

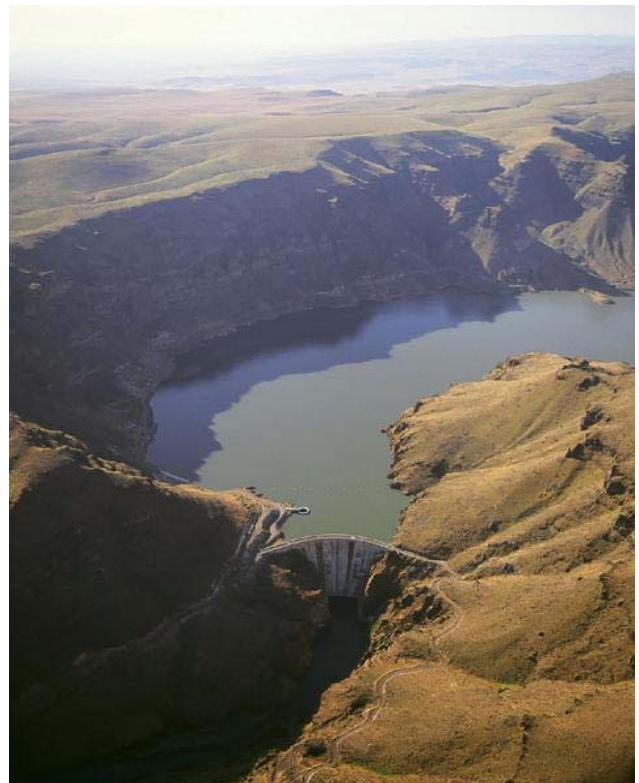
RECLAMATION

Managing Water in the West

Managing for Excellence Team 19 – Adding Value to Major Repair Projects

Final Report

September 27, 2006



U.S. Department of the Interior
Bureau of Reclamation

Executive Summary

Reclamation's Managing for Excellence Action Plan led to the formation of Team 19 to produce recommendations for adding value to major repair projects at water, power, and dam facilities.

The team focused its efforts on:

1. Conducting internal and external outreach including input from staff, customers, and other stakeholders.
2. Developing a checklist of methods that can be used as a tool to add value to major repair projects.
3. Researching case studies where value was added during major projects as well as where opportunities have been missed.
4. Detailing the five most important focus areas for adding value to major repairs.
5. Researching the role of Reclamation's existing Value Engineering Program.
6. Producing this report and recommendations.

The team's efforts resulted in the following recommendations:

1. Early and continuous involvement of customers and other stakeholders is a necessary ingredient for success in all aspects of major repair projects from planning through completion. Ensure that meaningful customer involvement is incorporated into all aspects of Reclamation project management processes.
2. Explore existing options for Reclamation to utilize customers to assist with or complete repair projects when appropriate. If necessary, seek additional authority to allow customers to complete such projects where benefits can be realized.
3. Ensure that funding continues for Reclamation to provide technical assistance for the review and oversight of its facilities and major repair projects on both reserved works (those operated and maintained by Reclamation) and transferred works (those operated and maintained by water users).
4. Develop Reclamation-wide Indefinite Delivery Indefinite Quantity (IDIQ) contracts for services and supplies which are frequently required at Reclamation facilities. Post a listing of currently available Reclamation IDIQs on Reclamation's intranet and include links to GSA websites describing GSA IDIQ contracts which could be used for major repairs.

5. Using the team's inventory checklist as a model, develop an add-value guidebook that helps employees, customers, and other stakeholders make major repair projects successful. The audience for the guidebook would include all Reclamation staff, customers, and other stakeholders involved with major repairs. Post guidelines for adding value on applicable Reclamation websites.
6. Incorporate processes to screen for methods which add value during all aspects of Reclamation's project management processes.
7. Develop a presentation to communicate the improvements that can be made to Reclamation performance on major repairs by using the concepts in this report.
8. Continue to develop, maintain, and expand partnerships among the federal entities. Expand these efforts to specifically include a more formal method of sharing major repair experiences, such as expanding the joint Power O&M Workshop to include other federal entities involved in the power industry.

This report describes in more detail the findings of the team's efforts towards adding value to major repair projects.

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Background

Reclamation's aging infrastructure presents major repair challenges on many fronts. Reclamation must continue to focus on operating, maintaining, and modernizing water and power investments across the West. The maintenance responsibility for this aging infrastructure will continue to be an increasing financial burden on available resources. Innovation and more efficient use of resources is one method of overcoming the challenges confronting major repair projects.

To address these concerns, Reclamation's Managing for Excellence Action Plan included three action items focusing on the financing, analysis, and added-value aspects of major repair challenges. The purpose of this report is to address the third action item: "Working with stakeholders, develop innovative processes that can add value to major repair projects."

Scope

The objective of the team working on this action item was to produce recommendations to improve the accomplishment of major repair projects at water, power, and dam facilities.

"Adding value" for this effort is defined as obtaining the greatest benefit in relation to cost from a required repair of a major component at a Reclamation facility. This does not necessarily mean completing a repair for the least cost, as the least-cost option could result in missed opportunities for life-cycle benefits.

Internal and external outreach of staff, customers, and other stakeholders was conducted and results are included in this report.

Major repair projects can be separated into two types: those with a relatively clear economic value and adequate financial resources that can be addressed with technical solutions, and those whose economic value is less clear with limited financial resources, requiring a combination of technical, social, and political solutions. This team focused its efforts on the business culture which could improve Reclamation accomplishments for either type of project. New and existing ideas for improving major repairs were inventoried and listed. A checklist for use by personnel responsible for the success of major repair projects was the end result.

Approach

A five member, multi-disciplinary team was formed with members from four Reclamation regions and the Power Resources Office. The team members have diverse backgrounds, and were selected so that the team composition reflected expertise in water and power operations and maintenance (O&M) at all sizes of facilities, including “transferred” facilities and “reserved” facilities.¹.

An initial two-day discussion at Hoover Dam in April 2006 provided time to “brainstorm” ideas and develop the strategy for addressing this action item. Two additional team meetings and numerous stakeholder meetings were held between May and August 2006 to review progress, discuss results of stakeholder outreach, develop recommendations, and determine a strategy for conveying the team’s findings. Team members drafted their assigned report sections and were responsible for ensuring that these sections were reviewed by subject matter experts. The report was forwarded to Reclamation leadership for review in September 2006.

Informal contacts were made both internally and externally to gather information on the success factors for repair projects. Case studies of major repairs were compiled and reviewed. As ‘add-value’ measures were identified they were captured on an inventory as described in Appendix A. The team selected priority ‘focus points’ from the growing inventory and did more extensive research on these topics.

Reclamation projects have a broad array of external customers and other stakeholders. Customers include water districts, power purchasers, and others that have a direct financial interest in the project. Other stakeholders, who may not have a direct financial interest, have important contributions and perspectives that must be considered. The level of customer and other stakeholder involvement with past repair projects was identified as part of the review, and an outreach plan provided further input from customers and other stakeholders.

From the beginning, there were integral connections between Team 19 and several other team efforts, most significantly:

- Team 1 - Strengthen interaction with customers and other stakeholders
- Team 17 - Seek/Obtain legislative authority for loan guarantees
- Team 18 - Develop processes or measuring tools to determine whether a major repair project is warranted
- Team 20 - Identify and implement a project management process
- Team 23 – Develop a training program for all personnel with project management responsibilities
- Team 24 – Establish and maintain a central repository for examples and appropriate guidance regarding procurement contracting

¹ At “transferred” facilities, the water or power entities are responsible for operations and maintenance (O&M), whereas at “reserved” facilities, Reclamation is responsible for O&M.

Team 29 - Analyze effectiveness of current O&M planning
Team 30 - Integrate O&M planning with the budgeting process

It is recommended that the results from the various teams be consolidated, enabling ‘adding value’ to remain an integral part of any solution for major repair projects.

It also became clear that the measures used to ‘add value’ had to be an essential part of project management and the team looked at where and how adding value could contribute to successful Reclamation project management processes.

