

RECLAMATION

Managing Water in the West

Bureau of Reclamation Asset Management Plan

Fiscal Year 2011



**U.S. Department of the Interior
Bureau of Reclamation
Policy and Administration
Denver, Colorado**

September 2012

Mission Statements

The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Bureau of Reclamation Asset Management Plan

Prepared by

Policy and Administration



U.S. Department of the Interior
Bureau of Reclamation
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Denver, Colorado

September 2012

Approval of Asset Management Plan

Over the more than 100 years of its existence, the Bureau of Reclamation (Reclamation) has constructed water, power, and incidental (*e.g.*, recreation) facilities in the 17 Western States with an original development cost of \$18.2 billion. Reclamation's inventory of assets includes 476 dams and dikes, creating 337 reservoirs with a total storage capacity of 245 million acre-feet of water, as well as associated buildings, quarters, and recreation sites. Reclamation is also the Nation's seventh largest power utility and second largest producer of hydroelectric power. The 53 hydroelectric power plants owned and operated by Reclamation provide an average of more than 40 megawatt hours of energy each year.

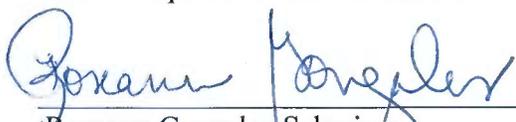
With over 70 percent of the Department of the Interior's (Department) constructed assets, Reclamation has a major stewardship role in managing this infrastructure and its supporting assets. Given that Reclamation is over 100 years old, many of the facilities it owns are now exceeding an average age of over 50 years. Such aging infrastructure presents an increasing challenge in that it experiences increased maintenance and replacement requirements.

This Asset Management Plan (AMP) for Reclamation primarily focuses on mission critical assets. It tiers off of the Department's AMP and sets forth Reclamation's overall asset management framework which is to be memorialized and regularly updated in the Reclamation Manual through policy and directives and standards, as well as supplemented by additional guidance documents.

Reclamation has had much experience in the operation and maintenance of capital-intensive water and power infrastructure. This AMP augments existing policy and practices with the adoption of new practices and metrics as developed by the Federal Real Property Council and memorialized in the Department AMP.

Throughout this AMP, business practices are discussed and a number of performance metrics are set forth that directly focus on asset management. This AMP is intended to serve as a strategic plan for Reclamation's asset management now and into the future. As policies and situations change, this AMP will be updated to reflect those changes.

As Reclamation's Senior Real Property Officer, I approve the goals, strategies, and practices reflected in this AMP as the blueprint for Reclamation's stewardship of our extensive water and power infrastructure in the West.



Roseann Gonzales-Schreiner
Reclamation Senior Real Property Officer

9/25/2012

Date

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Acronyms and Abbreviations

ABP	Asset Business Plan
AFRO&M	Associated Facilities Review of Operations and Maintenance
AMP	Asset Management Plan
API	Asset Priority Index
ARRA	American Recovery and Reinvestment Act
BRC	Budget Review Committee
CARMA	Capital Asset and Resource Management Application
CFR	Comprehensive Facility Review
CI	Condition Index
COG	Coordination and Oversight Group
CPIC	Capital Planning and Investment Control System
CRV	Current Replacement Value
D&S	Directive and Standard
DEC	Design, Estimating, and Construction
Department	U.S. Department of the Interior
DM	Deferred Maintenance
DSO	Dam Safety Office
eCPIC	Electronic Capital Planning and Investment Control
EMS	Environmental Management System
EO	Executive Order
FBMS	Financial and Business Management System
FCI	Facility Condition Index
FMS	Facility Maintenance System
FO&MT	Facilities Operations and Maintenance Team
FRPC	Federal Real Property Council
FRPP	Federal Real Property Profile
FRR	Facility Reliability Rating
FY	Fiscal Year (October 1 – September 30)
GIS	Geographic Information System
GPRA	Government Performance and Results Act
IRO	Information Resources Office
IRS	Infrastructure Reliability and Safety
IT	Information Technology
MR&R	Major Rehabilitation and Replacement
MSD	Maintenance Services Division
MSO	Management Services Office
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OM&R	Operations, Maintenance, and Replacements
PAB	Policy, Administration and Budget
PFR	Periodic Facility Review
Policy	Policy and Administration
PM	Project Management
PMOC	Property Management Officers Council

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RAIRB	Reclamation Asset Investment Review Board
RAX	Replacements, Additions, and Extraordinary Maintenance
RBSDB	Reclamation Buildings and Structures Database
Reclamation	Bureau of Reclamation
RD	Regional Director
RM	Reclamation Manual
RLT	Reclamation Leadership Team
SOD	Safety of Dams
SRPO	Senior Real Property Officer
SSLE	Security, Safety, and Law Enforcement
Subtitle G	Title IX, Subtitle G, Omnibus Public Land Management Act
TR	Technical Resources
UI	Utilization Index
V&V	Verification and Validation
VE	Value Engineering
XOM	Extraordinary Operations and Maintenance

Mission and Organizational Structure and Support

The Department of the Interior’s Mission and Goals

The Department of the Interior’s (Department) mission is to protect America’s natural resources and heritage, honor our cultures and tribal communities, and supply the energy to power our future.

The business vision for this Asset Management Plan (AMP) is derived from the Department’s planning and performance framework as outlined in the Strategic Plan for Fiscal Years (FY) 2011 – 2016. The Department’s FY 2011 – 2016 Strategic Plan, in compliance with the principles of the Government Performance and Results Act (GPRA) Modernization Act of 2010, provides a collection of mission objectives, goals, strategies, and corresponding metrics that provide an integrated and focused approach for tracking performance across a wide range of Department programs. Listed in Table 1 are the GPRA goals related to asset management. The Bureau of Reclamation (Reclamation) also contributes to the Strategic Plan through supporting measures listed in Table 2.

Table 1: Reclamation Asset Management Related Strategic GPRA Measures

MISSION AREA 2: SUSTAINABLY MANAGE ENERGY, WATER, AND NATURAL RESOURCES
GOAL #1: Secure America’s Energy Resources
Percent of hydropower facilities in good condition as measured by the Facility Reliability Rating (FRR).
Percent of time that Reclamation hydroelectric generating units are available to the inter-connected Western electrical system during daily peak demand periods.
GOAL #2: Manage Water for the 21st Century
Percent of water infrastructure in good condition as measured by the FRR.

Table 2: Reclamation Asset Management Related Supporting Measures

MISSION AREA 2: SUSTAINABLY MANAGE ENERGY, WATER, AND NATURAL RESOURCES
Total number of water facilities.
Number of annual water facility condition assessments scheduled/completed.
Number of reviews scheduled/completed (includes periodic facility reviews (PFR), comprehensive facility reviews (CFR) on high- and significant-hazard dams, and associated facility reviews of operation and maintenance (O&M) at reserved works).
Number of annual, periodic, and comprehensive reviews completed (hydropower).
Percent of generating capacity that has a major generator/turbine-related component rated in poor condition.
Forced outage factor lower than or equal to the industry average of 2.2 percent.
MISSION AREA 5: BUILDING A 21st CENTURY DEPARTMENT OF THE INTERIOR
Improving Acquisition and Real Property Management.
Percent of assets targeted for disposal that were disposed of during the FY.
Overall condition of buildings and structures, as measured by the Facility Condition Index (FCI), that are mission critical, as measured by the Asset Priority Index (API), with emphasis on improving the condition of assets with critical health and safety needs.

The Bureau of Reclamation’s Mission

Reclamation’s mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Established in 1902, Reclamation is best known for the dams, power plants, pipelines, and canals constructed in the 17 Western states. These water and power projects led to homesteading and promoted the economic development of the West. Reclamation has constructed hundreds of dams and reservoirs including Hoover Dam on the Colorado River and Grand Coulee Dam on the Columbia River.

Reclamation is the largest wholesaler of water in the country. It delivers 10 trillion gallons of water to more than 31 million people, and provides one out of five Western farmers (140,000) with irrigation water for 10 million acres of farmland that produces 60 percent of the nation's vegetables and 25 percent of its fruits and nuts.

Reclamation is also the second largest producer of hydroelectric power in the Western United States. On an annual basis, the 53 power plants owned and operated by Reclamation provide nearly a billion dollars in power revenues and produce enough electricity to meet the annual needs of 9 million people. Reclamation owns 24 additional power plants which are operated and maintained by other entities.

Today, Reclamation is a contemporary water management agency, operating under the Department's Strategic Plan, outlining numerous programs, initiatives, and activities that will help the Western states, Native American Tribes, and others to meet new water needs and balance the multitude of competing uses of water in the West. Reclamation places great emphasis on fulfilling water delivery obligations, water conservation, water recycling and reuse, developing partnerships with customers, states, Indian Tribes, and other stakeholders, and in finding ways to bring together the variety of interests to address the competing needs for our limited water resources.

Vision for Asset Management

Reclamation's vision is: "Through leadership, use of technical expertise, efficient operations, responsive customer service, and the creativity of people, Reclamation will seek to protect local economies and preserve natural resources and ecosystems through the effective use of water."

Reclamation will work toward this vision through asset management by protecting the public and the environment through the adequate maintenance and appropriate operation of its facilities.

Reclamation's Strategic Goals

Facility Reliability Rating

One of Reclamation's primary missions is to operate and maintain its water facilities in a safe, efficient, economical, and reliable manner, and to assure that systems and safety measures are in place to protect the facilities and the public. Reclamation's FRR system was established to score and provide a general indication of Reclamation's ability to maintain the reliability of its facilities. Reclamation is alerted to activities or areas needing attention with the use of FRR scoring data, which helps to ensure water storage and delivery in meeting its customers' (our Nation's) needs.

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In 2004, Reclamation developed the FRR system (one for dams and one for reserved works associated facilities) primarily for two purposes:

1. In support of Reclamation's Strategic Plan and GPRA, to provide a preferred "outcome-oriented" performance measures in lieu of "output-oriented" performance measures that were in place at that time; and
2. In support of asset management practices, to provide a performance indicator for the condition of our "structural" assets (e.g., dams), in lieu of the FCI which was proposed to be used at that time.

The 100-point scoring criteria for the two FRR systems were developed by a team of Denver, regional, and area office O&M staff and were thoroughly reviewed by all Reclamation offices until final sets of criteria were agreed upon in June 2005. The scoring criteria for the FRR primarily represents those activities that support and contribute to the continued reliability of high- and significant-hazard dams (and to associated facilities) to function as authorized and constructed. Additionally, the criteria was "weighted" to reflect the relative amount of Reclamation funding dedicated to the activities involved with each criteria. Furthermore, the criteria were developed for those activities where the most objective data could be used to provide the relative scoring. With this in mind, computing data for the criteria was intended to be simple (not complex and cumbersome), with data readily available and able to be obtained regularly (repeatable) on an annual basis.

The FRR criteria for dams were subsequently revised by a Reclamation-wide team in 2010 to better reflect the reliability/condition of the dam, as well as improved budget sensitivity. During FY 2004 – 2010, this measure reflected the percent of those facilities with FRR scores of 60 points or greater (rated "good" (80 or >) and "fair" (60 - 79)). This resulted in an average reportable score of approximately 98 percent each FY. This was sometimes interpreted that our facilities were in such good condition that no additional O&M funding needs were justified. Since FY 2011, this measure reflects the percent of those facilities with FRR scores of 80 points or greater (rated "good"). The reasoning for this limitation was to provide more room for improvement (approximately 75 percent instead of 98 percent) and to more accurately reflect the impacts of aging infrastructure and the justification for continued/additional O&M funding needs.

FRR scoring is accomplished and maintained by the regional and area offices. Some of the more pertinent criteria that can potentially and significantly influence the FRR scoring are dam safety restrictions/modifications and the completion and age of O&M recommendations. The timing of these issues, as well as the timing of facility reviews, can have a significant impact on the scoring, as well as the setting of future targets (i.e., those facilities which fell near the 80 point scoring level for the previous FY).

Performance Improvement

Bureau Measures (formerly the Performance Assessment Rating Tool) metrics related to asset management are listed in Table 3.

Table 3: Asset Management Related Performance Improvement Metrics

OPERATIONS AND MAINTENANCE
Average time to correct/mitigate higher priority O&M deficiencies at reserved works.
Percent of Reclamation reservoir capacity associated with dams having good FRR ratings.
Percent of water infrastructure in good condition as measured by the FRR.
Percent of reserved works buildings (exclusive of FRR facilities) with good FCI value.
HYDROPOWER
Percent of units available during daily peaking periods.
Improve overall condition and long-term reliability of Reclamation power plants by reducing the total amount of generating capacity that has a major generator/turbine-related component rated in poor condition.
Percent of Associated Facilities Reviews, PFRs, and CFRs completed.
Maintain forced outage rate on hydropower units lower than the industry average for similar units.
SAFETY OF DAMS
Complete CFRs of every high- and significant-hazard dam once every six years.
Percent of dam safety component score within the FRR.
Percent of safety of dams (SOD) recommendations completed.
Percent of decision documents related to dam safety issues at high- and significant-hazard dams completed within 60 days of source document completion.
SITE SECURITY
Percent of key assets where security-related risks are at an acceptable level.
Percent of critical and project essential facilities that have had a Periodic Security Review conducted in the past six years.
Percent of critical facilities that have had a Comprehensive Security Review conducted in the past six years.

Reclamation’s Asset Portfolio

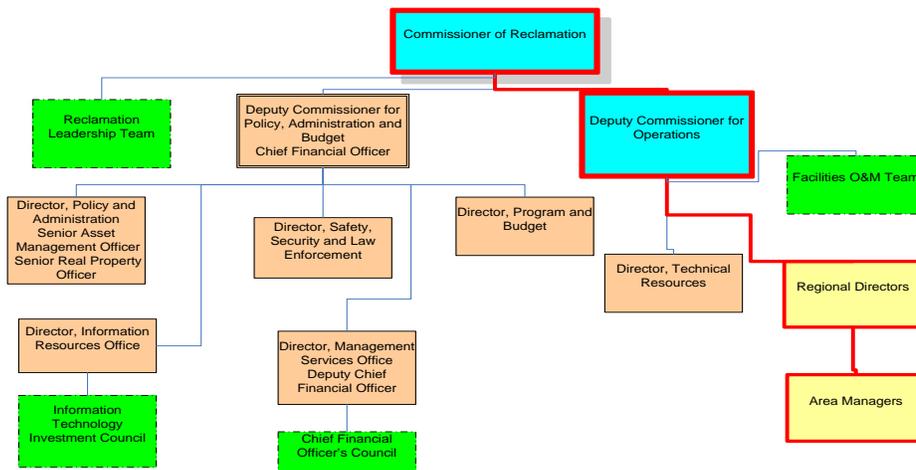
Reclamation’s portfolio consists primarily of capital-intensive utility facilities. This portfolio was constructed pursuant to specific project authorizations by Congress. Reclamation’s program management specifically focuses on our mission critical portfolio of dams, power plants, and associated facilities. Reclamation’s portfolio will be discussed in detail under the Asset Inventory, Condition, and Valuation section.

Asset Management Organizational Structure

Reclamation’s organization is geographically dispersed, with delegated authority and accountability spread throughout a hierarchical organization. For the most part, Reclamation is organized on the basis of major western drainage basins, with some consolidation having taken place over time for efficiency purposes. Primary physical asset management responsibilities reside in Reclamation’s five regions and 24 area offices.

From a hierarchical and functional standpoint, Reclamation’s asset management organizational structure is divided into three sections: strategic decision making, policy development and oversight, and strategic decision making/physical asset management, with key advisory bodies interspersed throughout the organization.¹

Figure 1 – Reclamation’s Asset Management Organizational Structure



¹ Note that this is not a full organizational chart for Reclamation; only the principal asset management positions have been depicted.

Decision Making Process

Many executives and managers have responsibility for asset management due to the broad nature of Reclamation's portfolio of assets. These responsibilities are detailed below. However, the principal hierarchical responsibility for major asset management is outlined in red in Figure 1 (i.e., from the Commissioner, through the Deputy Commissioner for Operations, through the Regional Directors, and to the Area Managers).

Commissioner – As the head of the agency, the Commissioner of Reclamation has overall responsibility for asset management within Reclamation.

Reclamation Leadership Team – The Reclamation Leadership Team (RLT), comprised of senior managers within Reclamation, is responsible for developing and forwarding recommendations to the Commissioner regarding broad policy aspects of asset management.

