



— BUREAU OF —
RECLAMATION

Strategic Asset Management Plan



MISSION OF THE U.S. DEPARTMENT OF THE INTERIOR

The Department of the Interior conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

MISSION OF THE BUREAU OF RECLAMATION

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.

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Executive Approval and Commitment

Since 1902, the Bureau of Reclamation's (Reclamation) assets have provided secure, reliable water supplies for irrigation, people, and the environment; efficiently generated energy to meet our economic needs; ensured outdoor recreation opportunities; and fulfilled our commitments to Tribal nations in the 17 western states. Reclamation is the largest wholesaler of water in the United States and supplies 10 trillion gallons of water to 31 million people each year and irrigates more than 11 million acres of farmland. Reclamation is also the Nation's seventh largest power utility and second largest producer of hydroelectric power. The 53 hydroelectric powerplants owned and operated by Reclamation provide an average of more than 40 million megawatt hours of energy each year. This is equivalent to supplying the energy demand of over 3.8 million homes in the United States.

Reclamation is the steward of the agency's infrastructure assets, which have an average age of over 50 years. This Strategic Asset Management Plan (SAMP) focuses on Reclamation's assets—the lands, facilities, and structures that sustain functions of congressionally authorized projects. This plan describes Reclamation's asset management practices and the strategies for improving asset management.

As the Commissioner of Reclamation, I approve the goals, strategies, and practices in the SAMP as the framework for Reclamation's management of the agency's infrastructure.



Brenda Burman, Commissioner
Bureau of Reclamation

APR 21 2020

Date

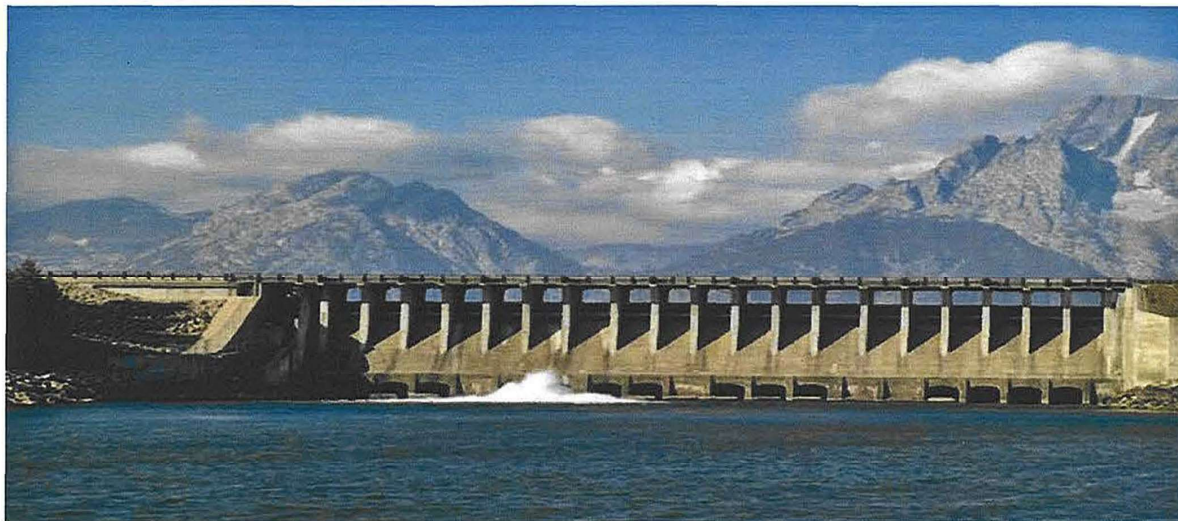


Figure 1. Jackson Lake Dam, Minidoka Project, Wyoming.

Scope

The Strategic Asset Management Plan (SAMP) focuses on Reclamation's lands and constructed assets that sustain the essential functions of congressionally authorized projects. In addition, the SAMP provides a reporting framework consistent with requirements outlined in the Reclamation Transparency Act of 2019 (Title XIII Subtitle G of Public Law 116-9).

The SAMP aligns Reclamation with the principles of the International Standards Organization (ISO) 55000 International Standards on Asset Management and incorporates implementation guidance from the Institute of Asset Management. It describes Reclamation's current asset management practices in addition to strategies to meet the challenges of balancing competing demands on the Nation's water and power infrastructure.



Figure 2. South Canal, Salt River Project, Arizona.

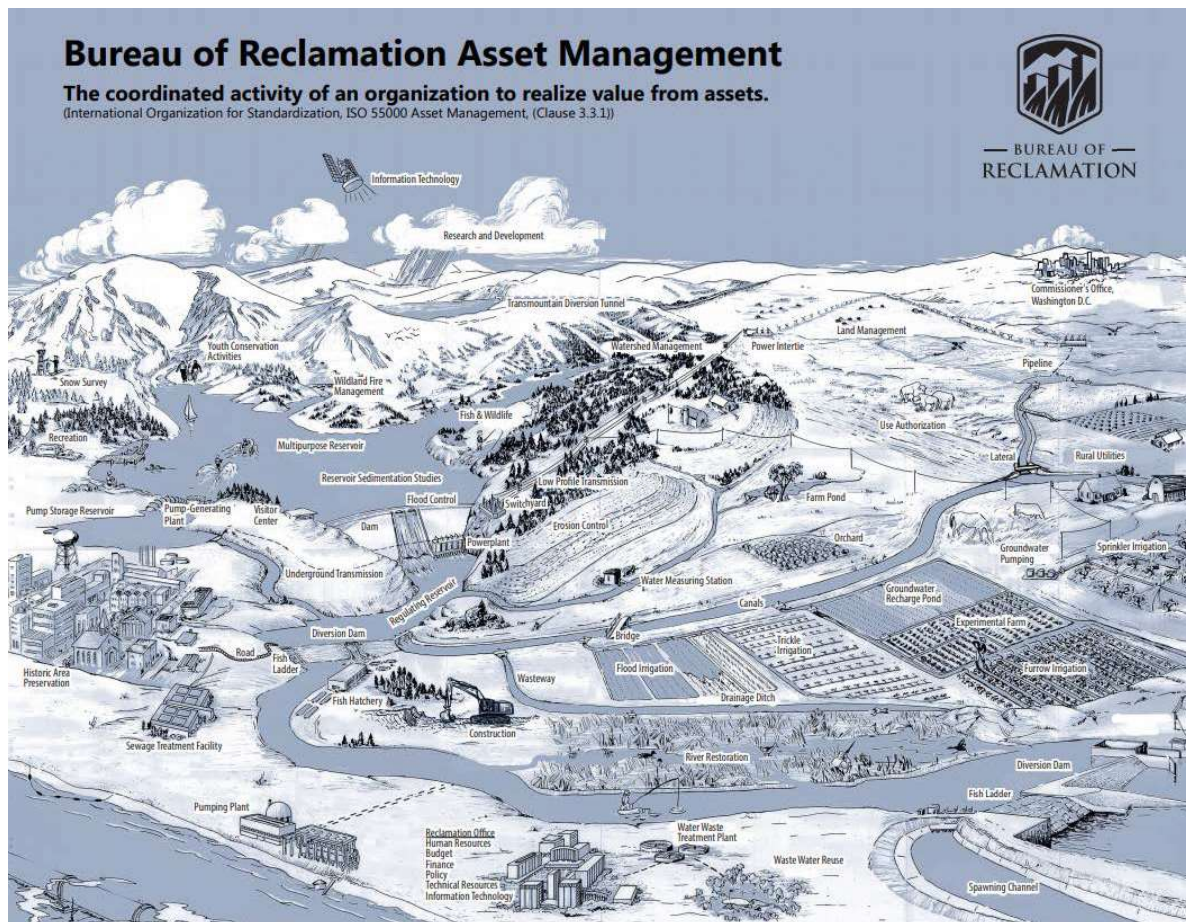


Figure 3. Diagram Depicting Various Benefits Resulting from Reclamation Projects and Infrastructure.

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Acronyms and Abbreviations

ACIO	Associate Chief Information Officer
AMD	Asset Management Division
AMP	Asset Management Plan
APP&R	Annual Performance Plan and Report
BORGIS	Bureau of Reclamation Geographic Information System
BPA	Bonneville Power Administration
BRC	Budget Review Committee
CARMA	Capital Asset and Resource Management Application
CFO	Chief Financial Officer
CFOC	Chief Financial Officer's Council
CFR	Comprehensive Facility Review
CI	Condition Index
COG	Coordination and Oversight Group
CPIC	Capital Planning and Investment Control
CRV	Current Replacement Value
D&S	Directive and Standard
DEC	Design, Estimating, and Construction
Department	Department of the Interior
DM	Deferred Maintenance
DSIS	Dam Safety Information System
DSO	Dam Safety Office
EMS	Environmental Management System
EO	Executive Order
EPR	Estimating Process Review
E-TAS	Electronic Time and Attendance System
FBMS	Financial and Business Management System
FCI	Facility Condition Index

FERC	Federal Energy Regulatory Commission
FIST	Facilities Instructions, Standards, and Techniques
FITARA	Federal Information Technology Acquisition Reform Act
FLTP	Federal Lands Transportation Program
FO&MT	Facilities Operation 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	Geographical Information System
GPRA	Government Performance and Results Act
HydroAMP	Hydropower Asset Management Partnership
IMT	Information Management and Technology
IRBAC	Information Resources Budget Advisory Committee
IRO	Information Resources Office
ISCA	Initiate Safety of Dams Corrective Actions
ISO	International Standards Organization
IT	Information Technology
LOPP	Lease of Power Privilege
MR&R	Major Rehabilitation and Replacement
MSO	Mission Support Organization
NERC	North American Electric Reliability Corporation
NHPA	National Historical Preservation Act
O&M	Operation and Maintenance
OM&R	Operation, Maintenance, and Repair
OMB	Office of Management and Budget
PAB	Policy, Administration, and Budget
PEB	Power Equipment Bulletins
PFR	Periodic Facility Review

PICP	Programmatic Internal Control Program
PM	Project Management
PMAT	Project Management Advisory Team
PRIS	Power Review Information System
PRO	Power Resources Office
PRO&M	Power Review of Operation and Maintenance
RD	Regional Director
RDC	Reclamation Data Council
RDCCT	Reclamation Design and Construction Coordination Team
Reclamation	U.S. Bureau of Reclamation
RLT	Reclamation Leadership Team
RM	Reclamation Manual
RO&M	Review of Operation and Maintenance
RPG	Reclamation Planning Group
RPOC	Real Property Oversight Council
RTF	Reduce the Footprint
SAMO	Senior Asset Management Officer
SAMP	Strategic Asset Management Plan
SCADA-ICS	Supervisory Control and Data Acquisition Industrial Control Systems
SEED	Safety Evaluation of Existing Dams
SO	Secretarial Order
SOD	Safety of Dams
SRBC	Space Request Business Case
SRPO	Senior Real Property Officer
TR	Technical Resources
TRMR	Temporary Reclamation Manual Release
TSC	Technical Services Center
USACE	United States Army Corps of Engineers
V&V	Verification and Validation

VE	Value Engineering
WCF	Working Capital Fund
WECC	Western Electric Coordinating Council
XM	Extraordinary Maintenance

Introduction

Established in 1902, Reclamation is best known for constructing dams, powerplants, pipelines, and canals in the 17 western states. These water and power projects led to homesteading and promoted the economic and social development of the West. The western United States has changed dramatically since 1902, but Reclamation's infrastructure continues to reliably deliver water and power to meet multiple demands and changing public needs.

Most of Reclamation's facilities are more than 50 years old and some dams are more than 100 years old. The longevity of Reclamation's infrastructure is achieved through preventive maintenance programs, capital improvement planning, and substantial investment in major rehabilitation and replacement (MR&R) activities. Continued investments by Reclamation and its water and power partners will further extend the serviceability of Reclamation's water and power infrastructure. Today, Reclamation is a contemporary water management agency with numerous programs, initiatives, and activities designed to address new water needs and balance the many uses of water in the West.

Context of the Organization

Mission Statements

Reclamation is a bureau within of the Department of the Interior (Department). The Department conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

Reclamation manages, develops, and protects water and related resources in an environmentally and economically sound manner in the interest of the American public.

Asset Management Policy

Asset management, as defined by ISO 55000, is the coordinated activity of an organization to realize value from assets (ISO 55000 Asset Management, Clause 3.3.1). The benefits of a comprehensive approach to asset management—from the planning phase to retirement of an asset—will optimize existing processes. In addition, it will provide decision makers with improved data and analytics to maximize value from Reclamation assets. Reclamation's infrastructure management policies and practices are documented in the Directives and Standards (D&S) and the Facilities Instructions, Standards, and Techniques (FIST) series found in the Reclamation Manual.

Asset Management Objectives

As part of the development of a comprehensive asset management policy, Reclamation would establish asset management objectives that align with Reclamation's mission to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. The objectives would describe how Reclamation plans to meet priorities set by the President, Secretary of the Interior, and Commissioner of Reclamation. Further, the objectives would outline how to incorporate the needs of stakeholders and the American public.

Asset management objectives may include:

- Improving comprehensiveness of asset inventory;
- Refining criteria for existing risk ratings;
- Evaluating ways to increase use of qualifying benefits related to infrastructure investment decisions;
- Improving asset information quality and standardizing data; and
- Exploring ways for Reclamation project beneficiaries and operating entities to identify financing for infrastructure investments.

To work toward the continual improvement of asset management, Reclamation has looked to other agencies for best practices and lessons learned in the evolution of asset management. Most recently, Reclamation and the United States Army Corps of Engineers (USACE) Civil Works began collaborating on asset management techniques and sharing strategies for communicating the value of asset management to water and power management. In addition, power marketing agencies have become interested. They recognize the importance of implementing asset management principles and the value of sharing practical solutions. These agencies have joined in what has now evolved into the Federal Asset Management Working Group.

Reclamation is evaluating the development of a new comprehensive policy to provide a unifying philosophy of asset management that will link the established programmatic policies. This policy would detail alignment with ISO 55000 series requirements and describe Reclamation's commitment to continual improvement of its asset management system.

Understanding Reclamation and Its Context

Reclamation constructed many of the dams, canals, and hydropower plants that provide water and power vital to the economic strength and security of the United States. Approximately one-third of Reclamation's constructed assets, referred to as reserved works, are operated and maintained by Reclamation. The remaining two-thirds, referred to as transferred works, are operated and maintained under an operation and maintenance agreement by operating entities such as water districts, counties, or other agencies and organizations.

Reclamation Stakeholder Needs and Expectations

Reclamation works in partnership with Federal and non-Federal stakeholders to meet the infrastructure needs at Reclamation facilities, using both appropriated and non-appropriated funding. The processes for identification, prioritization, and funding of MR&R activities have been shaped by important differences in the types of partnerships, sources of funding, project authorizations, cost allocations, and agreements with operating entities.

The cost of Federal Reclamation projects is categorized as (1) construction costs, and (2) Operation and Maintenance (O&M) costs. The recovery of the appropriate costs from project beneficiaries is required by Federal Reclamation law. After the construction of a congressionally authorized Project (Project) is completed, Reclamation is responsible for ensuring that Operation, Maintenance, and Replacement (OM&R) activities are carried out. These activities ensure all authorized Project purposes are met in a sustainable and reliable manner, and that facilities are adequately maintained to protect the Federal investment. Project authorization, repayment contracts, and other factors may have a bearing on how Project OM&R is accomplished.

Reclamation retains responsibility for operating and maintaining reserved works facilities and regularly conducts Review of Operation and Maintenance (RO&M) Program field examinations (i.e., condition assessments) to verify the condition of Reclamation facilities and ensure that O&M is performed at an acceptable level.

For transferred works, Reclamation has entered into contracts and formal agreements with non-Federal entities to perform the OM&R on facilities that are constructed and owned by Reclamation. The project beneficiary has the responsibility for the day-to-day O&M and is accountable to Reclamation for proper performance of facility maintenance. Reclamation also regularly conducts RO&M field examinations at transferred works facilities.

Reclamation owns 78 hydropower plants across the western United States, 53 of which are operated by Reclamation. Funding activities at the hydropower facilities is derived from three sources:

- A mix of appropriations and contributions from power customers;
- Revolving funds; and
- Direct funding by Bonneville Power Administration (BPA), the federal power marketing agency in the Pacific Northwest of the United States.

The way each of these sources is managed differs depending on the specific project authorizations and agreements with the power customers.

Reclamation's Asset Management System

Reclamation uses the Institute of Asset Management Conceptual Asset Management Model (Figure 4) as a guide in documenting its asset management system framework. Reclamation is improving its asset management system framework to show areas of cross-functional collaboration within the organization, outline roles and responsibilities, detail how the organization manages risk, and document the process for continual improvement of the asset management system.

