

SCOPE OF SERVICES

The CONSULTANT shall develop a report addressing the following general tasks for the existing Route 171 / 249 corridor from I-44 to I-49 in Jasper County, and for the proposed alignment of the Joplin West Corridor from I-44 in Newton County to Route 171 in Jasper County. The analysis shall include construction year 2030 and design year 2050. The report will conclude with a phasing and implementation plan that results in projects and estimates that can be added to the STIP, as well as identifying phasing and focus to accommodate grant applications and general revenue appropriations.

Existing Route 171 / 249 Corridor:

- Traffic Safety and Operational Analysis (TS&O)
- Document requirements and future project needs for upgrading the corridor to Interstate standards
- Alternatives Analysis for the Route 171 and I-49 / Route 96 interchange in Carthage
- Economic Impact Analysis with Cost / Benefit

Proposed Joplin West Corridor:

- Location Study and Alternatives Analysis
- Economic Impact Analysis with Cost / Benefit

This scope of services is intended to be an accurate description of the items and tasks required for the completion of the study; however, each project is unique and may require additional effort in an individual task to complete the study. The following information will explain and define in general terms the major study items of importance relating to this project. All the elements of work that are necessary to satisfactorily complete the study of this project may or may not be listed. The lack of a specific listing of an element or item in the scope of services does not in itself constitute the basis for additional services, supplemental agreements, and/or adjustment in compensation.

Services rendered by the CONSULTANT, which are considered additional services, will be addressed per paragraph (3), Additional Services of the Project Design Consultant Agreement. The provisions of the Design Consultant Agreement outlining the responsibilities of the CONSULTANT regarding the quality and accuracy of the deliverables and products shall apply to any decisions regarding determinations of additional services.

Preparation of a supplemental agreement is necessary prior to performance of any work, which is considered as additional services, not included in the original scope of services. The CONSULTANT will not be compensated for additional services performed prior to execution of a supplemental agreement. Only additional services, which are required due to changed or

unforeseen conditions or are due to a change in the specified deliverable, will be considered for inclusion in a supplemental agreement.

The Commission reserves the right to direct additional services not described in this Exhibit as changed or unforeseen conditions may require. Such direction by the Commission or its Engineer shall not be a breach of the agreement. In this event, a supplemental agreement will be negotiated and executed prior to the Consultant performing the additional or changed services or incurring any additional cost for those additional services. Any changes in the maximum compensation and fee, or time and schedule of completion, will be covered in the supplemental agreement.

The CONSULTANT will provide the professional, technical, and other personnel resources, equipment, materials, and all other things necessary to prepare the report. This scope of services includes management of this project from notice to proceed through completion of the report. This scope of services includes contract administration, project monitoring, invoicing, and maintaining coordination through internal team meetings, and core team meetings for the duration of this project.

A more detailed description of the process and requirements used by MoDOT for completion of the work may be found in the MoDOT Engineering Policy Guide (EPG). The CONSULTANT is encouraged to review the appropriate sections of the manual to supplement the information contained in the scope of services and provide additional guidance in the requirements and expectations of MoDOT for completion of the consulting services.

The CONSULTANT shall perform the following services, all in accordance with the standard practice of the Commission as outlined in the EPG and using AASHTO Green Book and other resources as listed in the EPG.

I. Project Management, Coordination, and Administration:

1. The CONSULTANT shall coordinate with MoDOT's project manager to schedule and plan the kick-off core team meeting.
2. The CONSULTANT shall participate in the kick-off core team meeting, inviting any sub-consultants that need to attend. It is assumed that this core team meeting will be in a virtual format. MoDOT's project manager will lead the kick-off core team meeting.
3. The CONSULTANT shall plan and lead monthly progress meetings with the project core team as coordinated through MoDOT's project manager. The purpose of these progress

meetings is to review the project performance and other parts of the work necessary to keep the project on scope, schedule, and within budget. It is assumed that these meetings will be in a virtual format.

