

Northwestern Division Regional Technical Center for Sustainable Design and Development and Life Cycle Cost Analysis FY13 Work Plan

Building Envelope, Hydropower, Waste

31 August 2012



US Army Corps of Engineers

BUILDING STRONG®

1. PURPOSE AND AUTHORITY

Regional Centers of Expertise for Energy, Sustainable Design, and Life Cycle cost Analysis (RTCX-SDD-LCCA) have been developed at each USACE Major Subordinate Command (MSC) in accordance with Operational Order (OPORD) 2011-72 and associated Fragmented Orders (FRAGO). Per OPOrd 2011-72, the Regional Centers are intended to accelerate learning and knowledge transfer while creating a base level of technical competency throughout the broader USACE organization to meet the needs of our customers. Regional Energy Centers are not work centers; rather they are technical centers available to support USACE and its' customers in applying sustainability strategies in all projects and programs.

Northwestern Division (NWD) has been assigned responsibility as Regional Center of Expertise for Waste and Building Envelope. The existing USACE mandatory center of expertise for hydropower engineering and design and the technical center of expertise for pump plant engineering and design are located at the Hydroelectric Design Center (HDC) within NWD. Thus, NWD has also been assigned responsibility for hydropower.

Per Draft FRAGO 1 to OPOrd 2011-72, Regional Centers are required to create Work Plans annually that are reviewed within the MSC and approved by HQ prior to the start of a new Fiscal Year. This document serves as the Work Plan and addresses what NWD intends to deliver and accomplish in FY13 within the assigned Regional Centers.

2. NWD REGIONAL CENTER ORGANIZATION

The NWD RTCX-SDD-LCCA (NWD RTCX) is a virtual center comprised of technical experts throughout NWD and the broader USACE community. The NWD RTCX is led by the NWD Sustainability and Energy Program Manager (NWD Program Manager). The NWD Program Manager is responsible for coordinating with HQ to ensure the RTCX is meeting the identified mission in OPOrd 2011-72. A Technical Lead is assigned to provide support to the NWD Program Manager and will participate in scheduled phone calls with HQ as needed. The assigned HQ and ERDC liaisons will be invited to participate in developing the annual Work Plan and provide guidance to the Regional Centers. NWD will select a lead and co-lead for each assigned Regional Center who will have responsibility to support the Range of Services described below. The Regional Center Lead will be responsible for maintaining a list of technical experts that can be called upon when required.

3. VISION

NWD is well positioned to provide support to USACE and its customers in the Waste, Building Envelope, and Hydropower arenas. NWD has long been a leader in implementing sustainability features on projects to include the arenas of waste, building envelope and hydropower. Through the Activities and Range of Services described in this Work Plan, NWD will be a reliable Center of Expertise that delivers high quality training, supports customers within agreed upon levels of quality, budgets and schedules, and is on the leading edge of implementing Waste, Building Envelope, and

Hydropower projects.

4. FY13 ACTIVITIES

The following three charts address the activities NWD has planned within each assigned technical area. Initiatives are identified with purpose, date, audience and cost described for each item. These lists have been developed in coordination with the assigned liaisons at HQ USACE and ERDC. These lists are not an exhaustive list of the only items NWD plans to accomplish, but rather serves as a starting point. As needs are identified throughout the FY the NWD team will work to provide the necessary services to meet the emerging needs.

a. Hydropower

Initiative	Purpose	When	Intended Audience	Cost to HQ	Cost to NWD
Hydroelectric Design Center capabilities webinar for USACE	Inform Project/Program Managers of HDC expertise available on a reimbursable basis	Q1	Program/Project Managers supporting Military customers (Army, Air Force installations)	\$0	Existing HDC capabilities brief; minor overhead cost to update where necessary
USACE Hydropower capabilities webinar for customers (Army)	Inform customers of USACE experience and expertise with hydropower projects	Q1	Installation DPW Chiefs, Energy Managers, and others responsible for meeting renewable energy goals	\$0	Existing USACE hydropower brief presented to Mr. Kidd; minor overhead costs to update
Develop Hydropower SharePoint, monitor discussion boards	See "Websites" paragraph for additional information	Q1	USACE	\$5,000	\$0
Host ACTEDS CP-18 funded courses appropriate to Hydropower	Support technical training as needed in hydropower	Q4	USACE	\$0; ACTEDS funded	\$0

b. Waste

Initiative	Purpose	When	Intended Audience	Cost to HQ	Cost to NWD
Develop Waste SharePoint, monitor discussion boards	See "Websites" paragraph for additional information	Q1	USACE	\$5,000	\$0
Develop and	Inform USACE of	Q1	USACE	\$0	\$2,000

