



— BUREAU OF —
RECLAMATION

Reclamation's Deferred Maintenance

Asset Leadership Network
National Academy of Sciences
January 10, 2024

Agenda



Reclamation Background



Deferred Maintenance



Reclamation Deferred Maintenance



Moving Forward



Questions



Mission Statement

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.



Infrastructure

294 Reservoirs and 591 Dams

77 Hydroelectric Plants

10,956 Miles of Canals

\$1.4B in Hydropower Economic
Contribution

\$23.2B in Irrigation Economic
Contribution



Hydropower

- Second Largest Hydroelectric Producer in the U.S.A.
- Fifth Largest Electric Utility In The 17 Western States
- Produce 40B kwh Annually
- 192 Generating Units
- Enough power for 3.97 million households



Irrigation

- Provides irrigation water to 20% of U.S. Western farmers (10M acres)
- Reclamation Projects enable farmers to produce 60% of the nation's vegetables and 25% of the nation's fruit and nut crops
- Supports more than 362,000 jobs.



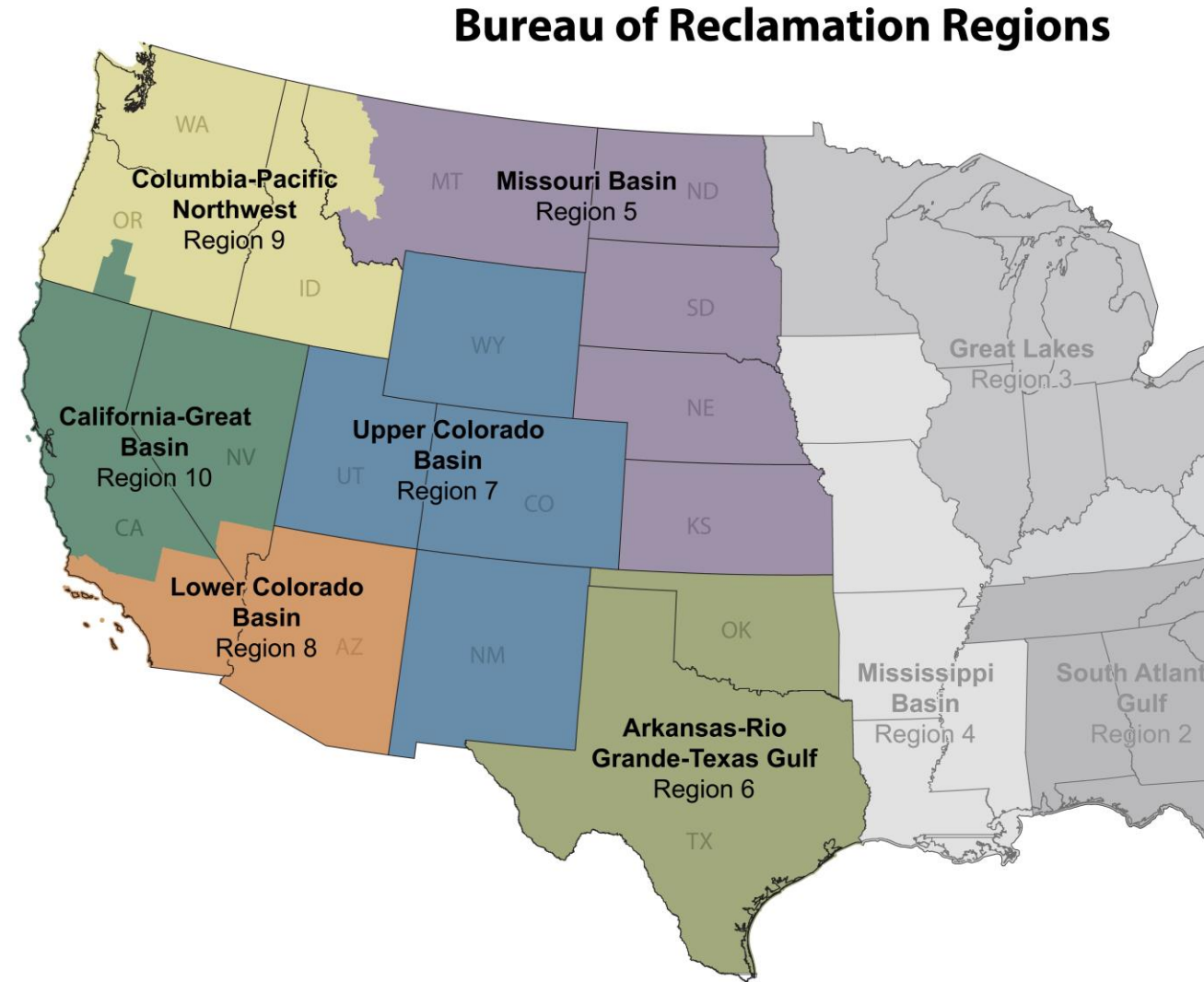
Recreation

- 235 recreation areas
- 590 campgrounds
- 1391 miles of trails
- 514 boat ramps
- \$3.2 billion economic contribution in 2021
- 38,000 jobs supported



Bureau of Reclamation

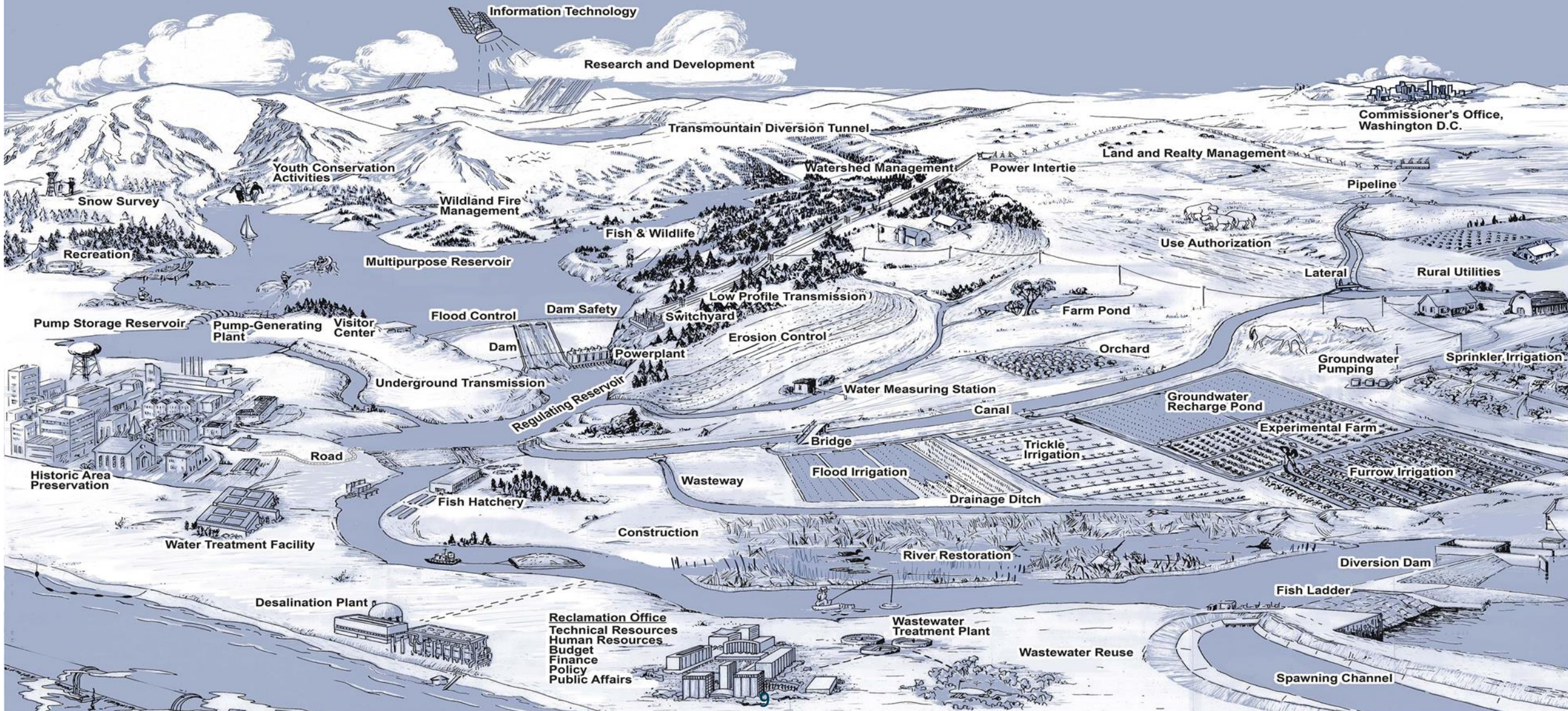
- Missouri Basin and Arkansas-Rio Grande-Texas Gulf
- Lower Colorado Basin
- California-Great Basin
- Columbia-Pacific Northwest
- Upper Colorado Basin



