

# ALTERNATE PROJECT DELIVERY OFFICE

## INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: DESIGN-BUILD REQUIREMENTS FOR ADVERTISEMENT	NUMBER:  IIM-APD-1
SPECIFIC SUBJECT: DESIGN-BUILD DELIVERABLES FOR RFQ AND RFP ADVERTISEMENT	DATE: AUGUST 1, 2012
	SUPERSEDES:
APPROVED:	Mohammad Mirshahi, PE Deputy Chief Engineer Approved July 27, 2012

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### EFFECTIVE DATE AND PURPOSE

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- This memorandum is effective August 1, 2012. It identifies the Request for Qualifications (RFQ) and Request for Proposals (RFP) deliverables required to ensure the successful advertisement of Design-Build contracts.
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### LEGAL AUTHORITY AND BACKGROUND

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During the 2001 Virginia Legislative Session, the General Assembly of Virginia amended and reenacted § 33.1-12 of the Code of Virginia, relating to powers and duties of the Commonwealth Transportation Board (CTB) authorizing the award of Design-Build contracts.

The code requires the CTB to adopt Objective Criteria for project selection. On October 17, 2001, the CTB adopted and approved the following Objective Criteria for the selection of Design-Build projects:

- Expedited Schedule,
- Established Budget,
- Well-defined Scope,
- Risk Analysis,
- Prequalification of Design-Build Firms, and
- Competitive Bidding Processes.

The Code was further amended during the 2006 Virginia Legislative Session to eliminate the restrictions on the number of transportation projects the Commonwealth Transportation Board may award on a Design-Build basis.

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## **DESIGN-BUILD METHODOLOGY**

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Design-Build delivery method promotes innovation, flexibility and risk sharing by providing the contractor sole responsibility for design and construction of the project. It is important that the Design Builder is given the appropriate amount of performance specifications, standards, technical criteria and design concept to ensure the completed project performs as expected without impeding innovation. The level of preliminary engineering effort required before a Design-Build contract is advertised should be sufficient to allow the Department to determine a clear scope, schedule, and reasonable cost estimate that meet all Federal and State laws and regulations. These efforts vary depending on project size, scope, and complexity. Therefore, it is critical that the District Project Manager and APD Office Point of Contact (POC) meet and discuss activities noted below to determine appropriate level of efforts prior to start of the preliminary engineering design. Any deviation from the required RFQ and RFP deliverables must be approved by the Deputy Chief Engineer.

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## **RFQ ADVERTISEMENT DELIVERABLES**

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A Design-Build RFQ Submittal Package shall be provided by the District to APD, consisting of the following:

- Project Overview – A Project description that identifies the project location, general scope of work (i.e. widening, new alignment, reconstruction, etc.) and any major features or considerations that need to be taken into account by the Design-Builder.
- Risk Analysis – A Risk Analysis Meeting must be conducted prior to advertisement of the RFQ to identify major project risks, propose mitigating actions and allocate risks to the Design-Builder, VDOT or both. This Risk Assessment is instrumental in determining the appropriate scope of work, key personnel, and disciplines required for the successful delivery of the project.
- Disadvantaged Business Enterprise (DBE) Goal - A DBE Goal must be established prior to the advertisement of the RFQ so potential Offerors can assemble teams that allow them to achieve this goal. The preliminary scope of work and estimate shall be provided to Central Office Civil Rights Division for the determination of the appropriate DBE Goal.
- Project Schedule – An initial project schedule is prepared to determine reasonable,

substantial and final completion dates to be included in the RFQ. At a minimum, the contract schedule should consider activities for the procurement of the Design-Builder, final design, right-of-way acquisition (if applicable), utility relocation (if applicable), time of year restrictions (if applicable), governmental approvals, VDOT's review time for submittals and construction.

