SOUTHERN NEVADA WATER AUTHORITY®

John J. Entsminger
General Manager

What We Do:

Regional water supply planning

Conservation programming

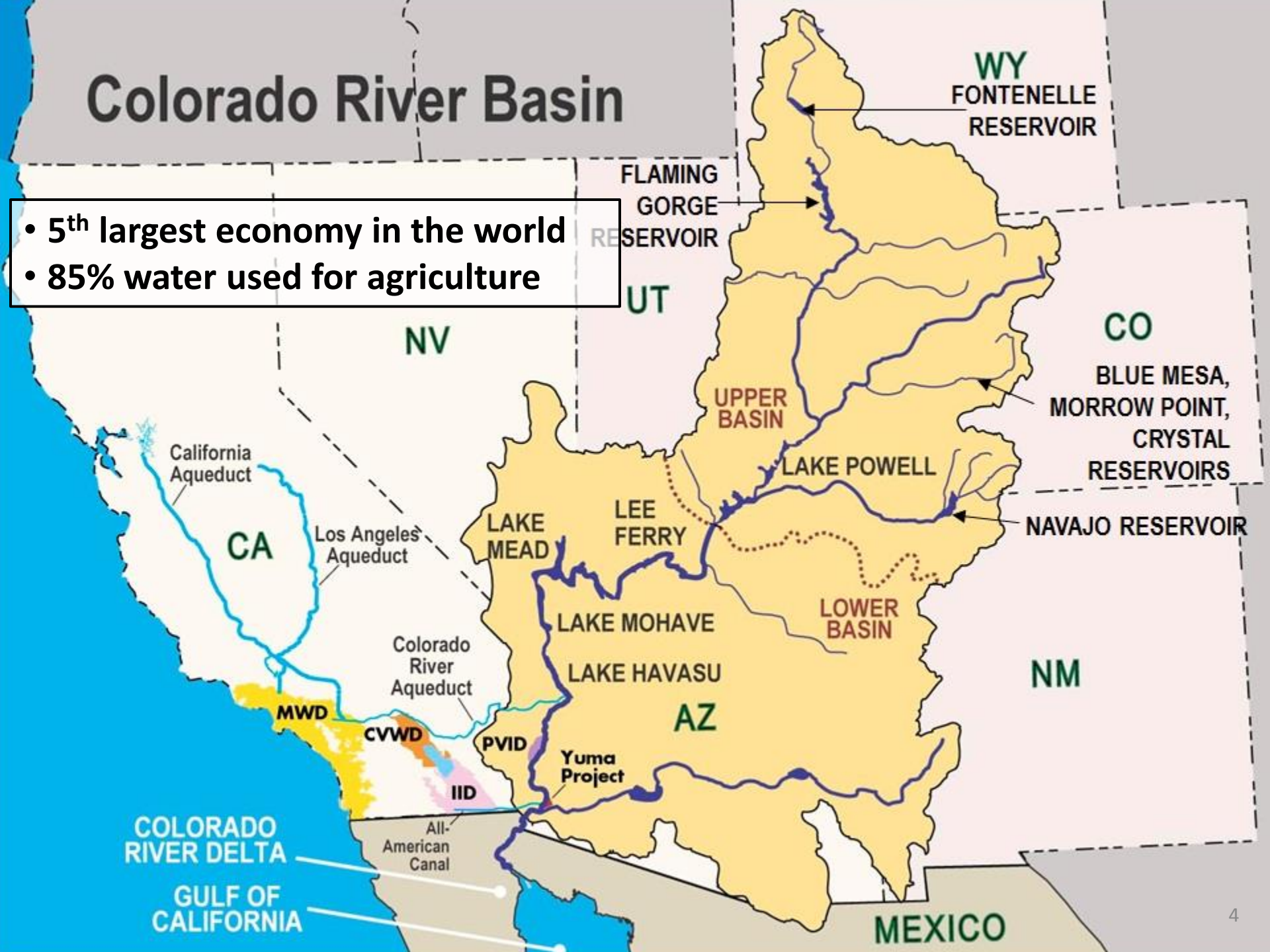
Water Quality

Facility construction

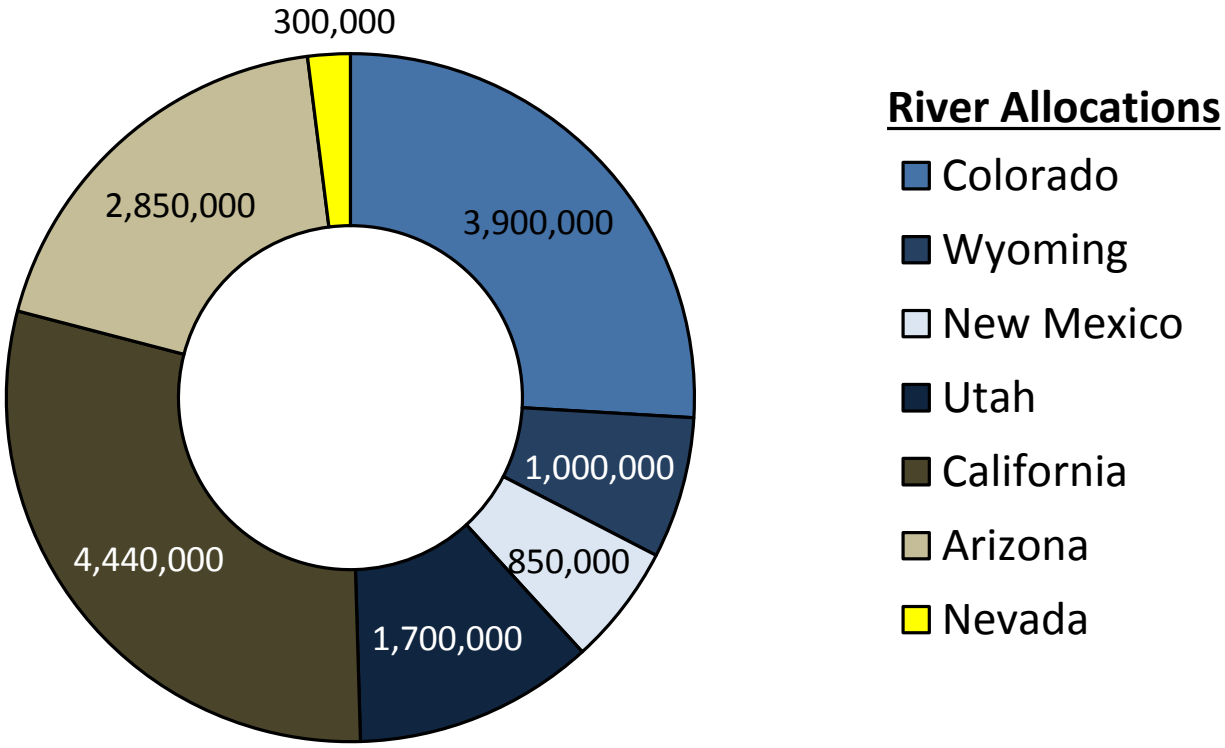
Operate Major Regional Facilities

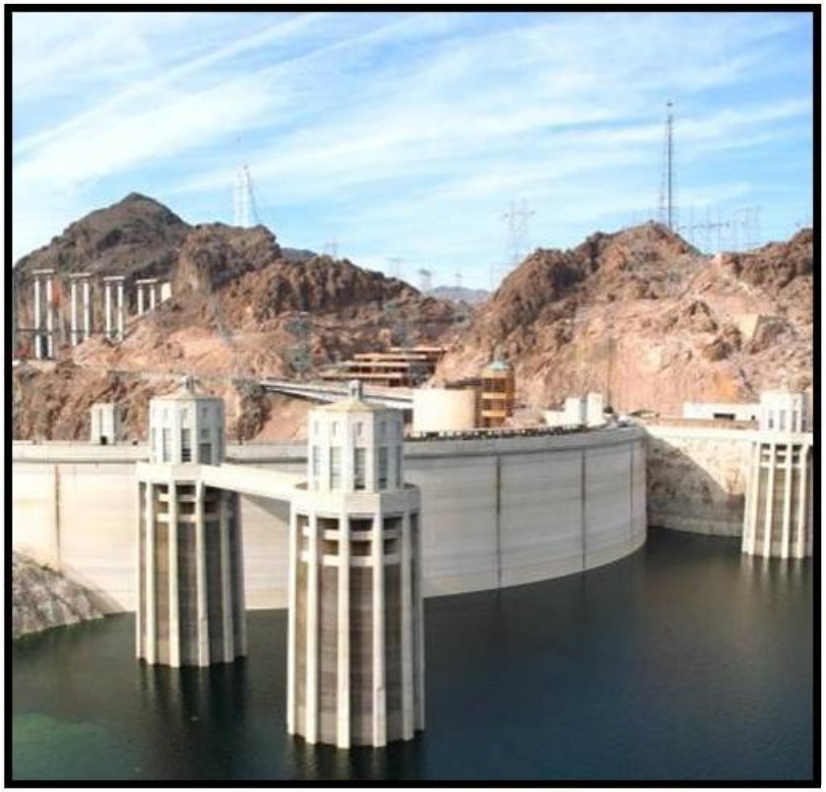
Colorado River resources
meet 90 percent of
Southern Nevada's water demands

Other resources


Colorado River Basin
• 5th largest economy in the world
• 85% water used for agriculture
WY
FONTENELLE RESERVOIR
FLAMING GORGE RESERVOIR
UT
NV
CO
BLUE MESA, MORROW POINT, CRYSTAL RESERVOIRS
UPPER BASIN
LAKE POWELL
NAVAJO RESERVOIR
California Aqueduct
CA
Los Angeles Aqueduct
LAKE MEAD
LEE FERRY
LAKE MOHAVE
LOWER BASIN
NM
Colorado River Aqueduct
LAKE HAVASU
AZ
MWD
CVWD
PVID
Yuma Project
IID
All-American Canal
COLORADO RIVER DELTA
GULF OF CALIFORNIA
MEXICO

Nevada receives 300,000 acre-feet of Colorado River water annually.



