SOUTHERN NEVADA WATER AUTHORITY®

Integrated Resource Planning Advisory Committee

Resource and Facility Recommendations

Background

Since its formation in 1991, the SNWA has actively engaged the public in its decision-making processes through integrated resource planning.

- **Integrated Resource Plan Advisory Committee (1994-96)**
- **Advisory Committee for Groundwater Management (1997-present)**
- **Water Quality Citizens Advisory Committee (1997-98)**
- **Las Vegas Wash Coordination Committee (1998-present)**
- **Drought Citizens Advisory Committee (2003)**
- **Integrated Water Planning Advisory Committee (2004-05)**
- **Integrated Resource Planning Advisory Committee (2012-2014)**

IRPAC – Phase I

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

In September 2013, the IRPAC concluded its first phase of the committee process with nine recommendations, which included:

- **An open and transparent rate process**
- **A rate increase (shared among fixed and variable charges) to address a significant increase in annual bond payments**
- **Policy directives to bank excess revenues for future needs or pay debt faster**

IRPAC – Phase II

After a short break to allow time to implement its first set of recommendations, the IRPAC began meeting again in 2014 to address facility and resource related topics:

Water resources

Conservation

Facilities

Water quality

Climate change

Committee Meetings

- **All committee work conducted in public meetings**
- **Agendas were publicly noticed and posted**
- **All committee materials are available on SNWA.com for review, including audio recordings**
- **Recommendations were drafted by the committee at its public meetings**
- **A neutral facilitator was utilized to coordinate meetings**

Committee Topics

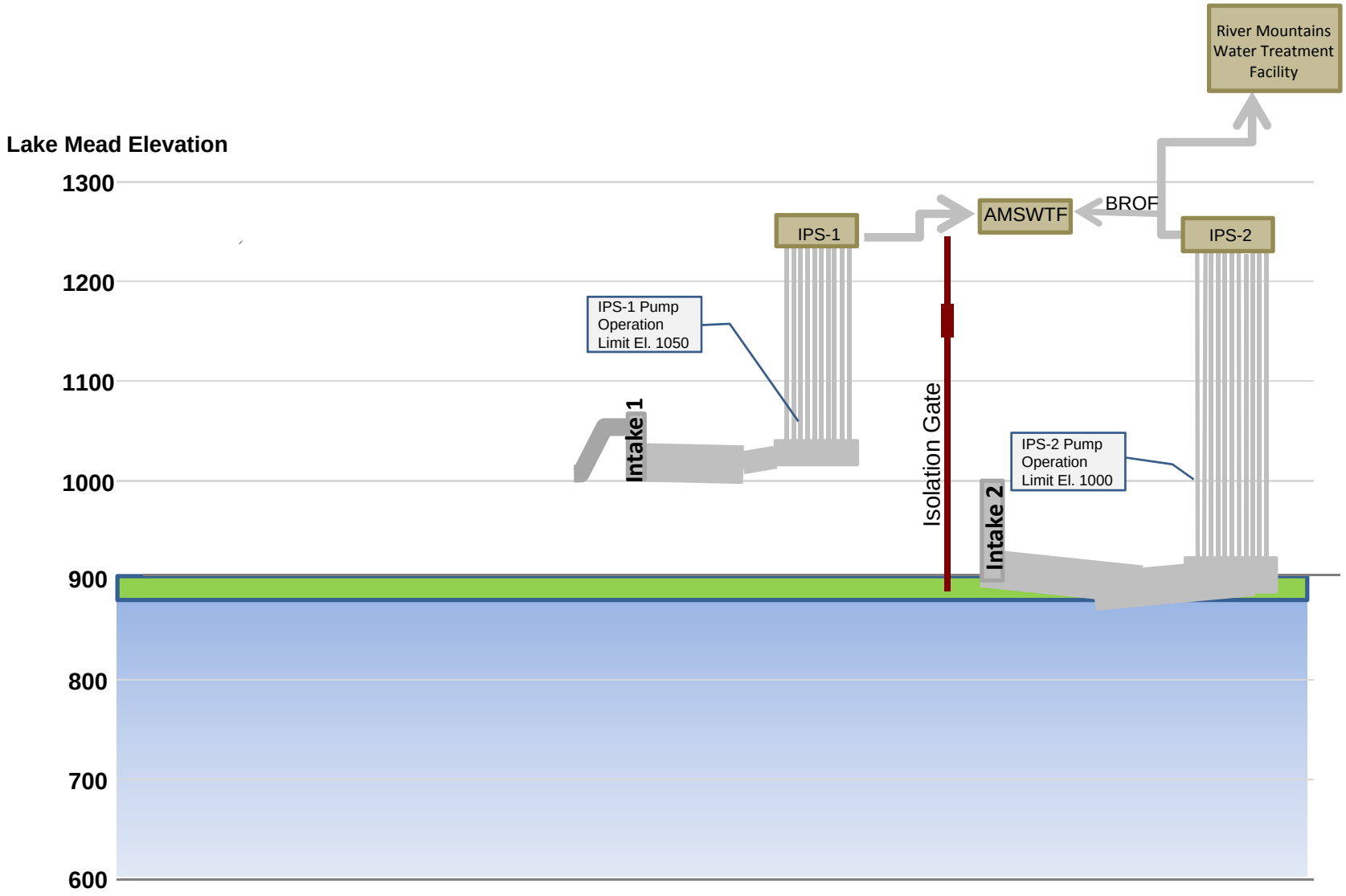
- **Colorado River laws and agreements**
- **Climate change and Lake Mead elevation projections**
- **Impacts to Lake Mead as a result of declining lake levels**
- **Conservation**
- **Water resources**
- **Funding**
- **Groundwater Development Project**

Committee Focus

The IRPAC evaluated the probability of Lake Mead reaching 1,000 feet and its impacts to the SNWA.