Reclamation Asset Investment Review Board (RAIRB) – RAIRB is comprised of the RLT². RAIRB conducts an annual review of asset management through the Budget Review Committee (BRC) process. The RLT periodically meets throughout the year, and schedules investment decision topics on its agenda, as needed. This process is detailed in the Portfolio Management section.

Deputy Commissioner for Policy, Administration and Budget (PAB) – The Deputy Commissioner, PAB, also Reclamation's Chief Financial Officer, is advised by the Chief Financial Officer's Council with respect to overall financial management in Reclamation and decisions associated with funding from Reclamation's Working Capital Fund.

Director, Program and Budget – The Director, Program and Budget, is Reclamation's Budget Officer. As such, the Director is part of the strategy decision-making hierarchy with respect to the priority and securing of budgetary resources for asset management. The Director is a permanent member of Reclamation's BRC and is directly responsible for ensuring that RAIRB is fully integrated in Reclamation's annual BRC process.

Director, Policy and Administration (Policy) – The Director, Policy, supported by the Maintenance Services Division (MSD), the Land Resources Division, the Program Services Office, the Water and Environmental Resources Division, the Program Management Office, the Ethics Office, the Civil Rights Division, and the Human Resources Division develops policy recommendations and provides policy oversight and advice to Reclamation executives for management of water and power facilities and structures, project land, cultural and historic properties,

² Reclamation's Information Technology (IT) Investment Council serves as the investment review board for IT investments. Similarly, Reclamation's Fleet Management Improvement Review Board makes recommendations to Reclamation's Senior Fleet Manager.

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and recreation assets. The Director, Policy, also serves as Senior Real Property Officer (SRPO), and is responsible for:

- Serving as the principal senior manager accountable for ensuring that the processes and practices in this AMP are carried out.
- Representing Reclamation on the Department's Asset Management Team.
- Identifying, categorizing, and inventorying all real property owned, leased, or otherwise managed by Reclamation.
- Prioritizing actions to be taken to improve the operational and financial management of the agency's real property inventory.
- Making lifecycle cost estimates associated with the prioritized actions.
- Identifying legislative authorities that are required to address these priorities.
- Identifying and pursuing goals, with appropriate deadlines, consistent with and supportive of Reclamation's AMP, and measuring progress against such goals.
- Incorporating planning and management requirements for historic properties under Executive Order (EO) 13287 of March 3, 2003, and for environmental management under EO 13148 of April 21, 2000.
- Ensuring that RAIRB is fully integrated in Reclamation's annual BRC process.
- Identifying any other information and pursuing any other actions necessary to the appropriate development and implementation of Reclamation's AMP.
- Ensuring that Reclamation assets are managed in a manner that is supportive of Reclamation's business objectives and the Department's Strategic Plan and AMP, through adherence to this AMP and holding executives accountable.

Manager, Maintenance Services Division – The Manager, MSD, has the responsibility of coordinating the update of this AMP in order to reflect current policies and mission of Reclamation. In addition, the Manager, MSD, chairs the annual BRC Operation, Maintenance, and Replacements (OM&R) Workgroup. This division is also responsible for implementing the Verification and Validation (V&V) Review Plan for Reclamation.

Director, Management Services Office (MSO) – Supported by Business Analysis, Finance and Accounting, Property Management, Financial and Business Management System, and Acquisitions and Financial Assistance offices, the Director, MSO, staffs and develops policy recommendations on accountability, financial controls, and acquisition for fleet, space management, quarters, and personal property. The Director is the Deputy Chief Financial Officer.

Director, Information Resources Office (IRO) – Advised by the IT Investment Council (which also acts as Reclamation's IT Investment Review Board), the

Director, IRO, is responsible for program coordination, execution, and oversight of Reclamation's IT functions.

Director, Security, Safety, and Law Enforcement (SSLE) – Supported by the Chief of Dam Safety, the Safety Manager, the Chief of Programs and Emergency Management, and the Chief Security Officer, the Director, SSLE, staffs and develops policy recommendations with respect to security, and public and employee facility safety activities.

Chief, Dam Safety Office (DSO) – The Chief, DSO, has the responsibility to administer the appropriate Safety Evaluation of Existing Dams, and initiate SOD Corrective Actions and the Department's SOD line items to help Reclamation achieve the Dam Safety Program objectives.

Deputy Commissioner for Operations – The Deputy Commissioner for Operations has overall responsibility for operational decisions for Reclamation mission critical assets. In this capacity, the Deputy Commissioner is responsible for ensuring the application of asset management principles to mission critical assets. Regional Directors (RDs) report to the Deputy Commissioner. The Power Resources Office also reports to the Deputy Commissioner, as does the Senior Power Liaison.

Director, Technical Resources (TR) – Supported by the Design, Estimating, and Construction (DEC)/DSO, the Director, TR, performs the audit function of the Dam Safety Program, meets Reclamation's quality assurance goals, and performs oversight reviews of projects including planning, design, cost estimating, and construction. Also, the Director, TR, manages Reclamation's Technical Service Center, which houses technical expertise on all aspects of Reclamation's asset management program.

Regional Director – Reclamation's RDs are responsible for asset management within their respective regions. They have the responsibility to ensure that assets are maintained in a condition to meet Reclamation's strategic objectives. They are responsible for conducting an inventory of all real property owned, leased, or otherwise managed by Reclamation, including condition assessments, and working with the Deputy Commissioner for PAB to consolidate this information. The RDs are responsible for appropriately budgeting through the BRC process for the O&M of assets within their respective regions with appropriate consultations with stakeholders. RDs report to the Deputy Commissioner, Operations.

Area Manager – Reclamation's area managers are responsible for asset management within their respective areas. They have the responsibility to ensure that assets are maintained in a condition that meets Reclamation's strategic objectives. They are responsible for conducting an inventory of all real property owned, leased, or otherwise managed by Reclamation, including condition assessments, and working with the appropriate RD, to consolidate this

information. The area managers are responsible for appropriately budgeting through the regional budget process for the O&M of assets within their respective regions with appropriate consultations with stakeholders. Area managers report to a RD.

Portfolio Management

The primary, on-the-ground, responsibility for portfolio management rests with 24 Reclamation area offices.³ Each area office reports to one of the five Reclamation regional offices which, in turn, reports to the Deputy Commissioner for Operations. Ultimate asset portfolio decisions rest with the Commissioner of Reclamation, who relies on several advisory bodies for assistance in the decision-making process. These bodies include the RLT, the Facilities O&M Team (FO&MT), the BRC, and the Property Management Officers Council (PMOC).

The RLT is comprised of Reclamation's highest ranking senior executives, including its RDs. The RLT deliberates agency-wide topics, and advises the Commissioner on policy-level activities. Decisions of the Commissioner are communicated back through the organization through members of the RLT.

The FO&MT is a forum to address Reclamation-wide O&M-related priorities, issues, activities, and program/budget formulation, and to facilitate program accomplishment. The FO&MT's responsibilities include reviewing and making recommendations to the Director, Policy, and the Deputy Commissioner for Operations on:

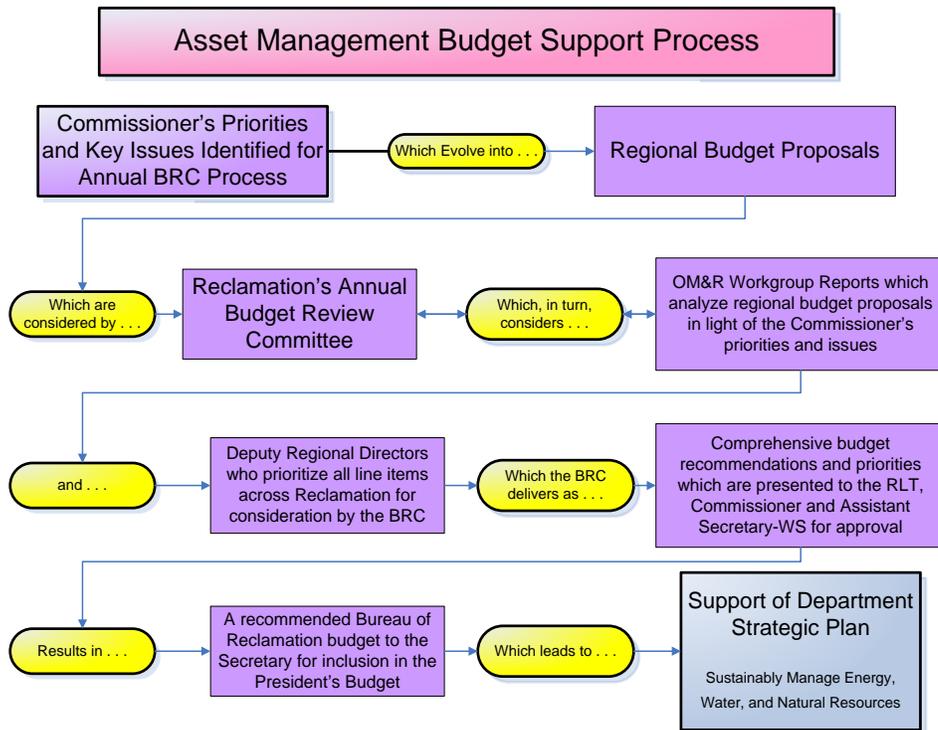
- Deferred maintenance (DM).
- Asset management.
- Condition assessments/field review activities.
- Replacements, Additions, and Extraordinary Maintenance (RAX) items.
- Facility security, Life Safety Code, Universal Accessibility, and public safety.
- Maintenance management practices and systems.
- Implementation of facility O&M-related policies and/or directives & standards (D&S).
- Congressional, Office of Management and Budget (OMB), and stakeholder questions.
- Performance goals/information related to O&M.
- O&M-related audit issues and recommendations.
- Program/budget formulation related to the A40 and A50 portions of the Programmatic Budget Structure.
- Monitoring and control of quagga/zebra mussels.
- Urbanized canals.

³ The Southern California Area Office does not manage any structural or building assets.

As a result of the FO&MT’s recommendations, the Deputy Commissioner for Operations will either direct changes in policy, practices, or priorities in asset management, or bring an issue to the RLT.

The annual BRC plays a critical role in developing recommendations on Reclamation-wide budget proposals for the consideration of the RLT, the Commissioner, and the Assistant Secretary – Water and Science. This committee extensively reviews all budget proposals from all parts of Reclamation, and develops the overall budget profile for Reclamation, including resource allocations for asset management. A diagram of this process is displayed Figure 2.

Figure 2 – Reclamation Asset Management Budget Support Process



Reclamation’s PMOC serves in a parallel capacity with respect to the management of buildings and leased property. The mission of PMOC is to promote quality, efficiency, and professionalism in Reclamation’s property management activities and to maximize the level of service provided to the customers of Reclamation’s property management organizations. PMOC develops procedures to facilitate and encourage the sharing of information, policies, and procedures throughout the regional operation offices, while striving to identify and analyze property management issues, recommend resolutions, and make other improvements to Reclamation’s property management programs.

Program Management

Programmatic and Legislative Authorities

Reclamation, which is responsible for most of the Department's constructed assets,⁴ does not have an "organic act" and finds its authority in numerous Federal laws. The Federal Reclamation program was authorized by the Reclamation Act of 1902 to reclaim the desert lands of the Western United States by conserving and supplying irrigation water to make the land productive for establishing family-sized farms. Since that time, a growing population, a multifaceted economy, and competing uses for water in the West has led Congress to expand Reclamation's work through the authorization of multipurpose projects. Reclamation obtains its authorities through provisions of Federal general reclamation law, as well as project-specific authorities covering areas such as, but not limited to, constructing, managing, and repaying water facilities, as well as hydropower facilities. Currently, five volumes and two supplements of *Federal Reclamation and Related Laws Annotated* incorporate more than 5,000 pages of congressional direction.

Federal Reclamation law, both of general application and project-specific, is a major, but not the only, legal or other instrument directing Reclamation's asset management activities. Elements that have significant effects include:

EO 12893 (January 26, 1994) – *Principles for Federal Infrastructure Investment.*⁵ EO 12893 sets out guidance on the planning and management of Federal infrastructure. Contained within that guidance are directions for analysis of investment proposals and operational management of infrastructure, including the reliance on market-based mechanisms.

EO 13327 (February 4, 2004) – *Federal Real Property Asset Management.*⁶ EO 13327 establishes a SRPO in each executive-level agency and the Federal Real Property Council (FRPC) to develop guidance on real property management throughout the Federal Government.

OMB, FRPC, *Guidance for Improved Asset Management.*⁷ The FRPC Guidance provides direction on the duties of SRPOs and the content of AMPs. In addition, it sets forth 10 guiding principles in real property asset management: (1) support agency missions and strategic goals; (2) use public and commercial benchmarks and best practices; (3) employ lifecycle cost-benefit analysis; (4) promote full and appropriate utilization; (5) dispose of unneeded assets;

⁴ Reclamation is responsible for over 70 percent of *all* constructed assets within the Department (based on total acquisition costs of the assets).

⁵ <http://www.archives.gov/federal-register/executive-orders/pdf/12893.pdf>.

⁶ <http://www.gpo.gov/fdsys/pkg/FR-2004-02-06/pdf/04-2773.pdf>.

⁷ http://m.whitehouse.gov/sites/default/files/omb/assets/omb/financial/fia/frpc_guidance.pdf.

(6) provide appropriate levels of investment; (7) accurately inventory and describe all assets; (8) employ balanced performance measures; (9) advance customer satisfaction; and (10) provide for safe, secure, and healthy workplaces.

The Department’s *Strategic Plan for FY 2011 – 2016*.⁸ The Department’s FY 2011 – 2016 Strategic Plan provides a framework that integrates programs and activities into five mission areas, which serve as long-term areas of focus in the next five years. Each mission area contains goals, which have strategies that demonstrate how the goal will be accomplished. The Plan also outlines performance measures for each strategy that show how programs contribute to a mission area’s goals. The mission areas are summarized below:

Table 4: The Department’s FY 2011 – 2016 Strategic Plan Mission Areas

Mission Area #1	Provide Natural and Cultural Resource Protection and Experiences
Mission Area #2	Sustainably Manage Energy, Water, and Natural Resources
Mission Area #3	Advance Government to Government Relationships with Indian Nations and Honor Commitments to Insular Areas
Mission Area #4	Provide a Scientific Foundation for Decision Making
Mission Area #5	Building a 21 st Century Department of the Interior

The Department’s Asset Management Plan (June 2008). In 2008, the Department updated its *Asset Management Plan, Version 2.0* as the Department’s official policy statement and guidance document that establishes standardized asset management business processes to be used across the Department. That document provided overall guidance and requirements on the management of fixed and mobile assets within the Department. It also required bureaus to develop individual AMPs and facility sites develop site-specific asset business plans (ABPs). Reclamation developed ABPs for each of its area offices and regional offices (as applicable) to document existing asset management practices, activities, metrics, and related information/data utilized in planning and budgeting for future actions to implement regarding this management of its assets. For some area offices (i.e., Lower Colorado Region), existing 10-year operating plans are used in lieu of ABPs to convey this information and data. This exception was permitted by Department staff visiting Reclamation area office staff in that region in December 2007.

This Reclamation AMP tiers off of the Departmental AMP, and sets forth Reclamation’s overall asset management framework which has been, and continues to be, memorialized in the Reclamation Manual (RM) through policy

⁸ http://www.doi.gov/pmb/ppp/upload/DOI_StrategicPlan_fy2011_2016.pdf.

and D&S, as well as supplemented by additional guidance documents. The primary focus of Reclamation's AMP is on mission critical and mission dependent, not critical assets.

Departmental Manual. The Departmental Manual contains the principal policies and D&S on management of Department activities. Wherever practicable, hyperlinked references are made to the Departmental Manual for asset management policy and guidance, rather than repeating those documents in this AMP.

Reclamation Manual. The RM contains the principal policy and D&S on the management of Reclamation program activities. Wherever practicable, hyperlinked references are made to the RM for asset management policy and D&S, rather than repeating those documents in this AMP.

Related Legislation. Reclamation is also subject to other legislative acts which require it to comply with congressional direction. For example, the Energy Act of 2005 directed Reclamation to compile information on hydropower development and to comply with mandatory electric energy generation and transmission reliability standards.

Case Law. Throughout the Department's history, the courts have interpreted statutes which then provide case law that must be considered in Reclamation activities. Many of these cases were brought forward due to the conflict between state, Federal, and tribal water laws and affect both project authorizations and operations.