The tools for adding value to major repairs in Reclamation are all business process tools. Without exception, these tools already exist and are being used for some major repairs in some areas in Reclamation. More widespread use of these tools would help Reclamation complete major repairs more efficiently with much higher levels of customer satisfaction. The team recommends against additional formal directives and standards to implement methods of adding value to major repairs. Instead, the team recommends distribution of this report as “best management practices” for any new directive or standard addressing stakeholder involvement, project management, or other business processes.

Outreach

Customer involvement is the most important success factor for improving Reclamation performance in the completion of major repair projects. Input for this report was obtained from internal (within Reclamation) and external customers and other stakeholders (outside the agency) to learn what has worked and what has not. By looking at past experiences, the team assembled the common characteristics of successful major repair projects.

Each team member participated in obtaining feedback from both internal and external customers. For external outreach, the team interviewed water districts and power customers with which team members had established working relationships. The water districts were selected so that both irrigation and municipal/industrial customer bases were reflected; both large and small districts were interviewed; and inputs were received from districts associated with both transferred and reserved facilities. The team leader also hosted a break-out session at the first corporate Managing for Excellence stakeholder meeting held in Las Vegas, Nevada in July 2006 to obtain feedback from a wider cross-section of Reclamation’s customers and other stakeholders.

Internal outreach was accomplished through individual team member contact with a variety of Reclamation employees including design, construction, operations, and procurement staff from area offices, regional offices, and the Technical Services Center (TSC).

Common themes were heard from customers, other stakeholders and employees:

1. Customer and other stakeholder involvement must begin early in the major repair process, during the initial planning phase. This is important to encourage customer input on the project alternatives and scope. Early involvement by customers builds a relationship for joint decision-making which improves planning, budgeting, and the overall job approach. Early discussion may also reveal the need for added value measures during the preliminary economic screening, should the project exceed the financial capabilities of the customers.
2. Reclamation must remain flexible to meet the needs of its customers and other stakeholders. Implementation of innovative add-value measures will often require new business practices.
3. The Value Program employed by Reclamation has shown some success but must be structured more flexibly; for example, an abbreviated Value Engineering process would be beneficial for smaller projects.
4. Centralized policies in Reclamation are of grave concern to customers since the “one size fits all” approach is in conflict with the unique authorization of each Project in Reclamation. While high-level policies are necessary for business uniformity, policies must be carefully structured to insure that the framework for local leadership and decision-making is incorporated into each policy. Customers would prefer that decisions impacting a Reclamation project continue to be made by the agency at a local level. Area office or field office personnel generally have a more detailed understanding of the facilities and the impacts of decisions on project sponsors.
5. The benefits from major repair projects must be defined early so that each beneficiary is identified to ensure that all possible funding sources are explored. For example, major repairs at Reclamation sites may benefit recreation or fish and wildlife interests, which may have available funding to assist with the project.
6. Successful completion of major repair projects requires the assignment of a single employee responsible and accountable for the entire project.
7. Successful completion of major repair projects requires that knowledgeable, on-site employees work on the ground with the forces accomplishing the work.
8. Processes must be in place to track the total cost of a project, including contract and non-contract cost. The status of the cost of the project

must be communicated to customers as soon as a significant variance exists between planned costs and actual costs.

A list of outreach contacts is included in Appendix B.

Case Studies

Case studies, providing descriptions of actual major repair projects in Reclamation, are included in Appendix C to help convey the concepts presented in this report.

As part of customer outreach, team members identified and documented cases where value was added during major projects as well as where opportunities have been missed. The case studies in Appendix C describe the use of an array of add-value measures that contributed to the success of the projects.

Add-Value Inventory

An inventory of measures that added value to projects was derived from the team's review of case studies and from internal and external outreach efforts. All major repair projects have a different combination of issues that must be addressed when developing solutions. As each case study was reviewed, the team did not discover any single combination of add-value measures common to all success stories, but rather a combination unique to each issue. Although the inventory focuses on business process measures, it also addresses social and political issues that should be screened for adding value. For the more complex issues, the need for revised or additional authorization would have to be determined early in the project in the event legislation is needed. Often these complex issues would be resolved by recommendations from formal feasibility studies.

The team's inventory is presented in Appendix A in a checklist format. The team recommends that these add-value measures be further defined and developed as part of Reclamation's project management process, with additional definitions and explanations of inventory items as deemed appropriate. The team also recognizes that the inventory is not all-inclusive and can be expanded with additional efforts. The Add-Value Checklist should be expanded when an innovative solution to a future major repair project is developed.

Not all measures are applicable to all projects, since each project is bound by a unique set of technical, economic, social, and political constraints. However, this inventory of measures is presented as a guide to project managers when developing strategies for accomplishing major repairs.

Value Program and Library

For several years Reclamation has used its existing Value Program to find ways to add value to major repair projects. The program is based on the Value Method, a systematic and organized way to develop and compare alternatives that will accomplish the job (provide all of the essential functions) with the greatest value (greatest efficiency, economy, quality, and the least delay). Completed studies have repeatedly shown significant ways to improve performance, reliability, quality, safety, and life-cycle costs. The program reports an estimated \$100 million dollars in savings over its history, reducing costs to our customers.

A value study before a preferred alternative has been selected will typically concentrate on identifying project objectives, developing functional components and the general approaches to meet project objectives. Such a study is normally termed a value planning study. Value planning studies are appropriate for most projects, programs, or activities at a very early stage of design or development.

A value study of a construction or O&M project after design alternatives have been developed will typically focus its time and use many techniques to quantify and compare alternatives for selected project components. Such a study is normally termed a value engineering study. Because more is known about a project as the design process advances, the level of detail reached in engineering studies is greater than in planning studies.

The average cost of a study done in-house is about \$35,000. The criterion for selection comes partly from DOI policy, which requires a value study for projects greater than \$500,000. A typical study consists of 5 to 7 team members with relevant expertise looking at the project over a week's time. Reclamation uses a six-step Value Method "Job Plan" consisting of Information Gathering, Creativity, Analysis, Development, Presentation, and Implementation components.

During the outreach interviews, Team 19 received comments that the cost of a value study is significant, especially for the smaller or more straightforward projects, such as power transformer replacements. Comments were also made regarding the overly-structured format of the process, especially in regards to the time spent in developing required alternatives that are were obviously not feasible.

Customers also expressed the need for an 'exit strategy' to end the process early if it was obvious after the analysis phase that the project is straightforward. The Team has the following recommendations:

1. Value study policy should be revised to include flexibility so that the process can be adapted to a specific major repair project with customer input. Flexibility can be achieved with options for shorter value processes, customized value process agendas, smaller teams, and exit strategies.

2. Customers should be highly encouraged to participate in value studies.
3. A more informal “value screening” process should be a part of Reclamation’s project management process, using the Team’s Value Measures Inventory (Appendix A) as a guide for areas to be explored.

A library of 350 existing value studies with recommendations from 1991 through 2005 has been compiled by Reclamation’s Value Program office. It is available on the Reclamation Intranet:

Quick List-Tech Service Center-Technical Guidelines – Value Program
(<http://intra.usbr.gov/%7Etscc/guidance/valuprog/index.html>).

Focus Areas

During the teams’ research and outreach efforts, there were several themes that were often repeated. The team selected five focus areas that it considers the most universal and important. These five areas are candidates for early implementation, and are listed below:

- Improve Project Management –Ensure that adding value is an integral part of project management.
- Strengthening Partner Relationships – Communicate and work with customers and other stakeholders from inception to completion of major repair projects.
- Customer Participation with Executing Work – Explore processes to allow customers to assist with or complete major repair work.
- Procurement Methods – Utilize alternative procurement methods when applicable for major repair projects.
- Partnering with Other Agencies - Utilize the resources of non-Reclamation federal, state, and private entities.

Each of these five focus areas is explained in more depth.