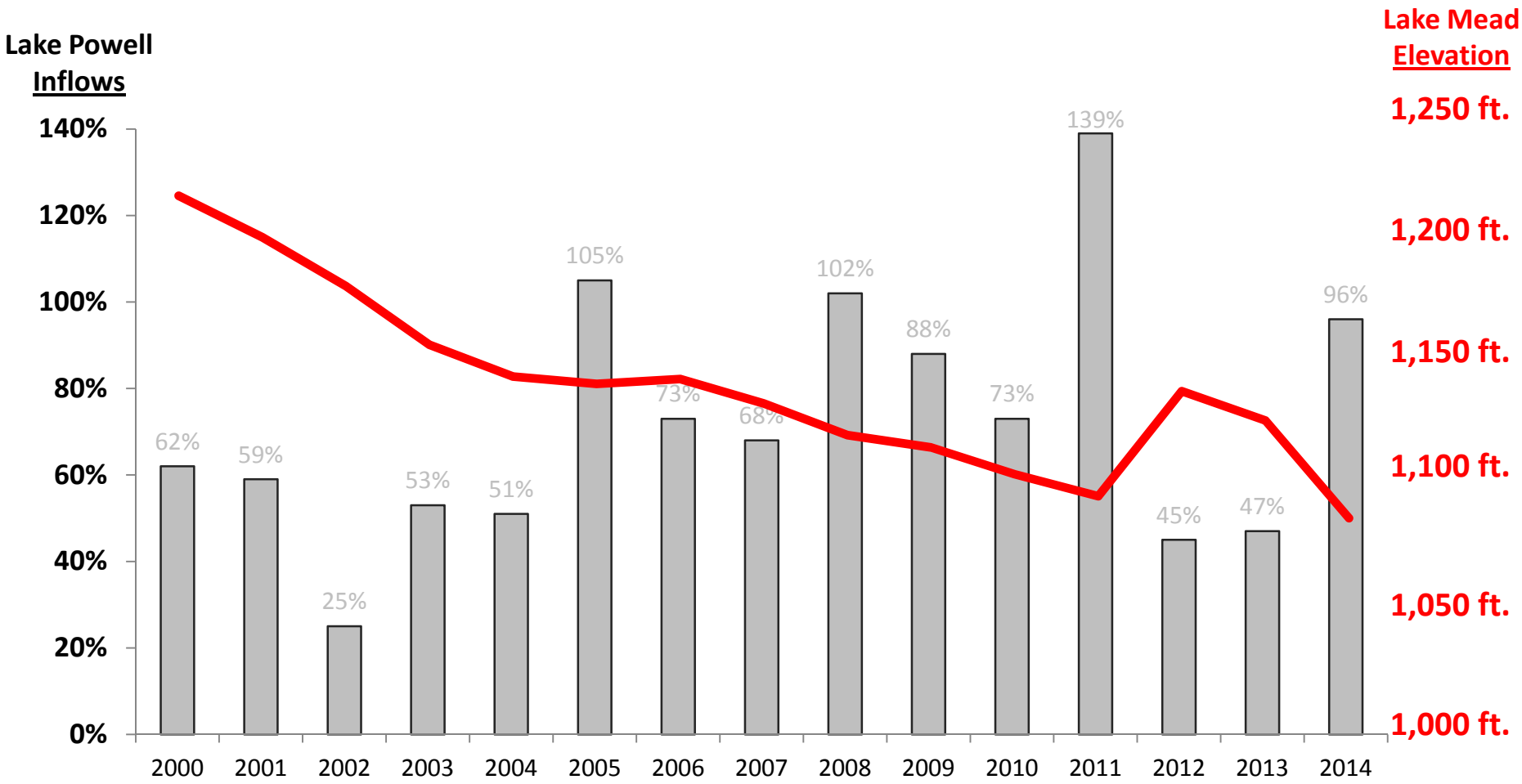
- **Water quality**
- **Reduced operating flexibility**
- **Access to water supplies (access lost at 1,000 feet)**
- **Additional treatment costs**
- **New facility costs**
- **Supplemental resource costs**

