

# Impacts to Hydropower Customers and the Basin Fund from Conducting Experiments

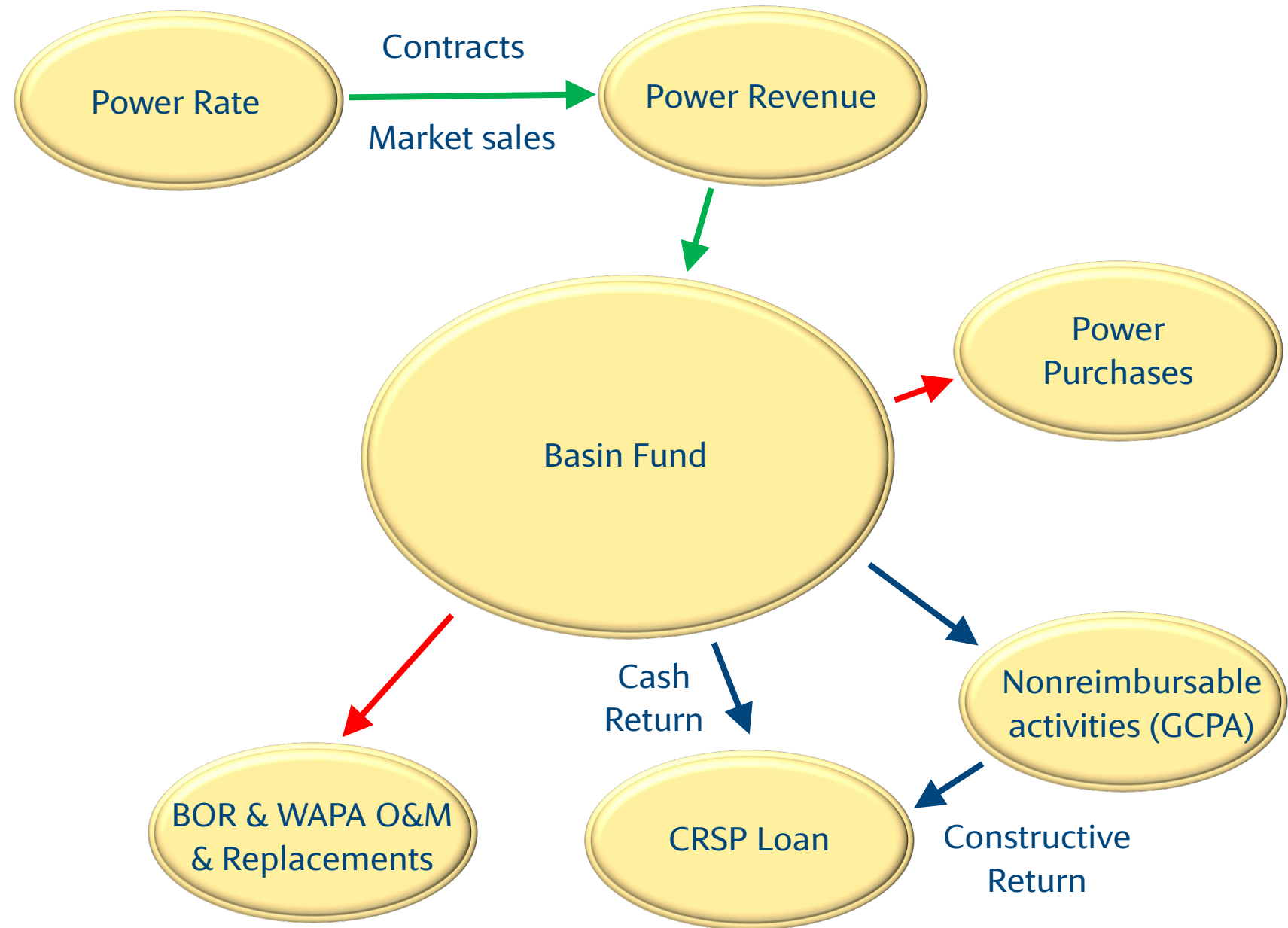
Craig Ellsworth

Fish Biologist

TWG – June 2023



# The CRSP Basin Fund model



“... without further appropriations ...”



