ENGINEERING POLICY BALLOT

Effective: April 1, 2022

Level 2

Level two revisions require the approval of the **Assistant Chief Engineer** and the **Federal Highway Administration** only. The **Senior Management Team** is encouraged to review the content and provide comment to the appropriate director. For all other parties, these revisions are posted for information only.

ENGINEERING POLICY BALLOT

Effective: April 1, 2022

Issue 1: Full Depth Pavement Repairs Basis of Payment

Approval: **Level 2 – Assistant Chief Engineer**

Sponsor: John Donahue – CM

Summary: This revision updates the Basis of Payment guidance for Resident Engineers to calculate additional concrete costs for contractors when the full depth repairs significantly exceed typical section plan depths.

Fiscal Impact: Roughly assume a statewide increase of $10K per year, which would at least be partially offset by contractors bidding less risk into the full depth repair prices if they know they'll be fairly compensated for unexpected additional concrete quantities.

Publication: EPG 613.1.1

Issue 2: Design-Build

Approval: **Level 2 – Assistant Chief Engineer**

Sponsor: David Simmons – DE

Summary: This proposed revision is for EPG 139.1 - EPG 139.10 of EPG 139 Design-Build and EPG 149 Project Delivery Determination and Initial Risk Assessment. Revisions to EPG 139 include: new conflict of interest form, initial risk assessment and constraint identification, inclusion of delegation of authority items the Project Director has authority to approve, clarifications for Project Team resourcing, confidentiality agreements, conflicts of interest, project goal-settings to measure success, clarifications to in-depth risk assessment and risk allocation, contractor quality management guidance, and an inspection testing plan (ITP), among other revisions. Revisions to EPG 149 include: the addition of initial risk assessment, establishes Project Delivery Determination (PDD) tool to help determine appropriate delivery methods, draft project goals, project delivery constraints, initial risk assessment, and additional guidance on project delivery determination, among other minor revisions.

Fiscal Impact: There is no anticipated fiscal impact associated with this revision.

Publication: EPG 139, EPG 149

Issue 3: Increased Federal Share Program

Approval: **Level 2 – Assistant Chief Engineer**

Sponsor: Glenn D. Konersmann

Summary: FHWA's Center for Accelerating Innovation allows for project-level innovations for certain projects/innovations. Approved projects will receive an additional 5% federal share, thus reducing MoDOT's share from 20% to 15% on projects. This new EPG article will provide the guidance to walk design and construction teams through the process of implementing this additional federal share on projects.

Fiscal Impact: Additional 5% share on certain projects; this will reduce MoDOT's state fund match from 20% to 15% potentially saving $100,000 to $1M+ per year.

Publication: EPG 104.2

613.1.1 Full Depth Pavement Repairs (Sec 613.10)

Full depth pavement repairs are made on concrete pavement at locations where joints have failed. The tendency over many years has been to make too many pavement repairs, particularly on projects with overlays in excess of 3 in. When a joint is cut out and patched there are then 2 new joints where previously there was only 1. In the long term this often creates more problems than it solves. Joints or cracks that have faulted but are stable are better left alone, particularly if the project is set up with a multi-lift overlay. The "Distress Identification Manual" prepared by the Strategic Highway Research Program (SHRP) is an excellent resource for the inspector in evaluating joints and cracks. There is a copy of that manual in every project office. Contact your Liaison Engineer in Construction and Materials for assistance. Full depth pavement repairs should be made according to the specifications and Standard Plan 613.00. The patch should be placed on sound subgrade, so recompact or remove and replace as appropriate. It is critical to the long-term durability of the pavement that load transfer across the joints be established. Take care installing dowels. Equipment that damages the existing pavement should not be allowed.

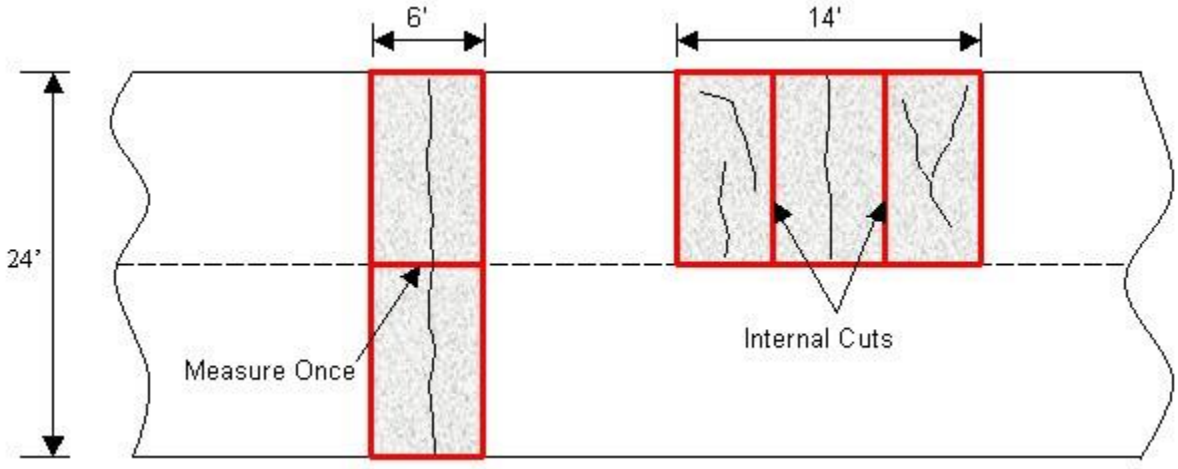
Method of Measurement

Saw Cuts

If there is a pavement repair across the roadway in two lanes or more, such as 6 ft. x 24 ft. on a dual lane highway, the saw cut along the longitudinal joint between the lanes should only be measured once for payment purposes. This specification allows for internal saw cuts in repair areas that are longer than 6 ft. This specification is based on the largest slab (6 ft. in length) that may be reasonably removed without doing damage to subgrade and/or the slab to remain in place. There may be special equipment available that can remove larger slabs. If internal saw cut are used, the following equation should be used to determine payment for the number of internal saw cuts:

Example: Pavement repair is 14 ft. long.

So 2 internal saw cuts may be measured for payment. See the following illustration:



Additional internal saw cuts would be at contractor expense.

Dowel Bars

Dowel bar quantities are provided in the contract plans and field measured on an individual basis, regardless of whether they are installed in a basket or drilled into the adjacent slab (Pay Item Nos. 6131017 and 6131015, respectively).

Basis of Payment

Payment for the perimeter saw cut along the shoulder joint for a pavement repair should be provided when the shoulder is concrete and the shoulder is tied to the pavement. If the shoulder is asphalt, or concrete but not tied, no saw cut is typically necessary; however, if the concrete pavement cannot be removed without damaging the shoulder, payment for a saw cut should be provided.

Repair depths for composite pavements, consisting of one or more asphalt overlays on the original PCC pavement, cannot always be accurately estimated on plan drawings, because of uncertainty regarding rehabilitation histories. Contract provisions do not guarantee maximum repair depth limits, and the contractor is expected to assume some risk when bidding on a project with full depth repairs, However, in the case of full depth repair(s) greatly exceeding their plan thickness, REs can use the following guidelines for compensating contractors for the actual excess material –

- Measure the depths of at least three random full depth repairs. The set of measurements should be performed for each typical design depth shown in the plans. Calculate the average depth for each typical section. Additional measurements should be included in the average if the inspector notices obvious variations in depth.

- If the average measured repair depth is greater than 2 inches more than the typical section depth in the plans, then take the difference between the two depths.

- Calculate the anticipated excess volume of the repairs for each typical section in cubic yards by multiplying the depth greater than two inches over the plan depth by the total area as follows:

  $C_{EV} = ((D_{FIELD} - (D_{PLAN} + 2)) / 36) * A_{TOTAL}$, where

  - C_{EV} = concrete volume in excess of two inches greater than plan depth (CY)
  - D_{FIELD} = average measured repair depth (IN)
  - D_{PLAN} = typical plan depth in plans (IN)
  - A_{TOTAL} = total full repair area (SY)

- If a C_{EV} can be calculated for a full depth repair project, the RE may issue a change order with a lump sum contingent item for the actual cost to the contractor of the excess amount of concrete furnished. No additional payment will be provided for other full depth repair pay items.

Example

The contractor repairs a total of 400 SY of a composite pavement with full depth concrete. The plan depth in the typical sheet for the composite pavement is 14 inches. The average measured repair depth is 17.5 inches. The contractor can produce invoices verifying a unit price cost from the ready mix supplier of $125 per CY.

$C_{EV} = ((17.5 - (14 + 2)) / 36) * 400 = 16.67$ CY

Lump Sum = 16.67 * $125 = **$2083.75**

- In the case of a project where the contractor has their own plant and is also the supplier, the RE will request an actual unit material cost from the contractor and evaluate it for reasonableness against local supplier rates.

139.1 Design-Build Values

Prescriptive methods and requirements for design-build projects limit the creativity of the private sector and ultimately limit the project scope. Therefore, the design-build philosophy and its processes focus on the desired end result for the project. This focus ensures that there is the greatest opportunity for flexibility and innovation during both design and construction of the project and maximizes the likelihood to deliver the project within the available project budget. By allowing design-build contractors to propose alternative FHWA approved approaches to means and methods, material requirements, specifications and best practices, the design-build teams can bring innovation to MoDOT. This opportunity not only benefits the delivery of the related project, but allows MoDOT to capitalize on industry development and advancement by providing a pathway for their innovation into the way MoDOT does business. Due to the unique nature of MoDOT's design-build approach, each project team must hold the following core values paramount throughout the design-build process.

139.1.1 Be Goal Oriented

Prioritized project goals are critical for success and are used to focus the project on the big picture and end result. The project goals guide all decisions throughout procurement and contract execution.

I-64 Daniel Boone Design-Build Information

139.1.2 Be Flexible

Flexibility during design-build procurement allows industry to identify the best possible project solution, providing the best value. Flexibility maximizes the opportunity for innovation, identifies the best solutions, provides the most improvements for the budget, brings new ideas to MoDOT and develops a partnering attitude. Project teams should maintain flexibility throughout the contract by evaluating design plans and change proposals based on the contract requirements and project goals. On design-build projects, the goal is to never say, "That's not how MoDOT does it."

139.1.3 Be Confidential

MoDOT has developed a "best in the industry" reputation for confidentiality. Confidentiality allows trust to be established with the industry, creates a safe environment for the industry to be innovative, drives competition to provide the best proposal, and validates the design-build selection process. Each person (MoDOT employee, consultant, or, in some cases, external partners) involved in development of the contract or in project scoring is asked to sign a Confidentiality and Non-Disclosure Agreement (Form 139.1.3). Keeping project information confidential throughout the procurement process is held as a critical value for every project team. Each person (except FHWA representatives) involved in the project procurement process shall sign a Confidentiality Agreement (Form 139.1.3). Discussions with anyone who has not signed the Confidentiality Agreement are not allowed. Each person (except FHWA representatives who are bound by 18 U.S.C 1905) that participates in scoring shall sign a Conflict of Interest Form (Form 139.8.1.5) for SOQs or a Conflict of Interest Form for Proposals (Form 139.8.2.5).

139.1.4 Be an Empowered Team

For design-build projects, some specific authority of the Chief Engineer is granted to the Project Director of each project. This authority establishes the Project Director as the project decision maker, creates trust with industry, expedites the decision making process throughout the contract and helps develop one team with the contractor. The authority gives the contractor confidence that when a decision is made by the Project Director, the decision is final.

With the delegation of authority, the confidence shown by executive management provides the project team with credibility with the proposers during the procurement phase of the project, and with the selected design-build contractor during implementation. In addition, when the proposers perceive that management has delegated authority to and has confidence in the project team members, there is no temptation to "go over the heads" of the team members to pressure management into making decisions that may conflict with the decisions of the project teams. The delegation of authority to the Project Director requires commission action. When the Project Director uses this authority, they should attach documentation of the commission action granting the authority, usually in the form of a memo from the Chief Engineer.

An example of the authority typically given to the Project Director is available.

For each project, staff from different functional units should be designated to participate on the project team. Typically, this team consists of traditional core team members, with each member having different areas of expertise, such as design, bridge, construction, right of way, utilities, geotechnical, traffic, customer relations and/or maintenance. Each core discipline applicable to the project should be included in the contract development process. In some cases, not all disciplines will be represented on the main project team. In this situation, the Project Director has the responsibility of conferring with subject matter experts, such as design, bridge, environmental, financial, maintenance, traffic, construction or Right of Way staff, to assist in the decision making process, as appropriate. Many

Project Director's find it helpful to meet regularly with representatives from all disciplines in the form of a core team meeting.

139.2 Project Selection

* EPG 149 Project Delivery ~~Method~~ Determination and Risk Assessment provides guidance for design-build project selection.

* Examples of the MHTC back-up documents and transfer of authority are available.

The first steps of any design-build (DB) project are selecting a project and selecting a Project Director. EPG 149 Project Delivery ~~Method~~ Determination and Initial Risk Assessment provides guidance for the Project Delivery Method Determination process, which includes goal setting strategies, constraint identification and risk analysis guidance. Upon selecting a project for DB, a Project Director is named by the district to be confirmed by the appropriate executive management. To obtain approval for both, the District Engineer shall contact the Design-Build Coordinator or State Design Engineer to discuss making arrangements for executive management to consider the project. If design-build is the concurred project delivery method, the MHTC will be consulted to approve the project for design-build and delegate certain approval and expenditure authorities to the Chief Engineer or the Chief Engineer's designee, typically the Project Director.

Once a project has received MHTC approval, basic information about the project should be placed on the Design-Build webpage, by the Project Director contacting the Design-Build Coordinator. The Project Director should also request up-to-date working contract documents, to use as a starting point for their contract.

139.2.1 Delegation of Authority

The Missouri Highways and Transportation Commission will formally delegate to the Chief Engineer position or his designee (The Project Director) to approve and execute documents and expend funds on their behalf for the following items, except that any change resulting in an expenditure of two percent over the project cost will be presented to the Commission.

- **Escrow of Bid Documents** – Approve authority to execute agreements, affidavits, and related documents and expend funds for costs associated with the escrow of bid documents on the project.
- **Agreements** – Approve authority to execute agreements with local governments including other entities for cost-share, enhancements, use of property, environmental mitigations, utilities, etc. on the project, subject to approval as to form by Chief Counsel's Office (CCO) and Commission Secretary (CS) attestation.
- **Railroad Agreements** – Approve authority to execute agreements pertaining to railroads, subject to approval as to form by CCO and CS attestation.

- **Construction Change Orders -** Approve authority to approve construction change orders on the project.
- **Consultant Engineering Services –** Approve authority to execute contracts for engineering services needed subject to approval as to form by CCO and CS attestation and in keeping with the Brooks Act, 40 USC 1101 et seq. and 23 CFR 172.5 as well as Section 8.285 RSMo. These consultant engineering services will be included in the monthly Commission Consultant Report.
- **Other –** Approve authority to expend funds for the project, as well as approve, execute, sign and seal project-specific documents. This includes payment of a Stipend to unsuccessful teams when approved by the Commission.
- **Design Exceptions –** Approve authority to sign design exceptions specific to the design of the project currently delegated to the District Engineer, State Design Engineer, and the State Bridge Engineer, subject to consultation with the department's technical experts per the Design Exception Process in MoDOT's Engineering Policy Guide.

139.3 The Project Team

The first tool is for the project director to create a small, five to ten member core management team to participate from development of the procurement documents, selection of the design-build contractor and oversight of the performance of the work on the project. The project team should represent a variety of engineering and other disciplines that are important to the project. If possible, the team should be located together and should meet at least weekly to manage the delivery of the project. The Project Team should provide adequate resourcing to deliver the procurement and the Project. Coordination with District Leadership and Central Office should occur to determine the appropriate resources for a Project. Acquiring the services of an owner consultant shall follow the process and procedures in EPG Section 134.

139.3.1 Confidentiality Agreements

Each person (MoDOT employee, owner consultant, or, in some cases, external partners) involved in development of the contract or in project scoring is asked to sign a Confidentiality and Non-Disclosure Agreement (Form 139.1.3). Each person (except FHWA or CCO representatives) involved in the project procurement process should sign a Confidentiality Agreement. Discussions regarding procurement decisions with anyone who has not signed the Confidentiality Agreement are not allowed. In some cases, Consultant Agreements can be used in place of individual Confidentiality and Non-Disclosure Agreements for individuals working for the Consultant. The Project Director is responsible for cataloging and keeping records of all

the individuals who have signed the Confidentiality Agreement. Electronic file keeping is encouraged.

139.3.2 Conflict of Interest

Careful consideration must be contemplated when assembling resources for a Design-Build Project. Resource managers are encouraged to work with MoDOT Chief Council's Office with any issues regarding Conflict of Interest.

Perceived conflicts of interest must be considered when evaluating whether an entity or person is (a) unable or potentially unable to render impartial assistance or advice to MoDOT, (b) is or might be otherwise impaired in its objectivity in performing the contract work, or (c) has an unfair competitive advantage. The following definitions shall be considered to differentiate this type of conflict from those considered "real", "actual", or "potential":

- **Real/Actual Conflict of Interest.** A situation where a person's or entity's official duties can be influenced.
- **Potential Conflict of Interest.** A situation where a person's or entity's official duties may be influenced in the future.
- **Perceived Conflict of Interest.** A situation where a person's or entity's official duties appear to be influenced.

Perceived conflicts of interest will be ***managed by avoidance of the situation***(s) that create the conflicts. A perceived conflict of interest cannot be neutralized.

Certain actions of Design-Build teams, individual entities of Design- Build teams (firms or persons), individual Consultants, Sub-consultants, or Sub-contractors (firms or persons) that may join Design-Build teams, will create perceived conflicts of interest that must be identified and managed by MoDOT staff. These actions include, but are not limited to, the following:

- Meetings, discussions, presentations, seminars, workshops, or any medium where design-build policy modification are directly suggested to MoDOT staff.
- Meetings, discussions, presentations, seminars, workshops, or any medium where design-build policy modification are suggested to MoDOT staff through examples of past practice or lessons learned.
- Meetings, discussions, presentations, seminars, workshops, or any medium where the content is intended to deliver design-build training information.

139.3.2.1 Guidelines for Evaluating Conflict of Interest

MoDOT follows the pertinent state and federal laws regarding Conflict of Interest. Nothing contained in this document is intended to limit, modify, or otherwise alter the applicability or effect of relevant (federal and state) law, rules, and regulations. All such laws, rules, and regulations shall apply in their normal manner irrespective of these guidelines.

MoDOT evaluates the following on a case-by-case basis

1. Whether or not a conflict of interest exists

2. Whether or not the conflict of interest can be avoided or neutralized

3. The appropriate steps to avoid or neutralize conflict of interest in evaluating the above, MoDOT uses the following in making such determinations.

- Section 105.452 RSMo and Section 105.454 RSMo. are general conflict of interest statutes applicable to all state officials and employees including MHTC members and MoDOT employees. These statutes prohibit actual conflicts of interest including, but not limited to:
  - favorably acting or refraining from acting on any matter or using decision making authority to obtain financial gain (§105.452(1), (4) and (5) RSMo.);
  - disclosing and/or using confidential information obtained in his/her official capacity in any matter with the intent to result in financial gain (§105.452(2) and (3) RSMo.);
  - performing any service for an agency in which he/she is an officer or employee or has supervisory authority for payment in excess of $500 per transaction or $5000 per year without competitive bidding (§105.454(1), (3) RSMo.); and
  - selling or leasing any property to an agency in which he/she is an officer or employee or has supervisory authority over for payment in excess of $500 per transaction or $5000 per year without competitive bidding (§105.454(2), (3) RSMo.). However, this provision does not apply to property that is condemned by the agency from its officer or employee (§105.466.3 RSMo.).
- The Federal Highway Administration (FHWA) addresses Conflicts of Interest in relation to federally funded highway projects in general at 23 CFR §1.33, DB projects under 23 CFR §636.116 and §636.117 , and the NEPA process as it relates to DB at 23 CFR §636.109(b) 6 & 7. MoDOT adopts these rules for use on all MoDOT DB contracts, whether federally funded or not.