Existing SNWA Intake System



Declining Lake Elevations

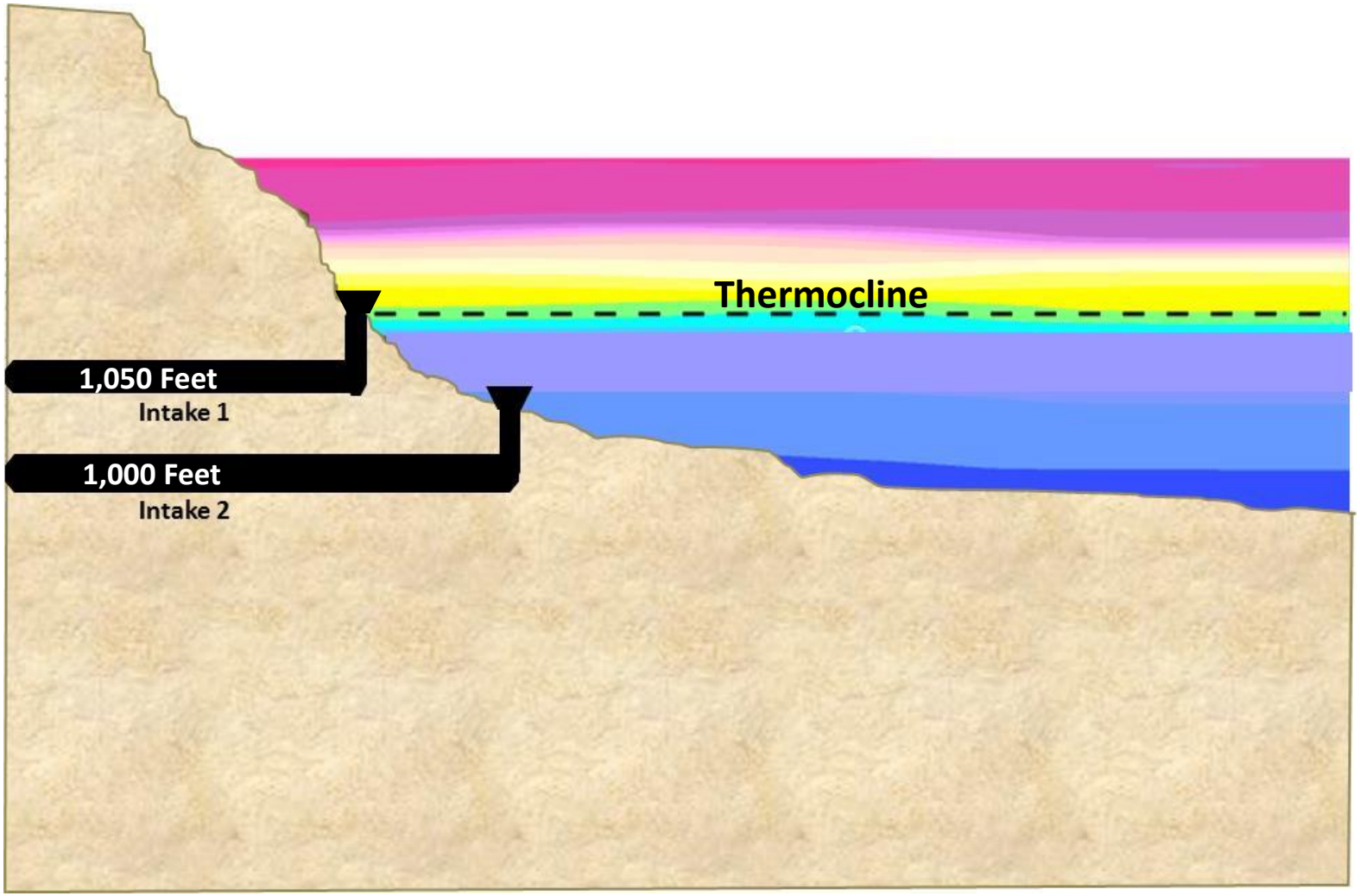
Beginning in the early 2000s, Colorado River inflows declined. As a result, Lake Mead water elevations fell.