Focus Area 1 - Improving Project Management

Highlights

- Select a single point of contact to serve as the Project Manager for each major repair project with responsibility for all phases of the repair project from inception to completion.
- Ensure local facility staff with “hands-on” knowledge of operations and maintenance is involved in planning and scoping the project.
- Seek input from “the best” technical resources when appropriate.
- Ensure adequate peer review.
- Coordinate with other facilities to incorporate lessons learned.
- Empower the Project Manager and facility staff.
- Allow flexibility in funding options and customer involvement during project implementation.
- Involve customers and other stakeholders (internal and external) from project inception through completion.
- Reference the Add-Value Checklist (Appendix A) for considerations when developing project strategies.

Discussion

A consensus building, project management process including early planning and involvement of key customers and other stakeholders is essential to the completion of major repair projects. The following recommendations provide suggested project management practices for consideration when customers and Reclamation are faced with major repairs.

A single point of contact should serve as the Project Manager for each major repair project with responsibility for all phases of the project. The Project Manager should identify the key internal and external customers and other stakeholders and should seek input and feedback from them throughout all phases of the project. Internal customers and other stakeholders may include representatives from operations, maintenance, design, construction and procurement. External customers and other stakeholders may include water districts or other resource management agencies.

Selecting a Project Manager who can shepherd a project from inception through completion is critical to the success of a major repair project. In addition, it is essential that the Project Manager either has a detailed working knowledge of the facility, preferably as member of the facility staff, or that the Project Manager closely coordinate all activities with local facility staff.

The Project Manager may not have all the expertise needed to complete a major repair, but will provide centralized leadership and project continuity. The Project Manager will identify and utilize “the best” technical resources for specific issues as they arise during the project. “The best” resources could be craftsmen or engineers; may be from regional offices, a field office or the TSC, or may even be

external to Reclamation. He or she would also be responsible for seeking out and utilizing appropriate technical resources for peer review of the project.

External customers and other stakeholders, especially those who have a significant financial stake in a major repair, should be included in the project management process. There are many instances where external customers and other stakeholders have the necessary resources or knowledge to make significant contributions to a repair project. Utilization of external stakeholder resources for project planning, design, and implementation should be considered when appropriate. Such stakeholder contributions could be used to offset some of their reimbursement costs for the project.

The Project Manager and facility staff should be empowered to make the critical decisions affecting the project, and should be given as much flexibility as possible to implement the repair project.

Early involvement and inclusion of all project customers and stakeholders is essential. An on-site (or as close to the site as possible) stakeholder meeting should be held early in the process. The goal of this meeting is to facilitate an interactive, collaborative environment for brainstorming ideas, scoping the repair project, developing strategies for project implementation, and building consensus on a solution. Such a meeting will allow for maximum stakeholder interaction with immediate feedback to the project manager. In addition, regularly scheduled progress meetings should be held to ensure continued communication and maximize productivity.

Decisions and implementation strategy should be documented in meeting notes following the stakeholder meeting. The meeting notes should cover all aspects of the repair project including defining roles, responsibilities, authorities, and project workflow. Notes should also be prepared and distributed to document key discussions and decisions from the progress meetings.

Project expenditures should be tracked and reported to all customers on an appropriate periodic schedule, typically no less than quarterly.

Assigning employees with hands-on knowledge of the work is critical to the implementation strategy. Job performance by contractors will suffer when the job is run from remote locations by employees who do not really understand the work and/or employees who begin the resolution process with written letters. When contract issues are resolved between the contractor and the Government quickly, the Government earns credibility with the contractor. Employees involved in managing the contract on site develop a working relationship with the foreman and respond to problems quickly.

An “Add-Value Checklist” is provided in Appendix A for use by Project Managers to assist them in identifying as many alternatives as possible when considering various project implementation strategies. This list includes items

such as procurement options, design alternatives, NEPA options, value engineering, and construction management strategies.

The team recommends the development of a training presentation to communicate the possible improvements to Reclamation's performance, using the ideas in this report as tools. The presentation would be directed to Project Managers and other Reclamation employees with the responsibility for major repair projects. The presentation should illustrate the attributes of a successful project and review the checklist for options to be considered during the initiation and planning phases for a project. This training should become a small part (one hour or less) of existing forums including but not limited to:

1. Project Management Training (Team 23)
2. Facility Review Workshops
3. Power Review Workshops
4. Power Leadership Workshop
5. Power O&M Conferences

Focus Area 2 - Strengthening Partner Relationships

Highlights

- Partnering Relationships - continue to build and strengthen partnering relationships with customers and stakeholders.
- Communication – improve communication and sharing of information regarding major repair projects.
- Customer Involvement – involve customers early in the process as a full partner.
- Reclamation Involvement – ensure, as facility owner, that major repairs preserve the safety of the public and integrity of the facility.

Discussion

Maintaining early and continuous communication with project customers and stakeholders is vital to the success of the repair project. It is important for customers and stakeholders to be involved in the decision making process, cooperating throughout the project activities.

Reclamation must listen to and understand the input of customers and stakeholders. Major repair projects should be approached as a team effort. Team members need to understand the issues other partners are facing. Customers and major stakeholders should be given the opportunity to participate in facility examinations, site visits, and project management meetings. Time spent educating customers and stakeholders about the actions associated with the operation and maintenance practices and policies of the project or feature will pay dividends in the long run.

As described, Reclamation's mix of federal facilities is designated as Reserved Works (operated and maintained by Reclamation) or Transferred Works (operated and maintained by water or power entities). As the owner of (holding legal title to) both types of facilities, Reclamation must continue to provide review and oversight during critical phases of major repair projects to ensure that the safety of the public and the integrity of the facilities are protected, and that the authorized project purposes are not compromised. The team recommends that adequate funding be preserved to complete this function through Reclamation's existing appropriate funding sources.

Focus Area 3 - Customer Participation with Executing Work

Highlights

- Utilize existing customer resources effectively.
- Develop methods to allow customers to assist with or complete major repair projects.
- Develop authorities to allow customers to complete major repair work for selected projects.

Discussion

Reclamation customers have access to an array of resources that can assist with completing major repair projects. Often these resources are available and under-utilized during off-seasons and can be efficiently employed for all or part of the work associated with a major repair.

Current practice and regulations result in barriers for utilization of customer resources for the repair of reserved works (those facilities operated and maintained by government forces). Vehicles such as contract amendments or the transfer of Operations and Maintenance responsibilities for specific repairs should be considered and explored in concert with the solicitor's office during the project planning process. In this light, the team recommends that two potential authorities be considered and explored.

43 U.S.C. 505, addressing drainage facilities and minor construction in irrigation works, provides for customers to directly perform work for certain construction activities, within a two hundred thousand dollar limit. These provisions have been utilized successfully to complete specific components of the project or unanticipated tasks that may arise during the course of the work. In concert with the solicitor's office, use of this option should be investigated during the overall add-value screening of a construction project.

43 U.S.C. 499, addressing the Secretary's discretionary power to transfer management of Operations and Maintenance of project works, may give Reclamation flexibility in this area. The Section reads, in part:

“Whenever any legally organized water-users’ association or irrigation district shall so request, the Secretary of the Interior is authorized, in his discretion, to transfer to such water-users’ association or irrigation district the care, operation, and maintenance of *all or any part* (emphasis added) of the project works, subject to such rules and regulations as he may prescribe.”

Again, in concert with the solicitor’s office, use of this option should be investigated as a method to allow water users or power entities to complete major repair for selected projects when appropriate.

