

## TECHNICAL

### PART 4 - Design-Build Execution Methodology

Tenderers shall show how their proposed team will manage the design-build process, establish and sustain an effective workforce, integrate the project team, effectively control cost and programme, manage the design process, procure the <sup>A15</sup>Materials, Plant, and equipment, <sup>A15</sup> manage the Works, manage safety by establishing diligent and effective safety protocols, manage and deliver quality, meet or exceed environmental standards, and mitigate risk. This part includes the development of several plans that will demonstrate to the evaluation committee the intent, philosophy, and approaches the Tenderer will use to deliver the Works. Within this Section, the Tenderer shall provide plans defining various elements of the Works that convey the Tenderer's ability to achieve the Employer's Requirements. Tenderers shall identify the techniques and methodologies they will use to meet the quality, schedule, and budget requirements <sup>A15</sup>in order to deliver the Works. <sup>A15</sup>

**A. Project Chartering.** Tenderers shall describe their proposed methods for chartering both their internal teams and the combined locks delivery team of the Tenderer, Employer, and Employer's Representative. A chartering session uses two-way communication to engage team members and other participants to define the "how's" of the project, such as responsibilities, operating guidelines, etc. A tangible product of this process is a written charter document which has been endorsed by all the participants of the chartering session. The essence of chartering is to establish how the participants of a project effort can and will work together to achieve the best outcome. The content of this section is not to exceed 1,200 words or two pages, whichever is the lesser.

**B. Design Management.** Tenderers shall describe their proposed processes for managing design of multiple, concurrent design packages and for collaboration among distributed design teams and integration with procurement activities, resulting in phased construction. The Tenderer shall describe the processes and systems to be used to plan the design and ensure coordination among the Tenderer's team, as well as with the Employer and Employer's Representative, through the stages of design and during construction. The Tenderer shall show the proposed design organization, the team members with whom it will be staffed, the design team's locations (both offshore and in Panama), and the roles and responsibilities of the team. This shall be done on no more than 5 sheets of 11 by 17 inches.

**C. Labor Management.** Tenderers shall:

1. Develop and submit a labor-management plan, inclusive of forecasted wage rates for the construction labor force. The plan shall include, but not be limited to, the Tenderer's plan to a) recruit labor, b) train the work force, c) retain capable / skilled labor, d) organize the work force – including any labor union agreements and / or issues, e) recruit supervision for the work force, f) comply with local and national labor laws / statutes, and g) <sup>A15</sup>any additional information which will enhance the evaluation committee's understanding of the Tenderer's approach to effectively manage labor for the Works. <sup>A15</sup> The content of this subsection shall not exceed 1,800 words or three pages, whichever is less. Organizational charts, programmes, and tables (e.g., wage rate tables) do not apply against the page or word count.
2. <sup>A17</sup>Develop and submit a labor-employment plan, showing the projected work force concentrations by trade and time on Site for the entire duration of the Works, based on the Tenderer's programme. The plan will include trades required to execute the Works, including the Tenderer's direct-hire and Subcontractor-hired trades. <sup>A17</sup> Labor groups are to be categorized as a)

Site work, b) structural concrete (including reinforcing steel and forms), c) building trades, d) mechanical, e) power and control systems, f) specialties (e.g., gates, valves), and g) other. The plan shall be presented in a tabular and histogram format, reporting the expected daily number of personnel by categories on a quarterly basis. Curves prepared from the Tenderer's resource-loaded Primavera P6 schedule are preferred. The content of this subsection shall not exceed 1,800 words or three pages, whichever is less. Organizational charts, programmes, and tables do not apply against the page or word count.