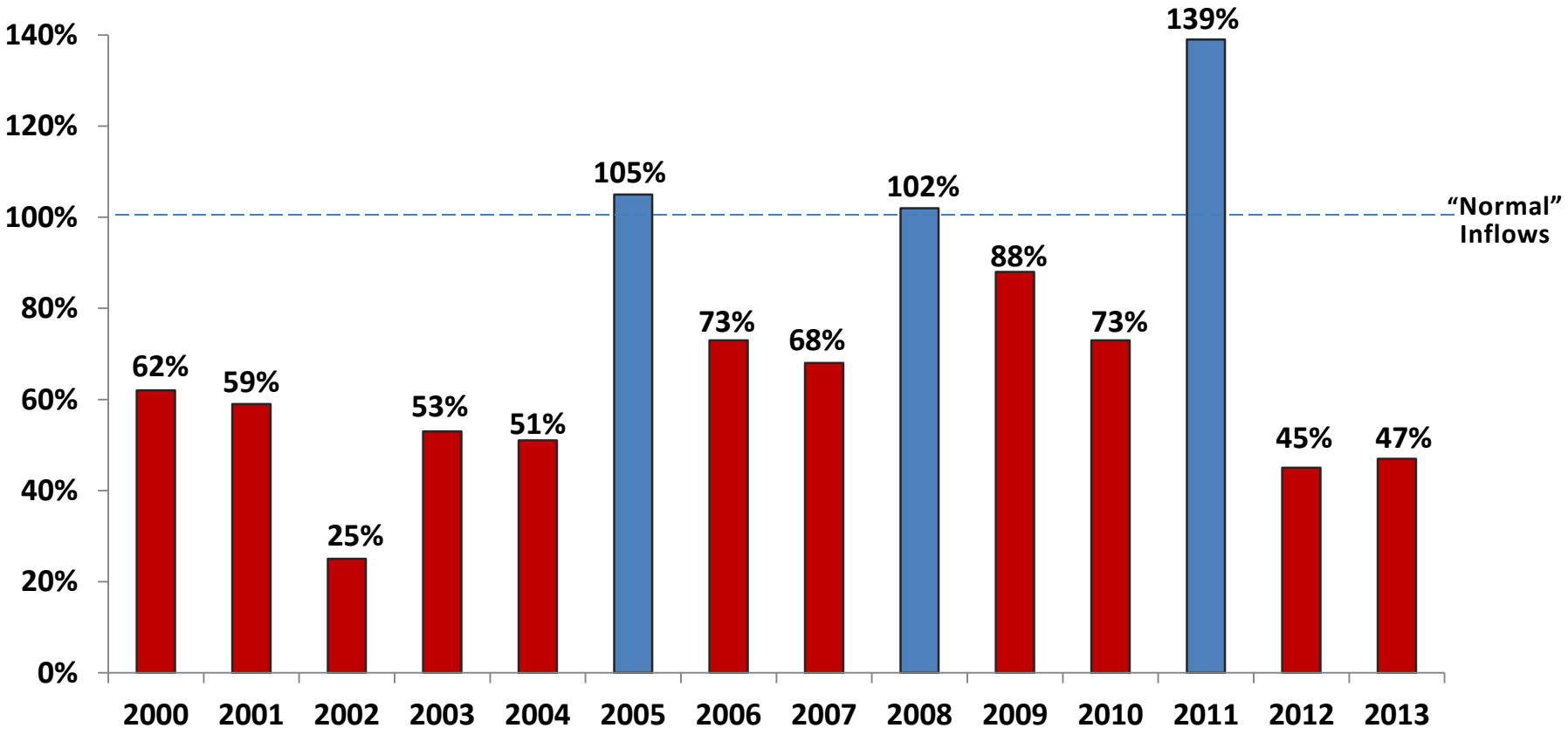


Hoover Dam, Lake Mead

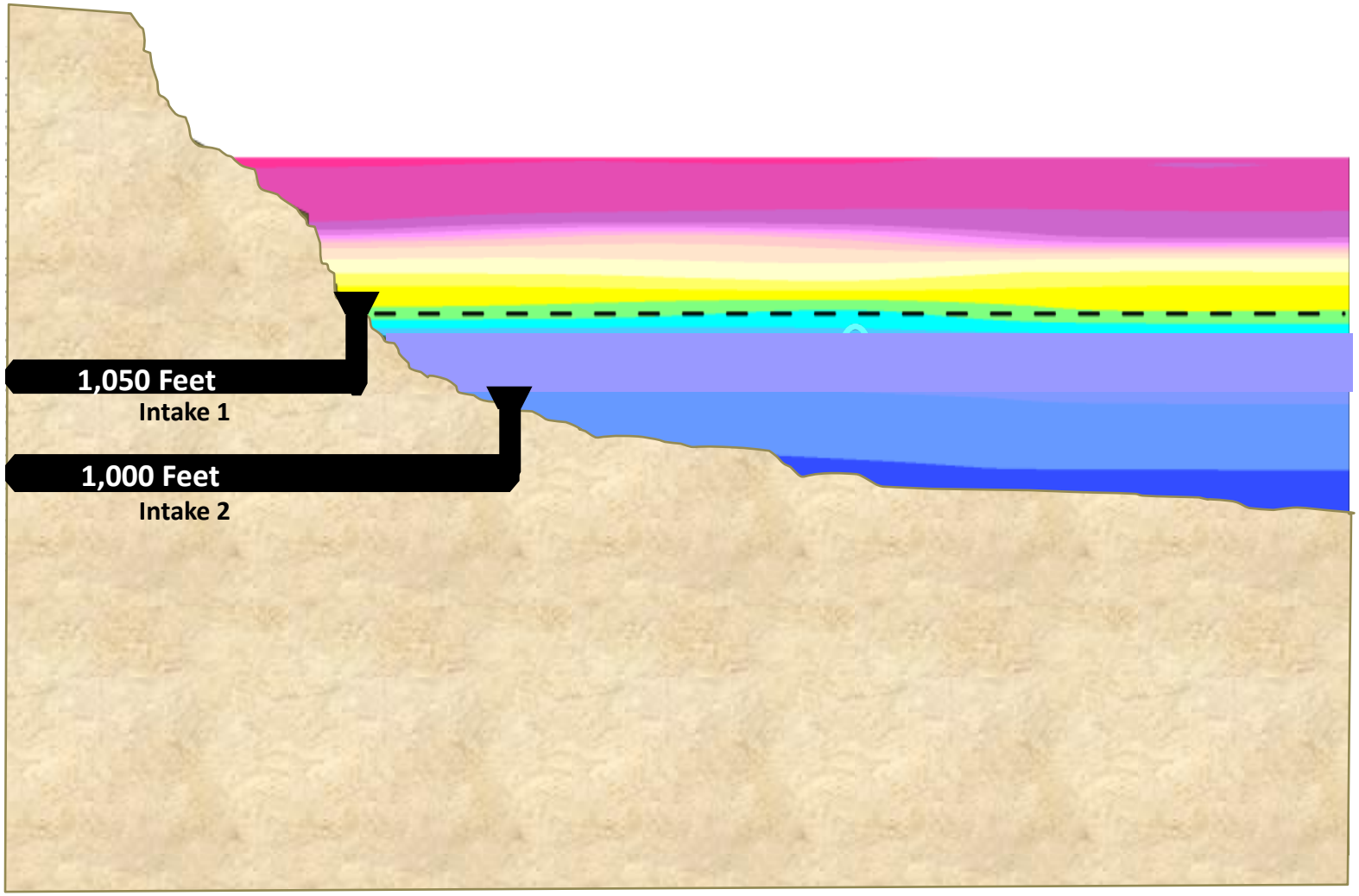
2014

The Colorado River Basin has been experiencing severe drought conditions.