The following situations are considered to result in Conflict of Interest that cannot be avoided or neutralized. These restrictions apply only to the circumstances described.

1. For DB projects, firms that act as the Owner Engineer (OE), or key staff employed by the OE or Major Consultant, will not be allowed to join a DB team which submits on a contract that is part of the project for which the person or firm acted in the capacity of a OE, Major Consultant, or key staff employed by the OE or Major Consultant.
2. For DB projects, a Consultant (person or firm) and/or Sub-consultant (person or firm) that assists MoDOT in preparing a RFQ, RFP, ITP, or selection criteria shall not participate in any capacity on a DB team related to the same contract.

139.3.2.2 Conflict of Interest Form

Each person (MoDOT employee, consultant, or, in some cases, external partners) involved in the evaluation of Statement of Qualifications or the evaluation of Proposals is asked to sign a Conflict of Interest Form. The person filling out the form shall not leave any section blank. Indication of "N/A" or "None" should be made if there is nothing to report. The Project Director is responsible for reviewing any Conflict of Interest with MoDOT's Design-Build Coordinator and Chief Council's Office. For any indication of a potential COI, documented reasoning and resolution shall be provided on the form by the Project Director, Design-Build Coordinator, or Chief Council representative. The Project Director is responsible for cataloging and keeping records of all the individuals who have signed the Conflict of Interest Forms. Electronic file keeping is encouraged.

139.4 Project Goals on Design-Build

Once a project is selected as design-build, the project team should finalize the goals determined via guidance in EPG 149 Project Delivery ~~Method~~ Determination and Initial Risk Assessment. The project team should then request approval of the goals by district and central office executive leadership. In order to effectively use project goals to guide the procurement process, the goals must be defined in order of importance. Prioritized goals provide a basis for project "trade-off" decisions during the development of design-build procurement documents and execution of the project contract. Whether the project team is determining short-list criteria, design-build contractor selection criteria, technical provision requirements or risk allocation, the prioritized project goals guide how one approach is selected over other viable options.

Examples of previous Design-Build project goals are available.

Prioritized goals are also useful as a public communication tool throughout the procurement process, as much of the design-build process is confidential in nature. The project goals convey to the public the end result they should see at project completion. Once the goals have been developed and approved, they can be made public, through a project website or other methods. Throughout the project, the goals should be clearly communicated to all project participants including all project personnel, industry public stakeholders.

139.4.1 Content of Project Goal-Setting

Project goals are standards that measure the success of a project. Most projects' goals are complex and therefor require objectives to be established to define how each is to be measured. Objectives are the methods by which the project goals are achieved.

Questions that should be considered when determining the goals for a project include:

1. Is this goal detailed enough to guide preparation of the Procurement Documents?
2. Is this a goal which, if met or exceeded, the public would perceive the project as successful?
3. Is this goal "end-minded"?
4. Is this goal realistic?
5. Is this goal measurable?
6. Is this goal clear?
7. Who is this goal intended to benefit?
8. Is this goal based upon an objective assessment of the needs of the community, MoDOT, etc.?
9. Are the goals established in order of importance?

Questions that should be considered when determining the objectives pertaining to each goal include:

1. Does this objective contribute toward achieving the goal?
2. Will meeting this objective assist in meeting the goal?
3. Is this an objective for the entire project or for a specific area of the project? If it is for a specific area of the project, what are the objectives for the remaining areas that will help achieve the goal?
4. Is this objective time-constrained?
5. Is it an interim or during construction objective?
6. Is this objective achievable?
7. Is this objective measurable?
8. Does the objective provide additional definition in support of the goal?

Once these questions have been addressed and the goals have been developed and approved by MoDOT executive management, the goals can be made public. Throughout the project development process, the goals should be clearly communicated to all project participants including all MoDOT project personnel, the design and construction industry and all project stakeholders.

Examples

The project goals listed below were developed for past projects. The goals are included as a reference for future goal setting efforts.

I-270 North Design-Build Project

1. Deliver the project by December 1, 2023 within the program budget of $225 million.
2. Maximize reliability and safety while linking communities for all users.
3. Provide a durable and maintainable transportation network making Interstate 270 the conduit for a prosperous region.
4. Grow and utilize a diverse workforce.
5. Minimize and mitigate impacts to customers through innovation.

Bootheel Bridge Bundle Design-Build Project

1. Deliver the project within the program budget of $25.2 million on or before December 31, 2023.
2. Use innovation to maximize the number of locations to be addressed while providing quality structures sensitive to location and traffic.
3. Minimize public inconvenience through increased construction speed and flexibility in scheduling.
4. Improve safety at each location.

US 169 Buck O'Neil Bridge Design-Build Project

1. Construct an innovative, low-maintenance Missouri River Bridge that will provide a century of service within the program budget of $247.5 million.
2. Provide a safe, connective and accessible transportation facility that improves regional and local system performance.
3. Manage the impact to the traveling public during construction.
4. Complete the project by December 1, 2024, utilizing a diverse workforce.

Safety Design-Build Project

1. Deliver the project within the budget of $24.11 million.
2. Reduce fatal and serious injury crashes by maximizing safety improvements.
3. Deliver all improvements with a reasonable service life and low maintenance cost.
4. Minimize impacts to the public during and after construction.
5. Complete construction on the project by October 1, 2019.

Route 141 Interchange Design-Build Project

1. Deliver the project within the program budget of $25 million.
2. Maximize mobility on Route 141 and improve efficiency at the I-44 interchange and Vance Road intersection.
3. Deliver the project in a manner which demonstrates the importance of safety.
4. Provide a quality product resulting in a long lasting transportation facility that minimizes future maintenance.
5. Deliver the project using a diverse workforce.
6. Complete project by July 15, 2018.

139.5 In-Depth Risk Assessment and Risk Allocation on Design-Build Projects

The design-build delivery method is unique in that it allows for risks to be assigned or transferred to the most appropriate party.

After developing project goals, the next step to successful design-build delivery ~~involves two exercises,~~is to progress the design and investigation into the project in order to perform an in-depth ~~-~~risk assessment and risk allocation. These exercises are the keys to maximizing the probability of achieving the desired outcome and meeting or exceeding the project goals. ~~Although the two terms are often used interchangeably, they are two distinct analyses used for different purposes on design-build projects.~~ Appropriate examples of investigation include: Request for Environmental Service findings for Conceptual or Preliminary Plan, Level B Utility Identification, Right of Way Information, Permitting requirements, understanding of Traffic Safety and Operation of the facility, and any other project related requirements.

Risk assessment for design-build projects involves an analysis of the risks involved on a project that likely would cause a design-build contractor to include cost or schedule contingencies in its proposal. The risk assessment should analyze which risks can be avoided or mitigated, prior to design-build contractor selection. As discussed in EPG 149 Project Delivery ~~Method~~ Determination and Initial Risk Assessment, risks will be evaluated to determine the significance of each risk, the effort required to alleviate or mitigate each risk and the probability of each risk. The project team should use the ~~high level~~high-level risk assessment developed during the Project Delivery ~~Method~~ Determination Process as a starting point, examining the project in greater detail.

After the in-depth risk assessment has been completed, an evaluation of the party who is in the best position to manage and control all remaining risks (or impacts of remaining risks) further determines the most effective allocation of risks between MoDOT and the design-build contractor to best achieve the project goals. Risk allocation is an allocation between MoDOT and the contractor of responsibility for risks that cannot be avoided. Risk should be allocated to the party best able to manage each risk. The allocations of risks will be set forth in the contract documents. Risk Allocation should be documented in a risk register. The allocation of risk shall be in accordance with best practices.

The desired result of a risk assessment/allocation effort is to use MoDOT resources to avoid or mitigate as much risk as possible prior to Design-Build contractor selection paying close attention to the high impact, high probability risks and to allocate the remaining risks to the party that will be most able to effectively manage the risk.

Examples of areas of risks that should be evaluated during a risk allocation include:

1. Environmental – Careful consideration should be taken to ensure NEPA is followed and the project is executed in accordance with clearances. Project permitting should be identified as part of the Risk Process. Some permits can be acquired with concept plans. For instance, MoDOT may be in the best position to obtain permits from the Army Corps of Engineers, however, the design-build contractor is the best party to obtain new permits or variances to existing environmental permits based upon the final design.
2. Right of Way – Understanding the existing Right of Way footprint and what potential needs there are to provide a buildable footprint should be considered. Also, while in

typical situations, MoDOT is the party best able to acquire permanent right of way, the design-build contractor is in the best position to determine the necessary temporary right of way for the project.

3. Utilities – Utilities are generally a shared risk item that need to clearly have location and relocation costs and responsibility known for a Design-Build Contract. MoDOT can utilize existing Master Utility Agreements in place with most Utility Company's and supplement with a project specific agreement when necessary.
4. Public Information – Public acceptance of potential alternatives that are developed in accordance with the Goals should be weighed during the risk assessment. While MoDOT may be the best position to identify and communicate daily coping messages to the public, the contractor is the best to notify MoDOT of upcoming work and public impacts.
5. Geotechnical – Items of work that are dependent on geotechnical considerations should be analyzed during the Risk Assessment process. It may be appropriate to provide preliminary geotechnical information to teams. Once MoDOT has determined the extent of an adequate geotechnical investigation, it is normally the Design-Build contractor who should assume the risk of deviations from the borings.
6. Method of Handling Traffic – Consideration for public acceptance of impacts to traffic should be considered in the Risk Assessment.
7. Drainage – Careful consideration should be taken to decide if existing hydraulic information should be provided to enhance the quality of proposals submitted.
8. Insurance – Consideration of level of insurance that are required for each project - traditional insurance, OCIP, CCIP, PCIP.
9. Maintenance During Construction - While the risk of maintenance during construction may be most appropriately allocated to the design-build contractor, the risk of extraordinary maintenance of the project during construction may be best allocated to MoDOT.
10. Noise Walls – Careful consideration of Noise Analysis and mitigation should be considered in the risk assessment. While MoDOT may be best positioned to communicate with the public regarding noise mitigation during the environmental process, the Design-Build contractor may the best party to determine where the noise mitigation is located based upon its final design.
11. Third Party Agreements and Permits (other than environmental): Are there local IGA's, railroad agreements, process agreements, standards agreements that need to be obtained?
12. Design: Are there variances or exceptions that will be required? Is an AJR required? Are there approvals or variances that need to obtained related to Structures?

~~**1.** Drainage – Who is best able to perform studies of off-site flows, hydrology, etc?~~
~~**2.** Environmental – MoDOT may be in the best position to obtain a Section 404 permit from the Army Corps of Engineers, however, the design-build contractor is the best party to obtain new permits or variances to existing environmental permits based upon its design.~~
~~**3.** Geotechnical – Once MoDOT has determined the extent of an adequate geotechnical investigation, it is normally the Design-Build contractor who should assume the risk of deviations from the borings.~~
~~**4.** Insurance – What type of insurance would be advantageous for each project - traditional insurance, OCIP, CCIP, PCIP?~~

~~**5.** Lighting Agreements – MoDOT may be able to reduce the Design-Build contractor's contingency by reaching an agreement with the power company utility owner related to temporary lighting.~~
~~**6.** Maintenance During Construction Example - While the risk of maintenance during construction may be most appropriately allocated to the design-build contractor, the risk of extraordinary maintenance of the project during construction may be best allocated to MoDOT.~~
~~**7.** Method of Handling Traffic – Are there agreements that MoDOT can enter into with local jurisdictions for alternate routes?~~
~~**8.** Noise Walls – While MoDOT is probably the best party to assume the risk of dealing with the public regarding many noise wall issues during the environmental process, the Design-Build contractor is the best party to determine where the noise walls are required based upon its final design.~~
~~**9.** Public Information – While MoDOT may be the best position to identify and communicate daily coping messages to the public, the contractor is the best to notify MoDOT of upcoming work and public impacts.~~
~~**10.** Right of Way – While in typical situations, MoDOT is the party best able to acquire permanent right of way, the design-build contractor is in the best position to determine the necessary temporary right of way for the project.~~
~~**11.** Utilities – MoDOT can avoid high utility contingencies by reaching a master utility agreement with utility owners that define a process for relocations caused by the project.~~

139.6 Policy Issues in Design-Build

MoDOT uses a white paper process to develop the proposed approach for significant design-build elements and to communicate that approach to all interested employees. The white papers are ultimately approved by executive management for incorporation into the Design-Build Request for Proposal (RFP). White papers can also be used to document innovative ideas or solutions implemented on a design-build project, which may be useful on traditional design-bid-build projects.

The White Paper Process

The purpose of the white paper process is to document a recommended approach to particular design-build concepts and to receive concurrence by management and approval by the Chief Engineer. New or revised design-build concepts should follow the approval process below.

Step 1. Design-Build concepts are developed and described in white paper format.
Step 2. The draft white paper is reviewed, discussed and finalized by the Design-Build Coordinator.
Step 3. The draft white paper will be submitted to and reviewed by various Division Directors/Engineers when the white paper affects their jurisdiction, and by the Chief Engineer. Draft white papers may be provided to other select stakeholders if needed. Comments received will be reviewed by the Design-Build Coordinator. If the Design-Build Coordinator deems the comments to be consistent with nationally recognized

design-build best practices, the comments will be incorporated into the draft white paper. If comments received during the stakeholder reviews differ from the original approach finalized by the design-build project team, both design-build concepts will be presented to the Chief Engineer for direction.
Step 4. The white paper is presented to the Chief Engineer for approval.

Approved white papers should be considered living documents to be updated on an as needed basis to reflect current policies on various design-build topics. The lessons learned identified during design-build projects need to be documented. Revised white papers shall be submitted to the Design-Build Coordinator for review and approval in order to ensure consideration during development of future design-build projects.

139.7 FHWA involvement on Design-Build Projects

MoDOT/FHWA Design-Build Program Agreement

Since the design-build process can be complex and involve time critical reviews and approvals, the MoDOT/FHWA Design-Build Program Agreement outlines the Missouri Division of FHWA's involvement on design-build projects. The purpose of the Design-Build Program Agreement is to ensure that MoDOT and FHWA have an understanding of the level of involvement, approval actions, roles, responsibilities and processes that FHWA will provide on Design-Build projects. The agreement addresses the design-build procurement process, the NEPA process as it relates to design-build, the Access Justification Report (AJR) process and other approval requirements during contract execution.

Document Review Procedures

FHWA will review procurement documents developed for each project, for conformance with federal requirements. Feedback resulting from these reviews will be provided to MoDOT within timeframes included in the MoDOT/FHWA Design-Build Program Agreement. The project team shall also coordinate with Central Office staff, including the Design-Build Coordinator, regarding procurement document reviews. Internal reviews should occur prior to FHWA reviews, but can be performed concurrently if needed. It is important to allow for adequate review time when developing the project procurement schedule. The project team may use the Review Comment Response Sheet (RCRS) Form (Form 139.8.1) to collect and respond to comments.

139.8 Design-Build Procurement Process

The first phase in a two-phase, design-build procurement process begins with short-listing the most highly qualified submitters based on qualifications submitted in response to a Request for

Qualifications (RFQ). The second phase consists of the submission technical proposals, and sometimes contract price, in response to a Request for Proposals (RFP).

> The Design-Build Process Checklist can be used as a guide through all the steps in the design-build process. A list of design-build acronyms can be helpful in learning the "language" of design-build.

Even before the procurement process begins, the MoDOT project teams shall not share information that will give any potential design-build team an advantage. Very little other than the project goals, schedule and budget can be shared publicly before the RFQ is released. Once the project goals are finalized and approved by the executive committee and the project budget set in STIP, this information and the procurement schedule can and should be shared publicly. Potential solutions will not be discussed publicly during the RFQ phase.

EPG 139 Design-Build focuses on the contents and concepts involved in a two-phase design-build procurement process, as that is the most likely approach to design-build procurement. However, the design-build rules and FHWA's design-build regulations allow for a one-step procurement process (Modified Design-Build) that is typically used for small, non-complex projects that includes a low bid selection process.

139.8.1 Request for Qualifications (Phase 1)

During the RFQ (Phase 1) process, the qualifications are established that will be evaluated to determine which of the submitters are the most highly qualified to perform the design-build project. These qualifications should reflect the goals of the project. The short-listing process for design-build procurement should not be confused with the pre-qualification process for contractors used for design-bid-build projects. Short-listing submitters for a design-build project identifies the most highly qualified potential design-build team where prequalifying contractors for design-bid-build projects identifies all contractors that are qualified to submits bids.

It is required by state statute to short-list no more than five and no fewer than two submitters.

139.8.1.1 Public Notice of Upcoming Design-Build Project

MoDOT is required by statute to give public notice, or advertise a Request for Qualifications in at least two public newspapers that are distributed wholly or in part in Missouri and at least one construction industry trade publication that is distributed nationally. Typically, advertisements are placed in large city newspapers (St. Louis and Kansas City), the local paper in the area of the project, and an engineering trade magazine~~, such as *Roads and Bridges*~~.. Consideration should also be given to advertising in minority newspaper publications, if one exists in the project area. The advertisement should also be emailed to the MoDOT consultant and contractor databases, as well as the DBE database.

Typically, the advertisement is placed approximately 30 days prior to the industry meeting. Advertisements are run for one day (or one week/month in the case of a weekly/monthly publication). Trade publications typically offer an online advertisement that is less expensive.

A sample project advertisement is available.

The project advertisement should also be placed on the project website, which should be accessible through MoDOT's Design-Build website as well as through the district and/or major project sites. The project website will be used throughout the RFQ (phase 1) process to communicate with potential submitters.

139.8.1.2 RFQ Process Purpose and Objectives

The purpose of the RFQ process is to develop a short list of two to five submitters identified as the most highly qualified, which will be allowed to participate in the RFP process. The RFQ is the opportunity to communicate to interested parties the specific qualifications/experience desired of submitters and to provide guidance on how the short list will be developed. The RFQ identifies and prioritizes the desired team traits that should be addressed by each submitter's Statement of Qualifications (SOQ). Furthermore, the RFQ details the specific qualifications and experience required of the proposed key personnel for each submitter, which is to be included in the SOQ. The RFQ may require the submitters to describe their past performance in areas such as safety, schedule, budget and community satisfaction.

The RFQ submittal requirements should focus on identifying the submitters that provide the best probability of achieving or exceeding the project's goals. In addition to the common items found in many RFQs such as a description of the project, the goals for the project, and the general procurement schedule, unique project interests and requirements tailored to desired project outcomes must be included. Therefore, the following items should be considered when developing RFQ requirements:

- The project goals.
- Is local design and construction experience important?
- Is design-build experience important?
- Are the qualifications and availability of key personnel important?
- Is the long term financial stability of the team important? Generally, this needs to be considered for very large projects.
- What management systems/philosophies are important, if any?
- What past performance measures need to be included, if any?
- What rating criteria will be used to determine the most highly qualified submitters?

It is important to develop short-listing criteria that establish a clear separation between the most highly qualified teams and all other submitters. Within the design-build industry it is generally understood that a short-listing process helps to identify, very early in the procurement process, a team (or teams) that is unlikely to be selected. This benefits those teams by preventing them from wasting their time and money competing for a project they are unlikely to be awarded. On the other hand, the short-listed teams gain a higher probability of being successful, so they are more likely to put the necessary resources into developing proposals. This typically results in higher quality teams, higher quality proposals (risk vs. reward) and a more efficient proposal review process.

It is important to minimize the duplication of information requested in both the RFQ and RFP. By doing so, the cost for each competing team is reduced and interest in the MoDOT design-build program is maintained.

