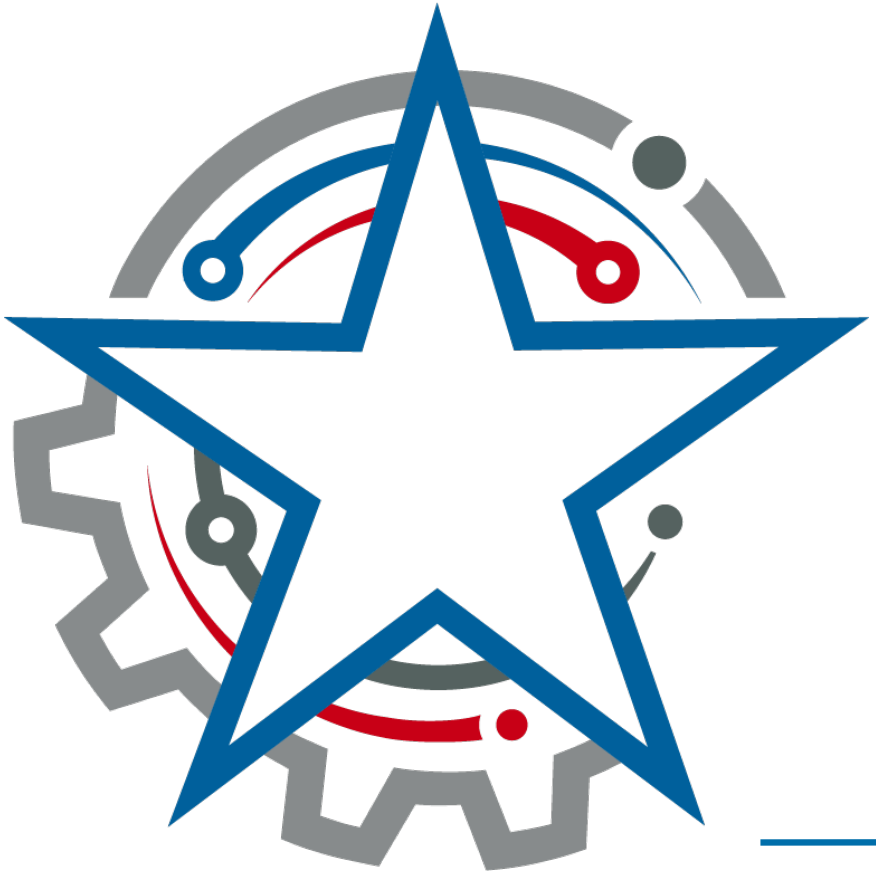


INTRODUCING THE ERDCWERX WEB PORTAL

HOW TO ACCESS ERDC CIVIL WORKS PROJECTS

MAY 2023

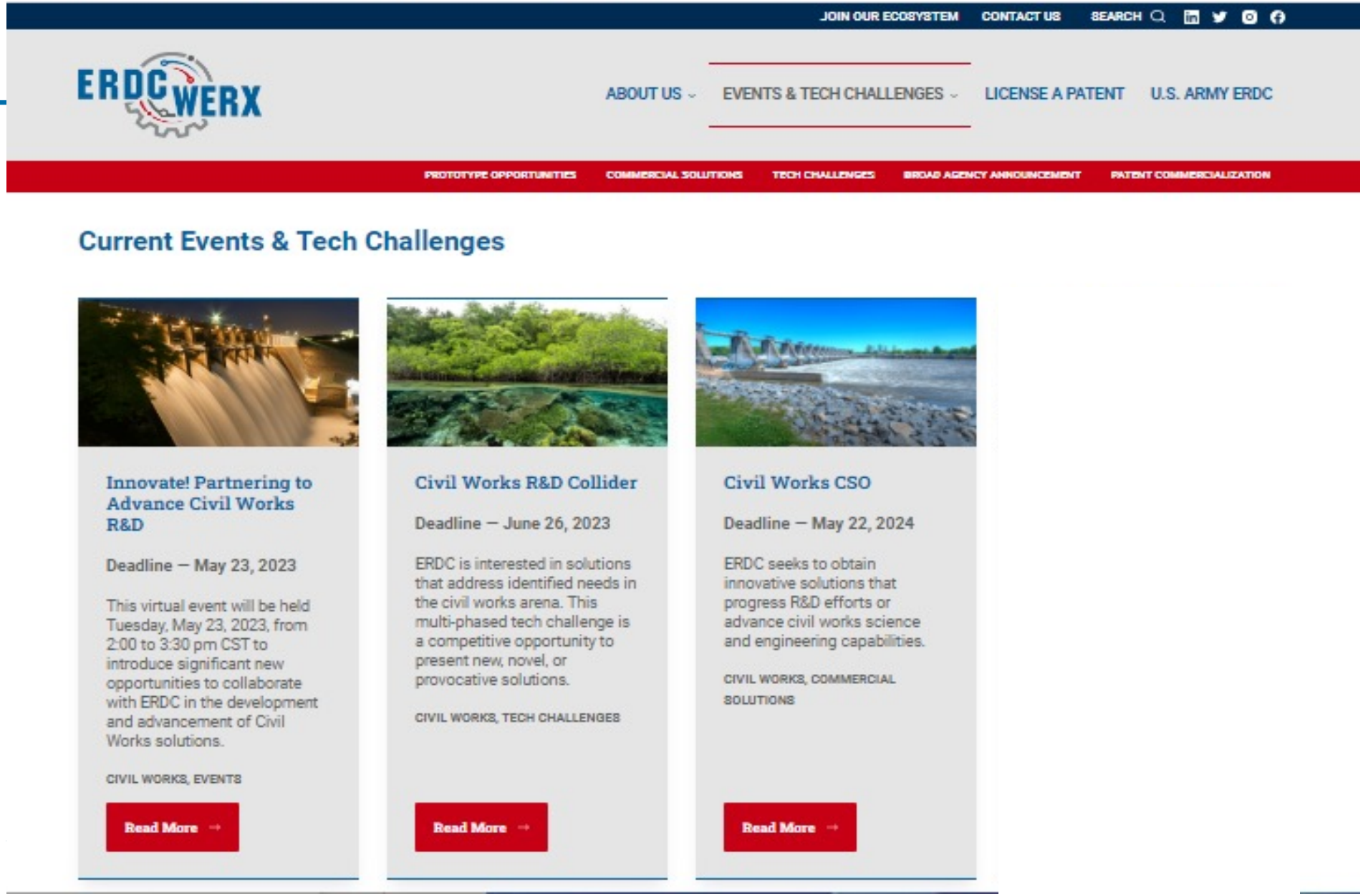
ERDCWERX

INNOVATE. COLLABORATE. ACCELERATE.

THE ERDCWERX VALUE PROPOSITION

ERDC's goals for its Partnership Intermediary Agreement (PIA)

ERDCWERX.ORG WEB PORTAL



Civil Works R&D Collider

Deadline — June 26, 2023

ERDC is interested in solutions that address identified needs in the civil works arena. This multi-phased tech challenge is a competitive opportunity to present new, novel, or provocative solutions.

CIVIL WORKS, TECH CHALLENGES

CIVIL WORKS R&D COLLIDER

2023 Notional Project Schedule

- **May 23: Submissions Open**
- **June 26: Submissions Close**
- **July: ERDC completes review of submissions, requests virtual pitches if needed**
- **August: ERDC selects final candidates, requests full proposals**
- **September: Full proposals due**
- **Early 2024: ERDC awards contracts, pending funds availability**

Civil Works R&D Collider

CIVIL WORKS, TECH CHALLENGES

The U.S. Army Engineer Research and Development Center (ERDC) is interested in solutions that address identified needs in the civil works arena. This multi-phased tech challenge is a competitive opportunity to present new, novel, or provocative solutions. The deadline for submissions is June 26, 2023, for all listed individual program requirements. A notional project schedule is provided below.

Why You Should Participate

This collider is designed to save time and accelerate progress while spotlighting some of the nation's greatest needs and most significant opportunities for R&D collaboration. Submissions that are favorably evaluated by ERDC subject matter experts may be hosted for virtual pitch and/or demonstration while being considered for possible near-term funding.