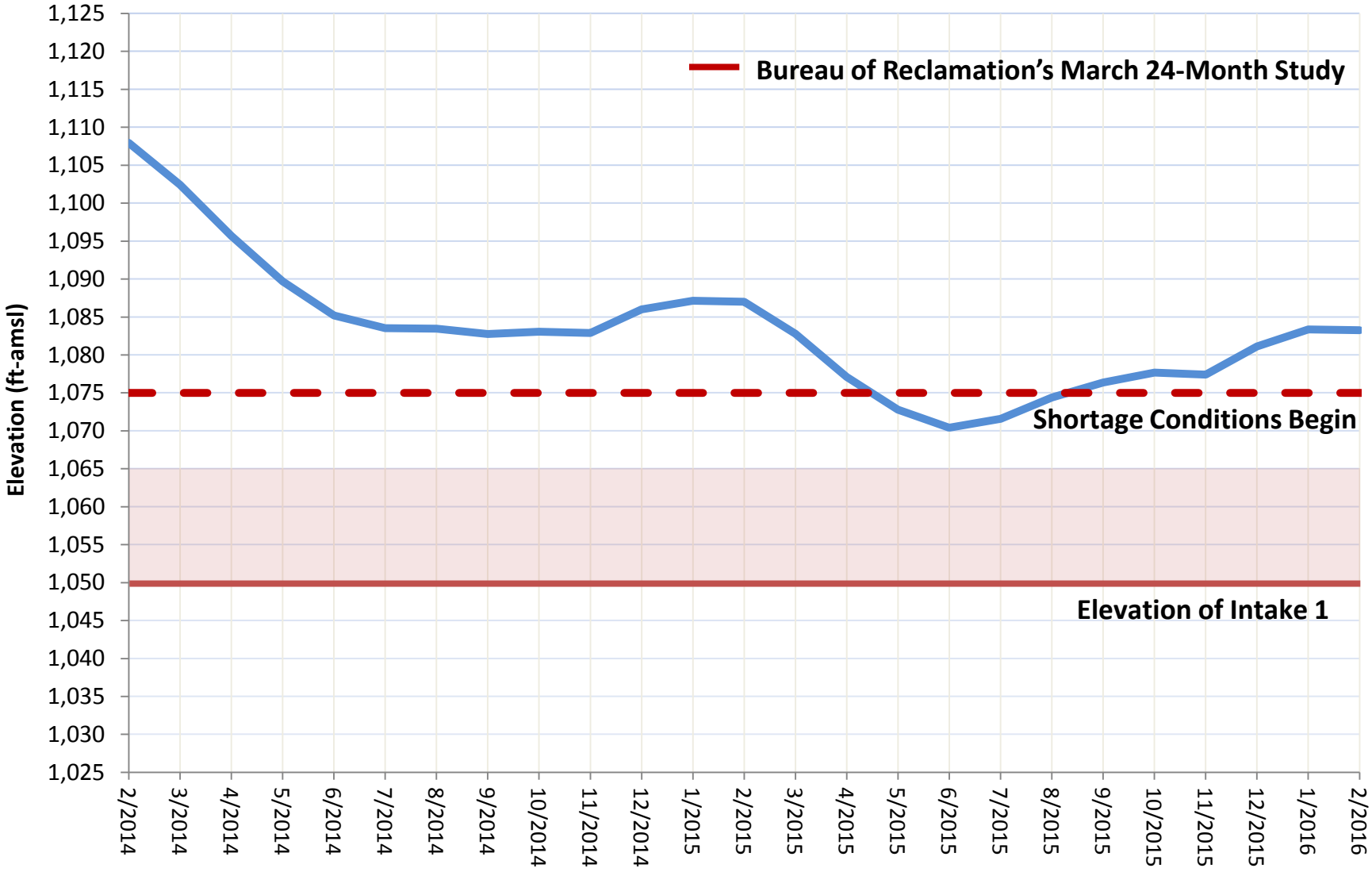
Lake Powell's annual inflows continue to be below normal.



SNWA's Intakes in Operation (2004)

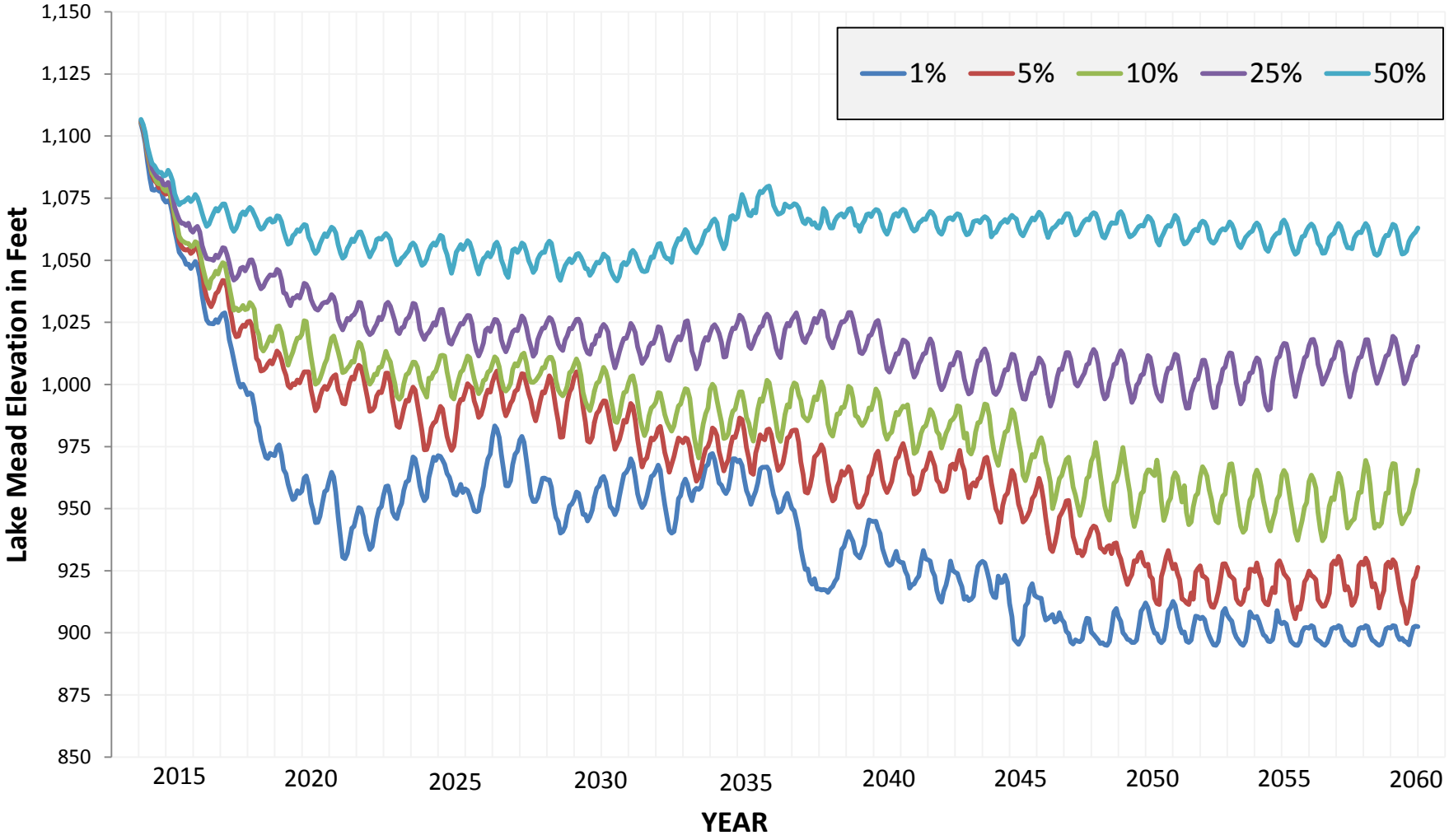


Lake Mead's water levels are projected to decline.