# The Colorado River Storage Project (CRSP)

## Initial Units

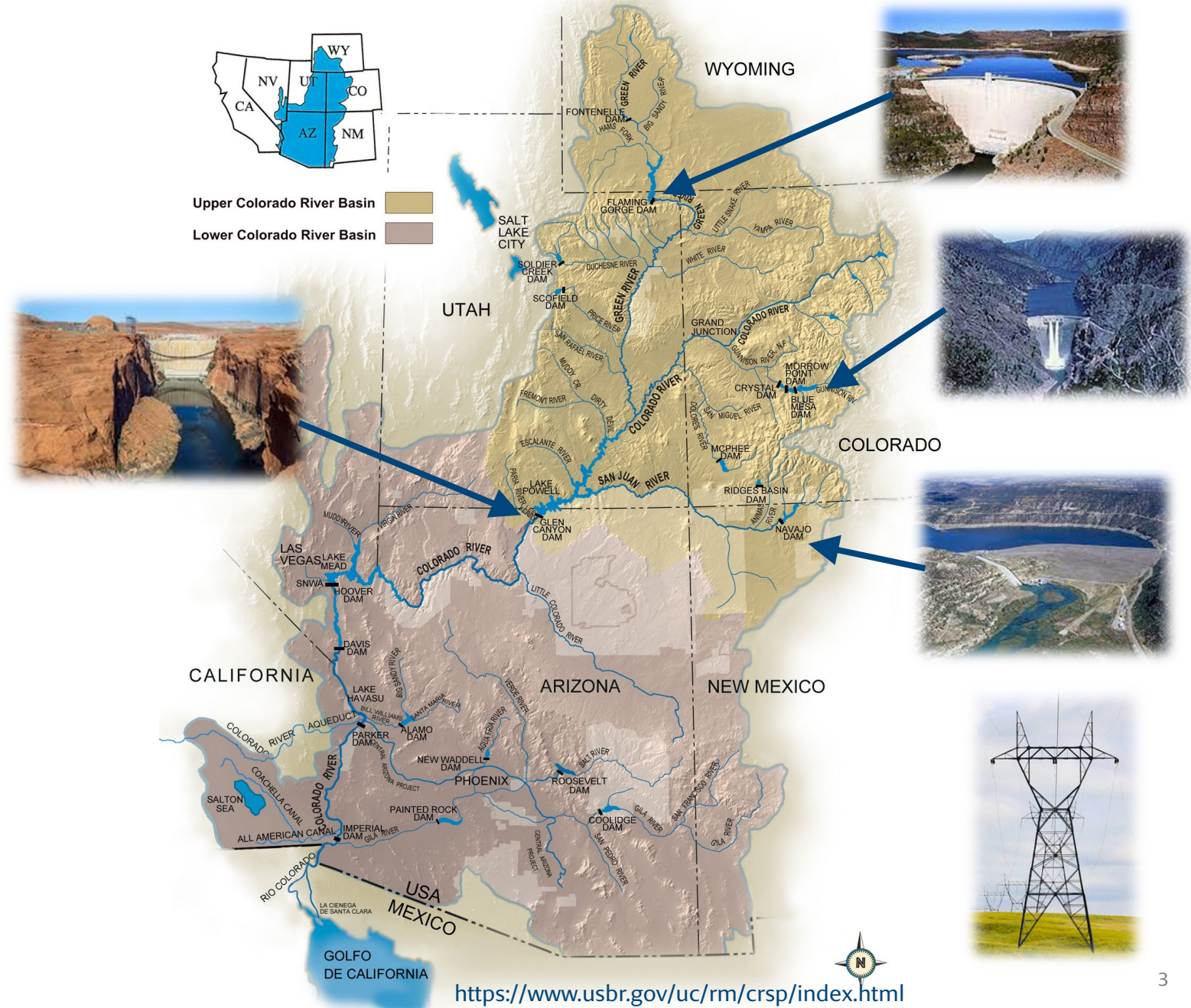
- Glen Canyon Dam
- Flaming Gorge Dam
- Aspinall Units
  - Blue Mesa
  - Morrow Point
  - Crystal
- Navajo Dam