139.8.1.3 Contents of the RFQ

Typically, the RFQ should include the following information:

1. Introductory Information. The RFQ includes a brief description of the project, the project goals, the estimated contract price (if known), and the completion deadline.
2. RFQ Process information. The RFQ includes a description of the procurement process, submitter requirements and the procurement schedule.
3. SOQ Contents and Evaluation Criteria. The RFQ details what information must be submitted by each submitter, including administrative elements, submitter experience information and key personnel and organization information. The heart of the RFQ is a description of the factors that will be evaluated to determine the most highly qualified submitters. Examples include the experience of the major participants in similar projects, the safety records of the major participants, and the experience and qualifications of proposed key personnel (which positions and minimum qualifications are defined in the RFQ). Examples of key personnel are Project Manager, Design Manager, Construction Manager and Quality Manager.
4. Submittal Requirements. The RFQ sets forth the format for the statements of qualifications and the requirements for submittals, i.e. due date and time, number of copies, etc. and the protest procedures.
5. Evaluation Process. The RFQ describes the method the statements of qualifications will be evaluated and scored.
6. General Information.
a. The RFQ defines design-build team major participants and states that the major participants and key personnel can only be changed by the submitters with prior approval.
b. The RFQ sets forth the anticipated stipend the short-listed teams will receive if they submit a responsive proposal in response to the RFP. No stipend is paid for submitting an SOQ.
c. The RFQ includes instructions for future communications between MoDOT and the potential DB teams. For participant confidence in the process, all communication by any potential participants after the RFQ is issued should be through the Project Director and only as allowed by the RFQ.
d. The RFQ shall address the process and deadline for any and all questions or requests for clarifications, as well as the process for issuance of addenda.
e. The RFQ includes requirements related to firms that are ineligible to participate on a submitter's team, and usually identifies firms that are working with MoDOT to prepare the procurement documents (RFP). Specifically:
i. The design-build rules provide that consultants and sub-consultants who assist the commission in the preparation of an RFP document will not be allowed to participate as an offeror (submitter) or join a team submitting a proposal in response to the RFP. However, the commission may determine that there is not conflict of interest for a consultant or subconsultant where:

Design-Build Rules: 7 CSR 10-24

1. The role of the consultant or sub-consultant was limited to provision of preliminary design, reports, or similar "low-level" documents that will be incorporated into the RFP, and did not include assistance in development of instructions to offerors or evaluation criteria, or
2. Where all documents and reports delivered to the commission by the consultant or sub-consultant are made available to all offerors.

ii. The rules further provide that all solicitations for design-build contracts, including related contracts for inspection, administration or auditing services, must direct the offeror to this section of the rules. In addition to MoDOT's rules, on projects involving federal funds, the federal regulations have similar provisions.

Federal Design-Build rules: 23 CFR Part 636 Subpart A.

f. The RFQ should state that documents submitted in response to the RFQ will be subject to the Missouri Public Records Act, and detail procedure for marking items confidential or proprietary.

g. The RFQ sets forth the Federal Equal Employment Opportunity (EEO) Policy and the DBE goal(s) for the project and identifies where the submitters may obtain copies of a directory of DBEs. In addition to setting an overall DBE goal, separate DBE goals may be set for design services and for construction.

i. The design DBE goals are based on the percentage of DBE design consultants that are available and qualified to perform a portion of the design on the project.

ii. The construction DBE goals would be based on the percentage of DBE subcontractors that are available and qualified to perform a portion of the construction work on the project. The methodology of setting each goal should be the same that is used for design-bid-build projects, and should be requested through the Division of External Civil Rights.

h. The RFQ may also include requirements regarding the submitter's legal structure, bonding capacity and additional financial requirements, if any. On most projects, assurance of required bonding capacity of the submitters is adequate to show financial capability. Design-Build contracts may be for larger amounts of money and in such cases, companies must have the ability to bond that amount. In the case of The New I-64, the design-build contractor teams were required to have bonding capacity of more than $400 million. The I-64 teams included national design-build companies and prime contractor and design firms from St. Louis. In this instance all of these companies made up the prime contracting team.

Forms should be provided for most of the information requested of the submitters, as follows:

A sample RFQ

i. Major Participant Information Form.
ii. Reference Project Summary Form.
iii. Resume Summary Form.
iv. Receipt of Addenda Form.
v. Statement of Existence of Organization Conflicts Form.

139.8.1.4 Industry Meeting

A sample agenda for this meeting is available

A key defining name tag colors

A blank sign-in sheet for this meeting

For most design-build projects an industry meeting is conducted, typically scheduled immediately before or after the RFQ release. The industry meeting is used to introduce the project to the design and construction industries and announce the procurement schedule for the project. Typically, the industry meeting includes an introduction of the MoDOT project team, a presentation related to the project and the RFQ and an opportunity for questions and answers. The remaining time is dedicated to an industry mixer, where prime contractors, subcontractors and professional services companies, identified by name tags, can network and have the opportunity to establish connections for the benefit of the project. Previous mixers have led to the development of submitting teams and can be very beneficial to meeting all of the project goals. To allow for further communication between consultants, sub-contractors and DBEs, the sign-in sheet is typically made public immediately following the industry meeting, by posting to the project website.

139.8.1.5 Scoring of Statements of Qualification

139.8.1.5.1 SOQ Evaluation Procedures

A confidential SOQ Evaluation Procedures document is created for each design-build project. The document includes, at a minimum, specifics related to maintaining confidentiality of the SOQs, scoring team organization and roles, scoring procedures and evaluation criteria, including compliance reviews.

139.8.1.5.2 Scoring Teams

Scoring teams are composed of appropriate staff representative of the applicable areas of expertise associated with the proposals. The Project Director works with the MoDOT project team to determine the scoring team members, which may include personnel outside of the immediate project team, and establish a scoring chairperson. Each member of the scoring team shall sign the Confidentiality Agreement (Form 139.1.3) and Conflict of Interest Form for SOQs (Form 139.8.1.5). After scoring is complete, the scoring chairperson(s) will document the scoring process and outcome in a memo (the [Final Recommendation Report]), which summarizes each team's strengths and weakness and states the recommended short-list, to the Project Director.

139.8.1.5.3 Draft Short List Development

The short-list is restricted to no more than 5 teams and a minimum of 2; therefore, short-list selection should be intentionally crafted to differentiate between submitting teams. Appropriate rating criteria will be used to determine a maximum of five most highly qualified teams and/or demonstrate a significant separation between the most highly qualified and those meeting qualifications. An example of SOQ rating criteria used on past projects is provided below. If

there is no clear numerical separation between teams, the Project Director and Executive Selection Committee (refer to EPG 139.8.1.6 Short List Approval) may, at their discretion, choose to further examine the submitting teams by requesting additional information from the teams or conducting interviews.

Score	Description
Green, Exceptional +/-, or 85-100%	The submitter has demonstrated an approach that is considered to significantly exceed stated requirements/objectives and provides a consistently outstanding level of quality. There is very little or no risk that the submitter would fail to meet the project goals. There are essentially no weaknesses.
Yellow, Good +/-, or 60-84%	The submitter has demonstrated an approach that is considered to exceed stated requirements/objectives and offers a generally better than acceptable quality. There is little risk that the submitter would fail to meet the project goals. Weaknesses, if any, are minor.
Orange, Acceptable +/-, or 20-59%	The submitter has demonstrated an approach that is considered to meet the stated requirements/objectives and has an acceptable level of quality. The submitter demonstrates a reasonable probability of meeting the project goals. Weaknesses are minor.
Red, Unacceptable, or 0-19%	The submitter has demonstrated an approach that is considered to fail to meet the stated requirements/objectives and/or provides unacceptable quality and/or demonstrates no reasonable likelihood of meeting the project goals and/or contains weaknesses that are major.

For the purposes of evaluating SOQs, a strength represents a part of the SOQ that ultimately represents a benefit to the project and is expected to increase the Submitter's ability to meet or exceed the project goals.

- Significant strength has a considerable positive influence on the submitter's ability to meet or exceed the project goals.
- Minor strength has a slight positive influence on the submitter's ability to meet or exceed the project goals.

For the purposes of evaluating SOQs, a weakness represents a part of the SOQ that detracts from the submitter's ability to meet the project goals or may result in inefficient or ineffective performance.

- Significant weakness has a considerable negative influence on the submitter's ability to meet the project goals.
- Minor weakness has a slight negative influence on the submitter's ability to meet the project goals.

139.8.1.6 Short List Approval

According to 7 CSR 10-24.030, all responses to the Request for Qualifications will be evaluated by a prequalification review/short listing team, known as the Executive Selection Committee. The Executive Selection Committee will be comprised of the following MoDOT staff or their designated representative: Chief Engineer, Chief Financial ~~and Administrative~~ Officer ~~(Chief Financial Officer)~~, ~~Controller (~~Financial Services Director~~)~~, ~~Director of Program Delivery (~~Assistant Chief Engineer~~)~~, one or more District Engineer(s), Project Director for Project, State Construction and Materials Engineer, State Bridge Engineer and the State Design Engineer. Federal Highway Administration (FHWA), acting as an external partner will be an observer to the prequalification/short listing process.

After scoring in accordance with the SOQ Evaluation Procedures document, the Project Director will meet with the Executive Selection Committee to present details of all SOQs received, as well as the ratings each team received. The Executive Selection Committee report ~~should~~ shall include, at a minimum:

- Confidentiality forms (Form 139.1.3)
- Conflict of Interest forms (Form 139.8.1.5)
- ~~Copy of presentation~~
- Final Recommendation Report
- Scoring sheets or a summary of scoring sheets
- Submitter organization charts
- Project RFQ
- Project SOQ Scoring Procedures
- ~~Blank~~ Short-list Recommendation Approval for Chief Engineer's signature
- ~~Copy of the Missouri Design-Build Statute and MoDOT Design-Build Rules~~
- Minutes from the Executive Selection Committee Meeting including members present and action taken.

A representative from the Chief Counsel's Office should attend this meeting to advise staff on any legal matters. Following the presentation, the Executive Selection Committee will move to approve the short list.

Once the short list is approved, all submitting teams should be notified whether or not they were short-listed. Once the teams have been notified, the short list is announced publicly, through a press release and/or posting on the project website. After the short list is announced, the project team may elect to offer debrief meetings with all submitting teams, including those that were not short-listed to provide feedback on their SOQs.

139.8.2 Request for Proposals

The I-64 reconstruction project in St. Louis was selected as the 2010 America's Transportation Awards Grand Prize Winner by the American Association of State Highway and Transportation Officials (AASHTO), AAA and the U.S. Chamber of Commerce.

Once the risk assessment and risk allocation processes have been completed by the project team, or are far enough along to provide adequate guidance, the Request for Proposal (RFP), or Phase 2, documents can be developed. An RFP defines the legal, technical and selection requirements for the project. It should be noted that development of the RFP must occur concurrently with the RFQ and short listing process in order to be meet the requirements for RFP release stated in the RFQ.

139.8.2.1 Purpose and Objective of the RFP Process

There are three main objectives of the Request for Proposals process. First, the RFP provides clear, concise and flexible technical requirements that will promote a quality project and will become the contract documents. Second, the RFP provides contract terms that fairly allocate risk between MoDOT and the contractor. Last, the RFP details the contractor selection criteria that

are designed to achieve or exceed the project goals. Throughout the design-build process, it is important to use the philosophy, “write what you mean, say what you mean, do what you say/write.” The result is an RFP that clearly describes and defines the “must have” requirements for the project while allowing the maximum amount of flexibility for the proposers.

To maintain flexibility in the RFP, project teams should define ONLY minimum requirements that are absolutely necessary for each technical discipline. This allows each proposer to submit FHWA approved standards, specifications, designs and approaches that have been used on other projects. The proposed approaches should be approved unless there is a reason that the approach cannot apply in Missouri or in the specific project’s situation.

139.8.2.2 Request for Proposals Process (Phase 2)

Shortly after the short list developed in Phase 1 (the RFQ process) is announced for a project, the RFP is released. Other than forms, RFQ and RFP documents should be released in pdf format. In order to maintain confidence in the process and to meet our obligations, it is critical to release the RFP on or before the date committed to in RFQ.

The RFP is typically released via an external SharePoint site, which set up specifically for the project. The Project Director should contact the Design-Build Coordinator or the IS department to get the site set up. The site will contain a “MoDOT” folder, where MoDOT can post information for all teams to see, as well as individual team folder for each short-listed team. Only the individual team and MoDOT can see each respective individual team folder. Once the SharePoint site is set up, each short-listed team shall be granted access to the MoDOT folder and their respective individual team folder. The SharePoint site will be used throughout the RFP (Phase 2) process to communicate with proposers, send and receive documents and to receive the proposals.

139.8.2.2.1 Optional Draft RFP

In some cases, the project team may choose to release a draft RFP in advance of the RFP release. This is known as an “industry review” and would typically be used only on very large projects or on projects using new and different procurement strategies or atypical risk assignments. The purpose of the industry review is to give the design-build industry the opportunity to voice questions or concerns in a confidential setting. Through the process, issues or unclear provisions in the draft RFP can be clarified or revised based on the feedback of the proposers. The allocations of specific risks can also be revised if the proposers provide feedback that a different allocation is more beneficial to both parties. The fact that the industry review process is a confidential process allows each proposer to candidly discuss the contents of the draft RFP without fear that their questions will be communicated to other proposers and minimizes the potential to “give away” its proposal strategies. After the draft RFP process, a “final” RFP will be issued. If a draft RFP process is pursued, the specifics and appropriate timeline should be reflected in the procurement schedule defined in the RFQ.

139.8.2.2.2 Confidential Meetings

Once the final RFP is issued, the project team will conduct one-on-one confidential meetings with each of the shortlisted design-build proposers to allow them to submit their proposed scope ideas and proposed standards and designs that have been approved on other projects. This process allows the proposers to submit alternative approaches and creative solutions for approval. The project team should provide the proposers feedback on what it values according to the project goals related to the proposals without leading the proposers to technical approaches they may prefer. The discussions with individual proposers are confidential so that proposers will be encouraged to propose innovative, cost-effective solutions.

Sample Kick-Off Meeting Agenda

MoDOT should host a separate kick-off meeting with each short-listed team to discuss the RFP bidding process, special RFP requirements and other pertinent information. A sample kick-off meeting agenda is available. Typically, the subsequent meetings are held at the Proposers place of business (in the same region as the project) and will be limited to a specified number of hours and times per week, usually once per week or once every-other week. The proposers establish the agendas for the meetings. The agendas for the meetings are provided to the project team at least two business days prior to each meeting so key discipline leads may attend.

The proposers may present technical solutions during the meetings. If the proposer desires, a preview of the technical concepts can be accommodated in advance of the meetings by posting the information to a secure project SharePoint site. The project team will provide verbal feedback to the Proposers on whether the proposed technical solutions achieve or exceed the project goals and meet the requirements of the RFP. Additionally, potential improvements such as Project definition changes, moving focus from one technical area to another and changes within a technical area may be identified and discussed. It is very important, however, that the playing field be kept equal for all potential bidding teams. The project team will not provide solutions to the proposers. The project team will provide consistent answers to questions in each confidential meeting to keep a level playing field.

139.8.2.2.3 Requests for Clarification

During the meetings, proposers may request clarifications to the RFP. It is important that proposers understand throughout this process that critical issues identified may require an RFP addenda, which once identified, is shared with all short listed teams and that the project team reserves the right to do so at the start of the process. The proposers may request clarifications to the RFP informally during the confidential meetings, or formally in writing. The project team may provide responses to informal requests verbally during the confidential meetings or may request that the request for clarification be submitted formally. Formal requests must be submitted on Requests for Clarification (RFC) (Form 139.8.2.2(a)). The project team will determine if its responses need to be provided to all teams, on the master RFC form or to just the requesting team. Prior to responding to all teams using the master RFC Form, the specific proposer making the request will be informed of the determination that the master RFC is required and will be provided the opportunity to withdraw the question. However, the project team must reserve the right to issue RFP addenda if an issue is raised that must be corrected. Responses to formal requests will be posted on the project's SharePoint site.

139.8.2.2.4 Additional Applicable Standards (AAS) and Design Exceptions

AASs and Design Exceptions shall be submitted by each proposer using forms provided in the RFP. AASs should be submitted using Form 139.8.2.2(b). Design exceptions must be documented on the Design Exceptions Form (Form 139.8.2.2(c)) and detailed on the Design Exception Information Form (Form 139.8.2.2 (d)). Proposers shall be responsible for submitting enough information about the AAS or DE so that it can be adequately evaluated. The project team should encourage submittals of AASs and DEs early in the technical discussions. The project team will provide feedback regarding the acceptability of the AASs and design exceptions either verbally during the meetings or in writing (via e-mail or the secure SharePoint site). The project team will also consult with FHWA to obtain concurrence or approval, as described in the FHWA Design-Build Program Agreement.

139.8.2.2.5 Environmental Commitments and Access Justification Reports

For some projects environmental commitments have been made prior to the RFP. In these instances it is important to document environmental commitments, and evaluate any proposed changes to the commitments. In these cases, the project team will provide a list of environmental commitments in a spreadsheet. In accordance with the RFP, a NEPA re-evaluation or revision may be required, depending on the content of each Proposal. As described in the FHWA Design-Build Program Agreement, to prepare for any potential revision, each proposer may be asked to use the Environmental Commitments Form (Form 139.8.2.2(e)) to request any commitment revisions. This form may not be necessary for all projects.

For some interstate projects, an Access Justification Report may be required. As described in the FHWA Design-Build Program Agreement, to prepare for a potential AJR revision, a proposer may be asked to submit a draft AJR revision, in advance of their proposal submittal to obtain concurrence from FHWA.

139.8.2.2.6 RFP Addenda

The RFP should be continually reviewed as it is developed and throughout the RFP process, during the industry review process, if used, after the RFP has been finalized, and during the confidential one-on-one meetings. Once the RFP is issued, the project team will issue addenda as necessary, which will be incorporated into the final contract between MoDOT and the design-build contractor. The purpose of the addenda process is to supplement and make corrections to the RFP. In the typical case when no draft RFP is issued, the addenda process can be used to clarify risk allocations or make certain contract provisions more clear. However, major changes to the RFP requirements should be avoided, especially late in the process.

Issued addenda should include a cover sheet and clearly identify each document change in the document(s) using tracked changes. A sample addenda cover sheet and issued addenda are available.

Sample Addenda Cover Sheet and Issued Addenda.

139.8.2.3 RFP Documents

The RFP consists of the following documents:

- Book 1 – Contract language
- Book 2 – Performance requirements
- Book 3 – Applicable standards
- Book 4 – Contract drawings, documents and reports
- Book 5 – Informational (or reference) documents
- Instructions to Proposers (ITP)

Normally, Books 3, 4 and 5 simply include an index of referenced documents. However, if these referenced documents are not generally available, MoDOT should place them on the project SharePoint site or make copies of each and provide them to the short-listed proposers.

Books 1-4 and the accepted proposal are combined to create the official contract, once the project is awarded and the final negotiations process is complete. Book 5 is for information only and not contractual.

A sample RFP is available.

Boilerplate documents are available through the Statewide Design-Build Coordinator and can be found on MoDOT Design Division's internal SharePoint Site.

139.8.2.3.1 Book 1

The purpose of Book 1 (also referred to as the "contract") is to define the legal parameters of the design-build contract and to provide for flexibility for the design-build contractor. The requirements for payment, change orders, project acceptance and dispute resolution are included here. This book designates the areas where, after award of the contract, the design-build contractor has the flexibility to propose cost-savings changes to the contract requirements that are equal to or better than the technical requirements. Additionally, this book distinguishes the specific areas where cost savings proposals are treated as value engineering proposals. Book 1 is fairly standard and does not typically change much from project to project, except for insurance amounts, mobilization payments, liquidated damages, escrow requirements or other project specific values.

A critical exhibit to Book 1 is the definitions exhibit, applicable to all of the RFP documents. Many definitions in the RFP are unique to the Design-Build process and have been changed from the traditional design-bid-build definitions to conform to the risk allocation decisions that have been made for the project. In order to understand the technical requirements of the RFP, it is necessary to understand the applicable definitions.

Examples of areas included in Book 1 ~~include~~:

1. A description of the contract documents and how they are to be interpreted, e.g., order of precedence of the books included in the contract documents, federal requirements, project deadlines, and definitions applicable to all of the RFP documents.

