plan* and an outreach program will be conducted to involve the elderly, persons with disabilities, minorities and low income community and other groups traditionally under-represented in the plan update process. Strategies to solicit input from the business, environmental and other communities of local significance will also be addressed.

- 1.1 Communication approaches to be used include the use of periodic newsletters and Internet Web site. This site will be a direct link from the City of Rapid City's web site and will provide access to materials prepared during the plan update process.
- 1.2 The CONSULTANT will work with the public, the MPO Advisory Committees and the MPO to develop a list of goals and objectives that will govern the development of the LRTP, including long-range and short-range strategies and actions consistent with state and local goals and objectives. The CONSULTANT will develop a process that will insure that the public has ample opportunity to provide input in developing the goals and objectives for the LRTP.

The CONSULTANT will develop draft goals and objectives that include a careful review of the goals and objectives adopted by the City of Rapid City. Efforts will be made to ensure that the goals and objectives of this update are consistent with other local and regional comprehensive plans.

The CONSULTANT will include goals concerning safety and security. This information will be provided to the public during the first series of public workshops. These workshops will be held at locations throughout the urbanized area.

- 1.3 The CONSULTANT will incorporate visualization techniques in the public participation process to describe various aspects of the long range transportation plan.
- 1.4 The consultant will compile data and prepare maps, graphs, or other visual aids for public presentations regarding the LRTP; and prepare agendas and conduct meetings for these presentations. The consultant will be required throughout the duration of the contract to attend necessary meetings to discuss the scope of work, negotiate the contract, and meet with the City and State staff advisory group. The consultant shall attend a minimum of two public meetings in addition to those required for the Long Range Transportation Research Study.

TASK 2 – LONG RANGE TRANSPORTATION RESEARCH STUDY

A long-range transportation research study will be initiated to assess the needs and desires of users of the Rapid City Area transportation system. The information will be used to guide the preparation of the Long-Range Transportation Plan (LRTP) Update for the Rapid City Area MPO. The research study may include but is not limited to the involvement of focus groups and surveys to determine the public's perception of the MPO area's current transportation system, recommendations on transportation policy and the establishment of a list of seed projects for the LRTP Update. Some examples of issues to be discussed should include congestion, proposed street and highway safety, bicycles, pedestrians, transit, freight, underrepresented populations, Intelligent Transportation System (ITS) measures, and proposed construction projects. A 25-year planning horizon for the LRTP Update will be followed as a basis for all projects.

The current guiding objectives of the Long-Range Transportation Plan (LRTP) are:

1. Maintenance of the existing transportation system.

2. Preservation of access across the City of Rapid City.
3. Development of a cohesive transportation network that effectively links Pennington and Meade Counties.

To achieve these objectives, the LRTP following strategic initiatives should be accomplished:

1. Maximize the capacity of existing corridors and interstates in the City of Rapid City.
2. Maintain existing links between the City of Rapid City and surrounding cities and counties
3. Pursue the acquisition of right-of-way and development of new transportation corridors in future growth areas.
4. Invest in Intelligent Transportation Systems (ITS).

It is strongly recommended that a community-based market research firm be responsible for this task.

TASK 3 - DATA COLLECTION, MAPPING AND DATA DEVELOPMENT

The purpose of this task is to develop the maps, model networks and data files needed to validate and run the transportation model. Data inputs to the model include socioeconomic data in the form of ZDATA files and traffic counts.

3.1 DATA COLLECTION

CONSULTANT will collect datasets from the existing model and determine if they contain any usable information. CONSULTANT will collect, create, and/or compile datasets necessary to validate and calibrate the Rapid City Area travel demand model. CONSULTANT will revise screenlines and cutlines as necessary. CONSULTANT will collect and utilize all necessary traffic count data. CONSULTANT will conduct a roadway inventory to develop a 2008 Highway System Network including facility type, number of travel lanes in each direction, presence of turn lanes, posted speed, functional classification and other information as necessary. The roadway inventory will incorporate existing roadway inventory data for the state system from SDDOT. The CONSULTANT will be responsible for the coding, reviewing, editing and debugging of the 2008 base year network.

- 3.1.1** The screenlines and cutlines developed for the previous Update will be revised as appropriate and used in the validation of the 2008 Base Year Model. The CONSULTANT will be responsible for the review and modification of the screenlines and cutlines.
- 3.1.2** The CONSULTANT is responsible for all traffic count data necessary to validate/calibrate the 2008 Base Year Model. Extensive traffic count data has been collected by the MPO, SDDOT, the City of Rapid City and other partner agencies. The data will be made available to the CONSULTANT. The CONSULTANT will review the traffic count data/locations for adequacy and shall adjust the counts to average weekday peak season counts. Seasonal adjustment factors for local roads developed by the MPO will be used where appropriate.
- 3.1.3** A highway network shall be developed by the CONSULTANT for the 2008 Base Year. The structure of this network will be consistent with the highway network for the previous update. This network must also include double digit coding to allow for more accurate facility type representation. The revised model network will incorporate changes to networks since the last plan update and add the highway network for the City of Box Elder and portion of Meade County that have been added to the MPO boundaries since the last update.