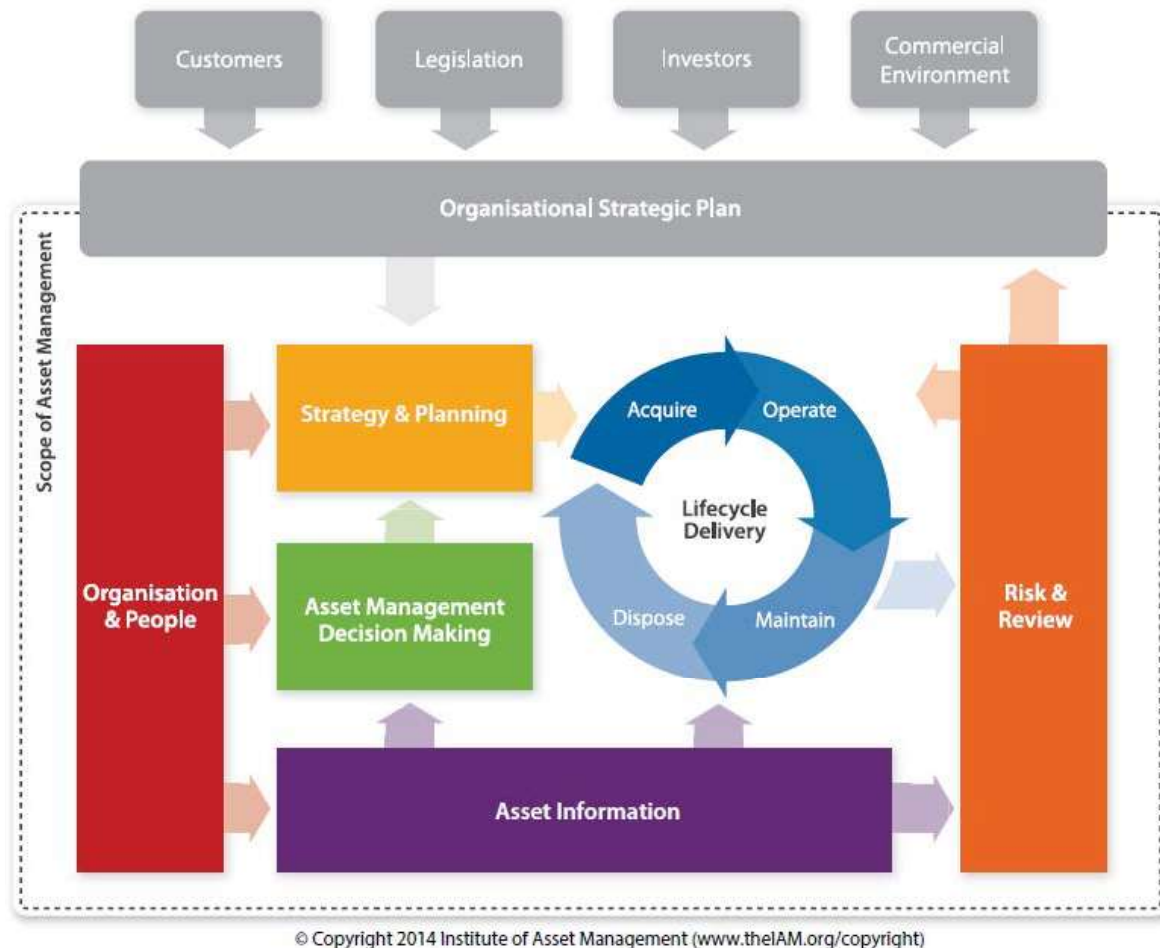


Figure 4. Institute of Asset Management Conceptual Asset Management Model¹

¹ IAM Asset Management - an Anatomy Ver3, 2015, Page 16 - theIAM.org/AMA

Scope of the Asset Management System

Reclamation's asset portfolio consists primarily of capital-intensive utility facilities constructed pursuant to specific project authorizations by Congress. Reclamation's asset management system will focus on the asset portfolio and the processes that help derive value to Reclamation and its stakeholders.

A conceptual asset management system framework of Reclamation's current state is documented in Figure 5 on the following page and described throughout the SAMP. All areas will be further developed in annual updates of the SAMP.

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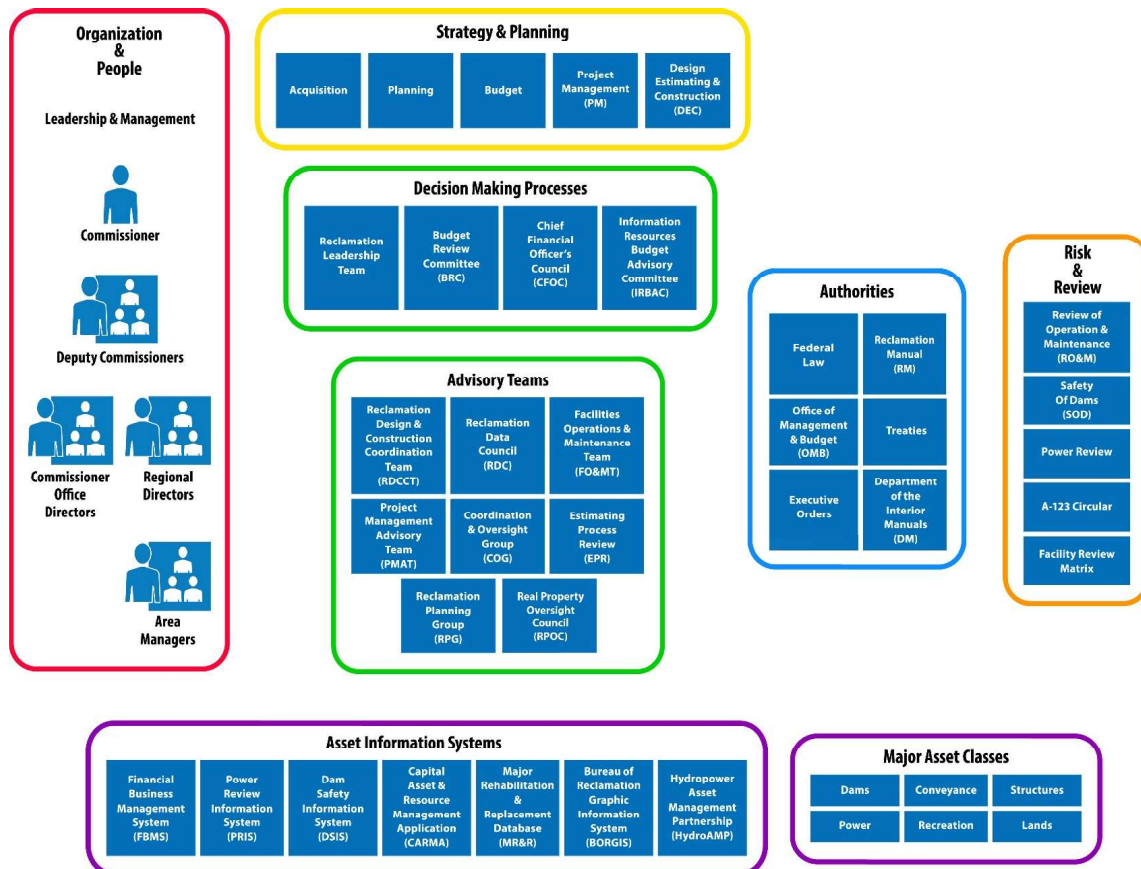


Figure 5. Reclamation's Conceptual Asset Management System Framework. Developed Based on the Institute of Asset Management's Conceptual Asset Management Model.¹

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Organization Roles, Responsibilities and Authorities

Reclamation's organization is geographically dispersed with delegated authority and accountability distributed throughout the organization. Reclamation's regional boundaries fall within six of the Department of the Interior regions; however, Reclamation will continue to operate with five regions generally under the historic boundaries. The Departmental reorganization plan is based on major drainage basins and is being implemented in fiscal years 2018, 2019 and 2020. Responsibility for the management of Reclamation's physical assets resides at 22 area and program offices located throughout the five historical regions.

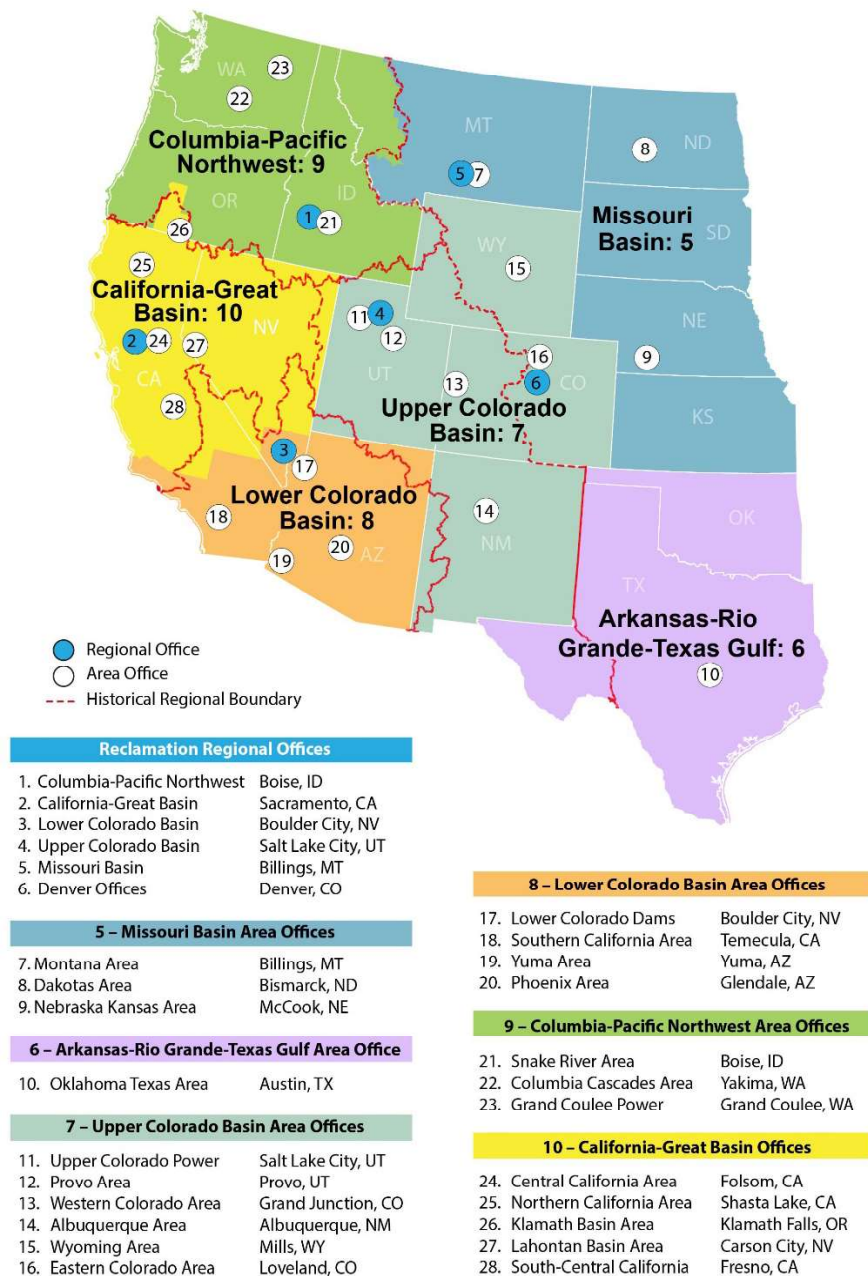
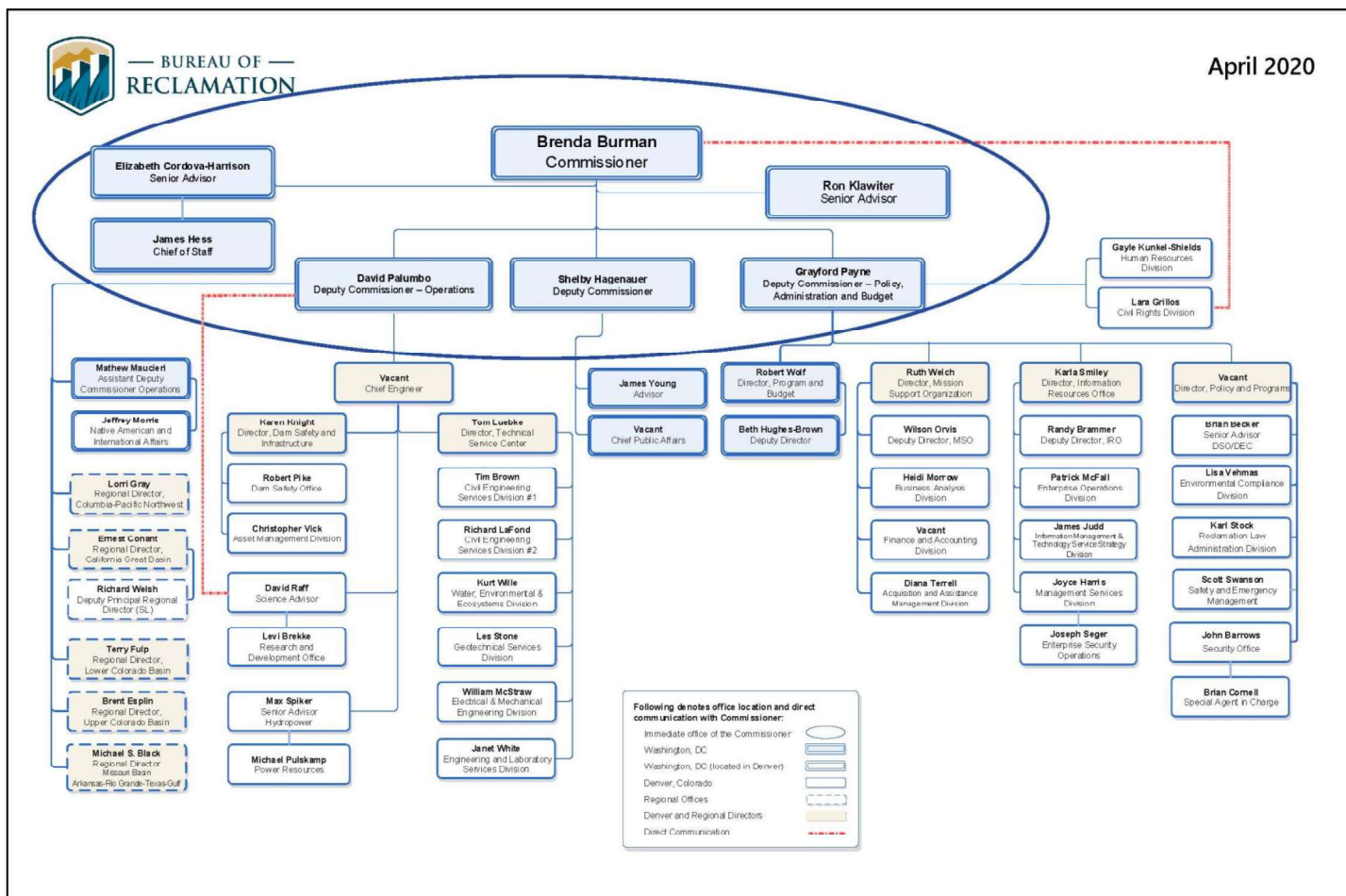


Figure 6. Reclamation's Offices and Boundaries.

Roles and Responsibilities

Due to the broad nature of Reclamation's portfolio of assets, many executives and managers have responsibility for asset management. These responsibilities are detailed after Reclamation's Organizational Chart on the next page (Figure 7).



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

Reclamation Leadership Team (RLT) – The RLT comprises all Reclamation senior executives. The RLT deliberates on agency-wide topics and advises the Commissioner on policy-level activities, including the recommendations of the Budget Review Committee (BRC). Decisions from the Commissioner are communicated back to the organization through members of the RLT.

Deputy Commissioner – The Deputy Commissioner provides executive direction for Reclamation policy, activities and program matters within prescribed Administration and Departmental policies, regulations and procedures. The Deputy Commissioner reviews, monitors, and evaluates Reclamation proposals, program achievements, and operational effectiveness for conformance with Administration and major Department objectives. The Deputy Commissioner oversees congressional, legislative and public affairs activities, and represents Reclamation’s relationships with Federal, Tribal, State and local governments.

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

Deputy Commissioner for Operations – The Deputy Commissioner for Operations has responsibility for the operational decisions for Reclamation’s constructed assets.

Chief Engineer – The Chief Engineer provides direction, management, and coordination of scientific, engineering, and research services related to water resource management and development. Provides leadership in the introduction, development, and improvement of engineering, scientific, and research services capabilities including related policy formulation, implementation and application, and shares with the Commissioner and Deputy Commissioner - Operations the highest level of responsibility for program planning, support, and execution. The Chief Engineer is supported by the Director for Dam Safety and Infrastructure, the Director of the Technical Services Center, the Senior Advisor for Hydropower/Electric Reliability Compliance Officer, and the Science Advisor.