Federal/State/Tribal Treaties and Compacts. Due to the nature of state-administrated water rights in the Western United States, Federal, state, and tribal governments must coordinate in the management of water resources. This can lead to conflict, but there are many examples of coordination and cooperation effectively utilizing the water supply. Federal, state, and tribal governments coordinate in a variety of ways, such as jointly managing water storage and delivery projects, adhering to water rights, interstate compacts, and treaties, coordinating operations and systems, and sharing data.

Repayment of Costs to the United States for Federal Reclamation Projects. The cost of Federal Reclamation projects are categorized as (1) construction costs, and (2) O&M costs. The recovery of the appropriate costs from project beneficiaries is required by Federal Reclamation law.

Role of Power Customers in Financing Power-Related Work – More than 80 percent of Reclamation's power-related construction and O&M work is financed through power customer funding (i.e., non-appropriated funding). As such, Reclamation closely consults with different power customer groups on power investment and O&M requirements, and seeks their funding of that work.

Reserved vs. Transferred Works/Managing Partners. Reclamation owns most of the water resources-related constructed assets of the Department. Of these assets, about two-thirds have been “transferred” to managing partners for O&M. These “transferred works” are those facilities still owned by Reclamation where O&M has officially become the responsibility of an operating entity (irrigation district, state, county, city, local customers, managing partners, or others) pursuant to contracts with Reclamation. This also means that the contracting entity is primarily responsible for managing the day-to-day O&M and annual O&M funding of the facilities.

Overall, Reclamation operates within a mosaic structure of constitutional, legislative, judicial, administrative, and contractual considerations.

Legislative Action

Loan Guarantee Program

Significant shares of costs associated with RAX are required to be paid, generally in advance, by Reclamation’s project beneficiaries. Often, such expenditures are beyond the resources available to these entities in the time period in which the costs are incurred. Prior to 1993, Reclamation provided direct loans to project beneficiaries which allowed them to repay these costs over a longer period which was more representative of their financial capacity. For a number of reasons, these loans were discontinued. However, the need for funding assistance for project beneficiaries’ share of RAX projects continues. Reclamation has explored the possibility of providing loan guarantees to private lenders as a means of providing this funding assistance. Pub. L. 109-451 authorized a guaranteed loan program for Reclamation.

Reclamation is currently developing the program’s administrative requirements and processes in consultation with OMB. OMB indicated that Reclamation needs to complete several actions before funding would be made available for loan guarantees. Thus, Reclamation is uncertain of when loan guarantees will be implemented.

Energy Policy Act of 2005

Recent Federal policies and legislation focus on moving the nation towards a cleaner energy economy that includes developing environmentally appropriate renewable energy projects involving solar, wind, wave, geothermal, biofuel, and hydropower. The 2010 Federal Memorandum of Understanding for Hydropower and the Energy Policy Act of 2005 direct Reclamation to evaluate development of new hydropower projects at Federally-owned facilities and upgrade or rehabilitate existing hydropower generation facilities, as a contribution to the Nation’s clean energy goals. State policies are also starting to encourage renewable energy development. Some states have adopted renewable portfolio standards that

require electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date.

Recognizing the current national emphasis on renewable energy and its extensive existing water infrastructure systems, Reclamation performed the *Hydropower Resource Assessment at Existing Reclamation Facilities*⁹ (Resource Assessment) to assess hydropower development at existing facilities to contribute to nationwide renewable energy strategies. Reclamation identified 530 sites, including reservoir dams, diversion dams, canals, tunnels, dikes, and siphons in Reclamation's five regions, comprised of the 17 Western states, for analysis in the Resource Assessment. All 530 sites were considered in the analysis, of which, 191 sites were determined to have some level of hydropower potential. It is estimated that the 191 sites show approximately 268 megawatts of capacity and 1.2 megawatt hours of energy potential.

Reclamation developed the Hydropower Assessment Tool to estimate potential energy generation and economic net benefits at the identified Reclamation facilities. The tool is an Excel spreadsheet model with embedded macro functions and computes power generation, cost estimates, and economic benefits. The Resource Assessment concluded that substantial hydropower potential exists at Reclamation sites and 70 of the 530 sites could be economically feasible to develop based on available data and study assumptions; of which 36 sites used high-confidence data for the analysis.

Reclamation embarked on a phase II study called the *Site Inventory and Hydropower Energy Assessment of Reclamation-Owned Conduits, a Supplement to the Hydropower Resource Assessment at Existing Reclamation Facilities*, (Supplemental Assessment Report).¹⁰ The Supplemental Assessment Report builds off of the Resource Assessment, and identifies potential hydropower sites on Reclamation-owned conduits and determines those sites' capacity and energy potential. The results of the study show that 104 megawatts of potential capacity and 365,219 megawatt hours of potential generation are available at 373 identified sites on Reclamation canals.

American Recovery and Reinvestment Act

The American Recovery and Reinvestment Act (ARRA) of 2009 (Pub. L. 111-5) provided Reclamation a unique opportunity to advance program objectives and address some needed maintenance issues at aging Reclamation facilities. ARRA funding of \$164.6 million was designated to immediately address the rehabilitation of aging infrastructure and projects, categorized as Improving Infrastructure Reliability and Safety (IRS). Of the \$164.6 million, approximately \$130 million was allocated for O&M activities (not including SOD or canal inspection activities). Of the approximately \$130 million, approximately

⁹ <http://www.usbr.gov/power/AssessmentReport/USBRHydroAssessmentFinalReportMarch2011.pdf>.

¹⁰ <http://www.usbr.gov/power/CanalReport/FinalReportMarch2012.pdf>.

\$2 million was used to reduce the DM backlog (currently at \$128 million) and the remaining \$128 million was used reduce the \$3.2 billion Major Rehabilitation and Replacement (MR&R) needs identified in FY 2010.

ARRA required that for a project to be considered for funding, it had to be previously authorized. Thus, projects that were selected have been included in Reclamation's future budget requests. In this context, Reclamation reviewed approximately \$2 billion worth of potential projects. In the spirit of ARRA, and with the objective of creating jobs and advancing overall Reclamation program priorities, Reclamation and the Department used a multi-tiered, merit-based evaluation process with direct input from regional offices in the decision-making process.

In section 1603, ARRA required all funds to be obligated by December 2012. In addition, the ARRA Conference Report indicated that priority should be given to projects which have little schedule risk, a completed environmental assessment (or will be completed at time of obligation), and will complete a phase of a project or provide a useful service that does not require additional funding. Some have referred to these projects as "shovel ready." Pursuant to the ARRA, Reclamation identified approximately \$164.6 million of IRS opportunities that could be accomplished expeditiously with ARRA funds.

Additionally, as a part of ARRA, Reclamation performed inspections of urbanized canals (see section on Inspection of Urbanized Canals).

Public Law 111-11

Title IX, Subtitle G, of the Omnibus Public Land Management Act of March 30, 2009 (Subtitle G), provided the first Reclamation-wide, long-term authority for the extended repayment of extraordinary O&M (XOM) costs (up to 50 years). In accordance with Subtitle G, XOM means major, non-recurring maintenance to Reclamation-owned or -operated facilities, or facility components, that are (1) intended to ensure the continued safe, dependable, and reliable delivery of authorized project benefits; and (2) greater than 10 percent of the operating entity's (either Reclamation or another operating entity's) annual O&M budget for the facility, and¹¹ greater than \$100,000.

Although the authority for extended repayment of XOM is provided by Subtitle G, no appropriations have been made for use of the authority. Appropriations for XOM work will be requested through the standard budgetary process and are anticipated to be limited given the current budgetary environment. Limits on available funding in the face of deficit reduction pressures over the next several years require that innovative procedures and incentives be explored to

¹¹ It should be noted that "and" is used instead of "or," as provided in Pub. L. 111-11, resulting from a policy call by Reclamation that recognizes the limited funding that might be available for this authority.

Bureau of Reclamation Asset Management Plan

provide a means of prioritizing funding to address the most urgent of these needs. Reclamation's temporary release of the D&S for the extended repayment of XOM costs was issued in August 2011 (PEC TRMR-49), and provides requirements for implementing the repayment provisions of Subtitle G. Limited use of the authority has been made using existing appropriations, pursuant to the D&S requirements.

In order to be eligible for funding as XOM under the program, the proposed work must meet the following criteria:

- Major, non-recurring maintenance to Reclamation-owned facilities or facility components.
- Intended to ensure the continued safe, reliable delivery of authorized project benefits (any additional benefits resulting from the work must be strictly incidental to the work required to maintain present authorized project benefits).
- The cost of the work must be greater than 10 percent of Reclamation's or the transferred works operating entity's annual O&M budget for the facility, and greater than \$100,000.
- Must involve XOM work on a facility identified as mission critical utilizing Reclamation's API/Comprehensive Condition Index (CI).

Funding requests will be prioritized by a Reclamation investment review board during budget formulation, and reviewed/revisited immediately prior to the year of budget execution, in accordance with the following criteria:

- Engineering need
- Consequences of failure
- Financial considerations
- Efficiencies
- Scheduling

The weighting of the criteria has been established to prevent a large number of project requests from achieving a score of 100, which would undermine the purpose of the weighting. The intent is also to have a prioritization range, based on overall score, that clearly represents XOM needs and distinguishes between the project requests as objectively as possible. Furthermore, the criteria and related weighting have been selected in an attempt to make prioritization of XOM requests consistent throughout Reclamation. Additional detail on the criteria can be found in Appendix B.

Section 9603(c) (1, 2) of Pub. L. 111-11 directs (not just authorizes) Reclamation to perform any emergency XOM work on a project facility determined to be necessary to minimize the risk of imminent harm to public health or safety, or property, and authorizes the advance of funds to transferred works operating entities to perform the work. XOM work deemed to meet the criteria for

emergency work listed below would immediately rise to the top of the priority list, and remaining unexpended funds would be diverted to that work, dropping other work lower on the priority list, or work budgeted for that year which has not yet been accomplished.

Emergency Criteria – Flow or water surface elevation restrictions have been implemented as a result of deficiencies identified in the facility inspection resulting in the need for this major nonrecurring maintenance activity.

Section 9603(c) (3) of Pub. L. 111-11 provides that if Reclamation determines that the facility in question has been maintained in accordance with the guidelines and criteria that Reclamation is directed to develop in Section 9602, then 35 percent of the funds advanced to a transferred works operating entity to perform the emergency XOM will be non-reimbursable. Applicability of this provision will be based on the following project inspection and maintenance criteria:

- All Category 1 recommendations related to the requested XOM work have been corrected within 6 months of identification; and
- All Category 2 recommendations related to the requested XOM work have been corrected within 1 year of identification and prior to the next reporting period.

Aging Infrastructure

In order to fully address and efficiently manage future water supply challenges, it is essential that Reclamation maintain and improve its existing infrastructure for system reliability and safety, and sustained water conservation. Aggressive action is required to address future water supply challenges and maintain economic productivity in the agricultural rural West. Anticipated increases in population, renewed emphasis on domestic clean energy development, and the need for adequate supplies of water to support environmental values will place additional demands on already stressed infrastructure. Addressing the needs of an aging infrastructure is central to mission objectives of O&M projects to ensure delivery of water and power benefits.

Major Rehabilitation and Replacements

MR&R are those identified specific XOM activities which are separate and distinct from those activities that would typically be addressed as part of a facility's regular O&M program. MR&R activities are limited to those activities that are identified for funding needed or "to be invested in" within the next five years (i.e., FY 2012 through FY 2016) for Reclamation facilities (or those entrusted to Reclamation) to continue to provide authorized project benefits. MR&R needs include betterments or state-of-the-art upgrades only if they are deemed necessary as part of efforts in continuing to assure the delivery of current project benefits. MR&R activities do not encompass those activities that would be considered to be additions, modernizations, or enhancements, where the intent is to provide additional benefits.

MR&R estimates were requested for all facilities based on current conditions, at the major facility level (e.g., dam, canal system, power plant, major pumping plant, pipeline, etc.), and irrespective of the source of financing (e.g., appropriated monies, power financing, funding agreements, revolving funds, non-appropriated funds used by operating entities of transferred works, etc.). The original intent of the MR&R estimate was to capture the repair and replacement needs related to Reclamation assets to use in the calculation of the CI provided to the Federal Real Property Profile (FRPP). Reclamation requested updates of the regional MR&R needs during late FY 2011 to refine the previously-reported \$3.1 billion estimated need, identified in an early FY 2010 update. Through this updating process, the FY 2011 summary of MR&R needs is approximately \$2.6 billion. This need has been broadly characterized as potential costs associated with Reclamation's "aging infrastructure."

The MR&R is comprised of four types of needs: SOD, Loan Guarantee, DM, and Other RAX items. These four types of needs are described as follows:

Safety of Dams

The Dam Safety Program continues to be one of Reclamation's highest priorities. The program helps ensure the safety and reliability of Reclamation's dams to protect the downstream public. Approximately 50 percent of Reclamation's dams were built between 1900 and 1950, and approximately 90 percent of the dams were built before currently used, state-of-the-art design and construction practices. Reclamation evaluates dams and monitors performance to ensure that risks do not exceed current Reclamation public protection guidelines. Potential failure modes include seismic based on updated data for the potential for earthquakes, the potential for overtopping as indicated through updated data on hydrologic events, and dams which lack state-of-the-art structural reliability features. These risks place a great reliance on monitoring, examinations, and re-analyses with ongoing risk management activities to assure safe dam performance. Reclamation will undertake corrective actions expeditiously when reasonable public risk is identified. The program requires dams to be examined by specialists every three years, with additional internal reviews performed annually. Reclamation has put together a team to evaluate the frequency of future exams.

Loan Guarantee

As introduced in the Legislative Action Loan Guarantee section of this AMP, Reclamation received authorization for a new program to help rehabilitate its aging infrastructure in 2006. Under Title II of Pub. L. 109-451, enacted as the Twenty-First Century Water Works Act, the Secretary of the Interior is authorized to guarantee up to 90 percent of the cost of a project subject to a non-Federal loan. In this context, "project" means activities to perform XOM, rehabilitation or replacement, or improvement of Reclamation facilities. Projects that have been identified for replacement, additions, or XOM are included as a need under MR&R. It is expected that operators of Reclamation transferred works will take advantage of this authority to address aging infrastructure either operated and maintained by them, or reserved works for which they are required to share in the O&M costs. This authority represents a major step forward in the maintenance and improvement of Reclamation's assets. As of the date of this AMP, Reclamation and the Department were still engaged in a dialogue with the OMB on specific issues associated with the level of appropriations necessary to support the program.

Deferred Maintenance and Repairs

DM and repairs are maintenance and repairs that were not performed when they should have been or were scheduled to be and which are put off or delayed for a

future period.¹² This is the definition contained within the Statement of Federal Financial Accounting Standard No. 6. Reclamation tracks and reports an accumulated DM amount for its reserved works facilities which, at the end of FY 2011, was slightly more than \$128 million. A certain amount of DM is typical for the “utility-type” missions that are Reclamation’s responsibility and there is no expectation that this amount will be significantly reduced or eliminated in the foreseeable future. More detail on Reclamation’s DM can be found under the section Asset Inventory, Condition, and Valuation.

Other RAX

Other RAX items are those items that have been identified and scheduled to be completed within the next five years but do not fall under any of the other three criteria. The total of Other RAX items at the end of FY 2011 was approximately \$1.3 billion.

Inspection of Urbanized Canals

Reclamation is utilizing \$10 million in ARRA funding to develop an inventory of canals located in urbanized areas and perform inspections, which currently consists of over 250 canal reaches representing more than 1,000 miles. Inspections consisted of aerial remote sensing techniques and onsite procedures. Geographic Information System (GIS) activities related to canals located in urbanized areas include data validation and verification (V&V), data analysis, and placement of data into an application for display of inspection observations. Reclamation has developed tools to assist in categorizing the observations on each canal reach, and expected actions associated with each rating category. For canal reaches identified as being in the immediate action or follow-up monitoring categories, additional technical analysis/field investigations will be performed. Funding for the next steps will be through annual appropriations. Formal recommendations, based on additional technical analysis/field investigations, will be developed to address identified concerns for a particular canal reach in coordination with the region/area office staff and the responsible operating entity. These recommendations will be tracked using the existing Dam Safety Information System until completion, similar to those resulting from Associated Facilities Review of Operations and Maintenance (AFRO&M) examinations. As these canals reaches are evaluated, categorized, and prioritized, the results will be used in determining future inspection frequencies and necessary activities under the AFRO&M program. This process is currently captured in the temporary D&S, *The Bureau of Reclamation’s Associated Facility Review of Operations and Maintenance (AFRO&M) Program - Inspection of Canal Reaches Located in Urbanized Areas* (FAC TRMR-55).

