PARSONS

A Framework for Sustainability during Construction

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- Research Project (RT-304)

Construction Sustainability Process

Construction Phase Sustainability Actions

- 54 construction phase sustainability actions (CPSAs)
  - Organized by function of construction activities

Construction Function	No. of CPSAs	% of All
Project Management	**10**	**19**
Contracting	5	9
Field Engineering	**10**	**19**
Site Facilities and Operations	**12**	**21**
Craft Labor Management	3	6
Materials Management	6	11
Construction Equipment Management	6	11
Quality Management, Commissioning, and Handover	2	4

CPSA Catalog

A. CPSA NO.: 4

1. CPSA TITLE: Sustainability Provisions in Construction Execution Plans	4. DATE: 5/5/2014
2. PRIMARY CONSTRUCTION FUNCTION: Project Management	
3. SECONDARY CONSTRUCTION FUNCTION: None	

B. CPSA DESCRIPTION

Incorporate sustainability provisions and solutions in the construction execution plans that are similar to provisions for safety, quality, cost, schedule, and resource management, among others. Include a discussion on sustainability requirements and opportunities as part of the preconstruction/kickoff meeting agenda, to align the project team on sustainability objectives and expectations. Confirm that the team understands any sustainability specifications, and assign responsibilities and commitments for documentation.	

C. SUSTAINABILITY IMPACTS CHARACTERIZATION

PRIMARY IMPACTS	MOST AFFECTED AREAS/RESOURCES			IMPACT MAGNITUDE				
				−−	−	N	+	++
1. ENVIRONMENTAL	Energy consumption	Waste generation	Water consumption	☐	☐	☐	☒	☐
2. SOCIAL	Health & safety	Jobs created	Traffic	☐	☐	☐	☒	☐
3. ECONOMIC	Project fiscal impacts	–	–	☐	☐	☐	☒	☐

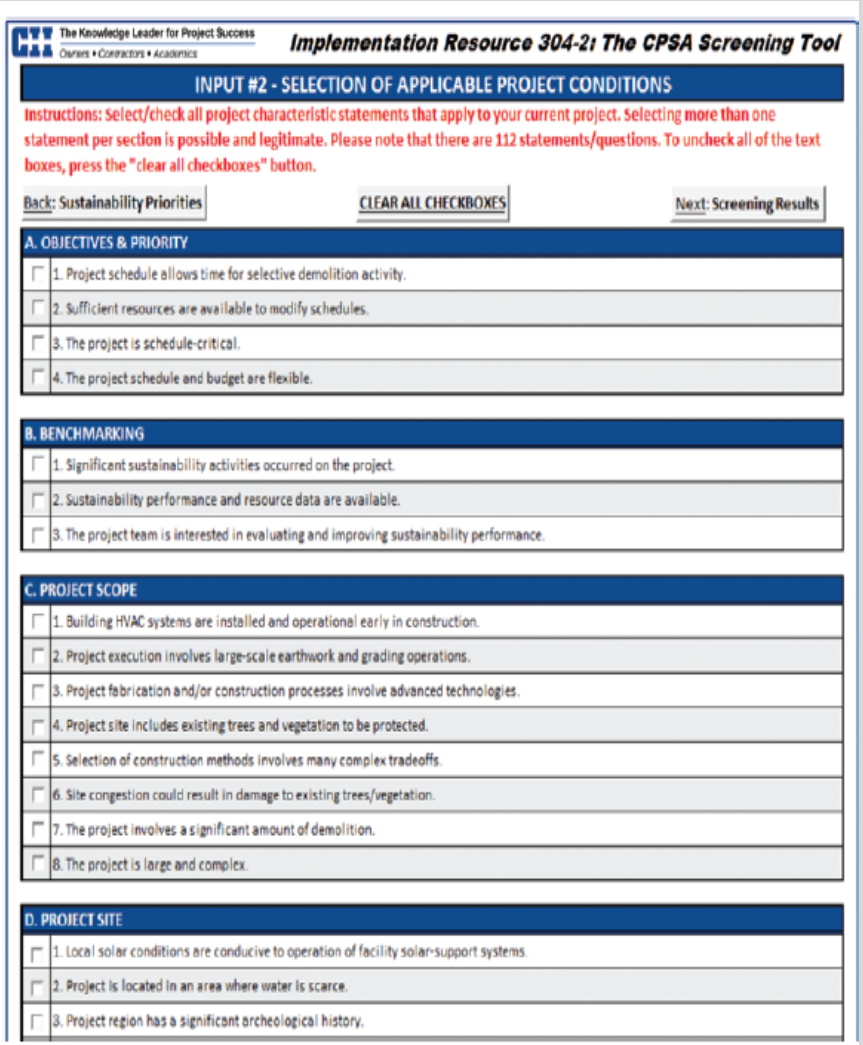
D. THIS CPSA HAS A SIGNIFICANT POSITIVE INFLUENCE ON THE FOLLOWING CONVENTIONAL PROJECT PERFORMANCE CRITERIA