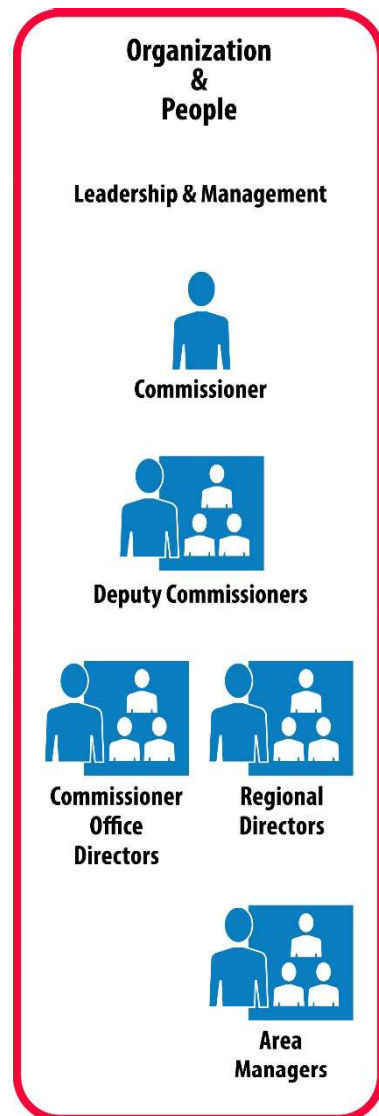


Figure 8. Reclamation's Conceptual Asset Management Framework Organization and People, Leadership and Management.

Director, Program and Budget – The Director, Program and Budget, is Reclamation’s Budget Officer. As such, the Director is part of securing budgetary resources and the decision-making hierarchy with respect to funding asset management priorities. The Director is a permanent member of Reclamation’s BRC.

Director, Policy and Programs – The Director of Policy and Programs is supported by the Environmental Compliance Division, Program Services Office, Reclamation Law Administration Division, Security Division, Emergency Management and Aviation Office, and the Safety and Occupational Health Division.

Director, Dam Safety and Infrastructure – The Director, Dam Safety and Infrastructure, is supported by the Dam Safety Division and the Asset Management Division (AMD).

Chief, Dam Safety Office (DSO) – The Chief, DSO, has the responsibility to administer the appropriate Safety Evaluation of Existing Dams and Initiate Safety of Dams (SOD) Corrective Actions. In addition, they have the responsibility to oversee the Department’s safety of dams to achieve the objectives of the Dam Safety Program.

Manager, AMD – The Manager, AMD, has the responsibility of coordinating the update of this SAMP to reflect the mission and current policies of Reclamation. In addition, the Manager, AMD, co-chairs the annual BRC OM&R Workgroup and Facility Operation and Maintenance Team (FO&MT), and serves as the business owner of CARMA. Also, this division is responsible for implementing the Verification and Validation (V&V) Review Plan for Reclamation.

The Director, Dam Safety and Infrastructure, also serves as the Senior Asset Management Officer (SAMO), and is responsible for:

- Serving as the principal senior manager accountable for ensuring that the processes and practices in this SAMP are carried out.
- Representing Reclamation on the Department’s Asset Management Executive Steering Committee.
- 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 activities.
- Identifying legislative authorities that are required to address these priorities.
- Identifying and pursuing goals, with appropriate deadlines, consistent with and supportive of Reclamation’s SAMP, and measuring progress against such goals.

- Serving as the Executive Owner of the Capital Asset and Resource Management Application (CARMA), Reclamation's instance of IBM® Maximo® Asset Management software.
- Identifying any other information and pursuing any other actions necessary to the appropriate development and implementation of Reclamation's SAMP.
- Ensuring that Reclamation assets are managed in a manner that is supportive of Reclamation's business objectives and the Department's Strategic Plan and SAMP.

Director, Mission Support Organization (MSO) – Supported by the offices of Business Analysis, Finance and Accounting, Property Management, Financial and Business Management System, and Acquisitions and Financial Assistance. 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 CFO.

Director, Information Resources Office (IRO) – The Director, IRO, serves as Reclamation's Chief Information Officer and is advised by the Information Technology (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, Technical Service Center (TSC) – The Director, TSC, manages Reclamation's TSC, which houses technical expertise on several aspects of Reclamation's asset portfolio.

Dam Safety Officer/Senior Advisor – Design, Estimating, and Construction (DEC) – The Dam Safety Officer serves as the principle advisor on the implementation of the Federal Guidelines for Dam Safety. The Dam Safety Officer provides broad program guidance and the audit function of Reclamation's Dam Safety Program. Further, the Dam Safety Officer serves as the Department's representative to the National Dam Safety Review Board. As the Senior Advisor, Design, Estimating, and Construction, the position provides oversight associated with DEC activities as they are being formulated and prepared. This oversight ensures executive-level management decisions and products are technically sound at the project and corporate levels.

Senior Advisor for Hydropower and Electric Reliability Officer – The Senior Advisor for Hydropower and Electric Reliability Officer coordinates implementation of corporate partnership efforts involving Reclamation's power functions. The position serves as the liaison on intergovernmental initiatives associated with hydropower delivery. Further, this position is responsible for Reclamation's overall compliance with Federal Energy Regulatory Commission Mandatory Bulk Electric System Reliability Standards. This position also coordinates activities in collaboration with the U.S. Army Corps of Engineers, Bonneville Power Administration, Western Area Power Administration and the Tennessee Valley Authority.

Science Advisor – The Science Advisor serves as Reclamation's Scientific Integrity Officer, ensuring that the agency follows the Department of the Interior's Scientific and Scholarly Integrity Policy. In addition, the position oversees Reclamation's Research and Development Office and Water Resources and Planning Division.

Regional Directors (RD) – 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 that meets Reclamation’s strategic objectives. They are responsible for maintaining a comprehensive inventory of all real property owned, leased, or otherwise managed by Reclamation, including condition assessments. 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 for Operations.

Area Managers – 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 for 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 areas with appropriate consultations with stakeholders. Area Managers report to an RD.

The following advisory teams support leadership in asset management decision-making:

Budget Review Committee (BRC) – The BRC is comprised of leadership representing different areas of Reclamation and is chaired by an RD. The responsibility of BRC chair is annually rotated through Reclamation regions and directorates. This committee extensively reviews all budget proposals from all offices of Reclamation and develops the overall budget profile for Reclamation for consideration by the Commissioner.

Facility Operation and Maintenance Team (FO&MT) – The FO&MT is comprised of representatives of all regions and operations-related directorates. The team serves as a forum to address Reclamation-wide OM&R-related issues, activities, policies and budget formulation, and to support program accomplishment. The FO&MT’s responsibilities include reviewing and making recommendations to the Director, Dam Safety and Infrastructure, the Deputy Commissioner for Operations, and the Deputy Commissioner for Program and Budget on:

- Deferred Maintenance (DM)
- Condition assessments/field review activities
- MR&R activities (including extraordinary maintenance (XM) items)
- Facility security, Life Safety Code, Universal Accessibility, employee and public safety
- Maintenance management practices and systems
- Implementing facility O&M-related policies and D&Ss
- Congressional, Office of Management and Budget, and stakeholder questions

Authorities

Reclamation 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. Reclamation conserved and supplied 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 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, 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 legal instrument directing Reclamation's asset management activities.

Other authorities that significantly affect how Reclamation manages its assets include:

EO 12893 (January 26, 1994). Principles for Federal Infrastructure Investment. 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. EO 13327 establishes a Senior Real Property Officer (SRPO) at the executive-level in each agency and the Federal Real Property Council (FRPC) to develop guidance on real property management throughout the Federal Government.

Office of Management and Budget (OMB), FRPC, Guidance for Improved Asset Management. The FRPC Guidance provides direction on the duties of SRPOs and the content of agency asset management plans (AMP). 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; (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.

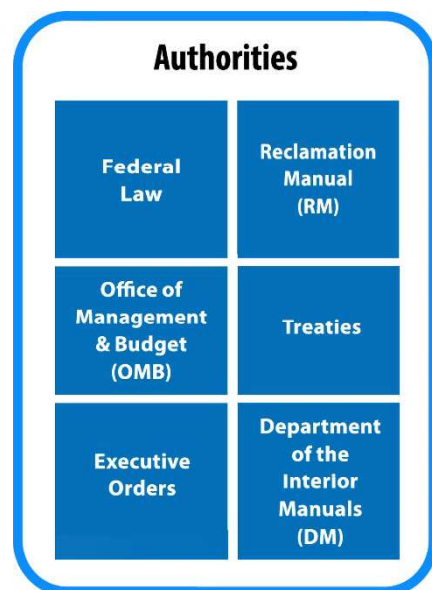


Figure 9. Reclamation's Conceptual Asset Management System Framework Authorities

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

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

Related Enacted Legislation. Reclamation is also subject to other enacted legislations 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, which 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. Federal, State, and Tribal governments coordinate in a variety of ways, such as jointly managing water storage and delivery projects; coordinating operations and systems; sharing data; and adhering to water rights, interstate compacts and treaties.

Asset Inventory

Reclamation annually reports its asset inventory to the General Services Administration for the Federal Real Property Profile (FRPP) at the major constructed asset level and parcels of land. Reclamation classifies each major asset as either a building or a structure, and all installed equipment and related components are grouped as part of the major asset. In some instances, assets are grouped within major features and facilities (dams, canals, pumping plants, and recreation areas). Reclamation's reported inventory consists of nearly 4,000 buildings and structures and over 27,000 owned and withdrawn parcels of land (excluding easements and rights of way). The FRPP Fiscal Year (FY) 2019 reported replacement value for Reclamation's buildings and structures is over \$113 billion. Table 1 below also summarizes the number of assets by whether the asset is a reserved or transferred work and excludes Reclamation's direct leases.

Table 1. Reclamation FRPP Summary for FY 2019

Reserved Works	
Building	692
Structures	619
Total Number of Reserved Works	1,311
Reserved Works as a Percentage of All Facilities	33%
Transferred Works	
Buildings	1,099
Structures	1,546
Total Number of Transferred Works	2,645
Transferred Works as a Percentage of All Facilities	67%
Total Buildings and Structures	3,956

Federal Real Property Profile Data Validation and Verification (V&V)

Reclamation staff annually update, verify, and validate Reclamation's asset inventory and FRPP data recorded in the Financial and Business Management System (FBMS). Each region ensures that the data in FBMS accurately represents the characteristics of the assets in its inventory. This includes annually certifying the accuracy of its real property data in FBMS and explaining unusual trends and variances in data. To facilitate the certification process, V&V reviews are performed annually in each region.

The focus of the V&V reviews includes data review and an onsite visual verification of constructed real property assets. The V&V reviews provide the opportunity to communicate

detailed information related to real property and to facilitate the exchange of information as it relates to real property inventory validation, data quality, and data verification. In completing these activities, Reclamation continues to refine and improve the accuracy and completeness of its asset portfolio.

Reclamation's SAMP will be supported by an AMP for major asset classes. An AMP documents information that specifies the activities, resources and timescales required for an individual asset, or a grouping of assets, to achieve the organization's asset management objectives described in the SAMP. Each AMP will provide greater details on capital investments, operations, performance, alternatives, risk management, and asset utilization. AMPs apply to specific asset types or asset categories and focus on optimal whole life cycle management and improvements within the asset management capabilities of the organization. Table 2 provides more detail on Reclamation's major assets classes, each of which will be covered in an AMP.

Table 2. Reclamation Asset Detail.

Reclamation Asset	Quantity
Dams	492
Hydropower Facilities	78
Buildings	1,796
Recreation and Wildlife Areas	329
Bridges	1,436
Roads	2,780 miles
Trails	1,327 miles
Canals	Over 8,000 miles
Lands	Over 7.7 million acres

Asset Management Oversight Programs

Several Reclamation programs provide asset management oversight including the Asset Management Division's Operation and Maintenance Programs, and Land Resources and Recreation Programs. In addition, other Reclamation-wide programs serve as oversight including the Dam Safety Program and the Power Resources Office Programs.

Operation and Maintenance Programs

Reclamation's Asset Management Division Operation and Maintenance Branch is responsible for the oversight of the operation and maintenance of Reclamation's assets and conducts several preventative program activities and initiatives, including:

Dam and Levee O&M Program. The Dam and Levee O&M Program provides Reclamation-wide policy, guidance, and coordination of dam and levee operation and maintenance activities including examinations of high- and significant-hazard dams in coordination with Reclamation's Dam Safety Program.

Water Conveyance O&M Program. The Water Conveyance O&M Program conducts Reclamation-wide asset management activities on canals, pipelines, tunnels, pumping plants and other assets transporting water from one location to another.

Transportation O&M Program. The Transportation O&M Program is a new and developing program covering Reclamation owned bridges, roads, and parking lots. Further, Reclamation is actively working on developing a geospatial trails inventory. The Transportation O&M Program includes the Bridge Program which involves inventorying, inspecting, load rating, and other related activities for Reclamation's 300 plus public bridges, as well as Reclamation's non-public bridges.

Buildings and Structures O&M Program. The Buildings and Structures O&M Program provides a consistent framework for inspecting and documenting maintenance needs for Reclamation owned buildings. Along with building operations, maintenance, and inspections, Reclamation is also responsible for managing its use of building space through the implementation of the government-wide Reduce the Footprint (RTF) policy (OMB Memorandum M-12-12 Section 3; March 25, 2015).

Land Resources and Recreation Programs

The Asset Management Division's Land Resource Management Team provides bureau-wide oversight, technical assistance, and guidance for the Land Resources and Recreation Programs as stewards of more than 7.7 million acres of land. The Land Resource Management Team also provides programmatic oversight of public use of Reclamation land, facilities, and waterbodies.



Figure 10. Medicine Creek Recreation Area, Nebraska.

Reclamation has more than 300 recreation areas that provide an abundance of recreational opportunities to the public. Of these recreation areas, more than 246 are developed and are managed by Reclamation or a managing partner. These developed recreation areas provide more than 550 campgrounds, 450 boat launch ramps, 7,500 miles of shoreline, and 17,000 campsites. Reclamation's recreation areas draw more than 45 million visits annually. When taking into account all recreation areas, including jurisdictionally transferred recreation areas that were developed because of Reclamation projects, Reclamation estimates over 90 million visitors annually.

The Recreation Program emphasizes the importance of maximizing recreational opportunities in accordance with Reclamation's authorized project purposes and consistent with the Department's Secretarial Order (SO) 3356, *Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories*, and SO 3366, *Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior*. Reclamation completes this task by seeking qualified Federal and non-Federal managing partners to manage a variety of recreation opportunities and visitor services for the public, pursuant to the Federal Water Project Recreation Act of 1965, as amended (Public Law 89-72). A limited number of Reclamation-managed projects have site-specific authority to plan, develop, and manage recreation facilities and improvements. In the absence of project-specific legislation or a managing partner, Reclamation is limited by Public Law 89-72 to provide only "minimum basic" facilities.

Dam Safety Program

Reclamation's Dam Safety Program was officially implemented in 1978 with passage of the Reclamation Safety of Dams Act, Public Law 95-578. This act was amended in 1984 under Public Law 98-404, in 2000 under Public Law 106-377, in 2002 under Public Law 107-117, in 2004 under Public Law 108-439, and in 2015 under Public Law 114-113 (Reclamation Safety of Dams Act, as amended). Program development and administration of safety of dams activities is the responsibility of Reclamation's DSO located in Denver, Colorado. Reclamation's Dam Safety Program is divided into two major funding areas.

Safety Evaluation of Existing Dams (SEED). Part of Reclamation's Dam Safety Program is the SEED activities. The primary emphasis of the SEED program is to fund on-going activities of the Dam Safety Program including examinations; performance monitoring; regular comprehensive reviews of high- and significant-hazard potential dams; and site evaluations, such as loading, risk, and failure mode analyses, when uncertainty is identified. The SEED program aims to quickly identify dams that may pose an increased threat to the public. Once identified, related analyses can be completed to expedite corrective action decisions and safeguard the public and associated resources.

Initiate Safety of Dams Corrective Actions (ISCA). ISCA focuses on evaluating and implementing actions to resolve safety concerns at Reclamation dams. Reclamation completes studies and identifies and accomplishes needed corrective action on Reclamation dams. The

selected course of action relies on assessments of risks and liabilities with environmental considerations and public input into the decision-making process.



Figure 11. Folsom Dam Joint Federal Project Auxiliary Spillway, California.

Power Resources Office Programs

The Power Resources Office (PRO) develops and coordinates policy, provides guidance, and assists in managing Reclamation's power program. Regional and area offices oversee the operation of Reclamation's individual power facilities. The PRO works extensively with internal and external stakeholders to develop policies and technical standards for the Reclamation hydropower program. In addition, the PRO provides oversight, training, and reviews to ensure the program is properly implemented. The PRO is funded by a mix of direct funding by power customers and Federal appropriations. The PRO consists of the following programs:

Power Operation and Maintenance Program. The Power Operation and Maintenance Program is responsible for:

- Developing hydroelectric power facility policy
- Developing Directives and Standards
- Developing technical requirements and documents
- Administering power review of operation and maintenance (PRO&M) facility reviews to ensure facilities remain reliable, available, safe, economic, and efficient. All Reclamation power facilities undergo periodic assessments to evaluate PRO&M Program implementation.

Electric Reliability Compliance Program. Reclamation hydroelectric facility operations are subject to North American Electric Reliability Corporation (NERC) Western Electric Coordinating Council (WECC) reliability compliance standards to ensure the reliability of the bulk electric system. About half of Reclamation's hydropower facilities meet the threshold for mandatory electric reliability program requirements. The regulatory standards are administered by NERC and carry Federal Energy Regulatory Commission (FERC) regulatory enforcement. The Electric Reliability Compliance Program is responsible for ensuring Reclamation compliance with mandatory NERC WECC reliability standards via certification, mitigation, auditing, and training activities.