**D. Supplies and Logistics.** Tenderers shall:

1. Develop and submit a programme of staff and construction equipment mobilization (inclusive of non-mobile equipment). The plan is to represent the Tenderer's intent for mobilization and demobilization of managerial, administrative, and supervisory staff and of major construction equipment, both mobile and fixed, including equipment for excavation, grading, loading, hauling, backfilling, compacting, aggregate processing, concrete batching, material transport, cranes, gantries, and material handling, as well as any additional information relevant to the evaluation committee's understanding of the Tenderer's approach to effectively deploy management, supervisory, and administrative staff and to implement effective equipment-management for the Works. The content of this subsection shall not exceed 2,400 words or four pages, whichever is less. Organizational charts, programmes, and tables do not apply against the page or word count.
2. Develop and submit a logistics-management and supply chain management plan (including a material-management plan for materials generated on Site). The plan shall identify vendors, suppliers, in-plant inspection plans, transportation plans, inventory-management methodology, security provisions and methods, and distribution methods to be employed for the <sup>A15</sup>duration of the Works. <sup>A15</sup> It shall address receipt and processing of delivered materials; access to and retrieval of stored materials; security of stored materials; disposition of excavated materials; temporary storage of materials and components to be installed in the Works; temporary storage of equipment and components to be installed as part of the Works; and storage of Materials and components used to construct the Works (e.g., forms). The content of this subsection shall not exceed 3,600 words or six pages, whichever is the lesser. Organizational charts, drawings, programmes, and tables do not apply against the page or word count.

**E. Safety Management.** Tenderers shall:

1. Develop and submit an outline of the project-specific safety plan that will meet or exceed Employer standards. <sup>A17</sup>The plan is to identify all areas to be detailed in the project submittal as required by Volume II, Part 3, Subpart 1, Sections 01 35 23 and 01 35 29, with adequate detail to reveal to the evaluation committee that the Tenderer has considered the safety risks associated with the Works and will take the necessary steps to ensure that work will be conducted in a safe manner within as safe an environment as possible. <sup>A17</sup> The outline shall address all salient areas corresponding to those identified in Employer safety regulations. Submission of a corporate safety manual is not an acceptable response to this requirement. The submittal must be project specific. The content of this subsection shall not exceed 1,800 words or three pages, whichever is less.
2. Develop and submit with the safety plan an organizational chart that reflects the Tenderer's intent on safety management staffing. The chart shall include all staff assigned to the Works who will serve in the capacity of safety supervision, monitoring, inspection, and/or management. Additionally, the Tenderer is to prepare and submit a description and definition of the responsibilities for each identified position within the organization chart. The content of this

subsection shall not exceed 3,000 words or five pages, whichever is less. Organizational charts, programmes, and tables do not apply against the page or word count.

**F. Environmental Management.** Tenderers shall:

1. Develop and submit an environmental-management plan that is compliant with the project environmental impact-assessment (EIA). Included in the plan shall be all items identified in the EIA, additional expected environmental concerns resulting from construction activity, and the corresponding proposed mitigation actions. The plan shall identify the proposed environmental-management team and the corresponding organization, roles and responsibilities of the team members and their assignment programme, interfaces and points of contact with legal and regulatory entities in Panama, and additional applicable information relevant to the evaluation committee's understanding of the Tenderer's approach. Impacts to be addressed shall be presented in a preliminary format, whereby an outline defines the general areas of concern. Specific concerns shall then be identified within the general areas, and corresponding mitigation actions will be generalized (details shall be provided in the final plan submittal following Contract award). The content of this subsection shall not to exceed 1,800 words or three pages, whichever is less. Organizational charts and programmes do not apply in the page or word count.
2. <sup>A17</sup> Develop and submit a contamination-mitigation plan that reflects the Tenderer's intent to minimize the effect that a large volume of people, trash, garbage, debris, refuse, sanitary waste, and the like will have on the concentrated work sites associated with the Works.<sup>A17</sup> Tenderers shall describe the training, orientation, and management attention that will be provided to the work force to ensure that the Site is maintained in a clean, orderly, and healthy state. The content of this subsection shall not exceed 1,800 words or three pages, whichever is less.
3. Develop and submit a preliminary spill-prevention and recovery plan that reflects the Tenderer's intent to ensure that any liquids or solids to be stored on Site will be managed with attention to the potential for a spill to occur. Proper containment requirements and methods shall be identified, addressed, and planned for in concert with the associated material. Proper spill-prevention devices shall be identified and incorporated into the storage facilities; including controls, alarms, and appropriate devices alerting responsible personnel that attention to the facility is required. Recovery plans shall be developed for the respective storage areas in the event a spill should occur. Corporate plans are not an acceptable response to this subsection. A project-specific plan must be developed in outline form, with all essential elements to the plan identified and addressed in a manner that reveals awareness of the issues and acknowledgement that the plan to be submitted upon Contract award will address the details accordingly. The content of this subsection shall not exceed 1,800 words or three pages, whichever is less.

