



**US Army Corps
of Engineers®**

ENGINEERING AND CONSTRUCTION BULLETIN

No. 2025-3

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SUBJECT: Implementation of Quality Risk Indicators.

CATEGORY: Directive and Policy

1. References:

- a. Engineer Regulation (ER) 5-1-11, USACE Business Process, 31 July 2018
- b. ER 1165-2-217, Civil Works Review Policy, Water Resource Policies and Authorities, 2 September 2024
- c. ER 1110-3-12, Quality Management, 25 March 2021
- d. ER 1180-1-6 Construction Quality Management, 30 September 1995
- e. Engineering and Construction Bulletin 2023-9 – Civil Works Design Milestone Checklists, 20 July 2023
- f. Engineering and Construction Bulletin 2024-3 – Technical Lead for Engineering and Construction Deliverables, 9 May 2024

2. **Purpose.** The purpose of this Engineering and Construction Bulletin (ECB) is to provide Project Delivery Teams (PDTs) with guidance on evaluating and reporting Engineering Quality Risk Indicators (EQRIs) throughout the design phase. It also provides PDTs with guidance on expanding the Construction Quality Risk Indicators (CQRIs) pilot projects.

3. Applicability.

a. EQRIs. This ECB applies to all design packages and submittals across all mission areas, regardless of delivery method (in-house, Architect-Engineer (AE) contracted, design-bid-build, design-build, brokered work, etc.) that have an estimated construction cost (ECC) greater than \$40M or are a Major Subordinate Command (MSC)-designated Mega Project, regardless of cost. For projects that do not meet the criteria above, evaluating and reporting EQRIs is optional, but highly recommended.

b. CQRIs. This ECB expands the CQRI pilots to include all MSC-designated Mega Projects regardless of cost.

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4. **Background.**

a. USACE has traditionally relied on cost and schedule metrics to determine project health. Past attempts to identify reliable quality measures have faltered due to the inherent complexity and difficulty in defining quality indicators.

b. In early 2021, USACE identified significant quality issues on several high-profile projects. Investigations of these projects demonstrated the need for USACE to cultivate a stronger culture of quality. In response, HQUSACE held a Quality Management (QM) Stand-Down with the MSCs on 10 June 2021. This stand-down established a vision for quality, identified problems, reviewed recent quality issues, and discussed obstacles and solutions for improved quality management. HQUSACE also directed MSCs to conduct similar QM Stand-Downs by August 2021. While these efforts have improved the focus on quality, USACE continues to identify quality issues on prominent projects.

c. Recognizing the need to address quality, HQUSACE E&C and enterprise subject matter experts met to identify quality risk indicators that can assist PDTs in projecting quality risk for both design and construction phases of a project. Teams comprising HQ, MSC, and District personnel collaborated to draft, review, and test Quality Risk Indicators (QRIs) and supporting Automated Information Systems from 2022-2024. The QRIs and supporting systems have been discussed with MSC Commanders at monthly Engineering Reviews with Commanders since the first quarter of FY25.

5. **Guidance.**

a. The requirements included in this ECB will be included in forthcoming updates to the referenced Engineering Regulations.

b. EQRIs.

(1) Beginning the date of this ECB, applicable design projects must evaluate and report EQRIs at each design milestone using the AIS located at <https://egis-app.mvr.usace.army.mil/ords/cm2/r/qri/home>.

(2) Additional guidance and instructions can be found at <https://usace.dps.mil/sites/KMP-EC/SitePages/QRI.aspx>

(3) To assist with implementation, each district will identify primary and alternate EQRI administrators to the EQRI points of contact listed below no later than 30 days after the date of this ECB.

c. CQRIs. Beginning 30 days after issuance of this ECB, the Resident Management System (RMS) data pull for CQRIs will include the pilot projects as well as all fiscal year 2025 MSC-designated Mega Projects.

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6. Implementation.

a. EQRIs.