Audit Program and Unexpected Events Reporting Program. The Audit Program is an internal check on Electric Reliability Standards conducted annually as part of Reclamation's Internal Controls Program. Internal audit findings are analyzed to identify necessary program improvements and to make recommendations to specific offices regarding actions to ensure compliance with the standards. The Unexpected Events Reporting Program analyzes the root cause of all power equipment forced outages and identifies trends, lessons learned, and areas for program improvements.

Strategic Energy Program. Reclamation's Strategic Energy Program supports Administration and Department domestic energy security initiatives. The program facilitates the development of untapped hydropower potential on Federal water resource projects through collaborative regulatory reform, technological and operational innovation, and stakeholder outreach. These activities allow Reclamation to derive additional value and revenue from existing public infrastructure. This added value and revenue reduces project operating costs (e.g. water and power delivery costs) and ensures projects remain financially solvent. Revenues derived from incremental hydropower production are invested in the underlying Federal infrastructure to ensure continued, reliable operations and benefits.



Figure 12. Grand Coulee Dam, Columbia Basin Project, Washington.

Risk and Opportunity

Risks

Reclamation has a large inventory of aging assets. Most of Reclamation's facilities are more than 50 years old and some dams are more than 100 years old. The longevity of Reclamation's infrastructure is achieved through preventive maintenance programs and substantial investment in major repair and replacement activities. The following risks will continue to provide challenges in the future:

- At least \$10.4 billion will be needed over the next 30 years to address XM, DM, and dam safety modifications.
- Over 1,000 miles of Reclamation's canals flow through highly populated areas. These canals pose a greater risk to the public and require a higher level of maintenance and security.
- Planning and budgeting for large capital improvements can be difficult while simultaneously continuing to meet operation and maintenance needs.

In addition, Reclamation must work to address external pressures, such as:

- An increase in population in the western U.S. has increased the need for Reclamation assets, including land, water, and power.
- Droughts have made Reclamation operations and revenues more variable. In turn, modifications have been necessary to upgrade facilities and operations in order to continue to provide Project benefits.
- A majority of Reclamation's infrastructure is operated and maintained in partnership with an operating entity. Similar planning and budgeting of resources is required to meet non-Federal partner cost share requirements to maintain operations, maintenance, public health, and safety.
- Ongoing workforce planning is needed to prepare for the loss of technical capabilities and departure of institutional knowledge, and to ensure adequate staffing levels to manage an aging infrastructure portfolio.



Figure 13. Black Canyon Canal, Boise Project, Idaho.

Opportunities

Reclamation is pursuing several opportunities to better manage its large and aging asset inventory, and to meet the challenges presented by new and competing demands on the Nation's water and power infrastructure. Such opportunities include:

- Transferring title of select assets. This helps Reclamation focus its O&M efforts on priority assets. Also, title transfer provides transferred works entities more flexibility to meet local or regional needs and an opportunity to access Federal or private financing. Reclamation is working to maximize these opportunities in view of the recent enactment of expanded title transfer authority in 2019 (Subtitle A of Title VIII of P.L. 116-9).
- Continuing modernization of infrastructure data and information sharing to optimize mission-critical service delivery.

- Leveraging technological innovations, including hydropower optimization systems, data acquisition, and analytics to achieve operational efficiencies.
- Working on the exchange of information with Reclamation's strong network of partners who contribute to the O&M of Reclamation facilities, including:
 - Local operating entities
 - Local managing partners and stakeholders of recreation areas
 - Local, State, and Federal agencies
 - Industry partners
- Targeting investment opportunities and partnerships to maintain critical asset infrastructure and facilities to ensure effective operations and service delivery.
- Continuing to facilitate non-Federal development at non-powered Reclamation assets via Lease of Power Privilege or Federal Energy Regulatory Commission licensing.
- Continuing to improve asset and risk management to further align with the ISO 55000 series standards and ISO 31000 Risk Management standard.
- Continuing to identify assets at a more granular level to better manage Reclamation's asset portfolio.



Figure 14. Mount Elbert Pump Generating Plant, Fryingpan-Arkansas Project, Colorado.

Performance Evaluation

Monitoring, Measurement, Analysis and Evaluation

Reclamation recognizes the importance of reliable and informative asset management and, as a result, has processes for gathering asset data and assembling the information into meaningful and useful formats for specified purposes.



Figure 15. Ropes Team Inspection, Hungry Horse Dam, Hungry Horse Project, Montana.

Facility Assessment and Review Programs

Facility examinations to assess the condition of Reclamation's assets and infrastructure are conducted through several recurring examinations and RO&M programs. Key review and examination programs for various asset types include:

High- and Significant-Hazard Dam Examination. Reclamation implements a detailed review and examination program for high- and significant-hazard dams. The program ensures dams are operated and maintained properly and effectively, continue to provide project benefits, and do not create unacceptable risks to public safety and welfare, property, and the environment.

RO&M Program. This program oversees the periodic review and field examination program for Reclamation's water related associated facilities, including water conveyance systems, pumping

plants, pipelines, fish passage facilities, rural water systems, treatment plants, maintenance buildings, and recreation facilities.

PRO&M Program. The PRO&M Program evaluates the application and effectiveness of Reclamation's power operation and maintenance program through periodic facility reviews. The PRO&M Program ensures power facilities are operated in a safe, reliable manner that is in compliance with applicable regulatory standards.

Facility Review Resource Matrix. In 2008, Reclamation developed the Facility Review Resource Matrix. The matrix characterizes the various facility and program reviews and provides information to enhance local decisions and foster 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 A.



Figure 16. Choke Canyon Spillway, Nueces River Project, Texas.

Improvement

Reclamation has established many programs and processes to ensure the continued reliability of its assets to meet Reclamation's asset management objectives.



Figure 17. Owyhee Dam Outlet Works, Owyhee Project, Oregon.

Nonconformity and Corrective Action

Reclamation conducts reviews of its facility assets to assess their condition, identify and document problems, and establish corrective actions for any deficiencies requiring mitigation. Oversight is accomplished through review programs to ensure safe and reliable operation of Reclamation assets. Review programs are structured on risk of failure to Reclamation's mission and public safety.

Recommendations from the review programs are categorized as:

- Category 1 recommendations are made for the correction of severe deficiencies where immediate and responsive action is required to ensure structural safety and operational integrity of a facility.
- Category 2 recommendations are made for a wide range of important matters where action is needed to prevent or reduce further damage or preclude possible operational failure of the facility.

- Category 3 recommendations are made for less important matters but believed to be sound and beneficial suggestions to improve or enhance the O&M of the project or facility.

Recommendations are reviewed quarterly and published annually. The purpose of annual reports is to provide an update to the RLT on O&M recommendations through the end of the FY. In addition, the reports provide the status, analyses, and focus areas to continue improving the effectiveness of the O&M program. It is important that the status of O&M recommendations is updated routinely as this information and data are used in various reporting activities to indicate Reclamation's performance on both reserved and transferred works. Such reporting activities include:

- Annual DM reporting
- Input into scoring of the annual Facility Reliability Rating (FRR)
- Calculation of the Comprehensive Condition Index for FRPP annual updating
- Evaluation purposes for determining O&M program effectiveness for emergency extraordinary O&M requests
- Continuity and reference purposes in conducting future field examinations/reviews
- Underlying use of this information in publicly published performance metrics in the Department's Annual Performance Plan and Report (APP&R)

Information used for the data analyses is extracted from the O&M recommendation database tracking systems to identify focus areas to continue improving O&M program effectiveness. Focus areas are identified to improve key program initiatives, such as scheduling and cost estimates. Examples include:

- Reviewing aging O&M recommendations during facility reviews
- Developing technical resources and training to support infrastructure investment planning
- Focusing on developing schedules and cost estimates for Category 2 O&M recommendations greater than 10 years old without plans for completion
- Prioritizing timely entry of recommendations into tracking databases and undertaking efforts to improve data quality in recommendation databases
- Crosswalking O&M recommendations with data used in annual DM, FRRs, and MR&R reporting

Planning and Decision Making

In FY 2015, Reclamation released the Reclamation Infrastructure Investment Strategy, which outlined the steps it would take to improve data to inform decision making of its infrastructure

needs. A large focus of the strategy was to improve MR&R data. Since 2008, Reclamation has collected data on an annual basis on its MR&R, or repair needs, at all Reclamation facilities regardless of the funding source. The identified activities in the MR&R database consist of SOD modifications, XM, and DM.

Reclamation looks at the activities in four investment areas: Power, Dam Safety, Reserved Works Water Resource Infrastructure, and Transferred Works Water Resource Infrastructure. Beginning in FY 2016, the MR&R reporting period was expanded from 5 years to 30 years. This expanded period aims to better represent long-term capital planning efforts for needs at Reclamation facilities. Also, it focuses on the future activities needed to address risks, sustain benefits, and ensure continued performance and reliability of Reclamation facilities.

Reclamation's categorization of its MR&R activities involves two primary areas of influence—risk and benefits. These two factors establish a common basis for assigning a relative category or ranking of importance (from A to E, with A being the highest) to each of the MR&R activities across the four investment areas, with the risk component carrying more weight than the benefits component. For MR&R activities identified through O&M recommendations, the O&M recommendation category (e.g. 1, 2, or 3) is a factor in determining the risk component of the MR&R categorization. While O&M recommendations identify all facility deficiencies and corrective actions, the MR&R categorization assists Reclamation in prioritizing investments across all facilities with limited resources. Reclamation recognizes the factors influencing the relative importance of MR&R activities can differ by investment area.

The funding arrangements for the four investment areas reflect a range of investment decision-making models. In cases where significant risk and consequences are concerned, such as in the Dam Safety Program, decision and budgetary processes require a greater degree of standardization. Consequently, the process for decision-making depends on quantifiable criteria and must be documented in detail.

For other MR&R activities, where local knowledge of specific project issues can inform decisions more efficiently, the budgetary processes are more decentralized. Reclamation relies less on the application of uniform criteria that might not adequately capture relevant aspects of an identified activity. Many MR&R investment decisions require the informed deliberation of managers and technical professionals familiar with the unique issues and circumstances affecting a facility, often in close collaboration with water and power customers.

On an annual basis, Reclamation engages in a multi-step process to identify and prioritize MR&R activities, and then formulates a budget to request appropriations for the MR&R work scheduled to be completed in the budget year. Reclamation's deliberate, ground-up approach to budget formulation begins with input from the area and field offices and reflects subsequent decisions made at each organizational level of the bureau. While investment decisions ultimately rest with Reclamation's Commissioner, the budget development process described below ensures that the agency's request for Federal appropriations reflects priorities informed by local and regional knowledge.

Reclamation's area and field office managers have the primary responsibility for decision-making on MR&R activities. Each of the area office managers report to one of the Reclamation RDs who, in turn, report to the Deputy Commissioner for Operations. In addition, the Commissioner consults with several advisory bodies for assistance in making final infrastructure investment decisions. As shown in Table 3, decisions for MR&R activities are made at four points.

Table 3. Decision Points in the Current Process for Identifying, Prioritizing, Budgeting, and Completing MR&R Activities

Decision Point	Decision Maker	Description
Decision Point 1	Field or Area Manager	MR&R needs identified for regional and budget considerations.
Decision Point 2	Regional or Dam Safety and Infrastructure Director	Priorities applied to MR&R activities and budget requests developed.
Decision Point 3	Commissioner (with RLT and BRC Input)	Reclamation priorities applied, and Reclamation's budget request developed.
Decision Point 4	Director, Program and Budget	Following congressional authorization of Reclamation's budget, activity funding is adjusted, if needed, in the year of execution to address changing circumstances.

Decision Point 1 – Developing the MR&R Database

Currently, Dam Safety and Infrastructure and each region consult several sources of information to determine the infrastructure investments to be included on Reclamation's list of MR&R activities planned within the 30-year reporting period. At a minimum, the area offices identify XM and DM at Reclamation's reserved works facilities noted for funding or accomplishment in the upcoming 5-year timeframe. Area and regional office staff, in collaboration with water and power operating entities, determine if any planned XM activities at transferred works are appropriate to be included in the MR&R database. The DSO provides a list of all SOD modifications. Supporting data for each identified MR&R activity typically includes the cost estimate, source of funding, investment area, project location, and other related information. The level of effort in developing cost estimates and other supporting data for individual MR&R activities can vary across Reclamation, as can the comprehensiveness of each region's consolidated list of activities that are submitted for inclusion in the MR&R database.

Decision Point 2 – Prioritizing MR&R Work for the Budget Year

Area office managers determine which of the activities in the MR&R database require annual appropriations for the Federal share of the work proposed in the current budget year and, to a

limited extent, for the beneficiaries' share to be recovered through repayment over time. Budget requests from the area and field offices are then submitted to the responsible RD for consideration. All regions use a risk-informed approach to prioritize their MR&R activities, but there is variability and discretion across regions and area offices in determining which of the identified activities are included in the RDs budget request for Federal appropriations. The regional budget request reflects regional priorities; criteria specific to each investment area (Power, Reserved Works, and Transferred Works); and other factors such as stakeholder involvement, acquisition timeframes, availability and timing of funding, availability of technical resources, and operational concerns. Funding for the DSO is requested by the Dam Safety and Infrastructure Director.

Decision Point 3 – Development of Reclamation Budget Requests

The information submitted by the RDs reflects regional priorities rolled up from the area and field offices. When the Commissioner's Office budget request is provided to the BRC it includes the SOD funding request and the regional budget requests. Often, the BRC requests specific types of analyses from the OM&R Workgroup. The OM&R Workgroup is comprised of the same membership as the FO&MT, in addition to Budget Officers from each regional office and the Commissioner's Office. Using the OM&R Workgroup's analyses and their own review, the BRC deliberates over the budget requests and develops a proposed Reclamation budget for consideration by the RLT and the Commissioner.

The BRC considers regional priorities for MR&R funding on a Reclamation-wide basis, but does not apply formal metrics to compare one MR&R activity or investment area relative to another. The BRC instead relies on the narrative justifications for MR&R activities provided for each activity in the five regional BRC notebooks; input and analysis provided by the OM&R work group; direct discussion with each region of its overall budget submittals and priorities; and the knowledge, collective experience, and judgment of individual BRC members.

The BRC presents its recommendations to the RLT and the Commissioner. The larger and more significant line items in the overall budget proposal are discussed and the Commissioner's budget proposal is developed. The Commissioner then discusses this proposed budget with the Assistant Secretary for Water and Science before submitting Reclamation's final budget proposal to the Department, and later to OMB for finalization. Based on its role in this process, the RLT serves as Reclamation's Asset Investment Review Board for purposes of considering infrastructure investment activities.

Decision Point 4 – Funding Changes in the Year of Execution

Budget proposals are prepared up to 3 years in advance of execution. In most cases, work accomplished in the year of execution is the same as the work identified in the budget request. However, emergencies, new information, changes to the schedule, and other factors sometimes impact priorities and create the need to re-direct funding from an MR&R activity identified in the budget proposal to another MR&R activity in the year of budget execution. Reclamation's

Program and Budget Office reviews and approves requests to re-direct the funding within authorized amounts. The fund transfer approval process includes documentation of the factors supporting the decision. Fund transfers are made throughout the FY for the various reasons cited above. Fund transfers are also made at the end of a FY to ensure that obligations of appropriations support the timely completion of construction and maintenance activities.

In addition to the BRC, Reclamation also uses the following advisory bodies to assist in decision-making regarding Reclamation’s working capital fund and information technology:

Chief Financial Officer’s Council (CFOC) – The CFOC is responsible for providing advice and support to the Deputy CFO and CFO in fulfilling the requirements of the CFO Act. The CFOC ensures that its recommendations are consistent and support the Department’s initiatives and Reclamation’s program priorities. The CFOC focuses on aspects of mission support services and management of Reclamation’s Working Capital Fund. Reclamation maintains a Working Capital Fund which is primarily used to fund fleet, IT, other Reclamation-wide programs, and program assessments from the Department.



Figure 18. Reclamation’s Conceptual Asset Management System Framework Decision Making Processes.

Information Resources Budget Advisory Committee (IRBAC) – The IRBAC is Reclamation’s principal governance body responsible for providing bureau-wide leadership and oversight support to the Associate Chief Information Officer (ACIO) for all aspects of Information Management and Technology. The IRBAC is one of the cornerstones of Reclamation’s Information Management and Technology Alignment Plan for the implementation and integration of the accountability and governance structure required by the Federal Information Technology Acquisition Reform Act.

Categorization Framework

The assessment of risk is a crucial part of asset management because it provides a clear and consistent means of prioritizing choices across an entire enterprise or organization. Reclamation has developed a categorization process to define the relative importance of activities where a decision has been made which requires a significant investment to implement an identified repair, replacement, or rehabilitation at a facility. Reclamation categorizes all MR&R needs at Reclamation facilities based on risk and benefit factors irrespective of how the activity is planned to be funded.