**G. Quality Management.** Tenderers shall:

1. Develop and submit an overall quality-management plan outline for the Works. The plan is to identify all areas to be detailed in the project submittal as required by Volume II, Part 3, SP-01, Section 01 40 00, with adequate detail to reveal to the evaluation committee that the Tenderer has considered the quality requirements associated with the Works. The submitted outline shall address both the design and construction phases of the Works. Each phase of the Works shall have an organizational chart identifying the staff responsible for implementing quality control within the respective phase. This shall encompass the management and administration of the Works – which includes, but is not necessarily limited to, document control, communication, personnel management, cost control, program management, safety, and quality control itself. Engineering, detailed design, drawing production, procurement, submittal processing, receiving and inventory management, and construction shall also be addressed. Corporate plans are not an

acceptable response to this subsection. A project-specific plan must be developed in outline form, whereby all essential elements to the plan are identified and addressed in a manner that reveals awareness of the issues and acknowledgement that the plan to be submitted upon Contract award shall address the details accordingly. The content of this subsection shall not exceed 3,000 words or five pages, whichever is less. Organizational charts, programmes, and tables do not apply against the page or word count.

2. <sup>A15</sup> Develop and submit a list of materials and construction testing laboratories proposed to be used during the construction phase, including the corresponding scope of services and corresponding service agreements for the respective laboratories and/or businesses. The Tenderer shall also identify the laboratory/business executive sponsor, project manager, and technicians who will support all construction activity. Multiple laboratories/businesses are acceptable. The content of this subsection shall not exceed 3,000 words or five pages, whichever is less. Organizational charts, programmes, and tables do not apply against the page or word count.

**H. Project Controls.** Tenderers shall:

1. The Tenderer shall identify the proposed project-control software besides Primavera Project Manager Version 6.0 (P6) or the latest version, which is an Employer requirement. <sup>A17</sup> (See Volume II, Part 3, Subpart 1, Section 00 31 00 (*Project Management and Coordination*)). <sup>A17</sup>
2. Submit a certification by the lead project programmer that the installed control system(s) will be integrated and compatible with existing Employer systems.

**I. Communication and Public Relations.** Tenderers shall:

1. Develop and submit a communication and public-relations plan. The plan shall address the Tenderer's approach to manage communications with the media, communications with government officials, communications and public relations with the general populace surrounding the Site, communications and public relations with the general populace of the geographical area, and public relations with the international community. The plan shall address language, points of contact within the communities affected by the Works, concerns anticipated by the Tenderer with regard to what communities are expecting, and how the Tenderer will approach issue resolution with the government and general populace. The plan shall discuss public-relations approaches with regard to public demonstrations associated with the Works. The content of this subsection is not to exceed 1,800 words or three pages, whichever is the lesser.
2. Submit a defined communication and public-relations organization and the description and responsibilities assigned to each position. The content of this subsection shall not exceed 1,800 words or three pages, whichever is less. Organizational charts, programmes, and tables do not apply against the page or word count.

**J. Risk Management.** Tenderers shall:

1. Develop and submit a risk-management plan outline identifying anticipated project risks and corresponding mitigation action. Risks shall be categorized (e.g., financial, labor, logistics, geotechnical, and the like), with specific risks identified within the corresponding categories. The mitigation action shall be synoptical, recognizing that details shall follow Contract award. <sup>A15</sup> The plan shall address both the design and construction of the Works. <sup>A15</sup> The content of this subsection shall not exceed 3,000 words or five pages, whichever is less. Charts and tables do not apply against the page or word count.
2. Develop and submit a labor and logistics contingency plan. The plan shall define the actions to be taken by the Tenderer in the event that either a labor or logistics contingency occurs over the

course of the Works. Specific contingencies to address within the plan include, but are not limited to, labor or Material shortfalls, strikes, labor walkouts, delivery failures, major equipment breakdown or failure, delivery of non-compliant components or systems, unresponsive suppliers or vendors, and unresponsive Subcontractors. Documents on corporate philosophy in these applications are eligible for attachment as appendices to the proposal.

**END OF SECTION**

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