2. A description of the legal obligations of the design-build contractor, including performance of all of the work in accordance with the RFP requirements and responsibility for final design.
3. Information supplied to the Design-Build contractor and the legal significance of the information.
4. Requirements for notice to proceed (NTP), scheduling and project completion. A provision that is unique to the design-build process is issuance of a notice-to proceed that allows the Design-Build contractor to begin construction of the project only after submitting a cost-loaded schedule that is necessary for MoDOT to make monthly progress payments to the design-build contractor as the work progresses. Another unique provision is that there are two NTPs on design-build. The first NTP releases the contractor to begin design. The second NTP releases the contractor to begin construction.
5. Change order procedures, including right of way and utility work that are added or deleted from the scope of the design-build contractor's work in the RFP. Design-Build RFPs include the traditional value engineering change proposal provisions, however, a unique concept that has been developed to give the design-build contractors flexibility is the "Equal or Better" process, which allows the design-build contractor to propose innovative, cost-saving solutions in lieu of the RFP requirements. As long as these proposed solutions are equal to or better than the requirements of the RFP, the design-build contractor realizes the cost savings from using the alternatives.
6. DBE, EEO, subcontractor, labor requirements and key personnel requirements. The DBE requirements are modified for the design-build process, since the Design-Build contractor does not have the final design when it submits its proposal and therefore it cannot name all of its DBEs at the time of the proposal. The key personnel concept allows certain key personnel positions to be defined. Once identified by the Design-Build contractor, the contractor must obtain approval before replacing personnel in a key personnel position.
7. Surety bond, insurance, maintenance responsibilities, suspension, termination, default, damages and indemnification provisions.
8. Partnering and dispute resolution provisions.
9. Miscellaneous legal requirements, including provisions related to acceptance, warranties, document requirements, and cooperation and coordination with others.
10. The process for distributing the stipend to unsuccessful but responsive proposers. The stipend payment transfers ownership of ideas and intellectual property of both the successful and qualifying unsuccessful proposers. As described in the design-build rules, the stipend amount determination may consider: (A) Project scope; (B) Substantial opportunity for innovation; (C) The cost of submitting a proposal; (D) Encouragement of competition; (E) Compensate unsuccessful proposers for a portion of their costs (usually one-third to one-half (1/3 to 1/2) of the estimated proposal development cost); and (F) Ensure that smaller companies are not put at a competitive disadvantage.

139.8.2.3.2 Book 2

Book 2 provides the project specific technical requirements of the RFP. The purpose of the technical requirements is to define the "box" that the design-build contractor needs to stay within in designing and building the project. To invite innovation, the technical requirements should be

as flexible as possible to maximize the proposer's ability to meet or exceed the project goals. However, if there are specific items that are absolutely required as part of the project, those should be specifically identified. Book 2 can also include items not typically found in any state specifications but could be considered special provisions to a particular project, such as environmental requirements, third party agreement requirements or public information requirements.

In preparing the technical requirements, standard operating requirements and procedures may be modified, where appropriate, to better fit the flexible design-build process and conform to the risk allocation decisions applicable to the project. Requirements detailed in third party agreements shall be negotiated with the third party as required to further define the minimum applicable requirements. Although difficult, an objective of Book 2 is to balance defining the minimum acceptable requirements applicable to the project while providing the design-build contractor with the maximum flexibility possible.

This book outlines deliverables, the timing of them, and whether items are for approval or not.

The general technical areas that are addressed in Book 2 include:

1. Basic Configuration. The basic configuration provides the overview of the final product, or what the project will achieve when it is completed. It is a concept of the "envelope" of right of way and physical requirements that the design-build contractor will have to design and construct the project. The basic configuration is usually based upon the design in the environmental documents prepared for FHWA approval of the project. However, if no design of this nature exists or if the environmental document design does not adequately define the "envelope", the basic configuration may be based upon design work performed specifically for this purpose. MoDOT typically uses broadly defined basic configuration definitions to promote design flexibility, and does not include preliminary design requirements.

The purpose of the Basic Configuration definition is to define the degree of design flexibility provided to the design-build contractor and the degree to which the design–build contractor can rely upon the owner-supplied preliminary design included in the Request for Proposals (RFP).

In order to provide the design-builder with the most design flexibility, any owner-supplied preliminary design work should be provided for "information only". By doing this, the design-build contractor is not required to follow the preliminary design but, in return, cannot rely upon the preliminary design documents included in the RFP. Since there usually are key project components that are identified in the preliminary design that form the foundation of a project's scope, the MoDOT project team could choose to include those key project components in a basic configuration definition and thereby make the referenced components contract requirements.

The basic configuration concept serves the following purposes:

a. It allows the MoDOT project team to define the minimum requirements or "must have" project components.

b. It defines the basic elements of the project from which the Design-Build contractor may not deviate without an Project Director approved change order.

c. It defines which elements of the preliminary design, if any, are contract requirements.
d. It allows the MoDOT project team to define the degree of flexibility provided to the design-build contractor in its design of major project elements, usually referred to as the "design window".
e. It allows the Design-Build contractor to incorporate changes to the provided preliminary design within the defined "design window" which establishes design flexibility.
f. It gives the Design-Build contractor the flexibility to optimize their proposed design.
The contract documents contain provisions restricting the design-build contractor from making changes to the basic configuration without owner approval. Additionally, provisions address that if the basic configuration is not constructible, the owner will pay the design-build contractor's costs of correcting or addressing the problem. Therefore, the more defined the basic configuration, the more risk MoDOT assumes.

Examples of Basic Configuration definitions on MoDOT design-build Projects are available.

The Basic Configuration definition usually includes a general description of the project termini, right of way limits, the general types and locations of interchanges and the numbers of lanes and lane widths. MoDOT's approach is to limit the basic configuration definition to the minimum requirements that are absolutely necessary for the project, e.g., right of way limitations based on intergovernmental agreements.

2. Project Management. The project management performance requirements include the invoicing, scheduling and co-location requirements necessary to manage the project.

3. Quality Management. Defines the quality management performance requirements for the project, including required Quality Manual information, materials management and quality oversight.

4. Public Information. The public information performance requirements may define the responsibilities for the design-build contractor in regards to certain communication efforts, including the timelines for requests for information and emergency situations.

5. Environmental Requirements. This section defines the minimum environmental performance requirements for the project, typically outlined from the approved project environmental documents.

6. Third Party Agreements. This section includes a summary of third party agreements and related minimum performance requirements including finalized and future agreements.

7. Utility Relocations. Since the final design is not known at the time of the proposal, a master utility agreement that defines the processes that the utility owner, MoDOT and the design-build contractor will follow is typically required. This section includes performance requirements regarding utility tracking reporting and the work order process.

8. Right of Way. This section communicates performance requirements regarding right of way, including rules and risk allocations for additional acquisitions, if needed.

9. Survey. Provides survey control and datum performance requirements and other survey performance requirements.

10. Geotechnical and Earthwork. This section details the geotechnical report and assigns risk regarding provided geotechnical borings.
11. Signing, Pavement Marking and Lighting. This section provides minimum performance requirements for signing, pavement markings and lighting.
12. Drainage. This section provides minimum performance requirements for drainage.
13. Roadways and Pavements. This section provides minimum performance requirements for roadways and pavements, including AJR, local road, driveway and bicycle and pedestrian requirements.
14. Signals and Intelligent Transportation Systems (Traffic Management Systems). This section provides minimum performance requirements for traffic management systems.
15. Structures. This section provides minimum performance requirements for structures.
16. Maintenance of Traffic. This section provides minimum performance requirements for the maintenance of traffic plan, traffic control plans and detours.
17. Maintenance during Construction. This section provides minimum performance requirements for maintenance during construction and assigns risk for project maintenance during the design-build contract.
18. Optional sections. Project specific topics such as performance requirements for landscaping, aesthetics or safety can be included in this section.
19. Modifications to Standard Specifications and Special Provisions. While most of the standard specifications and special provisions are applicable to Design-Build projects, some of them must be modified in some manner to reflect the design-build process. As an example, the price adjustments for nonconforming but acceptable work are applicable to design-build projects, but design-build projects have no unit prices that are contemplated in the standard specifications. Therefore, if price adjustments are used for the project, the specification or special provision should be modified for the design-build process.

139.8.2.3.3 Book 3

Book 3 includes the applicable standards. In addition to the applicable standards, which include industry standards such as AASHTO and FHWA manuals and standards, the proposers can propose alternate FHWA approved standards, specifications and requirements. Additionally, the proposers has the option of using MoDOT's standards, specifications and requirements as a baseline and proposing alternative standards for specific portions of the project. The additional or alternate standards ultimately approved are referred to as "Additional Applicable Standards (AASs)."

Book 3 documents provide the design-build contractor the requirements that cannot be modified except through a value engineering and/or design exception process. As such, the risk of changes to Book 3 documents rest upon the design-build contractor. If standards or specifications in Book 3 are amended after the proposals have been submitted at MoDOT's request, MoDOT assumes the risk associated with these changes.

Book 3 documents include the federal standards and requirements applicable to all projects and the contractor's proposed standards, requirements and specifications. For example, AASHTO standards, ANSI standards, FHWA guidelines and MoDOT or other DOT and FHWA applicable

design standards are included in Book 3. Even with the flexible design-build model, design-build contractor teams still have to meet quality & safety laws and requirements (federal and state). Since design manuals have been written as internal, guidance documents they must be reviewed to ensure that their provisions are enforceable, either by incorporating enforceable requirements in Book 2 or by making revisions to the manuals in Book 3.

139.8.2.3.4 Book 4

The purpose of Book 4 is to provide the design-build contractor with the data, reports and studies for which MoDOT guarantees the accuracy and assumes the risk for any necessary changes. Book 4 documents typically include the project right of way plans and any requirements from which the Design-Build contractor cannot deviate, such as architectural requirements that are applicable to the project's corridor. Specific sections of Book 2 are used to clarify the risk assignment of documents in Book 4.

Some examples of Book 4 documents include third party agreements (those between MoDOT and an entity other than the design-build contractor) that the design-build contractor will be required to comply with, permits obtained for the project, and applicable NEPA environmental documents. Book 4 may also include geotechnical or hydrological data, studies and reports, if the project team decides during the risk assessment/risk allocation process that the accuracy can be guaranteed. The most important analysis to perform is a determination of which of the documents it will accept the risk of accuracy (Book 4, contract drawings, data and reports) and which will be provided to the Design-Build contractor for information only (as reference documents in Book 5).

139.8.2.3.5 Book 5 (For Information Only)

The fifth group of documents in the RFP process is "reference documents", which are informational only. The sole purpose of the reference documents is to provide the proposers with as much information as possible without guaranteeing the accuracy of the documents.

Reference documents might include any preliminary reports or design documents that have been prepared for the project that are not included in any other book. The reference documents are provided to the design-build contractor for information only, and the contractor is not entitled to a change order for any errors or omissions in them.

139.8.2.3.6 Instructions to Proposers (ITP)

The purpose of the ITP is to define the expectations for the form and contents of the proposals and to describe the criteria that will be used for scoring. Specifying the format of the proposals ensures that the proposals will be uniform and easily comparable. Additionally, a uniform and consistent format focuses the proposers on the substantive contents of their proposals.

The ITP provides instructions on the required form and content of the proposals, as well as how to propose alternatives to the project scope and standards, specifications and requirements

detailed in the proposal. Additionally, the ITP includes a description of the criteria that will be used to evaluate the proposals and the formula or methods used to score them.

The prioritized evaluation criteria provides insight to proposers on how to best meet the project goals. With well-defined scoring criteria, it should be evident how the scoring criteria relates to the project goals. The inclusion of this evaluation criteria is required by MoDOT statute and rules.

139.8.2.3.6.1 Contractor Selection Criteria

Examples of scoring criteria used on design-build Projects are available.

139.8.2.3.6.1.1 Purpose and Objective of the Selection Criteria

The selection criteria define not only how the proposals are going to be evaluated, but provide insight to the proposers about the relative importance of the various elements of the project and project goals. The primary objectives in developing the selection criteria is to demonstrate what requirements are most important, and to determine what criteria will help identify the best value proposal. The selection criteria are provided in the ITP in order to assist the proposers in tailoring their proposals to best meet the project goals. Additionally, the ITP identifies the rules for the proposal process, such as how clarifications will be addressed, what communication will be allowed, what conflict of interest rules are applicable, and what laws and procedural requirements are applicable.

139.8.2.3.6.1.2 Selection Criteria Process Options

Pursuant to the design-build rules, the selection criteria options on a standard Design-Build selection include: lowest price, adjusted low-bid; meets criteria/low bid; weighted criteria process; fixed price/best design or “build to budget”; and best value.

1. The “lowest price, adjusted low-bid” procedure is a process where the price of each proposal is divided by the respective proposal's qualitative criteria score, and the lowest adjusted price is selected.
2. The “meets criteria/low bid” procedure is a process where proposals must meet or exceed the criteria set forth in the RFP to be eligible and of the eligible proposals, the lowest priced proposal is selected.
3. The “weighted criteria” process is a form of best value selection where maximum point values are pre-established for both qualitative and price criteria, and the award is made to the proposal with the highest point score.
4. The “build to budget” selection is a form of the best value selection where the contract price is fixed, the qualitative criteria is set forth in the RFP, and the proposal that best meets or exceeds the qualitative criteria is selected.
5. The best value selection is determined based on which proposal best meets a combination of price and qualitative criteria.

The criteria that will be used to evaluate the "best value" for MoDOT on all of the above five processes are set forth in the Instructions to Proposers (ITP), which is issued simultaneously with the RFP. Pursuant to the design-build rules, the ITP will clearly specify all factors and significant sub-factors and their relative importance that will be used to select the proposal that provides the best value. The factors and sub factors should reflect the goals of the project.

139.8.2.3.6.1.3 Selection Criteria Process Method Selection

The ITP will indicate the method that will be used to evaluate the selection criteria. The selection criteria should be focused on the identifying the proposal that best meets or exceeds the project's goals. There are a number of common items found in many ITPs such as a description of the project, the RFP documents, the estimated cost of the project, the procurement schedule, the goals for the project, and the general procurement process, including the industry review procedure (if used). The selection criteria for each project should be unique and tailored to the desired outcome. While most of the following example issues are important, when developing the selection criteria, MoDOT will need to rank these and other project-specific criteria to determine which selection criteria process will best meet the project goals.

- What are the project goals?
- Are there public involvement needs with the project?
- How critical is inconvenience to the public important?
- Would the project benefit from local design and construction experience?
- How critical is a contractor's design-build experience?
- Are there environmental compliance needs?
- How critical is the budget?
- Would the project benefit from contractor partnering?
- How critical is the schedule?
- Is the contractor's approach to quality management important?
- Would the project benefit by providing additional flexibility to the contractor?
- Are there critical management systems/philosophies?

The selection criteria should communicate the expectations and desires for the project while being in line with the project goals. When developing proposal scoring criteria, it is also important to ask, "How will this be scored?" to ensure the information requested in the RFP can be evaluated fairly in a short amount of time.

139.8.2.3.6.2 Contents of the Instructions to Proposers

The ITP should include a description of the definitions applicable to the proposals, the project goals, the maximum contract price, and the Basic Configuration (or "envelope") available for the project. Many of the items described in the ITP may cross-reference the RFP.

The ITP should specify which contractor team members are considered "Major Participants". These members will need to supply required information such as bonds and federal and state required certifications." Since many proposing teams are joint ventures and these joint venture

will only exist as related to the project, commitments and information are needed for the larger members of the joint venture teams.

The ITP will also include a description of the proposal process, which provides for communications, industry review, discussions with proposers regarding their innovative ideas, submission of draft and final proposals and AASs. Confidential proposal discussions are used to provide the proposers with a maximum amount of flexibility while maintaining the requirements in the RFP.

The ITP includes a format, or outline, for the proposals. As part of the format, it is beneficial to include as many forms as possible so it is clearly understood what information and in what form the proposal should be submitted.

The critical element in the ITP is a description of how the proposals will be evaluated (the selection criteria). While the project team has broad discretion to determine the evaluation factors, budget and the quality of the service will always be included as factors for design-build projects. The specific rating method or combination of methods is clearly specified in the ITP, including color or adjectival ratings, numerical weights and ordinal rankings.

The ITP should include the bonding requirements including the amount and the format for the bonds. Additionally, it should require the proposers to submit a detailed plan for meeting the project DBE goal or goals for design and construction. The evaluation of the proposals must be based solely on the factors and subfactors listed in the ITP.

The ITP should specify exactly what information is needed to evaluate the proposals. For example, the ITP may ask for the proposing team's approach to quality management, and then may specify that the team needs to submit its approach and commitments to quality policy, planning, assurance, control and improvement. (As the best-value proposal becomes contractual, experience has shown that it is beneficial to require commitments from the proposers as well as approaches.)

The ITP should include a list of required forms and reports that must be submitted with the proposals for evaluations. These forms represent the proposer's commitments and will be contractual.

The evaluation criteria should specify which criteria are pass-fail and how the remaining factors will be weighted. Weighting of the factors can be based on factors or can be broken down to subfactors.

A sample ITP is available.

139.8.2.4 Authorization to Release RFP

Authorization to advertise and release the RFP document must be provided by FHWA. The project authorization given by FHWA will not be issued until the following are accomplished:

- FHWA Approval of the RFP
- Project Certification
- Approval of Project Financial Plan, if required.

Details on project authorization are available in the FHWA/MoDOT Design-Build Program Agreement.

An example of project certification is available.

FHWA Approval to Release the RFP

Following FHWA's approval of the RFP, submittal of the written certification and review or approval of the project FP, the project must be approved by FHWA in the Fiscal Management Information System (FMIS), FHWA's financial database. The FMIS approval/authorization will constitute FHWA approval to release the RFP. The Project Director should work directly with their assigned FHWA Transportation Engineer to ensure all items are completed per the CFR and per the FHWA/MoDOT Design-Build Program Agreement.

139.8.2.5 Proposal Evaluations

When the final proposals and price allocations are received, the price allocations will be separated from the proposals and will not be opened until completion of the proposal evaluations. Before proposal evaluations begin, the proposal documents undergo a compliance review to ensure the proposal is a complete, responsive proposal. Staff from External Civil Rights should review proposals for DBE compliance. Pursuant to state statute, at least two responsive proposals must be received in order to award the design-build contract.

A confidential Proposal Evaluation Procedures document shall be created for each design-build project. The document shall include details of maintaining confidentiality of the proposals, scoring team organization and roles, scoring procedures and evaluation criteria, including compliance reviews. Each member of the scoring team shall sign the Confidentiality Agreement (Form 139.1.3) and the Proposal Conflict of Interest Form(Form 139.8.2.5). Past experience has shown that holding preparation meetings with each scoring team in advance of receiving the proposals is very beneficial. Teams should be reminded that the rating method specified in the ITP must be used. After scoring is complete, The Project Director, with input from evaluation team members if needed, will prepare a Final Recommendation Report.

An example of proposal rating criteria used on past projects is below.

Rating	Description
Exceptional +/–	The proposer has demonstrated an approach that is considered to significantly exceed stated requirements/objectives and provides a consistently outstanding level of quality. There is little or no risk that the proposer would fail to significantly exceed the project goals. This rating is worth 85% – 100% of the available points.
Good +/–	The proposer has demonstrated an approach that is considered to exceed stated requirements/objectives and offers a generally better than acceptable

	quality. There is little risk that the proposer would fail to exceed the project goals. This rating is worth 60% – 84% of the available points.
Acceptable +/–	The proposer has demonstrated an approach that is considered to meet the stated requirements/objectives and has an acceptable level of quality. There is little risk that the proposer would fail to meet the project goals. This rating is worth 20% – 59% of the available points.
Poor	The proposer has demonstrated an approach that is considered to fail to meet the stated requirements/objectives and/or provides unacceptable quality and/or demonstrates little reasonable likelihood of meeting the project goals. This rating is worth 0% – 19% of the available points.
NOTE: As used above +/– delineates the proposer's rating within the related rating (i.e., + shall be considered as high within the rating and – shall be considered as low within the rating).	