Focus Area 4 - Acquisition Choices to Consider

Highlights

- Involve acquisition staff early in the project planning process.
- Utilize the tools developed by the *Managing for Excellence* Team 24 for acquisition guidance when planning for major repairs.
- Where applicable, use performance-based specifications which define the work objectives, rather than using detailed specifications defining the design.
- Utilize Indefinite Delivery Indefinite Quantity (IDIQ) contracts when possible - IDIQ contracts could shorten and simplify the acquisition process and ensure qualifications of bidders.
- Focus on obtaining better-qualified contractors through evaluations of contractor past performance and experience. Avoid the award of contracts to less- than-qualified contractors.
- Use a Best Value Source Selection acquisition process to help evaluate contractors’ experience, technical capability, and past performance.
- Invest time in the Source Selection process to define best value criteria by using either the trade-off process (between price and technical merit) or the lowest-priced technically-acceptable process, as defined in the Federal Acquisition Regulations (FAR) Part 15.100.
- Ensure that the solicitation language which describes the scope of work is concise and clear.
- Evaluate scope of work carefully to see if the work can be classified for acquisition purposes as a “commercial item” as defined in FAR Part 2.101. Contracts for the acquisition of commercial items are subject to simplified acquisition procedures up to five million dollars.
- Use Blanket Purchase Agreements, Federal Supply Schedule, Government-wide Area Contracts, and other available tools as acquisition alternatives.

Discussion

Consideration of acquisition alternatives is a necessary ingredient to improving Reclamation performance when major repair projects are completed by contract. In any business, the goal of major repairs is to complete the work while optimizing safety, quality, schedule, and price. To achieve these goals

efficiently, Reclamation must obtain qualified contractors, while also reducing administrative and technical support costs for acquisition.

The acquisition choices should be discussed and agreed upon with acquisition staff input early in the project planning process. The use of the most effective acquisition process, whether Reclamation's or that of another Federal agency, should be considered in the project planning stage. Knowledge of the acquisition choices available ensures the successful completion of the project on time and within budget.

Acquisition staffs provide a service to help their Reclamation customers who are responsible for major repairs. Acquisition professionals must be committed to providing custom solutions to the customer's acquisition challenges. They need a clear understanding of their customer's requirements and should offer solutions to meet those needs. Likewise, employees responsible for the repairs are expected to provide clearly written technical requirements.

Writing a clear and concise statement of work in the solicitation is important to reducing the costs for acquisition and improving the quality of contractor proposals. Included must be clear definitions of the objectives for the work, deliverables for the work, boundaries for the work, site parameters, and proposal requirements.

Use of performance-based specifications with a statement of work, rather than detailed specifications defining the design will often improve Government performance on major repairs. The intent is to allow the expertise in the marketplace to define the design details. The purpose of a statement of work in a performance-based specification is to describe the requirements in terms of results required rather than the methods of performance of the work. Performance-based specifications should use measurable performance standards (i.e., terms of quality, timeliness, quantity, etc.) and quality assurance surveillance plans.

Existing Indefinite Delivery Indefinite Quantity (IDIQ) contracts may be used to complete major repairs, or new IDIQ contracts may be developed when necessary. The structure of IDIQ contracts includes the award of work in a general category to a group of previously qualified vendors.

Larger facilities should consider developing IDIQ contracts for purchase of equipment or services that could be used by other Reclamation facilities. This would allow the smaller Reclamation facilities which may lack specialized staff to benefit from the knowledge base of the larger facilities, and may result in overall cost savings to Reclamation's customers.

Once an IDIQ contract is in place, specific items of work are awarded with task orders or delivery orders under the "umbrella" IDIQ contract. The vendor is then selected from the group of previously qualified vendors based on price alone. Once the IDIQ contract is awarded, the acquisition process and the requirements for technical information are streamlined.

IDIQ contracts may contribute to obtaining well-qualified contractors in the following two ways:

1. In developing an IDIQ, added resources may be required up-front to strengthen the acquisition process since these contracts will be used for multiple awards over the five-year term of the contract. The added expense up front is offset by the savings which result from well-qualified contractors and less acquisition process expense.
2. As with other acquisition vehicles, IDIQ contracts can be structured to include past performance as an evaluation criteria. This structure encourages good contractor performance based on the potential for future business under the same IDIQ. Another benefit of a multiple award IDIQ contract is that the government can choose not to exercise the option to extend the contract, effectively terminating the agreement. Past performance can be used as a basis for award of future task orders under multiple award IDIQ.

There are several types of IDIQ contracts to choose from:

1. IDIQ contracts that have been developed and awarded within Reclamation.
2. IDIQ contracts that have been developed and awarded by other Federal agencies and made available for Reclamation use (some may require a fee for their use). For example, GSA IDIQs can be used by Reclamation for which Reclamation may be required to pay a small fee (i.e. 3%) to GSA. The contract is then managed by a Reclamation Contracting Officer (CO).
3. IDIQ contracts that have been developed and awarded by other Federal agencies and used by a customer in Reclamation with full contract support by the other agency (some may require a fee). For example, a GSA IDIQ is used to accomplish a construction project in Reclamation. For the use of the GSA IDIQ and the GSA CO, Reclamation may be required to pay GSA a percent of the contract price on a sliding scale (for example 4.7% for a \$200K contract). The fee paid to GSA is for the cost for the use of the contract and for the administration of the contract. The contract is then managed by a by a GSA Contracting Officer (CO).

There are several types of acquisitions which could be completed utilizing IDIQ contracts:

1. Equipment purchases: An IDIQ contract can be awarded for items such as exciters, relays, and turbine parts. If some IDIQ contracts were implemented by Reclamation and made available to all Reclamation employees, the benefits from a single IDIQ would apply to each use of the contract. Alternatively, IDIQs of other agencies could also be used by Reclamation to achieve these benefits.
2. Construction: An IDIQ contract can be awarded for the general construction and remodeling of buildings.

3. Engineering services and other technical services.
4. Operations and Maintenance (O&M): For example, an IDIQ contract can be awarded for refurbishing hydro unit guide bearings or for filtering the oil in large transformers.

Obtaining qualified contractors is critical to the success of major repair projects. Possible methods used to obtain qualified contractors are listed below:

- Capability interviews can be held with 8A, Hubzone, and Service Disabled Veterans.
- The Dynamic Small Business Search Engine and other available tools can be utilized to obtain information on these small business preference firms who may have the past performance and expertise to perform the work.
- If required, a Sources Sought announcement can be sent out in FedBizOps to serve as a market survey to locate sources to perform or deliver a specific item or service.
- A Best Value acquisition process can be used. As part of the process, contractors may be evaluated on factors such as experience, technical capability, and past performance. Best Value means that the expected outcome of an acquisition, in the Government's estimation, provides for the greatest overall benefit in response to the requirement.
- The Source Selection process should be carefully developed to define best value criteria by using either the trade-off process (between price and technical merit) or the lowest-priced technically-acceptable process, as defined in the Federal Acquisition Regulations (FAR) Part 15.100.

Another area to consider when planning for major repairs is evaluating the work scope to see if the work can be classified for acquisition purposes as a "commercial item" as defined in the FAR, Part 2.101. Some major work which was historically classified for acquisition purposes as "construction" in Reclamation could fit into the criteria of a "commercial item." For example, the rehabilitation of water delivery valves (84-inch valves) or large turbine components may be classified as "commercial items", if the majority of the work is performed at the vendor's establishment and site work or installation is incidental to the actual item. The advantage of "commercial item" contracts is that simplified acquisition processes can be used when the contract value is less than five million dollars.

In summary, there are acquisition methods which can be used to obtain qualified contractors and reduce contract administrative costs. Some of the methods available have been included in the Add-Value Checklist (Appendix A) to provide a tool for Reclamation employees responsible for major repairs. Team 24 of the *Managing for Excellence* effort was tasked specifically with developing tools for acquisition guidance. These tools should also be fully utilized for all acquisitions including the major repair process.

Focus Area 5 - Partnering with Other Agencies

Highlights

- Sharing detailed information for specifications ensures that a broader set of experience is considered when acquiring specialized equipment.
- Sharing lessons learned on major repair projects between the Corp of Engineers, Reclamation, and the Tennessee Valley Authority can save the agencies from repeating costly mistakes.
- IDIQs, whether it is for engineering and technical services, construction services, or equipment purchases, saves the acquiring entity time and costs throughout the contracting process.