This multi-topic tech challenge is centered around individual program requirements. It is considered competitive as defined in the Commercial Solutions Opening and Broad Agency Announcement documents contained herein. ERDC anticipates awarding up to $20,000,000 in new partnerships during FY 2024 under this solicitation. Proposals with a multi-year scope that address current and follow-on opportunities, up to five years in duration, are desired. Individual awards of up to $500,000 per year are anticipated.

Submissions for this tech challenge will open on May 23, 2023.

Submit Basic and Applied Research Solution | Submit Commercial Solution

Individual Program Requirements

Civil Works project opportunities exist in **basic and applied research** and **commercial solutions**.

Basic and Applied Research

Basic research is defined as research directed toward increasing knowledge in science with the primary aim being a fuller knowledge or understanding of the subject under study, rather than any practical application of that knowledge. **Applied research** is the effort that normally follows basic research, but may not be severable from the related basic research; attempts to determine and exploit the potential of scientific discoveries or improvements in technology, materials, processes, methods, devices, or techniques; and attempts to advance the state-of-the-art.

Instructions and guidance for submission are provided in ERDC's Civil Works Broad Agency Announcement.

- Non-Destructive Evaluation and Geophysics Tools (CW-01)
- In-Situ Robotic Repair and Rehabilitation Technology (CW-02)
- Sustainable Construction and Repair Materials (CW-03)
- Mitigation of Overtopping Damage in Geotechnical Projects (CW-04)

Non-Destructive Evaluation and Geophysics Tools (CW-01)

The Corps of Engineers requires a robust understanding of existing conditions of built infrastructure to support optimized asset management approaches and maintenance prioritization. New and advanced inspection technologies are required to improve our ability to detect and quantify conditions in infrastructure projects. The technologies will require fundamental research to improve our understanding of mechanisms and their utility for infrastructure assessment. This effort focuses on fundamental research on advanced non-destructive evaluation (NDE) systems and geophysical characterization technologies for concrete, steel, and geotechnical infrastructure systems. The work will focus on NDE tools and related fundamental research that will advance the Corps' future infrastructure assessment methodologies. The following basic and applied research topics are of interest:

- Study and method development for utilization of raw X,C,L, and S band synthetic aperture radar data, processing, and basic analysis for interferometric SAR (InSAR) applications in geotechnical and structural infrastructure assessment.
- Identification, feasibility, and practicality of geophysical / seismic imaging technologies, models, and underlying mechanisms that enable characterization of subsurface geology and blanket thickness beneath a levee or other earthen structure.

Commercial Solutions

ERDC seeks to accelerate the application of commercially-derived solutions into deployable capabilities. Commercial Solutions Opening (CSO) is a competitive procedure to acquire innovative commercial items, technologies, or services. These individual program requirements are being announced and supported by this ERDCWERX platform based on ERDC's interest in a particular problem set for civil works.

Instructions and guidance for submission are provided in ERDC's Civil Works Commercial Solutions Opening.

- **Composites Durability and Service Life Prediction**
- **Advanced Non-Destructive Evaluation and Geophysics Tools**
- **In-Situ Robotic Repair and Rehabilitation Technology**
- **Mitigation of Overtopping Damage in Geotechnical Projects**
- **Computational Fluid Dynamics/Fluid Structure Interaction (CFD/FSI) Modeling**

Composites Durability and Service Life Prediction

USACE and ERDC have invested in composite materials used for large-scale construction and in repair applications. Indeed, composite structures are being used currently at USACE projects. The durability of composites subjected to impacts, vibrations, abrasion, or cavitation must be investigated. The longevity of composites in various environments, such as with extreme temperatures or harsh chemistry must be investigated. Methods of inspecting, both visually and through use of non-destructive testing or sensors, for composites must be developed to provide engineers and asset managers necessary condition information, especially for life-safety structures. Further, repair and maintenance methods and requirements for composites must be understood or developed in order for USACE to maintain composite assets over a service life. Commercial solutions are sought in the following topic(s):

- Capacitive imaging technology development for defect detection during inspections or quality assurance of new composite structures

Civil Works CSO

Deadline — May 22, 2024

ERDC executes R&D projects on behalf of the Assistant Secretary of the Army for Civil Works, U.S. Army Corps of Engineers, and various other government organizations.