## Participating Projects

- Dolores
- Seedskaadee

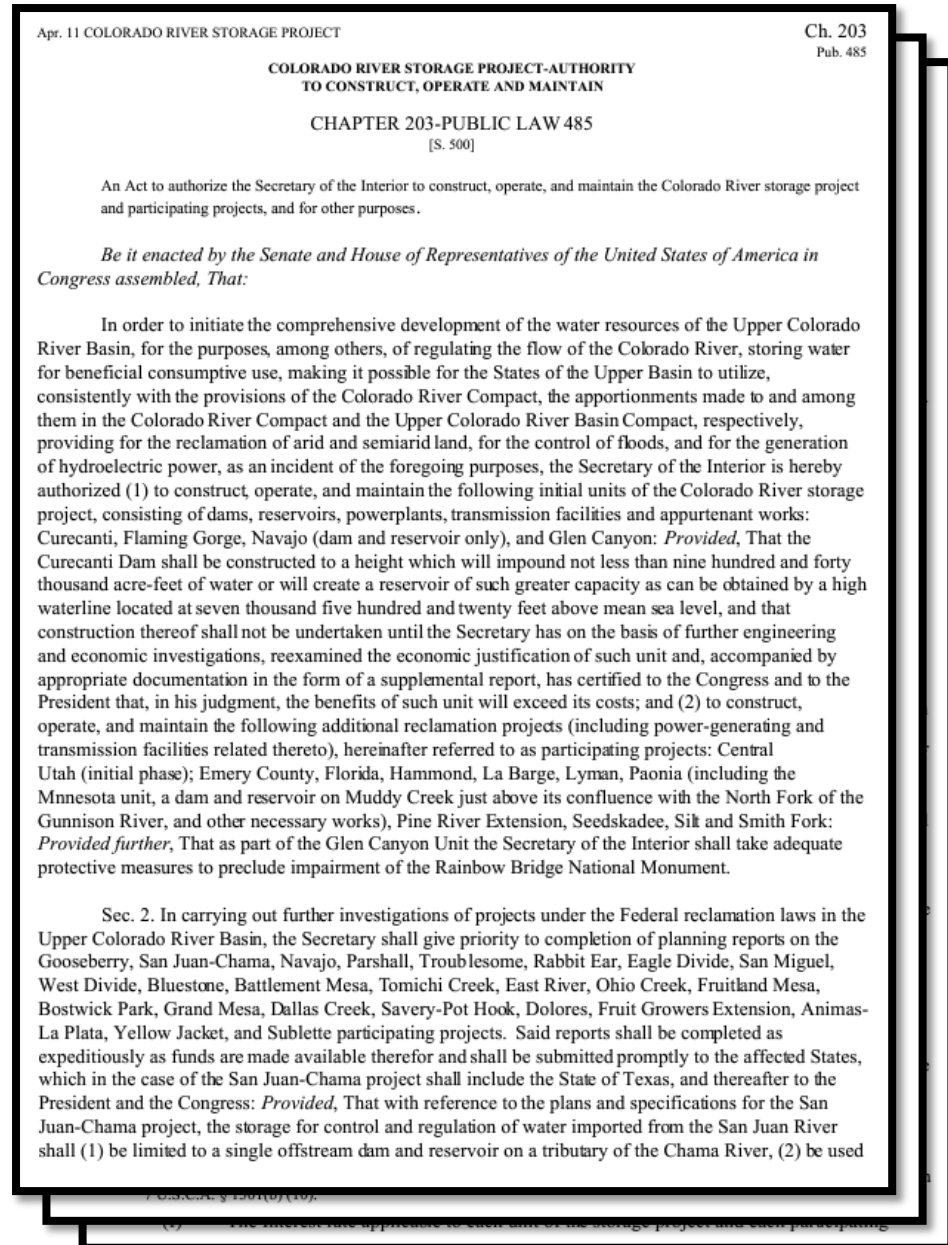
## Water Projects

- Central Utah Project
- Many others



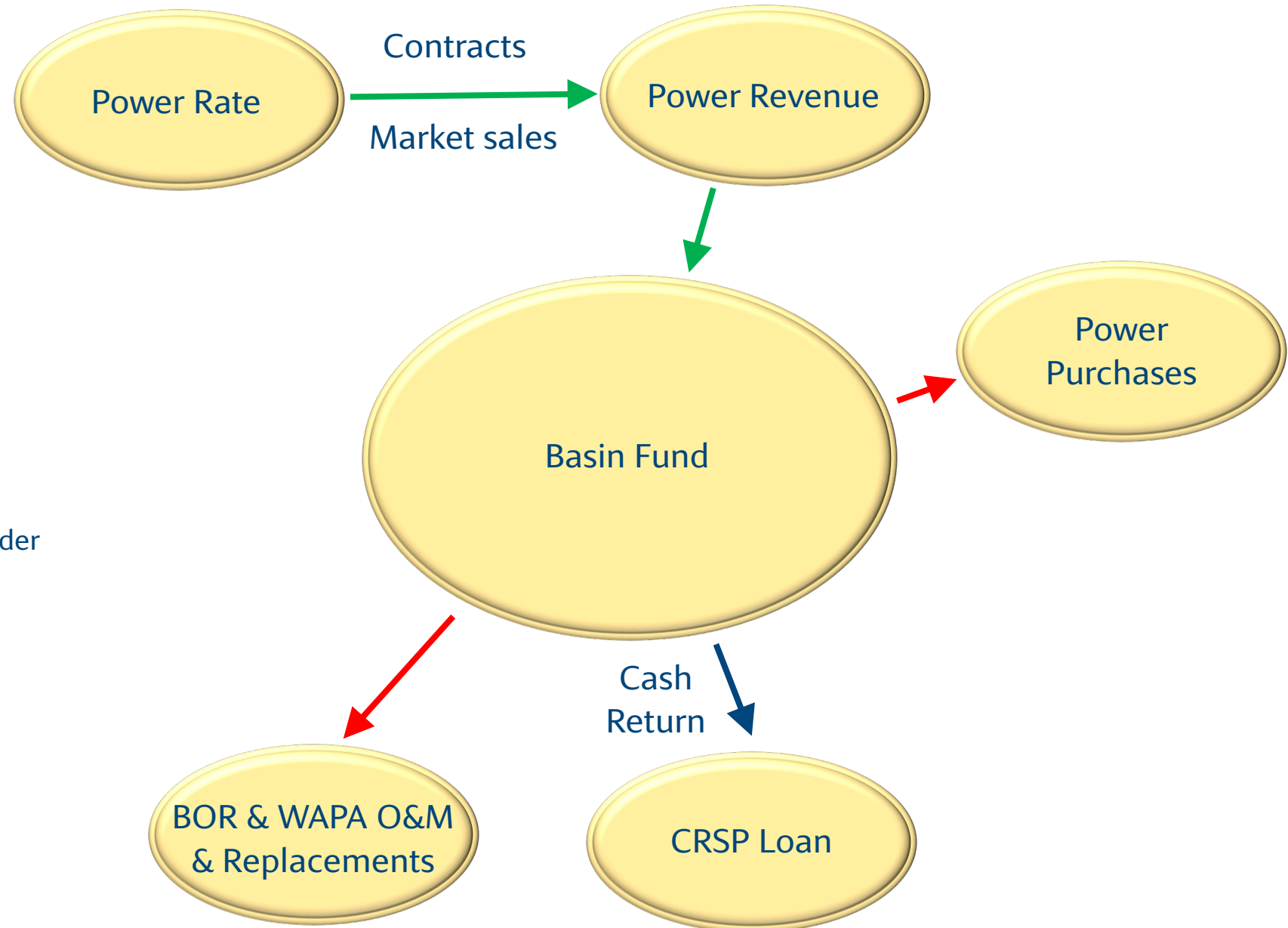
# 1956 CRSP Act

- Provided authorization for the construction of initial units
- Allowed Upper Basin to develop their water allocation
- Includes power generation and transmission
- Power revenues pays for
  - Repayment
  - O&M
  - Replacements
- Established the Basin Fund
- Operate “... without further appropriations ...”



# The Basin Fund - 1956

- Power Revenue
  - BOR & WAPA O&M
  - Replacements
  - Firming for contracts
  - Repayment
- Power Contracts
  - WAPA is a wholesale provider
  - Project use
  - Preference customers
    - Small, rural utilities
    - 54 Tribes



“... without further appropriations ...”



# 1992 GCPA

Section 1804e: “Costs allocated to Section 1802 purposes shall be nonreimbursable”

- Nonreimbursable
  - Grand Canyon is national resource
  - Direct costs of GCPA are borne by the Federal government
  - Shifts burden of GCPA from project beneficiaries to the Federal government
- WAPA then books these costs as a constructive return against the debt taken to build the CRSP



## RECLAMATION PROJECTS AUTHORIZATION AND ADJUSTMENT ACT OF 1992

### TITLE XVIII -- GRAND CANYON PROTECTION

#### SECTION 1801. SHORT TITLE.

This Act may be cited as the "Grand Canyon Protection Act of 1992".