*Projected end-of-month elevations

Drought conditions are expected to continue.



What We're Doing:

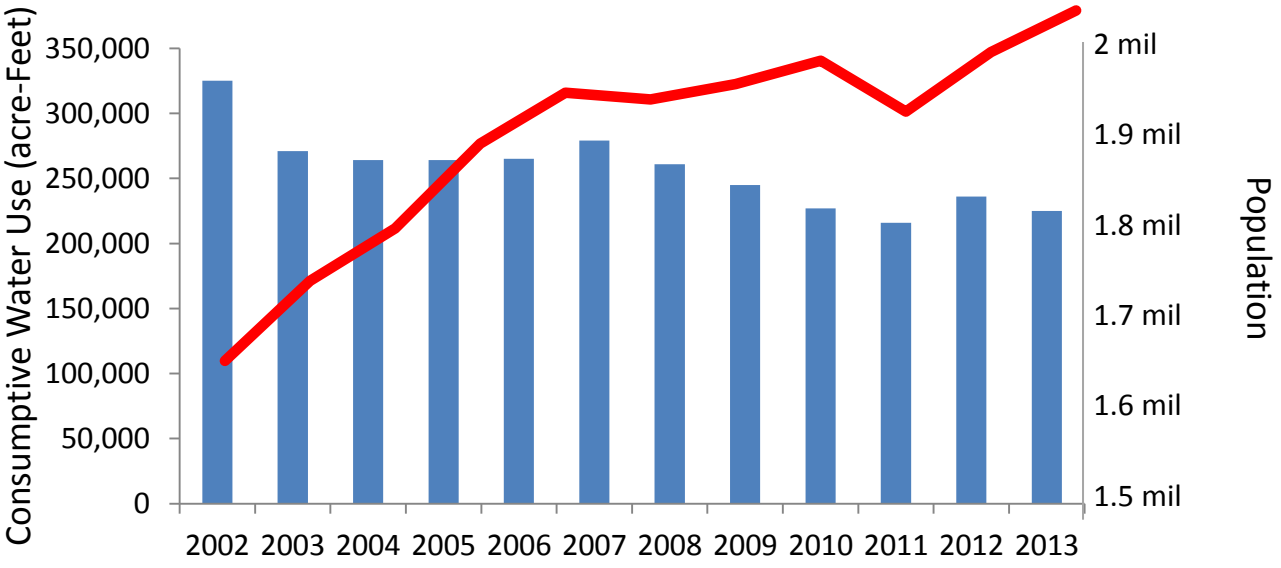
Reducing Demands

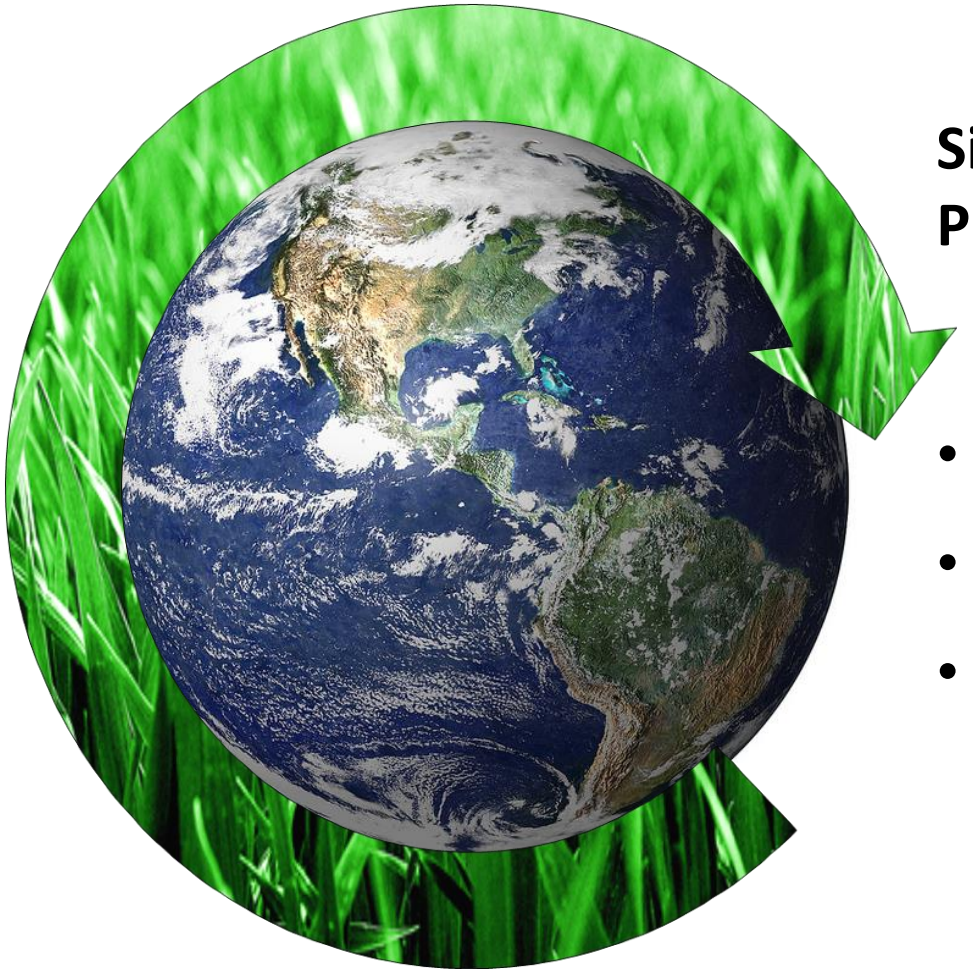
Working with Colorado River partners

Securing temporary and long-term supplies

Safeguarding our access

Southern Nevada consumptively used about <u>32 billion gallons</u> less water in 2013 than in 2002, despite annual population increases and millions of annual visitors.