Bureau of Reclamation Asset Management

The coordinated activity of an organization to realize value from assets.

(International Organization for Standardization, ISO 55000 Asset Management, (Clause 3.3.1))



Deferred Maintenance (DM)

"Maintenance and repairs that were not performed when they should have been or were schedule to be and which are put off or delayed to a future period" (*Statement of Federal Financial Accounting Standards (SFFAS) 42: Deferred Maintenance and Repairs*)

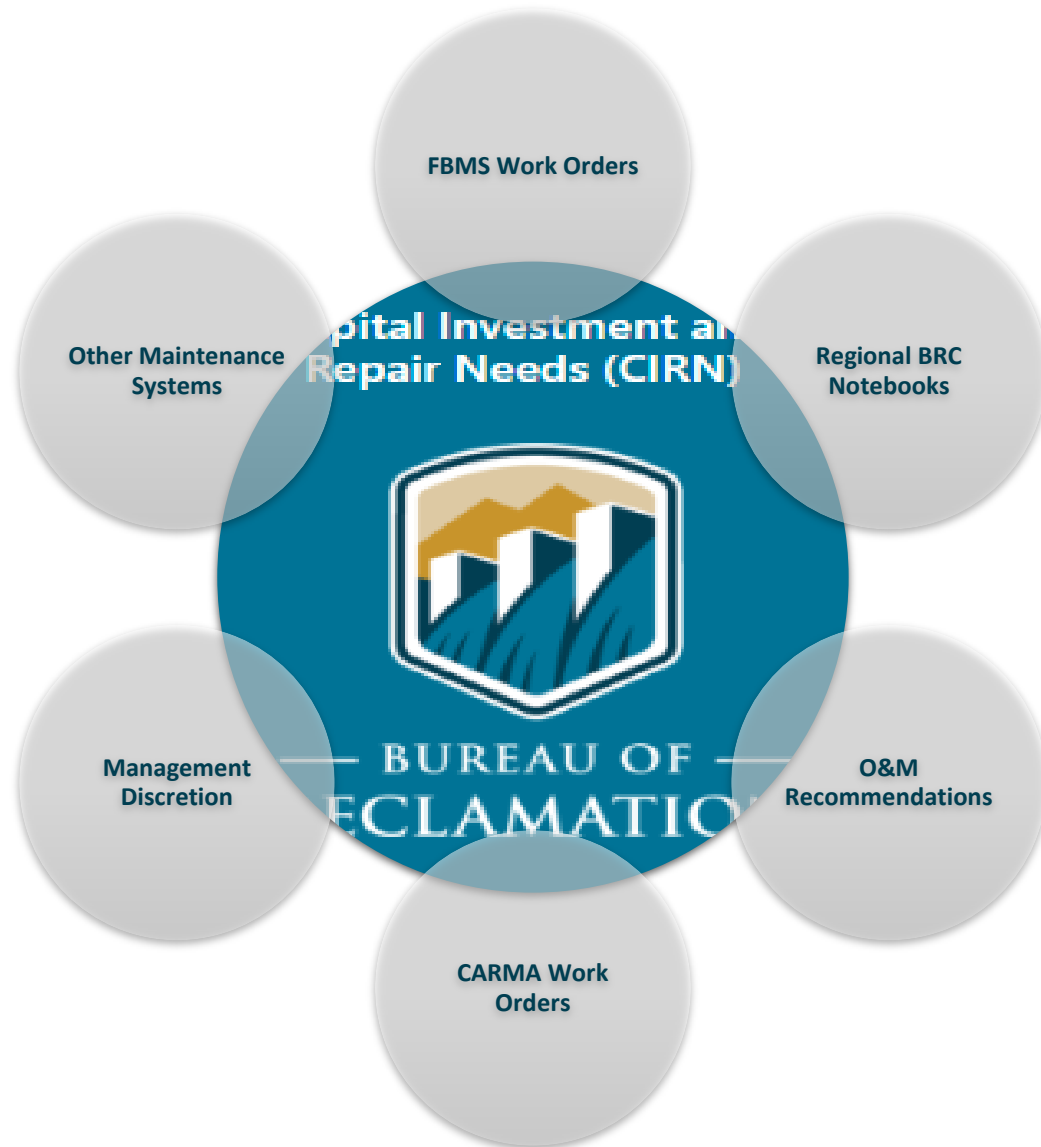


Reclamation DM Requirements

- **SFFAS 6 Accounting for Property, Plant, and Equipment**
 - Established the standards for disclosing DM associated with Federally funded and constructed assets
- **SFFAS 42 Deferred Maintenance and Repairs**
 - Amended SFFAS 6 Required Supplemental Information (RSI) requirement to improve the measurement of deferred maintenance and repairs (DM&R)
- **DOI-AAAP-0031, Changes to Deferred Maintenance and Repairs Reporting by the Statement of Federal Financial Accounting Standards 42**
 - The purpose of this joint policy memorandum is to implement the SFFAS 42: Deferred Maintenance and Repairs; amending SSFFAS 6, 14, 29, and 32
- **Reclamation Manual (RM) FAC 01-09, Reporting Deferred Maintenance and Repairs (DM) of the Bureau of Reclamation's Reserved Works Assets**
 - Directive and Standard on reporting Reserved Works DM amounts to the Department of Interior (DOI) consolidated Agency Financial Report (AFR), RSI



Reclamation DM Sources



- DM can come from various sources
 - *Sources should be auditable*
- DM is reported out of the Capital Investment and Repair Needs (CIRN) application

CIRN Home (Activities for All Major Categories)

Advanced Filter: Filter By Field Condition Enter text Apply Adv. Filter Clear Adv. Filter Refresh & Clear Refresh Without Clearing

CIRN ID	Short Title	Major Category	Asset Name	Project Name	Region	Office	RPUID	Rating	Status	Est. Total Cost
9080004	Shop Replacement	DM	Norton Dam, Reservoir, Garage, Shop	P-S MBP, ALUMINA UNIT	MSB-ART	Nebraska Kansas Area Office	R0482002008	E	Incomplete	\$350,000
