

Peer Review of Research Priorities Roadmap to Enhance Pumping Plant Infrastructure Sustainability

Date: March 4, 2016

Originating Office: Research and Development Office, Bureau of Reclamation, Mail Code 08-10000, PO Box 25007, Denver CO 80225

Reclamation Roles:

Director or Delegated Manager: Levi Brekke, Chief, Research and Development Office, Bureau of Reclamation

Peer Review Lead: Erin Foraker, Infrastructure and Renewable Energy Research Coordinator, Bureau of Reclamation

Subject and Purpose: Reclamation's Research and Development Office recently engaged in infrastructure research roadmapping to determine where future research efforts should focus to provide the greatest benefit. The purpose of the prioritized roadmap is to fill gaps in Reclamation's current toolbox to extend the useful life of critical infrastructure. Reclamation field and Denver Office personnel generated the data used in this roadmapping process. A team of subject matter experts completed the roadmap and prioritized the identified research needs. The pumping plant infrastructure research roadmap describes the research need by identifying adverse outcomes, causes, current mitigation practices, and outstanding needs for tools, technology, etc.

The purpose of this Peer Review Plan is to facilitate stakeholder and expert review of the roadmap for use in future decision processes amongst Reclamation leadership. The report (roadmap) will also be distributed to the roadmap data respondents as an internal vetting exercise.

Impact of Dissemination: The Pumping Plant Infrastructure Research Roadmap report is not determined to be influential or highly influential as defined by Office of Management and Budget Final Information Quality Bulletin for Peer Review (70 FR 2664-2677) and the Reclamation Manual Peer Review of Scientific Information and Assessments (CMP P14).

Peer Review Scope: This peer review is focused solely on the research needs identified in the Pumping Plant Infrastructure Research Roadmap and their ranked priority. Peer reviewers are asked to provide responses relative to the questions below:

Question 1. Based on your experience, is the final list of highest priority research needs representative of the greatest pumping plant infrastructure needs?

Question 2. What (if any) are your experiences with the research needs identified within this report?

Question 3. Are there other important research needs associated with pumping plant infrastructure that were not identified in this report?

Manner of Review, Selection of Reviewers: The review will take place on Reclamation's Peer Review Agenda website. Public, expert, and stakeholder review will occur concurrently through targeted invitations from Reclamation. Professional and scientific societies dedicated to the engineering or operations of pumping plants and associated structures will be asked to nominate potential peer reviewers. The expert peer reviewers will have least 10 years of experience with pumping plants, including such fields as pumping plant design, pumping plant construction, and pumping plant operation. Public comments will not be provided to the expert peer reviewers. Reviewers will be given attribution for their comments and not remain anonymous.

Number of Peer Reviewers: It is anticipated that more than 10 peer reviewers will be utilized.

Timing of review: March 11, 2016 to April 8, 2016

Delivery of findings: Following the review period, the Peer Review Lead will consolidate and synthesize the input from individual peer reviewers. At a minimum, this peer review summary document will include a description of the peer review process, subject being reviewed, and reviewer comments. The final roadmapping report will be provided digitally and as a hardcopy to Reclamation Research Office.

Agency contact: Erin Foraaker, Reclamation's Infrastructure and Renewable Energy Coordinator (eforaker@usbr.gov).

Comment Disposition Table

#	Reviewer, Org	Comment	Resolution
1	Al Bernstein, Reclamation, Technical Service Center	<p>The only comment I have is why is item 19 struckout? Detoriated metalwork can become a safety issue.</p> <p>No other comments</p>	<p>Item 19 was crossed-out and included with Item 1 prior to the committee scoring. It is now deleted and an explanation is provided in the body of the report.</p>
2	Kurt von Fay, Reclamation, Technical Service Center	<p><i>Question 1.</i> Based on your experience, is the final list of highest priority research needs representative of the greatest pumping plant infrastructure needs?</p> <p>Yes. The report seem very well done.</p> <p>I would add something about composite materials to “Review and reassess uses of noncorrosive materials, such as polyvinyl chloride, for buried and encased pipe” to be clear that all potential alternative materials will be investigated.</p> <p><i>Question 2.</i> What (if any) are your experiences with the research needs identified within this report?</p> <p>Most of my experience is related to the concrete structures used to house the pumping plants and performing repairs to damaged concrete components and leaking cracks and joints.</p> <p><i>Question 3.</i> Are there other important research needs associated with pumping plant infrastructure that were not identified in this report?</p> <p>It seemed that most of the emphasis was placed on the components of a pumping plant, but not the pumping plant building (although there was a question about that in the survey). Should there be some consideration given to issues with the structure(s) that house the pumping plant? If there are problems with the building, that could have a big impact on the operation of the plant.</p> <p><i>Comments:</i> I think the report and the work that went into developing it are first rate. I think to make the roadmapping exercise complete, a few additional steps need to be taken, which may already be planned. For the items that are deemed most important, they should be assigned to a champion. The champion would be tasked with promoting, arguing for, obtaining research partners, and obtaining funding for the project. The champion would not necessarily perform most or all of the research needed, but would serve more in a supporting and coordinating role. A schedule to complete the project should also be established. Finally, an estimated budget for the project should be determined. As with all research projects, there will undoubtedly be findings as the project progresses that will likely mean that the budget and schedule may need to be adjusted.</p>	<p>Added “or composites” to Research Need Statement B in Item 1.</p> <p>For Question 3, the deterioration of the plant structure was identified as Item 9; however, the committee did not rank the research needs as high priority. This does not preclude this subject from being a priority or from research being conducted in this area.</p> <p>The motivation for research roadmapping is to identify Reclamation’s high priority research needs for principal investigators’ consideration during the solicited research proposal development and submission process. Some research brokering is planned, ensuring the highest priorities are addressed.</p>