

## 2006 INNOVATIONS AWARDS PROGRAM

### APPLICATION

**Deadline: March 4, 2006**

INSTRUCTIONS: Complete and submit this document electronically if possible, preferably in Microsoft Word format (.doc or rtf). This application is also available at [www.csg.org](http://www.csg.org), in the Programs section. Determine the appropriate "Change Driver" from the enclosed matrix and indicate that in the appropriate space listed below. Keep in mind that the matrix is only meant to show potential relationships between change drivers, trends and issues, and is not exhaustive. **Be advised that CSG reserves the right to use or publish in other CSG products and services the information that you provide in this Innovations Awards Program Application. If you object to CSG potentially using or publishing the information contained in this application in other CSG products and services, please advise us in a separate attachment to your program's application.**

ID #: 06-MW-03IL

Change Driver: Resource Management

State: Illinois

1. Program Name

**"Mud to Parks"**

2. Administering Agency

**Office of Illinois Lieutenant Governor Pat Quinn**

3. Contact Person (Name and Title)

Marc Miller, Senior Policy Advisor

4. Address

214 State Capitol, Springfield, IL 62706

5. Telephone Number

217-557-5625

6. FAX Number

217-524-6262

7. E-mail Address

Marc\_Miller@ltgov.state.il.us

8. Web site Address

www.StandingUpForIllinois.org

9. Please provide a two-sentence description of the program.

“Mud to Parks” takes an out-of-place resource – Illinois River sediment – and identifies beneficial uses and locations for this material.

Deep water and aquatic habitat are restored in the Illinois River and its backwater lakes, natural treasures which have degraded over time from erosion and sedimentation, and rich Illinois topsoil is placed once again on upland sites where soil is needed to grow prairie plants and trees for parks and natural areas.

10. How long has this program been operational (month and year)? **Note: the program must be between 9 months and 5 years old on March 4, 2006 to be considered.**

Planning for the program began in June 2003, and work activities commenced in April 2004.

11. Why was the program created? What problem[s] or issue[s] was it designed to address? **Indicate how the program applies to the “change driver” that you listed above.**

“Mud to Parks” was created to address severe sedimentation problems on the Illinois River and its backwater lakes. The program changes how resource managers view what is typically thought of as a waste material.

The Illinois River is a large river ecosystem that runs entirely within the borders of the State of Illinois. The lower two-thirds of the river is the ancestral course of the Mississippi River, and, before glaciers changed the larger river’s course, it created a wide floodplain between limestone bluffs. When the smaller Illinois River assumed its current course, large areas of connected backwater lakes survived to foster abundant plant and animal communities.

The Illinois River has provided human communities with drinking water, natural resources, commercial river navigation, and served later to provide recreational opportunities for fishing, hunting, and boating. It once was a vibrant system, providing the nation with fish, waterfowl, and other commercial products, and was considered the second largest freshwater fishery in the United States. Man-made

alterations to the floodplain, watershed, and the river itself, along with various forms of pollution, changed this resource and the legacy of these changes can be observed today.

The most significant impact and a dire threat to this system is the accumulation of sediment in the backwater lakes and in the river channel itself. Where many of these areas were six to eight feet deep in 1903, today most areas are less than two feet deep. Many backwater areas have vast acres of exposed mud flats in low water conditions. If action is not taken today, many of these areas will be lost to encroaching terrestrial plants and will not be easily reclaimed.

The “Mud to Parks” program seeks to mechanically remove this sediment and create deep-water habitats and over-wintering areas for fish and other wildlife. Resource management attitudes treated dredge material as “spoil”, or an unwanted resource that is disposed in the most efficacious manner. Changing management though about a waste material can create new possibilities to beneficial uses, perhaps in areas that are hundreds of miles away.

Sediments accumulating in the Illinois River eroded from the rich, fertile plains of Illinois, and possess essentially the same qualities as our finest topsoil. This “out-of-place” resource can be re-used to redevelop areas where soil fertility is lacking, such as an abandoned factory site or surface mine.

Because these are new end-users for the dredged material, innovative technologies and transfer techniques were needed to deliver a product that could be easily transported, handled, and used. In order to re-use this resource, dredged river sediment is placed immediately into river barges and transported to areas of need. The program identifies and tests “off-the-shelf” material handling technologies and creates new transfer techniques with dredged sediment.

For more information on the technologies used and the locations that have benefited from “Mud to Parks”, please see attached circular, “Returning the Soil to the Land.”

12. Describe the specific activities and operations of the program in chronological order.

April 2003: Lt. Gov. Quinn meets with scientists to discuss possibilities;

June 2003: Lt. Governor Quinn hosts a symposium of agencies and interested parties to determine beneficial uses of Illinois River sediment. Scientific samples of sediment sites are taken, and the search for funding sources begins;

April 2004: City of Chicago and Illinois Department of Natural Resources are selected to receive \$2 million from a state grant to transport the Illinois River sediment to former U.S. Steel South Works factory site;

April to July 2004: Dredging and transport of sediment begins. Sediment is transported 168 miles to Chicago site, unloaded and placed. As sediment dries, earthmoving equipment moves soil to make room for additional loads of sediment. Grass seeds are sown, and new growth is observed and monitored immediately;

July 2004: Scientific monitoring begins for soil bacteria. Two additional barge-loads of material are moved to Banner Fish and Wildlife Area to amend soil in abandoned surface coal mine. Scientific plots monitor soil temperature and moisture content as sediment as well as meteorological conditions. Work underwritten by ARTCO Fleeting Company;

Summer to Fall 2004: Illinois Natural History Survey biologist begins taking plant samples at the Chicago site;

September 2004: Sediment is graded at the Chicago site and re-seeded; and,

Spring to Summer 2005: New plant growth is observed and monitored. Scientific studies of plants and bacteria continue.