¹² http://www.fasab.gov/pdf/Handbook_sffas_42.pdf.

As a result of these inspections, additional funding may be needed for this XOM work by the responsible operating entity. Possible funding options include authorities under Pub. L. 111-11 and authorized loan guarantees, which may permit operating entities to enter into extended repayment contracts with Reclamation to finance this work. The initial ARRA-funded inspections are complete and necessary analysis is presently ongoing. At this time, it is unclear as to how much funding will be needed for financing this XOM work. Special follow-up inspections to better quantify recommendations are currently being performed.

Work continues to define the specific requirements to address XOM related to the canals in urbanized areas, the site-specific locations for these activities, and related funding needs. The funding for these activities are currently centered in Policy and Administration as this allows the flexibility to direct the funding corporately to the specific facilities and regions where they are of highest priority.

Asset Inventory, Condition, and Valuation

Asset Portfolio

Reclamation's inventory of mission critical and mission dependent, not critical structural assets is maintained by MSD (Organization Code 84-57000); the Property Office for Housing and Buildings (Organization Code 84-27841); and the Land Resources Office (Organization Code 84-53000) until that inventory can be migrated to the Financial and Business Management System (FBMS), which is currently scheduled for implementation in late 2013. The inventory is currently maintained in the Reclamation Buildings and Structures Database (RBSDB) with 26 Federal Real Property data elements in accordance with the FRPP (updated on an annual basis) and physically validated on a 5-year cycle in accordance with the Department's Real Property Financial Management Policy and Guide (April 30, 2003). As of December 2011, Reclamation reported a total of 4,021 buildings and structures assets into the FRPP. These assets are detailed in Table 5.

As of December 2011, most of Reclamation's asset inventory was reflected at the major asset level in the FRPP. Some of the FRPP performance measure cells¹³ associated with transferred works are populated with data based on best engineering estimates until further verification work is accomplished.

Under Reclamation law, Reclamation has transferred approximately two-thirds of its assets to water and recreation entities for O&M responsibility (title remains with the United States).¹⁴ These assets are primarily single-purpose in nature (e.g., delivering irrigation water through a Reclamation distribution system or operating recreation facilities at a Reclamation reservoir). In contrast, "reserved works" are those assets which are owned, operated, and maintained by Reclamation. Reserved works are normally multi-purpose in nature, often serving entities for multiple purposes, sometimes in multiple states.

Reclamation must report transferred works and associated attributes into the FRPP. As Reclamation does not operate or maintain these works, there is limited performance data¹⁵ on those facilities. Such performance data, to the extent it is readily available to Reclamation, is added into the FRPP. Primary data gaps are associated with the four performance metrics for transferred works in the FRPP: asset utilization (buildings), mission dependency, CI, and O&M costs.

¹³ API, Utilization Index (UI), FCI, and O&M Costs.

¹⁴ Reclamation's requirements for transferring facilities to others for O&M are found at Transfer of Operation and Maintenance Responsibility of Project Works, at: <http://www.usbr.gov/recman/fac/fac01-05.pdf>.

¹⁵ Performance data constitutes the FRPP attributes of API, UI, FCI, and O&M Costs.

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Table 5: Constructed Assets by FRPP Code

Buildings (Each)			Structures (Each)		
3510	Office	252	4012	Airfield Pavements	0
3514	Post Office	0	4013	Harbors and Ports	0
3521	Hospital	0	4015	Power Development & Distribution	152
3522	Prison & Detention Centers	0	4016	Reclamation & Irrigation	1,530
3523	School	4	4018	Flood Control & Navigation	36
3528	Museum	2	4040	Storage (other than Buildings)	6
3529	Other Institutional Uses	31	4050	Industrial (other than Buildings)	39
3530	Family Housing	503	4060	Service (other than Buildings)	3
3531	Dormitories/Barracks	11	4065	Space Exploration Structures	0
3541	Warehouses	688	4066	Parking Structures	2
3550	Industrial	48	4070	Research & Development (other than Labs)	0
3560	Service	241	4071	Utility Systems	85
3572	Communication Systems	18	4072	Communications Systems	37
3573	Navigation & Traffic Aids	0	4073	Navigation & Traffic Aids (other than Buildings)	0
3574	Laboratories	16	4075	Recreational (other than Buildings)	166
3580	All Other	87	4076	Roads & Bridges	52
TOTAL ASSETS – BUILDINGS		1,901	4077	Railroads	2
			4078	Monuments & Memorials	0
			4079	Miscellaneous Military Facilities	0
			4080	All Other	9
			4082	Weapons Ranges	1
			TOTAL ASSETS – STRUCTURES		2,120

Bureau of Reclamation Asset Management Plan

Reclamation has approximately 350 operating partners (organizations) that operate and maintain transferred works. In the event that the operating entity does not track O&M costs by asset, Reclamation uses the same methodology to estimate O&M costs for transferred works as for reserved works. Also, it may be the case that there are currently assets in the FRPP database that no longer exist in the field, or new assets may have been constructed by operating entities.

Federal Real Property Profile Data Validation and Verification

Reclamation has dedicated resources and staff to update and verify and validate asset inventory and FRPP data. In completing these activities, Reclamation continues to refine the data and information in the FRPP, conducting this work in conjunction with its initial asset inventory and financial records integration project (now referred to as the RBSDB) to verify and validate real property assets with the Federal Finance System prior to migration into the FBMS.

Reclamation continues to refine and update asset records and data elements while expanding focus to onsite reviews, condition assessments, and V&V processes. Recognizing the buildings, structures, and the FRPP as a living database, Reclamation continuously allocates the necessary resources to maintain and improve the accuracy and completeness of its asset portfolio.

Relationship to Reclamation's Financial Programs and the Financial and Business Management System

Reclamation's balance sheet contains an entry for "General Property, Plant and Equipment, Net," which is Reclamation's official valuation of its assets.¹⁶ Assets are subdivided into the categories of structures and facilities; land; construction in progress; construction in abeyance; equipment, vehicles, and aircraft; buildings; and other (software). As indicated in Table 6, financial asset classifications are divided in terms of whether they are mission critical; mission dependent, not critical; or not mission dependent. This is a general classification only; each asset will be individually classified for purposes of reporting into the FRPP. The intent is to generally define the different classes of assets in their relationship to Reclamation's mission and to demonstrate a link between Reclamation's official asset records, as recorded in financial statements and this AMP.

¹⁶ The original costs of Reclamation's assets are not universally maintained at the minimum level of detail found in the Construction/Plant accounts as specified in RM FIN 07-20. The records only contain whatever detail was available at the time the financial system was automated in the 1970s. Records for many of the older projects do not have complete details of their construction costs. In addition, when major replacements and/or upgrades are made, the original value of the asset is replaced with a new value of the upgraded asset.

Table 6: FY 2011 Undepreciated General Property, Plant, and Equipment¹⁷

Categories	Acquisition Cost (\$000s)	Percent Value
Structures and Facilities	18,097,122	80.15%
Land	1,878,175	8.32%
Construction in Progress	1,754,346	7.77%
Construction in Abeyance	587,366	2.60%
Equipment, Vehicles, Aircraft	131,095	0.58%
Buildings	96,264	0.42%
Other (Software)	35,587	0.16%
Total	22,579,955	100.00%

Financial and Business Management System

The FBMS is a single, integrated tool that will help the Department's bureaus to manage their many unique missions. Implementing FBMS will allow the Department to realize common processes, a common technology platform, integrated real-time data, and improved operational decision-making. Reclamation will adopt FBMS in Deployment 8, which is scheduled to occur in late 2013. Blueprinting sessions are scheduled for August – September 2012. Once deployed, FBMS will be the system of record for the asset inventory and the FRPP.

Asset Valuation

Reclamation holds approximately 70 percent of the constructed assets (from a cost standpoint) of the Department with an original acquisition/construction cost of approximately \$18.2 billion. As such, our inventory of buildings, quarters, structures, and associated land constitutes an important piece of the Department's financial and property system. A number of directives and emerging requirements define the inventory and financial reconciliation requirements for Reclamation and other agencies within the Department and the Federal Government. These directives and requirements are the drivers that initiated a comprehensive asset inventory project in FY 2005. Current Replacement Value (CRV) for assets will be updated annually based on construction cost indices or other engineering cost estimating techniques. As of January 2011, the CRV for all Reclamation assets currently in the FRPP is \$89.8 billion.

¹⁷ FY 2011 Department Agency Financial Report, Reclamation Footnote.

Deferred Maintenance and Repairs

DM amounts have been reported by Reclamation since FY 1998 for reserved works (including mission critical; mission dependent, not critical; and not mission dependent) assets only.¹⁸ As a condition of a non-withdrawn exemption from the requirements of “Attachment G” to the Department’s annual budget guidance, Reclamation agreed that it would compile and report DM in its quarterly and annual financial statements. *It is Reclamation’s policy that no critical maintenance is deferred.* It is important to distinguish between “deferred maintenance and repairs” and “indicated or identified maintenance.” “Deferred maintenance and repairs” are maintenance and repairs that were not performed when they should have been or were scheduled to be and which are put off or delayed for a future period. This is the definition contained within the amended Statement of Federal Financial Accounting Standard No. 6. “Indicated/identified maintenance” is maintenance that is recognized as needing to be accomplished and may or may not be scheduled by the office responsible for it. Most indicated/identified maintenance on mission critical reserved works is identified either in Reclamation’s annual budget process, or through advanced funding arrangements from Reclamation’s (mostly power) customers. Other indicated maintenance is identified through Reclamation’s Review of O&M Program Examination of Associated Facilities.

DM results from a number of different reasons and is considered to be an accepted business practice for any private business or government agency. A continuous level of DM to manage is normal for a capital-intensive organization such as Reclamation. A variety of reasons contribute to the amount of DM being reported by Reclamation:

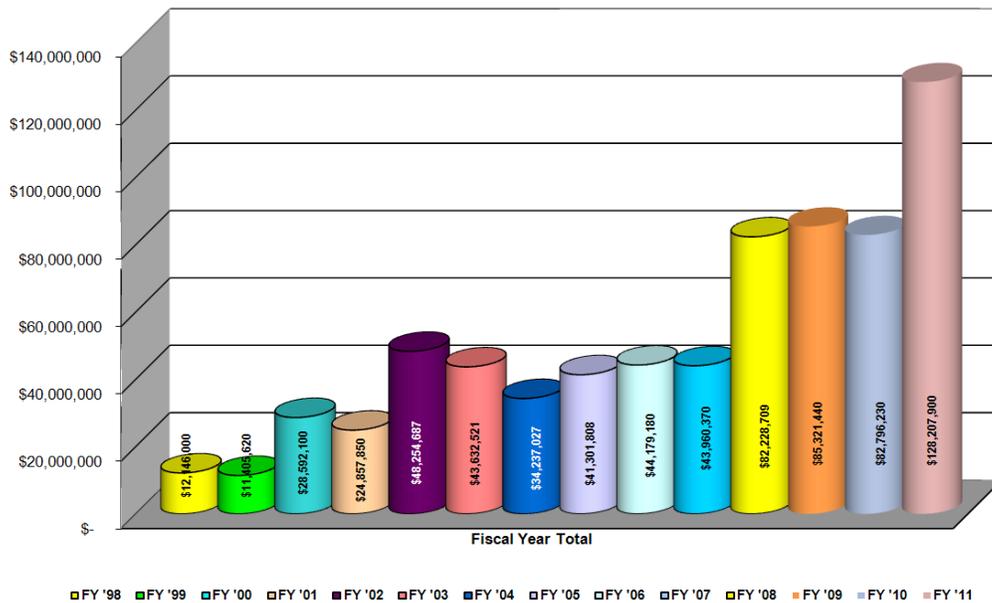
- Accomplishment of unscheduled higher priority work items.
- Lack of available funding.
- Unpredictable weather and water conditions preventing the timely completion of work.
- Conflicts in the schedules of technical specialists, availability of specialized equipment, etc.
- Management’s decision to replace rather than repair and/or upgrade.
- Management’s decision to combine and/or reschedule work.
- Management’s decision to perform research or modeling as a means of determining the best methods or materials to complete work.
- Long lead times in specifying and acquiring large specialized equipment replacements.

¹⁸ Per an informal agreement with the Director, Federal Accounting Standards and Advisory Board, Reclamation does not collect or report information on DM associated with transferred works since Reclamation is not responsible for the day-to-day operation of those facilities. The operating entity of a transferred work is responsible for funding 100 percent of the OM&R. In addition, non-Federal operating entities do not use the accounting concept of DM.

DM is annually evaluated after the fact, i.e., DM is reported on the amount of maintenance that was scheduled, but not completed, and Reclamation does not “project” DM into the future.¹⁹ The trend for DM through FY 2011 is shown in Figure 3. Per Department reporting requirements, DM is reported quarterly.²⁰

Figure 3 – Reclamation-wide Deferred Maintenance

Reclamation Deferred Maintenance - Annual Report



The doubling of DM from FY 2007 to FY 2008 was almost entirely due to the MP Region bringing their outstanding DM work up to current prices. Between FY 2010 and FY 2011, the reported DM for the GP Region tripled due to management decisions to reschedule and do more research to determine the best methods to complete the work.

DM continues to be completed within reasonable timeframes, and Reclamation is adequately managing its accumulation of DM. Each region continues to prioritize its O&M activities to ensure that the higher-priority maintenance items (based on the risk if not completed), including DM items, are completed as soon as practicable.

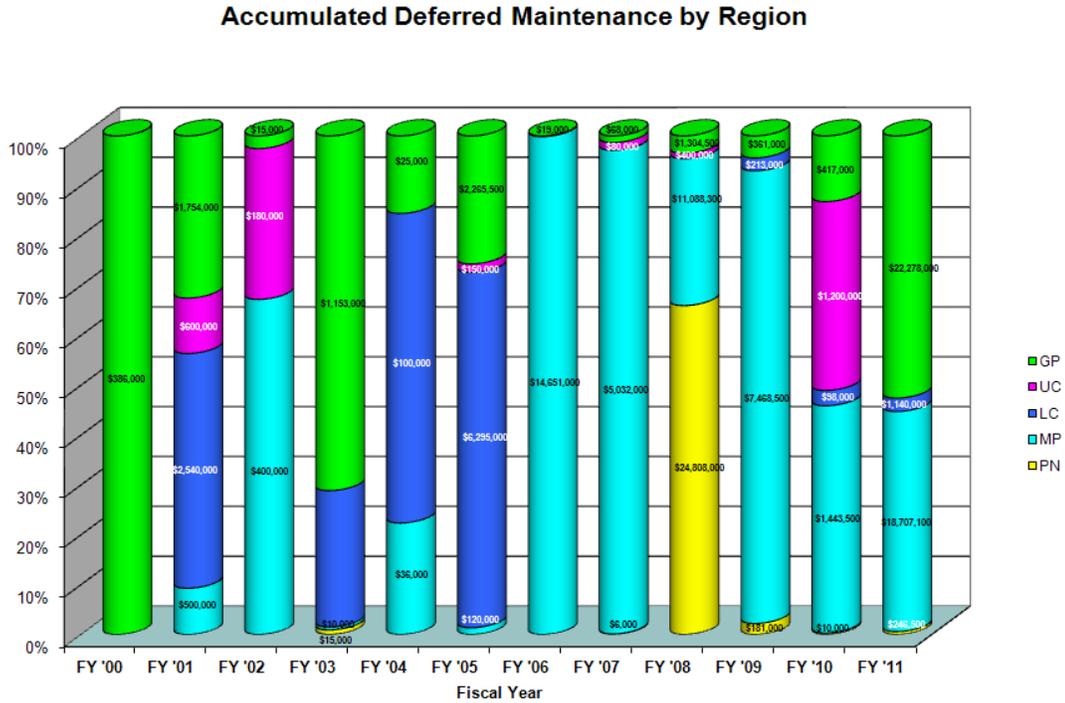
¹⁹ Reclamation’s FY 2012 enacted budget reflects an O&M budget of \$407.5 million. This request covers all Reclamation reserved works, including dams, canals, pipelines, recreation areas, pumping plants, hydropower generation, etc. Reclamation’s budget is financed by appropriations (\$895 million) and non-Federal financing (\$449.7 million).