Committee Finding

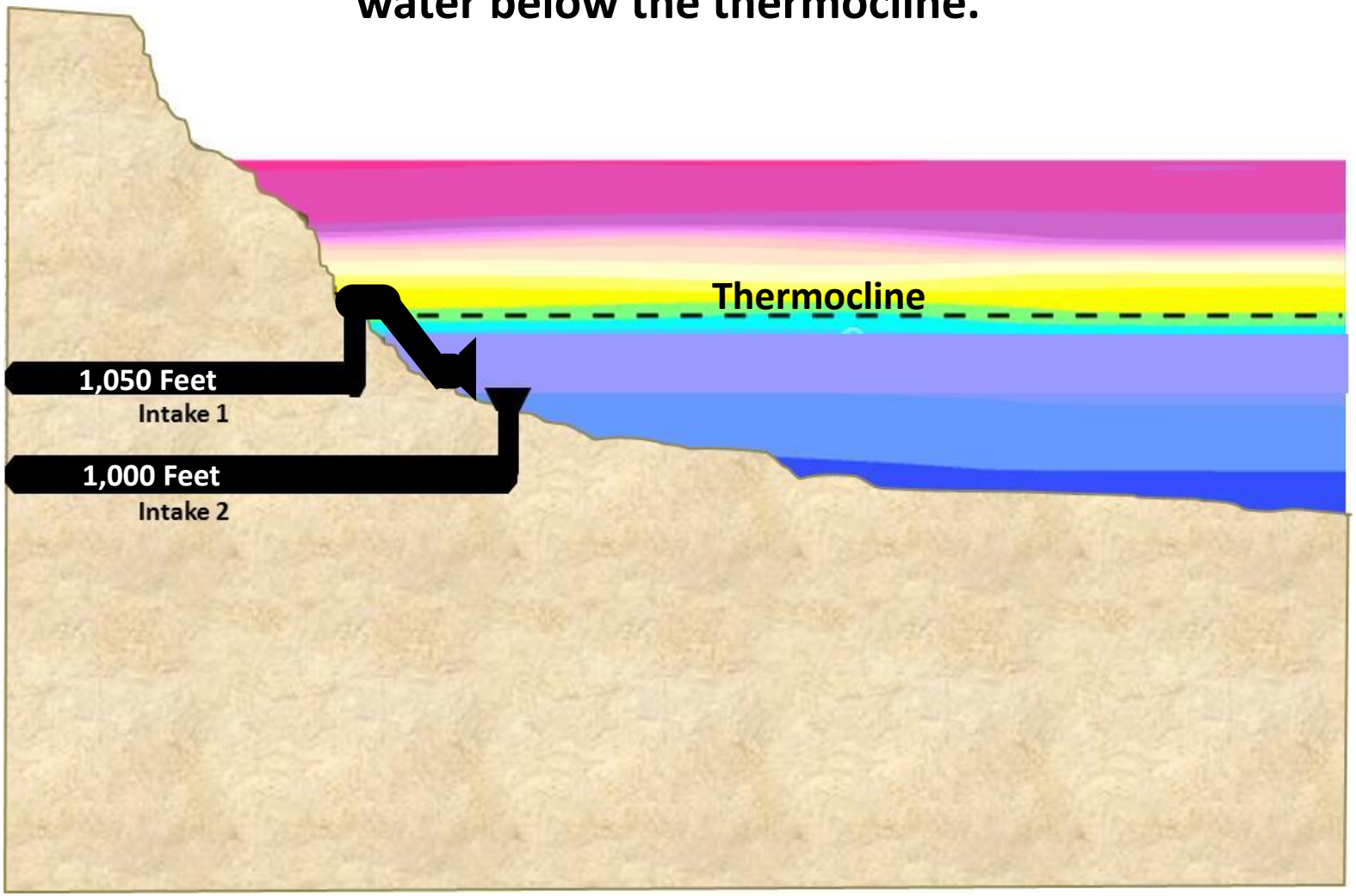
The risk of Lake Mead's elevation falling below 1,000 feet is not acceptable to our community due to the impacts on water delivery and resource availability.

SNWA Intake System (2004)

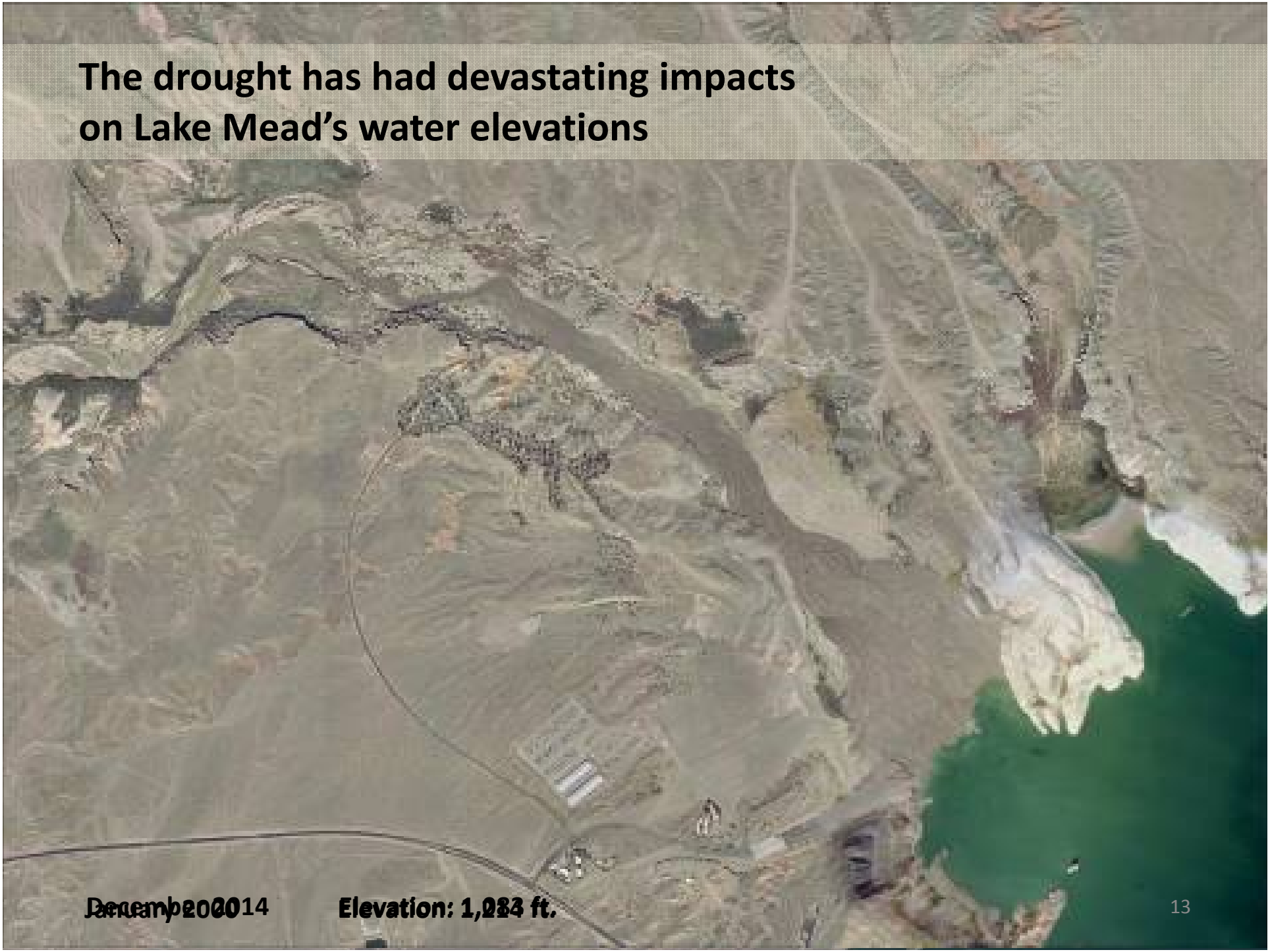


SNWA Intake System (Water Quality Protection)