- RFQ Estimate – An estimated contract value is developed for the RFQ using the Design-Build estimate summary sheet provided by APD. The estimate includes design, right-of-way, utility relocation, construction, Design-Build risk, QA/ QC, price adjustments (asphalt, fuel and steel) and contract administration. These items shall be divided into VDOT and Design-Builder costs. The estimate for the project may be developed utilizing PCES software.
- Conflict of Interest Determination – Any firms and subconsultants that are involved with pre-award (environmental studies, survey, design, geotechnical, traffic analysis, RFP plans, technical requirements) and/ or post award activities (contract administration, Independent Assurance/ Independent Verification testing) should be identified and may be considered in conflict in accordance with Innovative Project Delivery Division Memorandum IPD 07-02.0. The District should notify any firms that they deem to be in conflict; however, it is ultimately the responsibility of the consultant to verify their conflict of interest status regarding the project.
- RFQ Concept – A conceptual document shall be provided that illustrates the intended scope of work for the Project. Minimally, this concept should identify any major project features (bridges, retaining walls, roadway improvements, etc.).
- Status of NEPA Document – The status of the NEPA Document indicates the type of environmental document being prepared and its anticipated approval date. If the NEPA Document has not been completed and approved prior to the advertisement of the RFQ, the status of the NEPA Document shall be provided.
- RFQ Evaluation Criteria – Key Personnel and any unique requirements for the Project (i.e. a specialized blasting contractor) shall be identified for the development of the RFQ evaluation criteria.
- RFQ Information Package – The RFQ Information Package includes the documents necessary for Offerors to assess the proposed project and determine (1) their appropriate team structure, (2) the type and level of experience required and (3) critical project risks. Minimally, this should include, but is not limited to the: FOPI, Conceptual RFQ Concept, Status of NEPA Document (including any completed environmental studies), and any existing information related to the Project (as-built or existing plans of adjacent roadways and/ or structures not identified as critical infrastructure, existing topographical survey, existing traffic data, etc.). Any RFP Deliverables (defined below) that have been completed prior to the advertisement of the RFQ can also be included in the RFQ Information Package.

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## REQUEST FOR PROPOSALS (RFP) DELIVERABLES

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A Design-Build RFP Submittal Package must be provided by the District to APD one week prior to the FHWA Submittal Date. The Design-Build RFP Submittal Package shall consist of the following:

- For a single-phase procurement (RFP only), all of the items listed as RFQ deliverables are required as RFP deliverables in addition to those listed below.
- STIP and TIP Verification - A STIP and TIP (if applicable) verification document shall be provided. The amount identified in the STIP or TIP must correspond with the current contract value. In case there is a change in the value that exceeds the sliding scale noted in the VDOT - FHWA Efficiencies Agreement, the STIP or TIP amendment shall be made prior to submitting the RFP Submittal Package to APD.
- Value Engineering – A Value Engineering study must be completed for all projects with a total estimated cost (Design and Construction) of \$5 million or greater, unless a waiver is granted by the VDOT Commissioner.
- NEPA Document – A completed NEPA Document is required to obligate RW and CN funds. It is VDOT practice to complete the NEPA Document prior to release of the RFP. All deviations from this practice require special FHWA approval. All environmental commitments shall be incorporated into the RFP technical requirements as part of the Design-Builders' scope of work. The approved NEPA Document and supporting studies will be included in the RFP Information Package.
- Noise Analysis (if applicable) – It is VDOT practice to complete a preliminary noise analysis prior to release of the RFP. It is the Design-Builders' responsibility to complete the final noise analysis based on their unique design.
- VDOT's Public Involvement Documentation – VDOT's Public Involvement Process shall be completed as a requirement of the design approval process. All commitments in the Public Hearing Transcript that impact the scope of the project shall be incorporated into the RFP technical requirements as part of the Design-Builders' scope of work.
- RFP Estimate – An Estimate shall be provided for the RFP using the Design-Build estimate summary sheet provided by APD. The Estimate should be as detailed as possible and include design, right-of-way, utility relocation, construction, Design-Build risk, QA/QC, and VDOT contract administration to include the Department's services for Independent Assurance and Independent Verification. These items shall be divided into VDOT and Design-Builder costs. The Estimate for the project's major items, which includes, but is not limited to the following: excavation, rock excavation, pavement, drainage, traffic control devices, bridges, guardrail, sound walls, retaining walls, E&S, etc. should be developed utilizing TRNS\*PORT software. The estimate in VDOT's SYIP, TIP and STIP shall match the most current Estimate prior to submitting RFP submittal to FHWA.