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deliver webinar on NWD Waste capabilities	expertise available within NWD on a reimbursable basis				NWD/District overhead to develop briefing material
Develop and deliver webinar on waste reduction opportunities for new construction projects	Inform Army customers about waste reduction opportunities on new construction projects	Q2	Installation DPW Chiefs, Project Managers, and others responsible for meeting waste reduction goals	\$5,000	\$0
Develop and deliver webinar on waste reduction renovation projects	Inform Army customers about waste reduction opportunities on renovation projects	Q2	Installation DPW Chiefs, Project Managers, and others responsible for meeting waste reduction goals	\$5,000	\$0
Develop and deliver webinar on waste reduction AT Civil Works Operating Projects	Provide guidance and best practices to Operating Project staff regarding waste reduction	Q3	Civil Works Operating Project staff	\$5,000	\$0
ASHRAE 189.1 Webinar – Section 9, Sustainable Building Materials & Construction Debris Management	Inform USACE of contract changes associated with complying with ASHRAE 189.1, Section 9	Q2	Construction Representatives, Project Engineers, Project Managers	\$0	Existing brief developed by Jeanette Fliess for Army Net Zero Waste workshop
Host ACTEDS CP-18 funded courses appropriate to Waste	Support technical training as needed in waste	Q4	USACE	\$0; ACTEDS funded	\$0

c. Building Envelope

Initiative	Purpose	When	Intended Audience	Cost to HQ	Cost to NWD
Develop and deliver webinar on NWD Building Envelope capabilities	Inform USACE of expertise available within NWD on a reimbursable basis	Q1	USACE	\$0	\$2,000 NWD/District overhead to develop briefing material
Develop Building Envelope SharePoint, monitor discussion boards	See “Websites” paragraph for additional information	Q1	USACE	\$5,000	\$0
Develop High Performance Building Envelope	Provide training to Army O&M staff for efficient building	Offer first class in Q2	Installation O&M staff and project managers	See separate HPBE II	

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Workshop for Building Renovations (HPBE II)	remodel efforts		responsible for developing scopes of work for building renovations	proposal for costs	
Participate as instructor for PROSPECT #126, Building Air Barriers and Pressure Testing (Nick Alexander and Don Dittus)	Provide detailed technical training to design and construct effective continuous air barriers	Q3, Q4	Mechanical Engineers, Architects, Construction QA staff	\$0	\$0
Evaluate Passive House Institute US (PHIUS) certification opportunities and determine if projects should obtain PHIUS certification	Provide recommendation to HQ USACE for Passive House policy	Q2	HQ USACE	\$7,500	\$0
Develop guidance for insulation levels and air tightness return on investment by climate zone	Provide technical guidance on building envelope by climate zone to include details and criteria for wall sections	Q4	USACE	\$100,000	\$0
Upload material from initial Building Envelope Workshop (February 2012) to Building Envelope SharePoint	Share video-taped presentations and slides from initial High Performance Building Envelope workshop	When CDs are provided by ERDC-CERL	USACE	\$0	\$0
Collect air barrier details and lessons learned by construction type; collate and post to SharePoint	Develop repository of details that have been used on USACE projects	Q3	USACE	\$25,000	\$0
Develop and deliver webinar on thermal bridging	Provide technical training on designs that reduce thermal bridging	Q2	USACE Mechanical Engineers, Architects, Construction Quality Assurance Representatives	\$10,000	\$0
Review UFGS for air barrier specification	Ensure UFGS include appropriate specifications to	Q3		\$2,000	\$0

improvements	provide effective air barriers				
Host ACTEDS CP-18 funded courses appropriate to Air Barriers	Support technical training as needed in air barriers	Q4	USACE	\$0; ACTEDS funded	\$0
Develop guidelines for scoping insulation and air tightness requirements of renovation projects	Provide technical guidance on insulation and air tightness recommendations for renovation projects	Q4	USACE, DPW Project Managers	\$25,000	\$0

5. RANGE OF SERVICES

a. KNOWLEDGE SHARING

i. Websites

The NWD RTCX will develop four main websites within the HQ established MRSI platform (<https://mrsi.usace.army.mil/sustain/SitePages/CenterOfExpertise.aspx>). A summary webpage will be provided at the NWD level to address the capabilities and services provided by NWD in waste, building envelope and hydropower.

Independent technology webpages will be developed for the Hydropower, Building Envelope, and Waste assignments to NWD. The technology webpages will include multiple layers that provide items such as Best Practices, Design Tools, References, Training, Research, FAQs and a Discussion Board. An initial hierarchy of the webpage development was provided to HQ USACE in July 2012.

NWD is targeting to have the webpages developed with enough organized content that they can be made public by the end of FY13 Q1 subject to the availability of funds. The webpages will be living items that will be continuously updated throughout the FY as appropriate.