#### SEC. 1802. PROTECTION OF GRAND CANYON NATIONAL PARK.

(a) In General. -- The Secretary shall operate Glen Canyon Dam in accordance with the additional criteria and operating plans specified in section 1804 and exercise other authorities under existing law in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use.

(b) Compliance With Existing Law. -- The Secretary shall implement this section in a manner fully consistent with and subject to the Colorado River Compact, the Upper Colorado River Basin Compact, the Water Treaty of 1944 with Mexico, the decree of the Supreme Court in *Arizona v. California*, and the provisions of the Colorado River Storage Project Act of 1956 and the Colorado River Basin Project Act of 1968 that govern allocation, appropriation, development, and exportation of the waters of the Colorado River basin.

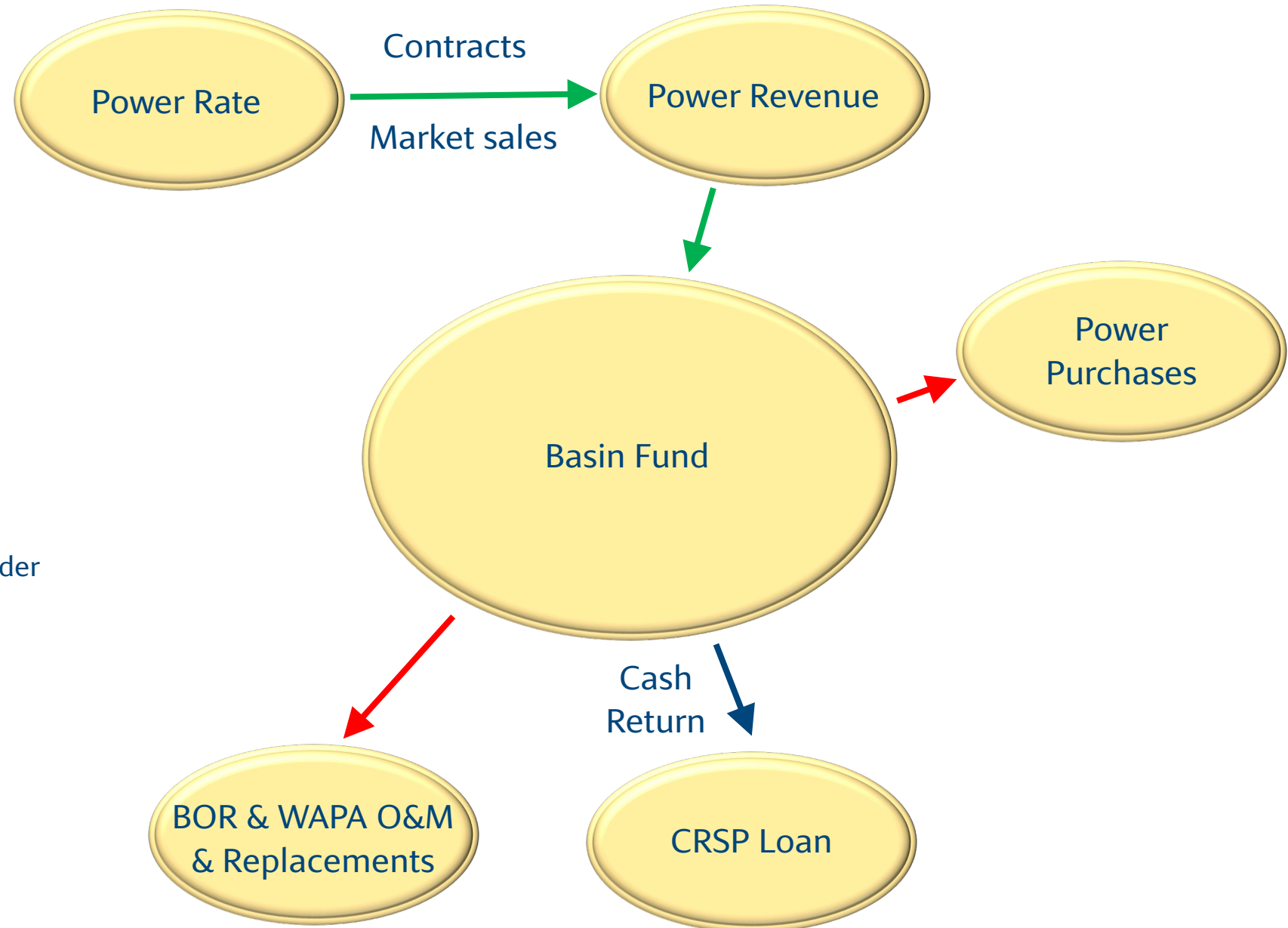
(c) Rule of Construction. -- Nothing in this title alters the purposes for which the Grand Canyon National Park or the Glen Canyon National Recreation Area were established or affects the authority and responsibility of the Secretary with respect to the management and administration of the Grand Canyon National Park and Glen Canyon National Recreation Area, including natural and cultural resources and visitor use, under laws applicable to those areas, including, but not limited to, the Act of August 25, 1916 (39 Stat. 535) as amended and supplemented.