- Trainee Goal – A Trainee Goal must be established so Offerors can consider it when developing bids. The District Civil Rights Section is responsible for providing the Trainee Goal for the project.
- Design Approval – Typically, the design approval for a Design-Build project requires a reduced amount of plan development when compared to the traditional Design-Bid-Build process. The approval request should include plans identifying major features such as line, grade, typical sections, design criteria, etc.
- Design Waivers/ Design Exceptions – It is preferred that all known design waivers and/or design exceptions based on the RFP plans be obtained and included in the RFP Information Package. Otherwise, a determination shall be made for each exception/waiver as to whether VDOT obtains advance approval or leave it for the Design-Builder to mitigate the need for those design exceptions/waivers as part of their final design. At a minimum, all known design exceptions/waivers shall be listed in the RFP technical requirements.
- Survey – It is VDOT's practice to provide preliminary survey control and preliminary base mapping for the project. The level of mapping shall be a design level survey adequate to support the development of preliminary engineering for the RFP plans and to determine the Right of Way limits for the Project. Design level survey is defined in Chapter 4 of the Survey Manual and can include control, topography, boundary, existing improvements (as built), hydraulic features, and DTM. Any items that are not included in the preliminary base mapping will be noted within the preliminary base file. Additional survey will be necessary to complete items expressly excluded from the preliminary base mapping prior to final design. These features may be obtained through conventional field procedures, photogrammetry, mobile scanning, or a combination thereof that meets the VDOT Survey Manual standards. All work is required to be signed and sealed per Chapter 12 of the Survey Manual. The survey shall include location and Quality Level B designation of all existing utilities (underground and overhead).
- Traffic Data – Sufficient traffic data shall be provided to support the traffic analysis, pavement design, environmental studies and other applicable documents. Traffic Data will be included in the RFP Information Package.
- Traffic Analysis – A preliminary traffic analysis, necessary to identify general operational characteristics, and geometric requirements shall be performed for all intersections and interchanges. This shall include obtaining approval for all Interchange Justification Reports (IJR) and/ or Interchange Modification Reports (IMR) required for the Project, including coordinating FHWA approval where applicable in accordance with VDOT's Policy outlined in IIM-LD-200. The results of the traffic analysis shall be reviewed and incorporated into the RFP technical requirements.
- Geotechnical Data Report (GDR) – An unknown subsurface condition is considered a high risk item on any construction project. It's in the best interest of the Department to conduct a sufficient level of geotechnical investigation to minimize the risk of potential claims related to Differing Site Conditions during the construction. Therefore, an

adequate subsurface investigation shall be performed and a GDR prepared utilizing the Materials Division template to establish a baseline for the project's subsurface conditions. The GDR generally takes an extensive amount of time; therefore, this process should be started as soon as practical and in coordination with the District Material Engineer and Central Office Geotechnical Program Manager. The completed GDR will be included in the RFP Information Package.

- Pavement Design – A minimum pavement section must be provided for each roadway section on the project. Where under drains are needed, the requirements for these under drains shall be included as part of the pavement design. The pavement design is included in the GDR and RFP technical requirements and should not be depicted on typical sections in the RFP plans. Areas of new pavement, pavement widening, pavement salvage (including mill, mill and overlay and/ or build up) and pavement demolition should be accurately depicted on the RFP plans.
- Roadway Concepts – The level of development for the roadway concepts shall be based on the scope of work, complexity and the risk assessment analysis. Roadway concepts shall consist of the following for the mainline and all connecting/intersecting roadways:
  - Preliminary line and grade for all anticipated road improvements
  - A design criteria table depicting minimum geometric requirements
  - Typical sections with appropriate geometric requirements identified and specific pavement layers removed to avoid potential discrepancies with the GDR
  - Construction and ROW limits, utility easements
- Contextual Features (if applicable) – Aesthetic details (specialty medians/ sidewalks, decorative railing, wall treatments, specialty lighting, specialty signal and sign structures and landscaping) shall be referenced in the technical requirements and should be identified on the RFP Plans if possible. This shall include the specifications and anticipated locations of each aesthetic detail.
- Drainage Study – A preliminary drainage study should be conducted to the extent necessary to identify constructability issues and determine appropriate right of way limits. Potential stream relocation, restoration or enhancements should be identified, if possible. All existing drainage structures shall be inspected for structural and functional adequacy. Any remediation measures should be identified and included in the RFP technical requirements.

A preliminary Hydraulic and Hydrologic Analysis (H&HA) shall be completed as required for culverts and bridges in accordance with the VDOT Drainage Manual.

- Structural Concepts – Structural concepts shall be consistent with the Structure and Bridge Division's "Guidelines for the Structural Coordination of Design-Build Projects" (April 2008) and the latest version of Volume V-Part 2 of the Manual of the Structure and Bridge Division. This shall include one conceptual bridge plan for each structure that contains a plan view, elevation view and typical section identifying the type, size and location for each alternative. Specific requirements for each structure, such as type of barrier, lighting, paint color and other aesthetic treatments shall be included in the

technical requirements. A Scour Potential Assessment shall be completed in coordination with Central Office Structures and Bridge Division for all structures over water where foundations may be scour critical. Conceptual plans for all structures will be included in the RFP Information Package.