Reclamation’s categorization includes two primary areas of influence—risk and benefits. These two factors establish a common basis for assigning a relative category or ranking of importance

(from A to E, with A being the highest), with the risk component carrying more weight than the benefits component. The categorization process helps inform the budget process and allows Reclamation to corporately analyze proposed investments to ensure Reclamation is appropriately investing in assets to reduce risk and maximize benefits.

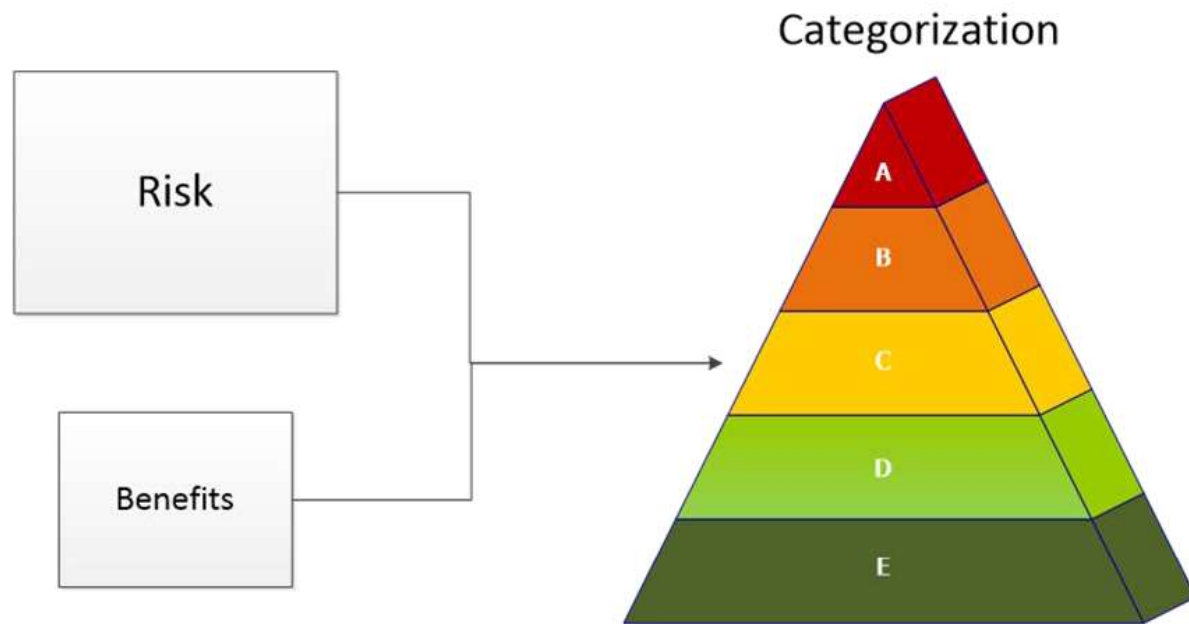


Figure 19. Reclamation's Categorization Framework

Reclamation's assessment of risk (i.e., probability and consequences of failure) uses established internal and external models. These models include the risk-informed approaches used by Reclamation field offices to evaluate XM activities, the quantified risk analysis system used in the Dam Safety Program, and the risk assessment process used by the Power Program with its customers to prioritize investments in power facilities. The probability of failure can be characterized in terms of engineering need and the age or overall condition of the facility, structure, or piece of equipment involved in the MR&R activity. Consequences can be characterized in terms of potential impacts to facility or equipment operations; life loss; safety and health impacts; property, resources or environmental damage; and impacts in not meeting contractual or legal commitments.

Probability	Risk Assessment Score			
High	6	8	10	10
Likely	4	6	8	10
Occasional	2	4	6	9
Rarely	2	2	4	7
Consequence	Minor	Significant	Critical	Catastrophic

Figure 20. Reclamation’s Risk Assessment Score Matrix

The Benefits Score is determined by evaluating both the investment rating and the mission enhancement for each MR&R activity. The investment rating demonstrates the length of time it takes to recoup the investment of accomplishing the activity (i.e., operational efficiency gains, increased revenue generation, or a reduction or savings in O&M cost). The mission enhancement contribution is based on the demonstrated and measurable contribution—that is determined to be additional and beyond the mitigation of the identified risk—of the completion of the activity’s impact on mission delivery.

Investment Rating	Benefits Code		
Major (<7 years)	3	4	5
Moderate (7-15 years)	2	3	4
Low (> 15 years or Unknown)	1	2	3
Mission Enhancement	Minimal	Moderate	Major

Figure 21. Reclamation’s Benefits Score Matrix

The categorization rating of A to E depends on the Risk Assessment and Benefits scoring. Once the Risk Assessment and Benefits Scores have been determined, the summation of the codes translates to an overall categorization rating as listed in Figure 22 below.

Category A - High

Risk Score of 10 or a Total Score $13 \leq$ and ≤ 15

Category B - Significant

Total Score of $10 \leq$ and ≤ 12

Category C - Moderate

Total Score of $7 \leq$ and ≤ 9

Category D - Low

Total Score $4 \leq$ and ≤ 6

Category E - Minimal

Total Score ≤ 3

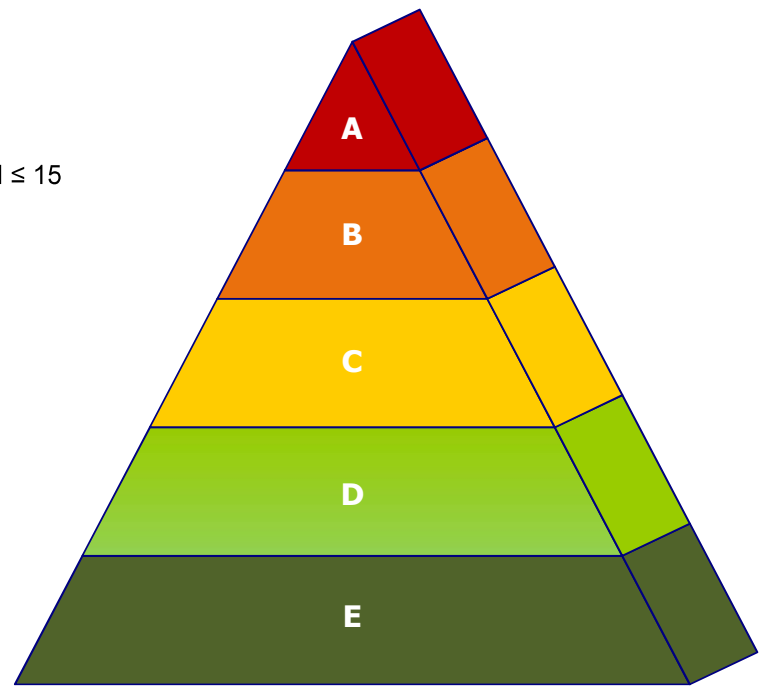


Figure 22. Reclamation's Categorization Scoring



Figure 23. Hoover Dam and Bypass Bridge, Boulder Canyon Project, Nevada and Arizona.

In addition to MR&R categorization, Table 4 summarizes the various ways Reclamation evaluates its infrastructure.

Table 4. Evaluation Efforts for Reclamation Infrastructure.

Evaluation Area	Description	Focus
Dam Safety Process	Risk informed decision making through periodic facility evaluations, risk assessments, and facility modifications.	Uncontrolled release of the dam leading to life loss. Typically assumes facility operates as designed.
Associated Facility Reviews/Annual Site Inspections	Periodic evaluation of facility condition through on-site inspections by one office removed.	Identification of O&M recommendations to improve the overall facility condition.
Infrastructure-Specific	Efforts to evaluate risk on specific types of infrastructure through select evaluations or pilots (e.g.,	Focus is on risk of an individual material or facility specifications with the potential to lead to failure. Individual evaluations focus on specific infrastructure risk and typically

Evaluation Area	Description	Focus
Evaluations or Pilots	Urban Canals, Pre-stressed Concrete Cylindrical Pipe, etc.)	do not consider risk to an integrated system.
Deferred Maintenance	Annual documentation of outstanding recommendations, work orders, and budget items deferred due to lack of funding, resources, or site conditions.	DM focuses on identifying the number of incomplete activities that need to be addressed for the facility to be operated properly. Limited information is available on cost to complete these activities. Focus is on activity not facility risk as a whole.
Major Rehabilitation and Replacement	Annual documentation of major rehabilitation and replacement needs over a 30-year future planning horizon.	List includes XM, dam safety modifications, and DM. Risk-benefit process used to categorize individual activities. Focus is on activity not facility risk as a whole.
Facility Reliability Rating	Scoring templates prepared as self-assessments of overall facility condition (i.e. good, fair, or poor).	The FRR is a numerical rating which reflects the overall reliability of high- and significant-hazard facilities, reserved works associated facilities, and hydropower facilities.
Facility Condition Index	Calculated by the ratio of maintenance needed compared to the current replacement value.	Evaluates the maintenance need based on total estimated cost of MR&R by facility. Current replacement value figures are limited to indexed values.
Department of the Interior Priority Goal: Percent of priority assets in acceptable condition	Facility condition as measured by the FRR.	The FRR scores are used to report this priority goal measure.
Hydropower Asset Management Partnership (HydroAMP)	An objective analytical tool for determining the state of facility components.	Focus is on evaluating major powertrain components using a two-tiered assessment.
Site Security	Evaluates the potential risks to the public, Reclamation staff, and Reclamation facilities resulting from unauthorized activity by malicious or criminal factors.	Focuses on physical, technical, and procedural systems for assessing, reducing, and managing security-related risks at Reclamation facilities.

Performance Metrics

Facility Reliability Ratings (FRR)

Under the Government Performance and Results Act (GPRA), Reclamation tracks the percentage of water infrastructure that is in good condition through the FRR for high- and significant-hazard dams, reserved works associated facilities, and reserved hydropower facilities. Collectively, these measures gauge the reliability of approximately 245 high- and significant-hazard storage dams, over 100 reserved works water-related associated facilities, and over 50 conventional and pumped storage powerplants owned by Reclamation.

The FRR is a score derived from a set of weighted criteria which covers safety, maintenance, operations, and management factors for reserved and transferred high- and significant-hazard dams and reserved works associated facilities. Hydropower FRRs are based on HydroAMP equipment condition indices for powertrain components. Condition indices consider, at minimum, component age, maintenance history, operational performance, and physical inspection observations.

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 Facility Condition Index (FCI) since it not only evaluates maintenance factors, but encompasses operation and management factors that contribute to the overall reliability condition of Reclamation's more complex assets.

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

For reserved works associated facilities, the FRR evaluates:

- Status of site reviews
- Status of operating documents

- Training of operator
- Status of operating restrictions
- Status of operation and security recommendations
- Status of Category 1 and Category 2 maintenance-related recommendations

For hydropower reserved works facilities, the FRR evaluates HydroAMP condition assessments using the following condition indicators:

- Age or number of operations
- Operational performance
- Maintenance history
- Physical inspection
- Tests and measurements

Each high- and significant-hazard dam has an annual FRR completed or updated. Similarly, each reserved works associated facility has an annual FRR completed or updated. Therefore, the FRR is a tool that can aid in the evaluation of the reliability condition of these mission critical facilities. However, it is not the only indicator. Reclamation also has a sophisticated dam safety risk assessment program that prioritizes failure risk at high- and significant-hazard dams.

Percent Capacity at Risk

Reclamation also monitors the condition of equipment that could potentially impact capacity at a hydropower facility. If a unit has a major powertrain component rated in poor condition, as measured in HydroAMP, that unit's capacity is affected by a poor component. This metric is focused on reducing powertrain components in poor condition at Reclamation's 52 active, owned, operated, and maintained (reserved) hydropower facilities. Major powertrain components include the unit breaker, exciter, governor, turbine, transformer, and generator (rotor and stator).

Priority Asset Improvement

The Department developed six agency priority (performance) goals with the FY 2018–2022 Strategic Plan. Per the Department's agency priority goal for asset management, by September 30, 2019, the Department will improve the condition of its priority real property assets such that 82 percent are in the desired state of acceptable condition. Reclamation contributes to the Department's priority goal through the continued reliable performance of its water and power facilities. Reclamation's contributions to this priority goal are made possible through effective preventive maintenance and the commitments of Reclamation and its managing partners to significant ongoing investments.

To measure this goal, Reclamation uses a strategic performance metric collected through Reclamation's FRR system for high- and significant-hazard dams and reserved works associated facilities. This metric is used in lieu of the Department's facility condition index. After consulting

with the Department's Priority Goal Lead, Reclamation began using this alternative metric in FY 2019 to reflect revised baselines and a trend analysis that predicted a reduction of assets in acceptable condition to 82 percent in FY 2022. The reduction is anticipated due to the increased identification of MR&R needs for Reclamation's assets.

Table 5 shows FY 2019 target and actual Reclamation contributions toward the goal. In FY 2019, 340/343, or 99 percent, of priority assets were in acceptable condition at the end of the fourth quarter. This improvement is due to the use of additional appropriations received in FY 2019 to address repair needs at Reclamation facilities. Further, local Reclamation operation and maintenance leads worked diligently throughout the year to make facility improvements in order to meet the goal. As a result, Reclamation reported over \$347 million in accomplishment of repair needs addressed. This performance measure tracks the total project cost of completed and deleted activities reported in the annual MR&R update.

Table 5. Reclamation FY 2019 Performance Measures

Fiscal Year	FY 2019 Target	FY 2019 Actual
Percent of priority assets in acceptable condition (Priority Goal)	82% (283/345)	99% (340/343)
Amount of priority deferred maintenance (repair) needs/activities addressed	\$172,000 ²	\$347,440

² Reported units in \$1,000

Information Requirements

Much of the future success of Reclamation's asset management system will rest on the professional judgment of on-site managers who will assess human, financial, and asset information. Reclamation has supported investments to improve the quality of information used to inform decision making.

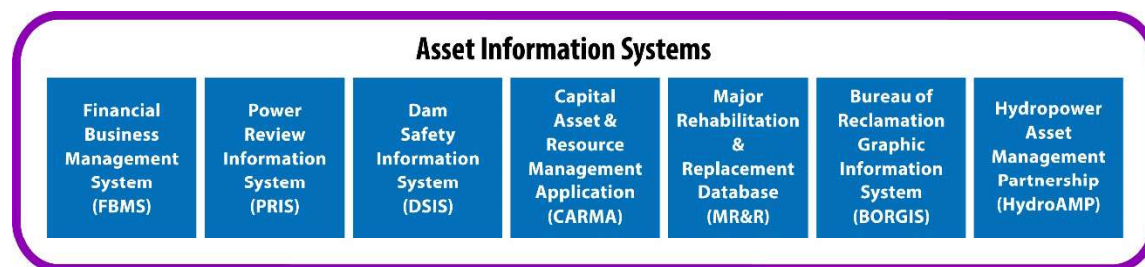


Figure 24. Reclamation's Conceptual Asset Management System Framework Asset Information Systems.

Data Management/Asset Information

Reclamation maintains a variety of systems to manage asset information. A few of these systems are described in their current state of use below:

Financial Business Management System (FBMS)

FBMS is an integrated suite of software applications designed to streamline financial and administrative functions across all Department bureaus. Implementing FBMS allowed the Department to realize common processes, a common technology platform, integrated real-time data, and improved operational decision-making. Reclamation adopted FBMS in Deployment 8, which took place in November 2013. FBMS is the system of record for Reclamation's FRPP.

Power Review Information System (PRIS)

PRIS is a web-enabled database system used to track O&M recommendations resulting from power program reviews.

Dam Safety Information System (DSIS)

DSIS is a web-enabled database system only accessible on Reclamation's intranet that is used to track Safety of Dams and O&M recommendations resulting from reviews or examinations of non-power facilities.

Capital Asset and Resource Management Application (CARMA)

CARMA is Reclamation's implementation of the Department's computerized maintenance management system using IBM® Maximo® Asset Management Software. CARMA uses the core features of the IBM® Maximo® Asset Management application; however, there are custom applications within CARMA that address specific business needs unique to Reclamation. CARMA interfaces with Reclamation's Electronic Time and Attendance System (E-TAS), and FBMS.

CARMA is employed as a tool to assist in the tracking, planning, and scheduling of work so that the highest-value work is readily identified and can be scheduled on a priority basis. CARMA is used at 27 Reclamation sites to manage equipment downtime; control and track maintenance expenses; cut spare parts inventory and costs; improve safety; increase purchasing efficiency; and deploy assets, personnel, and other resources.

Major Rehabilitation and Replacement Database (MR&R Database)

The MR&R Database is a Microsoft SharePoint application that hosts Reclamation's Major Rehabilitation and Replacement activities. The MR&R application is a live database that allows the regions and area offices to add and update MR&R activities throughout the year. The new MR&R application has improved data quality, reduced the number of data calls, and streamlined the reporting process.