4. The CONSULTANT shall schedule and lead additional meetings with MoDOT personnel as needed to address questions or issues.
5. The CONSULTANT shall prepare the minutes for all meetings and provide the minutes and action items to MoDOT's project manager for distribution to the core team.
6. The CONSULTANT shall utilize the COMMISSION-provided SharePoint site to share documents.
7. The CONSULTANT shall prepare monthly progress reports that include the following for both CONSULTANT and sub-consultant tasks.
 - a. Past month's activities and accomplishments;
 - b. Pending issues and decisions;
 - c. Problem areas and recommended corrective actions;
 - d. Budget summary status (% complete vs. % expended per task);
 - e. Schedule summary status (baseline schedule vs. actual schedule);
 - f. Next month's planned activities and goals; and
 - g. Summary of coordination efforts (including correspondence summaries).
8. The CONSULTANT shall prepare invoices using MoDOT's Engineering Services invoice template found in EPG 134, and shall submit invoices monthly.

II. Public Involvement:

1. The COMMISSION will be the main point of contact for interacting with the public. The CONSULTANT shall interact with external agencies and the public as required by the COMMISSION to accomplish the Scope of Services of this contract.

2. The CONSULTANT shall schedule and attend meetings with public organizations, county officials, local municipalities, and other entities as required by the COMMISSION. The CONSULTANT shall work with the COMMISSION core team to develop questionnaires and talking points for these meetings. A minimum of fifteen (15) in-person stakeholder meetings are anticipated with the following entities:
 - a. City of Joplin
 - b. City of Webb City
 - c. City of Carl Junction
 - d. City of Oronogo
 - e. City of Carterville
 - f. City of Carthage
 - g. City of Duquesne
 - h. City of Duenweg
 - i. Village of Airport Drive
 - j. Village of Brooklyn Heights
 - k. Village of Fidelity
 - l. Newton County
 - m. Jasper County
 - n. Joplin Area Transportation Study Organization (JATSO)
 - o. Harry S Truman Coordinating Council (HSTCC)
3. The CONSULTANT shall attend two (2) in-person public meetings and assist MoDOT with answering questions from the public. It is anticipated that one meeting will be held in Joplin and the second meeting will be held in Carthage.
4. The CONSULTANT shall participate in planning meetings with MoDOT personnel prior to the public meetings. The purpose of the planning meetings is to brief MoDOT personnel on the current status of the project, and to strategize our response to any issues expected to arise during the public meetings.

5. The CONSULTANT shall provide all exhibits for stakeholder meetings and public meetings as requested by the COMMISSION. All exhibits to be posted on the project website shall be Section 508 compliant. 3D renderings and traffic simulation models will not be required.
6. The COMMISSION will advertise for public meetings, produce copies of handouts and newsletters, perform mass mailings of notices of meetings, create the project fact sheets, and create and maintain the project website.
7. The CONSULTANT shall obtain the meeting location and room for the public and stakeholder meetings. The meeting locations shall be as close to the project site as practicable, and should utilize public-access facilities (schools, auditoriums, council chambers, etc.) with enough space to accommodate the displays and anticipated attendees of the meetings. The CONSULTANT shall make every effort to utilize facilities that are of no cost to the COMMISSION. The CONSULTANT shall ensure that all facilities utilized for public meetings are fully ADA compliant. Private facilities, as approved by the MoDOT Project Manager, may be used if these conditions are met.
8. The COMMISSION will record attendance at public meetings, and will prepare the meeting minutes and transcripts if applicable. The CONSULTANT shall take notes of topics discussed verbally during the meetings, and furnish these notes to the COMMISSION to aid in the preparation of the minutes.

III. Data Collection (Route 171 / 249 Corridor):

The CONSULTANT shall collect the following data for incorporation into the Traffic Safety and Operational Analysis (TS&O) report for the Route 171 / 249 corridor. The corridor extents begin at Route 249 mile marker 0.0 at the I-44 / I-49 interchange in Joplin and proceed northerly along Route 249 to the Route 249 / 171 interchange in Carterville, then easterly along Route 171 ending at the Route 96 / I-49 interchange in Carthage.