²⁰ Note that in total, Reclamation’s DM is a relatively small percentage of its original construction costs of \$18.2 billion, and would be an even smaller percentage if those original construction costs were indexed to today’s replacement costs.

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In Figure 4, the different colors represent a particular year's identified DM for each region. The figure demonstrates that, over time, DM identified in one year is addressed and generally becomes a smaller percentage of the overall outstanding DM in subsequent years.

Figure 4 – Accumulation of Deferred Maintenance on Mission Critical Assets



Capital Improvement

Reclamation's capital improvement projects are essential for Reclamation to carry out its mission. The following principles are followed in considering major capital investment decisions expected to exceed \$10 million.²¹ Major capital investments, as defined in OMB Circular A-11, *Preparation, Submission, and Execution of the Budget*, Part 7, "are capital assets that require special management attention because of their importance to the agency mission; high development, operating, or maintenance costs; high risk; high return; or their significant role in the administration of agency programs, finances, property, or other resources." (For the purposes of this AMP, the threshold of \$10 million includes all expected contract and non-contract costs leading up to the commissioning and operation of the asset.)

²¹ This threshold is consistent with the Department's IT and Construction Capital Planning and Investment Control (CPIC) guide at: http://www.doi.gov/pam/programs/asset_management/upload/CPICguide62107.pdf.

1. **DEC Review.**²² Each proposed capital investment in excess of \$10 million will adhere to the principles for independent review found in Reclamation Policy FAC P10²³ and D&S FAC 10-01.²⁴
2. **Value Program Analysis.** For proposed capital investments in excess of \$10 million, the requirements of CMP 06-01²⁵ will be followed.
3. **Work Plan Review.** For capital investments for which customers will be the source of financing or repayment, the regional/area office will consult with the customers on the planned work and investment timeframe.
4. **Investment Review Boards.** For proposed major capital investments in excess of \$10 million, and which will be financed by appropriations, both the RAIRB and the Department will review such investment proposals.²⁶ In reviewing such proposals, the RAIRB will consider the applicable DEC analysis, Value Engineering (VE) analysis, available budget resources, and whether the investment supports Reclamation's strategic business objectives. Selected investments will be supported by a business case in the form of an OMB Exhibit 300 in the Department's Electronic Capital Planning and Investment Control Program (eCPIC).²⁷ For capital investment work associated with power generation as financed by power customer funds, this work would be thoroughly reviewed by those customers, and not subject to the Department's investment review board process unless there was \$10 million or more of appropriated funding work anticipated for a particular project.
5. **Design and Construction.** The design and construction of each proposed capital investment in excess of \$10 million will be accomplished pursuant to FAC P03.²⁸ The RD will recommend appropriate cost-schedule performance tracking and evaluation for acceptance at the appropriate higher headquarters level.
6. **Earned Value Methodology.** Design and construction performance will be tracked using earned value methodology. Construction performance will be reported quarterly in eCPIC for those projects that are reviewed by the Department.

²² Reclamation's DEC/DSO. Review by the DEC is a verification and quality assurance function to ensure all appropriate standards have been applied to the design and estimation of the costs of a project, usually those over \$10 million.

²³ *Independent Oversight of Design, Cost Estimating, and Construction* (FAC P10), http://intra.usbr.gov/tr/dec/pdf/authorities/rm_fac-p10.pdf.

²⁴ *Identifying Design, Cost Estimating, and Construction Projects for which Independent Oversight Review is Required, and Performing Those Reviews* (FAC 10-01), http://intra.usbr.gov/tr/dec/pdf/authorities/rm_fac10-01.pdf.

²⁵ *Reclamation Value Program* (CMP 06-01), <http://www.usbr.gov/recman/cmp/cmp06-01.pdf>.

²⁶ For Departmental construction approval process, see the IT and CPIC Guide at: http://www.doi.gov/pam/programs/asset_management/upload/CPICguide62107.pdf.

²⁷ For projects that are considered operation, maintenance, or replacement activities, an OMB Exhibit 300 is not required.

²⁸ *Performing Design and Construction Activities* (FAC P03), <http://www.usbr.gov/recman/fac/fac-p03.pdf>.

Capital investment decisions in excess of \$2 million and less than \$10 million.

For the level of capital investment between \$2 million and less than \$10 million, all of the above criteria apply except that the Department does not review this proposed investment. The RAIRB will review and approve such investment proposals. Investment proposals will be supported by a business case. In reviewing such proposals, the RAIRB will consider the DEC review, VE analysis, available budget resources, and whether the investment supports the mission critical objectives outlined above.

Capital investment decisions less than \$2 million. For the level of investment less than \$2 million, a less rigorous review process will apply unless some nonfinancial level of controversy is associated with the proposed asset. Then, the asset review can be elevated to a higher level of scrutiny.

1. **DEC Review.** Unless categorically excepted, all Reclamation projects including planning, design, cost estimating, and construction will be considered for independent review per Reclamation Policy FAC P10 and D&S FAC 10-01.
2. **Value Program Analysis.** For proposed capital investments less than \$2 million, the requirements of CMP 06-01 will be followed, if the expected benefits outweigh the costs of a value analysis on this smaller class of investments.
3. **Workplan Review.** For capital investments for which customers will be the source of financing, the regional office will consult with the customers on the planned work and investment timeframe.
4. **BRC.** For proposed capital investments less than \$2 million, which will be financed by appropriations, the RAIRB is not required to specifically review and approve such investment proposals. However, all investment decisions are subject to review within the Reclamation annual BRC process in the context of overall budget decision-making.
5. **Design and Construction.** The design and construction of each proposed capital investment of less than \$2 million will be accomplished pursuant to applicable Reclamation engineering standards. The RD will recommend appropriate cost-schedule performance tracking and evaluation for acceptance at the appropriate higher headquarters level.
6. **Earned Value Methodology.** Design and construction performance for projects greater than \$1 million will be tracked using earned value methodology.

Assessments

Each mission critical facility is monitored as to its overall reliability condition and periodically evaluated as to whether it is meeting an acceptable level of performance, which will trigger subsequent decisions on maintenance, repair, or replacement. The actual evaluation of condition and performance is conducted through several business processes.

Reclamation conducts reviews of its facility assets to assess their condition, identify and document problems, and establish corrective actions for any deficiencies requiring mitigation. Power facility reviews are conducted in accordance with FAC 04-01, *Power Review of Operation and Maintenance (PRO&M) Program* (<http://www.usbr.gov/recman/fac/fac04-01.pdf>). Reviews of high- and significant-hazard dams are conducted in accordance with FAC 01-07, *Review/Examination Program for High- and Significant-Hazard Dams* (<http://www.usbr.gov/recman/fac/fac01-07.pdf>). Reviews of associated facilities other than high- and significant-hazard dams are conducted in accordance with FAC 01-04, *Review of Operation and Maintenance (RO&M) Program Examination of Associated Facilities (Facilities Other Than High- and Significant-Hazard Dams)* (<http://www.usbr.gov/recman/fac/fac01-04.pdf>). Comprehensive Security Reviews are periodically conducted to ensure adequate physical, technical, and procedural systems are in place to protect Reclamation's infrastructure. Performance monitoring for high- and significant-hazard dams will be conducted pursuant to FAC 01-08, *Dam Safety Performance Monitoring for High- and Significant-Hazard Dams* (<http://www.usbr.gov/recman/fac/fac01-08.pdf>).²⁹

The outcome of these reviews is formal reports which contain categories of recommendations that are required to be acted upon over various periods of time. The accomplishment of recommended actions is tracked by Policy's MSD or SSLE's Dam Safety Office and constitutes important data for budget decisions and management performance evaluations.

Each D&S details the requirements for inspection of each mission critical asset, and requires documentation and follow-up for resolving identified issues.

Reclamation uses the FRR to capture information on dams and associated facilities to indicate a relative reliability condition and to develop trending data over time. It was designed as an alternative to the FCI, since it not only evaluates maintenance factors, but encompasses O&M factors as well that contribute to the overall reliability condition of these more complex assets that Reclamation has responsibility for.

For high- and significant-hazard dams, the FRR evaluates:

- Status of site reviews.
- Status of operating procedures and their exercise.
- Presence of trained dam operators.
- Status of security recommendations.
- Status of reservoir and operating restrictions.
- Status of dam safety issues and recommendations.

²⁹ Buildings, quarters, and recreation sites are simultaneously reviewed in conjunction with mission critical facility reviews, dependent upon the CRV of the asset using Reclamation's D&S.

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- Structural performance (instrumentation).
- Public and personnel safety recommendations.
- Status of Category 1 and Category 2 maintenance-related recommendations.³⁰
- MR&R cost ratio.

For reserved works associated facilities, the FRR evaluates:

- Status of site reviews.
- Status of operating documents.
- Training of operators.
- Status of operating restrictions.
- Status of operation and security recommendations.
- Status of Category 1 and Category 2 maintenance-related recommendations.

Each high- and significant-hazard dam has an annual FRR completed or updated. Similarly, each reserved works' mission critical associated facility has an FRR completed or updated annually. Thus, the FRR is a tool that can aid in the evaluation of the reliability condition of these mission critical facilities and the need for additional resources (e.g., increased maintenance funding), but it is not the only indicator. Additionally, Reclamation has a sophisticated dam safety risk assessment program that prioritizes failure risk at high- and significant-hazard dams. Reclamation also has guidelines for use on inspections of its dams, power plants, and associated facilities.

In 2008, Reclamation developed the Reclamation Facility Review Resource Matrix as a tool to be used to combine site-specific and program reviews conducted by Reclamation at the facility level. Availability of information on content and purpose of reviews complements the efforts to gain efficiencies while balancing the integrity of each of the reviews. The matrix is a resource that characterizes the various reviews (facility/program), provides information to enhance local decisions, and fosters opportunities for customer involvement. It aims to gain efficiency through combining reviews at the local level, where decisions concerning personnel (Reclamation and customer) involvement, preparatory requirements, site requirements, and review schedules are closely coordinated. A copy of this matrix can be found in Appendix C.

³⁰ Category 1 O&M recommendations involve corrections of severe deficiencies where immediate and responsive action is required to ensure safety and structural and operational integrity of a facility. Category 2 O&M recommendations cover a wide range of important matters where action is needed to prevent or reduce further damage or preclude possible operational failure of the facility.

Asset Prioritization

For the purposes of this AMP, “mission critical infrastructure (or assets)” is defined as “a facility or piece of equipment that, if unavailable or inoperable, would substantially detract from the achievement of Reclamation’s business objectives.” The intent is to focus on water and power infrastructure – the “hard” assets that physically capture, store, generate, or deliver products and services to Reclamation’s customers. Also for the purposes of this AMP, two additional asset categories are provided: (1) “mission dependent, not critical” assets which are important to supporting the achievement of business objectives, but would not necessarily detract substantially from the achievement of Reclamation’s mission if they were temporarily rendered unavailable or inoperative, e.g., buildings, quarters, fleet, space (Reclamation-owned, commercial-leased, and General Services Administration (GSA)-provided, etc.); and (2) “not mission dependent” assets which are peripheral to Reclamation’s mission, but for legal or regulatory reasons, must be maintained until feasible disposal options are identified (e.g., recreation, heritage assets, etc.), or which are identified for disposal.³¹

Reclamation continues to manage its assets with the primary focus on mission critical assets (e.g., major structures such as dams, canals, power plants, pumping plants, pipelines, etc.) and, to a lesser extent, mission dependent, not critical (e.g., buildings) and not mission dependent assets (e.g., heritage assets). Table 7 provides various characteristics of Reclamation’s assets, on an approximate basis, as reported in the FRPP as of November 2011.³²

As Reclamation adds assets to its inventory, the API/Mission Dependency on those assets will be determined. Initial API/Mission Dependency determinations for existing assets are unlikely to change over time.

As depicted in Figure 5, Reclamation’s mission critical and mission dependent assets fall in the upper quadrants of the CI/Mission Dependency graph. These assets are structures (mission critical) and buildings (mission dependent, not critical), characterized by being in various states of operating condition.

³¹ These are Reclamation’s equivalent designations of asset terms set forth in the GSA’s FY 2011 *Guidance for Real Property Inventory Reporting*. In that guidance, GSA defines (1) “mission critical assets” as “without constructed asset or parcel of land, mission is compromised;” (2) “mission dependent, not critical assets” which are described as “does not fit into *Mission Critical* or *Not Mission Dependent* categories;” and (3) “not mission dependent” as “mission unaffected.” Note that Reclamation uses various definitions of “National Critical Infrastructure,” “Major Mission Critical,” and “Mission Critical” in its Security Directives. The use of the above definitions in this AMP should not be necessarily considered parallel concepts with those security program-oriented definitions.

³² The FRPP is a database maintained by the GSA to collect information on Federal real assets. These values presently understate the total CRV for Reclamation. As Reclamation proceeds with the validation of its asset inventory, more assets and dollars will be verified for inclusion in the FRPP over time.

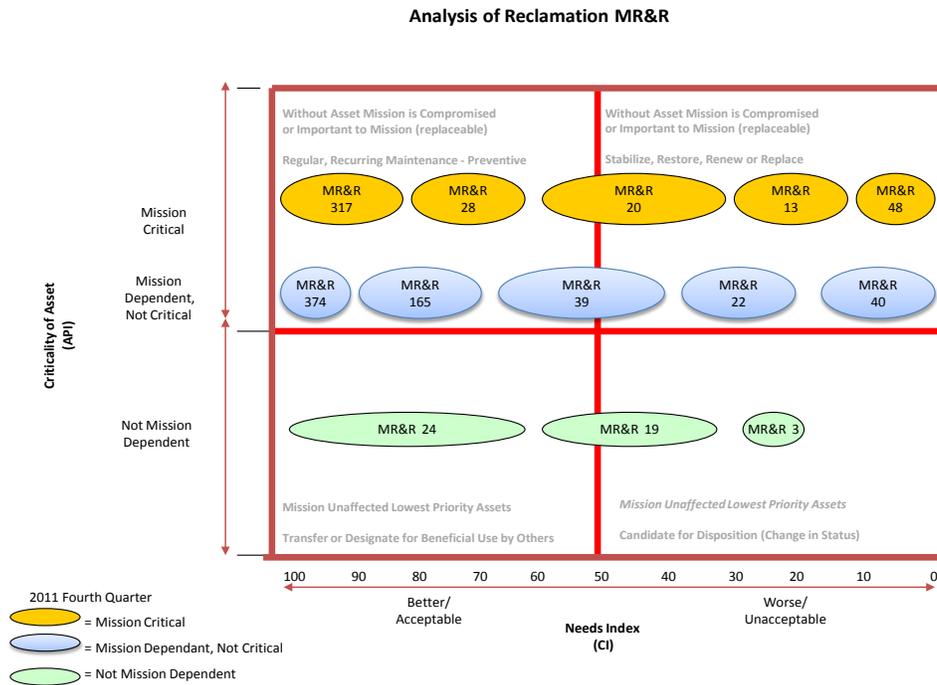
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The lower two quadrants depict not mission dependent assets (e.g., recreation facilities, cultural resources) and their reported condition.

Table 7: Asset Categorization and Estimated CRV as of FY 2011³³

Mission Dependency	Asset Category	Total CRV	Reserved Works CRV	Transferred Works CRV
Mission critical	Structures and facilities (e.g., dams, power plants, pipelines, canals, SCADA systems, communication systems, associated land, etc.) ³⁴	\$82.8 billion	\$45.2 billion	\$37.6 billion
Mission dependent, not critical	Buildings and quarters (and associated land), installed equipment, fleet, internal use software	\$6.5 billion	\$2.3 billion	\$4.2 billion
Not mission dependent	Recreation, heritage (and associated land)	\$520 million	\$44.6 million	\$475.4 million

Figure 5 – Analysis of Reclamation Assets Using CI/API Methodology



³³ Indexed value of assets in the FRPP as of FY 2011.

³⁴ Associated construction-in-progress is included.

Total Cost of Reclamation Asset Management

Multi-year Portfolio Plans

Reclamation adheres to the requirements of EO 13327 and the annual Department Budget Guidance Attachment G. Reclamation's DM and Capital Improvement projects include projects that are funded completely by Reclamation appropriations as well as projects that are cost-shared with other entities.

Reclamation's Capital Improvement Five-Year Plan covers a variety of projects that help address the condition of its infrastructure. The Five-Year Plan includes projects that address dam safety risk, resource protection, and litigation responsibilities. These capital improvement projects are essential for Reclamation to carry out its mission to manage, develop, and protect water and related resources.