1. Project safety performance: ☒	3. Project cost performance: ☒	5. None: ☐
2. Project quality performance: ☒	4. Project schedule performance: ☒	

E. EASE OF ACCOMPLISHMENT/IMPLEMENTATION

1. Easy: ☐	2. Moderate: ☒	3. Challenging: ☐

CPSA Screening Tool



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Implementation Resource 304-2: The CPSA Screening Tool

INPUT #2 - SELECTION OF APPLICABLE PROJECT CONDITIONS

Instructions: Select/check all project characteristic statements that apply to your current project. Selecting more than one statement per section is possible and legitimate. Please note that there are 112 statements/questions. To uncheck all of the text boxes, press the "clear all checkboxes" button.

Back: Sustainability Priorities | CLEAR ALL CHECKBOXES | Next: Screening Results

A. OBJECTIVES & PRIORITY

- ☐ 1. Project schedule allows time for selective demolition activity.
- ☐ 2. Sufficient resources are available to modify schedules.
- ☐ 3. The project is schedule-critical.
- ☐ 4. The project schedule and budget are flexible.

B. BENCHMARKING

- ☐ 1. Significant sustainability activities occurred on the project.
- ☐ 2. Sustainability performance and resource data are available.
- ☐ 3. The project team is interested in evaluating and improving sustainability performance.