Discussion

The research revealed that interagency partnerships have benefited Reclamation throughout several phases of major repair projects, in addition to revealing areas where improvement could be sought. These areas include procurement, equipment experience, and lessons learned on major repair approach.

The Tennessee Valley Authority (TVA), the U.S. Army Corp of Engineers (USACE), the Department of Energy marketing agencies, and Reclamation are all involved in the electric utility industry. Additionally, the TVA and USACE have major water and power infrastructure. The infrastructure for these entities is similar in both make-up and age; therefore these agencies face similar challenges.

The USACE has a “Major Rehabilitation Program” that has been in place since the early 1990s for its hydropower assets. Similarly, the TVA has a \$750 million Hydro Modernization Program that has been ongoing since 1992 related to its power program. Reclamation has been performing many unit overhauls in recent years based upon the age and condition of the equipment in its hydropower program. All of these entities are assessing equipment condition and specifying, procuring and installing new equipment which leaves many opportunities for sharing experience and knowledge which translates to cost savings for their customers.

Recently, Reclamation has participated in several partnership efforts with the USACE related to a shared interest in the power industry. The most successful effort relates to evaluation of the condition of major assets relating to hydropower. This effort is well known among the industry as the Hydro Asset Management Partnership (hydroAMP) which also includes the Bonneville Power Administration and Hydro Quebec. Assessing the equipment condition plays a major role in determining the required scope of a major repair project. Additionally, it provides an opportunity to share experience among the federal entities regarding experience with certain types of equipment and the issues associated with it, as well as a better understanding of things to consider when specifying equipment.

One example of this benefit relates to greaseless bushings. The TVA and USACE embarked on using this new technology much earlier than Reclamation. In some instances using this new technology has required hydro units to be disassembled a second time to correct failures that occurred. This can cost one million dollars or more. Reclamation has benefited from informal relationships in which the experience and knowledge regarding this equipment was shared.

Additionally, each of these entities has its own procurement philosophies in place. As discussed in the procurement section of this report, IDIQs are a tool that can save agencies costs throughout the procurement process. The ability to use other agencies IDIQs could benefit the federal government since the needs of these agencies and the work performed are similar.

Recommendations

1. Early and continuous involvement of customers and other stakeholders is a necessary ingredient for success in all aspects of major repair projects from planning through completion. Ensure that meaningful customer involvement is incorporated into all aspects of Reclamation project management processes.
2. Explore existing options for Reclamation to utilize customers to assist with or complete repair projects when appropriate. If necessary, seek additional authority to allow customers to complete such projects where benefit can be realized.
3. Ensure that funding continues for Reclamation to provide technical assistance for the review and oversight of its facilities and major repair projects on both reserved works (those operated and maintained by Reclamation) and transferred works (those operated by water users).
4. Develop Reclamation-wide Indefinite Delivery Indefinite Quantity (IDIQ) contracts for services and supplies which are frequently required at Reclamation facilities. Post a listing of currently available Reclamation IDIQs on Reclamation's intranet and include links to GSA websites describing GSA IDIQ contracts which could be used for major repairs.
5. Using the team's inventory checklist as a model, develop an add-value guidebook that helps employees, customers, and other stakeholders make major repair projects successful. The audience for the guidebook would include all Reclamation staff, customers, and stakeholders involved with major repairs. Post guidelines for adding value on applicable Reclamation websites.

6. Incorporate processes to screen for methods which add value during all aspects of Reclamation's project management processes.
7. Develop a presentation to communicate the improvements that can be made to Reclamation performance on major repairs by using the concepts in this report.
8. Continue to develop, maintain, and expand partnerships among the federal entities. Expand these efforts to specifically include a more formal method of sharing major repair experiences, such as expanding the joint Power O&M Workshop to include other federal entities involved in the power industry.

Conclusion:

Tools to add value to major repairs are recognized in competitive businesses and have often been used during Reclamation's long history. Reclamation employees need to embrace change to implement the best tools applicable to each major repair project. Additional efforts should be implemented as outlined in this report to help project managers and employees understand that they are empowered to use new and existing methods to achieve positive results on major repair projects in the future.

Appendix A

Add-Value Checklist

Measures to Add Value to Major Repair Projects

- Project Management
 - Performed in-house
 - Performed by contract
 - Performed by customer
 - Establish team size early (avoid duplication, unnecessary meeting participation)
 - Coordinate with other required work at facility
 - Coordinate with other similar work at other facilities
 - Coordinate need for repair with other basin-wide issues

- Utilize written Service Agreements (define the deliverables and the cost for service approved by both the funding authority and the service provider)

- Identify benefits of existing project or feature
 - Impacts of a no-action alternative (provide discussion instead of categorical statements)
 - Identify existing benefits and beneficiaries
 - Identify potential new benefits and beneficiaries

- Utilization of the water, power, or associated resources
 - Reduce the need for the resource (i.e. conservation of water)
 - Improve efficiency of the resource (i.e. more power for the same water)
 - Increase the available resource (i.e. improved conservation)
 - Change practices or policy related to the resource (i.e. examine why resource is needed)
 - Added value from existing or increased water supply
 - Endangered Species Act (ESA)
 - Municipal
 - Fish and Wildlife
 - Recreation
 - Indian Settlement Rights
 - Federal Rights – Wildlife refuges, other
 - Water Quality – minimum flows
 - Hydropower
 - Expansion of Irrigation

- Non-Structural Solutions or Partial Solutions
 - Changes in practices (i.e. - reduce the top of active conservation in a reservoir to avoid a major dam modification to accommodate the Probable Maximum Flood)
 - Changes in policy (i.e. – blanket policy does not fit needs of major repair project)
 - Changes in authorization (i.e. – may be required by additional utilization of resource)

- National Environmental Protection Act (NEPA) and Permitting Process
 - Performed in-house
 - Performed by contract
 - Performed by customer

- Financial
 - Available funding sources of beneficiaries
 - Benefits from “big picture” (i.e. economic benefits to community from irrigation-based agribusiness, benefits from sale of conserved water)
 - Incidental revenue from project or feature
 - Land Leases
 - Recreation
 - Contributed funds from other sources
 - Cost Sharing
 - States (water-user grants, water supply, recreation benefits, other.)
 - Park Service and other agencies (fish and wildlife, recreation benefits, other)
 - Other Partners
 - Science and Technology Funding
 - Income from patents
 - Research funding from use of new technology
 - Loan Guarantees
 - Reserve Fund – as required by USBR contract
 - Repair Project Reserve Fund – established by customer for specific project

- Design Process
 - Performed in-house
 - Performed by contract
 - Performed by customer
 - Perform thorough exploration of technical alternatives (value engineering or other process)
 - Develop clear scope of work and integration of work details
 - Types of solicitations
 - Specification-based (repairs completed according to detailed design)
 - Performance-based (statements of work that provide objectives, boundaries, performance criteria, deliverables, bid and work schedules)
 - Solicitation Review – determine number and types of technical and management reviews
 - Submittal Response – develop methods for timely review and timely dispute resolution
 - Drawings – require as-built drawings as part of the job requirement.

- Value Engineering Program
 - Encourage participation by customers
 - Adjust agenda and number of participants appropriate for job.
 - Utilize an exit strategy for unrealistic alternatives
 - Expand scope to include value in other areas outside of technical design

- Contract Administration/Procurement
 - Performed in-house
 - Performed by contract
 - Performed by customer
 - Establish controls for non-contract costs to be within industry averages
 - Initiate discussion with procurement at conceptual phase of project
 - Investigate alternative methods of procurement (USBR IDIQ, GSA IDIQ, GSA Contracting Officer, Reverse Auctions, negotiated RPF, commercially-available items)
 - Business Processes

- E-mail - accepted as official contract documentation
- Develop methods for timely resolution of change orders as part of solicitation
- Investigate methods to streamline selection of qualified contractors (pre-qualification, 2-step sealed bid, thorough source selection plan)
- Develop methods for timely contract close-out

Construction

- Construction by project forces
- Construction by contract
- Construction by customer
- Combination of construction resources

Construction Administration

- Performed in-house
- Performed by contract
- Performed by customer
- Management and Inspection
 - Maintain a presence on site during the work and be accessible.
 - Utilize knowledgeable employees at the job site to resolve issues with major repairs on a timely "same-day" basis.
 - Use conference calls, faxes, and e-mails for dispute resolution, avoiding written letters except to document verbal agreements for contract purposes.
- Construction documentation – type and format (reports, photos, summaries)

Appendix B

Outreach

Stakeholder input was a critical component in this effort. During the research phase of the team's assignment both internal (within Reclamation) and external (outside of the agency) customers and other stakeholders were interviewed to learn what has worked, and what has not.