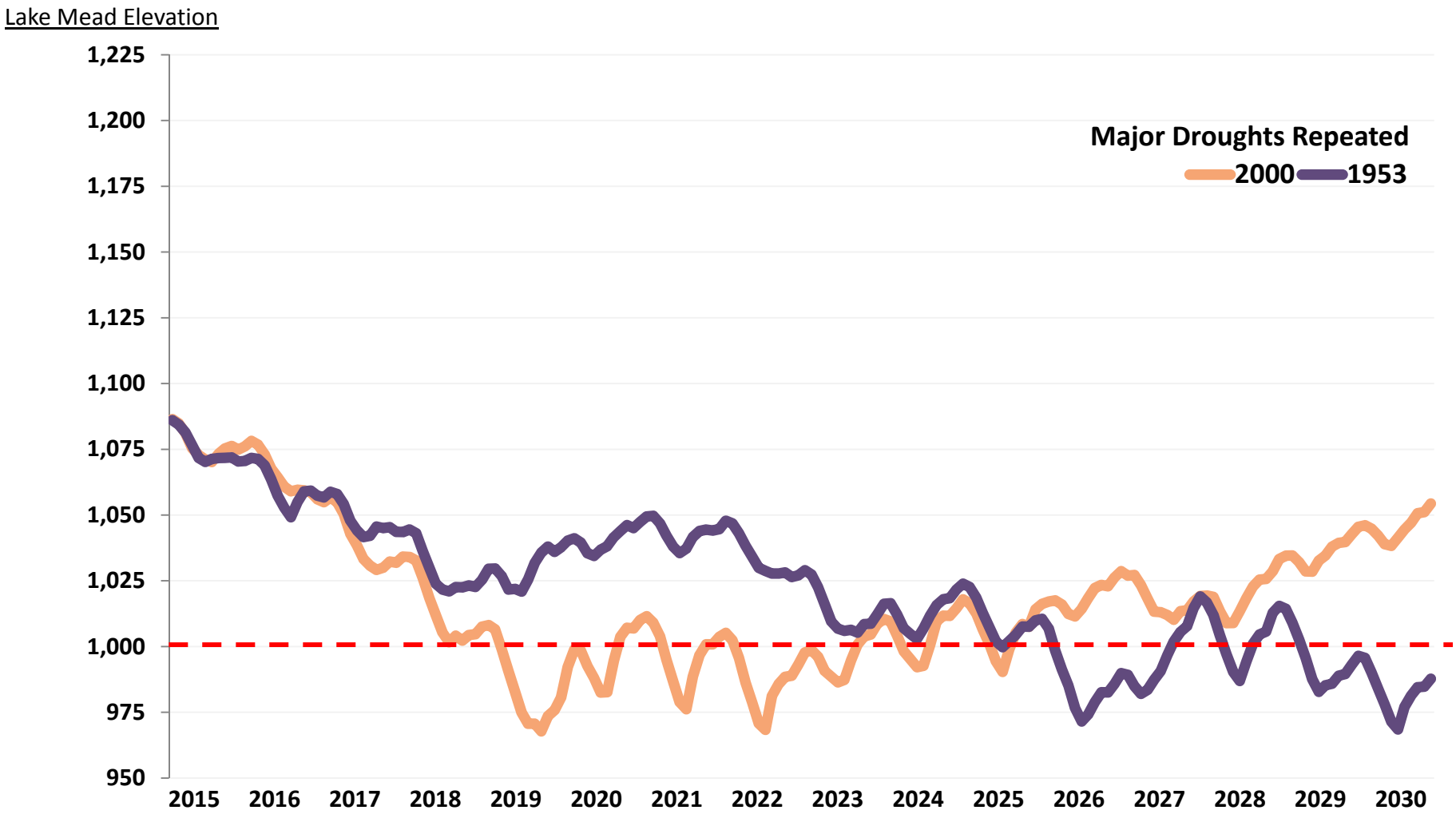
The intake extension allowed SNWA to access water below the thermocline.