CIVIL WORKS, COMMERCIAL SOLUTIONS

CIVIL WORKS COMMERCIAL SOLUTIONS OPENING (CSO)

2023-24 Project Schedule

- **May 23: Submissions Open**
- **May 2024: CSO Closes or Extends**
- **Continuously Open**
- **Timely Review By ERDC**
- **Opportunity for Selection For:**
  - **Existing Funding or**
  - **Selection For Library/Future Funding**

CIVIL WORKS COMMERCIAL SOLUTIONS OPENING

https://www.erdcwerx.org/civil-works-cso/

Submit Innovative Solutions

The U.S. Army Engineer Research and Development Center (ERDC) executes research and development (R&D) projects on behalf of the Assistant Secretary of the Army for Civil Works, U.S. Army Corps of Engineers (USACE), and various other government organizations. Investments in Civil Works are critical in generating near- and long-term benefits for securing our communities, supporting and growing our economy, creating jobs, and enhancing broader societal impacts such as improved public health, National security, recreation and tourism.

Submissions for this opportunity will open on May 23, 2023.

Learn More About CSOs | Review CSO Solicitation | Review FAQ | Submit Solution

Strategic Focus Areas

- Infrastructure
- Sediment Management
- Water Modeling
- AI, Robotics and Data
- Crisis Mitigation
- Ecosystems

CIVIL WORKS COMMERCIAL SOLUTIONS OPENING

https://www.erdcwerx.org/civil-works-cso/

Infrastructure

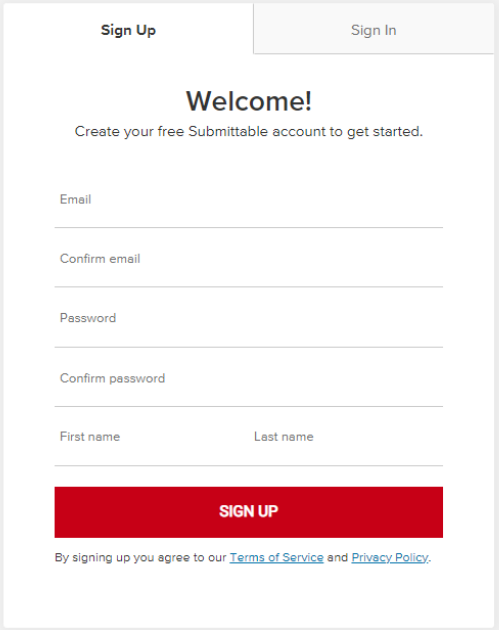
NextGen Water Resources Infrastructure

Years of deferred construction and maintenance have created backlogs approaching $200 billion. Maintaining and replacing aging infrastructure requires transformative technologies that enable more cost-effective, resilient and reliable solutions within a changing climate, including ultra-durable and rapid construction materials and processes, models that predict performance and optimize maintenance, and autonomous inspection techniques.

Targeted strategic capabilities for this focus area are:

- Robust and Quantitative Understanding of Existing Conditions: advanced Non-Destructive Evaluation (NDE) methods, geophysical characterization, aging processes and synergies, health monitoring systems, advanced digital twins, and related modeling and analysis
- Risk Quantification and Decision-Support: asset monitoring for reliability-centered maintenance, infrastructure technology transition and guidance modernization
- Technologies for Resilience and Reliability: advanced materials, repair and retrofit methods, innovative design and construction approaches, modernizing aging infrastructure with green materials and autonomous operations / control capabilities, automated QA/QC tools, and in-situ robotic repair technologies
- Infrastructure Performance Forecasting: cross cutting S&T for improved risk quantification and forecasting, advanced decision support for asset management, and risk communication tools for Planning, Engineering and Design (PED), Construction, and Operations & Maintenance (O&M)

SUBMISSION PLATFORM



- Create a password-protected account
- Utilize the streamlined process
- Return to complete partial work saved in the platform
- Receive your submission confirmation