Since Water Smart Landscapes Program inception:

- **$205 million invested to date**
- **78 billion gallons saved**
- **168 million square feet of turf converted***

***Southern Nevada has removed enough grass for a roll of sod to extend 85 percent of earth's circumference!**
(Approximately 25,000 miles)

What We're Doing:

- Reducing Demands
- Working with Colorado River partners
- Securing temporary and long-term supplies
- Safeguarding our access

In the years following the onset of the drought, conflict existed among the states:

Lake Mead/Lake Powell operating plans

Timing/Quantity of Shortages

River Augmentation

Interim Surplus Guidelines timeframes

The seven Colorado River Basin States spent years finalizing an agreement that addressed concerns.

Lake Mead/Lake Powell operating plans

Two reservoirs now operated jointly.

River Augmentation

An additional category of surplus was created: "Intentionally Created Surplus"

Timing/Quantity of Shortages

AZ and NV share shortages, based on Lake Mead elevations

Interim Surplus Guidelines Timeframes

Amended and extended the ISG through 2026

The United States also began working with Mexico to address basin-wide concerns.

1944 Water Treaty (US-Mexico)

MINUTE 318
Mitigated earthquake impacts – stored water in one country on behalf of another.

MINUTE 319
Creates pilot program to replenish Colorado River Mexican Delta wetlands and outlines conditions for shortage sharing among the countries

What We're Doing:

- Reducing Demands
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- Safeguarding our access


Virgin River, Nevada

Temporary water supplies will meet interim demands until more permanent supplies are developed.

Arizona Water Bank

California Water Bank

Southern Nevada Water Bank

Virgin and Muddy River Tributary Conservation and Imported ICS

Brock Reservoir ICS

Yuma Desalting Plant

Extraordinary Conservation ICS

Binational ICS

Groundwater Development Project alignment

A water supply separate from the drought-stricken Colorado River is necessary.

What We're Doing:

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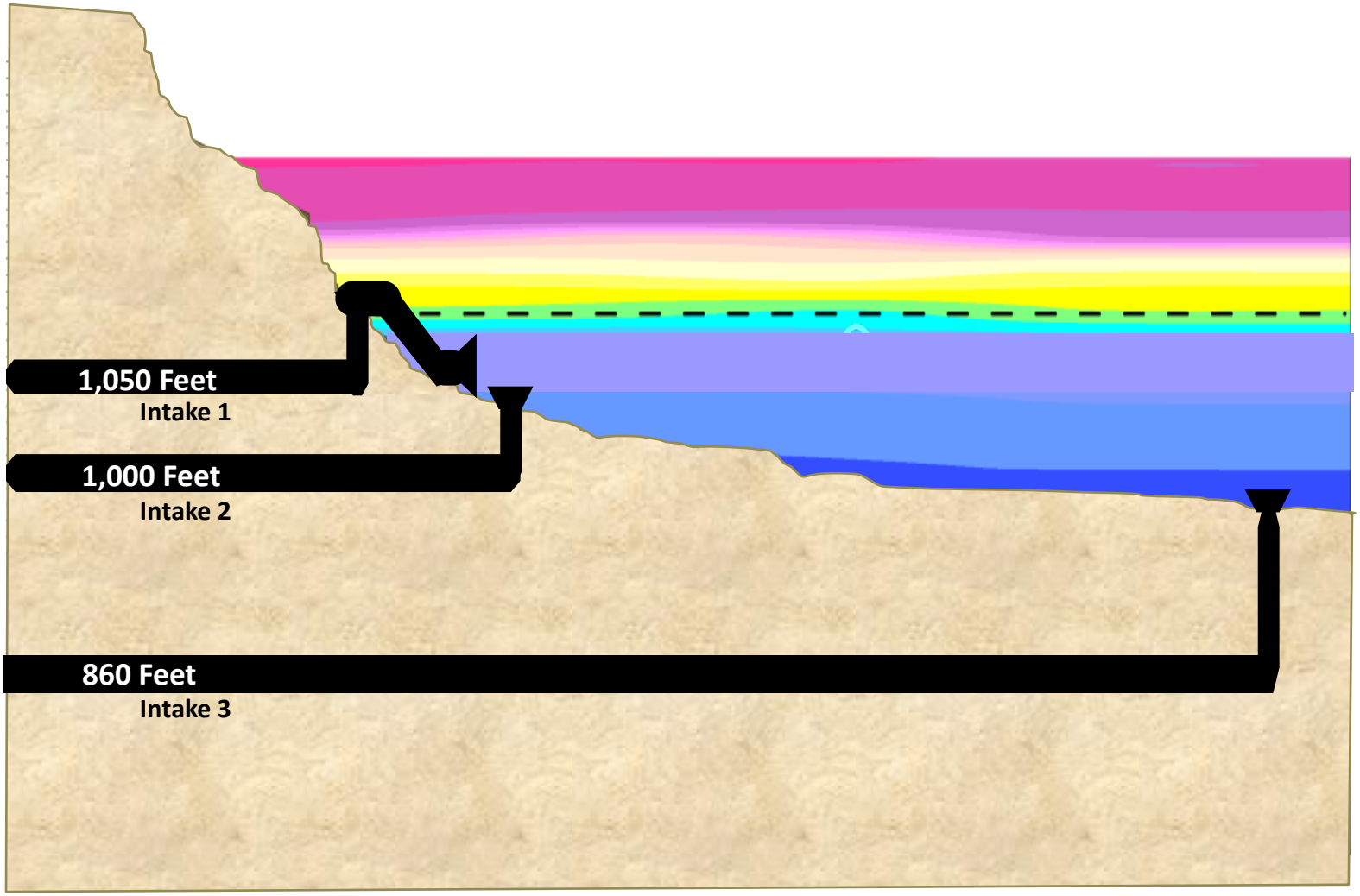
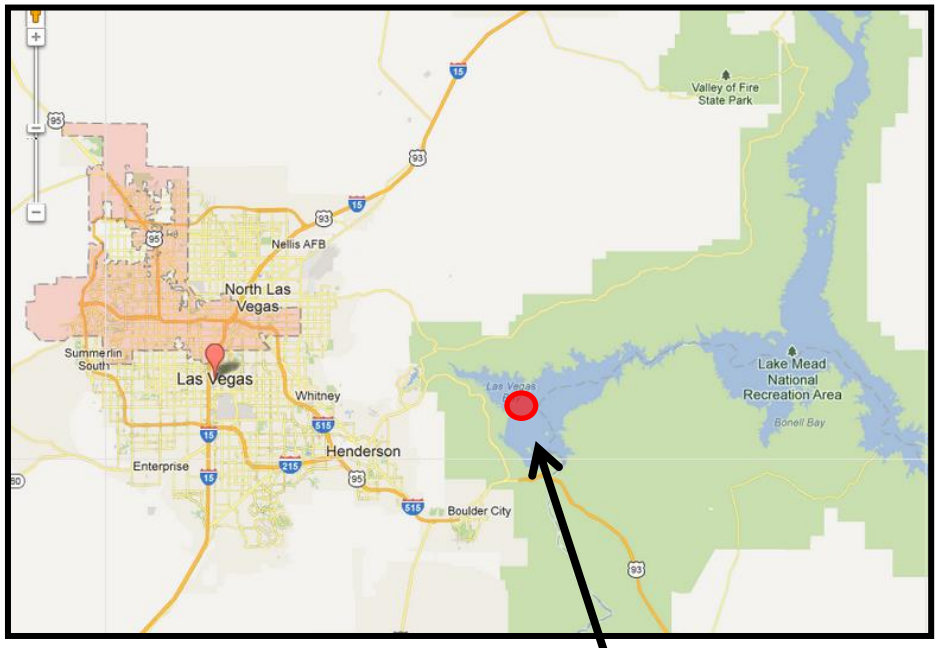
The SNWA is constructing a third intake in Lake Mead to access the deepest part of the lake.