3.2 MAPPING

The CONSULTANT will be required to provide maps and digital copies of the data collected to MPO staff to facilitate the review and revision of the data prior to its use during model validation and calibration. Maps and data may include the study area boundary, the principal street system, traffic analysis zones (TAZ), the highway system network maps (link/node plots)

and data files, the transit system network maps and data files and other such maps that will be used as working instruments.

All shapefiles are to be delivered to the MPO by the CONSULTANT in TRANSCAD format and in ESRI ArcView shapefile format (Version 9.0 or later). Network maps will be in line format with all roadway and/or transit network attributes and shall be used on the City of Rapid City's Street Centerline File unless an alternative road dataset is agreed upon by MPO staff.

- 3.2.1** A new Traffic Analysis Zone (TAZ) Map will be developed for the Update. This task will be prepared by the CONSULTANT and provided to the MPO staff for review prior to model validation.
- 3.2.2** A Highway System Network Map shall be developed by the CONSULTANT for the 2008 Base Year Network and include double-digit coding for more specific facility and area type designations. The CONSULTANT will provide draft Highway System Network maps and data to MPO staff for review prior to model validation. The Network will also utilize the true shape display function in CUBE for more accurate graphical representation.
- 3.2.3** The development of all maps will be documented by the CONSULTANT

3.3 DATA DEVELOPMENT

The socioeconomic data developed for the Year 2035 Update will be prepared by MPO staff. Base year data (2008) will be developed by using information obtained from the 2000 Census, USA employment data, Chamber of Commerce Employment Statistics and Property Appraiser records where necessary.

The scope of services for this plan update will test and evaluate one future land use scenario. This scenario represents the most realistic forecast of where people will live and work in MPO Area in the Year 2035 based upon currently adopted comprehensive plans.

The CONSULTANT will assist MPO staff in review of this data, perform necessary edit checks and make any corrections as may be required. Additionally, the CONSULTANT will deliver all ZDATA in TRANSCAD format and in ArcView format for the TAZ and boundary maps.

The CONSULTANT will obtain data relating to travel demand for airports, intermodal facilities, recreation areas, significant commercial activity centers and freight distribution facilities. The intent is to accumulate sufficient data suitable for analyzing the adequacy of "access" to such facilities. MPO staff and the CONSULTANT will coordinate the development of this list with the City of Rapid City and SDDOT.

The CONSULTANT will insure that all data is based upon the latest available estimates and assumptions for population, land use, travel, employment, congestion and economic activity.

- 3.3.1 ZDATA1:** Population and household data for each model TAZ will be obtained from the following sources by MPO staff:
 - A. Base year (2008) population and housing data for each TAZ will be obtained from the 2000 U.S. Census for the following:
 - 1. Population and the number of single-family and multi-family units;
 - 2. Auto availability;
 - 3. Percentage of vacant single-family and multi-family units; and
 - 4. Population and number of single-family and multi-family units occupied by non-permanent residents.This information will be cross referenced with 2008 Property Appraisers' parcel records.
 - B. Future year population forecasts will be developed by MPO staff and

used as control totals for future population and provide a basis for estimating other socioeconomic factors, such as housing and employment.

- C. The number of hotel/motel units will be obtained by MPO staff.
- D. In the absence of local data, the percentage of vacant single-family and multi-family dwelling units (DUs) as identified in the Year 2000 Census data will be used.

3.3.2 ZDATA2: Base Year (2008) employment data will be developed by MPO staff for each TAZ, classified by type (service, commercial, industrial). This data will be verified using Property Appraiser records. Employment data will be cross referenced with the Chamber of Commerce's large employers database for consistency (as it relates to size and location).

- A. Base Year (2008) public school enrollment will be obtained from the Pennington and Meade County School Boards.

3.3.3 ZDATA3: The CONSULTANT shall develop data for airports, universities, regional shopping malls, military installations, etc., which function as special generators. The identification of the special generators shall be initiated under this task in coordination with the MPO.

3.3.4 ZDATA 4 and EETRIPS files developed for the previous update will be reviewed and updated. The CONSULTANT will be responsible for updating the ZDATA4 and EETRIPS files.

3.4 DESIGNATION OF SCREENLINES

The screenlines and outlines developed for the previous Update will be revised as appropriate and used in the validation of the 2008 Base Year Model. The CONSULTANT will be responsible for the review and modification of the screenlines and outlines.

3.5 TRAFFIC COUNT DATA

The CONSULTANT is responsible for all traffic count data necessary to validate/calibrate the 2008 Base Year Model. Extensive traffic count data has been collected by the MPO and SDDOT and will be made available to the CONSULTANT. The CONSULTANT will review the traffic count data/locations for adequacy and shall adjust the counts to average weekday peak season counts. Seasonal adjustment factors for local roads developed by the MPO will be used where appropriate.