(1) Each Technical Lead (TL), in collaboration with the PDT, will assess the risks to the quality of a design package for each design milestone submittal. This assessment will occur at the end of each review period, after all reviews for the specific design submittal milestone are complete, using the applicable EQRI questionnaire. TLs, as the proponents for project quality, are responsible for following the required data entry standards into the current AIS. While the TL is the proponent for quality and will be responsible for assessing the quality of design products, ensuring USACE delivers a quality design is the responsibility of the entire PDT. The risk assessment relies on accurate data entry. While some indicators require verifiable facts, others necessitate nuanced interpretation and professional judgment from the data provider.

(2) Each district should develop a district-wide communication process of the assessment results. Implementation of this ECB will be tracked monthly with MSC Commanders at the Engineering Review with Commander meetings. Additionally, it is encouraged for use at regional and district level program and project reviews. Finally, the results should inform After-Action Reviews (AARs) and workload/workforce evaluations.

b. CQRIs. Construction field offices will enforce construction contractor compliance with all contract requirements, specifically regarding the use of the USACE construction management system, currently RMS. Construction quality assurance personnel will comply with applicable regulations, policies, and contract requirements for entering information into RMS. The Construction Management Administration Application includes a Construction Quality Risk Indicator Data Entry Guide to help field teams ensure they enter data in all CQRI fields. The guide and additional information on CQRIs can be found at: [https://usace.dps.mil/sites/TDL-CECW-EC-CMA/SitePages/Construction-Quality-Risk-Indicators-\(Pilot\)_kb.aspx](https://usace.dps.mil/sites/TDL-CECW-EC-CMA/SitePages/Construction-Quality-Risk-Indicators-(Pilot)_kb.aspx)

7. **Points of Contact.** HQUSACE points of contact for the EQRI portion of this ECB are Martin Borger, CECW-EC, (202) 317-2709 or April Fontaine, CECW-EC, (916) 201-2606. HQUSACE points of contact for the CQRI portion of this ECB are Andrea Hinkle, CECW-EC, (202) 761-0656 and Mark Pratt, CECW-EC, (309) 737-6893.

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Enclosure 1 – Engineering Quality Risk Indicators Questions

Engineering Quality Risk Indicators Questions

Civil Works	C
Military (IIS, SRM, Environmental, other)	M
All	A

ID	Indicator question	Program	Project submittal phase				
			I	35	65	95	100
1	Is there an Engineering Technical Lead (TL) assigned to the project with an active professional registration (e.g., P.E., R.A., P.L.A., P.G., etc.) or waiver from the Chief of the District's Engineering Function?	A	x	x	x	x	x
2	Does the design team have all the necessary members (i.e., technical disciplines) assigned given the project scope?	A	x	x	x	x	x
3	Do the QA/QC review teams have all the necessary members (i.e., technical disciplines) assigned given the project scope?	A	x	x	x	x	x
4	Does the design team have sufficient relevant design experience with projects of similar scope and complexity?	A	x	x	x		
5	Are senior staff mentors assigned to all design team members with less than two years of professional design experience?	A	x	x	x	x	x
6	Do the design and review team members have capacity to actively support the project?	A	x	x	x	x	x
7	Have the relevant Mandatory Centers of Expertise (MCX), Technical Centers of Expertise (TCX), and/or Centers of Standardization (COS) been identified and engaged on the project?	A	x	x	x	x	x
8	Have the relevant permitting authorities been identified and engaged on the project?	A	x	x	x	x	x
9	Are the assumptions made during planning/programming still valid (e.g., real estate, environmental, geotechnical, hydraulics and hydrology, survey, and other pertinent assumptions).	A	x				
10	At the start of design, is there a sufficient level of scope definition and design maturity to support a Class 3 estimate?	C	x				
11	Was the Total Project Cost Summary (TPCS) certified within the last two years?	C	x	x	x	x	x
12	At the current time, can the project be implemented without deviations from mandatory design criteria or receiving an approved waiver from HQUSACE?	A	x	x	x	x	
13	Have lessons learned been evaluated and incorporated into the design?	A	x	x	x	x	x
14	Did the Project Delivery Team (PDT) establish design expectations by milestone and communicate those in the Project Management Plan (PMP), Architect-Engineer (A-E) contract, and/or brokered work agreement, etc.?	A	x				