9080003	Replace Station Service Transformers and Switchgear	DM	Gen Canyon Power Facility	CRSP, GLEN CANYON UNIT	UCB	Upper Colorado Power Office	R05570000006005	C	In Progress	\$2,122,795
9080002	At spillway Gate 2, repair the lower electrical grounding cable located at the left side gate guide.	DM	KENDRICK DAM	CVP, MISCELLANEOUS PROJECTS	CSB	Northern California Area Office	R02140060005	E	Deleted	\$7,800
9080001	Grand Coulee Warehouse 3 Replacement	XM	WAREHOUSE 3	GRAND COULEE DAM OPERATIONS OF	CPH	Grand Coulee Power Office	R52220100008	C	Incomplete	\$11,208,350
9080009	Install a wireless remote operating system that would permit closure of the wheel-mounted penstock guard gates from the Mt. Elbert Pumped Storage House	DM	MT. ELBERT FOREBAY DAM, RESERVOIR (OFFstream ZE)	FRYINGPAN-ARKANSAS PROJECT	MSB-ART	Eastern Colorado Area Office	R03620130005	D	Incomplete	\$90,000
9080008	Lake Shoshone - Repair the hydraulic oil leak from the hoist for the regulating gate "B"	DM	LAKE SHERBURNE DAM, LAKE (South Current Creek HE)	MLK RIVER PROJECT	MSB-ART	Montana Area Office	R00131200005	E	Deleted	\$25,000
9080007	Left abutment rock removal and repair/replace broken rock anchor	DM	KORTES DAM, RESERVOIR (N Platte River, CO)	P-S MBP, KORTES UNIT	MSB-ART	Wyoming Area Office	R05457600005	C	Incomplete	\$5,400,000
9080006	Steel Outlet Works Pipe Painting	DM	GLENDON DAM, DIXES, RESERVOIR (North Platte River ZE)	P-S MBP, GLENDON UNIT	MSB-ART	Wyoming Area Office	R04980900005	D	Incomplete	\$75,000
9080005	Spillway Concrete Repair (Asiatic Dam Concrete repair on right wall of stilling basin. Spillway Bridge Concrete Repair. Spillway wall and left spill)	XM	ALCOVA DAM, RESERVOIR (North Platte River ZE)	KENDRICK PROJECT	MSB-ART	Wyoming Area Office	R01441821005	C	Completed	\$5,100,000
9080004	Right abutment rock reinforcement	DM	SEBASTIAN DAM, RESERVOIR (N Platte River, CDTA)	KENDRICK PROJECT	MSB-ART	Wyoming Area Office	R01441790005	C	Incomplete	\$661,000
9080003	Replace 156V Cable - Installed 1975, RR 40 years. This is an aluminum conductor, with an insulation system susceptible to	DM	Morrow Point Power Facility	CRSP, W N ASPHALL UNIT	UCB	Upper Colorado Power Office	R06220001019005	D	Incomplete	\$900,000