Reclamation's DM projects are maintenance projects that were not completed when originally scheduled. The DM Five-Year Plan includes DM projects that were identified at the end of the FY prior to the reporting period. The amount of DM reported includes that associated with reserved works facilities, regardless of the source of funding.

Planning, Design, Construction, or Acquisition

In accordance with OMB Circular A-11, EO 13327, and the Department's CPIC Guide and Schedule, Reclamation provides annual updates of DM and Capital Improvement of the Five Year Plans and OMB Exhibit 300 business cases for real property capital asset major projects.

Major capital investments follow the guidelines outlined in the Capital Improvement section and are entered into the Department's eCPIC program. Annual submissions are coordinated with the regions through the CPIC Coordinator in the MSD. Quarterly and annual updates are entered into eCPIC and reported to the Department and OMB throughout project completion.

Annual Operation and Maintenance

It has long been Reclamation's policy that once construction of a project is completed, the O&M of the facilities often are transferred to the water-user entities responsible for repayment of the project's construction costs. The O&M of many of Reclamation's single-purpose irrigation projects, and single-purpose

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irrigation facilities of multipurpose projects (e.g., canals, pumping plants, pipelines, and drains), are performed on Reclamation's behalf by the water users, (e.g., water districts). Facilities for which O&M responsibility has been transferred pursuant to formal transfer agreements with Reclamation are referred to as transferred works. In most cases (especially for single-purpose irrigation projects/facilities), the contracting entity funds and manages the day-to-day O&M of the transferred works facilities. However, in nearly all cases (unless authorized by Congress), the Federal Government still owns these facilities (retains the title) and Reclamation maintains an oversight role, which includes periodically inspecting the facilities and reviewing the water users' maintenance practices and operating procedures to ensure the Federal investment is adequately protected.

In general, Reclamation retains O&M responsibility on its larger (national interest) multipurpose projects, or the multipurpose facilities (e.g., storage reservoirs and power plants) of a given project. These are typically projects or facilities that serve at least two purposes: provide water service to multiple water users, and/or are operated to meet the requirements of interstate compacts, international treaties, and court decrees. Facilities for which Reclamation retains O&M responsibility are referred to as reserved works. Reclamation performs O&M activities on these facilities using its employees or through contracts for major non-recurring maintenance tasks. For these facilities, Reclamation collects funds in advance from project beneficiaries to cover the reimbursable share of the estimated annual O&M costs.

Under current funding levels, Reclamation continues to be diligent in its condition assessment practices and programs to identify facility deficiencies which require mitigation and address them at an early stage to avoid or minimize more significant maintenance and the need for major MR&R activities. Reclamation continues to emphasize preventive maintenance in the O&M of its infrastructure through regularly-conducted facility reviews to identify O&M deficiencies at an early stage to avoid more costly XOM. This has resulted in the lengthening of the service lives of these facilities and their continued reliability to deliver water and power services. However, due to the aging of the infrastructure, there is an increasing need by both Reclamation and its responsible operating organizations to invest in activities to sustain their intended missions. Reclamation resources will be applied such that mission critical assets are maintained, repaired, or replaced so as to minimize the risk of not achieving Reclamation's business objectives. Reclamation's annual O&M cost for FY 2011 for both transferred and reserved works was \$592.8 million.

Capital Asset and Resource Management Application

The Capital Asset and Resource Management Application (CARMA) represents Reclamation's implementation of the Facility Maintenance System (FMS), a Department investment utilizing Maximo™ Asset Management System as it is a core software product. CARMA is composed of several software elements:

Maximo™, Actuate, Oracle RDBMS, and Reclamation Corporate Data Warehouse. CARMA consolidates 18 independent implementations of Maximo™ version 4.1.1 into a single installation of IBM Maximo™ version 6.x, located in the Denver corporate office, integrated with Reclamation's Electronic Time and Attendance System.

CARMA is used by 24 Reclamation sites to reduce equipment downtime, closely control and track maintenance expenses, cut spare parts inventory and costs, improve safety, increase purchasing efficiency, and more effectively deploy productive assets, personnel, and other resources. CARMA is employed as a tool to assist in the tracking and scheduling of work so that the highest-value work is readily identified and can be scheduled on a priority basis. Current CARMA sites include: Closed Basin (Alamosa), Central California Area Office, Grand Coulee, Canyon Ferry, Curecanti, Davis Dam, Elephant Butte, Eastern Colorado Area Office, Flaming Gorge/Fontenelle, Glen Canyon, Hungry Horse, Hoover, Lower Columbia Area Office, Milk River/Marias Unit, Northern California Area Office, Parker Dam, South Central California Area Office, Snake River, Upper Columbia Area Office, Wyoming Area Office, Yuma Area Office, Yuma Desalting Plant, Yellowtail Dam Site, and Klamath Basin Area Office. Central Valley Operations is scheduled to be implemented in calendar year 2012.

As the result of an OMB TechStat evaluation of FMS in 2010, it was recommended and agreed by all parties (the Department, Reclamation, and OMB), that CARMA should be segregated from FMS and become an independent Major IT Investment. The first submission of the standalone Reclamation CARMA IT Investment was in 2010. Currently, the Department is proceeding with an iStat evaluation to determine how the Department will manage maintenance management software in the future.

Disposition

The primary method of disposing of mission critical assets is through title transfer to non-Federal operating entities. Reclamation's title transfer policy is documented in the *Framework for the Transfer of Title – Bureau of Reclamation Projects – August 7, 1995* (Appendix D).

Assets disposed of in September 2011 amounted to 14 buildings with a value of \$1,927,862 and one structure with a value of \$12,498. 28 assets were noted as excess and will be disposed of in the future. Processes have already been initiated to ensure that rules and regulations for eventual disposal are being followed. As the processes are completed, the status of each building and structure identified will change as appropriate. Over 70 percent (20 of the 28 assets) are operated and maintained by our operating entities.

Other asset disposal policies are reflected in the Federal Management Regulations ([41 CFR 102](#)), Departmental Manual (<http://elips.doi.gov/elips/browse.aspx>),

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RM *Delegations of Authority for Quarters and Property Management* ([PRM 01-01](#)), and RM *Land Disposal* ([LND 08-02](#)). Generally, such disposals yield very small amounts of revenue to Reclamation.

Cost Savings and Innovation for Asset Management

Reclamation examined areas where cost savings could be realized in support of the Department's Cost Savings and Innovation Plan. Outlined below are a few of the asset management related areas in which Reclamation identified as potential areas for cost savings.

Space Management

Reclamation's five-year space plan is a significant part of the Department's Multi-Year Strategic Space Plan. Reclamation continues to participate in and strives to implement the goals and objectives in the Multi-Year Strategic Space Plan. Reclamation ensures that facility acquisitions, lease renewals, and relocations are driven by mission-related needs. The Department's Space Coordination Office uses information provided in this plan to assist bureaus in identifying opportunities for collocation, consolidation, and other actions to improve space utilization and mission support. Reclamation will continue to be proactive within its owned and leased space management program to fulfill mission needs and requirements while ensuring economical assignments and utilization of space. Reclamation's goals are to support mission and strategic goals, and to promote full and appropriate utilization and disposal of unneeded assets in a cost-effective manner.

One of the challenges is that approximately two-thirds of Reclamation's buildings and structures are operated and maintained by our operating entities. This means the operating entities are typically responsible for funding and managing the day- to-day O&M of project buildings and structures. Since the cost to operate and maintain the assets rests with the operating entities, the cost saving is minimal to the Federal government. In fact, as implied by just the mitigation costs for hazardous materials, disposing of these assets in most cases exceeds the value of the asset undergoing disposition. Disposal of buildings is relatively straightforward as compared to structures. Structures on the other hand, can be more challenging to dispose of (e.g., the removal of a dam, power plant, diversion tunnel, or irrigation/drainage system). Disposal costs for these types of assets can easily exceed the original cost to construct them.

Telework

Telework within Reclamation is viewed as a positive method of getting work accomplished in a flexible manner. The majority of work currently conducted through teleworking is on a situational basis, such as completing projects, accommodating personal situations (e.g., pregnancies or recovering from

surgery), and reducing commuting. At the present time, teleworking in Reclamation is not used to such an extent that “hoteling” occurs (i.e., the sharing of a single office space by multiple employees).

Disposals

Reclamation had targeted 51 building assets for disposal between FY 2010-2012. As assets are targeted for disposal, minimal funding is allocated to those assets. Reclamation will continue to work with the GSA to implement additional removals in the future because of the potential for lower disposal costs compared to a demolition contract. Reclamation will continue to determine on a case-by-case-basis the most cost-effective method for disposing of unneeded assets now and into the future.

Sustainability

The Sustainability and Energy Program is designed and its components have been comprehensively integrated to ensure Reclamation meets the requirements of several EOs, Federal Acts, and Secretarial Orders (*e.g.*, EO 13514, Energy Independence and Security Act of 2007, Energy Policy Act of 2005, *et al.*). Examples of the requirements, which Reclamation must address, include reducing (a) energy and water (potable and other) intensity, (b) GHG emissions from Scopes 1, 2, and 3 sources, and (c) Reclamation's carbon footprint; and increasing (a) renewable energy production and usage, (b) alternative fuel use in fleets, and (c) sustainable/green buildings. Reclamation must implement Scopes 1, 2, and 3 GHG reductions to achieve 20 percent reductions for Scopes 1 and 2, and a nine-percent reduction for Scope 3 by 2020 relative to a FY 2008 baseline.

Environmental Management Systems (EMS) provide Reclamation with a management framework to identify and reduce the environmental impacts of its operations and activities, increase operational control over environmental requirements, and integrate environmental concerns into day-to-day decision making.

The Sustainability and Energy Program and EMS directly support Reclamation's core mission and align with priorities and key focus areas of increasing energy efficiencies to reduce Reclamation's carbon footprint, meeting the OMB Sustainability and Energy Program's scorecard requirements, and achieving the Departmental goals established in its Strategic Sustainability and Performance Plan. Only by implementation and adoption of the Sustainability and Energy Program across Reclamation will we achieve our GHG emissions reduction goals. GHG emissions reduction is the integrating metric for sustainability across the Federal government.

Workforce Management

Every five years, Reclamation reviews and updates its Workforce Succession Plan to comprehensively address future skills and staffing needs, as well as to look for opportunities to practice cost containment. As part of the current effort to address the FY 2013 – 2017 period, Reclamation will be evaluating the critical skills and employment needed to effectively support asset management throughout the agency. Mission critical occupations and associated skills will be identified, and strategies for retaining/filling such positions will be identified and pursued.

Improvements in Asset Management

Use of Geographic Information System

Hydropower and Renewable

Reclamation initiated work to develop a plan to utilize advanced Geographic Information System (GIS) technology to build a comprehensive power system and water delivery database that can be used cross-functionally for more accurate and consistent renewable energy development planning and research. The system will initially provide critical information on existing Reclamation renewable energy development. The second phase will be to add in potential developments and overlay that with development opportunities for other renewable resources. This activity began in late FY 2011 and will continue through FY 2015.

Rural/Urbanized Canals

Reclamation has initiated GIS work activities to place rural and urbanized canals (e.g., carriage facilities) into a GIS application. Data from *Reclamation's Statistical Compilation of Engineering Features on Bureau of Reclamation Projects* was used as the baseline data set. Coordination and V&V with the five regions on specific geospatial canal data are ongoing in FY 2012-FY 2013.

Project Management Framework

To maximize the success of its projects, Reclamation is committed to implementing effective project management at all levels and for all types of project work, whether it be IT projects or non-IT projects. In certain cases, project management processes are already mandated by the Department or governmental higher-level policy. Reclamation has developed a project management (PM) framework intended to address management for all types of projects. It specifically focuses on providing scalable requirements for projects where Reclamation retains discretion on the level and type of PM requirements.

In 2007, the OMB issued directives for Executive Branch agencies to establish a structured development program for program and project managers. Since then, the Department and OMB have refined or developed additional requirements that must be integrated into Reclamation's business practices. In 2009, Reclamation first issued policies and D&S for project management. In June 2011, Reclamation's Deputy Commissioner, Operations, directed the Coordination and Oversight Group (COG) to establish the PM Implementation Team as a sub-team of the COG, and tasked the team with developing an integrated PM framework

with the objective to guide the consistent administration and practice of project management for all programs, projects, investments, and initiatives.

Key guiding principles of the PM framework include:

- The PM framework must add value to the performance of the agency in conducting its work by clarifying project management practices for those projects for which no specific mandates apply.
- The application of PM to individual activities must be scalable to the size, sensitivity, scope, and complexity of the project, while also enabling the use of common means to execute, track, and report project status.
- Implementation of the PM framework must balance the need for a base level of consistency across the agency by providing flexibility to each directorate to implement and apply the PM principles as best works for its organization.

Appendices

Appendix A – Definitions

The following definitions are used in this Asset Management Plan (AMP). In many cases, the definition (e.g., “associated facility”) is Bureau of Reclamation-specific and is not used by other bureaus or agencies. In other cases, the definition is either in common usage or is a derivative of other common definitions (e.g., “asset management”).

- A. **Asset.** A Reclamation asset is a capitalized facility, building, structure, project feature, power production equipment, recreation facility, or quarters, as well as, capitalized and non-capitalized heavy equipment, motor vehicles, and other installed equipment that is used to achieve the mission of Reclamation to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. Assets can be mission critical; mission dependent, not critical; or not mission dependent.
- B. **Asset Management.** Asset management is a strategic approach to managing Reclamation’s infrastructure and supporting assets. It focuses on business processes for resource allocation and utilization with the objective of better decision-making based upon quality information and well-defined objectives.¹ Reclamation’s asset management is comprised of five principal activities:
- Optimization of a facility’s asset performance in support of Reclamation business objectives.
 - Analysis of an asset’s contribution to meeting business objectives.
 - Analysis of asset condition at levels consistent with expected value and related performance measurement.
 - Application of resources to assets in support of optimal performance for meeting business objectives.
 - Lifecycle management.
- C. **Asset Priority Index.** A metric which weights both the importance of an asset in terms of its support to an organization’s mission and business objectives, and other legally binding value (e.g., heritage value). It is used in conjunction with the facility condition index (FCI) and is synonymous with mission dependency.

¹ Adopted from the *Transportation Asset Management Guide*, prepared for the National Cooperative Highway Research Program Project 20-24(11) by Cambridge Systematics, Inc., with Parsons Brinckerhoff Quade & Douglas, Inc., Roy Jorgensen Associates, Inc., and Paul D. Thompson (November 2002, AASHTO Publication RP-TAMG-1).

- D. **Associated Facilities.** Associated facilities are non-dam, water-related facilities such as canals, distribution systems, pumping plants, etc.
- E. **Business Objective.** A business objective is a defined outcome (not output) that directly supports Reclamation’s mission.
- F. **Business Practice.** A business practice is a rule which Reclamation employees are expected to follow when conducting business processes.
- G. **Business Process.** A business process “consists of a group of logically-related tasks that use the resources of the organization to provide defined results to support the organization’s objectives.”²
- H. **Capital Improvement Projects.** Reclamation’s capital improvement projects are projects that are essential for Reclamation to carry out its mission. Major capital improvement projects, as defined in the Office of Management and Budget’s (OMB) Circular A–11, Part 7, “are capital assets that require special management attention because of their importance to the agency mission; high development, operating, or maintenance costs; high risk; high return; or their significant role in the administration of agency programs, finances, property, or other resources.”
- I. **CARMA.** CARMA is the acronym for the Capital Asset and Resource Management Application, the name for Reclamation’s implementation of Maximo Enterprise Suite (MXES)TM.
- J. **Current Replacement Value.** The estimated Current Replacement Value (CRV) of an asset. CRV is defined as the standard industry cost and engineering estimate of materials, supplies, and labor required to replace a facility or item of equipment at its existing size and functional capability, and to meet applicable regulatory codes. Reclamation uses a construction cost index that maps Engineering News Record data indices for a variety of constructed assets to calculate an indexed replacement value using the acquisition cost and construction date.
- K. **Disposal.** An asset (e.g., building, structure) that is targeted for removal from the Federal Real Property Profile (FRPP) inventory.
- L. **Deferred Maintenance.** “Deferred maintenance and repair are maintenance and repairs that were not performed when they should have been or were scheduled to be and which are put off or delayed for a future period.”³
- M. **Directives and Standards.** Directives and Standards contain the minimum scope and level of detail necessary to ensure consistent application of requirements for various programs. They are contained within the Reclamation Manual (RM) which is referenced at numerous points in this AMP. Directives and Standards are developed

² Harrington, H.J., *Business Process Improvement*, McGraw-Hill, New York, 1991, Page 9.