1. Mainline Traffic Counts:
 - a. The COMMISSION will provide average annual daily traffic (AADT) counts classified by vehicle type and broken down into hourly increments for all mainline segments between interchanges in the corridor extents. The provided data will include the peak hour percentage, percent trucks, and directional distribution for each segment.
 - b. The COMMISSION will provide growth rates and construction year and design year traffic projections for each segment.
2. Directional Ramp / Ramp Terminal Intersection Traffic Counts:

- a. The COMMISSION will provide average annual daily traffic (AADT) counts classified by vehicle type and broken down into hourly increments for all directional ramps at the following locations:
 - i. Route 249 / I-44 / I-49 interchange
 - ii. Route 249 / Route 171 interchange
 - b. The COMMISSION will provide growth rates and construction year and design year traffic projections for each directional ramp.
 - c. The CONSULTANT shall collect 16-hour intersection turning movement counts broken down into 15-minute increments, and encompassing the AM and PM peak hours at both ramp terminal intersections at the following interchanges:
 - i. Route 249 / Route 66 (7th Street)
 - ii. Route 249 / Newman Road
 - iii. Route 249 / Route VV (Zora Street)
 - iv. Route 171 / Route HH
 - v. Route 171 / Old US 66 (Brooklyn Heights)
 - vi. Route 171 / Route 96 (Inca Road)
 - vii. Route 171 / Route 96 / I-49
 - d. The COMMISSION will provide growth rates and construction year and design year peak hour traffic projections and turning movement diagrams for each intersection.
3. Speed and Travel-Time Data:
- a. The CONSULTANT shall collect RITIS/HERE and Acyclica speed data for the existing corridor extents, broken down in hourly increments.
4. Crash Data:

- a. The CONSULTANT shall collect the most current five (5) full years of crash data (including pedestrian crashes) within the corridor extents indicating location, severity, crash type, and possible contributing circumstances.
 - b. The CONSULTANT will be given access to the COMMISSION's TMS System from which the CONSULTANT can download the required crash data, maps, and reports.
5. Bridge Condition Data:
- a. The COMMISSION will furnish the most recent bridge inspection reports and photos for all bridges within the corridor extents.
 - b. The COMMISSION will furnish the most recent version of the Southwest District Bridge Asset Management Plan for all bridges within the corridor extents.
6. Design and Planning Data:
- a. The COMMISSION will furnish as-built plans (roadway and bridge) for all locations within the corridor extents.
 - b. The COMMISSION will furnish a list of current projects under construction and future planned COMMISSION projects adjacent to or within the corridor extents.
 - c. The COMMISSION will furnish a list of any known proposed improvements by others (interchanges, etc.) adjacent to or within the corridor extents.
 - d. The COMMISSION will furnish data on previous scoping / prioritization done by the COMMISSION along the corridor.
 - e. The COMMISSION will furnish copies of any previous studies conducted within the corridor extents.
 - f. The COMMISSION will provide a summary of known utility concerns and any specific known utility issues within the corridor extents. The CONSULTANT shall supplement this data if/when additional information becomes known during the progression of the project or through the public involvement process.
7. Survey Data:

- a. The COMMISSION will provide any survey data needed for this scope of services. The CONSULTANT shall submit a Survey Request to MoDOT that includes detailed information on the survey work needed. The CONSULTANT shall provide an exhibit that shows the outline and/or location of the requested survey area.

8. Environmental / Cultural Resources Data:

- a. The CONSULTANT shall use available databases and other resources to conduct a planning-level “desktop review” to identify any known environmental and/or cultural resource concerns within or adjacent to the corridor extents. Items to be evaluated include disturbed area, conversion of farmland, floodplain and regulatory floodway, stormwater, FEMA / SEMA buyout properties, socioeconomic impacts, threatened and endangered species, migratory birds, hazardous waste, wetlands, noise, historical buildings, bridges and sites, archaeological and cultural sites, and public lands (Section 4f/6f).
- b. The “desktop review” work is intended to evaluate potential environmental and/or cultural resource concerns or constraints with the different alternatives being considered. It is not the intent of this evaluation to require any reporting, permitting, correspondence with outside agencies, field surveys, sampling, habitat surveys, noise analysis, etc.
- c. The CONSULTANT shall verify and incorporate any environmental or cultural resources data brought by stakeholders during the public involvement process.