The drought has had devastating impacts on Lake Mead's water elevations

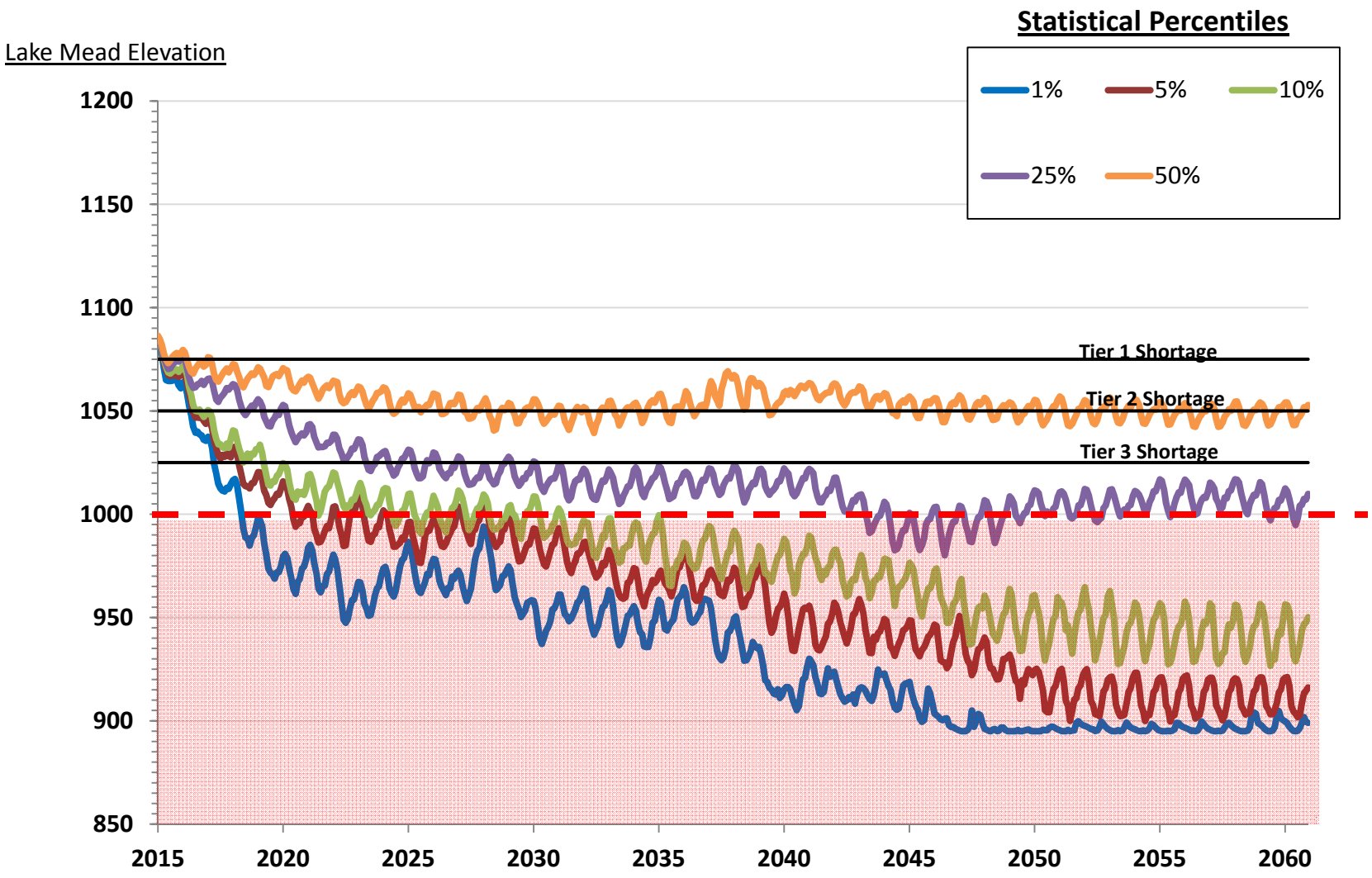


Historical Drought Elevations