NWD RTCX technical experts will monitor the discussion boards provided in each technology area. Responses will be coordinated with the NWD Program Manager and the assigned ERDC-CERL and HQ USACE liaisons.

ii. Webinars

As indicated in the FY13 Activities above, NWD plans to provide webinars in each of the three assigned technical areas. Webinars provide an effective means to deliver consistent teaching and policy implementation to a broad audience. Webinars can be offered to internal USACE audiences, broader contractor audiences, and/or focused customer audiences, depending on the expressed need. Webinars will be recorded and archived on the appropriate technology webpage for individuals to review after they have been presented.

iii. Professional credentials and certification

Within the Training section of the technology webpage the NWD RTCX will provide guidance and recommendation on current professional credential and certification programs applicable to the technology. Where appropriate links will be included that address how to obtain and maintain these credentials.

iv. PROSPECT Courses

NWD has a variety of technical experts engaged as instructors for PROSPECT courses. Specific to the three technologies assigned to NWD, Nick Alexander and Don Dittus are instructors for PROSPECT #126, Building Air Barriers and Pressure Testing. Nick and Don have been integrally involved in developing this class and were teachers at the Pilot offering in FY12.

HDC has several technical experts are engaged as instructors for PROSPECT #412, Lubrication of Mechanical Equipment and PROSPECT #376, Management of Hydropower – O&M. HDC technical experts assist with hosting PROSPECT #376 in Portland, OR annually and are involved in updating and teaching the course.

To date there no PROSPECT classes associated with Waste specifically being offered. NWD RTCX technical experts are available to support PROSPECT course development on a reimbursable basis in the assigned technology areas; if additional PROSPECT courses are warranted NWD will take an active role in leading the USACE team that develops and teaches material.

v. Non-PROSPECT Workshops

NWD RTCX technical experts are available to develop and teach onsite workshops of varying lengths on a reimbursable basis. For example, in FY13 NWD technical experts will lead the development of a High Performance Building Envelope Workshop for Existing Buildings. This workshop will be focused on providing training for deep retrofits of existing buildings via thermal envelope improvements. Additional workshops of this nature (3 day onsite) can be developed as appropriate. For example, a potential workshop could be focused on deconstruction techniques for building demolition.

b. FIELD ASSISTANCE

Team members of the NWD RTCX are available to provide support to Project Delivery Teams (PDT) on a reimbursable basis. This support can come in the form of training (see Knowledge Sharing paragraph above), technical consultation on projects (Example: Reviewing air barrier and building envelope construction details), supporting tasks (providing integral project support to PDTs), and design as PDT member (serve as designer of record).

Task	Action	Task Type
Outreach events	Speaking about Hydropower, Air Barriers, and Waste at events for government, private industry, and others	Consulting/ Training

Training	Develop and provide training on current and evolving technologies and sustainable strategies	Training/ Consulting
Specifications Development	Assist with specification development on a per-project basis	Supporting/ Consulting
Project Design	Act as the Designer of Record, providing completed product to be integrated into project	Design as PDT Member
Construction Support	Inspections and evaluations of projects in construction	Supporting
Documentation Review	Provide reviews of design and construction documents	Supporting

c. MENTORING JOURNEYMAN EMPLOYEES

Chiefs of Engineering and Construction within NWD have long been committed to providing strong mentoring for journey-level employees. This effort takes on different forms in each geographic district but is well established. Within the assigned technical areas RTCX journey-level employees will be given opportunities to learn from and work with NWD technical experts.

d. RESEARCH RECOMMENDATIONS

The NWD RTCX will work closely with ERDC and other appropriate offices to provide guidance and recommendation for the investment of research funds into areas appropriate for each of the assigned technology areas.

NWD has experience supporting projects funded through a variety of sources to include: Installation Technology Transition Projects (ITTP) and Environmental Security Technology Certification Program (ESTCP).

e. PARTNERSHIPS WITH PROFESSIONAL ORGANIZATIONS

The NWD RTCX stands ready to partner with Professional Organizations, Department of Defense Services and Federal Agencies as specific needs arise. If external support is determined advantageous the NWD RTCX will engage in appropriate partnerships.

f. LEVERAGING OUTSIDE RESOURCES

In FY12 NWS successfully submitted several proposals for ACTEDS CP-18 funding for sustainability related training. NWS hosted the Association of Energy Engineers Certified Energy Manager class and the Passive House Institute of the United States Passive House Certification Course in late FY12.

As FY13 progresses NWD will be prepared to take advantage of this funding stream again and will host training in building envelope, waste, and hydropower as appropriate and where funding allows. These classes will be offered to NWD RTCX technical experts first with a minimum amount of spaces reserved for other USACE attendees.

6. METRICS

Per FRAGO 1 to OPOD 2011-72, the NWD RTCX-SDD-LCCA will track and report the following information annually:

- i. Number of field questions answered
- ii. Number of projects where funding was provided to NWD RTCX for assistance
- iii. Description of presentations made by team members
- iv. Description industry liaison/outreach efforts
- v. Description of research projects/papers published
- vi. Description of education outreach opportunities
- vii. Research projects recommended
- viii. Other significant accomplishments

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