9. Field Review:

- a. Before conducting the field review, the CONSULTANT shall review the "as built" plans, aerial photographs, manuscripts, survey data, and all other information provided by the COMMISSION. The CONSULTANT shall make the necessary field investigations to assure that there have been no significant changes since the information was recorded or obtained. The CONSULTANT shall incorporate any changes found during the field investigation as part of this contract.
- b. The CONSULTANT shall complete a field review of the existing mainline, interchanges, and ramp terminal intersections to identify and document the following against current Interstate design standards:
 - i. Safety Deficiencies:
 - 1. Design Speed
 - 2. Lane and Shoulder Width
 - 3. Horizontal and Vertical Alignment

4. Superelevation Rate
 5. Cross Slope
 6. Signing
 7. Lighting
 8. Guardrail / Guard Cable
 9. Barrier
 10. Sight Distances
 11. Clear Zone Intrusions
 12. Vertical Clearance at Bridges
- ii. Traffic Control Deficiencies:
 1. Signing
 2. Ramp Terminal Traffic Control (stop-control / signals)
 3. Pavement Marking
 - iii. Geometrics and Structural Deficiencies:
 1. Acceleration lane and taper lengths
 2. Deceleration lane and taper lengths
 3. Weaving lane lengths
 4. Interchange spacing
 5. Storage lengths on ramps to ensure that traffic is not backing up onto the mainline.
 6. Capacity and storage / queuing lengths for the crossroad at existing ramp terminal intersections.
 7. Potential future geometric upgrades and signalization needs.
 8. Service interchange deficiencies.
 9. System interchange deficiencies.
 10. Design loading structural capacity of bridges.
 - iv. Any other additional pertinent information (e.g. railroad right of way, access restrictions and challenges, non-controlled access right of way, etc.).

IV. Traffic Safety and Operational Analysis (Route 171 / 249 Corridor):

The CONSULTANT shall prepare a Traffic Safety and Operational Analysis (TS&O) report per EPG 905.3.7.4, documenting the existing and future conditions within the corridor extents as described below. The report shall be submitted in Microsoft Word (.docx) and Adobe Acrobat (.pdf) format.

1. Operational Conditions: The CONSULTANT shall analyze the existing corridor with existing and future traffic volumes at a planning level:
 - a. Use Highway Capacity Manual methodology to determine the level of service for all mainline segments between interchanges, directional ramps, merge areas,

diverge areas, weaving areas, and stop / signal-controlled ramp terminal intersections. Traffic modeling utilizing SYNCHRO, VISSIM, or similar software is not required.

- b. Use RITIS/HERE and Acyclica speed data to determine operating speeds and travel times along the corridor.
- c. Include summary tables and maps documenting the results of the level of service and speed / travel time analysis within the corridor extents, noting any existing or future areas of concern.

2. Safety Conditions:

- a. Analyze historical crash data to determine locations of “hot spots” within the corridor extents.
- b. Identify trends in crash contributing circumstances such as speed, inattention, weather, time of day, etc.
- c. Using Highway Safety Manual methodology calibrated per historical crash data, predict future crashes within the corridor extents.
- d. Compare existing and predicted future crashes with statewide averages.
- e. Include summary tables and maps documenting the historical crash analysis, locations of “hot spots” and future crash predictions within the corridor extents, noting any existing or future areas of concern.

3. Bridge Condition Assessment:

- a. Review existing bridge inspection reports and briefly document in the report.
- b. Include summary tables and maps documenting the bridge number, feature on/over, existing bridge condition ratings, and any upcoming work noted on the Southwest District Bridge Asset Management Plan.

4. Review of Previous Efforts:

- a. Review and briefly document current and known future projects to be constructed by MoDOT or by others.
- b. Review and briefly document previous scoping and prioritization efforts.
- c. Review and briefly document previous studies conducted within the corridor extents.

5. Review of Other Known Constraints / Concerns:

- a. Review and briefly document any known utility concerns and any specific known utility issues within the corridor extents.
- b. Review and briefly document any known environmental and/or cultural resource concerns within or adjacent to the corridor extents.
- c. Briefly document any other constraints or concerns that become known during the progression of the study.

6. Review of As-Built Plans and Field Data: The CONSULTANT shall provide a summary including maps and tables of the following items identified in the desktop review of the as-built plans and field review:

- a. Safety Deficiencies:
 - i. Design Speed
 - ii. Lane and Shoulder Width
 - iii. Horizontal and Vertical Alignment
 - iv. Superelevation Rate
 - v. Cross Slope
 - vi. Signing
 - vii. Lighting
 - viii. Guardrail / Guard Cable
 - ix. Barrier
 - x. Sight Distances
 - xi. Clear Zone Intrusions
 - xii. Vertical Clearance at Bridges
- b. Traffic Control Deficiencies:
 - i. Signing
 - ii. Ramp Terminal Traffic Control (stop-control / signals)
 - iii. Pavement Marking
- c. Geometrics and Structural Deficiencies:
 - i. Acceleration lane and taper lengths
 - ii. Deceleration lane and taper lengths
 - iii. Weaving lane lengths
 - iv. Interchange spacing
 - v. Storage lengths on ramps to ensure that traffic is not backing up onto the mainline.
 - vi. Capacity and storage / queuing lengths for the crossroad at existing ramp terminal intersections.
 - vii. Potential future geometric upgrades and signalization needs.
 - viii. Service interchange deficiencies.
 - ix. System interchange deficiencies.

- x. Design loading structural capacity of bridges.
- d. Any other additional pertinent information (e.g. railroad right of way, access restrictions and challenges, non-controlled access right of way, etc.).
- 7. The CONSULTANT shall provide the above data in report format including tables, charts, maps, and any other means of effectively communicating the data in a simple, easy to read format.
- 8. The CONSULTANT shall submit a Google Earth .kmz file identifying the locations and description of all deficiencies.

V. Interstate Conversion (Route 171 / 249 Corridor):

The CONSULTANT shall prepare a report detailing the improvements needed to convert the Route 171 / 249 corridor to Interstate standards (job number JSR0315).

1. The COMMISSION will furnish all available data from past STIP updates and field reviews. The CONSULTANT shall review this data and update it according to existing field conditions and current design standards. The CONSULTANT shall include additional data as needed to fulfill the requirements of this scope of services.
2. The CONSULTANT shall detail all safety, traffic control, geometric, and structural deficiencies identified in the Traffic Safety and Operational Analysis (TS&O) report, with an emphasis placed on the 10 Controlling Criteria (NHS with Design Speed > 50 mph) found in EPG 131.1.2 and any other items that would hinder the existing corridor's designation as an Interstate.
3. The CONSULTANT shall provide separate cost estimates by deficiency / location for all work needed to upgrade the existing corridor to Interstate standards.
4. The CONSULTANT shall summarize the identified improvements in desired STIP programming or phasing, their respective project scope descriptions, right of way impacts (estimated as detailed 3D corridor modeling will not be completed), construction schedules, and cost estimate comparisons.
5. The CONSULTANT shall provide cost estimates in BidTabs Plus bid report format, utilizing the most recent bid tabulations and unit costs for the Southwest District, or statewide as applicable.
6. The CONSULTANT shall summarize the FHWA and AASHTO requirements and process for designating a new Interstate highway.

VI. Interchange Improvements at Route 96 / 171 / I-49 in Carthage:

The CONSULTANT shall perform an Alternatives Analysis per EPG 126, evaluating each geometric alternative for providing a directional interchange to convert or replace the existing diamond interchange at the intersection of Route 96 / 171 / I-49 in Carthage (job number J710797C).

1. The COMMISSION will furnish all available data from past STIP updates and field reviews. The CONSULTANT shall review this data and update it according to existing field conditions and current design standards. The CONSULTANT shall include additional data as needed to fulfill the requirements of this scope of services.
2. As part of the Alternatives Analysis, the CONSULTANT shall evaluate all six (6) geometric alternatives furnished by the COMMISSION. Maps or drawings of these alternatives shall not be shared with the public. The CONSULTANT may develop and evaluate additional alternatives as approved by the COMMISSION.
 - a. Establish and optimize horizontal geometry.
 - b. Estimate structure locations and sizes.
 - c. Estimate locations of traffic barriers and other traffic control devices.
 - d. Estimate area of right of way needs.
 - e. Identify potential design exceptions that may be required.
 - f. Identify and estimate utility impacts and relocations.
 - g. Evaluate constructability and feasibility of the alternatives.
3. The CONSULTANT shall provide a separate scoping cost estimate for each alternative evaluated. The development of cost estimates, for STIP planning purposes, shall follow the guidelines set forth in EPG 104.7 and 121.7. Estimates shall utilize the Cost Estimate Guide for Scoping, the Engineering Factors Report, and other related information found in the EPG.
4. The CONSULTANT shall develop a plan for phasing the interchange improvements in smaller, more financially manageable pieces of \$20-\$50 million that are compatible with grant awards or legislative appropriation. The consultant shall prioritize phases based on operational, safety, and economic development benefits.
5. The Alternatives Analysis shall include an evaluation of topographical constraints, railroad right of way, environmental and cultural resources constraints, utilities, etc. for each alternative.