Questions developed covered various topics:

- 1) What was the level of their involvement with major repair projects at Reclamation facilities?
- 2) What is their definition of adding value to major repair projects?
- 3) Have they used any innovative method to add value to a major repair project?
- 4) What was their role in the decision process in determining the best approach?
- 5) What suggestions did they have for adding value to Reclamation's process?
- 6) What was their feedback on Reclamation's Value Program?

Team members used these questions in a modified form within Reclamation and with other government agencies such as BPA, WAPA, COE, and TVA.

Internal outreach was accomplished through individual team member contact with a variety of Reclamation employees including design, construction, operations, and procurement staff from area offices, regional offices, and the Technical Services Center (TSC).

Contacts were made in June, July, and August 2006. A break-out session was conducted at the first corporate Managing for Excellence stakeholder meeting held in Las Vegas, Nevada in July 2006 to obtain feedback from a wider cross-section of Reclamation's stakeholders.

Team members, who work closely with a variety of external customers during daily responsibilities, obtained feedback on a more informal basis. Informal contacts included:

1. Boise Project Board of Control
2. Owyhee Irrigation District
3. Black Canyon Irrigation District
4. Northern Colorado Water Conservancy District
5. Fort Cobb Master Conservancy District
6. Nueces River Authority/City of Corpus Christi, Texas
7. Lugert-Altus Irrigation District
8. Metropolitan Water District of Southern California
9. Boulder Canyon Project Contractors

10. Parker Davis Project Customers
11. Central Utah Water Conservancy District
12. Weber Basin Water Conservancy District

The team members also coordinated with other Major Repair teams with a joint approach when appropriate.

Appendix C

Case Studies

PROJECT 1: Collaborative Design and Construction Effort for the Choke Canyon Dam River Outlet Works (ROW) Stilling Basin Repair and Modification, Nueces River Project, Choke Canyon Dam, Texas

BACKGROUND: Choke Canyon Dam is a transferred facility operated and maintained by the City of Corpus Christi, Texas (City) under Construction, Operation and Maintenance Contract, No. 6-07-01-X0675 (CO&M Contract).

Concrete damage was identified in the Choke Canyon Dam ROW stilling basin during a Periodic Facility Review (PFR) conducted at the facility. The PFR report included a recommendation to repair the damaged concrete and modify the ROW as necessary to eliminate the reoccurrence of damage. This paper was prepared to describe the collaborative efforts employed by Reclamation and the City to accomplish these repairs.

The City hired a consulting engineer to evaluate the damaged concrete and concluded that the damage had been caused by cavitation and recommended corrective actions such as aeration and reshaping of the spillway chute prior to repairing the concrete. Reclamation staff believed the damage was the result of abrasion, and formally disagreed with the City's conclusion that the damage was the result of cavitation.

The City subsequently contracted with Utah Water Research Laboratory to construct a physical model of the stilling basin to resolve the cause of the damage. Following completion of the modeling study, the City concurred with Reclamation's position that the concrete damage was the result of abrasion. Reclamation notified the City that the repairs were considered to be a normal maintenance item and that they should proceed with repairs in accordance with the CO&M contract. In addition, Reclamation suggested that its patent pending deflector technology, designed to eliminate upstream flows along the floor of type II stilling basins might be suitable for preventing future damage to the ROW.

Although O&M responsibility for Choke Canyon Dam has been transferred to the City under the CO&M contract, Reclamation and the City agreed that the best approach for completing the ROW repair and modification was a collaborative design and construction effort whereby Reclamation and the City worked jointly to accomplish the project. Reclamation collected hydraulic information with the assistance of on-site City personnel, developed the design and specifications for the deflector, and completed all environmental compliance work for the project. The City's consulting engineer developed the design and specifications for the concrete repair work, and combined the two project components into a single bid package. Both organizations reviewed the designs, and design review meetings were held on-site. The City advertised the project and awarded a construction

contract in FY 2006. The City and their engineer will manage construction, and Reclamation will conduct hydraulic testing following completion of the repairs and installation of the deflector to ensure the deflector is performing as designed.



Choke Canyon Dam River Outlet Works, Nueces River Project, Choke Canyon Dam, Texas

PROJECT 2: Collaborative Role of Reclamation in the Planning and Design of a Replacement River Pumping Plant, Lower Rio Grande Valley Program, Cameron County Irrigation District No. 2, San Benito, Texas

BACKGROUND: The Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000 (Act) (P.L. 106-576) directed the Secretary of the Interior to undertake a program to investigate and identify opportunities to improve the water supply in 11 Texas counties along the U.S./Mexico border. In summary, the Act provides a 50% Federal cost-share for planning, design and construction costs of authorized water conservation projects. It allows for the project sponsors to accomplish the work using their own in-house resources, engineering consultants, construction contractors, and/or Reclamation.

One of the 19 projects authorized by the Act was to replace a 600 cfs river pumping plant owned and operated by the Cameron County Irrigation District No. 2 (District). The existing pumping plant was over 90 years old and exhibited evidence of structural distress and damage.

The District selected Reclamation to complete the necessary planning studies and prepare the pumping plant design, primarily because of the agency's recognized expertise with these types of facilities. The District Manager and their consulting engineer participated in the design meetings at the TSC during which the District's expectations were clearly articulated to the entire design team. The District provided Reclamation with advance funding totaling approximately \$1,075,000, and TSC completed the design in less than 9 months. Final plans and specifications were delivered in December of 2003. The Oklahoma-Texas Area Office appointed a single point of contact to serve as project director and actively facilitate the interaction between the District, the District's consulting engineer and the TSC design team.

The TSC tailored the pumping plant design drawings and technical specifications for advertisement and construction management by the District and their consulting engineer. The District's engineer developed the contracting specifications and prepared the bid package and with the District, contracted for and managed construction of the pumping plant. The TSC provided technical support during construction by addressing pre-bid questions, providing clarification of the design, and reviewing critical submittals.

The Total Estimated Cost (TEC) for the pumping plant was approximately \$9.7 million. The bid amount and actual cost to complete construction was approximately \$1 million (10%) less than the TEC. Construction of the pumping plant began in the spring of 2004 and was substantially completed in February of 2005. The plant is now under operation.

Throughout this process, the TSC design team proved to be technically capable and very responsive. The plant is in operation, and Reclamation continues to receive very positive feedback from the customer.



Lower Rio Grande Valley Program, Cameron County Irrigation District No. 2,
San Benito, Texas

PROJECT 3: Collaborative Design and Construction Effort for the Spillway Radial Gate Trunnion Pin Bearing Support Beam Modification and Repairs, Altus Dam, W.C. Austin Project, Oklahoma

BACKGROUND: Altus Dam is a transferred facility operated and maintained by the Lugert-Altus Irrigation District (District). Severe corrosion of the Altus Dam spillway radial gate trunnion pin bearing support beams was identified during a rope assisted inspection of the dam. A detailed follow-up examination was conducted to determine the extent and severity of the corrosion. Using information collected during this examination the Technical Services Center (TSC) determined that corrosion had resulted in a 40% decrease in the thickness of the pin bearing support beam webs in some areas, and that the capacity of the beams had been significantly diminished. The TSC recommended the beam webs be reinforced.