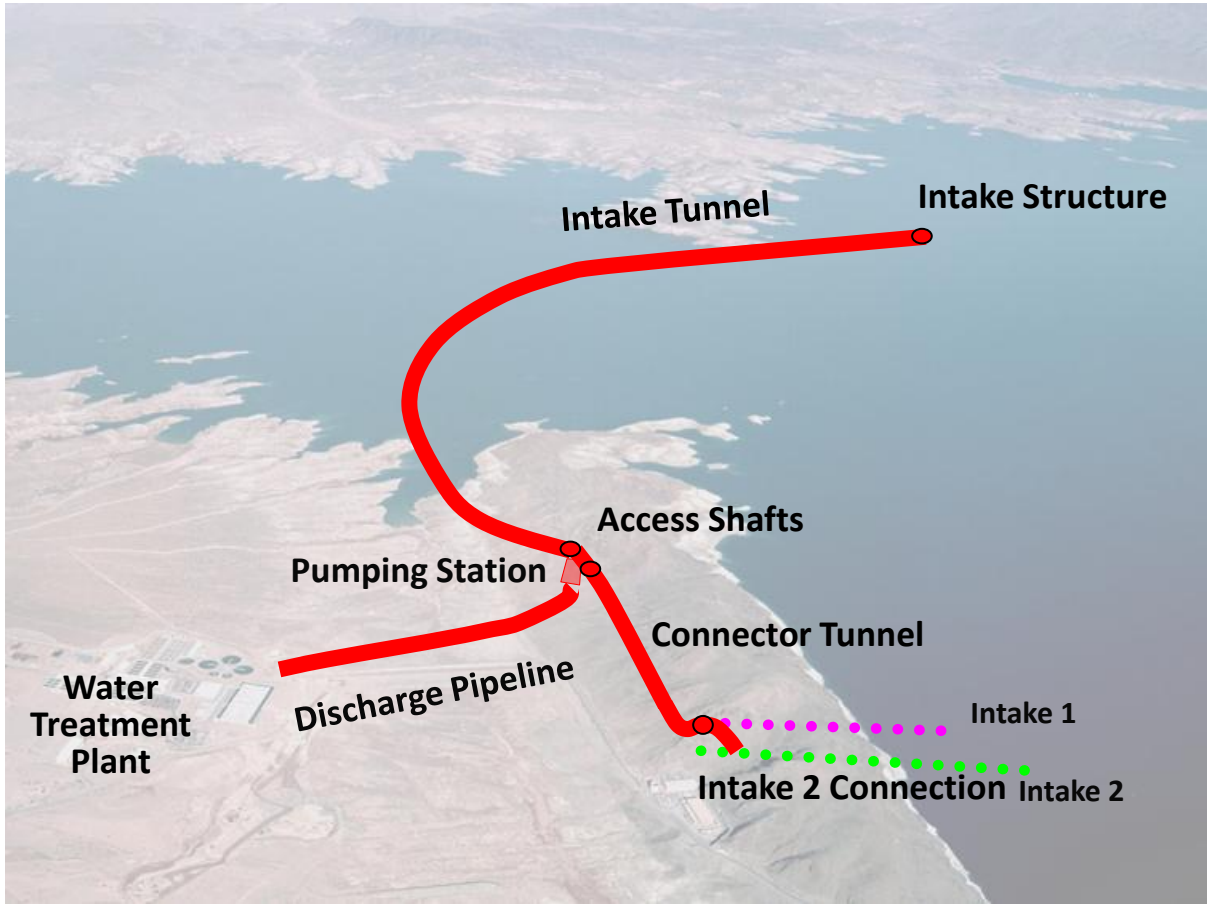


Intake No. 3

- **Replaces capacity in the event declining lake levels render Lake Mead Intake No. 1 inoperable**
- **Accesses water of best quality (deepest part of lake)**
- **Construction started 2008; to be finished in 2015**



Major Project Components



- **3 shafts**
  (Up to 30 ft. diameter and 600 ft deep)
- **4 miles of tunnel**
  (Up to 20 ft in diameter)
- **A 100-ft tall steel and concrete intake structure on the lake bottom**