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Figure: Screenshot of CIRN Homepage


Reclamation Reasons for DM

 **Facility Restrictions**
Operating restrictions may be in place and impact the ability to complete work

 **Insufficient Expertise**
Specialized or Experienced staff may be unavailable in the regional, area, or field offices

 **Funding Constraints**
Lack of available funding to complete the work

 **Lack of Priority**
Worsening conditions on other projects needing immediate attention, administration and/or regional priorities change, or other work takes priority

 **Weather**
Weather conditions may impede the ability to accomplish work (climate change, drought, flooding, fire)

 **Other Reasons**
Inaccessible equipment, labor, supply chain issues, inflation, etc.



Reclamation DM Process



Identification

Preventative and/or
Corrective
Maintenance/Repair
has been identified



Documentation

Asset is scheduled
for maintenance



Deferment

Action meets
DM definition



Tracking

DM is entered into
CIRN and tracked
until completion



Reporting

DM included in annual
MR&R reporting, Annual
budget development, and
quarterly DM reporting

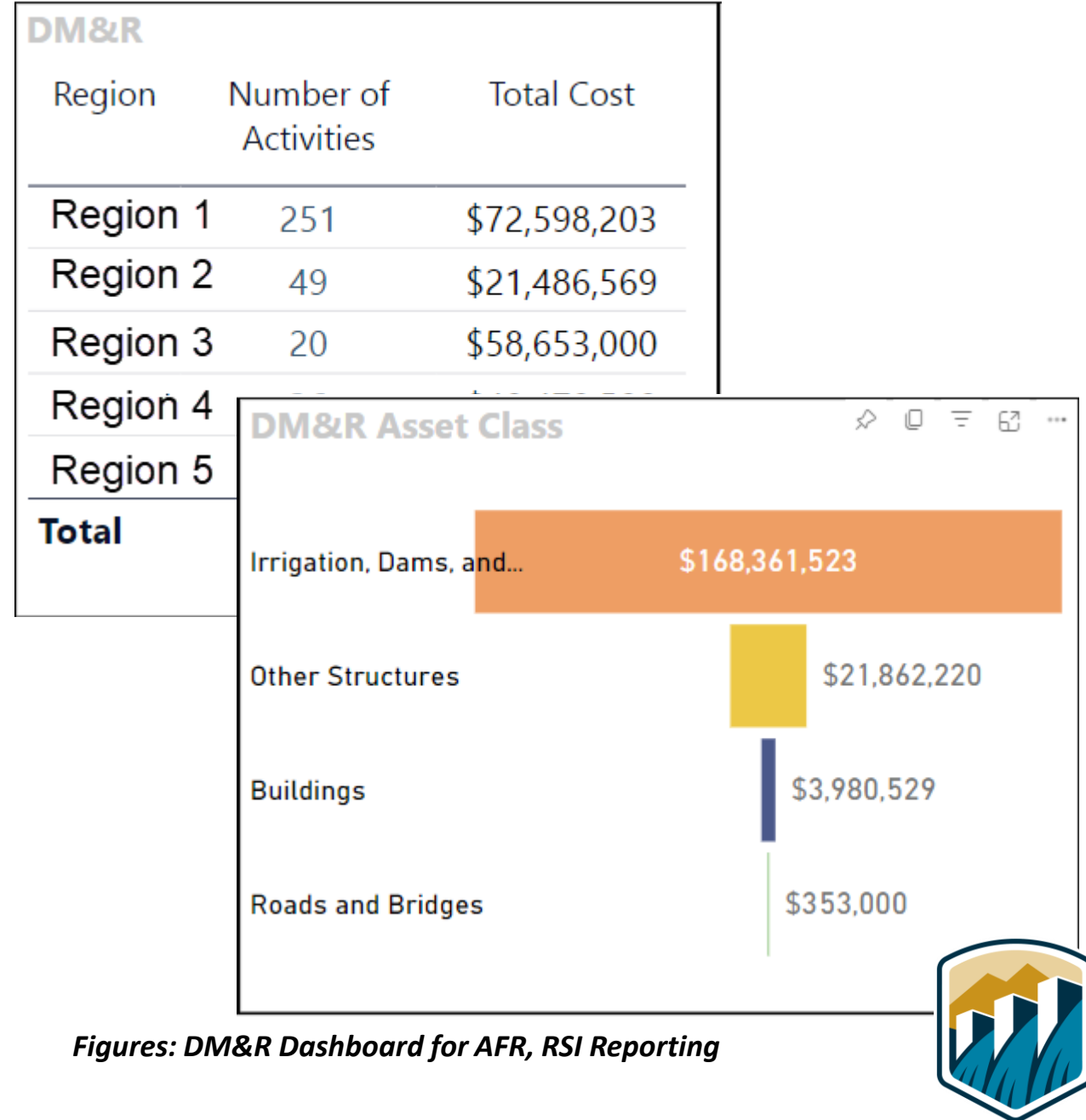


Completion

DM is addressed
and confirmed

Dashboards

- Uses Power BI to export DM data from CIRN for reporting and analysis
 - Ability to filter by region, area office, or by asset name
 - Ability to export data to excel, csv, or PDF
 - Ability to subscribe to the report or share with others
- Can customize visuals based on requirements or programmatic needs/analysis