³ Statement of Federal Financial Accounting Standards No. 6, ¶77 ([http://www.fasab.gov/pdf/ffas/SFFAS No.6.pdf](http://www.fasab.gov/pdf/ffas/SFFAS%20No.6.pdf)).

corporately, i.e., they undergo a comprehensive drafting and review process by the functional experts in the area, regional, and corporate offices before they are adopted.

- N. **Emergency Extraordinary Operations and Maintenance.** Emergency major, non-recurring maintenance to Reclamation-owned or -operated facilities, or facility components.
- O. **Extraordinary Operations and Maintenance.** Major, non-recurring maintenance to Reclamation-owned or -operated facilities, or facility components.
- P. **Facility.** A term used to encompass buildings and other structures, associated land, installed equipment, and other real property improvements, including utility systems and collateral equipment. The term does not include operating materials, supplies, special tooling, special test equipment, and non-capitalized equipment. The term “facility” is used in connection with buildings (facilities having the basic function to enclose usable space), structures (facilities having the basic function of an operational activity), associated land, and real property improvements.
- Q. **Facility Condition Index.** In accordance with Department of the Interior guidance, FCI is calculated by dividing the dollar amount of deferred maintenance by the estimated CRV of an asset. Reclamation has expanded this definition to reflect major rehabilitation and replacement (MR&R) needs on its facilities.
- R. **Financial and Business Management System.** A single, integrated financial and business management tool that will help the Department and Reclamation manage their missions. FBMS will help Reclamation manage a variety of administrative functions, including Real Property.
- S. **Federal Management Regulations (FMR) 41 Code of Federal Regulations (CFR) 102.** The FMR are regulations prescribed by the Administrator of General Services Administration (GSA) to govern and guide Federal agencies. The FMR provides policies covering the acquisition, management, utilization, and disposal of real property and motor vehicles by Federal agencies.
- T. **Federal Property Management Regulations (FPMR) 41 CFR 101.** The FPMR are regulations prescribed by the Administrator of GSA to govern and guide Federal agencies. The FPMR provides policies covering the acquisition, management, utilization, disposal of supply, and inventory management by Federal agencies.
- U. **Federal Real Property Council.** Executive Order (EO) 13327 established a FRPC for administrative purposes to develop guidance for and facilitate efforts of Senior Real Property Officers (SRPO). The FRPC is made up of all agency SRPOs, the Controller of the Office of Management and Budget (OMB), the Administrator of GSA, and other employees deemed necessary by the Chairman of the Council. The Deputy Director for Management of OMB serves as the chair of the Council.

- V. **Federal Real Property Profile.** A system administered by GSA that houses the Federal Real Property inventory data (e.g., buildings, structures, lands).
- W. **Facility Reliability Rating.** A performance measure rating system applied to Reclamation's high- and significant-hazard dams, power plants, and associated facilities, which documents important factors associated with the reliability of those assets.
- X. **Heritage Asset.** Property, plant, or equipment that is unique for one or more of the following characteristics: (1) historical or natural significance; (2) cultural, educational, or artistic (aesthetic) value; or (3) significant architectural characteristics. Heritage assets consist of (1) collection-type heritage assets, such as objects gathered and maintained for exhibition (e.g., museum collections, art collections, library collections); and (2) non-collection-type heritage assets, such as parks, memorials, monuments, and buildings (Statement of Federal Financial Accounting Standards 29).
- Y. **Historic Property.** Any prehistoric or historic district, site, building, structure, or object, included on, or eligible for inclusion on, the National Register of Historic Places. This includes artifacts, records, and material remains related to such a property.
- Z. **Maintenance.** Maintenance is the act of keeping fixed assets in acceptable condition. It includes preventive maintenance, normal repairs, replacement of parts and structural components, and other activities needed to preserve the asset so it continues to provide acceptable services and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset, or otherwise upgrading it to serve needs different from, or significantly greater than, those originally intended.⁴
- AA. **Major Rehabilitation and Replacement.** Extraordinary maintenance (MR&R) activities which are separate and distinct from those activities that would typically be addressed as part of a facility's regular (base) operations and maintenance (O&M) program.
- BB. **Maximo™.** A commercial, computerized maintenance management system adopted by Reclamation and the Department as its official asset maintenance management system.⁵
- CC. **Mission Critical Asset.** A mission critical asset is a facility or piece of equipment that, if unavailable or inoperable, would substantially detract from the achievement of Reclamation's business objectives. This definition encompasses major asset classes such as dams, power plants, canals, pipelines, distribution systems, and associated structural, mechanical, and electrical systems and subcomponents.

⁴ Statement of Federal Financial Accounting Standards No. 6, ¶78 (<http://www.fasab.gov/pdf/files/sffas-6.pdf>).

⁵ Known as the *Facility Maintenance Management System*.

- DD. **Mission Dependent, not Critical Asset.** A mission dependent, not critical asset is an asset which is important in supporting the achievement of business objectives, but would not necessarily detract substantially from the achievement of Reclamation's mission if it was temporarily rendered unavailable or inoperative (e.g., buildings, quarters, fleet, heavy equipment, etc.).⁶
- EE. **Multi-Use Heritage Assets.** Heritage Assets whose predominant use is general government operations.
- FF. **Not Mission Dependent Asset.** A not mission dependent asset is peripheral to Reclamation's mission, but for legal or regulatory reasons, must be maintained (e.g., recreation, cultural resources, heritage assets, etc.), or is otherwise identified for disposal.
- GG. **RAX.** An acronym for "replacement, additions, and extraordinary maintenance." RAX is used in Reclamation's program formulation and budget allocation processes to identify asset rehabilitation or replacement requirements beyond the category of ordinary maintenance.
- HH. **Reclamation Manual Supplement to the Federal Property Management Regulations, 114S.** The RM provides a link to Reclamation's supplement to the FPMR related to acquisition, management, utilization, and disposal of real and personal property.
- II. **Reserved Works.** Reserved works refers to facilities that are owned, operated, and maintained by Reclamation (in contrast to transferred works). It also includes those facilities where O&M services are contracted with another entity, but funded by Reclamation.
- JJ. **Reclamation Asset Investment Review Board.** Reclamation's Leadership Team serves as the RAIRB. In that capacity, RAIRB evaluates and reviews investment proposals according to parameters set forth in this AMP.
- KK. **Senior Real Property Officer.** EO 13327 establishes a SRPO in charge of effective management of the agency's real property by determining what it owns, what it needs, and how and what it costs to manage its real properties; developing and implementing asset management plans; developing and monitoring real property performance measures; and disposing of properties that are not needed.
- LL. **Title Transfer.** Where Reclamation turns over ownership and O&M to another entity pursuant to authorizing legislation. Title transfer is not to be confused with the term

⁶ Reclamation has some quarters that require employee occupancy as a condition of employment, for the protection of life and property. Thus, a few of Reclamation's quarters have been identified as mission critical assets. Refer to 5 USC 5911(e), *Quarters and Facilities; Employees in the United States*.

“transferred works” where the operation, maintenance, and replacement activities have been transferred to other entities.

MM. Transferred Works. Transferred works are facilities owned by Reclamation that have been transferred to other entities for O&M responsibility. “Transferred works” is not to be confused with “title transfer,” where Reclamation turns over ownership and O&M to another entity pursuant to authorizing legislation.

Appendix B – Extraordinary Operations and Maintenance Criteria

The following eligibility and prioritization criteria would apply to each project request:

Eligibility Criteria. In order to be eligible for funding as extraordinary operations and maintenance (XOM) under the program, the proposed work must meet the following criteria:

- Major, non-recurring maintenance to Bureau of Reclamation-owned facilities or facility components.
- Intended to ensure the continued safe, reliable delivery of authorized project benefits (any additional benefits resulting from the work must be strictly incidental to the work required to maintain present authorized project benefits).
- The cost of the work must be greater than 10 percent of Reclamation’s or the transferred works operating entity’s annual operation and maintenance (O&M) budget for the facility, and¹ greater than \$100,000.
- Must involve XOM work on a facility identified as mission critical, utilizing Reclamation’s Asset Priority Index (API)/Comprehensive Condition Index (CI).

Prioritization. Funding requests will be prioritized by a Reclamation Investment Review Board during budget formulation, and reviewed/revisited immediately prior to the year of budget execution, in accordance with the following criteria:

- **Engineering Need.** The extent to which engineering analyses demonstrate that the facility faces existing or potential conditions that could severely impair its ability to continue delivering project benefits or that could lead to failure of the facility. (This criterion is meant to assess the likelihood of failure, and would roughly track the assessment of canals in urbanized areas and Reclamation’s API/CI that captures mission critical assets in most need of repair.)
- **Consequences of Failure.** The value of project benefits that would likely be lost in the event of failure of the facility, as well as potential property damages resulting from such failure.
- **Efficiency Opportunities.** The extent to which the proposed work demonstrates a significant opportunity to substantially reduce future routine O&M costs associated with the facility and improve the Facility Condition Index, and opportunities for the proposed work to improve the efficiencies in water conservation and management.
- **Financial Feasibility.** The extent to which the project beneficiaries responsible for the reimbursable share of the work demonstrate the ability to repay the reimbursable share of the work pursuant to the terms of Section 9603 of Pub. L. 111-11.
- **Percent of Non-Federal Cost Share.** Higher non-Federal cost share (*i.e.*, a larger percentage allocated to reimbursable purposes) would score more under this criterion. Such projects would typically result in lower net costs to the Federal government

¹ It should be noted that “and” is used instead of “or,” as provided in Pub. L. 111-11, resulting from a policy call by Reclamation that recognizes the limited funding that might be available for this authority.

(although the appropriations requests would still be the same). It is likely that this criterion would have a significant degree of correlation with the “Engineering Need” criterion, as the irrigation-only projects are most likely to still be in need of significant extraordinary maintenance, whereas the multi-purpose projects typically have greater revenues to address these needs.

Appendix C – Reclamation Facilities Review Resource Matrix

In 2008, the Bureau of Reclamation developed the Reclamation Facility Review Resource Matrix as a tool to be used to combine site-specific and program reviews conducted by Reclamation at the facility level. Availability of information on content and purpose of reviews complements the efforts to gain efficiencies while balancing the integrity of each of the reviews. The matrix is a resource that characterizes the various reviews (facility/program), provides information to enhance local decisions, and fosters opportunities for customer involvement. It aims to gain efficiency through combining reviews at the local level, where decisions concerning personnel (Reclamation and customer) involvement, preparatory requirements, site requirements, and review schedules are closely coordinated.

Acronyms used in the checklist

CFR – Comprehensive Facility Review
CRM – Civil Rights Management
EMS – Environmental Management System
EO – Executive Order
FRPP – Federal Real Property Profile
O&M – Operations and Maintenance
MC – Mission Critical
MMC – Major Mission Critical
NCI – Nation Critical Infrastructure
PFR – Periodic Facility Review
PRO&M – Power Review of Operation and Maintenance
RBIC – Reclamation Bridge Inspection Coordinators
RO&M – Review of Operation and Maintenance
V&V – Verification and Validation

Reclamation Facilities Review Resource Matrix

Content Area (Review Name)	Review Type	Facility/ Program	Reclamation Office(s) Involved	Frequency	Expertise Required for Review	Is it Reimbursable?	Is There Current Customer Involvement?	Purpose (Authority)	Point of Contact	Additional Information
Power Review of Operation and Maintenance (PRO&M) Program										
Annual Review – Power	Site-specific	Facility	Facility	Annual except when a PFR or CFR is scheduled	Power/O&M	No. Facilities pay for reviews, which then relay charges towards customers.	Yes	FAC 4-01 http://www.usbr.gov/recman/fac/fac04-01.pdf	eforaker@usbr.gov	Annual reviews are performed as part of the PRO&M program. CFRs and PFRs are performed on alternating cycles. Annuals are performed on the years that either PFRs or CFRs are not performed.
Periodic Facility Review (PFR) – Power	Site-specific	Power Office	Regional/Area	Every 6 years and alternate with the CFR (PFR or CFR takes place every 3 years)	Power/O&M	No. Facilities pay for reviews, which then relay charges towards customers.	Yes	FAC 4-01 http://www.usbr.gov/recman/fac/fac04-01.pdf	eforaker@usbr.gov	Whenever possible, the reviews associated with this directive will be coordinated with other review programs. Such programs include, but are not limited to, the RO&M Program Examination of Associated Facilities and the Review/Examination Program for High- and Significant-Hazard Dams.
Comprehensive Facility Review (CFR) – Power	Site-specific	Power Office	Denver/Regional/Area	Every 6 years and alternate with the PFR (PFR or CFR takes place every 3 years)	Power/O&M	No. Facilities pay for reviews, which then relay charges towards customers.	Yes	FAC 4-01 http://www.usbr.gov/recman/fac/fac04-01.pdf	eforaker@usbr.gov	Whenever possible, the reviews associated with this directive will be coordinated with other review programs. Such programs include, but are not limited to, the RO&M Program Examination of Associated Facilities and the Review/Examination Program for High- and Significant-Hazard Dams.
Review/Examination Program for High- and Significant-Hazard Dams										
Annual Site Inspection – High- and Significant-Hazard Dams	Site-specific	High- and Significant-Hazard Dams	Area	Annual except when a PRF or CFR is scheduled	Dam Safety/O&M	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	Regional Facility O&M Managers	Annual Site Inspections are performed as part of the Review/Examination Program for High- and Significant-Hazard Dams. CFRs and PFRs are performed on alternating cycles. Annuals are performed on the years that either PFRs or CFRs are not performed.
Periodic Facility Review – High- and Significant-Hazard Dams	Site-specific	High- and Significant-Hazard Dams	Regional/Area	Every 6 years and alternate with the CFR (PFR or CFR takes place every 3 years)	Dam Safety/O&M	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	edinneen@usbr.gov	PFRs and CFRs are performed on alternating cycles. Annual Site Inspections are performed as part of the Review/Examination Program for High- and Significant-Hazard Dams. Annuals are performed on the years that either PFRs or CFRs are not performed.
Comprehensive Facility Review – High- and Significant-Hazard Dams	Site-specific	High- and Significant-Hazard Dams	Denver/Region/Area	Every 6 years and alternate with the PFR (PFR or CFR takes place every 3 years)	Dam Safety/O&M	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	edinneen@usbr.gov	CFRs and PFRs are performed on alternating cycles. Annual Site Inspections are performed as part of the Review/Examination Program for High- and Significant-Hazard Dams. Annuals are performed on the years that either PFRs or CFRs are not performed.
Examination of Normally Inaccessible Features – High- and Significant-Hazard Dams	Site-specific	Typical features	Evaluated during PFRs & CFRs	6 years	Specific technical expertise depending on feature	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	edinneen@usbr.gov	
Special Examinations – High- and Significant-Hazard Dams	Very site-specific	Identified as being of concern	Denver/Region/Area	As-needed	Dam Safety/O&M	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	edinneen@usbr.gov	
Review of Operation and Maintenance (RO&M) Program										
Examination of Associated Facilities – Facilities Other Than High- and Significant-Hazard Dams	Site-specific	Associated Facilities	Regional/Area	1-6 years; not to exceed 6 years	O&M	No, unless contract specifically states so (with few exceptions)	Yes	FAC 01-04 http://www.usbr.gov/recman/fac/fac01-04.html	dkrause@usbr.gov	Includes: 1) Carriage, distribution, and drainage systems; 2) Pumping and pump-generating plants; 3) Power plant structures; 4) Tunnels/pipelines; 5) Diversion and storage dams (low hazard); 6) Type 2 bridges; 7) Regulating reservoirs (low hazard); 8) Fish passage and protective facilities, including hatcheries; 9) River channelization features; 10) Rural/ municipal water systems; 11) Desalting and other water treatment plants; 12) Maintenance buildings and service yards; 13) Facilities constructed under past loan programs (until paid out); 14) Recreation facilities (reserved works only)
Special Examinations – Facilities Other Than High- and Significant-Hazard Dams	Very site-specific	Feature identified as begin of concern	Denver/Region/Area	As-needed	O&M	No, unless contract specifically states so (with few exceptions)	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	dkrause@usbr.gov	Includes Canal Special Reviews