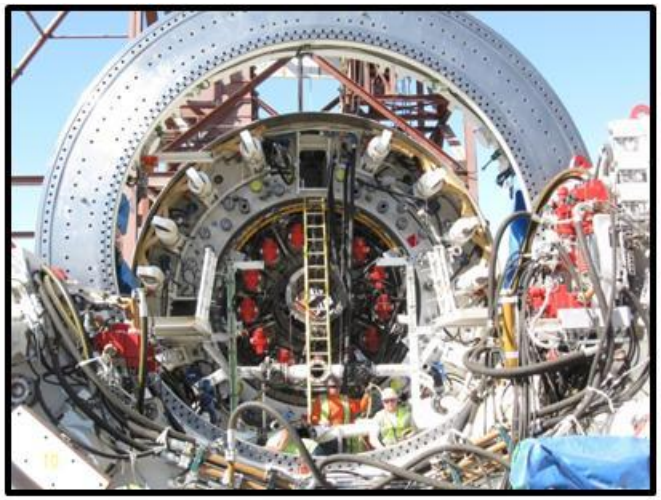
Tunnel Boring Machine

Cutter Discs

Irreparable Cutter Discs

Worn Cutter Disc

Muck Conveyor System



Tunnel Boring Machine Assembly

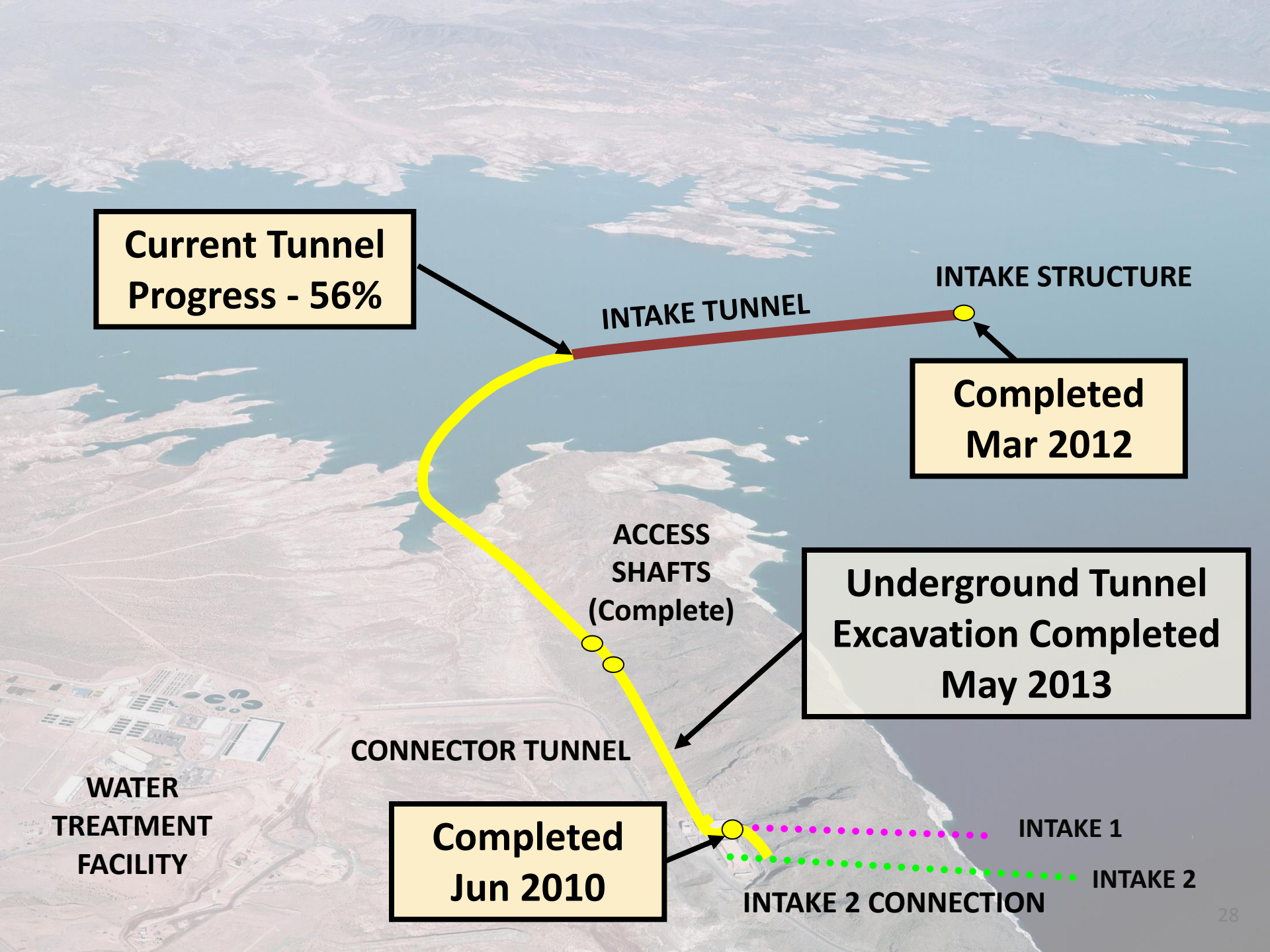
Intake Tunnel

Intake Structure

Starter Tunnel

Cement trucks for intake structure placement

Intake structure


Current Tunnel Progress - 56%
INTAKE TUNNEL
INTAKE STRUCTURE
Completed Mar 2012
ACCESS SHAFTS (Complete)
Underground Tunnel Excavation Completed May 2013
CONNECTOR TUNNEL
WATER TREATMENT FACILITY
Completed Jun 2010
INTAKE 1
INTAKE 2
INTAKE 2 CONNECTION

Since its formation in 1991, the Southern Nevada Water Authority (SNWA) has actively engaged the public in its decision making processes through integrated resource planning.

IWPAC, 2004

In early 2012, the SNWA Board again convened an advisory committee to develop recommendations that address the challenges faced by Southern Nevada's water utility managers:

<u>Phase I (concluded September 2013)</u>

- **Review the previous rate increase**
- **Made recommendations to address future funding requirements**

<u>Phase II (Began February 2014)</u>

- **Long-term facility planning**
- **Water resource development and management**
- **Facility construction and maintenance**
- **Conservation**
- **Water Quality**

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