3.6 HIGHWAY NETWORKS

A highway network shall be developed by the CONSULTANT for the 2008 Base Year. This network will be compatible with the Arc View GIS format. The structure of this network will be consistent with the highway network for the previous update. This network must also include double digit coding to allow for more accurate facility type representation and true shape format for graphical representation. The revised model network will incorporate changes to networks since the last plan update.

3.7 DATA PROJECTIONS

MPO staff will develop and project the socioeconomic data files (ZDATA1, ZDATA2) for the Year 2035. The CONSULTANT will be responsible for developing the ZDATA4 and EETRIPS Files for the Year 2035. MPO staff will also participate in this effort. In addition, representatives from other member agencies will also be invited to participate in developing this information.

TASK 4 – DATA REVIEW AND VERIFICATION

The primary purpose of this task is to review the model inputs and outputs to ensure that the data sets are adequate for planning purposes.

4.1 REVIEW ZDATA INPUTS

The CONSULTANT shall review the ZDATA to verify that it is in the standardized model format, is accurate, logical and properly coded. This review shall include the use of LUCHECK or similar software programs, as well as random manual checks. All errors and or deviations shall be corrected and documented by the CONSULTANT. MPO staff will be notified of all errors/corrections/changes.

- 4.1.1 The TAZ structure shall be analyzed by the CONSULTANT based on the number of productions and attractions generated. The necessary changes shall be made by *the* CONSULTANT to ensure a homogeneous TAZ structure in which zones are compatible as to the number of trips generated. The socio-economic data will also be checked for statistical validity and ratio comparisons.
- 4.1.2 The CONSULTANT shall incorporate special generators identified in Task 3.3.3 and ensure compatibility with all other socioeconomic data.
- 4.1.3 The CONSULTANT shall make all necessary changes related to the adjustments made to TAZ boundaries, including all the ZDATA Files and all the Network Files. All activities under this task shall be coordinated with the MPO, SDDOT, and City of Rapid City.

4.2 REVIEW 2008 HIGHWAY NETWORK

The CONSULTANT shall review the Highway Network for coding errors in facility types, area types, number of lanes and coordinates.

- 4.2.1 The review of the Highway Network shall also include the review of all turn prohibitors.
- 4.2.2 The CONSULTANT shall review the network to determine whether links should be added or deleted to obtain a better assignment and a better reflection of the actual travel pattern.
- 4.2.3 The CONSULTANT shall review the coding of Interstate facilities to ensure that directional links, ramp systems and interchanges are correctly coded.
- 4.2.4 Double digit coding will be used for area and facility type identification on all links.
- 4.2.5 All necessary corrections shall be made by the CONSULTANT and fully documented.

4.3 REVIEW 2008 TRAFFIC COUNT

The CONSULTANT shall review all traffic counts for accuracy and consistency. All traffic counts shall represent peak season weekday traffic and shall be reviewed by the South Dakota Department of Transportation (SDDOT), MPO, and the City of Rapid City prior to model input.

The CONSULTANT will review the location and number of counts available to ensure that screenlines, cutlines and cordon lines are fully represented. The CONSULTANT will also review the number of counts available within each cell matrix for each facility and area type for the purpose of validation/calibration.

4.4 REVIEW TRIP GENERATION RATE

The CONSULTANT shall review trip rates (input files) in the study area for multi-family and single-family dwelling units in the Model.

The CONSULTANT shall review the trip rate on the total number of productions and attractions in the area. All ZDATA Files shall be double checked if the output of the generation step falls beyond the acceptable range of ten thousand trips per TAZ.

The Rapid City Area MPO in conjunction with National Household Travel Survey is having an additional 500 households, all with the Rapid City Area interviewed. If this information is available, it can be used to help calculate trip rates and travel statistics specific to the Rapid City Area MPO.

4.5 REVIEW TRIP LENGTH DISTRIBUTION

The CONSULTANT shall review the trip length distribution curves for each trip purpose.

4.6 REVIEW AUTO OCCUPANCY RATES

The CONSULTANT shall compare the model auto occupancy rates to results of the 2000 U.S. Census and revise where necessary.

TASK 5 – MODEL UPDATE AND VALIDATION

The purpose of this task is to update, validate and calibrate the 2008 Base Year Model with year 2008 traffic counts. The CONSULTANT shall use the Rapid City Area MPO model, which includes Rapid City, City of Box Elder and portions of Pennington and Meade Counties. The end product of this task will be a validated travel demand model capable of forecasting and evaluating future travel demand for alternative highway networks using TRANSCAD. The entire validation process will be documented. Documentation will include flow charts and a step-by-step procedural guide for the complete model set and identify all parameters specific to the travel models. Details will be provided describing key decisions and conclusions from each step of the process, including trip generation, trip distribution, mode-split and traffic assignment to completion. The acceptable or tolerable range/limits for the various parameters generated in the model validation procedures that follow will be those established by the SDDOT and Federal Highway Administration. The CONSULTANT will provide all associated files in a format compatible with TRANSCAD.

5.1 VALIDATE EXTERNAL TRIPS

The CONSULTANT shall review and, if necessary, update the ZDATA4 and EETRIPS files developed for the Year 2025 Update.