Reclamation Facilities Review Resource Matrix

Content Area (Review Name)	Review Type	Facility/ Program	Reclamation Office(s) Involved	Frequency	Expertise Required for Review	Is it Reimbursable?	Is There Current Customer Involvement?	Purpose (Authority)	Point of Contact	Additional Information
Asset Management										
Bridge Inventory and Inspection Program (RBIC)	Site-specific	Type 1 Bridges	Region/Area	24 months	Structural	No	Yes	FAC 07-01 http://www.usbr.gov/recman/fac/fac07-01.html	Reclamation Bridge Inspection Coordinators	Coordination with RO&M, PFR, and CFR as appropriate
Landslide Surveillance Program	Landslide Register	Site-specific	Region/Area	As Needed	Geology, Geotechnical, Safety	No	No	FAC 08-01 http://www.usbr.gov/recman/fac/fac08-01.pdf	Regional Geologist	Coordination with RO&M, PFR, and CFR as appropriate
Federal Real Property Profile (FRPP) Validation and Verification (V&V) Site Visit	Assessment	Constructed Asset	Denver/Region/ Area	Annual	Asset Management/ O&M	No	No	Asset Management Plan Guidance	hirai@usbr.gov	Coordination with other Asset Management Assessment. After 2012, discussions will take place to determine whether annual V&V is needed.
Property Reviews	Internal Control	Regional	Denver/Region	3 year cycle	Property	Yes, regions fund review team	No	OMB Circular A-123 http://www.whitehouse.gov/omb/circulars/a123/a123.html	skeiffer@usbr.gov	Coordination with site V&V as required.
Historic Property Assessment	Internal Control	Regional	Regions/Areas	5 year cycle	CRM & Property	No	No	Asset Management Plan Guidance, LND 02-01, LND 02-03	Regional Archeologist	Coordinate with RO&M
Historic Property Reporting	Reporting	Regional	Regions/Areas	Annual	CRM	No	No	LND 02-01	Regional Archeologist	Denver Office Point of Contact: Tom Lincoln, tlincoln@usbr.gov
Environmental Compliance Program										
Hazardous Materials and Hazardous Waste Auditing and Review Program	Compliance	Facility/Area	Denver/Region/Area	5 per year; 1 per Region	O&M, Hazwoper, Haz-Mat	No	Yes	ENV 02-08 http://www.usbr.gov/recman/env/env02-08.pdf ; 515DM2	hkaplan@usbr.gov	Review schedules are developed at the Regional level
Environmental Management System (EMS)	Management	Region	Denver/Region/Area/ Facility	3 years	EMS, Environmental	No	No	ENV TRMR-37 http://www.usbr.gov/recman/temporaryreleases.html	kwhitford@usbr.gov	Reclamation underwent initial EMS audits in FY 2011/early 2012. Independent EMS audits will now occur every 3 years.
Federal Building Seismic Safety Program										
Seismic Evaluation	Site-specific	Buildings	Denver/Region/Area	One time	Structural	No	No	http://www.usbr.gov/recman/bgt/bgt04-05.html	tbrown@usbr.gov	
Seismic Evaluation	Site-specific	Power/Pumping Plants	Denver/Region/Area	One time	Structural/ Mechanical	No	No	http://www.usbr.gov/recman/bgt/bgt04-05.html	tbrown@usbr.gov	Structural and nonstructural reviews are included in the same report
Land Resources										
Review for Unneeded Lands	Compliance	Withdrawn and Acquired Lands	Region/Area	5 year cycle	Lands	No	No	LND 08-03 http://www.usbr.gov/recman/ld/ld08-03.pdf	Regional Realty Officers	
Concessions Management by Reclamation	Contract and Compliance	Recreation Site	Denver/Region	5 year minimum	Concessions Management	No	No	LND 04-01 http://www.usbr.gov/recman/ld/ld04-01.pdf	Regional Recreation Coordinators	
Concessions Management by Non-Federal Partners	Review and Evaluation	Recreation Site	Denver/Region/Area	Annual	Concessions Management	No	Non-Federal Partners	LND 04-02 http://www.usbr.gov/recman/ld/ld04-02.pdf	Regional Recreation Coordinators	Collaboration with non-Federal, State, and Local Managing Partners
Museum Property Management	Reporting	Facility	Region/Area	Annual	Cultural Resources	No	No	LND 02-02 http://www.usbr.gov/recman/ld/ld02-02.pdf	Regional Archeologists	Collaboration with Universities
Museum Property Management	Assessments	Facility	Region/Area	5 years	Cultural Resources	No	No	LND 02-02 http://www.usbr.gov/recman/ld/ld02-02.pdf	Regional Archeologists	Denver Office Point of Contact: Tom Lincoln, tlincoln@usbr.gov

Reclamation Facilities Review Resource Matrix

Content Area (Review Name)	Review Type	Facility/ Program	Reclamation Office(s) Involved	Frequency	Expertise Required for Review	Is it Reimbursable?	Is There Current Customer Involvement?	Purpose (Authority)	Point of Contact	Additional Information
Safety/Security/Accessibility Compliance										
Occupational Safety and Health	Compliance/ Program Review	Facility	Region/Area/Facility	Annual	Safety	No	Yes	Occupational Safety and Health Act of 1970 (Pub. L. 91-596; 5 USC 7902; 29 USC 651 et. seq.) as amended; Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters, 29 CFR 1960; EO 12196; OMB Circular A-123; Department of the Interior Safety and Health Manual, 485 DM Chapter 6; Reclamation Manual D&S SAF 01-01; and Reclamation Safety and Health Standards Section 2.1	Regional and Area Office Safety Contacts	Includes inspection, operations, procedures, and policy
Fire Protection (Life Safety Code)	Compliance	Site-specific/ Modifications	Region/Area/Facility	Annual	Safety/Fire	No	Yes	Occupational Safety and Health Act of 1970 (Pub. L. 91-596; 5 USC 7902; 29 USC 651 et. seq.) as amended; Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters, 29 CFR 1960; EO 12196; OMB Circular A-123; Department of the Interior Safety and Health Manual, 485 DM Chapter 6; Reclamation Manual D&S SAF 01-01; and Reclamation Safety and Health Standards Section 2.1	Regional Authority Having Jurisdiction	Compliance
Periodic Security Review – Security	Site-specific Assessment	Critical Infrastructure Facilities (NCI, MMC, and MC)	Region/Area/Facility/ Denver	6 years	Security/O&M	No	Yes	SLE 03-02 http://www.usbr.gov/recman/sle/sle03-02.pdf	Regional Security Managers	
Comprehensive Security Review – Security	Site-specific Assessment	Critical Infrastructure Facilities (NCI, MMC, and MC)	Region/Area/Facility/ Denver	6 years	Security/O&M	No	Yes	SLE 03-02 http://www.usbr.gov/recman/sle/sle03-02.pdf	klangston@usbr.gov	
Out-of-cycle Risk Assessment	Site-specific Assessment	Critical Infrastructure Facilities (NCI, MMC, and MC)	Region/Area/Facility/ Denver	As needed	Security/O&M	No	Yes	SLE 03-02 http://www.usbr.gov/recman/sle/sle03-02.pdf	klangston@usbr.gov	These assessments are completed as needed to evaluate a perceived or emerging threat.
Accessibility Compliance or Accessibility Self-Evaluation	Compliance	Dam, Power Plant, Facility, Building, Recreation Area	Region/Area/Facility/ Denver	Initial and follow-up	Accessibility Standards	No	No	43 CFR Part 17 Subparts B&E, CRM 03-01 http://www.usbr.gov/recam/cm/cm03-01.pdf	bsutherland@usbr.gov	

Reclamation Facilities Review Resource Matrix

Content Area (Review Name)	Review Type	Facility/ Program	Reclamation Office(s) Involved	Frequency	Expertise Required for Review	Is it Reimbursable?	Is There Current Customer Involvement?	Purpose (Authority)	Point of Contact	Additional Information
Water Contracts										
Periodic Reviews of Water Deliveries with Respect to Contract Terms	Compliance	Water Contract	Denver/Region/Area	10 contracts per year/region	Water Contracts	No	Yes	WTR 08-01 http://www.usbr.gov/reclaman/wtr/wtr08-01.html	Regional Contracts and Repayment	Denver Office Point of Contact: Owen Walker, owalker@usbr.gov

Notes:

This is a resource that was developed to enhance coordination and does not represent all of Reclamation's views

The matrix is a resource that characterizes the various facility/program reviews

This matrix provides information to enhance local decisions and opportunities for customer involvement

This matrix is the final product for Action Item 18, Recommendation 3 (updated July 2012)

Appendix D – Framework for Title Transfer

**FRAMEWORK
FOR THE
TRANSFER OF TITLE
BUREAU OF RECLAMATION PROJECTS
AUGUST 7, 1995
(Updated September, 2004)**

The criteria and guidance outlined in this document applies to "uncomplicated" projects. "Uncomplicated" projects are generally defined in the Scope of Application section following. This guidance is intended to initiate the Bureau of Reclamation's title transfer process.

This guidance does not apply to the more complicated projects, e.g., large multi-purpose projects where there is no consensus among the project beneficiaries concerning the transfer, where more than one competent beneficiary has expressed an interest in acquiring title, or where the institutional and legal concerns cannot be readily resolved.

BACKGROUND: The Reclamation program was founded in 1902. Its original mission was one of civil works construction to develop the water resources of the arid Western United States to promote the settlement and economic development of that region. The results of that work are well known in the hundreds of projects that were developed to store and deliver water. That substantial infrastructure made Reclamation the largest wholesale supplier of water in the United States, the sixth largest electric power generator, and the manager of 45 percent of the surface water in the Western United States. Many of these projects were constructed at a time when there were no local communities and utilities. Today much of the West is settled and is, in some respects, the most urbanized region of the country. Reclamation owns and operates public utility facilities which, if located in other parts of the country, would likely be owned, operated, and funded by publicly regulated private corporations or local government agencies. While it has been Reclamation's policy for decades to transfer operation and maintenance of projects to local entities where and when appropriate, interest in the actual transfer of title (with its attendant responsibilities) is now growing.

PURPOSE:

As part of the second phase of the National Performance Review (REGO II), Reclamation initiated an effort to transfer title of facilities that could be efficiently and effectively managed by non-Federal entities and that are not identified as having national importance. This effort is recognition of Reclamation's commitment to a Federal Government that works better and costs less. The transfer of title will divest Reclamation of the responsibility for the operation, maintenance, management, regulation of, and liability for the project and will provide the non-Federal entity with greater autonomy and flexibility to manage the facilities to meet their current needs in compliance with other Federal, state and local laws and in conformance with contractual obligation. The transfer of title to a project or set of facilities will, in effect, sever Reclamation's ties with that project.¹

SCOPE OF APPLICATION OF FRAMEWORK:

It is Reclamation's intent to transfer title and responsibility for certain projects or facilities, when and where appropriate, to qualifying non-Federal interests. Uncomplicated projects are projects or facilities where there are no competing interests, the facilities are not hydrologically integrated with other projects, the financial arrangements are relatively simple and easily defined, and the legal and institutional concerns² associated with a transfer can be readily addressed. In other words, after meeting the requirements set forth in the Criteria section below, projects will be selected for title transfer on the basis of the transfer being achievable and able to move forward quickly.

For purposes of this document and the transfer of title to the projects, the terms "beneficiary" and "stakeholder" are defined as follows: (a) **beneficiary** refers to (i) contractors and others who receive direct benefits under the authorized purposes for that project and (ii) non-Federal governmental entities in the project area; (b) **stakeholder** is a broader term and includes the beneficiaries, as well as those individuals, organizations, or other entities which receive indirect benefits from the project or may be particularly affected by any change from the status quo.

CRITERIA FOR TITLE TRANSFER

Following are the six major criteria that must be met before any project is transferred:

¹ Note: Reclamation recognizes that the complete severance of the relationship between Reclamation and the transferee may not be possible in all instances.

² Such concerns include, but are not limited to, unresolved Native American claims, endangered species considerations, international or interstate issues, absence of consensus among beneficiaries, significant disagreements raised by the stakeholders, a need to prepare an Environmental Impact Statement, and substantive objections from other governmental entities.

Appendices

- 1) The Federal Treasury, and thereby the taxpayer's financial interest, must be protected
- 2) There must be compliance with all applicable State and Federal laws
- 3) Interstate compacts and agreements must be protected
- 4) The Secretary's Native American trust responsibilities must be met
- 5) Treaty obligations and international agreements must be fulfilled
- 6) The public aspects of the project must be protected

GENERAL GUIDANCE FOR DETERMINING PROJECTS ELIGIBLE FOR TRANSFER

Reclamation Area offices will review projects nominated by an interested transferee and will pursue negotiations regarding those projects where the issues associated with transfer are relatively easy to resolve. This could include projects with multiple purposes and numerous stakeholders, but only if it is clear that outstanding issues are resolved and that there is consensus among the stakeholders.

Reclamation will not initiate negotiations on those projects where title transfer will involve a protracted process to ensure that the six criteria listed above are met.

Generally, Reclamation will not pursue transfer of powerhouses and generating facilities where power is marketed by the Power Marketing Administrations or where such power is used for purposes not directly associated with project purposes.

GENERAL GUIDELINES APPLYING TO TRANSFERS

All transfers will be voluntary.

Reclamation's intent is to transfer projects to current project beneficiaries, including non-Federal governmental entities, or to entities approved by the current beneficiaries.

All transfers must have the consent of other project beneficiaries. If another beneficiary raises substantive objections which cannot be resolved, the project will remain in Federal ownership.

Reclamation will comply with National Environmental Policy Act and other applicable laws in all transfers.

All transfers must ensure the United States' Native American trust responsibilities are satisfied. In addition, outstanding Native American claims that are directly pending before the Department and that would be directly affected by the proposed transfer will be resolved prior to transfer.

Reclamation officials will meet with representatives from all interested Federal and State agencies to consider their concerns early in the transfer process.

Potential transferees must be competent to manage the project and be willing and able to fulfill all legal obligations associated with taking ownership of that project, including compliance with Federal, State, and tribal laws that apply to facilities in private ownership and assumption of full liability for all matters associated with ownership and operation of the transferred facilities. Potential transferees must be able to demonstrate the technical capability to maintain project safety on a permanent basis and an ability to meet financial obligations associated with the project.

In general, it is Reclamation's expectation that, upon the transfer of title to a project, its jurisdiction over that project will be divested. Reclamation further recognizes that in some cases the complete divestiture of jurisdiction may not be attainable because the transferee still receives water supplied from a Reclamation facility, or only a portion of the project was transferred and the rest of the project remains in Federal ownership, or there are other extenuating circumstances. The degree to which the Reclamation Reform Act of 1982 will apply following transfer will be negotiated on a case-by-case basis.

The financial interests of the Government and general taxpayers will be protected. Transferees must agree to fair and equitable terms based upon the factual circumstances associated with each project. (See attachment which describes the valuation of projects.) Transferees will be expected to pay upfront the estimated transaction costs, such as costs associated with compliance with the National Environmental Policy Act, real estate boundary surveys, and so forth. The Federal share of any transaction costs will either be deducted from the "price" paid by the non-Federal entities pursuant to the valuation methodology or paid as an in-kind service for work done by Reclamation staff. Reclamation will not provide new loans to finance transfers.

No transferred Federal asset will be considered for federal assistance for project operation, maintenance, and replacement or capital construction purposes following completion of the transfer.

Prior to the initiation of detailed discussions on title transfer, Reclamation and the potential transferees will execute an agreement covering the responsibilities of all parties during the negotiations.

A base value will be determined for each project as it becomes the subject of serious negotiations for transfer. (See attached guidance on valuation.) The negotiated price for the project may deviate up or down from the base value. It will be necessary for Reclamation and the interested non-Federal entity to document how the factual circumstances and equitable treatment considerations justify such adjustments. In addition, Reclamation may consider future uses on the transferred lands and waters in establishing a price.

Potentially affected State, local, and tribal governments, appropriate Federal agencies, and the public will be notified of the initiation of discussions to transfer title and will have (1) the opportunity to voice their views and suggest options for remedying any problems and (2) full

Appendices

access to relevant information, including proposals, analyses, and reports related to the proposed transfer. The title transfer process will be carried out in an open and public manner.

Once Reclamation has negotiated an agreement with a transferee, Reclamation will seek legislation specifically authorizing the negotiated terms of the transfer of each project or feature.