Bureau of Reclamation Geographic Information System (BORGIS)

BORGIS is an enterprise system that provides geospatial information and services that directly support water and resources management operations and business functions in the accomplishment of the Department and Reclamation's missions. Enterprise geospatial data is delivered to Reclamation personnel through Tessel, a web mapping application framework that combines internal and external web services to create context-rich map views of Reclamation features. In addition, BORGIS delivers geospatial data libraries to many offices to support local geographic information system (GIS) analysis and mapping needs while realizing economies of scale and efficiencies in data management. In 2019, Reclamation began development of a new bureau-wide GIS initiative that will result in increased capabilities in these applications.

Hydropower Asset Management Partnership (HydroAMP)

Developed by Reclamation, Hydro-Quebec, the U.S. Army Corps of Engineers, and the BPA, the HydroAMP Equipment Condition Tool evaluates equipment condition through a complementary, two-tier assessment framework. Notably, the tool was developed for use and implementation by any utility with hydropower assets and may fit into existing maintenance, planning, budgeting, and decision-making structures.



Figure 25. Theodore Roosevelt Dam, Salt River Project, Arizona.

Support

Reclamation relies on the specialized knowledge of Reclamation staff at its regional, field, and area offices, as well as Reclamation's water and power partners. The primary on-the-ground

asset management responsibility rests with Reclamation’s 22 area offices.² Each area office reports to one of the five Reclamation regional offices which, in turn, reports to the Deputy Commissioner for Operations. Ultimately, asset portfolio decisions rest with the Commissioner of Reclamation who relies on several advisory bodies for assistance in the decision-making process detailed in the Resources section below.

Advisory Teams

Various advisory teams comprised of subject matter experts provide technical reviews for continual asset management program improvement and to establish best practices for Reclamation. These advisory teams span different areas of lifecycle management or related asset management processes. These teams include, but are not limited to:

Reclamation Design and Construction Coordination Team (RDCCT) – The mission of the Reclamation Design and Construction Coordination Team is to foster an environment of cooperation, communication, and collaboration across Reclamation offices at all locations and levels that will facilitate maintaining and enhancing construction management and design capabilities.

Reclamation Data Council (RDC) – The RDC coordinates Reclamation enterprise data management activities to more efficiently and effectively support Reclamation’s mission through its programs, systems, and projects. A primary goal of the RDC is to increase efficiency in the use and dissemination of information across Reclamation. Simple data standardization is essential for ensuring efficient and consistent flow of data and information that exists in various data holdings across the organization. Data standardization is the process of bringing data into a common structure that allows for better collaboration and sharing of tools and methodologies.

Facility Operation and Maintenance Team (FO&MT) – The FO&MT was created to provide a forum to address Reclamation-wide OM&R-related priorities, issues and activities. In addition, the team is used in Reclamation-wide OM&R-related program and budget formulation, and to facilitate program accomplishment. The Manager, AMD, co-chairs the FO&MT.

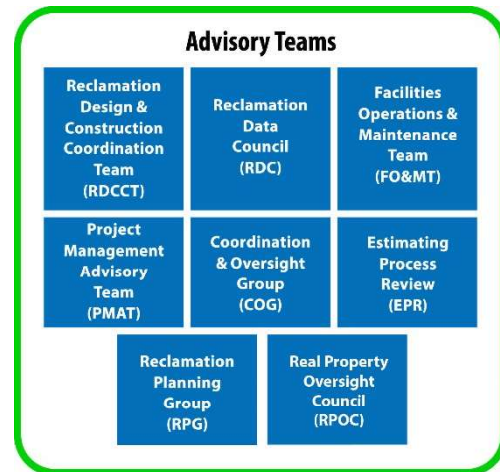


Figure 26. Reclamation's Conceptual Asset Management System Framework Advisory Teams.

² The Southern California Area Office does not manage any structural or building assets.

Coordination and Oversight Group (COG) – The COG develops and oversees the implementation of a business model to provide agency-wide processes and procedures for obtaining and managing technical services. This business model was developed to improve the overall business practices that guide the management of technical services work within Reclamation’s decentralized organizational structure.

Project Management Advisory Team (PMAT) – The PMAT provides leadership and serves as a resource assisting Reclamation directorates with the integration and consistent use of project management tools and processes to improve the use of project management practices.

Estimating Process Review (EPR) – The EPR is a group that has been tasked to address the perception that planning level cost estimates are conservative to the extent that cost/benefit analyses may be adversely affected. To address this perception, the EPR’s initial focus was on:

- Effectively informing Reclamation and others about planning level cost estimates and improving project cost risk communication;
- Developing a methodology to incorporate uncertainty in benefit estimations;
- Gaging the quality of Reclamation cost estimates by obtaining feedback from independent experts; and
- Collecting historical cost data to better understand Reclamation’s construction contingencies and non-contract costs.

Additional tasks have been added and the group’s focus has expanded to evaluating current or new procedures for all cost estimating within Reclamation.

Reclamation Planning Group (RPG) – The RPG acts in an advisory and collaborative role on the topic of planning. The group shares planning expertise and best practices for Reclamation planning, advises on related policy development, and assists with other water and related resources planning activities. The RPG also supports the development and advancement of Reclamation planning skills and competencies and makes appropriate consensus-based recommendations.

Real Property Oversight Council (RPOC) – The RPOC is responsible for the coordinated oversight of the administrative requirements for real property. Members coordinate the oversight of sound business practices essential for the consistent application of policy across Reclamation and to assist in the evaluation of significant real property inventory, transaction, and balances. The RPOC completes the following activities:

- Reviews findings of audits and internal control reviews and acts upon the findings, as necessary;
- Determines effectiveness of existing oversight activities;
- Coordinates changes to oversight across all organizations to address risk and functionality;

- Implements appropriate changes needed to oversight;
- Assigns subject matter experts to respective functional areas;
- Identifies need for additional oversight resources; and
- Ensures that functional areas are collaborating to provide guidance to regions and offices.

Workforce Competence

Reclamation continuously evaluates workforce planning to ensure that personnel have the appropriate education, training, or experience to sustain Reclamation’s current and long-term needs. By understanding workforce needs, Reclamation can better optimize recruitment, hiring, retention, training, diversity and inclusion, and employee engagement.

Reclamation has formed two teams to support its workforce planning efforts—a Leadership Team and a Planning/Functional Team. The Leadership Team consists of senior representatives from each directorate who can advise their organization and drive the workforce planning process internally. The Planning/Functional Team is made up of a group of multi-disciplinary experts from each directorate and region who provide the technical skills and knowledge for successful workforce planning.

These teams set the strategic direction for the workforce plan based on current objectives and future program changes over the next 1 to 3 years (5 years, if possible). Reclamation’s end goal is to get the right people with the right skills, experiences, and competencies in the right jobs at the right time.

Reclamation is also committed to continual growth and personal development for all Reclamation employees. To aid training professionals, supervisors, and employees alike, a Bureau of Reclamation Leadership Competency model (Figure 27) was developed. The foundational competencies of the model come from the Office of Personnel Management.



Figure 27. Reclamation Leadership Competency Model

This model illustrates five different critical areas and the associated competencies within each area. The model starts with the employee, builds towards team leader or project manager, progresses to supervisor, then manager, and finally executive. Having this competency model as a launchpad for all Reclamation employees helps guide and direct anyone interested in moving their career forward in a focused and deliberate manner.

Operation

Reclamation uses the RM to establish and formally communicate, internally and externally, Reclamation-wide requirements necessary for the consistent and efficient accomplishment of its mission. The RM consists of a series of policy, D&Ss, and select technical documents. Collectively, these releases assign program responsibility and establish and document

Reclamation-wide requirements and methods of doing business. All requirements set forth in the RM constitute official Reclamation-wide mandates.

Operational Planning and Control

The D&S, *RM Release Procedures*, [RCD 03-01](#) establishes the requirements for managing the RM and prescribes a system for developing and issuing the RM releases that enable clear instructions to the field. The process for releasing a D&S or policy is documented in the RM and requirements are outlined for drafting, internal and external reviews, comment disposition, formatting, approval, and distribution. The types of releases include:

- **Delegations of Authority.** Delegations of Authority consist of Reclamation-wide re-delegations of the Commissioner's authority.
- **Policy.** Policy reflects the Commissioner's leadership philosophy and principles and defines the general framework in which Reclamation pursues its mission. Policy is structured to encourage innovation in implementation at the local level.
- **D&Ss.** D&Ss provide the level of detail necessary to ensure consistent application of requirements. D&Ss are also structured to provide flexibility to local offices, allowing the unique aspects of each Reclamation project and program to be taken into consideration.
- **Temporary Reclamation Manual Releases (TRMRs).** TRMRs are issued to accelerate the release of policy and D&Ss or make temporary changes in requirements. TRMRs will either be incorporated permanently into the RM within 1 year or end on their expiration date. Requirements for final approval of TRMRs are identical to those for permanent releases. TRMRs have the full force of permanent policy or D&Ss.
- **Technical Documents.** Technical documents establishing Reclamation-wide requirements include Facilities Instructions, Standards, and Techniques Manuals and Power Reliability Compliance Bulletins.

Change Management

RM Release Procedures, RCD 03-01, establishes a requirement for existing RM releases to be reviewed on a recurring basis to ensure releases are current and the requirements respond to the needs of Reclamation and its stakeholders. These reviews consist of the technical expert in the originating office ensuring the information in the release is accurate and reflects current Reclamation requirements. In addition, the review must ensure the release meets the requirements established in RCD 03-01; the internet links in the document are current and working properly; and information such as mail codes and organizational references are accurate. Also, RCD 03-01 outlines requirements for major revisions, minor revisions, and rescission of existing releases that are no longer needed.

Partnerships

Reclamation regularly conducts RO&M Program field examinations (i.e., condition assessments) to verify the condition of transferred facilities and to ensure that the non-Federal entity conducts O&M of the project facilities in an acceptable manner. Deficiencies are identified and categorized, and corrective actions are documented as formal recommendations in an examination report. These recommendations are then monitored and tracked in DSIS until completed. Many of the recommendations are preventive actions intended to avoid facility breakdowns or costlier future XM.



Figure 28. East Park Dam, Orland Project, California.

The work necessary to perform O&M and any related MR&R activities is funded by the responsible operating entity in accordance with current project cost allocations. For single-purpose irrigation project facilities these costs are funded entirely by the project beneficiaries. Funding is typically obtained through OM&R assessments by the operating entity on individual users, or from other funds available to the operating entity. Additional funding is normally available in a reserve fund established by the operating entity for use in emergencies or for XM. Where sufficient funding is unavailable to the operating entity to fund significant MR&R activities, the operating entity may seek private financing or, in limited circumstances, an extended repayment contract through Reclamation.

Since the funding for OM&R of transferred works is typically the responsibility of non-Federal operating entities, much of the prioritization of activities is made by these entities. Reclamation provides input on this prioritization through its oversight processes, particularly through the RO&M field examinations and related recommendations. In the instances of multipurpose transferred works, Reclamation provides funding for the allocated share of costs assigned to the

non-reimbursable purposes, such as flood control, recreation, and fish and wildlife. Reclamation reviews the OM&R activities reported by the operating entity on an annual basis as part of the budget submitted by the entity and provides input to the priorities, as appropriate. This information will form the basis of Reclamation's future reporting under P.L. 116-9.

SAMP Documentation

Documented Information

Reclamation will continue the development of its asset management framework, which will be included in future updates of this SAMP. The SAMP will be updated on an annual basis. The SAMP will be made available online on Reclamation's internet for access, retrieval, and use and may also be sent electronically for official distribution.

SAMP Awareness

A communication plan will be created and implemented that will include the communication method, audience, content, and timeline for implementing and updating the SAMP.

Communication

Reclamation will continue to conduct internal and external outreach as it refines its asset management system. In addition to the SAMP, Reclamation will continue to provide a number of publications to disseminate information, including the [Water O&M Bulletin](#), [Facilities Instructions, Standards and Techniques \(FIST\) volumes](#), and other technical guidance and information sharing documents.

Continual Improvement

Reclamation continues to rely on a hybrid organization model that seeks the advantages of centralized program management and local program execution. Reclamation's commitment to cooperation, collaboration, and communication across organizational boundaries facilitates continued success of this organizational model. Reclamation must remain vigilant in sustaining these qualities as changes in organizational staffing, practices and policies could quickly have an adverse impact on the effectiveness of managing the risks inherent in storing large volumes of water.

Internal Audit

Once Reclamation has progressed towards establishing its asset management system, Reclamation will conduct internal audits to determine how well the organization conforms to the asset management system and the requirements laid out by ISO 55001, *Asset management — Management Systems — Requirements*. Reclamation will plan, establish, implement and maintain an audit program which will include the frequency, methods, responsibilities, planning requirements and reporting efforts as required by ISO 55001.

Management Review

Reclamation's management is responsible for establishing and maintaining effective internal controls. Reclamation has established a Programmatic Internal Control Program (PICP) to allow managers at all levels to satisfy their applicable internal control responsibilities and proactively manage risk associated with the achievement of their programs. Reclamation's PICP emphasizes integrity and ethical values to address demands for government programs and operations to be effective, efficient, reduce loss of assets, and be compliant with laws and regulations. Internal controls serve as the first line of defense in safeguarding assets and in preventing and detecting errors, fraud, waste, abuse, and mismanagement of resources. Internal controls help government program managers achieve desired results through effective stewardship of public resources.



Figure 29. Friant Dam, Central Valley Project-Friant, California.

Infrastructure Investment Strategy Update

As referenced above, Reclamation issued an Infrastructure Investment Strategy (Strategy) in 2015 that described how Reclamation planned to improve the characterization and reporting of anticipated repair needs of its assets. Initial implementation of Reclamation's Strategy focused on improving the quality of the MR&R data at reserved works facilities, DM reporting, and outreach to Reclamation transferred works operators. Specifically, Reclamation initiated three main actions:

1. Improvement of Reclamation's data reporting and processes for documenting MR&R needs at Reclamation facilities;
2. Development of a categorization system to identify the relative importance and urgency of MR&R activities using an objective risk-based methodology (described in the Categorization Framework section above); and
3. Standardization of DM activity identification.

Reclamation has improved the consistency, completeness, and utility of the MR&R database. Reclamation now categorizes all MR&R needs at Reclamation facilities based upon risk and benefit factors irrespective of how the activity is funded. Reclamation also expanded the MR&R reporting period from 5 years to 30 years to better represent the agency's long-term capital needs. The longer reporting period provides enhanced visibility of future needs to address risks, sustain benefits, and ensure the continued reliable performance of Reclamation facilities.

RM D&S, [Reporting Deferred Maintenance and Repairs of Bureau of Reclamation's Reserved Works Assets, \(FAC 01-09\)](#), was released in 2017 to improve transparency, standardization, and consistency in reporting DM. In FY 2019, Reclamation reported \$294 million in DM activities, which was consolidated into the Department's Agency Financial Report.

Reclamation continues implementation of the Strategy through engagement with external and internal stakeholders at the local and regional levels to identify the infrastructure needs of transferred works and the associated financing options. Activities described in the SAMP are consistent with the direction set forth in the Strategy and will show the continuous improvement of Reclamation's asset management.

MR&R Needs Assessment

Reclamation's five regional offices and the DSO identified 2,450 XM, DM, and dam safety modification activities in response to the FY 2019 MR&R annual update. Reclamation's 5-year MR&R needs estimate (FY 2021–2025) is \$3.8 billion, which represents more immediate, short-term needs. Reclamation's 30-year MR&R long-term needs estimate is \$10.8 billion for FY 2020–2049, which represents planning efforts for long-term needs that are currently identified at Reclamation facilities. Approximately 80 percent of MR&R activities identified in the 30-year estimate were identified at a preliminary level cost estimate.

As shown in Figure 30, the 5-year funding source breakout shows that roughly 66 percent of MR&R activities are funded through off-budget (non-appropriated) sources, including power financing, transferred works operating entities, water users, and other Federal appropriations, such as Federal Highway Administration funding.

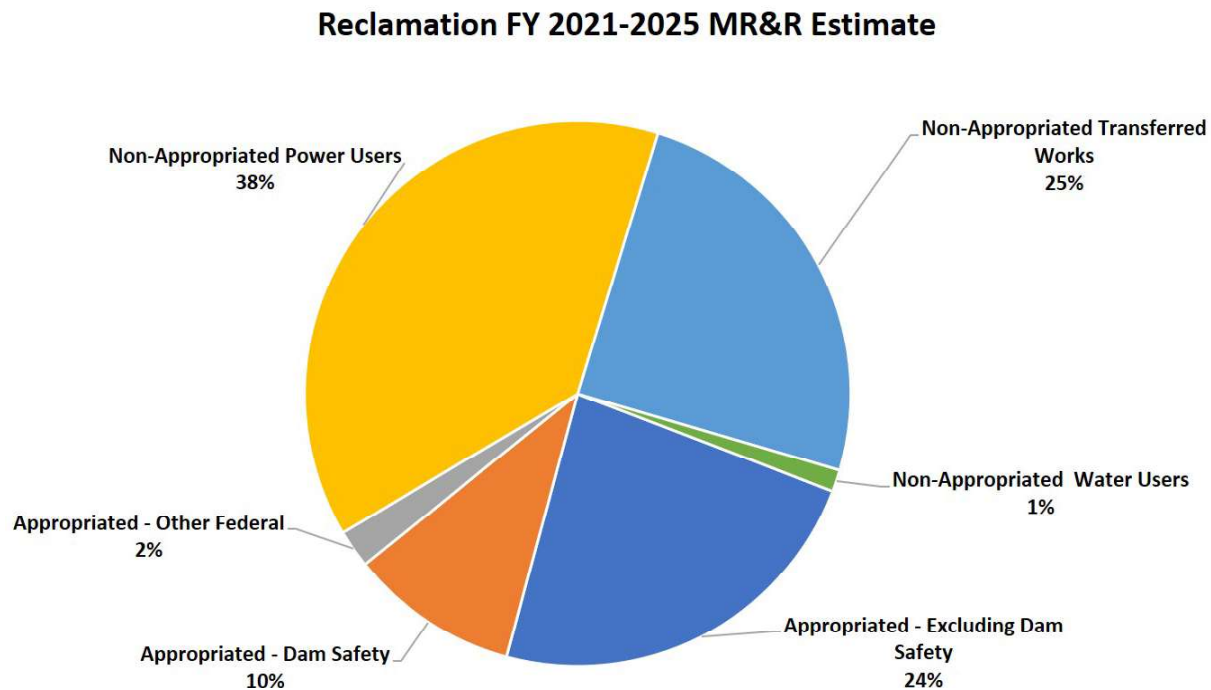


Figure 30. Reclamation FY 2021-2025 MR&R Needs Estimate by Funding Source.