- 5.1.1** The CONSULTANT shall perform a Base Year assignment using Year 2008 ZDATA4 and EETRIPS Files. Results of this model run will be reviewed by the CONSULTANT to compare the volume/count ratio on the cordon line capturing the links connecting to the external stations to actual counts.
- 5.1.2** The CONSULTANT shall compare the projected 2035 volumes at the external stations with the growth rates of the adjacent counties, as well as the historical growth rate at the count stations. Adjustments to the ZDATA4 and EETRIPS files will be made as necessary.

5.2 VALIDATE THE TRIP GENERATION MODEL

The CONSULTANT shall review and, if necessary, update the input files developed for the Year 2025 Update. All revisions will be documented in the accompanying technical memorandum.

- 5.2.1 Based on the results of the distribution and assignment process, the CONSULTANT shall identify the special generators. The output of the Trip Generation Model will be analyzed at the TAZ level, as well as at the District level.
At the TAZ level, the CONSULTANT shall review the total number of productions and attractions generated by the Year 2035 Model. Review and Refinement of Standard Trips Generation Model, to ensure a proper zone size and trip range per zone.
- 5.2.2 At the District level, the CONSULTANT shall conduct an analysis to ensure a direct correlation between land use and the relative number of productions and attractions per District. The total number of unadjusted attractions relative to the total number of adjusted attractions (productions) shall be compared with the Institute of Transportation Engineers (ITE) ratios and other national ratios, as will the percentage of total trips, by purpose, of the total number of trips produced.
- 5.2.3 The statistical information provided as part of the Trip Generation Model output, such as total permanent population, total number of employees, number of dwelling units, truck generation by class etc.... shall be checked against census information and other local data. In addition, all ratios such as number of persons per dwelling unit will be checked against national ratios. Any major deviations from the above mentioned totals and/or ratios shall be traced back to the ZDATA1 and/or ZDATA2 File(s) and researched, corrected and/or documented in the Technical Memorandum.

5.3 VALIDATE THE TRIP DISTRIBUTION MODEL

The CONSULTANT shall validate the trip distribution model. This process will be documented and identify major revisions to model input files necessary to meet the identified minimum thresholds.

- 5.3.1 The CONSULTANT shall review and document the percentage of intrazonal trips and ensure that no trip purpose exceeds the five percent (5 %) threshold. If there are purposes that exceed this threshold, the CONSULTANT shall analyze the trip distribution patterns at the District and TAZ Levels.
- 5.3.2 The CONSULTANT shall summarize the output of the Distribution Model at the District Level in order to identify the origin-destination pairs. This summary shall be checked for consistency with the land use in each planning district.
- 5.3.3 The CONSULTANT shall review the assigned volumes on the links adjacent to special generators and check them against existing counts. Based on the magnitude of difference, the assignment will be iteratively adjusted by adding or subtracting trips from the special generator in the ZDATA3 File. The accepted method to code the ZDATA3 File is described in TASK B, Review and Refinement of Standard Trip Generation Model.
- 5.3.4 Once the ZDATA3 File is adjusted, the CONSULTANT shall check the volume/count ratio on all screenlines, cut lines and cordon lines. In addition, the volume/count ratios within all matrices will be checked for all facility and area types..
The CONSULTANT will then make all necessary adjustments to all network and/or data files to obtain a proper distribution.

5.4 VALIDATE THE HIGHWAY ASSIGNMENT MODEL

- 5.4.1 The CONSULTANT shall validate the highway assignment model. The CONSULTANT shall be responsible for all necessary corrections to be made to the data and network files in order to obtain a proper highway assignment.
- 5.4.2 The CONSULTANT shall check the highway assignment against the actual

ground counts throughout the highway network and check the accuracy of the highway assignment against the volume/count ratios grouped by facility type, area type, vehicle miles traveled and vehicle hours traveled.

The CONSULTANT will refer to the existing documentation for allowable percentage of deviation of assignment versus count and compare to model results. If necessary, corrections to the appropriate files will be made to obtain a proper assignment.

- 5.4.3 The CONSULTANT shall run color coded plots listing the volume/count ratios by link to be reviewed for errors. The plots shall be color coded in four (4) groups as follows: less than 0.50, 0.51 to 0.85, 0.86 to 1.0, and over 1.0. If discrepancies are found in a particular district and/or along certain corridors, the network shall be checked for errors such as loadings of centroid connectors, possible errors in the Turn Prohibitor File, ZDATA File errors, etc. The CONSULTANT shall make all necessary corrections to obtain a proper assignment,

5.5 FINAL MODEL VALIDATION

- 5.5.1 The CONSULTANT shall perform a highway only run using the base year network and the socioeconomic dataset for Year 2035.
- 5.5.2 The CONSULTANT shall summarize the output of the generation and distribution steps by district and compare them with the Base Year 2008 socio-economic data. Screenline projections, Base Year counts and historical growth rates will be compared.
- 5.5.3 The CONSULTANT shall review the model output data with the MPO and SDDOT pointing out any inconsistencies or errors in the socioeconomic data.