Civil Works	C
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All	A

ID	Indicator question	Program	Project submittal phase				
			I	35	65	95	100
15	Does the project schedule include all standard practice design milestones?	A	x	x	x	x	
16	Does the project schedule include sufficient design time to accomplish all design related milestones?	A	x	x	x	x	
17	Does the project schedule include sufficient time for Quality Control (QC) and Quality Assurance (QA) reviews during all required design submittals?	A	x	x	x	x	
18	Does the project schedule include sufficient time to complete engineering investigations and surveys (e.g., cultural, geotechnical, environmental, hazardous materials, etc.) in time to adequately inform the design?	A	x	x	x	x	
19	Does the project schedule include sufficient time to complete permitting process(es)?	A	x	x	x	x	
20	Is the current design team schedule in alignment with the project schedule in the Project Management Plan (PMP)?	A	x	x	x	x	x
21	Does the project have a current, approved project-specific Quality Management Plan (QMP)/Review Plan (RP)?	A		x	x	x	
22	Did District Quality Control (DQC) occur prior, and not concurrent with, to the Independent Technical Review (ITR)/Agency Technical Review (ATR)/Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Review?	A		x	x	x	x
23	Was the Quality Management Plan (QMP)/Review Plan (RP) followed for this review milestone?	A		x	x	x	x
24	Have all computations gone through a rigorous Quality Control (QC) process (e.g., a "red dot" review)? (Note: For A-E work, it is incumbent upon the Technical Lead (TL) to ensure the A-E has performed this level of review.)	A		x	x	x	x
25	Have all critical graphics/plans gone through a rigorous QC process (e.g., a "red dot" review)? (Note: For A-E work, it is incumbent upon the Technical Lead (TL) to ensure the A-E has performed this level of review.)	A		x	x	x	x
26	Have all specifications gone through a rigorous QC process? (Note: For A-E work, it is incumbent upon the Technical Lead (TL) to ensure the A-E has performed this level of review.)	A		x	x	x	x
27	Have all models gone through a rigorous QC process? (e.g., a "red dot" review, clash detection, etc.)? (Note: For A-E work, it is incumbent upon the Technical Lead (TL) to ensure the A-E has performed this level of review.)	A		x	x	x	x

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ID	Indicator question	Program	Project submittal phase				
			I	35	65	95	100
28	Has a Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) review been performed in compliance with the ER?	A		x	x	x	x
29	Have District Quality Control (DQC), Independent Technical Review (ITR)/Agency Technical Review (ATR), and Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) certifications been completed?	A					x
30	Has the Quality Management Plan (QMP)/Review Plan (RP) been updated to respond to significant project changes?	A			x	x	x
31	Does the design adequately accomplish the project scope, intent, and functional and technical objectives as defined in the current Project Management Plan (PMP)?	A		x	x	x	x
32	Did the deliverable meet established design milestone expectations?	A		x	x	x	x
33	Is the design maturity sufficient to generate the required Class of estimate for this milestone? (Class 3 at 35%, Class 2 at 65%, and Class 1 at 95%/100%)	A		x	x	x	x
34	Does the project have a current risk register?	A	x	x	x	x	x
35	Was the project budget verified with a CSRA at concept design (i.e., 35%)?	M		x			
36	Did the Geographic District validate and/or develop the Programmed Amount (PA)?	M	x				
37	Has there been turnover on your design or review team that may affect the team's ability to develop a quality product?	A		x	x	x	x
38	What is your level of confidence in the quality of the engineering design efforts on this project?	A	x	x	x	x	x