For the purposes of evaluating proposals, a strength represents a part of the proposal that ultimately represents a benefit to the project and is expected to increase the proposer's ability to meet or exceed the project goals.

- Significant strength has a considerable positive influence on the proposer's ability to meet or exceed the project goals.
- Minor strength has a slight positive influence on the proposer's ability to meet or exceed the project goals.

For the purposes of evaluating Proposals, a weakness represents a part of the proposal that detracts from the proposer's ability to meet the project goals or may result in inefficient or ineffective performance.

- Significant weakness has a considerable negative influence on the proposer's ability to meet the project goals.
- Minor weakness has a slight negative influence on the proposer's ability to meet the project goals.

139.8.2.6 Proposal Selection and Project Award

After proposal evaluations are complete, a proposal is selected and the Final Recommendation Report is generated. This report, often in the form of a presentation, should include information on the scoring criteria, including the relationship between the scoring criteria and the project goals, a detailed synopsis of Proposals received and scoring outcomes for each category.

The Project Director will present the Final Recommendation Report to the Executive Recommendation Committee, which may includes the Director of Transportation, Chief Engineer, Chief Financial Officer, Assistant Chief Engineer and District Engineer. Additionally, FHWA and Chief Counsel's Office should be represented at the meeting. Please note that each member of the Executive Recommendation Committee shall sign a Proposal Conflict of Interest

Form (Form 139.8.2.5) and, if not previously signed, the Confidentiality Agreement (Form 139.1.3).

The Executive Recommendation Committee will consider the supporting information and recommendation and will select the final apparent best value proposal, which will be presented to the Missouri Highways and Transportation Commission (MHTC) in closed session. The MHTC will consider the supporting information and final recommendation and will select the best value proposal. The Commission's selection of the best value proposal also serves as the Commission's formal design approval for the project. Upon selection, concurrence of the award shall be obtained from FHWA before the award is announced publicly.

An example of a Commission Award Back-up Information form and the Contract Execution Authority Memo are available.

Upon final selection of the best value proposal, all proposers should be notified whether or not they will be recommended as the best value proposer for the project. The best value proposer should be asked to attend the public MHTC meeting in person. At the public MHTC meeting, the Project Director will request the MHTC's approval of the best-value award, approval to negotiate a contract with the best-value proposer and pay the project stipend to the losing proposers. Once the project has been awarded, the best value proposal should be announced through a press release and/or posting on the project website. Typically, a news conference has been held following the MHTC meeting to discuss the project details with the media in the project area. The need for a news conference will be dependent on the size of the project and/or public interest in the project.

Project Stipends

After the project award is announced, the project team may elect to offer debriefing meetings to all proposing teams, including those that did not submit the best-value proposal, to give feedback on their proposals. As described in the RFP, the stipend distribution process is followed. Each losing team must sign a Stipend Release Form (Form 139.8.2.6) before receiving a stipend for their proposal. Once the Stipend Release Form has been completed and the stipend paid, the Commission retains the right to use ideas from both successful and unsuccessful proposers. Proposers submitting non-responsive proposals are not eligible for payment of the stipend.

139.8.2.7 Contract Negotiations

The contract will be finalized through a negotiation process. If no final agreement is reached between MoDOT and the proposer with the apparent best value proposal, MoDOT reserves the right to pay the stipend to the apparent successful proposer and to negotiate a contract with another proposer with the second highest score. Confidentiality remains critical until all stipends are paid and the contract executed.

During contract negotiations, the proposer with the best value proposal may review the other submitted proposals once the stipends have been paid. Ideas from the other proposals may be

negotiated and incorporated into the best value proposal with concurrence of the winning proposer.

139.9 Contract Execution

139.9.1 Project Management

Once a design-build contractor has been selected and a contract has been executed, there are several procedures that the project team can implement to help ensure success on the project. Effective processes will vary depending on the design-build contractor involved, the size of the project team and the size and complexity of the project. However, it is important to continue to live the design-build values throughout the contract, focusing on “what the contract says” and always evaluating "want vs. need."

After the contractor has been selected, the project management team should meet on a weekly basis and discuss the progress of partnering with the contractor. Ideally, the project team and the contractor team will be co-located and will have scheduled weekly meetings. Co-location of MoDOT staff with contractor and consultant staff allows for easier collaboration and problem solving throughout the project and aids in partnering. The weekly project management team meetings should be focused on managing delivery of the project, addressing any issues and maintaining the goals of the project.

Example partnering documents, including the partnering charter, partnering surveys and partnering report from The New I-64 Project are available.

A partnering charter and process between MoDOT and the contractor is essential to a successful project. Example partnering documents, including the partnering charter, partnering surveys and partnering report from The New I-64 Project are available. The charter establishes the general ground rules and processes which will be used as the two teams work together to deliver the project. However, the MoDOT project team must remember that the contractor must comply with the terms of the contract documents above all else. A common mistake on previous projects has been the failure to distinguish between contract compliance and being a “good partner.” While on all projects there are times that it is appropriate to be flexible with a resolution to a specific problem, with design-build it is critical that the contractor complies with the terms of the contract documents.

It is often useful to have regular task force meetings where the MoDOT, the designer and the contractor discuss the progress being made, and resolve issues or disagreement as they occur. Specific disciplines that may benefit from task forces meetings include roadway, drainage, structures, maintenance of traffic, quality and utilities. MoDOT would then use internal management meetings with the project team to discuss any outstanding issues or conflicts identified in the task force meetings. Based upon the contract, responses are prepared and provided to the contractor team to resolve the issues in a timely fashion.

Since each design-build project and each design-build contractor are different, project teams are encouraged to try to be flexible in the approach to the various processes. However, experience has shown that for items such as change orders, potential disputes, and responses to the contractor, the more defined the internal processes are the smoother the project will proceed.

139.9.2 Contract Invoicing and Payment

Progress payments will be based on an estimate of physical percent complete of the work, not on measured quantities (except where specifically stated in the contract). Progress payment amounts are calculated by multiplying the percent complete for each construction activity by the cost associated with that activity. Monthly invoices are reviewed based on the contractor provided Work Breakdown Structure and Baseline Schedule or Recovery Schedule, as defined in the contract documents. After the invoice has been reviewed and approved by the project team, it must be submitted electronically to Financial Services at Contractual.Payments@modot.mo.gov. The invoice submittal should include the following:

- Project Name
- Project Number
- Copy of the approved contractor invoice
- Invoice number
- Payment amount
- Total payment amount to date.

139.9.3 Quality Oversight (Owner Acceptance)

MoDOT will use an audit approach for assessing the contractor's performance. This will entail checking on a sampling basis whether the Work is complying with the requirements of the contract documents.

A sample Quality Oversight Plan is available.

At the completion of the project, MoDOT is required by 23 CFR Part 637 to provide a materials certification for the project. The certification will conform in substance to Appendix A of 23 CFR Part 637 Subpart B. The certification will be prepared and submitted at the project level by persons intimately familiar with the project. The basis for the materials certification will be upon implementation of a quality assurance program meeting the criteria of 23 CFR Part 637.

An FHWA Technical Brief regarding construction quality assurance for design-build highway projects]] is available.

139.9.3.1 Quality Management Systems

The Contractor shall provide Quality Management on the Project to ensure the Work and Materials meet or exceed all contract requirements. The Contractor shall develop, implement, and maintain Quality Control (QC) and Quality Assurance (QA) for the Work. The Contractors

Quality Manager shall be responsible for the implementation if the Quality Management Plan (QMP) and shall oversee all QC and QA Activities during all phases of the Project including all sub-contracted work. The QM will designate a QC and QA lead that will be assigned to the Project full time during construction and may assign a separate QC/QA representative during the design phase. The Quality Manager shall report directly to the Contractor's executive management team only and shall have no responsibilities in the production of Work.

139.9.3.1.1 Quality Management Plan (QMP)

The Contractor shall develop, implement, and maintain a Quality Management Plan (QMP) that will ensure the Work meets or exceeds all contract requirements, and provides a record of acceptance of the Work and Material. The QMP shall address all QC and QA inspection and test requirements of the construction work The QMP shall be continuously improved throughout the delivery of the entire Project. Any QMP modifications require the Approval of MoDOT's Project Director. All modifications shall be tracked in an indexed table containing QMP version numbers, revision dates and corresponding section(s) changed with each revision.

MoDOT and FHWA's Approval of the Quality Management Plan is required prior to issuing NTP2. The Approved QMP shall be considered a Book 3 Contract Document and must be approved by MoDOT before any construction takes place.

The Contractor shall establish a Document Control Procedure. This procedure will describe the project file structure for all documents required in the QMP, including a file naming system and folder structure. The document storage shall be stored in the project management system selected by MoDOT that allows quick access to all documents. The Contractor and its required staff will be granted access to the system to upload all Project documents, including correspondence, administrative, design, construction, quality, and inspection documentation.

The Contractor shall ensure that all laboratories performing testing participate in and achieve a score of three or greater in the AASHTO Accreditation Program (AAP) and/or ASTM Cement and Concrete Reference Laboratory (CCRL) proficiency sample programs for the tests being performed by that laboratory. Equipment within laboratories shall be made accessible for Independent Assurance Testing, and Project oversight performed by MoDOT and FHWA.

At a minimum, the Quality Management Plan shall include the following:

- General organizational structure of the Contractor's production and QC/QA staff.
- Name, qualifications, and job duties of the QM and all QC/QA inspectors (include everyone that will perform material testing on project).
- A procedure describing QC and QA Inspections.
- A procedure describing QC and QA Testing.
- A procedure describing Material Receiving.
- An Inspection and Test Plan (ITP).

- A Document Control Procedure for electronically recording and tracking of all correspondence, Request for Information (RFI's), Field Design Changes (FDC's), and all Quality Control and Quality Assurance Activities including inspection reports, checking and testing activities within Oracle Aconex.
- A procedure for tracking Non-Conforming and Deficient work, and Corrective Action Requests.
- A procedure to resolve discrepancies between QC and QA test results.
- A list of work items that will be sub-contracted and the QC/QA personnel who will be responsible for inspection and testing of the sub-contracted work.
- A list of QC Hold Points and a procedure for addressing any issues found during the QC Hold Point inspections.
- A list of QA Hold Points and a procedure for addressing any issues found during the QA Hold Point inspections including notification, correction, and establishing a new hold point.
- The frequency of review of the quality management system by the Contractor's top management and the procedure for making revisions to the QMP.
- References to specific applicable QC/QA Plans such as asphaltic concrete pavement or Portland cement concrete pavement.
- Forms to be used by the QC and QA staff.
- Format for the Weekly Schedule and Work Plans.
- Format for monthly production and testing meetings including submittal requirements.
- A procedure for project closeout, including a Quality Documentation Audit that verifies all project documentation is accurate and complete.
- A Document Control Procedure for electronically recording and tracking As-Built Final Documents.
- A defined QC/QA procedure for review of all plans during the design stage.
- A defined method of responding and implementing internal and external RFI's, Non-Conformance Reports (NCR's), Corrective Action Requests (CAR's), and FDC's during construction.

Inspection and Testing Plan (ITP)

At a minimum, the standard ITP shall be the basis to the Project specific ITP. Any modifications shall be highlighted and Approved by MoDOT. The QC and QA inspections shall be performed for all on-site Work per the project ITP.

Completed daily inspection checklists, hold point checklists, inspection reports, and associated test reports shall be saved electronically for all Work performed by the prime and Subcontractors before payment.

Quality Control and Quality Assurance

QC staff shall remain independent of QA staff. QA staff shall have no responsibilities in the production of work and the role is to verify the performance of the QC inspection and testing. QA and QC inspection and testing may not be substituted for each other or performed by the same person. QA staff will report directly to the QM.

All QC/QA personnel who perform sampling and/or testing are certified by the MoDOT Technician Certification Program or a certification program that has been approved by MoDOT for the sampling and testing they perform.

Any QC/QA personnel determined in sole discretion of MoDOT's Project Director to be incompetent, derelict in their duties, or dishonest, shall at a minimum, be removed from the project. Further investigation will follow with a stop work notification to be issued until the Contractor submits a corrective action report that meets the approval of MoDOT.

Material Receiving

The QMP shall include a procedure for performing material receiving inspections. The procedure shall address inspections for all Material delivered to the site (excluding testable material such as concrete, asphalt, aggregate, etc.) for general condition of the material at the time it is delivered. The material receiving procedure shall record markings and accompanying documentation indicating the material is MoDOT accepted material (MoDOT-OK Stamp, PAL tags, material certifications, etc.).

All required material documentation must be present at the time of delivery. Material receiving reports shall be completed and saved electronically before payment is made following the delivery.

139.9.4 Keeping a Conformed Contract

Once the contract has been executed it is important to keep a Conformed Contract, documenting all changes through the course of the contract.

Sample Conformed Contract tracking sheet

When a Change Order or Equal or Better Change Proposal is executed, tracked changes should be used to document the change(s) in the Conformed Contract. Changes to the Conformed Contract should be tracked, documenting each contract element changed and the date of the change. A sample Conformed Contract tracking sheet is available.

139.9.5 Record Retention

Record retention should be in accordance with EPG Section 137 where appropriate.

139.10 Other Design-Build Procedures

139.10.1 Project Reporting

Typically, design-build Project Directors are asked to attend the monthly Major Projects Meeting. The Major Projects Meeting is an opportunity to update executive leadership on the project and discuss any potential project issues or concerns. If a specific topic is confidential, a separate meeting should be set up with executive leadership. Examples of items that can be discussed are:

- Project progress
- Schedule
- Budget/Finances
- Risk Allocation
- Procurement, right of way or legal needs
- Quality
- Safety
- DBE
- Project look ahead

139.10.2 Design-Build Project Funding

139.10.2.1 Program Budget and Project Coding

Establishing an accurate program budget is critical to a successful design-build project. At a minimum, the following costs should be considered when setting the project budget:

- Owner Consultants (working for MoDOT, outside the design-build contract)
- Project administration
- Utility relocations
- Stipends
- Right of Way
- Environmental mitigation
- Internal staff
- Design-Build contract (contractor design, administration and quality oversight should be considered as well as construction costs. By breaking out the design, administration and quality costs, the dollar value of actual construction can be estimated. For the sake of the program budget, this cost does not need to be broken out, but it is helpful to include when running scenarios of what may be proposed.)
- Funding from Other Sources (FFOS) should be included on the SIMS form. In the event that FFOS is added into the design-build contract via change order, the project team shall provide the change order information to Transportation Planning and Financial Services.

All project costs are included in the STIP. The district submits the information to transportation planning including the total cost and an itemized breakdown of each cost included. Typically, project costs are broken down as follows:

- Construction costs include the design-build contract, non-contractual costs, MoDOT funded utility relocations, stipend payments, and contingency,
- Stipend payments and contingency are placed in the "Other" category,
- ROW is MoDOT funded right of way acquisition (including easements),
- Consultants outside of the design-build contract should be in the DBC budget or the district's STIP construction budget,
- The PE phase should only be used for internal staff costs,
- In some cases there may be preliminary engineering and/ or consultants set up prior to the project being selected for design-build, resulting in multiple project numbers included with the P phase. In this case, the district should provide a preliminary budget spreadsheet for the Financial Services Projects and Accounts Receivable Sections. Based on prior costs and how they fit in the project budget, Financial Services assesses what project numbers are needed and communicates back to the district.

A matrix for coding design-build projects is available

139.10.2.2 Project Financial Plan

The project Financial Plan (FP) shall be developed in conformance with FHWA guidance. The following are guidelines for when an FP is required:

- Projects with program costs under $100 million do not require an FP.
- Projects with program costs over $100 million but less than $500 million require an FP. No FHWA approval of the FP is required, but FHWA review of the FP is required. Approval of the project FP will be provided by the Chief Financial Officer, or the CFO's representative.
- Projects with program costs over $500 million require FHWA review and approval of the FP.

139.10.3 File Storage Structure

Many design-build files are confidential, requiring the project SharePoint site to have access restricted to those members of the project team. Some folders can be given "read" or "contribute" access on an as needed basis for other staff assisting the project team.

To maintain consistency in design-build projects, project teams should set up their electronic file storage as shown in the Document Structure Template.

139.10.4 Procurement Schedule

The design-build procurement process typically takes about 6-8 months, but it can be shorter or longer depending on the size and complexity of the project. If a team opts to do an Industry Review, the process will take about 3-4 months longer. A typical procurement schedule is below:

- Advertise for Letters of Interest (30 Days)
- Issue RFQ/Hold industry meeting
- SOQs due (2 weeks)
- Shortlist teams (2 weeks)
- Issue RFP (Immediately after shortlist)
- Technical discussions (2-3 months)
- Proposals due
- Best Value Recommendation and award (4 weeks from proposal submittal)
- Final negotiations, stipend payouts (4-6 weeks)
- Execute contract/NTP 1
- NTP 2 (approximately 3 months after NTP 1)

When developing a detailed procurement schedule, teams should look at the time it will take to develop the contract documents. Teams should include document review times in the detailed schedule to ensure enough time is allowed for the required reviews. A best practice is to talk with FHWA and Design's Environmental Studies section when developing the project schedule, so they can anticipate required resources. See the FHWA/MoDOT Design-Build Program Agreement for topic specific review times.

139.10.5 Contract Incentives

The New I-64 Incentive Plan is available as an example.

Contract incentives can be used to reward the Design-Build contractor team for desired behaviors. In other words, incentives offer the opportunity to align the contractor's interest with MoDOT's. Incentives should be set up so that if MoDOT is successful, the Design-Build team is successful as well – mutual success. If incentives are used, they should be focused on non-cost issues such as traffic flow or customer satisfaction, and they should be meaning to the contractor. The New I-64 Incentive Plan is available as an example.

139.10.6 Acceptance of SOQs and Proposals

Receipt Template

A receipt should be provided to submitting teams for SOQs and Proposals, documenting the delivery time and person taking delivery. A receipt template is available.

139.10.7 Procurement Document Writing Guide

Design-build RFP documents need to be prepared in a consistent manner using clear, enforceable language. In general, RFP documents should be based on performance-based requirements rather than prescriptive specifications. In other words, the requirement should state a desired result, without specifying how to achieve the result.

Authors should rely on existing standards to the extent possible and avoid repeating information already contained in referenced standards. The RFP documents should primarily contain additions, modifications, or clarifications to the referenced standards. Authors should also strive to avoid repeating information contained elsewhere in the RFP.

Additionally, when writing RFP requirements, authors should strive to meet the following criteria:

- Correct – The requirement is technically accurate.
- Feasible – The requirement is achievable and reasonable.
- Complete – The requirement expresses a whole idea or statement.
- Clear – The requirement is written in understandable terms and is unambiguous in identifying "who shall do what."
- Consistent – The requirement is not in conflict with other requirements.
- Verifiable (auditable) – The requirement can objectively be confirmed to have been met.
- Traceable – The impact to changing the requirement is easily known.
- Required – The requirement is determined necessary.

139.10.7.1 Commonly Encountered Terms and Situations

The following are some terms and situations commonly encountered in preparing technical documents. For a list of terms with specific meanings to the MoDOT Design-Build program, refer to the Acronyms and Definitions included in Book 1.

- **abbreviations and acronyms:** Use only abbreviations and acronyms from the Acronyms and Definitions list developed for this program/project. To make an acronym plural, add an s if the acronym itself is singular (ADTs, UISs), but not if the acronym stands for a plural term (RD, not RDs, since RD stands for Reference Documents).

- **accept/acceptance:** On the MoDOT Design-Build Program, accept specifically means that the Owner agrees that a certain matter or item submitted for acceptance appears to meet the Contract requirements. Be aware of the distinction between accept and approve (see approve/approval) and the distinction between accept and except (see except/exception).

- **access:** Use as a noun, not as a verb.

- **active vs. passive verbs:** An active verb shows that the subject acts or does something (e.g., The Owner accepted the proposal.). A verb is passive when the

subject of the verb is acted upon (e.g., The proposal was accepted by the Owner.). The active voice is generally preferred over the passive voice. A passive voice may be acceptable when the person or thing receiving the action is more important than the person or thing doing the acting. Avoid shifts between active and passive voice within a sentence.