- Traffic Control Devices – All applicable Traffic Control Device questionnaires (Signals, Signing, Roundabouts, Pavement Markings and Lighting) shall be completed prior to the development of RFP plans and technical requirements. For freeway or expressway projects involving complex guide signing and projects including the installation of ITS/TMS devices, a preliminary signing and/or ITS plan shall be prepared. The scope of work regarding advanced guide signage located outside of the Project limits shall also be addressed.
- Right of Way Limits – The right-of-way limits for the project shall be depicted on the RFP plans. The limits should accommodate adequate right of way to construct the project, generally including easements for stormwater management, drainage and utility relocations. Temporary Construction Easements should be assessed to verify the constructability of the project, but do not have to be depicted on the plans. Any modifications to Limited Access shall be approved by the Commonwealth Transportation Board prior to advertisement of the RFP.
- Utilities – Detailed addresses and contact information shall be provided for all utility owners located within the Project limits. The location of underground and above ground utilities shall be depicted on the RFP plans consistent with a Quality Level B designation. All utility owners shall be invited to attend the Project Utility Meeting (generally held immediately following the Pre-Proposal Meeting) to discuss and answer questions related to utility impacts to the project. RFP plans shall be provided to utility owners prior to the Utility Meeting.
- RFP Plans – The level of RFP plan development shall be based on the scope of work, complexity and risk assessment analysis identified risks (technical, stakeholders, environmental, etc.) and project goals to assist the Department in determining the cost estimate and the constructability of the project. The RFP Plans aid the Department in communicating aspects of the scope of work, such as general project and right-of-way limits and boundaries, preliminary alignments and concepts, location of existing assets such as bridges, culverts, traffic signals, signage, roadway lighting, ITS features and known utilities within the project limits. The RFP Plans shall utilize the most recent project survey and consist of the roadway concepts, traffic control devices, contextual features, drainage study and structural concepts referenced above. Minimally, these plans should include the roadway geometrics, drainage/ stormwater management features, conceptual bridge plans, preliminary sound wall locations, right of way limits and the location of existing utilities. The RFP Plans should be consistent with the Road Design Manual (notably Appendix H), Structure and Bridge Guidelines noted above and meet all Design-Build requirements listed in the LD-436 checklist.
- Third-Party Requirements – Coordination with Third Parties (i.e. any federal, state and local governments, private entities, utilities and railroad companies, etc.) should be performed to ensure that all Third Party requirements are addressed in the RFP Plans

and Technical Requirements.

- Special Provisions – The District should coordinate Special Provisions to be included in the RFP with Central Office Scheduling and Contract Division to ensure that the most current documents are utilized. A listing of applicable special provisions, including special provision copied notes, will be included in the RFP technical requirements and all special provisions will be included in the RFP Information Package.
- RFP Technical Requirements – The technical requirements describe the scope of work for the project and should be clearly defined so Offerors are able to develop a fixed price bid and construct the Project as proposed. This includes a full listing of all standards and references that are applicable to the project. It is imperative that the technical requirements are not in conflict with the plans, studies, and other documents whether referenced in the RFP or included in the RFP Information Package.
- RFP Evaluation Criteria – For two-phase, best-value procurement, specific RFP evaluation criteria must be developed so Offerors' proposals can be objectively evaluated and ranked. The District should coordinate the development evaluation criteria with Central Office APD.
- RFP Information Package – The RFP Information Package shall include, but is not limited to the: FOPI, Value Engineering Recommendations, Environmental Document, Public Hearing Transcript or Willingness Approval Letter, known Design Waivers and/or Design Exceptions, survey, traffic analysis, GDR, RFP Plans, Traffic Control Device questionnaires, ITS design and special provisions.

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## **TRACKING LOG**

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The District Project Manager (PM) shall establish start and completion dates of RFQ/RFP deliverables utilizing the Tracking Log provided by the APD Office. This log must be reviewed and updated by the District PM on a monthly basis to accurately reflect current anticipated completion dates throughout the development and procurement of the Project. No request to use the Design-Build delivery method will be considered without the tracking log attached.

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## **DETERMINATION OF RFQ/ RFP ADVERTISEMENT**

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For Federal-aid oversight projects ( $\geq$  \$25 million on NHS and  $\geq$  \$1 million on Interstate), VDOT is required to get FHWA approval prior to releasing the RFP document. FHWA approval of the RFP document carries the same significance as PS&E approval, and VDOT must submit a formal request for RFP approval.