13. Why is the program a new and creative approach or method?

The program changes how resource managers view what is typically thought of as a waste material. Identifying new end-users for dredged river sediment creates deep-water habitat in a system plagued by sedimentation, and returns this out-of-place resource to areas that need topsoil or improved soil fertility.

Existing construction material technologies are applied to a new material, developing new techniques, to alleviate problems and provide benefits in other locations. Sediment dredging, transport, and application techniques can have a broader implication for governmental agencies involved in management of our nation's waterways and wetlands.

14. What were the program's start-up costs? (Provide details about specific purchases for this program, staffing needs and other financial expenditures, as well as existing materials, technology and staff already in place.)

The Lieutenant Governor's Office granted \$75,000 to the Waste Management Research Center (WMRC) in 2004 for "Mud to Parks." Support for "Mud to Parks" from the Lt. Governor's staff is ongoing.

WMRC is a division of the Illinois Department of Natural Resources located at the University of Illinois. WMRC is one of four scientific surveys funded by the state. Portions of survey funds support the pursuit of research and allow some flexibility to survey scientists.

The Department of Commerce and Economic Opportunity (DCEO) granted \$2million for the “Mud to Parks” Chicago project.

“Mud to Parks” also received in kind contributions from ARTCO, and other support CRESS Corporation, Midwest Foundation, and Caterpillar, several other companies and local governments.

15. What are the program’s annual operational costs?

There is no annual budget currently for “Mud to Parks.” The program is advanced specifically as grant dollars or donations are submitted for work.

Opportunities are currently being pursued for additional funding.

16. How is the program funded?

The program is currently funded through grants and general research funds. The initial project was funded by a grant from the Illinois Department of Commerce and Economic Opportunity.

17. Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number.

Not applicable.

18. What equipment, technology and software are used to operate and administer this program?

Various “off-the-shelf” construction technologies are combined in innovated ways to handle dredged sediment. This includes:

- River barges for transporting dredged material;
- Clamshell dredging bucket with minimizes turbidity;
- Creation of a portable 16 foot vibracore derrick on a pontoon boat;
- Concrete pumps;
- Slurry pumps; and,
- Conveyor belts.

19. To the best of your knowledge, did this program originate in your state? If YES, please indicate the innovator’s name, present address, telephone number and e-mail address.

Yes. The program was conceived by John Marlin, senior scientist with the Waste Management Resource Center, a division of the Illinois Department of Natural Resources.

20. Are you aware of similar programs in other states? If YES, which ones and how does this program differ?

There are no other known similar programs. Beneficial reuse has been used close to dredge sites, but to our knowledge, it has not been used on this scale at these distances to create benefits to other areas.

21. Has the program been fully implemented? If NO, what actions remain to be taken?

The initial project is completed but there are more areas in Illinois and elsewhere that can benefit from the program.

22. Briefly evaluate (pro and con) the program's effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples.

Advantages and effectiveness:

- Wide-scale dredging is needed to create deep-water habitat within the Illinois River system and to remove this material from the immediate area. This ensures that material will not quickly return from normal erosion or weather events;
- Program provides benefits to other locations where topsoil is needed in large quantities. This material is in great need, and many entities have requested information about the possibilities of "Mud to Marshes";
- Alternative sources of topsoil would require mining from developing areas and large number of trucks to move to areas of upland benefit. This would impact air quality, traffic congestion, and public safety;
- Creative application of the lessons learned could benefit resource agencies and the many areas in need of dredging. Most drinking water reservoirs are losing holding capacity are in need of dredging to extend life-span of the water source; and,
- Concept fosters a regional or watershed approach to problem solving and helps encourage the linkage of water and environmental problems outside of political or man-made boundaries.

Disadvantages

- A long-term funding source has not been identified for this concept; and,
- Logistics and cost effectiveness become more problematic when a location is further away from the U.S. navigable waterway system.

23. How has the program grown and/or changed since its inception?

The search is expanding for new end users and locations for material. We are in contact with many entities that desire soil material. Beneficial re-use of river sediment is being considered as a tool in coastal wetlands restoration in Louisiana.

24. What limitations or obstacles might other states expect to encounter if they attempt to adopt this program?

There may be issues with the availability of clean sediment with characteristics necessary for use as topsoil in other states. As stated above, there are physical limitations with transport and logistics. There is no limit of locations across the nation where sedimentation is reducing capacity of waterways. Few of these areas are situated where long distance transport is viable with cost effective and economic constraints and where a barge can be floated in areas of deep sediment.

Add space as appropriate to this form.

Return a completed application electronically to [innovations@csg.org](mailto:innovations@csg.org) or mail the paper copy to:

**CSG Innovations Awards 2006**

The Council of State Governments

2760 Research Park Drive, P.O. Box 11910

Lexington, KY 40578-1910

Deadline: All original applications must be received by March 4, 2006 to be considered for a 2006 Innovations Award.