

## Repair, Replacement, and Rehabilitation – The Three Rs (and now perhaps a fourth)

### Introduction

The State of California provided assurances to the U.S. Army Corps of Engineers (USACE) for the Sacramento River Flood Control Project and the San Joaquin River Flood Control Project, and in providing those assurances, it agreed to perform operation and maintenance (O&M) on the project. For example, the State signed an MOU with USACE for the Sacramento River Flood Control Project in which it stated that it “fully recognizes and accepts its obligation to operate and maintain all completed project works....” SRFCP 1953 MOU. That MOU further provided that the State is obligated for “the operation and maintenance of all of the works, after completion, in accordance with the regulations prescribed by the Secretary of the Army.” This language set the standard for actions by the State. Subsidiary to its obligations to USACE, the State entered into multiple assurance agreements with local maintaining agencies (LMAs) whereby the LMAs agreed to operate and maintain certain portions of the system.<sup>1</sup>

As a result of Congressional directive in the 1986 Water Resources Development Act,<sup>2</sup> USACE changed its guidance and assurance agreements to go beyond merely requiring operation and maintenance of authorized facilities (the term “maintain” previously already included the use of the term “repair”)<sup>3</sup> by adding repair, replacement, and rehabilitation (OMRR&R). While the terms repair, replacement, and rehabilitation can very well be considered subsidiary to maintenance when applied to things like flap gates, gravel roads, and pumps (in other words, *routine* RR&R), many LMAs are concerned about the possible application of the repair, replacement, and rehabilitation obligation to improvements to federal project features that have traditionally been the domain of USACE Civil Works or other capital expenditure programs.

### Discussion

Any consideration of the meaning of the terms repair, replacement, and rehabilitation must be considered in the context of how the terms have been defined by USACE. In 1994, USACE issued ER 1110-2-401 which provided definitions for each of the terms:

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<sup>1</sup> See also Water Code 8370 which, while it’s questionable what effect it has, also uses the terms maintain and operate: “It is the responsibility, liability and duty of the reclamation districts, levee districts, protection districts, drainage districts, municipalities, and other public agencies within the Sacramento River Flood Control Project limits, to maintain and operate the works of the project within the boundaries or jurisdiction of such agencies, excepting only those works enumerated in Section 8361 and those for which provision for maintenance and operation is made by Federal law.”

<sup>2</sup> 33 USC 2213 “Any project to which this section applies (other than a project for hydroelectric power) shall be initiated only after non-Federal interests have entered into binding agreements with the Secretary to pay 100 percent of the operation, maintenance, and replacement and rehabilitation costs of the project, to pay the non-Federal share of the costs of construction required by this section, and to hold and save the United States free from damages due to the construction or operation and maintenance of the project, except for damages due to the fault or negligence of the United States or its contractors.”

<sup>3</sup> But note the limited context in which the term “repair” was used: “Maintenance. The Superintendent shall provide at all times such maintenance as may be required to insure serviceability of the structures in time of flood. Measures shall be taken to promote the growth of sod, exterminate burrowing animals, and to provide for routine mowing of the grass and weeds, removal of wild growth and drift deposits, and repair of damage caused by erosion or other forces....” 33 C.F.R. 208.10(b)(1).

Repair is considered to entail those activities of a routine nature that maintain the project in a well kept condition. Replacement covers those activities taken when a worn-out element or portion thereof is replaced. Rehabilitation refers to a set of activities as necessary to bring a deteriorated project back to its original condition.

While these definitions are generally helpful, they are still subject to interpretation of whether one must rehabilitate a pump station (traditional routine O&M), or a dam or a levee (more commonly viewed as a capital improvement). However, the next line in that definition is helpful in creating a limitation:

RR&R actions are to conform to the project as-built plans and specifications unless other arrangements are made with the district commander.

Thus, a levee designed decades ago using less stringent engineering standards cannot be upgraded to the current engineering standards on the basis of RR&R. Similarly, RR&R cannot compel repair of damage from a flood event exceeding the original design flood. At the same time, typical earthen levee design assumes there will be some level of minor damage that requires maintenance or repair following the design event.

Another useful piece of guidance was issued on August 16, 2005 by MG Don Riley, the USACE Director of Civil Works. In that guidance document, Major General Riley notes:

Definition of Reconstruction. Cost shared reconstruction will be defined by elimination. Reconstruction excludes design or construction deficiencies. Further, ***reconstruction is limited to addressing impediments that prevent a project from performing as authorized after all maintenance, as required by the project operation and maintenance manual and the Code of Federal Regulations, has been accomplished and any deficiencies resulting from a lack of maintenance have been addressed. Reconstruction will consist of addressing the major performance deficiencies caused by a long-term degradation of the foundation, construction materials, and engineering systems that have exceeded their expected service lives and the resulting inability of the project to perform its authorized project functions.*** In addressing reconstruction needs, the latest design standards and efficiency improvements should be incorporated into the project.

This statement is helpful in that it makes clear that efforts to address major performance deficiencies that are caused by long-term degradation of the foundation, construction materials, and engineering systems exceeding their expected lives are not RR&R. To use an example, foundation piping as a result of poor rodent management could be a deficiency to be addressed by the non-Federal sponsor under RR&R, while foundation piping due to subsurface foundation conditions would not be a non-Federal sponsor obligation under RR&R. This suggests that one test to determine whether something should be addressed under RR&R or should be addressed under reconstruction (the fourth “R”), may be determined in part by whether consistent adherence to routine O&M could have prevented the problem.

Another helpful consideration is the way in which substantial damage to levees from extreme flood events have been handled historically. In these cases, USACE has typically repaired major damage using the P.L.84-99 or Civil Works authorities. When USACE did not undertake action

to repair a damaged levee from a storm event, and the repair exceeded the LMA's financial capacity, the State of California usually stepped in to repair the levee, often treating it as a capital project.

### **Conclusion**

These sources coupled with past practices suggests that we actually have a fair amount of certainty as to what the RR&R obligation is and isn't, and what level of funding is required to satisfy the RR&R obligation:

- RR&R **is not** work undertaken to allow the facility to function better than the as-built condition.
- RR&R **is not** work undertaken to address major, non-routine flood system damage caused by significant floods or other rare events.
- RR&R **is not** work undertaken to address the major performance deficiencies caused by long-term degradation of a project that has exceeded its expected service life.
- RR&R **is** work undertaken to achieve the requirements of the O&M manual which largely covers routine maintenance.

As a result, an LMA's O&M budget (including RR&R) should be based on the level of funding required to achieve the requirements of the O&M manual with a reserve to fund repair, replacement, and rehabilitation of facilities that have a defined and predictable service life, such as a pump station, a gravity drain and removal of fallen trees and repair of roadways after a flood event. It should also be recognized that many LMAs have not had adequate revenue streams to address repair and replacement activities to date. This has created a backlog of deferred maintenance that will need to be addressed. The LMAs will need to work with the CVFPB and DWR to identify revenue sources to address this backlog.