In order to mitigate delays in issuance of the RFP on two phase procurement, the RFQ will only be advertised once the APD office has submitted the final RFP (PS&E package) to FHWA for approval. Any deviation from this requirement must be approved by the Chief Engineer.

Please see the following VDOT policies and guidelines for additional information regarding the development of Design-Build projects:

- VDOT Location and Design Division's Road Design Manual, Appendix H
- Structure and Bridge Division's "Guidelines for the Structural Coordination of Design-Build Projects"

## CODE / POLICY REQUIREMENTS

In order for a project to be procured under the Design-Build delivery method, the following State and Federal Codes shall be met.

### Required by Code of Federal Regulation

Item	Description	Relevant Code Section
<b>TIP and STIP</b>	Project must be included in the Transportation Improvement Program (TIP) and the Statewide Transportation Improvement Program (STIP)	23 CFR 450.324, 23 CFR 450.216
<b>Environmental</b>	The NEPA document (whether Programmatic Categorical Exclusion (PCE), Categorical Exclusion (CE), Environmental Assessment (EA) or Draft Environmental Impact Statement (DEIS) and all supporting environmental coordination must be completed prior to the public hearing and a Finding of No Significant Impact (FONSI) or a Record of Decision (ROD) must be completed prior to release of the RFP to obligate RW and CN funds.	23 CFR 636.109 23 CFR 635.112 (i)
<b>Public Involvement</b>	The Public Involvement phase of the project shall be completed prior to the release of the RFP as this is a requirement of NEPA and required for the obligation of federal funds for RW and CN phases of the project.	23 CFR 771.111 (h)(2)(iii)
<b>Risk Analyses</b>	A risk analysis must be performed for all DB projects prior to RFP release.	23 CFR 636.114
<b>Value Engineering</b>	A Value Engineering study must be completed for all NHS projects with an estimated cost of \$25 million or greater.	23 CFR 627.1 23 CFR 627.5
<b>Evaluation Criteria (two phase procurements)</b>	RFQ and RFP evaluation criteria must be developed prior to release of the RFQ and subsequent RFP.	23 CFR 636.301

<b>Conflict of Interest Determination</b>	Conflict of Interest determination must be made and included in the RFQ (two phase) or RFP (single phase).	23 CFR 636.116, 23 CFR 636.117
<b>Estimate</b>	A cost estimate which includes costs for DB risk must be developed. These risks include incomplete design, geotechnical, utility relocations and right of way. An initial PECS estimate should be developed followed by the creation of a Transport estimate for all key items.	23 CFR 630.106
<b>DBE and OJT Goal</b>	The DBE participation goal must be determined prior to release of the RFQ (two phase) or RFP (single phase). Coordinate with the Civil Rights POC to determine the On the Job Trainee (OJT) Goal for the project.	23 CFR 200.9, 23 CFR 230.311, 23 CFR 635.107, 49 CFR 26.21,
<b>Federal Criteria Sheet for Authorization</b>	The Federal Criteria sheet must be submitted with the RFP documents to receive RFP approval and obligation.	23 CFR 635.309
<b>Right of Way</b>	Design Build Right of Way Requirements must be completed prior to CN.	23 CFR 710.313

### Required by Virginia State Codes

<b>Item</b>	<b>Description</b>	<b>Relevant Code Section</b>
<b>SYIP:</b>	Project must be in the Six Year Improvement Program and funding programmed for all phases.	VA 33.1-12 (9)(b)
<b>FOPI</b>	Finding of Public Interest (FOPI), approved by the Office of Attorney General (OAG) and signed by Chief Engineer and Commissioner, must be in place prior to moving forward with project development	VA 33.1-12(2)(b)
<b>Value Engineering</b>	A Value Engineering study must be completed for all projects with an estimated cost of \$5 million or greater, unless a waiver is granted by the VDOT Commissioner. If the DB preliminary plan development doesn't include a public involvement phase, then the Value Engineering study and associated design revisions shall be completed prior to advertisement of the RFP.	VA 33.1-190.1
<b>Public Involvement</b>	The Public Involvement phase of the project should be completed prior to the release of the RFP as this NEPA related.	24VAC30-380-10

### Required by VDOT Policy

<b>Item</b>	<b>Description</b>	<b>Policy</b>
<b>Design Approval</b>	Approval by the Chief Engineer following the Public Hearing	VDOT's Policy Manual for Public Participation in Transportation Projects
<b>Risk Analysis</b>	The occurrence of high risk items may prevent the project from moving forward as design-build, such as: undisclosed Department of Defense Utilities, Extensive Hazardous Materials issues, Unexploded Ordinance etc.	CTB Objective Criteria