



ITRC PROJECT PROPOSAL:

Regulatory Limitations of Water Reuse Technologies for Sustainable Infrastructure

Proposal Contacts:

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Call for Proposals Topical Area

Topical Area:

Biological drinking water treatment (BIODW)
Technologies and approaches for treatment of contaminated drinking water using biological processes.

Problem Statement (why is this project necessary and relevant to ITRC's purpose & mission¹?)

Problem:

- Water source quality and quantity continues to diminish
- Water demand for all uses continues to increase

Water recycling and reuse offers reasonable and viable mitigation of this problem. However, there is a hesitation by state health and environmental regulatory officials to fully embrace emerging water recycling and reuse technologies and adopt revisions and amendments to laws, regulations and policy that would allow full benefit of these solutions. This is in part due to:

- Public perception of insufficient protections with water reuse
- Existing regulations and laws limit demonstrated reasonable and safe reuse

An ITRC project applied to this problem would reinvigorate discussion by regulatory agencies and refocus their attention on solutions. The project guidance document would further validate and justify for the regulatory agency movement toward adoption of new laws, regulations and policies for the use of technically sound innovative solutions to this environmental challenge.

Proposed Scope to Address Problem (what is the approach for this project?)

Scope:

Project requires a group of professionals, specialists and regulatory officials to review state and local regulations governing water reuse, reclamation and recycling. Also review wastewater treatment and discharge regulations that govern and direct the reuse, reclamation and recycling of water. Evaluate the commonalities and differences between and among states comparing levels of reuse and water quality parameters. Inclusion of precipitation harvesting regulations is desirable. Provide a focus on and discussion of obstacles as seen by regulatory agencies to acceptance of new technologies and amendment of regulations that would enable and allow new technology application.

Targeted Users (who will use products generated by this project?)

Targeted Users:

Federal Government

- Federal facilities
- Military installations

State Governments

- Health Departments
- Environmental regulatory agencies
- Natural resources agencies
- Agricultural and soil conservation

Local, County and Municipal Governments

- Local Health Departments
- Environmental Health officials

- Departments of Public Works
- Utilities companies
- Water & wastewater treatment companies
- Groundwater recharge and constructed wetlands

Private Sector

- Golf course irrigation
- Industrial process cooling and make-up water
- Fire Protection Systems
- Nurseries
- Agriculture
- Silviculture
- Producers, manufacturers and suppliers of new technology
- Vehicle Wash Facilities
- Conservation groups

Summary of Deliverables (primary project product(s))

Deliverables:

Provide a discussion and detailed report of findings and more than one case study analyses of water recycling, reclamation and/or reuse which offers reasonable, viable and cost effective technologies that demonstrate multiple means to achieve relief for diminishing and scarce source supplies and infrastructure sustainability. Include a matrix, table and/or listing of available technologies, suppliers, regulatory agencies and their guidance documents links, and completed infrastructure successes. Case study area preferences are Orange County, CA, Arizona, New Mexico, Nevada, Georgia, Florida, Washington, New York, Pennsylvania, and Minnesota.

Impact (how will this project result in more effective environmental decision making?)

Impact:

The project will assist Department of Defense and potentially numerous municipalities and regions of the country where decreasing and/or degraded water resources are already a problem. The end result will better enable these resource managers to implement long term sustainable infrastructure solutions to help resolve water quality and quantity shortfalls. Additionally, this project has the potential to lead directly into several different technology transfer and implementation projects where we can expect to see direct positive influence of the ITRC in facilitation of lead edge technologies.

Project Schedule

Project Schedule:

For this proposal we expect that the development and delivery of the regulatory review document and case studies review to take nearly 3 years. Separate timelines can be managed for both the regulatory review and case study/technology analysis. There may be potential to shorten those timelines significantly pending decisions of scope of analysis and team formation and management considerations. A proposed timeline follows given in terms of consecutive tasks:

Regulatory Review

1. Establish team – 3 months.
2. Collection of State Water Reuse regulations/Case Studies – 6 months.
3. Matrix Analysis of State regulations/Case Study Analysis – 9 months
4. Draft Report – 6 months
5. Draft Final Report – 4 Months
6. Final Report – 6 months

Proposed Personnel

Potential Team Membership/Needs:

Propose a group of engineering professionals, environmental specialists, geologists/hydrologists and federal and state regulatory officials from the case study areas preferred (Orange County, CA, Arizona, New Mexico, Nevada, Georgia, Florida, Washington, New York, Pennsylvania, and Minnesota). Team should include at least one US Army Environmental Command representative and other Department of Defense representatives.

Proposed In-Kind/Direct Project Funding: The Environmental Technology Branch of the U.S. Army Environmental Command is pursuing funding to compliment this project. To date no funding has been identified within existing budget and spending authorities. The USAEC is evaluating options for potential availability of end of year funds and possible Federal Economic Stimulus funding within 2009. If no funds are found within FY09 resources, unfunded budget item requests will be presented for consideration in the 2010 budget. Additionally, USAEC staff technical personnel are expected to be available to participate substantively in a project team.

Related Work:

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This project is closely related to initiatives that are being conducted within the Department of the Army on implementing viable technologies and methods to reach Army sustainable infrastructure goals and objectives. Research and other efforts are supported by DoD using traditionally appropriations and funding authorities and may include fund authorization from the Federal Economic Stimulus package which calls for investments in sustainable infrastructure. Additionally, the WateReuse Foundation funds specific research and technology demonstration projects that may also compliment this proposed ITRC effort.