Because of the critical nature of the trunnion pin bearing support beams, some Reclamation personnel believed that repairs to the support beams should be designed and constructed by Reclamation. Reclamation's total estimated cost for completing the repairs was \$254,900.

Since O&M of the facility had been transferred to the District, the Area Office concluded that the District should be allowed the opportunity to accomplish the repairs if they chose to do so. Reclamation provided the District a copy of the Technical Memorandum prepared to document the findings of the examination and the subsequent TSC evaluation. Reclamation also provided a concept design for the repairs which involved reinforcing the support beam webs, installing drain holes to prevent water from collecting on the webs, and recoating of the beams. The repair method was straight forward, but accessing the beams presented a difficult challenge due to their location high above the downstream river channel.

Using Reclamation's repair concept, the District contracted with a private consulting engineer to develop plans and specifications for the repair project. Reclamation assisted the consulting engineer by providing a list of coating options which had proven effective under similar project conditions. Reclamation reviewed and commented on the consulting engineers draft design, completed all NEPA requirements, and approved the final design for construction. The District awarded the repair contract to an in-state contractor specializing in coatings projects with difficult access requirements (such as water towers). Area Office staff visited the site during construction to review progress and participated in the final inspection with the District prior to releasing the contractor. The total project cost including engineering fees was \$83,300, which was \$171,600 less than the estimated cost for Reclamation to complete the repairs. Reclamation's coordination, review, and inspection costs were approximately \$10,000.



Altus Dam, W.C. Austin Project, Oklahoma

PROJECT 4: Hoover Top of Dam Sidewalk Pedestrian Improvements, Boulder Canyon Project, Arizona and Nevada

INNOVATIVE METHODS: Use of alternative procurement processes to select capable, cooperative contractors. Establishing project beneficiaries for major repairs and allocating costs based on benefits provided. Ensuring that the COR manages the job from on-site so that contract issues are resolved informally and quickly.

BACKGROUND: This case study provides an example of using an existing GSA contract administered by a GSA Contracting Officer (CO) to complete major repair work in Reclamation. The GSA contract was for general construction work over a 6 state area including Arizona. The structure of the contract was Indefinite Delivery Indefinite Quantity (IDIQ).

Approximately 1 million visitors per year visit Hoover Dam. With this volume of visitors, pedestrian improvements were needed on the downstream sidewalk on top of the dam. Posts with a cable handrail would be added to the edge of the sidewalk to guide crowds of visitors to the crosswalks prior to crossing the street. The benefit of guiding visitors to crosswalks was to improve car traffic flow across the dam. Car traffic on Highway 93 across the dam was often backed up to a standstill with a 1 to 2 hour wait time on both sides (in Arizona and Nevada.) In addition, narrow portions of the sidewalk would be widened to accommodate the crowds.

The overall job scope was as follows:

- 116 cubic yards of concrete placed (4 ft wide, 785 ft long 1 ft deep)
- 48 cubic yards of asphalt removed (4 ft wide, 785 ft long, 5 inches deep)
- 121 stainless steel posts (2-inch) core-drilled into new concrete
- 3,660 ft of cable handrail strung between posts
- Concrete formed at crosswalks for ADA
- All work done at night
- No open forms or re-bar allowed during daytime hours

One of the early steps in completing this work was to clearly define the beneficiaries of the work so that the cost of the job could be allocated properly. Benefits to Hoover Dam included an improved experience for visitors which translating into more ticket sales. The benefit for Nevada and Arizona transportation departments was improved traffic flow and improved safety due to less car accidents and fewer car-pedestrian accidents.

Discussions and engineering estimates resulted in agreement that this \$205,000 project should be funded in proportion to the benefits of the project:

- 1/3 the cost was paid by Hoover customers
- 1/3 the cost was paid by the Nevada Department of Transportation
- 1/3 of the cost was paid by the Arizona Department of Transportation

It was essential to ask “Why is the project needed and who benefits?” in order to determine who should provide funding for the project.

With cost-sharing came added pressure to achieve the results within budget and on time. Hoover Dam personnel decided to work directly with GSA to contract out this work. GSA provided the IDIQ contract and the Contracting Officer. Hoover Dam provided a brief statement of work (3 pages) and a drawing.

The pace of achieving milestones was impressive:

- 9/6/02 - 3-page task order e-mailed to vendors by GSA
- 9/12/02 - Pre-bid meeting
- 10/9/02 - Job Award (36 days from advertising work to contract award).
- 1/30/03 all work complete. Final payment to contractor within 2 weeks of job completion. A single \$13,000 payment resolved all contract changes (see below). There were no claims or disputes during the course of completing this work.

The quality of the contractor obtained for this work resulted from:

- GSA made huge investments in their selection process prior to award of 5-year GSA contract covering a 6 state area. Each successful bidder was evaluated based on successful completion of prior government work.
- The contractor who is awarded a GSA IDIQ contract obtains the award contingent on satisfactory performance of previous GSA contracts. This has a tremendous effect on the contractor’s business performance, as present contract performance affects future opportunities decisively and directly.

Finally, some key success factors which resulted in the successful completion of the work were:

- The job was managed by a COR working on-site at Hoover Dam with the help of Government inspectors working on-site at Hoover Dam. An example of the “real-time” contractual working relationships was the resolution of all contract changes in a single day through the following process:
 - Contractor claimed \$13,000 net for increases and reductions in job scope.
 - Conference call resulted in agreement with the CO from GSA, the contractor, and the customer (Hoover engineering): The engineer and contractor foreman would walk through the work on-site and agree on a balance sheet for a net fair value of the changes in job scope.

The net fair value was determined to be \$3,000 and an e-mail to the CO put this in writing to the contractor on the same day as the conference call.



Hoover Top of Dam Sidewalk Pedestrian Improvements,
Boulder Canyon Project, Arizona and Nevada

PROJECT 5: Hoover Dam turbine overhauls, Boulder Canyon Project, Arizona and Nevada

INNOVATIVE METHODS: Use of alternative procurement processes to reduce major repair procurement costs and improve schedules.

BACKGROUND: This case study provides an example of streamlining Reclamation procurement processes to accomplish major repairs. Hoover Dam currently completes one or two major overhauls on hydraulic turbines per year. These overhauls are for the purpose of restoring worn parts to serviceable condition and improving efficiency. Each overhaul includes the purchase of bronze and stainless steel replacement parts such as wicket gate bushings, turbine seal rings, and wicket gates. The cost of these items for each overhaul is \$300,000.

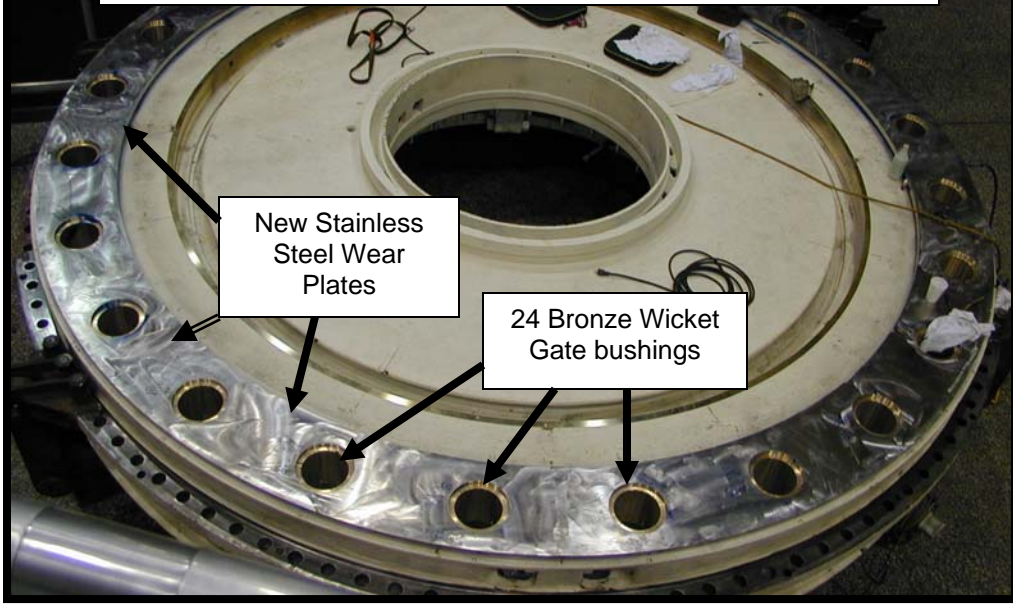
For several years, Hoover developed a separate specification for each purchase of turbine replacement parts. For the past 4 years, Hoover has used a single contract awarded in 2002 for the purchase of these parts. The structure of the contract is Indefinite Delivery Indefinite Quantity (IDIQ). The solicitation for this IDIQ contract was developed jointly by Hoover Dam personnel and Reclamation procurement employees.