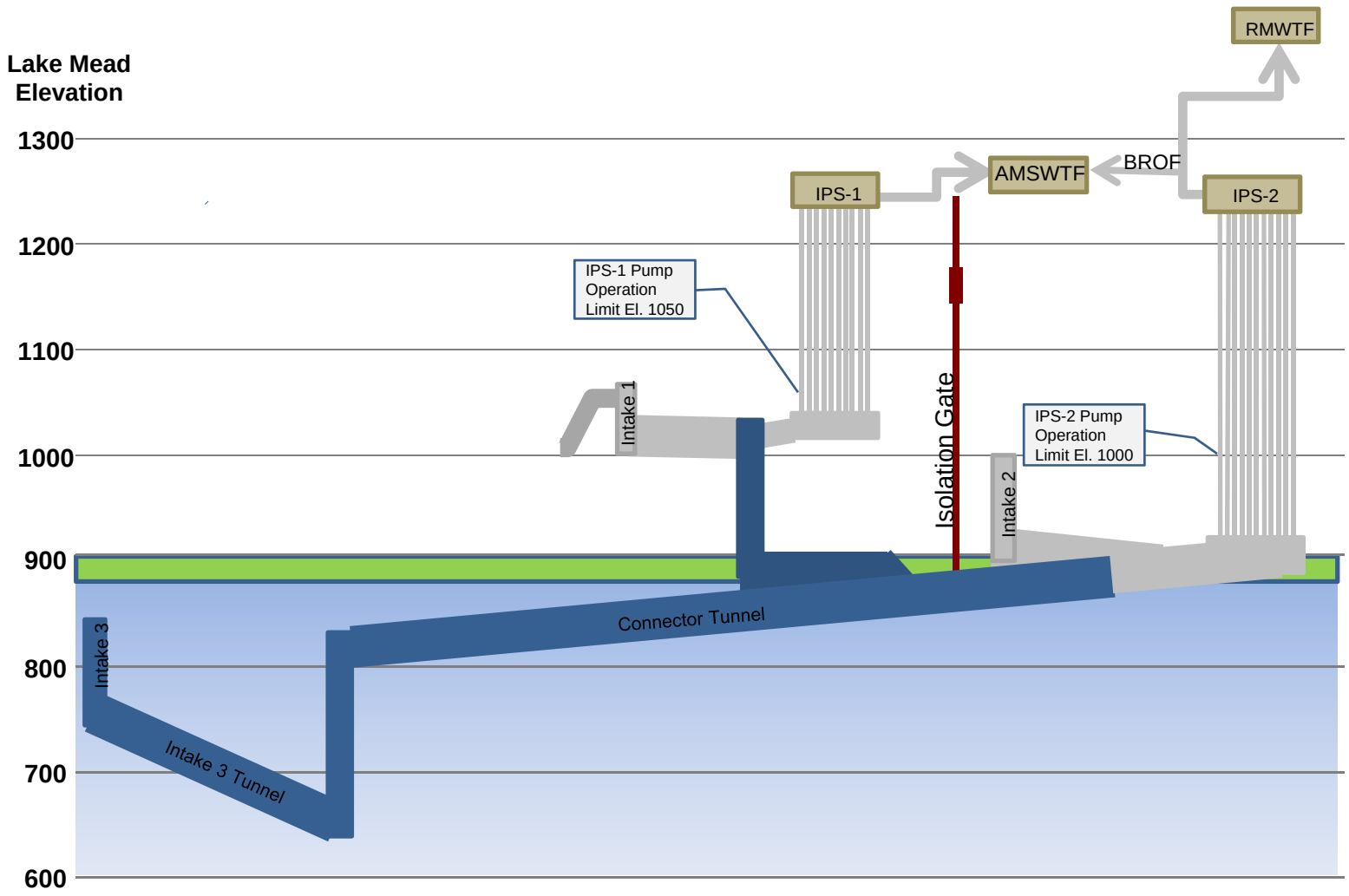


Projected Lake Mead Elevations

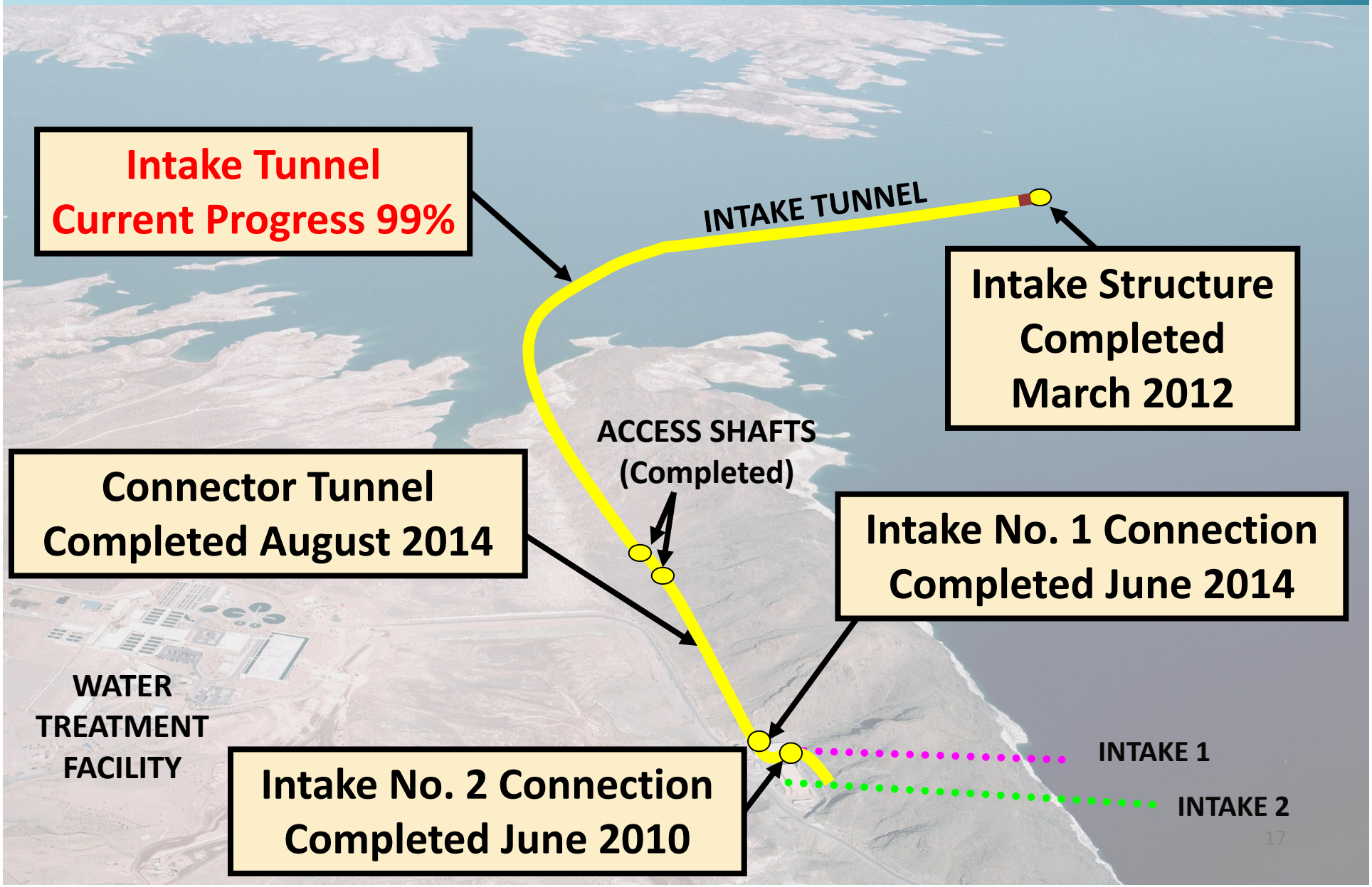
Percentiles Based on Observed Conditions