TASK 6 – YEAR 2035 TRANSPORTATION NEEDS PLAN AND COST FEASIBLE PLAN

The purpose of this task is to develop a long range transportation plan that identifies the transportation system modifications required to meet future year mobility demands. This will be accomplished through the development of a Year 2035 Needs Plan that identifies highway modifications.

A Year 2035 Cost Feasible Plan will also be developed by ranking projects and eliminating those for which financial resources cannot be identified. This plan builds upon the Needs assessment to select a list of projects that can be funded with available revenue sources.

Both the Year 2035 Needs Plan and the Year 2035 Cost Feasible Plan will include narrative descriptions of the "major" and more significant projects in the Plan. Any preliminary engineering studies and NEPA phases shall also be included in the LRTP.

6.1 NETWORK CODING, EDITING AND DEBUGGING

The CONSULTANT will be responsible for the coding, review, editing and debugging of all networks leading to an adopted Year 2035 Cost Feasible Plan. These networks will include the Year 2014 Existing Plus Committed Network and the Year 2035 Needs Plans and the Year 2035 Cost Feasible Plan.

6.2 DEVELOPMENT OF THE YEAR 2014 EXISTING PLUS COMMITTED NETWORK

- 6.2.1 The Year 2014 Existing Plus Committed (E+C) Network will be developed by the CONSULTANT by coding all projects listed for construction by the Year 2014 in the MPO Transportation Improvement Program (TIP) to the Base Year Networks.
- 6.2.2 The CONSULTANT shall also review the Rapid City Transit Development Plan for transit related ridership and operational information.
- 6.2.3 Only projects for which federal, state, local or private funding for construction, or

for the acquisition of right-of-way (and assumed to be completed and open to traffic in 2014), will be identified and included in the E+C Network.

- 6.2.4** The CONSULTANT shall make an "all or nothing" assignment to the Year 2014 E+C Network and include a Year 2035 Trip Table to determine the deficiencies on the highway and transit networks that will occur by the Year 2035.

6.3 DEVELOPMENT OF THE YEAR 2035 NEEDS PLAN

- 6.3.1** The CONSULTANT will use the following information to develop the Year 2035 Needs Plan:

- A. the South Dakota Strategic Highway Plan
- B. Pennington County and Meade County Emergency Management Plans; and
- C. the adopted Rapid City Transit Development Plan.

- 6.3.2** A Preliminary Needs Plan will be developed by running 2035 ZDATA with the 2014 Existing Plus Committed Network and identifying facilities with a volume/capacity (v/c) ratio of 0.9 or greater. The CONSULTANT and MPO Staff will review the facilities identified during this task. At the option of MPO Staff, the CONSULTANT will use NCHRP-255 to smooth and adjust the travel demand outputs for identified facilities as necessary.

- 6.3.3** A Constrained Needs Plan will be developed by identifying facilities in the Preliminary Needs Plan which cannot be improved for any of the following reasons:

- A. The impact widening of the road would have on the community;
- B. The geography or development of the area causes a project to be too difficult or expensive;
- C. The road is already as wide as allowed by state or local policies;
- D. The potential impact to a designated historic district; or
- E. The potential impact on environmentally sensitive lands.

Constrained facilities will be eliminated from the Needs Plan (for consideration of highway modifications only) prior to development of subsequent alternatives.

- 6.3.4** A network will be created that include highway related modifications that expand the grid network of roads.

- 6.3.5** The CONSULTANT shall coordinate the development of the Needs Plan process, including selection of the final Year 2035 Needs Plan, with the MPO. The criteria by which the alternative needs plans will be evaluated shall include:

- A. Requirements of SAFETEA-LU and appropriate rules issued by FHWA and FTA including the eight planning factors.
- B. The Goals and Objectives established for this Study.

- 6.3.6** The analysis of the Needs Plan will include sufficient information to understand the composition of the identified need. The CONSULTANT will develop cost estimates for Needs Plan projects that include all costs (operations, maintenance, capacity expansion, etc.) in year of expenditure dollars. The CONSULTANT will use South Dakota Department of Transportation adopted estimates of inflation to adjust costs from present day costs to year of expenditure costs.

- 6.3.7** Presentation materials, including graphics and support documentation for the Year 2035 Needs Plan Alternatives, will be prepared by the CONSULTANT and presented to the Citizens Advisory Committee (CAC) and the Technical Coordinating Committee (TCC).

- 6.3.8** A proposed Year 2035 Needs Plan will be developed by the MPO to take to a public hearing.
- 6.3.9** The CONSULTANT, in cooperation with MPO Staff, shall present the proposed Year 2035 Needs Plan at the MPO public hearing and include a discussion of the process by which the plan was developed.
The CONSULTANT shall prepare presentation materials that will include graphics, visual aids and handout materials.
- 6.3.10** The Needs Plan will be screened for environmental issues. The process includes the development of a GIS shape file by the CONSULTANT that contains the line-work for the proposed roadway projects. These projects would be major capacity improvements, new alignments, major interchange modifications, and bridge replacements. In addition to the creation of a GIS shape file, a spread sheet will be prepared by the CONSULTANT with the project identification number, roadway name and beginning and end points (locations).
This data will be used as a first level environmental screening for Needs Plan projects. When a list of Needs Plan projects that will be likely candidates for the Cost Feasible Plan is available; a meeting will be held with the resource agencies and tribes to gather input on the proposed plan.