#### SEC. 1804. GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT; LONG-TERM OPERATION OF GLEN CANYON DAM.

(e) Allocation of Costs. -- The Secretary of the Interior, in consultation with the Secretary of Energy, is directed to reallocate the costs of construction, operation, maintenance, replacement and emergency expenditures for Glen Canyon Dam among the purposes directed in section 1802 of this Act and the purposes established in the Colorado River Storage Project Act of April 11, 1956 (70 Stat. 170). Costs allocated to section 1802 purposes shall be nonreimbursable. Except that in Fiscal Year 1993 through 1997 such costs

# The Basin Fund - 1956

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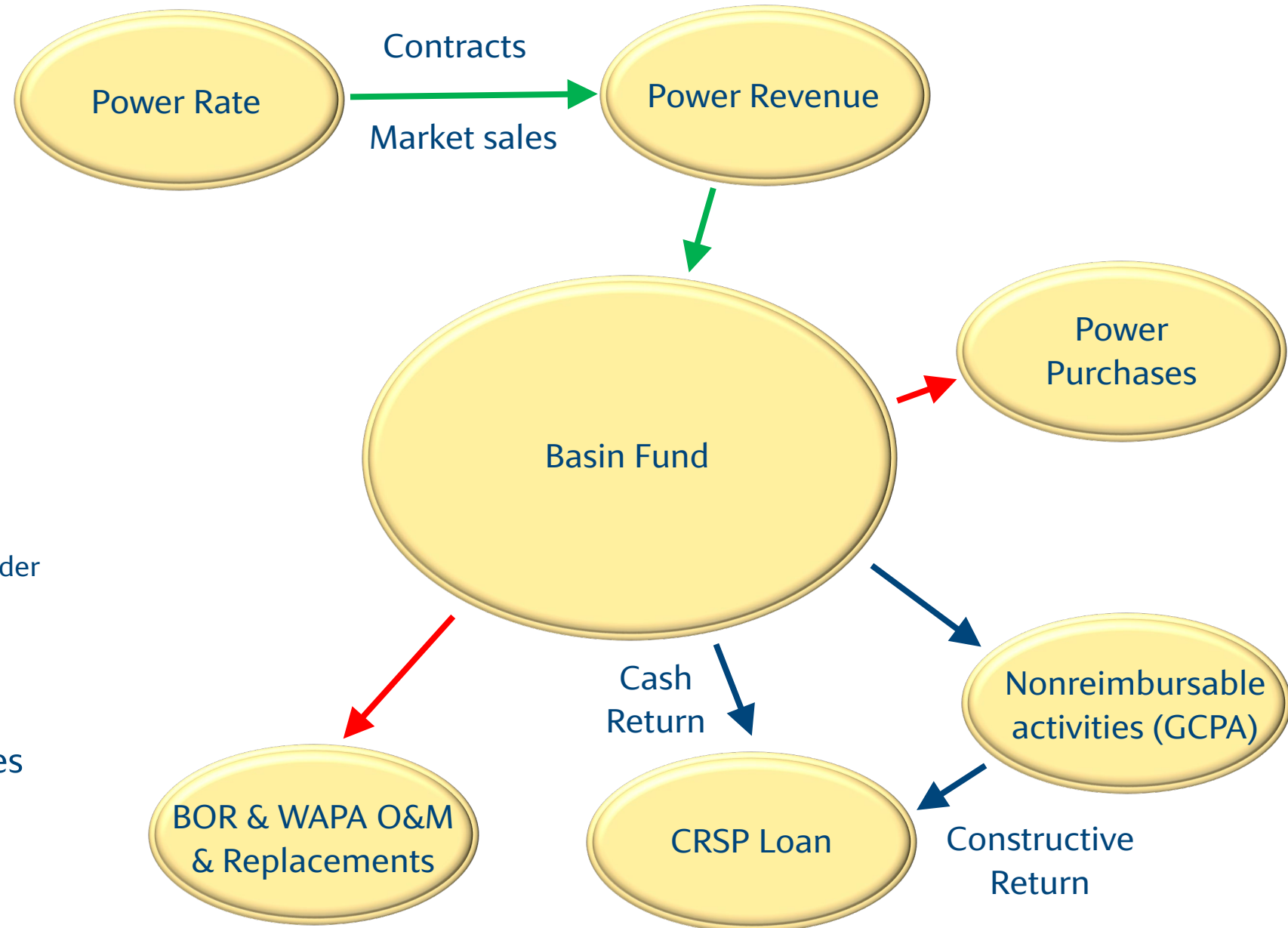