The FY 2019 MR&R update was the fourth year that Reclamation has used the categorization ratings described in the Categorization Framework section above. Figure 31 below shows the MR&R categorization for the activities identified in the 30-year (FY 2019–2048) timeframe. The highest risk, but lower number of activities are associated with category A activities. These activities are the highest category of relative importance and efforts to address these activities are more complex and time consuming to complete.

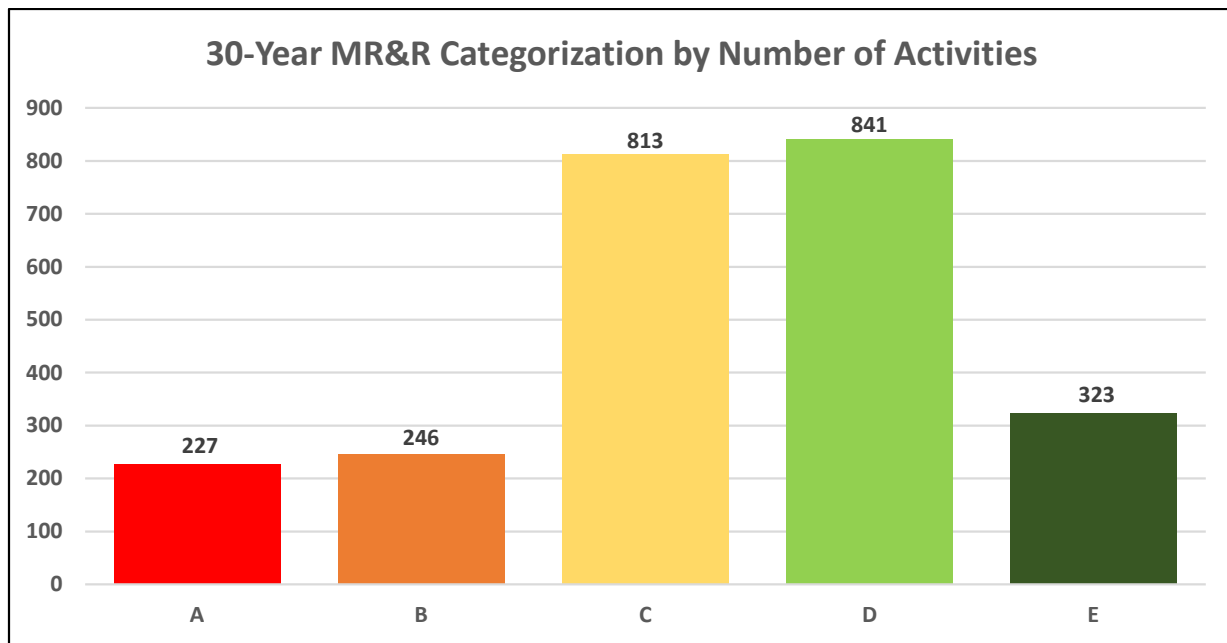


Figure 31. 30-Year MR&R Categorization by Number of Activities

Since the move to expand the reporting period from five years to 30 years, the number of activities has increased. In FY 2019, the number of activities reported was 2,450, an increase of 22 percent from the FY 2018 MR&R update. Some offices currently do not have the capability to report beyond the 5-year period and Reclamation will continue to work to identify needs over the 30-year timeframe to get a better idea of long-term needs of all facilities.

MR&R Funding Opportunities

Reclamation will continue to engage its water and power customers and other interests to ensure that infrastructure investment decisions are made in an efficient and transparent manner. Exploring additional funding opportunities can help Reclamation and its partners better meet the challenges presented by new and competing demands on the Nation's water and power infrastructure, and to expand access to public lands and recreation facilities.

Many Federal, State, and local entities offer opportunities through grant or loan programs to fund water, power, recreation, and related infrastructure improvements and new construction. This section lists some examples of Federal funding opportunities. Generally excluded from the list are funding opportunities for related activities, such as planning, studies, operations, land treatment, and emergency interventions.

The list of programs below should not be considered comprehensive, and Federal programs are subject to change on an annual basis. Furthermore, federally owned facilities may or may not be eligible for funding under these different mechanisms.

Department of the Interior Funding Opportunities

The Department of the Interior administers several funding opportunities for infrastructure maintenance and new construction activities through Reclamation and the National Park Service. Reclamation periodically offers financial assistance, primarily through the WaterSMART program, that competitively awards funding to non-Federal entities for water quality and water conservation activities. Most of these funding opportunities, except for Title XVI, may be used to conduct work on federally owned assets. Current Reclamation funding opportunities include:

Bureau of Reclamation

- **WaterSMART Grants**
 - [Water and Energy Efficiency Grants](#) are available to help applicants fund water management improvements that result in quantifiable water savings and support broader water reliability benefits.
 - [Small-Scale Water Efficiency Projects](#) focus on water efficiency improvements that have been identified through previous planning efforts and are generally smaller in scope and more locally focused than Water Energy and Efficiency Grants.
- **Drought Response Program**
 - [Drought Resiliency Projects](#) build long term-resiliency to drought by increasing water reliability, improving water management, or providing benefits for fish and wildlife and the environment.
- **The Title XVI Water Reclamation and Reuse Program**
 - [Planning, Design, and Construction of Water Recycling and Reuse Projects](#) that will stretch water supplies (including acre-feet of water to be recycled and specific water supply concerns to be addressed) in a cost-effective manner are specifically authorized for funding under Title XVI of P.L. 102-575 or eligible under 4009(c) of the Water Infrastructure Improvements for the Nation (WIIN) Act.
 - [Desalination Construction Program](#) funding is available for planning, design, and construction of WIIN Act brackish groundwater and ocean desalination projects. The projects must expand water availability, improve the environment, provide alternative water supplies in a cost-effective manner, and provide a Federal benefit.
- **Cooperative Watershed Management Program**
 - [The Cooperative Watershed Management Program](#) supplies funds for established Watershed Groups to conduct projects that address water supply concerns and improve water quality, reduce water conflicts, and advance other goals related to water quality and quantity.

- **Colorado River Basin Salinity Control Program**
 - [The Colorado River Basin Salinity Control Program](#), Title II provides financial support and technical assistance to projects that reduce salinity contributions to the Colorado River system. Common activities include canal lining and pipe installation.
- **Native American Affairs Technical Assistance Program**
 - [The Native American Affairs Technical Assistance Program](#) provides technical and financial assistance to Tribes and Tribal organizations to increase opportunities for Tribes to develop, manage and protect their water and related resources.

National Park Service

- [The Land and Water Conservation Fund](#)

Department of Agriculture Funding Opportunities

Natural Resources Conservation Service

- [The Regional Conservation Partnership Program](#)
- [The Watershed Rehabilitation Program](#)

U.S. Department of Agriculture Rural Development

- [Water and Waste Disposal Grants to Alleviate Health Risks on Tribal Lands and Colonias](#)
- [The Water and Waste Disposal Loan and Grant Program](#)
- [Water and Waste Disposal Predevelopment Planning Grants](#)
- [Water and Wastewater Revolving Funds](#)

Environmental Protection Agency Funding Opportunities

- [The Water Infrastructure Finance and Innovation Act Program](#). In America's Water Infrastructure Act of 2018 (P.L. 115-270, Section 4301), Congress directed the Environmental Protection Agency to enter into a Memorandum of Understanding with Reclamation to work together to provide assistance in administering and servicing Federal credit instruments subject to such authority and appropriations being provided to Reclamation. In October 2019, the Environmental Protection Agency and Reclamation signed the Memorandum of Understanding which includes additional terms of agreement that better align the agencies' funding mechanisms and highlight areas where the agencies will work together.
- [The Clean Water State Revolving Fund](#)
- [The Drinking Water State Revolving Fund](#)

Department of Commerce Funding Opportunities

- [The Public Works Program](#)

Department of Defense Funding Opportunities (available through the U.S. Army Corps of Engineers)

- [Environmental Infrastructure Assistance](#)

Department of Energy Funding Opportunities

- [The Title XVII Innovative Clean Energy Projects Loan Program](#)

Department of Housing and Urban Development Funding Opportunities

- [Community Development Block Grant Program](#)
- [Indian Community Development Block Grant Program](#)

Department of Transportation Funding Opportunities

- [The Surface Transportation Block Grant Program](#)
- [The Transportation Infrastructure Finance and Innovation Act Program](#)
- [The Federal Lands Transportation Program](#)
- [Federal Lands Access Program](#)

Other Funding Opportunities

Most states have funding opportunities for infrastructure improvements and new construction. Water, natural resources, recreation, transportation and commerce agencies are often good starting points. Further, local resources at the county or municipal level may be available.

Reclamation Title Transfer

As referenced above, on March 12, 2019, the President signed into law the John D. Dingell, Jr. Conservation, Management and Recreation Act (P.L. 116-9). Title VIII Subtitle A of this Act provides Reclamation with new authority to transfer title of certain eligible facilities to qualifying entities without separate and individual acts of Congress.

On May 22 and 24, 2019, Reclamation released two documents that will expedite the transfer of eligible Reclamation project facilities into local ownership and management—a new categorical exclusion and a Temporary Reclamation Manual Release (TRMR).

Reclamation established a new categorical exclusion to facilitate title transfers if the scope of the requested transfer is consistent with the terms of the categorical exclusion. If a requested title transfer does not qualify under the qualification factors of a categorical exclusion, additional analysis such as an environmental assessment or an environmental impact statement will be required. The new categorical exclusion streamlines the environmental review process for qualifying, simple title transfers.

The CMP TRMR-120, *Transfer of Title for Bureau of Reclamation Project Facilities*, is the interim guidance that Reclamation staff will follow when a requesting entity, such as a water district, requests title to Reclamation project lands or facilities. A permanent draft of the

Directive and Standard was sent out for public review and comment in October 2019 and Reclamation expects to finalize and publish it in 2020.

Future Asset Management Strategies

Reclamation will continue to work towards improving asset management throughout the organization. In general, the organization will work on the following areas:

- **Asset inventory improvement.** With even the best organizational model, success requires a complete and accurate inventory of the assets for which Reclamation is responsible. Reclamation continues ongoing efforts to identify and classify asset condition as appropriate and provide current and accurate data to the public inventories including the FRPP, National Inventory of Dams, National Bridge Inventory, and others as requested.
- **Training.** To maintain and develop technical expertise, Reclamation continues to provide personnel training. Training programs are made available to Reclamation's Denver, Regional, Area, and Construction Management Offices and to transferred works operating entities through workshops and individual asset O&M training. These training programs support Reclamation's Workforce Competence model by improving outreach and development of technical expertise in anticipation of inevitable employee succession. In addition, the trainings serve to advance asset management practices.
- **Communication.** Reclamation has adopted a coordinated asset management practice representative of all offices and, in certain cases, project stakeholders or other Federal agencies. Reclamation is committed to effective communication to improve asset management practices. Reclamation will leverage this report and future deliverables pursuant to P.L. 116-9 to further advance asset management practices.
- **Lifecycle management.** Reclamation will continue to streamline processes in a collaborative manner throughout the asset lifecycle stages to more efficiently deliver project benefits. The next iteration of the SAMP will include a full lifecycle management section detailing construction, O&M, and disposal strategies, including the title transfer process.
- **Data Analytics and Visualization.** Reclamation is working to increase the use of data analytics and visualization to better present asset management data, make data accessible and consumable for communicating needs to Reclamation stakeholders, and to further inform decision-making throughout Reclamation. A SharePoint solution has been developed to standardize Reclamation's asset data, reporting, and processes by providing a widely accessible database tool for use in the field. The use of data for resource and budget planning will reduce data calls to the field and the time required to complete the data calls.

- **Timeline and associated tasks.** Reclamation's next SAMP will include a timeline and associated tasks to show how Reclamation will achieve asset management objectives throughout the organization. The status of AMPs will also be included since they will support the implementation of these objectives.
- **Identification of infrastructure needs and funding options.** Reclamation will continue to engage with external and internal stakeholders at the local and regional levels to identify infrastructure needs and the potential for associated financing options.

Definitions

The following definitions are used in this SAMP. In many cases, the definition (e.g., “associated facility”) is 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.** An asset is an item, thing or entity that has potential or actual value to an organization.³
- B. **Asset Management.** The coordinated activity of an organization to realize value from assets.⁴
- C. **Associated Facilities.** Associated facilities are non-dam, water-related facilities such as canals, distribution systems, pumping plants, etc.
- D. **Business Objective.** A business objective is a defined outcome (not output) that directly supports Reclamation’s mission.
- E. **Business Practice.** A business practice is a rule which Reclamation employees are expected to follow when conducting business processes.
- F. **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.”⁵
- G. **Capital Asset and Resource Management Application (CARMA).** Reclamation’s instance of IBM® Maximo® Asset Management software application platform.
- H. **Comprehensive Review.** A team review of a high- or significant-hazard dam every 8 years. Performed by a senior engineer who leads the technical team responsible for the continuous monitoring and evaluation of a given dam in Reclamation’s inventory.
- I. **Comprehensive Facility Review.** A hydropower plant review performed by personnel external to the region every 6 years. The review covers management, operations, mechanical and electrical maintenance, and Supervisory Control and Data Acquisition Industrial Control Systems (SCADA-ICS).
- J. **Constructed Asset.** A Reclamation asset is a capitalized facility, building, structure, project feature, power production equipment, recreation facility, or quarters. In

³ International Organization for Standardization. 2014. *ISO 55000:2014 Asset management – Overview, principles and terminology*. Page 13.

⁴ International Organization for Standardization. 2014. *ISO 55000:2014 Asset management – Overview, principles and terminology*. Page 14.

⁵ Harrington, H.J. 1991. *Business Process Improvement*. McGraw-Hill. New York, NY. Page 9.

addition, capitalized and non-capitalized heavy equipment, motor vehicles, and other installed equipment used to achieve the mission of Reclamation.

- K. **Cultural Resources.** Any prehistoric and historic districts, sites, buildings, structures, objects, cultural landscapes, sacred sites, and traditional cultural properties. Further, within the broad range of cultural resources, some have recognized significance and are called historic properties.
- L. **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.
- M. **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.”⁶
- N. **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. Directives and Standards are developed corporately. In other words, they undergo a comprehensive drafting and review process by the functional experts in the area, regional, and corporate offices before they are adopted.
- O. **Disposal.** A constructed asset (e.g., building, structure) that is targeted for removal from the Federal Real Property Profile inventory.
- P. **Extraordinary Maintenance.** Major, non-recurring maintenance to Reclamation-owned or -operated facilities, or facility components. Extraordinary Maintenance is intended to ensure the continued safe⁷, dependable, and reliable delivery of authorized project benefits.
- Q. **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

⁶ Federal Accounting Standards Advisory Board. 1996. *Accounting for Property, Plant and Equipment – Statement of Federal Financial Accounting Standards No. 6*, ¶77. GPO # 041-001-00462-9. Available online at: <http://files.fasab.gov/pdffiles/sffas-6.pdf>

⁷ The term “safe” in this definition is intended to include the concept of structural safety of the facility.

enclose usable space), structures (facilities having the basic function of an operational activity), associated land, and real property improvements.