Data Analytics

● Number of Activities
● Estimated Cost

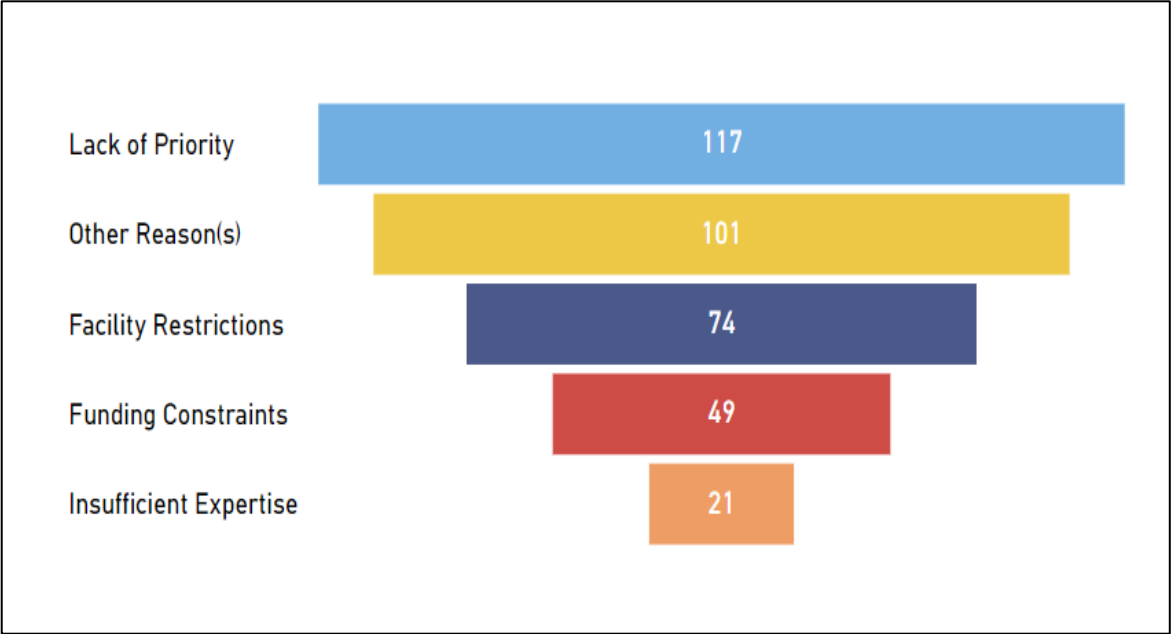
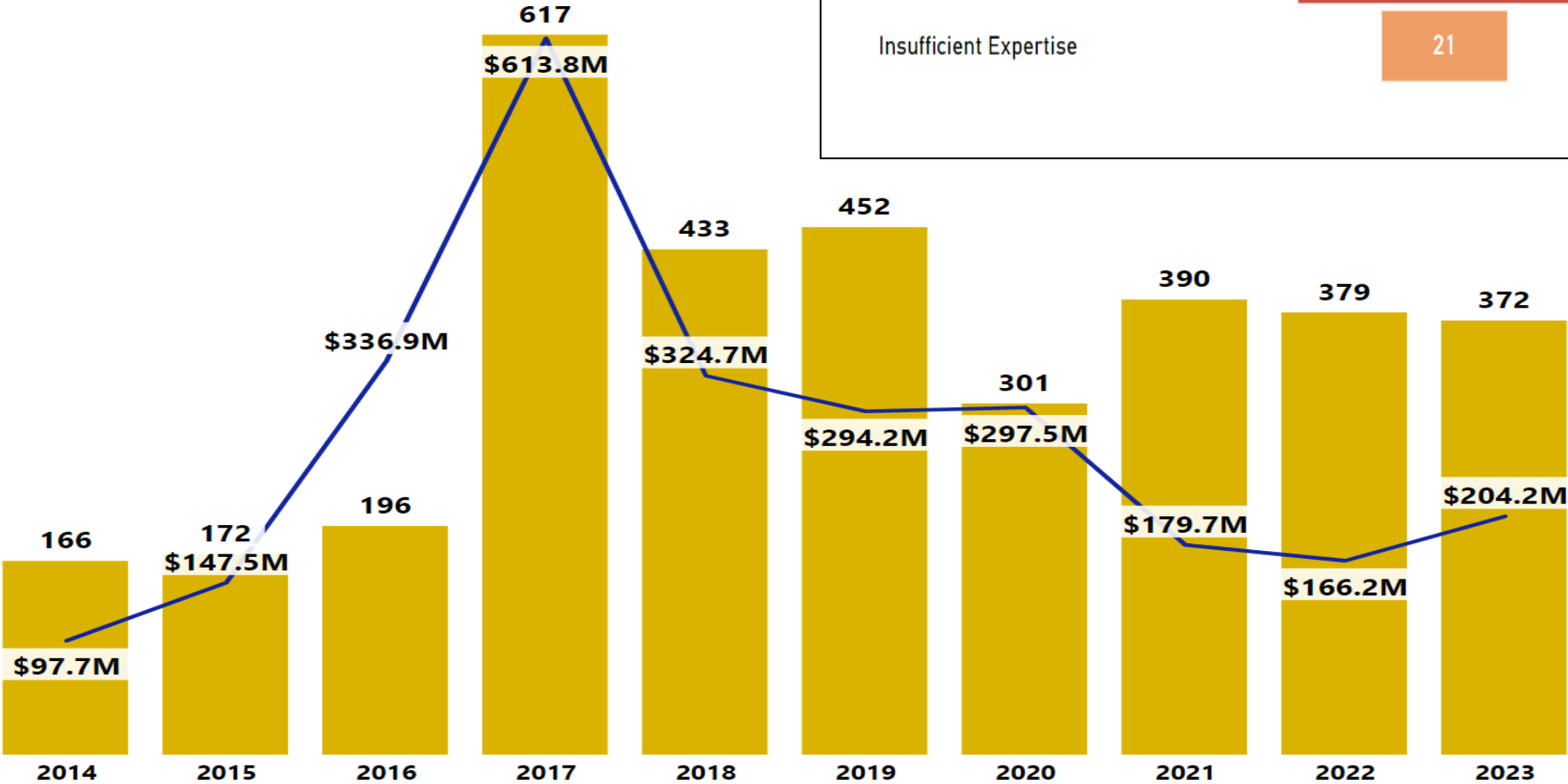
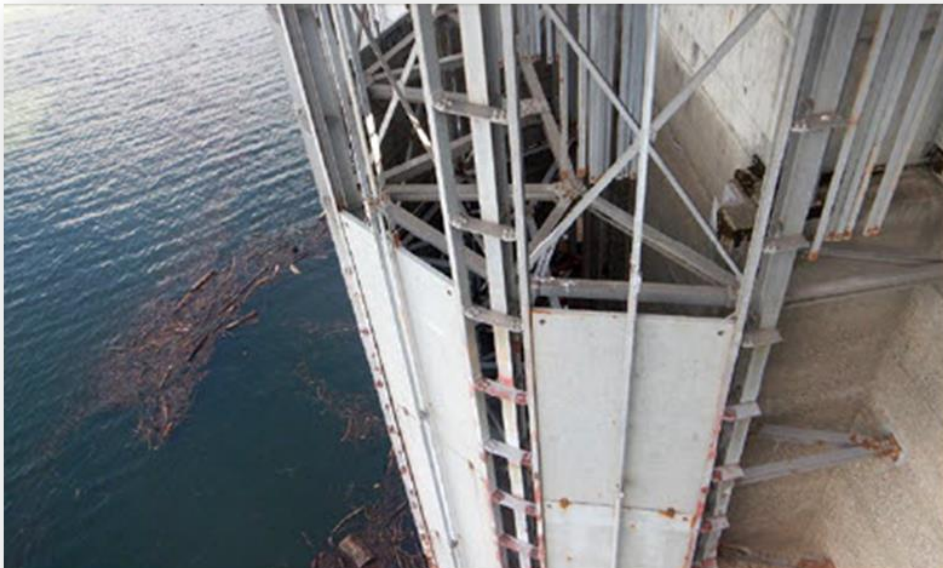


Figure: Reported DM&R for AFR, RSI Reporting (FY 14 – FY 23)



Good Reasons for DM

- Folsom Temperature Control Device (TCD)
 - Reason for Deferment: The planned replacement of the structure (Dam Raise Project in coordination with the U.S. Army Corps of Engineers). The decision to wait and incorporate it with the larger replacement was supported by having a Category D rating (prioritization rating), which would indicate its lower risk, lower priority.
 - Current Estimated Cost: \$5 million
 - Original Schedule Completion Date: 2006



Good Reasons for DM

- Hoover Drum Gates
 - Reason for Deferment: Water levels in the Lake Mead reservoir behind the dam had decreased enough that the facility would be unlikely to use them for the foreseeable future.
 - Current Estimated Cost: \$20.9 million
 - Original Schedule Completion Date: 2007



Summary, Reclamation Deferred Maintenance

- A healthy maintenance program should always consider deferred maintenance as an alternative to scheduled maintenance
- All maintenance budgets should include deferred maintenance projects
- Deferred maintenance is not always a bad practice
- Risk should be incorporated into decision making
- Money does not solely solve a deferred maintenance backlog
- Moving from scheduled based maintenance to reliability centered maintenance will result in less deferred maintenance and more reliable and resilient operations



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