“... without further appropriations ...”



# The Basin Fund w-GCPA

- Power Revenue
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  - Replacements
  - Repayment
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  - WAPA is a wholesale provider
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- Nonreimbursable activities
  - GCDAMP & UCRIPs
  - Glen Canyon Dam experiments
  - Water quality and consumptive use studies

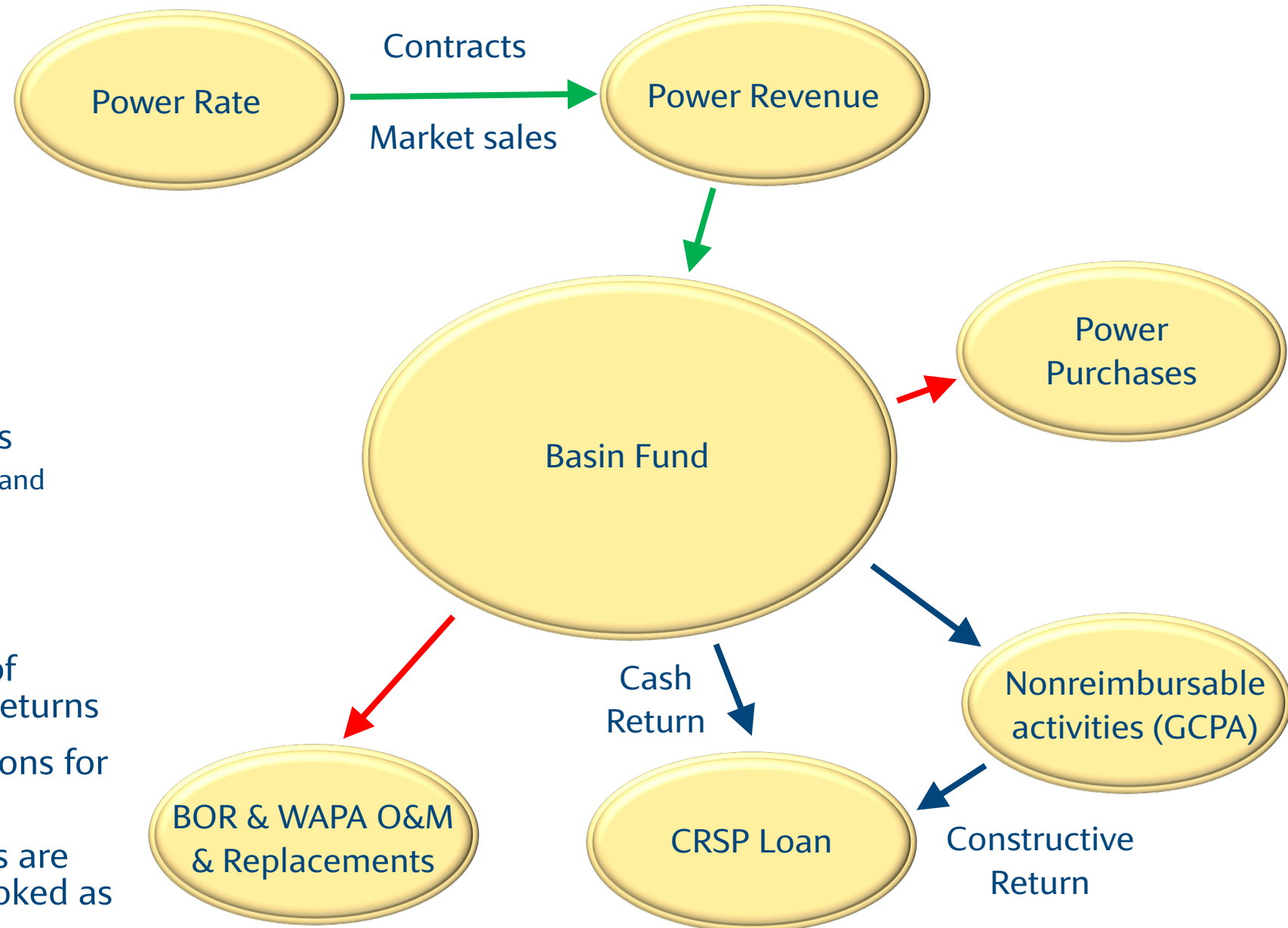


“... without further appropriations ...”