6. The CONSULTANT will not be required to identify a recommended alternative, however the benefits and disadvantages for each alternative shall be discussed in the report.
7. Development of the Purpose and Need will not be required.

VII. Data Collection (Joplin West Corridor):

The CONSULTANT shall collect the following data for incorporation into a modified Alternatives Analysis report for the Joplin West Corridor. The corridor extents begin near the Oklahoma state line at I-44 mile marker 1.0 in Newton County, and proceed northerly on new alignment to the Route 171 / 96 intersection in Carl Junction in Jasper County.

1. Design and Planning Data:

- a. The COMMISSION will furnish all available data from past STIP updates. This data includes three (3) conceptual alignments. Maps or drawings of these conceptual alignments shall not be shared with the public. For the purpose of this scope of services, the CONSULTANT shall analyze only the “red” alignment. The COMMISSION has not conducted any field reviews or design work on this project. The CONSULTANT shall review this data and incorporate it into the report.
- b. The COMMISSION will furnish a copy of the Joplin West Corridor Purpose and Need Study completed in October 2009. The consultant shall review this document and briefly summarize it in the report. It is not anticipated that the consultant will be required to update this study.
- c. The COMMISSION will furnish a list of current projects under construction and future planned COMMISSION projects adjacent to or within the corridor extents.
- d. The COMMISSION will furnish a list of any known proposed improvements by others (interchanges, etc.) adjacent to or within the corridor extents.
- e. The COMMISSION will furnish data on previous scoping / prioritization done by the COMMISSION along the corridor.
- f. The COMMISSION will provide a summary of known utility concerns and any specific known utility issues within the corridor extents. The CONSULTANT shall supplement this data if/when additional information becomes known during the progression of the project or through the public involvement process.

2. Environmental / Cultural Resources Data:

- a. The CONSULTANT shall use available databases and other resources to conduct a planning-level “desktop review” to identify any known environmental and/or cultural resource concerns within or adjacent to the corridor extents. Items to be evaluated include disturbed area, conversion of farmland, floodplain and regulatory floodway, stormwater, FEMA / SEMA buyout properties, socioeconomic impacts, threatened and endangered species, migratory birds, hazardous waste, wetlands, noise, historical buildings, bridges and sites, archaeological and cultural sites, and public lands (Section 4f/6f).
 - b. The “desktop review” work is intended to evaluate potential environmental and/or cultural resource concerns or constraints with the different alternatives being considered. It is not the intent of this evaluation to require any reporting, permitting, correspondence with outside agencies, field surveys, sampling, habitat surveys, noise analysis, etc.
 - c. The CONSULTANT shall verify and incorporate any environmental or cultural resources data brought by stakeholders during the public involvement process.
3. Any other additional pertinent information (e.g. railroad right of way, etc.).

VIII. Alternatives Analysis (Joplin West Corridor):

The CONSULTANT shall prepare a modified Alternatives Analysis report per EPG 126 and the requirements below. The report shall be submitted in Microsoft Word (.docx) and Adobe Acrobat (.pdf) format.

1. There are three (3) corridor classification concepts that are being considered for this corridor, which include:
 - Alternative 1: Principal Arterial
 - Alternative 2: Expressway
 - Alternative 3: Freeway
2. The CONSULTANT shall develop baseline versions of each of the three alternatives and their corresponding analytical results such as travel time, safety, cost, etc. The baseline version of the three alternatives is as follows:
 - Alternative 1: 2-lane principal arterial with stop-controlled intersections and traffic signals spaced approximately ½ mile apart.