6.4 RANKING OF PROJECTS AND PROGRAMS IN THE YEAR 2035 NEEDS PLAN

- 6.4.1** The CONSULTANT shall develop a methodology to rank projects and programs in the Year 2035 Needs Plan and shall coordinate the ranking process with the MPO and SDDOT. All projects and programs included in the adopted Year 2035 Needs Plan will be ranked based on the following criteria:
- A. Existing level of service;
 - B. Safety rankings that consider historic crash data, ability to manage traffic as an incoming emergency evacuation route from coastal counties and compatibility to non-motorized travel;
 - C. Consistency with the LRTP goals and objectives established through the public involvement process;
 - D. Forecast travel demand for the Year 2035;
 - F. Cost estimates (in base year dollars) and the scheduled availability of funding; and
 - G. Assessment of the distribution of social, cultural and environmental benefits and adverse impacts of proposed long range transportation plan projects on various socioeconomic groups.
- 6.4.2** The CONSULTANT shall prepare and distribute a list of the project rankings to the MPO for review and approval. The list will include project rank, as well as the ranking factors, for each proposed project. Any modifications by the MPO will be incorporated into the Adopted Year 2035 Needs Plan.

6.5 DEVELOPMENT OF THE YEAR 2035 COST FEASIBLE PLAN

Upon the approval of the Year 2035 Needs Plan by the MPO, the proposed Year 2035 Cost Feasible Plan will be developed based on the financial resources and the cost analysis. The CONSULTANT will use evaluation criteria established earlier as a basis for ranking projects to be considered in the Cost Feasible Plan.

The CONSULTANT will include an estimate of the cost of all projects and all phases, in year of expenditure dollars. The CONSULTANT will also clearly state in the proposed Year 2035 Cost Feasible Plan the costs of operating and maintaining the existing and future transportation system. Based upon this process, the CONSULTANT will develop up to three Alternative Cost Feasible Plan Scenarios that will establish the basis for identifying a final Year 2035 Cost Feasible Plan. These scenarios will be based on prior input received from the

public and will represent three unique proposals to address transportation system needs through the Year 2035. According to FHWA and SDDOT guidelines, the Year 2035 Cost Feasible Plan must be the final plan adopted by the MPO.

6.6 FINANCIAL RESOURCES

The CONSULTANT will be responsible for the accumulation and aggregation of information regarding existing and projected funding sources for modifications outlined in the Year 2035 Needs Plan that will be used in the development of the Year 2035 Cost Feasible Plan. The CONSULTANT shall develop estimates of funds that will be available to support Year 2035 Cost Feasible Plan implementation with the SDDOT.

6.6.1 IDENTIFY AND PROJECT AVAILABLE RESOURCES

Historical financial information relative to the funding of transportation services within the study area will be obtained from appropriate federal, state, and local agencies. Based on this historical information and the planning data forecast prepared in the development of the ZDATA, potential financial resources will be forecasted for the Year 2035. The CONSULTANT will report future revenues by funding category. Included in this information, will be financial information from the latest adopted MPO Transportation Improvement Program.

6.6.2 IDENTIFY SYSTEM OPERATIONS, MAINTENANCE AND CAPITAL COSTS

The CONSULTANT will confirm revenues and costs related to system operations and maintenance activities covered in the long range transportation plan. The financial plan will contain system-level estimates of costs and revenue sources that are reasonably expected to be available to operate and maintain highways and public transportation.

6.6.3 IDENTIFY NEW PROJECT FUNDING SOURCES

The funding available for new projects is the difference between the funds reasonably expected to be available for transportation modifications minus the funds required to construct committed projects and those funds required to operate and maintain the transportation system. This difference will be the funding available to develop the Year 2035 Cost Feasible Plan.

6.6.4 IDENTIFY AND PROJECT POTENTIAL FUNDING SOURCES

Alternative funding sources such as bonds, transit fares, tolls, special taxing districts, impact fees and local option gas tax shall also be investigated and will be included in the final report by the CONSULTANT as potential funding sources for projects not included in the Year 2035 Cost Feasible Plan. All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.

Should any of these alternatives sources be recommended to fund projects in the Year 2035 Cost Feasible Plan, strategies to ensure the availability and commitment of these sources will be included as part of the recommendation. These "strategies" must include a plan of action describing the steps necessary to enact the sources. The analysis will discuss past successes or failures to secure similar funding sources.