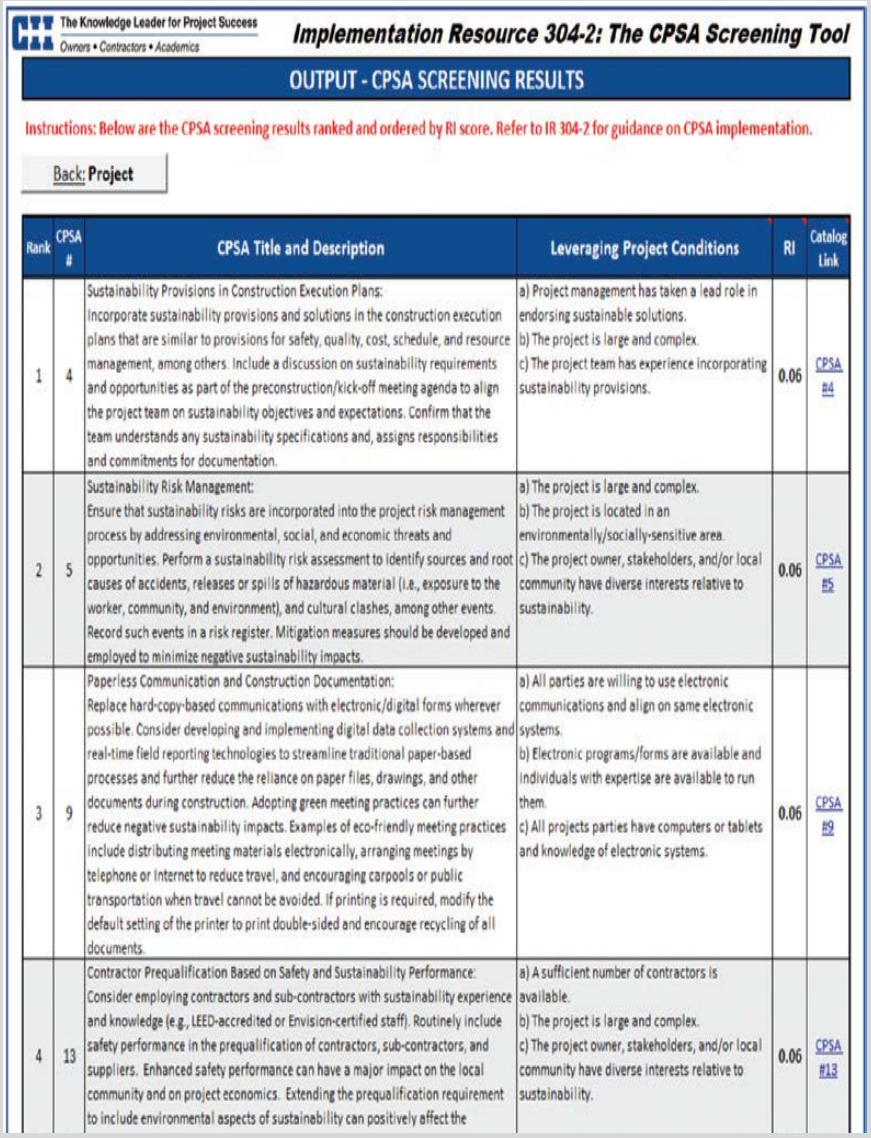
C. PROJECT SCOPE

- ☐ 1. Building HVAC systems are installed and operational early in construction.
- ☐ 2. Project execution involves large-scale earthwork and grading operations.
- ☐ 3. Project fabrication and/or construction processes involve advanced technologies.
- ☐ 4. Project site includes existing trees and vegetation to be protected.
- ☐ 5. Selection of construction methods involves many complex tradeoffs.
- ☐ 6. Site congestion could result in damage to existing trees/vegetation.
- ☐ 7. The project involves a significant amount of demolition.
- ☐ 8. The project is large and complex.

D. PROJECT SITE

- ☐ 1. Local solar conditions are conducive to operation of facility solar-support systems.
- ☐ 2. Project is located in an area where water is scarce.
- ☐ 3. Project region has a significant archeological history.