- Alternative 2: 4-lane expressway with traffic signals and J-turns spaced approximately 1 mile apart.
 - Alternative 3: 4-lane freeway with interchanges spaced no less than 2 miles apart.
3. The CONSULTANT shall perform a qualitative operational and safety analysis, discussing the operational and safety benefits of constructing the new corridor (e.g. removing traffic from local roads, shifting trucks from exiting north/south routes within the city, benefits of a modern facility, improved travel times, anticipated crash reductions, etc.).
 4. The CONSULTANT shall provide a separate scoping cost estimate for each alternative evaluated. The development of cost estimates, for STIP planning purposes, shall follow the guidelines set forth in EPG 104.7 and 121.7. Estimates shall utilize the Cost Estimate Guide for Scoping, the Engineering Factors Report, and other related information found in the EPG.
 5. The CONSULTANT shall develop a plan for phasing the corridor improvements in smaller, more financially manageable pieces of \$20-\$50 million that are compatible with grant awards or legislative appropriation. The consultant shall prioritize phases based on operational, safety, and economic development benefits.
 6. The Alternatives Analysis shall include an evaluation of topographical constraints, railroad right of way, environmental and cultural resources constraints, utilities, etc. for each alternative.
 7. The CONSULTANT will not be required to identify a recommended alternative, however the benefits and disadvantages for each alternative shall be discussed in the report.
 8. Development of the Purpose and Need will not be required.

IX. Economic Impact Analysis and Comparison:

A study of this scale has the potential to create positive social and economic impacts beyond the safety and operational benefits stemming from improvements to the transportation system. Such community benefits include improved access to jobs, improved access to businesses, and improvements in the public realm that can enhance marketability within the corridor. It is important to understand these social and market benefits in combination with the broader economic impacts. Such benefits reflect the importance of transportation investments to support community goals toward job creation, equity, environmental sustainability, and quality of life.

While the information collected and explored through the economic impact analysis is not within MoDOT's purview, its inclusion in this study reflects the importance and interconnected nature of transportation on broader community characteristics. Information from the economic impact analysis is intended to bring non-transportation factors into the consideration of the transportation needs for the southwest Missouri area.

1. The CONSULTANT shall perform an Economic and Market Analysis for both corridors. The study will assess and identify feasible, market-driven development opportunities within the corridors that best leverage off the roadway infrastructure being proposed. The study shall be divided into three (3) interconnected sections: Demographic and Economic Analysis, Market Analysis, and Fiscal and Economic Impact Analysis.
 - a. Demographic and Economic Analysis: Identify both market areas' demographic and economic characteristics.
 - b. Market Analysis: Evaluate directly competitive retail, employment, and residential market trends impacting both corridors. Site evaluations shall be conducted to determine the corridors' ability to accommodate commercial, industrial, and residential development formats, as well as identify prospective development sites.
 - c. Fiscal and Economic Impact Analysis: Quantify and compare the economic and fiscal impact to the community resulting from development of both corridors' planned land uses. Fiscal and economic impacts shall be quantified on a unit of measure such as on a per-dwelling unit or a per-1,000 square feet of commercial or industrial space.
 - d. Based on the findings of the Economic and Market Analysis, potential development opportunities for the corridors shall be identified. Study recommendations will include identifying prospective development sites, appropriate mix of land uses, and quantifying reasonably achievable rates of adsorption for new development.
 - e. The CONSULTANT shall perform a cost/benefit analysis for both corridors. The purpose of the analysis is to determine which corridor has the better economic return on investment. The consultant shall also consider staging, and the timeline required to realize the full economic benefit.
 - f. The CONSULTANT's benefit/cost analysis shall be compatible with requirements to apply for federal grants.
 - g. The CONSULTANT shall compare and contrast the economic development potential of both corridors in the pre- and post-construction conditions.

- h. The CONSULTANT shall evaluate the factors used by businesses for site selection, and determine how proximity to an Interstate route ranks in priority among those factors.
 - i. The CONSULTANT shall determine the amount of time it will take the state of Missouri to recoup its investment for each corridor, based upon the anticipated revenue from economic development along the corridors.
 - j. The CONSULTANT shall determine if the undermining of both corridors has any impact on their suitability for development. Mining maps will be furnished by the COMMISSION.
2. Route 171 / 249 Corridor:
- a. Review relevant research and case studies from other cities and states to indicate economic impacts that would potentially result from converting an existing freeway into an Interstate.
 - b. Analyze whether or not an Interstate designation would cause traffic to shift from the existing I-44 / I-49 alignment to a newly Interstate-designated Route 249 / 171 corridor. Take into account the proposed improvements at the I-44 / I-49N / Route 59 interchange (Fidelity interchange). These improvements are anticipated to improve the operational and safety performance of that interchange.
 - c. Analyze the impacts of shifting the existing I-49 designation to the Route 249 / 171 corridor, versus designating the Route 249 / 171 corridor as a new interstate loop (e.g. I-249). Quantify the economic impact of removing the I-49 designation between I-44 and Route 96.
 - d. Analyze the Interstate designation as a catalyst for economic development.
3. Joplin West Corridor:
- a. Analyze whether or not the new corridor would shift traffic from Route 43 (Main Street) in downtown Joplin.
 - b. Analyze the west corridor construction as a catalyst for economic development.