- **affect, effect:** Affect is usually a verb meaning "to influence, to have an effect on" (e.g., The additive will affect the strength.). Avoid using affect as a noun. Effect is usually a noun, meaning "result" or "consequence" (e.g., The total effect of the additive is minimal.). Effect is sometimes used as a verb, meaning "to cause, to bring about, to produce" (e.g., The new guidelines will effect many changes in the group.).

- **allow, enable, permit:** Allow and permit imply power or authority to give or deny. Permit suggests formal sanction, approval, consent, or authorization. Allow suggests merely the absence of opposition or refraining from prohibiting actions (e.g., The manager allows employees to arrive later on Fridays.). Enable means to make possible, practical, or easy (e.g., The new trucks will enable the crews to haul more material.).

- **ampersand (&):** Use the ampersand when it is part of a company's full name, but not to replace the word "and." The ampersand may be used in charts and tables.

- **approve/approval:** On the MoDOT Design-Build program, this specifically refers to a formal conditional determination that the matter or item submitted for approval is satisfactory for the project or condition under consideration.

- **assure:** Assure means to state confidently to another person or group that something has been or will be done: The director assured the council that staff will act on the resolution. See also ensure, insure.

- **as well as:** Avoid this phrase. Use "and" or "also" if possible. For example, instead of Hennepin County, as well as the City of Minneapolis, must approve the proposal, simply say St Louis County and the City of Chesterfield must approve the proposal. Do not use "as well as" with the word both.

- **backfill:** One word.

- **backward:** Not backwards.

- **bedrock:** One word.

- **before:** This term is preferred to "prior to."

- **begin, commence, start:** Begin and start have subtle differences in meaning. Begin means merely a setting into motion of some action, process or course (e.g.,

They planned to begin the project in March.). Avoid using commence to mean the same thing as begin. Start is more precise, usually suggesting physical movement or leaving a point of departure in any kind of progression (e.g., They started construction.).

- **biweekly:** Usually means every other week, not twice a week. Semiweekly means twice a week. Bimonthly can be interpreted as either every other month or twice a month. To avoid confusion, use every two weeks or every other week instead of biweekly (and twice a week instead of semiweekly).

- **bridge:** Capitalize when part of a formal name. Do not abbreviate (e.g., Main Street Bridge construction is under way.).

- **building:** Capitalize the proper names of buildings, including the word building, if it is an integral part of the proper name (e.g., The Exchange Building is on Second Avenue.). Do not abbreviate unless used in charts and tables.

- **by means of:** Wordy. Simplify by shortening to “by” or “with.”

- **CADD:** An acronym for computer-aided design and drafting. Use instead of CAD.

- **can, may:** Can refers to the capability, ability, or power to do something, and may refers to authorization or permission and sometimes possibility (e.g., They can finish the project by March. May we have an extra month to finish the project?).

- **Category A/B:** In general, Category A requirements refer to items that may be changed only through value engineering or MoDOT-directed changes. Category B requirements refer to items that may be considered as equal or better.

- **chapter:** Capitalize when used with a number to name a section of a book or legal code (e.g., Chapter 5). Lowercase when standing alone.

- **charts, figures, tables:** Always include titles with charts, figures, graphs, and tables. Abbreviations not typically used in text are acceptable in charts and graphs because of limited space. When referring to a chart or table in the text, capitalize the word chart or table and use the numeral (e.g., As Table 2 shows, the value increases over time.).

- **clean up, cleanup:** Two words when used as a verb; one word when used as a noun or adjective (e.g., The cleanup lasted two weeks. It took two weeks to clean up the spill.).

- **co-:** Hyphenate when forming nouns, adjectives, or verbs that show occupation or status (e.g., co-pilot, co-signer, co-worker). Omit the hyphen in other

combinations, including coordinate, coordination, cooperate, cooperation, and cooperative.

- **Co-location:** Hyphenate.
- **Contractor:** Use this when referring to the design-build contractor, as defined in the Contract Documents. Do not use design builder.
- **cross-section:** Hyphenate.
- **cut and cover:** Hyphenate when used as an adjective (e.g., The Contractor selected the cut-and-cover method instead of tunneling).
- **dangling modifiers:** Avoid modifiers that do not refer clearly and logically to some word in the sentence (e.g., Taking their equipment, the truck began its trip to St. Louis.). Modifiers should correspond with the applicable word (e.g., Taking their equipment, the workers began their bus trip to St. Louis.).
- **data:** Normally a plural noun, used with plural verbs and pronouns when referring to individual items (e.g., The data have been analyzed.). Data may take singular verbs when the group or quantity is regarded as a unit (e.g., The data is sound.). Use data to refer to evidence, measurements, records and statistics from which conclusions can be inferred, not as a simple synonym for facts, knowledge, reports, or information.
- **database:** One word.
- **Day:** Unless otherwise specified, references to “Days” shall mean Calendar Days, as defined in the Acronyms and Definitions list.
- **dead end , dead-end:** Two words when used as a noun; hyphenate when used as an adjective or verb (e.g., The street is a dead end. Jones Avenue is a dead-end street. The street dead-ends at an empty lot.).
- **design-build:** In general, use lower case and hyphenate. If part of a specific title, upper case both words and hyphenate. Always spell out; do not abbreviate as DB, D-B, or D/B.
- **Design-Builder:** Use Contractor instead.
- **directions and regions:** Lowercase when they show compass direction (e.g., north, south, northeast, etc.; The fire hydrant is east of the gate valve.). Capitalize the words when they designate well-defined regions (e.g., Minneapolis is in the Midwest.).

- Lowercase directions when combined with a proper name unless used to designate a politically divided nation (e.g., western United States, eastern Canada, North Korea).

- Lowercase compass points when they describe a section of a state, county or city (e.g., eastern Missouri). But capitalize compass points when used to show widely known regions (e.g., Southern California). When in doubt, lowercase, or be more precise in naming the geographic area.

- **e.g.** The abbreviation "e.g." is from the Latin meaning exempli gratia, or "for example." This abbreviation should only be used in a parenthetical comment. Include a period after both "e" and "g" since it is an abbreviation of two Latin words and a comma following the second period (e.g., concrete). See also i.e.

- **ensure:** To make sure something happens.

- **except/exception:** Except means other than, or to leave out (e.g., The Contractor completed all items except the landscaping.).

- **existing:** Refers to something that already exists. See also in-place.

- **fiber-optic:** Hyphenate.

- **flow chart:** Two words.

- **figures and tables:** When referring to tables and figure in text always spell out the whole word (e.g., Figure 2, not Fig. 2), beginning with an initial capital.

- **foot-candle:** Hyphenate.

- **groundwater:** One word.

- **handhole:** One word.

- **hardcopy:** One word.

- **however:** Avoid starting a sentence with the words however or therefore. The word therefore means "for that reason" suggesting a preceding contention. These words are used to splice two thoughts together (e.g., Construction is not complete; therefore, the Contractor cannot leave the premises.).

- **i.e.** The abbreviation "i.e." is from the Latin meaning id est, or "that is." This abbreviation should only be used in a parenthetical comment. Include a period after both "i"and "e" since it is an abbreviation of two Latin words and a comma following the second period (i.e., tomorrow). See also e.g.

- **in-place:** Hyphenate when used as a compound modifier (e.g., in-place utilities). Spell out as two words when it stands alone (e.g., The pipe is already in place.). Do not use inplace as one word; it is not a word.

- **include:** The words “include,” “included,” “includes,” and “including” are deemed to be followed by the words “without limitation.” You do not need to re-state that a list of items “includes, but is not limited to …”

- **insure:** Used when specifically referring to insurance

- **Internet:** Capitalize

- **lay, lie:** The action word lay means “to place, put, or deposit.” It is followed by a direct object (e.g., They will lay the materials on the ground). Lie means “to be in a reclining position.” It does not take a direct object. It is often followed by down or a prepositional phrase: The material lies on the northwest corner of the project.

- **MoDOT:** No slash when referring to the Missouri Department of Transportation. Do not refer to MoDOT as the Department.

- **neither:** When used on its own without nor, make the verb singular (e.g., Neither of the crews was present.).

- **on-site:** Hyphenate when used as an adjective (e.g., on-site materials).

- **parallel/perpendicular:** Two or more parallel items are “parallel with” each other. Two or more perpendicular items are “perpendicular to” each other.

- **partially, partly:** Use partially to mean incompletely when speaking of a condition, state or preference (e.g., The structure is partially complete.). Use partly to mean in part as distinct from the whole—usually a physical object (e.g., The structure is built partly of steel and partly of concrete.).

- **proprietary products:** Avoid listing proprietary products in the RFP; instead specify performance criteria.

- **right of way:** Spell out on first use without hyphens. Abbreviate as R/W on subsequent use.

- **road names:** Capitalize street names (e.g., Taylor Street), abbreviate commonly understood terms (I-494) or those on the abbreviations list (CSAH 62).

- **shall:** Use this word to express a command, or what is mandatory. In Contract Documents, “shall” is generally preferred over “will” when describing requirements of the Contractor.

- **software:** Spell out as one word. Do not use the phrase “software program,” as this is redundant. Spell out any software product names as they appear on the products, and include vendor names on first use. For example, MicroStation by Bentley Systems Inc., GEOPAK by Bentley Systems Inc., and AutoCAD by Autodesk Inc.

- **stormwater:** Spell out as one word.

- **Station:** Capitalize when referring to a roadway station (e.g., Station 10+00).

- **that, which:** See which, that

- **toward:** Not “towards.”

- **utilize:** Avoid this word. The word “use” is usually preferable.

- **very:** This word is usually meaningless and can be omitted.

- **Web site:** Capitalize Web.

- **which, that:** Which is used to introduce parenthetical or explanatory phrases. For example, “I’m wearing my favorite suit, which happens to be black.” The explanatory phrase is not needed to complete the sentence—it is optional. That is used to introduce phrases or words that must remain part of the sentence. For example, “This is the project that will be built first.” The phrase is needed to complete the sentence—it is not optional.

- **will:** Used to express something anticipated to happen in the future. Avoid this word when describing requirements of the Contractor; instead use “shall.”

139.10.7.2 Grammar and Punctuation

Refer to the following terms and guidelines when preparing documents.

Adjective

An adjective is a word or words that qualify, limit, or describe a noun or pronoun.

Adverb

An adverb is a word that modifies a verb, an adjective, or another adverb. Place an adverb as close as possible to the word or phrase it modifies.

Apostrophe (’)

The apostrophe has four primary uses: 1) It shows possession (e.g., the company's equipment); 2) it marks the omission of letters in contractions (e.g., won't); 3) it's used in abbreviations of years and decades (e.g., the '90s), although not in plurals of decades (e.g., the 1990s); 4) it marks the plural of single numbers or letters (e.g., they dotted the I's and crossed the t's). Avoid using contractions in Contract Documents.

Capitalization

Begin proper nouns, sentences, headings, and the important words in publication titles with capital letters. Proper nouns are specific names of people, places, and things. Avoid excessive capitalization for other purposes, such as highlighting words; this can make text more difficult to read. Do not capitalize the first letter of a word (or words in a phrase) simply to highlight it or to express its importance.

Capitalize the main words in titles of books, magazines, newsletters, newspapers, and works of art. Also italicize the names of such works, or underline them if italic type is not available.

Capitalize the main words and enclose in quotation marks the titles of dissertations, essays, lectures, short stories, speeches, radio and television programs, articles in periodicals, and chapters of books. If the title is part of a sentence, commas and periods go inside the closing quotation mark. Other punctuation, such as the question mark and the exclamation point, goes inside the quotation mark if it's part of the title; if it applies to the entire sentence, it goes outside the quotation mark.

Capitalize — but don't italicize, underline, or enclose in quotation marks — the names of brochures, bulletins, and reports, and catalogs of reference material, such as almanacs, directories, and similar publications.

In titles, capitalize only the first word in a permanently hyphenated compound word found in a current dictionary (e.g., Methods for Part-time Operators). Capitalize both words in an "unlisted" compound word used as a modifier (e.g., High-Performance Concrete Standards).

Within the RFP documents, capitalize the word "Section" when it refers to a specific section in the documents (e.g., Book 2, Section 12), including MoDOT reference manuals and manuals by others.

NOTE: In MoDOT design-build Contract Documents, capitalize terms included in the Acronyms and Definitions list when they are used in the specific context of the definition. For example, capitalize "Approve" when referring to an Approval by MoDOT, but do not capitalize when referring to an approval by an agency other than MoDOT.

Colon (:)

Use colons for three main purposes:

- to introduce a list, often after expressions (e.g., the following: or as follows:).
- to emphasize a word, words, or sentence that follows it (e.g., Here is the final direction: Install the pipe immediately.).
- to introduce a quotation longer than one sentence within a paragraph and to end a paragraph that introduces a quotation in the next paragraph. Capitalize the first word after a colon if it is a proper noun or the start of a complete sentence.

See “Lists” later in this section for further discussion of colons.

Comma (,)

Use commas to separate elements in a series of three or more terms, including the next-to-last item (e.g., Drawings shall include a north arrow, title block, and scale.).

Use commas in other cases according to common grammatical standards, such as

- to join two independent clauses with a coordinating conjunction (e.g., Widen the highway shoulder to 12 feet if no guardrail is present, or widen to 14 feet if guardrail is present.).
- to set off words and phrases such as however, meanwhile, in fact, in addition, moreover, nevertheless, as a result, thus, therefore, for example, finally and in other words.
- to separate a series of adjectives equal in rank. Use no comma when the last adjective before a noun outranks its predecessors because it is an integral element of a noun phrase (e.g., a reinforced concrete beam).
- to separate the parts of numbers, dates, and addresses. Use a comma for figures higher than 999 (e.g., More than 1,000 people attended the event.).
- to set off the year in complete dates (e.g., The report is dated November 16, 2004.). Do not separate the month from the year when not using a date (e.g., The report is dated November 2004.).

When used with quotation marks, place the comma inside the quotation marks (e.g., “The road is closed to traffic,” she said.)

Compound Words

Compound words are formed differently, depending on whether they are nouns, adjectives, or verbs. For nouns, generally spell out as two words (e.g., Contract Documents) unless a single word (e.g., roadbed) or a hyphenated term (e.g., start-up) exists. Use a hyphen for compound adjectives, also called compound modifiers (e.g., rush-hour service). No hyphen is necessary within a single proper noun (e.g., a St. Louis County project).

Contractions

Avoid using contractions (e.g., isn't) in Contract Documents. Instead, spell out as two words (e.g., is not).

Dash (—)

Long dashes, called *em dashes*, can be used for emphasis or to set off a phrase (e.g., XYZ Company has several qualities—versatility, integrity, and experience—that make it a candidate for this project.). In general, minimize the use of long dashes in Contract Documents. Instead use other punctuation options, such as a colon, or break into separate sentences.

Use short dashes, called *en dashes*, to express ranges of numbers: pages 145–63.

> **NOTE:** A hyphen (- on the keyboard) is not a dash. Most current word processing and design software can create em dashes and en dashes. If necessary, use two hyphens to create an em dash, and substitute a hyphen for an en dash. In Microsoft Word, if you type two hyphens and do not include a space before the hyphens, the hyphens become an em dash. If you type a space and one or two hyphens between text, the hyphen(s) automatically become an en dash.

Dates and Times

In general, spell out months and days (e.g., January 15, 2005). When not including a specific date, do not separate the month and year with a comma. Do not follow numerals used with dates by st, nd, rd, or th. Identify times with a number followed by a.m. or p.m. (e.g., 8:00 a.m.).

Dimensions

See numbers.

Footnotes

Footnotes can be used to provide notes to tables or figures, or to cite references for text contained within a document. Use of footnotes should be limited in RFP documents. If used, they should be indicated by a superscripted number (i.e., 1) using the Footnotes feature in Microsoft Word.

Lists

Use vertical lists to display a series of items. Use a colon to introduce a list when the introductory sentence includes the terms as follows or the following. Capitalize the first word of each item in the list. Use bullets to identify each item in the list when the sequence of the items is not important. Use numbers to identify each item when sequence is important. Use dashes to identify sub-items within bulleted or numbered lists. End items in a list with periods if one or more of the items is a complete sentence. The following examples illustrate various types of lists.

The Contractor shall provide written summaries of the following:
Cost
Completion schedule
Personnel
- Employees
- Subcontractors
The Contractor shall complete the work as follows:
1. Identify and locate borrow areas.
Mobilize equipment.
Begin excavation.

As an exception, do not capitalize the first word of list items if the items complete the sentence begun in the introductory sentence. Also omit the colon in these cases. For example:

The employee shall
work a minimum of 8 hours per day,
report for work on time, and
comply with all company policies.

Noun

A noun is a word used to name a person, place, thing, quality, or action. A proper noun names a specific person, place, or thing and is capitalized (e.g., Taylor Street.). A common noun is not specific and is not capitalized (e.g., the street). For exceptions to this convention, see Capitalization.

Numbers

Unless referring to dimensions, spell out whole numbers less than ten and use numerals for all other numbers. Do not begin a sentence with a numeral.

For dimensions, use numerals and spell out inches, feet, and yards to show depth, height, length, and width. Hyphenate when used as adjectives before a noun (e.g., the 5-by-8-foot box). Abbreviations may be used in tables, such as ft for feet or apostrophes to show feet and quotation marks to show inches. If you use the apostrophe or quotation marks for dimensions, use the symbols (e.g., 5'10") in Microsoft Word, rather than the keyboard version (e.g., 5’10”).

When using decimal places, use consistent numbers of decimal places (e.g., 0.23, 0.20, 0.12, etc.). For amounts less than 1 percent, put the numeral zero before the decimal point (e.g., 0.07).

Numbers with more than four digits should include commas (e.g., 4,223).

For telephone numbers, place area codes in parentheses and include a hyphen between the principal groups of the number. (e.g., (612) 555-1212).

See also Commas for discussion of commas within numbers, and see Percentages for a discussion of percentages.

Percentages

Spell out the word percent in text as one word (e.g., 55 percent). The percent sign (i.e., "%") is permissible in tables.

Period (.)

Use periods at the end of complete sentences according to common grammatical standards.

Also use periods to follow numbers in a numbered list, but not when referring to those items within text.

When used with quotation marks, place periods inside quotation marks.

Include one space after a period.

Preposition

A preposition is a word or group of words that links a noun or pronoun to a verb, adjective, or another noun or pronoun. The most frequently used prepositions are at, by, for, from, in, of, on, to, and with. Others include according to, ahead of, because of, contrary to, in spite of, next to, and out of. Avoid overusing prepositions in a single sentence. To maintain clarity, rewrite and shorten long sentences containing multiple prepositions.

Semicolon (;)

The semicolon has three common uses:

- to separate parts of a series when at least one item in the series also contains a comma.
- to link two (or more) closely related statements that could stand alone as independent sentences (or clauses).
- to connect two independent clauses when the second clause begins with transition words such as therefore, however, consequently and for example. Examples: The attendees were John Smith, 123 Main Street; Mary Larson, 2334 Jones Street; and Jane Doe, 552 Taylor Street. Construction is scheduled to start next week; however, weather conditions may delay this.

Titles

Capitalize the first and last words and all nouns, pronouns, adjectives, verbs, adverbs, and subordinate conjunctions (after, before, and because). Lowercase articles (a, an, and the), coordinate conjunctions (and, or, for), and prepositions. Italicize titles of published books, pamphlets, proceedings, periodicals, and newspapers (MoDOT Standard Specifications for

Construction, USA Today). Capitalize, but do not italicize titles of forms or loosely collected documents (Utility Permit, MoDOT Special Provisions).

Verb

A verb is a word that expresses existence, action, or occurrence.

MoDOT Design-Build Project Goals

Goals are listed in priority order.

- Deliver good bridges at a great value.
- Minimize public inconvenience through increased construction speed and flexibility with schedule.
- Complete construction no later than October 31, 2014.