Figure 13. CPSA Screening Tool Input – Project Conditions



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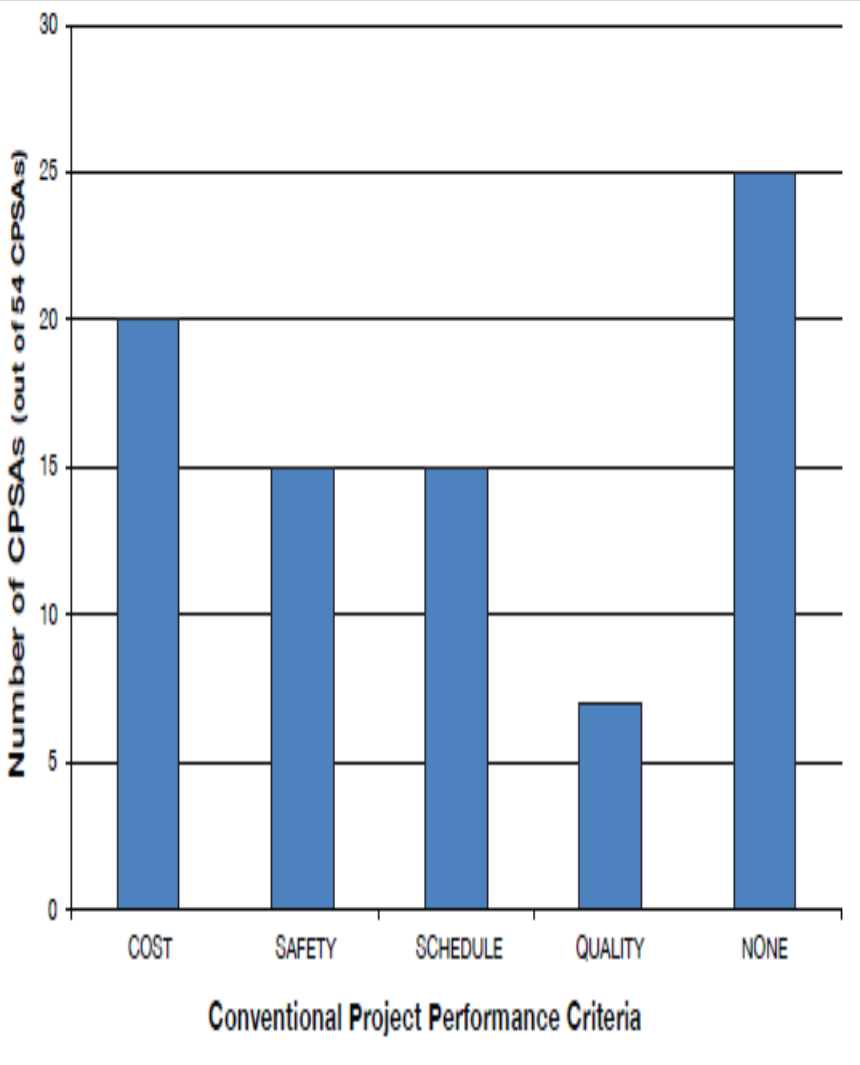
OUTPUT - CPSA SCREENING RESULTS

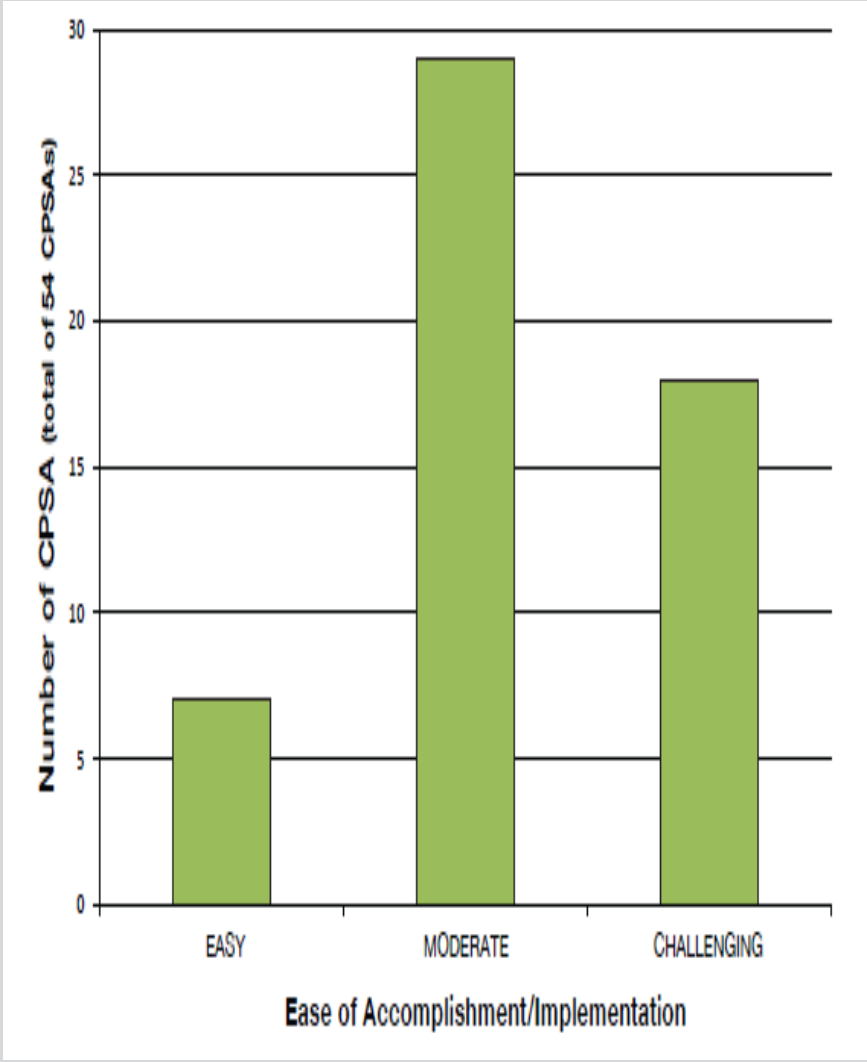
Instructions: Below are the CPSA screening results ranked and ordered by RI score. Refer to IR 304-2 for guidance on CPSA implementation.