This IDIQ contract was awarded to six suppliers and will be used for 5-years or when the contract awards total \$5M. Since Hoover Dam completes at least one major overhaul on a turbine each year, this IDIQ has been very beneficial in avoiding the cost each year for 3 or 4 separate specifications, the contract process costs, and labor intensive bid evaluations.

The specification for this type of contract describes a general type of work. A contract for the general type of work described in the specification is awarded to the group of most qualified bidders. When there is a need for specific work under the contract, a brief Statement of Work is prepared and becomes part of a “delivery order.” Note that there is no federal boilerplate paragraphs attached to each “delivery order” since the boilerplate is all part of the original contract. Contractors who won the IDIQ award study the task order and submit a price for the work. Selection of a contractor for the work is very streamlined since the contractors submitting prices for “task orders” have already qualified for the work.

Another benefit of this type of contract process is that achieving required delivery dates has improved. Achieving delivery dates which are on the critical path of an overhaul schedule helps to minimize expensive generating unit downtime.

**HOOVER UNIT A5 HEADCOVER UPSIDE DOWN
EXAMPLES OF TURBINE WEAR PART PURCHASES**



New Stainless Steel Wear Plates

24 Bronze Wicket Gate bushings



Hoover Unit A1 Wicket Gates (Typical of 24)

OLD GATE

NEW GATE

Hoover Dam turbine overhauls and wicket gates, Boulder Canyon Project, Arizona and Nevada

PROJECT 6: Use of Alternative Procurement Processes to complete Hoover Dam Upper and Lower Arizona Penstock Lighting, Boulder Canyon Project, Arizona and Nevada

INNOVATIVE METHODS: Use of alternative procurement processes to reduce major repair procurement costs and to obtain highly qualified contractor. Ensuring that the COR manages the job from on-site so that contract issues are resolved informally and quickly.

BACKGROUND: This case study provides an example of using an existing GSA contract administered by a Reclamation Contracting Officer (CO) to complete major repair work in Reclamation. The GSA contract was for general construction work over a 6 state area including Arizona. The structure of the contract was Indefinite Delivery Indefinite Quantity (IDIQ).

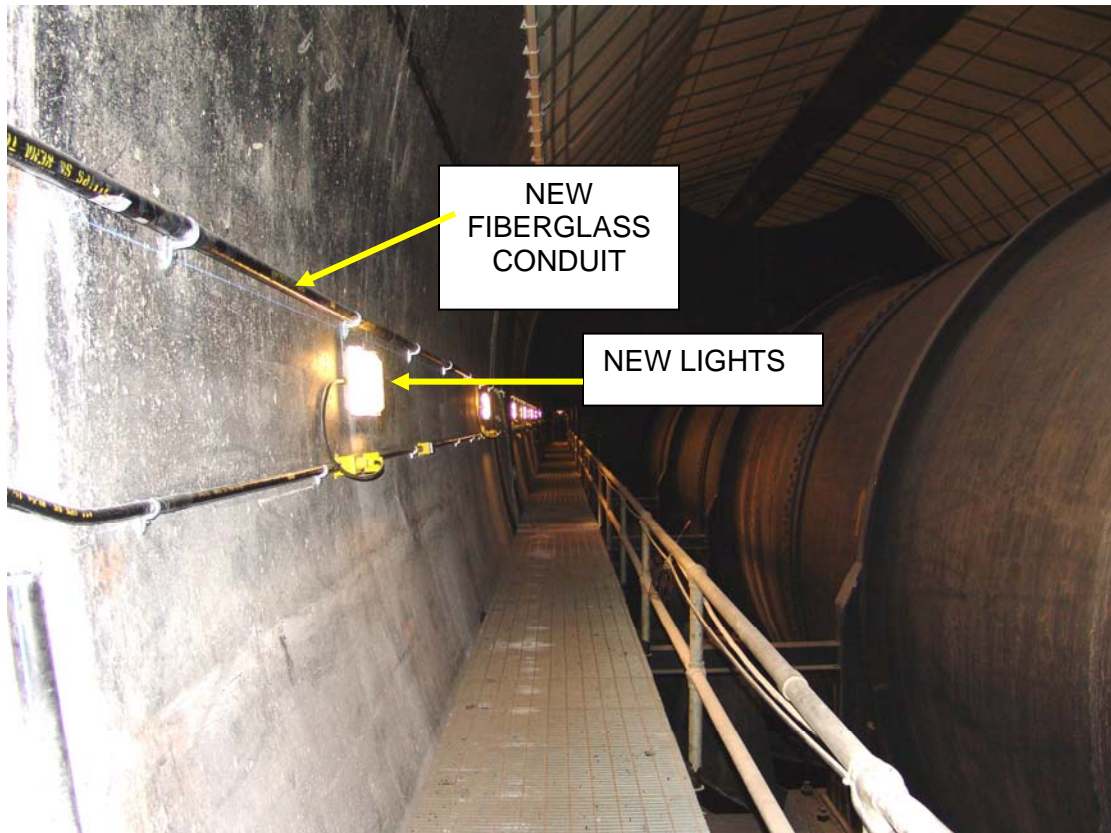
Hoover Dam had a need for a contractor to accomplish the installation of new lighting systems to illuminate walkways alongside the large pipes used to deliver water to the turbines. The major repairs included installation of 11,000 feet of fiberglass conduit, 100,000 feet of wire, 310 light fixtures, and associated transformers and distribution panels. The original contract cost was \$848,000. The final overall cost for the work, including additions to the original scope by the Government, was \$973,000. The work was completed safely with no contract claims and very few contract modifications.

The San Francisco construction office of GSA had previously awarded a general construction contract to 5 contractors. The contract was for work in a 6 state area including Arizona. GSA had completed very thorough evaluations of these contractors prior to award. GSA provided examples of past work by these contractors, from their evaluations, for Hoover Dam review. The decision was made at Hoover Dam to use this existing GSA contract. The solicitation was sent out to the construction contractors who had been awarded the IDIQ contract. The selection was very simple since these contractors had been “pre-qualified” through GSA’s IDIQ contract award process, so price was the only factor.

The advantages of using a GSA IDIQ for this work were:

- GSA made huge investments in their selection process prior to award of 5-year GSA contract covering a 6 state area. Each successful bidder was evaluated based on successful completion of prior government work.
- GSA makes every process as simple as possible. GSA’s entire procurement process fits on two pages.
- The contractor who is awarded a GSA IDIQ contract obtains the award contingent on satisfactory performance on task orders awarded. This has a tremendous effect on the contractor’s business performance, since present contract performance affects future opportunities decisively and directly.

One additional success factor for this major repair work was managing the job with a COR and Government inspectors working on-site at Hoover Dam. Job performance by contractors suffers when the job is run from remote locations by employees who do not really understand the work. When contract issues are resolved between the contractor and the Government quickly, the Government earns credibility with the contractor. Employees involved in managing the contract on site have knowledge of the work and the site and develop a working relationship with the foreman. Quick response to resolve problems is routine. Discussions and conference calls with all involved become the first step towards resolving problems instead of starting with written letters



Hoover Dam Upper and Lower Arizona Penstock Lighting,
Boulder Canyon Project, Arizona and Nevada