- Deliver the Interstate 29/35 corridor improvements within the total program budget of $245 million.
- Construct a landmark Missouri River bridge(s) that can be reasonably maintained to provide more than a century of useful service.
- Maximize safety, mobility, aesthetic and capacity improvements in the corridor.
- Engage stakeholders and the community to successfully develop and deliver the project.
- Meet or beat the project completion date of October 31, 2011.

- Deliver the project within the program budget of $535 million.
- Complete the project no later than October 1, 2010.
- Maximize the mobility and capacity improvements in the corridor when construction is complete.
- Minimize and mitigate construction impacts to customers through construction staging and communication efforts.
- Provide a quality product that produces a long lasting transportation facility.
- Demonstrate a quality construction and communication effort that creates a new model for doing a design-build project.

- Deliver the project within the programmed budget of $125 million.
- Construct a Missouri River bridge that can be reasonably maintained to provide more than a century of useful life.
- Maximize the mobility, capacity and safety improvements in the corridor when construction is complete.
- Minimize and mitigate construction impacts and maximize work zone safety to customers through construction staging and communication efforts.
- Complete the project no later than July 1, 2016.

- Deliver the design-build project within the program budget of $100 million.
- Maximize improvements in the corridor to connect Route 364 from Mid Rivers Mall Drive to I-64.
- Provide a design that allows for compatibility with future expansion.
- Minimize and mitigate construction impacts and maximize work zone safety through construction staging and communication efforts.
- Provide a quality product that produces a long lasting transportation facility.
- Complete the project no later than December 1, 2014.

- Impress our customers through innovative solutions that conveniently and efficiently move drivers through the project during and after construction.
- Construct durable structures that minimize future maintenance impacts.
- Balance regional mobility with total project cost to achieve optimal value.
- Deliver the project no later than December 15, 2015.

- SCHEDULE – Open all lanes of traffic no later than October 1, 2016.
- COST – Deliver a competitively priced project that is both practical and economical.
- DURABILITY – Construct low maintenance bridge(s) that will provide at least a century of service.
- SAFETY – Create and sustain an exceptionally safe project work environment.

- Deliver the project within the programmed budget of $35 million.
- Convert U.S. 60 into a freeway between County Road 241 on the west and near Chicory Road on the east, providing two points of controlled access to U.S. 60 in the vicinity of Greene County Farm Road 253 and Webster County Route B/VV.
- Engage stakeholders and the community to develop and deliver the project while minimizing impacts.
- Impress our customers through innovative traffic control solutions that conveniently, efficiently and safely move drivers through the project during and after construction.
- Create a new model for purchasing right-of-way on a design-build project.
- Complete the project by December 2016.

- Deliver the project within the program budget of $18 million.
- Construct bridges on Interstate 70 at Bus Loop 70/West Blvd, Garth Ave, and MO Route 763/Rangeline that provide long term service and will be compatible with future expansion.
- Minimize traffic impacts while maximizing capacity and mobility for the area.
- Maximize safety for the workers and the commuters.
- Complete the project by October 1, 2016.
- Provide a project team that reflects the diversity of the community.

- Deliver the project within the program budget of $25 million.
- Maximize mobility on Route 141 and improve efficiency at the I-44 interchange and Vance Road intersection.
- Deliver the project in a manner which demonstrates the importance of safety.
- Provide a quality product resulting in a long lasting transportation facility that minimizes future maintenance.
- Deliver the project using a diverse workforce.
- Complete project by July 15, 2018.

- Deliver the project within the budget of $24.11 million.
- Reduce fatal and serious injury crashes by maximizing safety improvements.
- Deliver all improvements with a reasonable service life and low maintenance cost.
- Minimize impacts to the public during and after construction.
- Complete construction on the project by October 1, 2019.

- Meet or beat the project open to traffic date of November 1, 2019.
- Deliver a project on budget that supports everyday commuters and freight.
- Construct a safe, reliable, low maintenance Mississippi River Bridge that will provide at least a century of service.
- Minimize and mitigate construction impacts and maximize work zone safety to customers and workers.
- Deliver the project using a diverse workforce by use of innovative techniques.
- Demonstrate a commitment to quality.

- Deliver the project utilizing a diverse workforce within the program budget of $74.8 million by May 1, 2020.
- Minimize the impacts to the traveling public during construction.
- Maximize safety and peak period travel speeds on the I-435 corridor.
- Minimize future maintenance needs.

- Deliver the project within the programmed budget of $36.1 million.
- Maximize the service life of all identified bridges within the project limits and deliver an end product that improves safety and minimizes future maintenance.
- Move traffic through the project in a safe, efficient manner using innovative techniques.
- Deliver the project using a diverse workforce.
- Complete the project by December 15, 2021.

- Deliver the project by December 1, 2023 within the program budget of $225 million.
- Maximize reliability and safety while linking communities for all users.
- Provide a durable and maintainable transportation network making Interstate 270 the conduit for a prosperous region.
- Grow and utilize a diverse workforce.
- Minimize and mitigate impacts to customers through innovation.

- Optimize traffic flow and safety with the project limits during and after construction.
- Use the available resources wisely to improve safety, reliability and long-term performance of the assets with the project limits.
- Meet or beat the construction completion date of Nov. 30, 2021.

Bootheel Bridge Bundle

- Deliver the project within the program budget of $25.2 million on or before December 31, 2023.
- Use innovation to maximize the number of locations to be addressed while providing quality structures sensitive to location and traffic.
- Minimize public inconvenience through increased construction speed and flexibility in scheduling.
- Improve safety at each location.

- Construct an innovative, low-maintenance Missouri River Bridge that will provide a century of service within the program budget.
- Provide a safe, connective and accessible transportation facility that improves regional and local system performance.
- Manage the impact to the travelling public during construction.
- Complete the project by December 1, 2024, utilizing a diverse workforce.

- Safely deliver the project within the program budget of $25.99 million on or before Oct. 31, 2023.
- Use innovation to maximize the number of locations to be addressed.
- Provide quality long-lasting structures.
- Minimize public inconvenience through increased construction speed and flexibility in scheduling.

- Improve connectivity for the local community while maximizing safety and efficiency of the transportation network within the program budget of $62 million.
- Provide a durable and maintainable transportation infrastructure allowing for future expansion.
- Minimize impacts to the traveling public during construction while safely delivering the project by June 28, 2024.
- Deliver the project using a diverse workforce.

- Meet the expectation of delivering the project under budget.
- Provide a high quality, durable, low maintenance project that improves safety and reliability.
- Minimize traffic impacts during and after construction while maximizing safety and capacity.
- Maximize safety for workers while beating the project completion deadline of 12/31/24.
- Deliver the Project with a diverse workforce that fosters future DBE and workforce development.
- Demonstrate a commitment to quality and innovation in all phases of the project.

- Deliver a safe project within the programmed budget of $38.055 million.
- Maximize the number of locations to be addressed while providing quality structures.
- Use innovation to reduce delay and minimize impacts to the public.
- Deliver the project utilizing a diverse work force.
- Complete the project on or before Nov. 1, 2024.

- Deliver the project within the program budget of $13.6 million.
- Bring designated pedestrian facilities into ADA compliance.
- Use innovation to maximize improvements that provide a long-lasting and safe pedestrian facility.
- Safely deliver a project that minimizes and mitigates construction impacts through construction staging and communication efforts.
- Complete the project no later than December 1, 2022.

MoDOT Design-Build Procurement Process Checklist

- ☐ MoDOT determines appropriate project delivery method for project
  - ☐ Draft goals developed
  - ☐ High-level risk assessment and project delivery determination
  - ☐ Project team documentation and recommendation of delivery method
  - ☐ Senior Management approval of delivery method
- ☐ Project approved as Design-Build
- ☐ Place basic project information on MoDOT's external Design-Build website (http://www.modot.org/business/consultant_resources/DesignBuildInformation.htm)
- ☐ Project Director assigned, if different form original Project Manager
- ☐ Consider Owner Consultant for Preliminary RFP Tasks (if nessesary)
- ☐ Develop schedule for procurement process
  - ☐ Include document reviews and approvals by Central Office and FHWA
- ☐ Establish final project goals and schedule, approved by Senior Management
  - ☐ Establishes project overall budget (MoDOT costs & Design-Build contract amount)
  - ☐ Establishes completion date
- ☐ Delegation to the Project Director of the Chief Engineer's authority to negotiate and sign the contract (Commission Action)
- ☐ Perform in depth risk assessment and risk allocation
- ☐ Establish DBE goals and identify federal workforce goals, as applicable to project
  - ☐ Develop preliminary estimate and items of work areas
  - ☐ Contact External Civil Rights Division
- ☐ Set up External Sharepoint Sites, or other Document Control System
- ☐ Assemble reference documents (as-builts, ROW plans, environmental requirements, etc.)
- ☐ Write Request for Qualifications
- ☐ Advertisement for Notice for Letters of Interest
  - ☐ STATE STATUTE requirements
  - ☐ Advertisement in advance of issuing RFQ
  - ☐ National publication and two statewide daily publications
  - ☐ Request for industry to submit their letter of interest for information on the Design-Build project as it moves forward
- ☐ CO and FHWA review of RFQ
  - ☐ FHWA formal approval not required
- ☐ Issue RFQ and hold Industry Meeting
  - ☐ Kickoff meeting to explain basics of project and what is in the RFQ
  - ☐ Provides project goals and procurement schedule
  - ☐ Provides DBE goal and federal workforce goals
- ☐ Accept Statements for Qualification from proposing teams
  - ☐ Review and score SOQs to determine recommended short-list
  - ☐ FHWA observes

- ☐ Short list the teams
  - ☐ STATE STATUTE requirements
  - ☐ Executive Selection Committee approval of short list
  - ☐ See specific members of Exec. Selection Comm. per CSR
  - ☐ See checklist for Exec. Selection Comm. presentation & documentation
  - ☐ No more than 5 teams and no less than 2
  - ☐ FHWA observes
- ☐ Announce the short listed teams
  - ☐ Call teams to inform them of their status prior to press release (no other info shared)
  - ☐ Press release
  - ☐ Post shortlist on website
  - ☐ Debrief with teams not shortlisted
- ☐ Craft Request for Proposals
  - ☐ Review risk assessment
  - ☐ Perform formal risk allocation
  - ☐ CO and FHWA reviews of each draft section developed
    - ☐ FHWA review times per oversight agreement
- ☐ Final RFP reviewed by CO, Senior Management and FHWA
  - ☐ FHWA review time per Oversight Agreement
- ☐ Final RFP approved by FHWA
  - ☐ FHWA formal written approval of RFP
  - ☐ Project Director certifies that requirements of 23 CFR 635.309(p) have been met.
    - ☐ FHWA review time per Oversight Agreement
  - ☐ Project Financial Plan developed in accordance with FHWA guidance, if required
    - ☐ FP required for projects over $500 million
    - ☐ FP FHWA approval required for projects over $500 million
    - ☐ FHWA review time per Oversight Agreement
  - ☐ FHWA formally approves the project in FMIS
- ☐ Issue the RFP to the short listed teams
- ☐ Hold one-on-one confidential technical and contract discussions with each team
  - ☐ MoDOT hosts first meeting, sets ground rules for meetings:
    - ☐ Number, length and frequency of meetings allowed
    - ☐ DB teams provide subsequent agendas
    - ☐ AAS reviews and approvals
    - ☐ DE reviews and approvals
    - ☐ NEPA revisions (Environmental requirements evaluations)
    - ☐ AJR conceptual (step 1) review and approval
    - ☐ RFC – requests for clarifications
  - ☐ Each team hosts subsequent meetings
  - ☐ Small group of MoDOT project staff and FHWA representative, as required, attend each meeting
  - ☐ Strict confidentiality

- ☐ Meetings stop about one month before proposal due date
- ☐ Issue RFP Addendums to teams as necessary during the confidential technical discussion timeframe
  - ☐ FHWA review and approval of addendums per Oversight Agreement
- ☐ Issue clarifications to questions of the RFP to all the teams or confidential questions per each team as deemed appropriate
  - ☐ Follow AAS, DE, NEPA, AJR process reviews and approvals per FHWA Oversight Agreement
- ☐ RFP Addendums and clarifications stop approximately two weeks before proposal due date
- ☐ Proposal Review
  - ☐ Receive proposal documents
  - ☐ Provide proposer with time stamped receipt
  - ☐ Compliance review that all aspects of the proposal have been submitted and meet pass/fail, as per the Instructions to Proposers
  - ☐ Hold independent scoring sessions for each scoring area, as per the Instructions to Proposers
  - ☐ Project Director reviews the scores from all the scoring areas
  - ☐ Project Director determines recommendation of Apparent Best Value Proposer
- ☐ NEPA revisions and approval, if necessary
- ☐ Conceptual (Step 1) AJR approval, if necessary
- ☐ Executive Review and MHTC Selection
  - ☐ Executive review and MHTC selection on concurrent dates (may or may not coincide with a regular MHTC meeting, could be special meeting)
  - ☐ Project Director provides oral report to Executive Review Team for approval to take recommendation to the MHTC
  - ☐ MHTC selects Apparent Best Value Proposer and authorizes Project Director to negotiate and sign a contract
  - ☐ Project Director requests FHWA concurrence in final award of contract to apparent best-value proposer
  - ☐ Hold news conference with Apparent Best Value Proposer to announce it publicly
- ☐ De-brief the other proposers, sign documents to release the stipend
- ☐ Negotiate contract with Apparent Best Value Proposer
- ☐ Escrow proposal documents (optional)
- ☐ Notice to Proceed 1
  - ☐ Quality Manual
  - ☐ Baseline Schedule
  - ☐ Other requirements to obtain NTP 2
- ☐ Notice to Proceed 2

Conflict of Interest Certificate
Proposals

DESIGN-BUILD

rev 10/2021

Pursuant to 48 CFR Part 3, in order to avoid any conflicts of interest that are prohibited by applicable laws and regulations, and/or to avoid the appearance of any conflicts of interest, completion of this Conflict of Interest Certificate is required by all persons involved in the evaluation of the Proposals for the **PROJECT NAME** Design-Build Project. After reviewing the information furnished in this Certificate, the Project Director may contact you to obtain additional information.

In answering the questions set out in this Certificate; please be guided by the following definitions:

- Immediate Family – Includes spouses, all members of your resident household, and all dependents (for income tax purposes). Also includes those family members, not included in the foregoing definition, whose financial activities and interests are related to yours.
- Preceding Year – The twelve (12) month period prior to the date of completion of this Certificate.
- Proposal Team Member – Each of the companies listed on Appendix A, attached hereto, and any company controlling or controlled by such company (e.g. a parent or subsidiary).

	Statement	Response (Do Not Leave Blank)
1	Name of person filing Certificate	
2	Position on Project Name Team	
3	Business telephone number	
4	List any Proposal Team Member from whom, directly or indirectly, any loan, payment, or anything of monetary value has been received by the Evaluation Team Member or an immediate family member, or for you or such family member's benefit within the preceding year. Briefly describe the services provided that resulted in each item of the substantial income, if any. (The amount of income derived is not requested on this form.)	
5	List any Proposal Team Member from whom, directly or indirectly, any gratuity, gift, favor or entertainment was received by you or an immediate family member, or for you or such family member's benefit in the preceding year. (The amount of any such gift is not requested on this form.)	

Conflict of Interest Certificate
Proposals

DESIGN-BUILD

rev 10/2021

	Statement	Response (Do Not Leave Blank)
6	List the name of any Proposal Team Member in which you or any immediate family member has had a substantial interest or investment during the preceding year. Briefly describe the nature of such interest or investment. Exclude stock held by mutual funds, but include stock held by 401k Retirement Plans (other than by Mutual Funds in such plans). State percentage of such stock interest in the company (i.e. stock interest owned divided by the total of company's shares outstanding).	
7	List the name of any Proposal Team Member to whom you or any immediate family member owes a substantial sum.	
8	List the name of any Proposal Team Member for whom you or any immediate family member have worked within the preceding year, or from whom you have received an offer of employment within the preceding year.	
For Consultants working on PROJECT NAME Design-Build Project:		
9	List the name of any Proposal Team Member with whom your firm has had a joint venture relationship within the preceding year.	
10	List the name of any Proposal Team Member to whom your firm is under contract to provide ongoing legal or consulting work.	

To the best of my knowledge the information provided on this certificate is correct:

Signature	Print Name	Date

I have reviewed the responses in this certificate and have determined that this person may participate in the evaluation of Proposals:

Signature	Print Name	Date

Conflict of Interest Certificate
APPENDIX A

rev 10/2021

The following Teams have been selected to submit Proposals:

Team Name:		
Major Participants:		
Additional Team Members:		

Team Name:		
Major Participants:		
Additional Team Members:		

Team Name:		
Major Participants:		
Additional Team Members:		

Team Name:		
Major Participants:		
Additional Team Members:		

Team Name:		
Major Participants:		
Additional Team Members:		

EPG 149 Project Delivery ~~Method~~ Determination and Initial Risk Assessment

Forms

Risk Assessment Brainstorm Sheet

Risk Assessment Worksheet

Figure

Project Delivery Method Determination Flow Chart

Contents

149.1 Project Delivery Method Determination

MoDOT uses innovative contracting to ensure that the public receives full value for every tax dollar invested in Missouri's transportation system. Innovative contracting methods provide the ability to accelerate project delivery, reduce cost, improve quality and minimize impacts to the traveling public. A discussion of MoDOT's various innovative contracting methods can be found in EPG 147 Innovative Contracting.

Project Delivery Method Determination Flow Chart

In order to select an appropriate project delivery method ~~or innovative contracting tool~~, a project must be evaluated to determine how the project aligns with each available delivery method~~/innovative contracting tool~~. This evaluation is accomplished as shown in the Project Delivery Method Determination Flow Chart. A Project Delivery Determination (PDD) tool has been established to guide Project Teams through the evaluation to determine appropriate delivery methods. This PDD is considered a national best practice to weigh project characteristics against key factors for consideration.~~, by setting project goals, assessing project risks and examining the appropriateness of the available delivery methods given the specifics of the project.~~ Although all projects benefit from this review, it is especially important that large and/or complex projects be considered in order that the most appropriate delivery method is used. Examples of large and/or complex project types that should be considered include but are not limited to: Bundled Projects, Major River Bridges, Complex corridor projects, and complex interchange projects.

The Project Delivery Determination Document provides a formal approach for selecting project delivery methods for highway projects. By using the PDD Tool, a Project Delivery Selection Report can be generated for each individual project. The primary objectives of this tool are:

- Present a structured approach to assist MoDOT in making project delivery decisions;
- Assist MoDOT in determining if there is a dominant or optimal choice of a delivery method; and
- Provide documentation of the selection decision.

149.1.1 Background

The project delivery method is the process by which a construction project is comprehensively designed and constructed including project scope definition, organization of designers, constructors and various consultants, sequencing of design and construction operations, execution of design and construction, and closeout and start-up. Thus, the different project delivery methods are distinguished by the manner in which contracts between the agency, designers, and builders are formed and the technical relationships that evolve between each party inside those contracts. Currently, there are several types of project delivery methods available for publicly funded transportation projects. MoDOT generally uses two primary delivery methods: Design-Bid-Build (DBB) and Design-Build (DB). Design-Bid-Build can include other alternative contracting methods such as: A+B Bidding, Fixed Price Variable Scope (FPVS), Indefinite Delivery Indefinite Quantity (IDIQ) and Alternate Technical Concepts (ATC). No single project delivery method is appropriate for every project. Each project must be examined individually to determine how it aligns with the attributes of each available delivery method.

149.1.2 Primary Delivery Methods

Design-Bid-Build is the traditional project delivery method in which an agency designs, or retains a designer to furnish complete design services, and then advertises and awards a separate construction contract based on the designer's completed construction documents. In DBB, the agency "owns" the details of design during construction and as a result, is responsible for the cost of any errors, omissions, and unknowns encountered in construction.

Design-Build is a project delivery method in which the agency procures both design and construction services in the same contract from a single, legal entity referred to as the design-builder. This method uses Request for Qualifications (RFQ)/Request for Proposals (RFP) procedures rather than the DBB Invitation for Bids procedures. The design-builder controls the details of design and is responsible for the cost of any errors or omissions encountered in construction.

