



Watershed Health Engineering Services

Colorado Water Conservation Board Technical Assistance Team

BACKGROUND

The Colorado Water Conservation Board (CWCB) has contracted with Enginuity (as of November 2020) and its partners to readily deploy resources to assist with the Colorado Watershed Restoration Program (CWRP) in activities related to technical support for grant applicants and grantees for design review, engineering analysis, and construction oversight. Other services to be provided under the resulting contract include: support for the CWCB for fire and flood analysis, fluvial hazard zone program implementation, project monitoring and adaptive management, and overall program management.

WILDFIRE RECOVERY: SUMMARY OF TECHNICAL ASSISTANCE SERVICES

Review of technical analysis and design

- Review of emergency designs and projects by a team of multi-disciplined professionals including experts in engineering, geomorphology, vegetation, ecology, and biology.

Technical Evaluations, Analysis, Planning, and Project Prioritization

- Data Collection and Baseline Conditions Assessment.
- Gap analysis, Including identifying where additional data and/or evaluations are needed to support decision making.
- Pre and post-burn hydrology and evaluation of changes by scale (Including hydrologic models such as HEC-HMS, GSSHA, StreamStats or others).
- Post-burn hydraulics (basin-wide) to determine increased flood risk (HEC-RAS 1D and 2D or RiverFlow2D). This analysis can include the addition of bulking factors to account for sediment and debris loading.
- Fluvial hazard zone delineation and assessing geomorphic risk. After a wildfire, [FHZ maps](#) can be quickly and cost-effectively created to delineate areas vulnerable to sediment and debris impacts spurred by rainfall over the burn scar. Mapping these post-fire hazards may allow downstream residents to prepare by preemptively moving vehicles, storage units, and other items to safer locations and to develop evacuation plans.
- Sediment and debris flow modeling (FLO-2D, US Forest Service, and USGS methodologies).
- Assistance with identification of values at risk and project/area prioritization.
- Detailed Damage Survey Report (DSR) support with Natural Resources Conservation Service (NRCS).
- Flood warning support including correlation to hydrology, hydraulics, and FHZ mapping
- Watershed recovery plan development, technical analysis, prioritization, concept design, and implementation recommendations.



Program/project management and recovery program support

Recovery program support coordination and administrative support including:

- Recovery program facilitation and coordination;
- Identification and assistance with stakeholder groups and water users;
- Goal setting and objective development (recovery goal setting workshops);
- Recovery funding identification and funder coordination including recovery funding workshops;
- Determine funding mechanisms for priority projects (align projects with appropriate funding);
- Development of handouts, website content, social media content, and fact sheets;
- Standardized templates for reporting, invoicing, or communication;
- Support for communication protocols and outreach materials;
- Assistance with project prioritization;
- Compliance with federal or state reporting;
- Assistance with tasks that are assigned to local sponsors;
- Assistance in setting up a pre-qualified list of contractors;
- Procurement support;
- Assistance in project closeout and reporting.

Adaptive management and monitoring

- Baseline data collection for post-fire monitoring
- Support for development of an adaptive management framework for recovery
- Support and coordination with research partners
- Performance of monitoring activities
- Recommend management strategies

Construction oversight assistance

- Assistance with permitting requirements
- Quality assurance for emergency work including both design and construction

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