TASK 7 – REPORTS AND MEETINGS

The consultant will provide local and state representatives with fifteen (15) copies of the draft Long Range Transportation Plan prior to completion of final draft reports. The draft will include an executive summary, preliminary findings and recommendations, and any other information developed as part of the study. The consultant shall review and become familiar with the requirements of the Federal Highway Administration which pertain to metropolitan transportation planning and federal aid road projects; and, include all necessary items in the report to satisfy those requirements.

The consultant will provide originals of revised draft reports throughout the public meeting and comment process. Staff of the Rapid City Area Metropolitan Planning Organization will cover the reproduction of documents during first and second draft reviews. The consultant will provide sixty five (65) final reports of the analysis for submittal to the South Dakota Department of Transportation, Federal Highway Administration, and local governments for use in the planning process.

The consultant shall be required to present the draft and final reports of the Long Range Transportation Plan Update to the Rapid City Council, the Citizen's Advisory Committee, the Technical Coordinating Committee, and the Executive Policy Committee.

Revised Schedule of Proposal

Proposals shall be governed by the following estimated schedule:

November 3, 2008 – Written proposals due at the Rapid City Growth Management Department

November 18, 2008 – Interviews of selected respondents at the City-School Administration Center

November 24, 2008 – Selection of consultant and initiation of contract negotiations

Revised Period of Performance

Detailed scheduling of the project will be negotiated during the contract negotiations by the selected consultant and the City.

The date for initiation of the contract as well as the overall contract performance period will be negotiated with the selected consultant based on the tentative time schedule listed below.

Notice to Proceed – **December 16, 2008**

Draft Final Report to Agencies for Review – **March 11, 2010**

Complete Study – **August 19, 2010**

Final payment and retainage will not be made to the consultant until the Final Report is accepted by the City and Rapid City Area Metropolitan Planning Organization.

GENERAL INSTRUCTIONS

INQUIRIES

Please direct questions to:

Monica Heller, Community Planning Coordinator
Rapid City Growth Management Department
300 Sixth Street
Rapid City, SD 57701
(605) 394-4120

SIGNATURE REQUIREMENTS

Proposals must be signed by a duly authorized official of the proposer. Consortia, joint ventures, or teams submitting proposals, although permitted and encouraged, will not be considered responsive unless it is established that all contractual responsibility rests solely with one

contractor or one legal entity which shall not be a subsidiary or affiliate with limited resources. Each proposal should indicate the entity responsible for execution on behalf of the proposal team.

MINIMUM SERVICES OF THE CONSULTANT

The following shall be the basic services and products provided by the consultant.

- A. The consultant agrees to attend and conduct a minimum of two public meetings during the study period, not including those required for the Long Range Transportation Research Study. The consultant shall be responsible for all public hearing notices, graphics, slides, and handouts, including executive summaries for distribution to the general public.
- B. The consultant agrees to attend and make presentations at the following meetings:
Presentation of the draft Long Range Transportation Plan to the Rapid City Council, the Citizen's Advisory Committee, the Technical Coordinating Committee, and the Executive Policy Committee at dates and times to be determined.
- C. The consultant agrees to prepare a brief synopsis of public comment as part of the final document(s). Official minutes of public meetings and committee meetings are the responsibility of the consultant and shall be included as part of the final document(s).
- D. The consultant agrees to attend and make presentations at the following meetings: Presentation of the Final Draft Long Range Transportation Plan to the Rapid City Council, the Citizen's Advisory Committee, the Technical Coordinating Committee, and the Executive Policy Committee at dates and times to be determined
- E. The consultant agrees to prepare draft documents, make revisions as required, and prepare final document(s) which will include the completion of tasks under the "**SCOPE OF SERVICES REQUESTED**" in addition to graphics, charts, tables, and an executive summary. The consultant will respond in a timely manner to any comments that result from the State/Federal/Public review, and will provide one copy of all responses. A minimum of sixty five (65) final reports of the Long Range Transportation Plan will be prepared and submitted for staff and officials within the State Department of Transportation, the Federal Highway Administration, the City of Rapid City, and the Rapid City Area Metropolitan Planning Organization. Originals will also be supplied to the City in camera-ready digital format.

PROPOSAL SUBMISSION

The City of Rapid City must receive your proposal no later than 4:00 p.m. MST, November 3, 2008. The background information, experience and descriptive examples of the proposers work must be submitted with information to accompany the proposal at the required time of submittal. Eight (8) copies of each proposal must be submitted to the City of Rapid City. Submissions will be directed to:

Transportation Planning Division
Rapid City Growth Management Department
300 Sixth Street
Rapid City, SD 57701

ADDENDA AND SUPPLEMENTS TO RFP

In the event that it becomes necessary to revise any part of this RFP or if additional information is necessary to enable the proposer to make adequate interpretation of the provisions of this Request for Proposal, a supplement to the RFP will be provided to each proposer.

REJECTION RIGHTS

The City of Rapid City and the Rapid City Area Metropolitan Planning Organization retain the right to reject all proposals and to re-solicit if deemed to be in their best interests.

Selection is also dependent upon the negotiation of a mutually acceptable contract with the successful proposer.