149.1.3 Facilitation of the Tool

When embarking on using the Project Delivery Determination tool for the first time, it is recommended that a facilitator is brought in for the workshop. The facilitator will assist with working through the tool and provide guidance for discussing the project and selection of a delivery method. This individual should be knowledgeable about the process and should be consistently used. The facilitator also helps to answer questions and make sure the process stays on track and the team moves towards a formal selection.

Participation

Using the project delivery determination tool is only as good as the people who are involved in the selection workshop. Therefore, it is necessary to have a collection of individuals to participate in the selection of the delivery method. The selection team may include members of district and division leadership, the Area Team, applicable discipline leads from both district and division levels, and staff from previous Design-Build teams and FHWA. When crafting the invite list, it is important to include both a variety of personnel and keep the numbers low to promote a collaborative discussion.

Potential bias

The best approach for the participants of the Project Delivery Determination Workshop is to keep an open mind about the delivery method to choose. Failure to maintain an objective approach by everyone in the workshop will result in an inaccurate outcome.

149.1.4 Project Delivery Selection Process

The process is shown in the outline below. It consists of individual steps to complete the entire process. The steps should be followed in sequential order.

Step 1:

- Project Overview and Status
- Establish Draft Project Goals
- Document Project Constraints

Step 2: High-Level Initial Risk Analysis

A. Brainstorm Major Risk Areas

B. Analyze and compile risk factors

Step 3: Primary Factor Evaluation

A. Assess the primary factors (these factors most often determine the selection)

- Complexity and Innovation
- Delivery Schedule
- Project Cost Considerations
- Level of Design
- Project Risks (High-Medium)

Step 4: Secondary Factor Evaluation (if ness.)

A. Perform a pass/fail analysis of the secondary factors to ensure that they are not relevant to the decision.

- Staff Experience/Availability (Agency)
- Level of Oversight and Control
- Competition and Contractor Experience

B. If pass/fail analysis does not result in clear determination of the method of delivery, then perform a more rigorous evaluation of the secondary factors against all potential methods of delivery

149.2 Draft Project Goals

An understanding of project goals is essential to selecting an appropriate project delivery method. Therefore, draft project goals should be set prior to using the project delivery selection tool. Typically, the project goals can be defined in three to five items and need to be reviewed here. Example goals are provided below, but the report should include project-specific goals. These goals should remain consistent over the life of the project.

Schedule

- Minimize project delivery time
- Complete the project on schedule
- Accelerate start of project revenue

Cost

- Minimize project cost
- Maximize project budget
- Complete the project on budget
- Maximize the project scope and improvements within the project budget

Quality

- Meet or exceed project requirements
- Select the best team
- Provide a high quality design and construction constraints
- Provide an aesthetically pleasing project

Functional

- Maximize the life cycle performance of the project
- Maximize capacity and mobility improvements
- Minimize inconvenience to the traveling public during construction
- Maximize safety of workers and traveling public during construction

~~Establishing well defined project goals is essential for any project delivery analysis as these goals will provide the necessary standards to measure success at each phase of project delivery. Ultimately, the measure of any project's success is how well it met or exceeded the established project goals.~~

~~Project goals should focus on how the project will be delivered – the conditions that define "during-construction" excellence. The challenge is to develop multifaceted, measurable project goals that capture all key stakeholders' definitions of project delivery success.~~

149.3 Purpose and Objective of Project Goal-Setting

The ~~determined~~ draft project goals for a particular project and potential risk to ataining those goals will be the basis by which the project delivery method will be determined and the project specific procurement requirements will be developed. These goals allow decision-makers to evaluate the advantages and challenges of various procurement methods and to select a project delivery method that provides the best opportunity for success.

In order to effectively use project goals to guide the project delivery method selection, the goals must be prioritized in order of importance to MoDOT. The determined "priority order" allows project delivery decisions-makers to use the most important goal as the "pivot point" to analyze all delivery choices. The remaining goals, listed in descending order of importance, further define and shape the project's procurement/delivery strategies.

149.4 ~~Content of Project Goal-Setting~~Project Delivery Constraints

There are potential aspects of a project that can eliminate the need to evaluate one or more of the possible delivery methods. A list of general constraints can be found below and should be referred to while completing the Project Delivery Determination.

Schedule

- Utilize federal funding by a certain date
- Complete the project on schedule
- Weather and/or environmental impact

Cost

- Project must not exceed a specific amount

- Minimal changes will be accepted
- Some funding may be utilized for specific type of work (bridges, drainage, etc)

Quality

- Must adhere to standards proposed by the Agency
- High quality design and construction constraints
- Adhere to local and federal codes

Functional

- Traveling public must not be disrupted during construction
- Hazardous site where safety is a concern

~~Project goals are standards that measure the success of a project. Most projects' goals are complex and therefor require objectives to be established to define how each is to be measured. Objectives are the methods by which the project goals are achieved.~~

~~Questions that should be considered when determining the goals for a project include:~~

~~1. Is this goal detailed enough to guide preparation of the Procurement Documents?~~
~~2. Is this a goal which, if met or exceeded, the public would perceive the project as successful?~~
~~3. Is this goal "end-minded"?~~
~~4. Is this goal realistic?~~
~~5. Is this goal measurable?~~
~~6. Is this goal clear?~~
~~7. Who is this goal intended to benefit?~~
~~8. Is this goal based upon an objective assessment of the needs of the community, MoDOT, etc.?~~
~~9. Are the goals established in order of importance?~~

~~Questions that should be considered when determining the objectives pertaining to each goal include:~~

~~1. Does this objective contribute toward achieving the goal?~~
~~2. Will meeting this objective assist in meeting the goal?~~
~~3. Is this an objective for the entire project or for a specific area of the project? If it is for a specific area of the project, what are the objectives for the remaining areas that will help achieve the goal?~~
~~4. Is this objective time-constrained?~~
~~5. Is it an interim or during construction objective?~~
~~6. Is this objective achievable?~~
~~7. Is this objective measurable?~~
~~8. Does the objective provide additional definition in support of the goal?~~

Once these questions have been addressed and the goals have been developed and approved by MoDOT executive managment, the goals can be made public. Throughout the project development process, the goals should be clearly communicated to all project participants including all MoDOT project personnel, the design and construction industry and all project stakeholders.

Examples

The project goals listed below were developed for past projects. The goals are included as a reference for future goal setting efforts.

Project A

1. Maximize capacity and mobility improvements in the corridor within the program budget of $150 million.
2. Minimize inconvenience to the public during construction.
3. Provide a quality product.
4. Complete construction by end of calendar year 2008.
5. Provide a visually pleasing finished product.

Project B

1. Minimize inconvenience to adjacent properties and the traveling public.
2. Complete the Project by November 2009 within the budget established by the city. (Should include $ amount).
3. Construct to the highest quality and at the best value, a safe, functional and aesthetically pleasing parkway that will enhance adjacent properties and be relatively easy to maintain.
4. Encourage participation of local engineers, contractors and material suppliers.
5. Keep the public well informed throughout the duration of the project.

I-70 Mississippi River Bridge Project Goals

1. Deliver the project within the established budget of $640 million.
2. Open the new bridge and roadway to traffic by January 1, 2014.
3. Construct a river crossing supported by the region that can be reasonably maintained and have a century of useful service.
4. Increase mobility and improve capacity to provide a vital link in the national transportation network.
5. Provide employment opportunities for socially and economically disadvantaged individuals and businesses.
6. Communicate progress and key milestones to stakeholders and the public.
7. Seek and incorporate ideas from designers, contractors and suppliers to provide the best value for taxpayers.

I-29/I-35 kcICON Design-Build Project Goals

~~1. Deliver the I-29/I-35 Corridor improvements within the total program budget of $245 million.~~
~~2. Construct a landmark Missouri River bridge(s) that can be reasonably maintained to provide more than a century of useful service.~~
~~3. Maximize safety, mobility, aesthetic and capacity improvements in the corridor.~~
~~4. Engage stakeholders and the community to successfully develop and deliver the project.~~
~~5. Meet or beat the project completion date of October 31, 2011.~~

149.5 Initial Risk Assessment

Risk is an uncertain event or condition that, if it occurs, has an effect on a project's objectives. Risk allocation is the assignment of unknown events or conditions to the party that can best manage them. An initial assessment of project risks is important to ensure the selection of the delivery method that can properly address them. An approach that focuses on a fair allocation of risk will be most successful.

Performing an initial high-level project risk assessment is necessary to determine and document the most appropriate delivery method for a project. The initial risk assessment is also used in the development of draft project goals. A good initial high-level~~thorough~~ risk assessment allows MoDOT to clearly identify, prioritize and assign resources to risk avoidance and mitigation opportunities in order to help eliminate or reduce risk to the project. The resultant risks and an understanding of the efforts required to properly manage the risk, provide the necessary perspective by which the appropriate project delivery method should be selected.

For each project initial risk assessment, the assessment team is composed of MoDOT staff from all applicable functional units. Typically, this team consists of traditional core team members, with each member having different areas of expertise, such as design, construction, right of way, utilities, geotechnical, traffic and maintenance. Depending on the project, you may include staff from other expertise areas including FHWA, environmental and customer relations. Each of the core disciplines applicable to the project should be included in the initial risk assessment meeting. It may also be helpful to include a facilitator to organize, streamline and expedite the process.

149.5.1 Content of an Initial Risk Assessment

The first step of an initial risk assessment is to brainstorm project risks. A brainstorming spreadsheet can be used to capture all project risks. Examples of areas of risks that should be evaluated during a risk assessment include:

~~1. Drainage: Are there third party approvals necessary for drainage design?~~
~~2. Environmental: Are there environmental permits that MoDOT can obtain? How can the NEPA document allow for flexibility in the ultimate project solution?~~

Risk Assessment Brainstorm Sheet

~~3. Noise Walls: Can MoDOT agree with the public to a height, elevation, etc. of a noise wall or to a process to reach agreement on a noise wall?~~
~~4. Method of Handling Traffic: Can MoDOT agree to detour routes with a public entity?~~
~~5. Public Information: Are there research efforts that can assist in formulating a public information plan or method of handling traffic plan? Are there key audiences that could derail the project?~~
~~6. Right of way: Are there parcels that acquisition can be avoided? Can the amount of right of way acquired be minimized?~~
~~7. Roadway design: Are there variances or exceptions that will be required? Is an AJR required?~~
~~8. Structures: Are there approvals or variances that need to obtained?~~
~~9. Third Party Agreements and Permits (other than environmental): Are there local IGA's, railroad agreements, process agreements, standards agreements that need to be obtained?~~
~~10. Utilities: What utilities are possible conflicts? Are there utilities with long relocation schedules? Should a SUE be pursued?~~

1. Environmental: Are there environmental permits that MoDOT can obtain? How can the NEPA document allow for flexibility in the ultimate project solution? Noise Walls: Can MoDOT agree with the public to a height, elevation, etc. of a noise wall or to a process to reach agreement on a noise wall?
2. Right of way: Are there parcels that acquisition can be avoided? Can the amount of right of way acquired be minimized?
3. Utilities: What utilities are possible conflicts? Are there utilities with long relocation schedules? Should a SUE be pursued?
4. Public Information: Are there research efforts that can assist in formulating a public information plan or method of handling traffic plan? Are there key audiences that could derail the project?
5. Third Party Agreements and Permits (other than environmental): Are there local IGA's, railroad agreements, process agreements, standards agreements that need to be obtained?
6. Drainage: Are there third party approvals necessary for drainage design?
7. Method of Handling Traffic: Can MoDOT agree to detour routes with a public entity?
8. Roadway design: Are there variances or exceptions that will be required? Is an AJR required?
9. Structures: Are there approvals or variances that need to obtained?

149.5.2 Initial Risk Assessment Process

A Risk Assessment Worksheet should be used to document the risk and the resultant mitigation efforts, if any, that will be performed. Traditionally the steps in the risk assessment process are as follows:

- A broad area of risk is identified and listed on the form as a "Risk Category".
- For each risk category, all associated specific risk elements are identified and listed on the risk worksheet under the heading "Risk Element". If a project has several risks, multiple risk worksheets can be filled out for each risk category.
- The risk assessment team evaluates each risk elements "impact factor". The impact factor is the significance of the impact that each risk element could have to the goals of the project, rated on a 0 to 6 scale (6 being the greatest impact – 0 being no impact). The impact factor is recorded in column A.
- Next, the risk assessment team evaluates the magnitude or "level of the effort factor" required to avoid or mitigate each specific risk element. This level of effort factor is rated on a 0 to 6 scale (6 being the greatest effort – 0 being no effort) and is recorded in column B.
- Next, for each risk element the risk assessment team determines the probability of the risk impact occurring if no action to avoid or mitigate the risk is taken. The probability factor rated on a 0 to 1.0 scale is recorded in column C.
- As a result of the ratings, a Risk Factor is calculated (Column A * Column B * Column C) for each risk element. The greater the Risk Factor, the higher the priority for MoDOT to identify the appropriate mitigation efforts necessary to reduce the risk and the greater the level of resources that must be employed to mitigate that risk.
- The final step in the initial risk assessment process is to identify the risk mitigation tasks that need to occur to reduce the risks to the project goals.

Risk Assessment Worksheet

149.5.3 Assigning Risk Elements to Delivery Method

Following evaluation of all of the Risks, the team should identify the medium and high risk items from the evaluation. The team should then assign these risk items to the delivery method that provides the best advantage to mitigate given the information known about them at that time. If no clear advantage is evident, document those risk items accordingly.

149.6 Project Delivery ~~Method~~ Determination

In order to determine the best delivery method for a project, it is helpful to consider the advantages and disadvantages (i.e. the pros and cons) of each delivery method. This may include a review of likely risk allocations which would occur if the design-build delivery method were pursued, as discussed in EPG 139 Design - Build. After reviewing the project goals, the project specific risks and the advantages and disadvantages of each delivery method, the project core team recommends a delivery method to their district management.

Some advantages of design-build are:

- ~~Allows innovation on projects~~Projects with multiple solutions
- Allows significant opportunity for innovation
- Permits extreme cost control

- Designs tailored to a contractor's strengths
- Establishes single point of responsibility between MoDOT and contractor
- Coordinates design & construction expertise
- Allocates risks to best party
- Bases contract on performance requirements & specifications
- Saves time

Some advantages of traditional design-bid-build are:

- Maintains MoDOT's control of design process and solutions
- Designer works directly for MoDOT
- Works well for projects with tight constraints that may limit innovation (i.e. floodplain, schedule, environmental issues ROW)
- Allows for "on-the-shelf" plans being developed in advance, i.e. an upfront construction funding allocation is not required
- Applies best for use on routine projects, such as overlays

Some advantages of traditional design-bid-build with Alternate Technical Concepts (ATCs) are:

- Allows implementation at any stage
- Allows opportunity for contractor innovation, but MoDOT maintains control of ultimate design solution
- Tailors designs to a contractor's strengths to achieve the most economical design
- Entices smaller contractors, increasing competition
- Uses plans that have been developed to an advanced stage
- Maximizes competitive bidding

149.7 Documentation and Approval

Documentation of the project delivery method determination must include the following:

- Project background
- Project ~~specific details~~Overview and Status
- Project Goals
- Project Constraints
- High Risk Elements
- Delivery Method Comparison (Pros/Cons)
- Obstacles and Opportunities for each Delivery Method
- Summary & Recommendation
- Attachments/Exhibits

If design-build is the recommended delivery method, the District Engineer or their designee should present the project to the Chief Engineer and~~,~~ Assistant Chief Engineer~~, State Design Engineer, State Bridge Engineer, Design-Build Coordinator and/or Chief Financial Officer must approve the recommendation~~for approval to move foward. Approval is required to ensure MoDOT is using design-build on the most appropriate projects and to ensure that MoDOT does

not exceed its legislative authority of 2% of the number of projects per year. ~~To obtain approval, contact the Design-Build Coordinator or State Design Engineer to discuss making arrangements for staff to consider the project.~~

If DBB with ATCs, A+B Bidding, or Fixed Price Variable Scope is the recommended delivery method, the project team should contact the Bidding and Contract Services and their Design Liaison for further guidance.

EPG 104.2.1 Increased Federal Share Program

Introduction

Using federal funding for transportation projects is a complex process as described in EPG 123.1. This article describes a process that allows MoDOT to increase its federal share of a project's eligible cost by five percent for projects useing project-level innovation per CFR.(will be linked later)

Request for Increased Federal Share

An obligation is a commitment by the federal government to reimburse MoDOT for the federal share of a project's eligible cost. This commitment occurs at each phase of the project and prior to advancing to the next phase. Federal aid transportation projects are developed by completing work in the following distinct work phases:

1. Preliminary Engineering (PE)
2. Right of Way (ROW)
3. Utilities, if applicable
4. Construction

To submit a request for increased federal share, the district must submit their innovative project via MoDOT's Online Portal along any phase of the project but must be prior to the obligation of the next work phase of a project desired to be captured. The project will be recorded and Central Office Design? will bundle multiple qualifying projects of similar innovation categories into a formal application to the FHWA. Examples of FHWA approved applications, arranged in categories, are available on FHWA's website. The following link, MoDOT Categories, will direct you to the most current list of opportunities that MoDOT has utilized. This list is not all-inclusive as new innovations are being implemented daily. Innovation is defined by FHWA as (list here?)

Criteria for no longer being innovative are below. The innovation must meet all criteria in order to no longer be innovative:

- Line Item Code that are not Misc. items are assigned to the innovation
- A special JSP is no longer needed for the innovation
- The innovation is now included in the MoDOT specification book
- There is an EPG article about the innovation

Once your innovative project is approved by FHWA, MoDOT will be notified and the project will be obligated by the Financial Services Division. Any expenses incurred in a work phase prior to the authorization of additional federal share will not be eligible for additional federal reimbursement.

MoDOT will receive the additional five percent federal share for the total final project cost that was obligated with additional share. It is important to note that this funding does not come back to your project. The additional five percent federal share allows MoDOT to preserve state road funds for additional federal match and non-federally eligible activities.

104.2.2 **District Role**

The following Job Special Provision "JSP 2107 Special Consideration of Change Orders and Value Engineering" shall be used on all projects containing an innovative concept or material that was

approved for increased federal share. Please note that the engineer reserves the right to remove such innovation from their respected project, but such parties shall ensure that the proposed change order or value engineering savings will outweigh the loss of additional federal share. If the innovation is removed from the contract, the involved party must notify the Financial Service Division that the project's federal share has been altered.

Process Summary

The following process is recommended for successful submission and approval:

1. Project Manager submits job information via online portal
2. Central Office Design bundles qualifying projects into sub-categories and sends them to FHWA for review. The projects must meet the FHWA criteria listed in 104.1 and be new or rarely used within the state
3. Upon satisfactory review, FHWA will issue an acceptance letter to MoDOT for approved projects
4. Financial Services will obligate projects with increased federal share
5. Project Manager will add Increase Federal Share JSP to contract

Additional Requirements

It is important to understand the following requirements so that MoDOT may utilize the full potential of the Additional Federal Share program.

- Additional 5% Federal Share may be applied to and capture the cost of all stages; Preliminary Engineering, Right of Way, Utilities and Construction costs provided that the application is submitted prior to the Federal Obligation of each pertinent stage.

- Project Managers reserve the right to make essential changes to associated projects. If such changes jeopardize the successful application to FHWA, Financial Services must be notified in order to plan final Federal Share accordingly.

- A maximum of five percent additional federal share will be allowed regardless of how many innovative solutions a project incorporates.

- In a single Fiscal Year, the money MoDOT gets back from the program cannot exceed ten percent of the combined NHPP, STBG, and PL federal funding sources.

- Projects that use NHFP, safety and ER funding are not eligible for increase federal share.

- No more than fifteen projects of any specific innovation within a federal fiscal year shall be applied for additional federal share.

- Minimum time for increased federal share application before Plans Specification & Estimate (PS&E) submittal to Central Office:

- PMs submit 3 months before PS&E Central Office submittals to FHWA due 3 weeks prior to the end of the quarter.