X. Deliverables:

The CONSULTANT shall furnish the COMMISSION with the following completed sheets and documents, as applicable, for the project included in this contract:

1. Electronic copy of the Draft TS&O Report.
2. Electronic copy of the Final TS&O Report.
3. Electronic copy of the Draft Alternatives Analysis Report.
4. Electronic copy of the Final Alternatives Analysis Report.
5. Electronic copy of the Draft Economic Impact Analysis Report.
6. Electronic copy of the Final Economic Impact Analysis Report.
7. Electronic copy of the design criteria used for the project.
8. Electronic copy of 2D Planview Layouts (both .pdf and Microstation .dgn formats).
9. Electronic copy of BidTabs Pro estimates categorized with subtotals and project phasing.
10. Maps or exhibits for use during stakeholder meetings or for other use by MoDOT.
11. Electronic copies of core team meeting agendas and minutes.
12. Electronic copy of the project progress reports for each month in which there is activity on the project. An updated project schedule and budget summary shall be included in the report.
13. Electronic copy of all public meeting exhibits.

XI. Standards:

The CONSULTANT shall use the latest version of the following publications to determine the design criteria and procedures which will be followed for development of the project.

1. Federal Emergency Management Administration Flood Insurance Guidelines and Specifications.
2. MoDOT Engineering Policy Guide (EPG).
3. Manual on Uniform Traffic Control Devices (MUTCD).
4. AASHTO A Policy on Geometric Design of Highways and Streets (Green Book).
5. AASHTO LRFD Bridge Design Specifications.
6. AASHTO Highway Safety Manual (HSM).
7. AASHTO Design Standards Interstate System.
8. Missouri Standard Specifications for Highway Construction.
9. Missouri Standard Plans.
10. MoDOT Bridge Manual.
11. MoDOT Specifications for Computer Deliverable Contract Plans.
12. Any other publications which the COMMISSION directs the CONSULTANT to use.

XII. Use and/or Release of Privileged or Confidential Information:

Certain information provided by MoDOT to the CONSULTANT and the CONSULTANT to MoDOT is confidential information and protected as privileged by 23 U.S.C. § 407. Federal Law prohibits the release or discovery of certain reports and surveys:

“Notwithstanding any other provisions of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings...for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery...”

The CONSULTANT shall watermark each and every page of the following studies and analyses with “23 U.S.C. § 407 Privileged Information” prior to providing it to MoDOT:

Existing Route 171 / 249 Corridor:

- Traffic Safety and Operational Analysis (TS&O)
- Document requirements and future project needs for upgrading the corridor to Interstate standards
- Alternatives Analysis for the Route 171 and I-49 / Route 96 interchange in Carthage
- Economic Impact Analysis with Cost / Benefit

Proposed Joplin West Corridor:

- Location Study and Alternatives Analysis
- Economic Impact Analysis with Cost / Benefit

All data and information provided by MoDOT to the CONSULTANT for such studies and analyses listed above, shall immediately be watermarked on each and every page of each and every document by the CONSULTANT “23 U.S.C. § 407 Privileged Information”.

The CONSULTANT agrees to obtain the written approval of MoDOT prior to dissemination of any privileged or confidential information or documentation. If it is unclear to the CONSULTANT whether such information or documentation is in fact privileged or confidential, the CONSULTANT agrees to obtain the written approval of MoDOT prior to dissemination of the information and documentation in question.

The CONSULTANT agrees that any unauthorized dissemination of any privileged or confidential information or documentation on the part of the CONSULTANT will create liability on the part of the CONSULTANT to the COMMISSION for any damages that may occur as a result of the unauthorized dissemination. The CONSULTANT agrees to hold harmless, indemnify, and release the COMMISSION from any liability that may ensue on the part of the COMMISSION for any unauthorized dissemination of any privileged and confidential information or documentation on the part of the CONSULTANT.