- R. **Facility Condition Index.** In accordance with Department of the Interior guidance, Facility Condition Index 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 needs on its facilities.
- S. **Facility Reliability Rating.** A performance measure rating system applied to Reclamation's high- and significant-hazard dams, powerplants, and associated facilities, which documents important factors associated with the reliability of those assets.
- T. **Federal Management Regulations 41 Code of Federal Regulations 102.** The Federal Management Regulations are regulations prescribed by the Administrator of the General Services Administration to govern and guide Federal agencies. The Federal Management Regulations provides policies covering the acquisition, management, utilization, and disposal of real property and motor vehicles by Federal agencies.
- U. **Federal Property Management Regulations 41 Code of Federal Regulations 101.** The Federal Property Management Regulations are regulations prescribed by the Administrator of the General Services Administration to govern and guide Federal agencies. The Federal Property Management Regulations provide policies covering the acquisition, management, utilization, disposal of supply, and inventory management by Federal agencies.
- V. **Federal Real Property Council.** Executive Order 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, the Administrator of the General Services Administration, 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.
- W. **Federal Real Property Profile.** A system administered by the General Services Administration that houses the Federal Real Property inventory data (e.g., buildings, structures, lands).
- X. **Financial and Business Management System.** A single, integrated financial and business management tool that helps the Department of the Interior and Reclamation manage their missions. FBMS helps Reclamation manage a variety of administrative functions, including Real Property.
- Y. **IBM® Maximo® Asset Management.** Maximo Asset Management is an Enterprise Asset Management system that provides comprehensive support for the asset management life cycle via work flow process management, operation and maintenance tracking activity, and supply chain management needs for resources and parts.
- 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.⁸

- AA. **Major Rehabilitation and Replacement.** Extraordinary maintenance activities which are separate and distinct from those activities that would typically be addressed as part of a facility's regular (base) operation and maintenance program and includes dam safety modifications and DM activities.
- BB. **Multi-Use Heritage Assets.** Heritage Assets whose predominant use is general government operations.
- CC. **Multipurpose Project.** A project designed for irrigation, power, flood control, municipal and industrial, recreation, and fish and wildlife benefits, in any combinations of two or more (contrasted to single-purpose projects serving only one need).
- DD. **Reclamation Manual Supplement to the Federal Property Management Regulations, 114S.** The Reclamation Manual provides a link to Reclamation's supplement to the Federal Property Management Regulations related to acquisition, management, utilization, and disposal of real and personal property.
- EE. **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.
- FF. **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 to manage its real properties and associated costs. In addition, the SRPO develops and implements asset management plans; develops and monitors real property performance measures; and disposes of properties that are not needed.
- GG. **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 "transferred works" where the responsibility of operation, maintenance, and replacement activities has been transferred to other entities.
- HH. **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

⁸ Federal Accounting Standards Advisory Board. 1996. *Accounting for Property, Plant and Equipment – Statement of Federal Financial Accounting Standards No. 6*, ¶78. GPO # 041-001-00462-9. Available online at: <http://files.fasab.gov/pdf/ffas-6.pdf>

be confused with “title transfer,” where Reclamation turns over ownership and O&M to another entity pursuant to authorizing legislation.

Appendix A – Reclamation Facility Review Resource Matrix

In 2008, the Bureau of Reclamation developed the Reclamation Facility Review Resource Matrix. The matrix provides information on the content and purpose of reviews to help Reclamation gain efficiencies and increase the integrity of the reviews. The matrix characterizes the various reviews (facility/program), provides information to enhance local decisions, and fosters opportunities for customer involvement. The matrix is used to combine Reclamation's site-specific and program reviews at the facility level. The local facility coordinates review schedules, preparatory requirements, site requirements, and decisions concerning personnel (Reclamation and customer) involvement.

Acronyms Used in the Checklist

CFR – Comprehensive Facility Review
CR – Comprehensive Review
CRM – Civil Rights Management
CSR – Comprehensive Security Review
EISA – Energy Independence and Security Act
EMS – Environmental Management System
EO – Executive Order
FRPP – Federal Real Property Profile
O&M – Operations and Maintenance
MC – Mission Critical
MMC – Major Mission Critical
MSO – Mission Support Organization
NCI – National Critical Infrastructure
OMB – Office of Management and Budget
PE – Project Essential
PFR – Periodic Facility Review
PRO&M – Power Review of Operation and Maintenance
PSR – Periodic Security Review
RBIC – Reclamation Bridge Inspection Coordinators
RO&M – Review of Operation and Maintenance
USC – U.S. Code
V&V – Verification and Validation

Reclamation Facility Review Resource Matrix

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Reclamation Facility 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 Engineering and Power Facility O&M related to Electrical, Mechanical, Operations and Management areas.	No. Reviews are direct funded by each facility with costs distributed in the same manner as other O&M costs.	Yes	FAC 4-01 http://www.usbr.gov/recman/fac/fac04-01.pdf	Max Spiker mspiker@usbr.gov	Annual Reviews are performed by the facility as part of the PRO&M Program. Annual Reviews are performed on the years that either PFRs or CFRs are not performed.
Periodic Facility Review (PFR) – Power	Site-specific	Power Office	Region/Area	Every 6 years and alternate with the CFR (PFR or CFR takes place every 3 years)	Power Engineering and Power Facility O&M related to Electrical, Mechanical, Operations and Management areas.	No. Reviews are direct funded by each facility with costs distributed in the same manner as other O&M costs.	Yes	FAC 4-01 http://www.usbr.gov/recman/fac/fac04-01.pdf	Max Spiker mspiker@usbr.gov	CFRs and PFRs are performed on alternating cycles every 6 years. Whenever possible, the reviews are 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. Annual Reviews are performed on the years that a CFR or PFR is not performed.
Comprehensive Facility Review (CFR) – Power	Site-specific	Power Office	Denver/Region/ Area	Every 6 years and alternate with the PFR (PFR or CFR takes place every 3 years)	Power Engineering and Power Facility O&M related to Electrical, Mechanical, Operations and Management areas.	No. Reviews are direct funded by each facility with costs distributed in the same manner as other O&M costs.	Yes	FAC 4-01 http://www.usbr.gov/recman/fac/fac04-01.pdf	Max Spiker mspiker@usbr.gov	CFRs and PFRs are performed on alternating cycles every 6 years. Whenever possible, the reviews are 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. Annual Reviews are performed on the years that a CFR or PFR is not performed.
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 CR 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. Specialists perform PFR or CR reviews on alternating cycles every 4 years. Annual Site Inspections are performed on years that reviews by specialists are not performed.
Periodic Facility Review – High- and Significant-Hazard Dams	Site-specific	High- and Significant-Hazard Dams	Region/Area	Every 8 years and alternate with the CR (PFR or CR takes place every 4 years)	Dam Safety/O&M	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	Bob Pike rpike@usbr.gov	PFRs and CFRs are performed by specialists on alternating cycles every 4 years. Annual Site Inspections are performed on years that reviews by specialists are not performed.
Comprehensive Review – High- and Significant-Hazard Dams	Site-specific	High- and Significant-Hazard Dams	Denver/Region/Area	Every 8 years and alternate with the PFR (PFR or CR takes place every 4 years)	Dam Safety/O&M	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	Bob Pike rpike@usbr.gov	PFRs and CRs are performed by specialists on alternating cycles every 4 years. Annual Site Inspections are performed on years that reviews by specialists are not performed.
Examination of Normally Inaccessible Features – High- and Significant-Hazard Dams	Site-specific	Typical features	Evaluated during PFRs & CRs	During PFR or CR reviews on alternating cycles every 4 years	Specific technical expertise depending on feature	No	Yes	FAC 01-07 http://www.usbr.gov/recman/fac/fac01-07.pdf	Bob Pike rpike@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	Bob Pike rpike@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	Region/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	Katharine Dahm kdahm@usbr.gov	Includes: 1) Carriage, distribution, and drainage systems; 2) Pumping and pump-generating plants; 3) Powerplant 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
Review of Operations and Maintenance of Urbanized Canals Program	Very site-specific	Canal Hazard Program	Region/Area/Denver Asset Management Division	Not to exceed 3 years	O&M	No	Yes	FAC 01-12 https://www.usbr.gov/recman/fac/fac01-12.pdf	Nick Casamatta ncasamatta@usbr.gov	Includes canals with a population at risk greater than 100, or estimated property damage greater than \$5,000,000. Each urban canal has a unique identification number. Although the inspection frequency is 3 years, there is an annual reporting requirement from each Region and the Asset Management Division.

Reclamation Facility 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
Review of Operation and Maintenance (RO&M) Program (continued)										
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	Katharine Dahm kdahm@usbr.gov	Includes Canal Special Reviews
Asset Management										
Reclamation Bridge Inventory and Inspection Program	Site-specific	All Bridges	Denver/Region/Area	2 – 6 years	Structural	No	Yes	FAC TRMR 98 https://www.usbr.gov/reman/temporary_releases/factmr-98.pdf	Dan Staton dstaton@usbr.gov	Coordination with RO&M, PFR, and CFR as appropriate.
Landslide Surveillance Program	Landslide Register	Site-specific	Denver/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	EO 13327 Federal Real Property Asset Management https://www.govinfo.gov/content/pkg/FR-2004-02-06/pdf/04-2773.pdf	Reuben Vidaurrezaga rvidaurrezaga@usbr.gov	Coordination with other Asset Management Assessments.
Property Reviews	Internal Control	Region	Denver/Region/Area	4 year cycle	Property	Yes, regions fund review team	No	OMB Circular A-123 https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2016/m-16-17.pdf	Jason Moss jmoss@usbr.gov	Coordination with site V&V as required.
Historic Property Assessment	Internal Control	Region	Denver/Region/Area	5 year cycle	CRM, Property, and RO&M	No	No	EO 13327 https://www.govinfo.gov/content/pkg/FR-2004-02-06/pdf/04-2773.pdf SFFAS 29 https://fasab.gov/accounting-standards/document-by-chapter/ LND 02-01 https://www.usbr.gov/reman/ln/ln02-01.pdf LND 02-03 https://www.usbr.gov/reman/ln/ln02-03.pdf Asset Management Plan Guidance	Federal Preservation Officer, Joe Giliberti jgiliberti@usbr.gov Regional Archeologist	Coordinate with RO&M and Property reviews.
Historic Property Reporting	Reporting	Region	Denver/Region/Area	Annual	CRM	No	No	LND 02-01 https://www.usbr.gov/reman/ln/ln02-01.pdf EO 13327 https://www.govinfo.gov/content/pkg/FR-2004-02-06/pdf/04-2773.pdf SFFAS 29 https://fasab.gov/accounting-standards/document-by-chapter/	Federal Preservation Officer, Joe Giliberti jgiliberti@usbr.gov Regional Archeologist	Denver Office Point of Contact: Joe Giliberti, Federal Preservation Officer
Building Condition Assessments	Site-specific	Region/Area/Fa- cility	Region/Area/s/ Facility	Annual/5 year Comprehensive	Property/O&M	No	Yes	DOI Asset Management Plan Section 4.5 (in development) EO 13327 https://www.govinfo.gov/content/pkg/FR-2004-02-06/pdf/04-2773.pdf	Dan Staton dstaton@usbr.gov Reuben Vidaurrezaga rvidaurrezaga@usbr.gov	Coordination with Property, RO&M, PFR, and CFR reviews as appropriate.

Reclamation Facility 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
Environmental Compliance Program										
Hazardous Materials and Hazardous Waste Auditing and Review Program	Compliance	Facility/Area	Denver/Region/Area	Maximum of 5 per year; 1 per Region	O&M, Hazardous Power, Hazardous Materials	No	Yes	ENV 15-03 https://www.usbr.gov/re/cman/env/env15-03.pdf , 515 DM 2	Lance Marbut lmabrut@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 15-01 https://www.usbr.gov/re/cman/env/env05-01.pdf	Lance Marbut lmabrut@usbr.gov	Reclamation underwent initial EMS audits in FY 2011/early 2012. Independent EMS audits will now occur every 3 years.
Sustainable Building Assessments	Conformance Audit	Region/Area/ Facility	Denver/Region/Area/ Facility	After initial assessment, every 5 years	Sustainable Buildings, Mechanical Professional Engineer	No	No	ENV TRMR-58 http://www.usbr.gov/rec/man/temporary_release/5envtrmr-58.pdf	Amanda Ross amross@usbr.gov	
Energy Independence and Security Act (EISA) of 2007 Audits	Compliance	Region/Area/ Facility	Denver/Region/Area/ Facility	25% of covered facilities each year; complete 100% in 4 years, repeat	Technical/ Engineering	No	Yes	Public Law 110-140; Energy Independence and Security Act of 2007	Amanda Ross amross@usbr.gov	Evaluation is entered annually into the EISA Compliance Tracking System and implementation information is entered as available throughout the year.
Federal Building Seismic Safety Program										
Seismic Evaluation - Buildings	Site-specific	Buildings	Denver/Region/Area	One time	Structural/ Nonstructural	No	No	BGT 04-05 https://www.usbr.gov/re/cman/bgt/bgt04-05.pdf	Tim Brown tbrown@usbr.gov	The Program was completed in FY 2013. Structural and nonstructural reviews are completed in separate reports.
Seismic Evaluation - Powerplants, Pumping Plants	Site-specific	Powerplants, Pumping Plants	Denver/Region/Area	One time	Structural/ Nonstructural	No	No	BGT 04-05 https://www.usbr.gov/re/cman/bgt/bgt04-05.pdf	Tim Brown tbrown@usbr.gov	The Program was completed in FY 2013. 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	Yes	LND 08-03 http://www.usbr.gov/rec/man/lnd/lnd08-03.pdf	Regional Realty Officers	Annual summary reports provided by regional offices to Policy and Administration Office.
Concessions Management by Reclamation	Contract and Compliance	Recreation Site	Denver/Region	5 year minimum	Concessions Management	No	Yes	LND 04-01 https://www.usbr.gov/re/cman/lnd/lnd04-01.pdf	Regional Recreation Coordinators	
Concessions Management by Non-Federal Partners	Review and Evaluation	Recreation Site	Region/Area	Annual	Concessions Management	No	Non-Federal Partners	LND 04-02 http://www.usbr.gov/rec/man/lnd/lnd04-02.pdf	Regional Recreation Coordinators	Collaboration with non-Federal, State, and local managing partners
Museum Property Management	Reporting	Facility	MSO; Region/Area	Annual	CRM and Property	No	Non-Federal Partners (Curators)	LND 02-02 http://www.usbr.gov/rec/man/lnd/lnd02-02.pdf	Regional Archeologists and Property Accountable Officers	Coordinate with non-Federal facility (State, Tribal, museum) and Federal Property Manager
Museum Property Management	Assessments	Facility	MSO; Region/Area	5 years	CRM and Property	No	Non-Federal Partners (Facility Managers)	LND 02-02 http://www.usbr.gov/rec/man/lnd/lnd02-02.pdf	Regional Archeologists and Property Accountable Officers	Denver Office Point of Contact: Kara J. Hurst, National Curator and Native American Graves Protection and Repatriation Act Coordinator

Reclamation Facility 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; Department of the Interior Safety and Health Manual, 485 DM Chapter 6; OMB Circular A-123 https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2016/m-16-17.pdf Reclamation Manual D&S SAF 01-01 https://www.usbr.gov/reclaman/saf/saf01-01.pdf Reclamation Safety and Health Standards Section 2.1 https://www.usbr.gov/ssle/safety/RSHS/rshs.html	Regional and Area Office Safety Contacts	Includes inspections, 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; Department of the Interior Safety and Health Manual, 485 DM Chapter 6; OMB Circular A-123 https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2016/m-16-17.pdf Reclamation Manual D&S SAF 01-01 https://www.usbr.gov/reclaman/saf/saf01-01.pdf Reclamation Safety and Health Standards Section 2.1 https://www.usbr.gov/ssle/safety/RSHS/rshs.html	Regional Authority Having Jurisdiction	Compliance
Periodic Security Review (PSR) – Security	Site-specific Assessment	Critical Infrastructure Facilities (MMC, MC, and PE)	Region/Area/Facility/ Denver	Every 4 years for MMCs, MCs and PEs; Every 3 years for NCIs	Security/O&M	No	Yes	SLE 03-02 http://www.usbr.gov/psman/sle/sle03-02.pdf	Regional Security Managers	Region is responsible for ensuring annual O&M inspection of all security equipment. Frequency cycle displayed began transition in FY 2017.
Comprehensive Security Review (CSR) – Security	Site-specific Assessment	Critical Infrastructure Facilities (NCI and MMC)	Region/Area/Facility/ Denver	Every 4 years for MMCs; Every 3 years for NCIs	Security/O&M	No	Yes	SLE 03-02 http://www.usbr.gov/reclaman/sle/sle03-02.pdf	Kim Langston klangston@usbr.gov	Region is responsible for ensuring annual O&M inspection of all security equipment. Frequency cycle displayed began transition in FY 2017.

Reclamation Facility 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 (continued)										
Accessibility Compliance or Accessibility Self-Evaluation	Compliance	Dam, Powerplant, 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 https://www.usbr.gov/re/cman/crm/crm03-01.pdf	Lara Grillos lgrillos@usbr.gov	
Water Contracts										
Periodic Reviews of Water Deliveries with Respect to Contract Terms	Compliance	Water-related Contracts	Denver/Region/Area	5 - 10 contracts per year/region	Water-related law and policy contracts	No	Yes	PEC 05-08 https://www.usbr.gov/re/cman/pec/pec05-08.pdf	Regional and Area Office Repayment staff	Denver Office Point of Contact: Scott Hutchins; shutchins@usbr.gov

Notes:

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

This 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 Managing for Excellence Action Item 18, Recommendation 3 (updated January 2019)