# Basin Fund principles

- Cost-based project
  - Revenues = Expenses
  - ~\$200M/yr
- Basin Fund pays for things
  - Buffers against lean years and unexpected expenses
  - Has a finite balance
  - Cannot be overdrawn (Anti-Deficiency Act)
- There is a finite amount of repayment/constructive returns
- No additional appropriations for O&M & replacements
- Glen Canyon experiments are nonreimbursable and booked as a constructive return

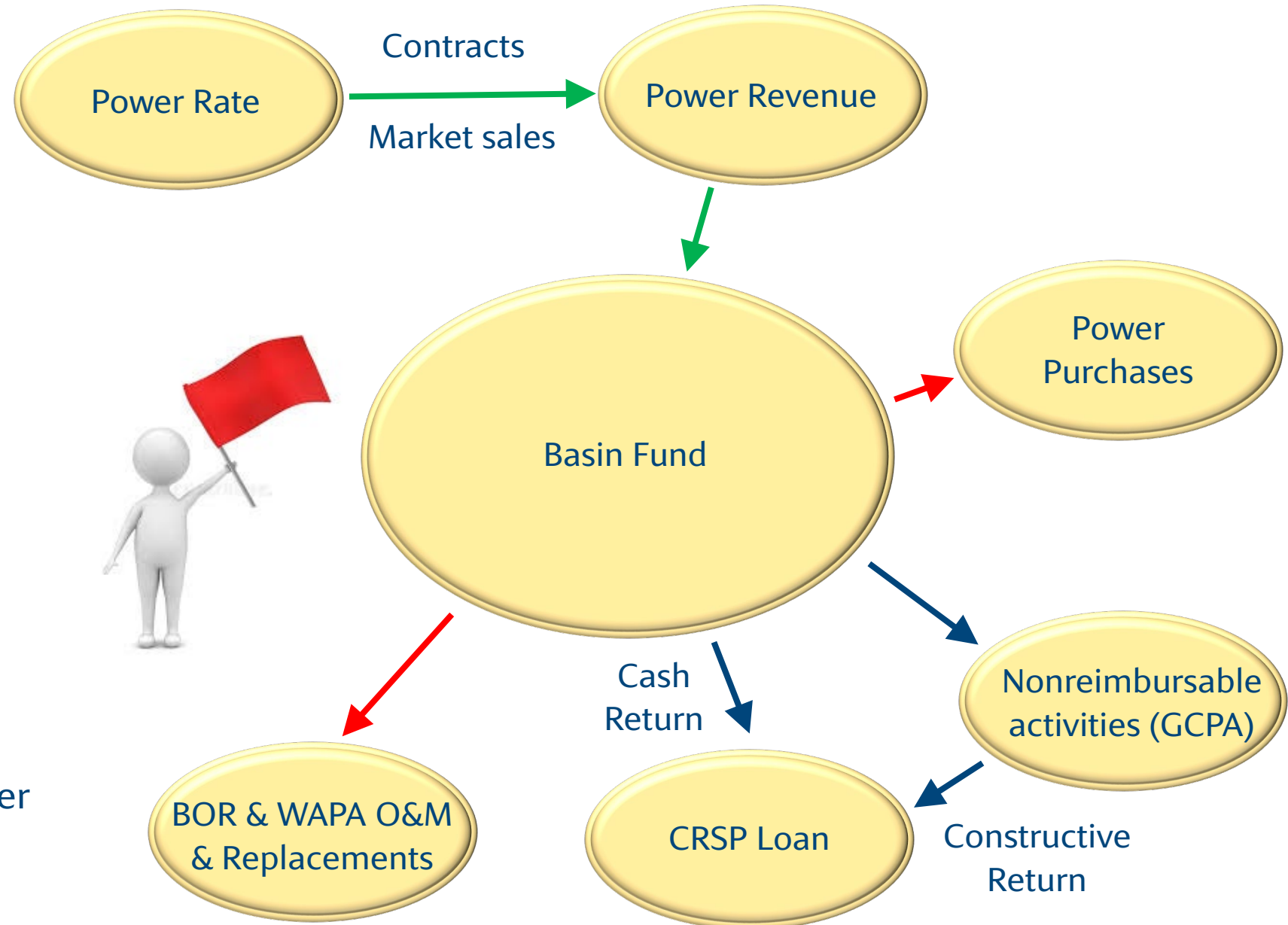


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# Status of the Basin Fund

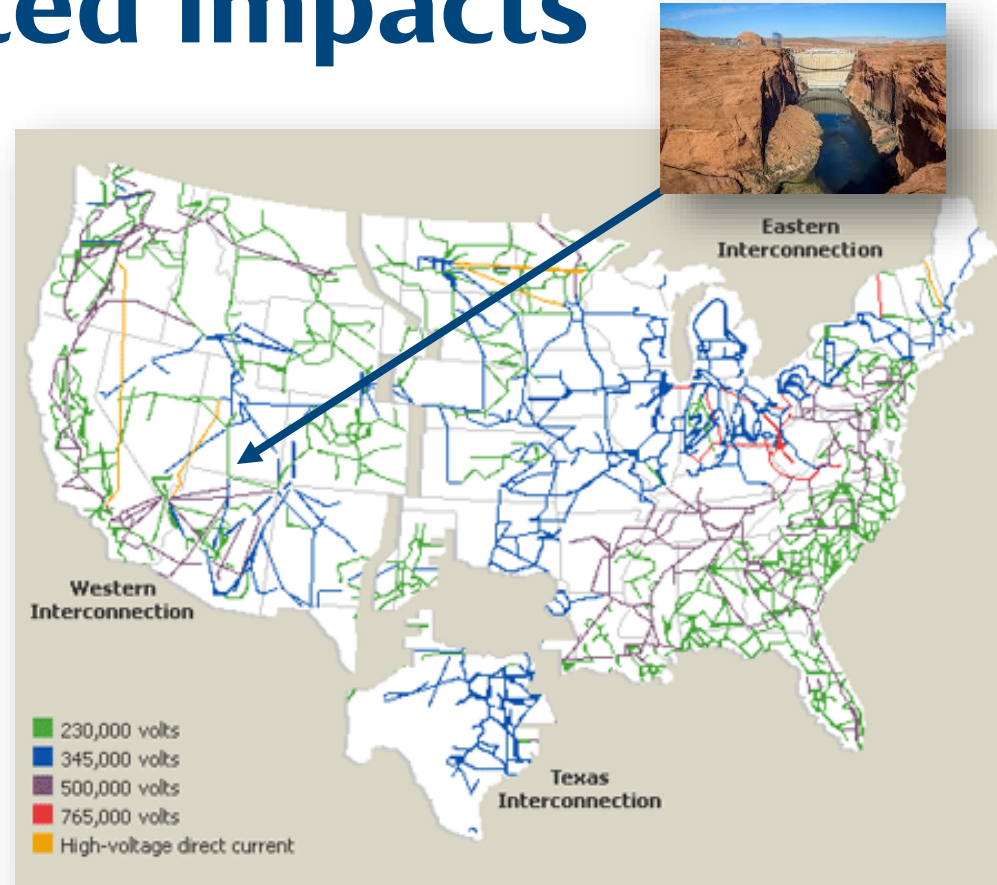
- ✓ Reduced funding for nonreimbursable activities
- ✓ Inability to firm / increased risk of CRC
- ✓ Deferred some replacements
- ✓ Ahead on repayment
- 😓 Reduced O&M on water and power



“... without further appropriations ...”

# Another day: Experiments may also have non-Basin Fund related impacts

- Changes in energy prices linked to experiments
  - 2000 LSSF
  - HFEs
  - SMB Bypass EA
- Difficulty in finding and delivering on-peak replacement energy and selling off-peak power
- Reduced power resources = Increased competition = Higher prices for everyone
- Larger experiments could threaten grid stability



Glen Canyon is an integral component of the Western grid and hydropower plays a critical role in power production, grid stability, and emergency response. Hydropower works in concert with wind and solar and is an important component of a renewable, non-carbon-based power portfolio.