COST OF PROPOSAL PREPARATION

No reimbursement will be made by the City of Rapid City or any other party to this agreement for any costs incurred prior to a formal notice to proceed under a contract.

PROPOSALS TO BE IN EFFECT

Each proposal shall state it is valid for a period of not less than ninety (90) days from the date of receipt.

PROHIBITED INTEREST

No member, officer, employee of the City or State, or member of its governing body or of a local public body having jurisdiction within the City's service area, during his or her tenure or one year thereafter, shall have any interest, direct or indirect, in any resultant contract or the proceeds thereof.

TAXES

The contract amount submitted by the consultant should take into consideration the fact that all sponsoring entities associated with the proposed project are exempt from all state taxation, including state sales tax.

SELECTION PROCESS

A study team will review responses to this Request for Proposal that meet the requirements enumerated and are received prior to the designated closing date.

Upon review of qualified proposers, the committee will designate the most qualified firms as finalists based on professional qualifications, costs and financial data. The selected finalists will appear for an oral presentation and evaluation by the committee which then will select a firm. The selected consultant will be notified and contract negotiations will commence. Upon the completion of negotiations, the City of Rapid City, the Rapid City Area Metropolitan Planning Organization and the South Dakota Department of Transportation must approve the contract before any work can begin. Federal funding will be utilized in this study and thus the consultant will be subject to all of the federal contracting requirements which are incurred as a result.

PROJECT APPROACH

The proposer should identify the study process utilized on other significant projects of similar scope and magnitude as well as the process envisioned for this project. The specific procedures and methods proposed for coordinating the requirements of the Federal Highway Administration, the South Dakota Department of Transportation, the City of Rapid City, and the Rapid City Area Metropolitan Planning Organization shall be detailed in the proposal.

QUALIFICATIONS, COSTS AND FINANCIAL DATA

Those firms submitting proposals will be evaluated according to the qualification of the firm in terms of experience, the ability to perform and manage the work, the ability to work within a schedule, and within a fixed budget. The firm is asked to submit a description of prior work that is related to the scope of work previously described. Particular emphasis will be placed on the qualifications of the firm's key staff, such as the project manager and all staff involved in the project.

The contract for the scope of work will be based on a fee schedule with a not-to-exceed amount. Project fee and cost estimates are not considered binding evaluation criteria. Each firm submitting a proposal must provide a time and cost estimate for each phase of the study based on the services enumerated and the assumed project time frame.

SPECIALIZED EXPERIENCE

The following criteria will be weighted equally in evaluating the qualifications of each consultant.

Capacity/Capability (30%)

- (a) Key personnel and individual relevant experience and capability, and outside consultants.
- (b) Diversity of skills - transportation planning, land use, and familiarity with Federal regulations governing the transportation planning process.
- (c) Total number of firm employees in project technical disciplines proposed for this project and current workload of those individuals.

Technical Ability and Understanding of Requirements (40%)

- (a) Technical approach proposed for meeting tasks.
- (b) Understanding and experience in meeting tasks.
- (c) Understanding and experience in addressing Long Range Transportation Plan issues.
- (d) Project schedule.
- (e) Personnel assigned to tasks.
- (f) Quality of examples of previous work.

Project Organization and Management (20%)

- (a) Project team.
- (b) Management Procedure - work reports.
- (c) Quality Control.

Past Record of Performance (10%)

Completion time - quality - efficiency

GENERAL EXPERTISE REQUIRED

The services envisioned within this Request for Proposal includes all of the transportation planning, civil engineering and traffic engineering disciplines necessary for the completion of the project desired.

MISCELLANEOUS

All previously mentioned information will be made available to the selected consultant, as well as, the latest available traffic counts, the Rapid City Major Street Plan, and any other maps or documents pertinent to the development of this document.

The City of Rapid City, the Rapid City Area Metropolitan Planning Organization and the South Dakota Department of Transportation retain the right to amend the contract with the successful proposer to include other possible areas of concern with this project.

NON-DISCRIMINATION/AMERICANS WITH DISABILITIES ACT

The successful consultant shall comply with the requirements of Title 49 CFR Part 21 and Title VI of the Civil Rights Act of 1964. The successful consultant shall submit upon request quarterly Title VI (civil rights) State of Contractor reports to the South Dakota Department of Transportation. The successful Consultant shall provide services in compliance with the Americans with Disabilities Act of 1990.

CONTRACT PROVISIONS AND ASSURANCES

Federal funds received by the Rapid City Area Metropolitan Planning Organization will be used as a component of the overall funding of this project. Accordingly, the selected consultant will be required to comply with all applicable Federal regulations and contracting provisions required by the Federal funding authority, including 49 CFR Part 31 - Allowable Costs, Civil Rights, Minority Business Enterprise, and other applicable assurance provisions. Additionally, the contract must be in compliance with state and local requirements applicable to such contracts.

SUMMARY

All plans, calculations, maps, digital files, reports, correspondence, minutes of meetings, and related data generated for the study will be included in the final documents submitted to the Rapid City Area Metropolitan Planning Organization.