Back: Project

Rank	CPSA #	CPSA Title and Description	Leveraging Project Conditions	RI	Catalog Link
1	4	Sustainability Provisions in Construction Execution Plans: Incorporate sustainability provisions and solutions in the construction execution plans that are similar to provisions for safety, quality, cost, schedule, and resource management, among others. Include a discussion on sustainability requirements and opportunities as part of the preconstruction/kick-off meeting agenda to align the project team on sustainability objectives and expectations. Confirm that the team understands any sustainability specifications and, assigns responsibilities and commitments for documentation.	a) Project management has taken a lead role in endorsing sustainable solutions. b) The project is large and complex. c) The project team has experience incorporating sustainability provisions.	0.06	CPSA #4
2	5	Sustainability Risk Management: Ensure that sustainability risks are incorporated into the project risk management process by addressing environmental, social, and economic threats and opportunities. Perform a sustainability risk assessment to identify sources and root causes of accidents, releases or spills of hazardous material (i.e., exposure to the worker, community, and environment), and cultural clashes, among other events. Record such events in a risk register. Mitigation measures should be developed and employed to minimize negative sustainability impacts.	a) The project is large and complex. b) The project is located in an environmentally/socially-sensitive area. c) The project owner, stakeholders, and/or local community have diverse interests relative to sustainability.	0.06	CPSA #5
3	9	Paperless Communication and Construction Documentation: Replace hard-copy-based communications with electronic/digital forms wherever possible. Consider developing and implementing digital data collection systems and real-time field reporting technologies to streamline traditional paper-based processes and further reduce the reliance on paper files, drawings, and other documents during construction. Adopting green meeting practices can further reduce negative sustainability impacts. Examples of eco-friendly meeting practices include distributing meeting materials electronically, arranging meetings by telephone or Internet to reduce travel, and encouraging carpools or public transportation when travel cannot be avoided. If printing is required, modify the default setting of the printer to print double-sided and encourage recycling of all documents.	a) All parties are willing to use electronic communications and align on same electronic systems. b) Electronic programs/forms are available and individuals with expertise are available to run them. c) All projects parties have computers or tablets and knowledge of electronic systems.	0.06	CPSA #9
4	13	Contractor Prequalification Based on Safety and Sustainability Performance: Consider employing contractors and sub-contractors with sustainability experience and knowledge (e.g., LEED-accredited or Envision-certified staff). Routinely include safety performance in the prequalification of contractors, sub-contractors, and suppliers. Enhanced safety performance can have a major impact on the local community and on project economics. Extending the prequalification requirement to include environmental aspects of sustainability can positively affect the	a) A sufficient number of contractors is available. b) The project is large and complex. c) The project owner, stakeholders, and/or local community have diverse interests relative to sustainability.	0.06	CPSA #13

Benefits and Ease of Implementation





Sustainability output metrics