# Possible Solutions

## Establish an Experimental Fund and Budget

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**Bugs Pay for Days of Steady Reservoir Releases to Reduce Costs to Hydropower Customers and Sustain Funds to Maintain Infrastructure: David Rosenberg, Utah State University (USU)**

- Presentation (10 minutes)
- Q&A and discussion (5 minutes)

<https://www.usbr.gov/uc/progact/amp/twg/2023-04-13-twg-meeting/20230413-TWGMeeting-FinalAgenda-508-UCRO.pdf>

- Nonreimbursable appropriation to Reclamation to offset cost of experiments
- Cost share from power, water, recreation, conservation, resource management agencies, and research grants
- In order to comply with GCPA, hydropower costs would need to be transferred back into the Basin Fund



# Summary

Why can't we afford a \$40-\$80M/yr nonreimbursable expense to the Basin Fund?

- The nonreimbursable program was an elegant solution.
- Absorbing the costs of experimental releases is not what the Basin Fund is for.
- The purpose of the Basin Fund is to operate and maintain the CRSP.
- The 1992 GCPA says project beneficiaries are not to cover the costs of experimental releases.
- Because of the repayment obligation, the nonreimbursable program has worked for smaller experiments, but it does not work for larger experiments.
- Keeping things in perspective:
  - BOR UC budget request to operate the entire CRSP = \$80M/yr
  - Aging infrastructure: \$40M in replacements at Glen Canyon
  - Unanticipated repairs: \$15M storm damage on 3 miles of the Pinnacle Peak – Rogers line in 2022 (Glen Canyon to Phoenix/Mesa)



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