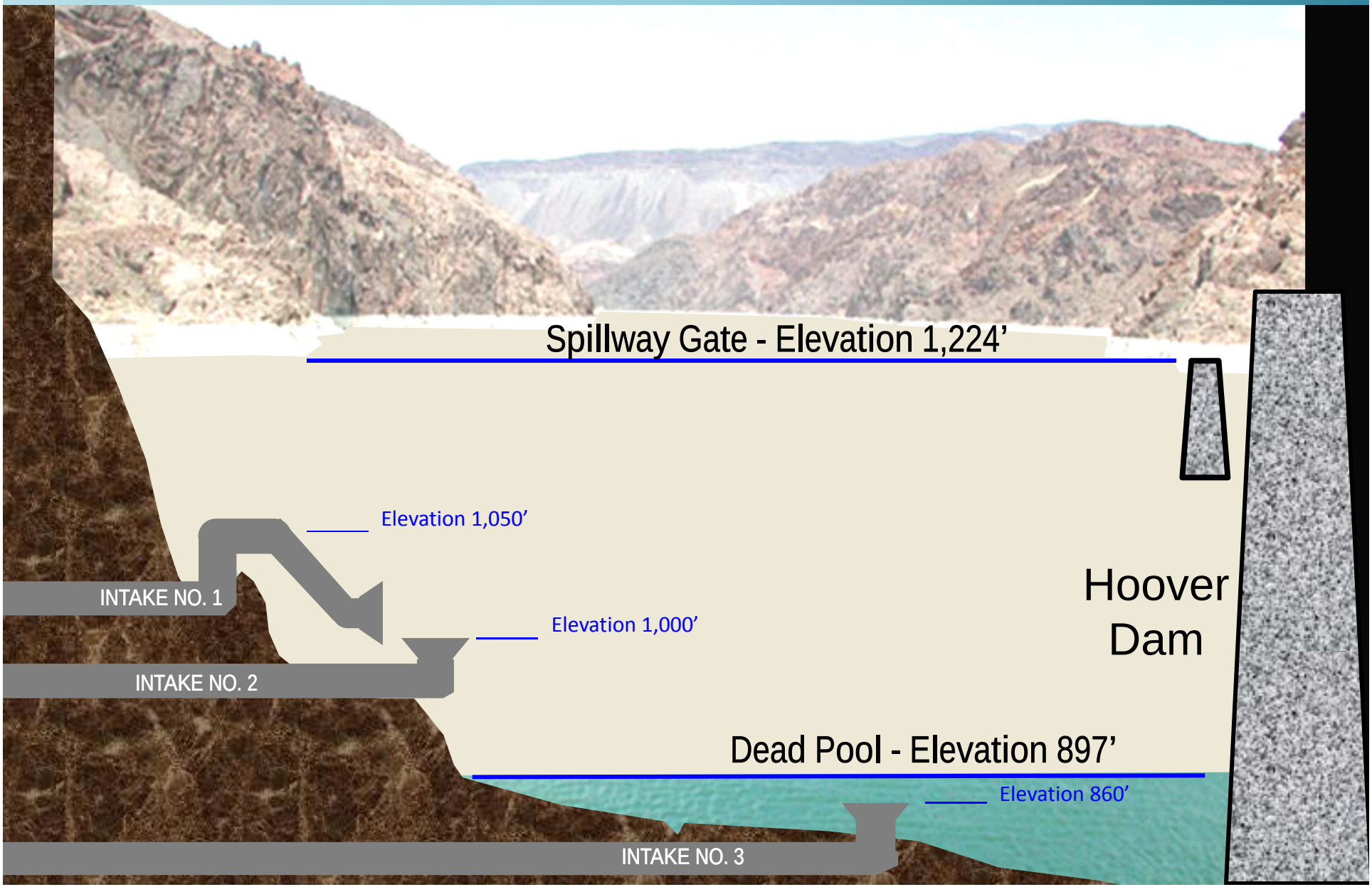
Intake No. 3


Lake Mead Elevation
1300
1200
1100
1000
900
800
700
600
RMWTF
AMSWTF
BROF
IPS-1
IPS-2
IPS-1 Pump Operation Limit El. 1050
IPS-2 Pump Operation Limit El. 1000
Isolation Gate
Intake 1
Intake 2
Intake 3
Connector Tunnel
Intake 3 Tunnel

Intake No. 3: Current Progress (Dec. 10, 2014)



Drought Impacts



Committee Recommendations

Recommendation #1
CONSERVATION – GPCD Goal

RECOMMENDATION #1: Evaluate an increased water conservation target upon achieving the currently established goal of reducing gross water usage to 199 Gallons Per Capita Per Day (GPCD) by 2035.

Investing in Conservation

The Southern Nevada Water Authority has invested more than $200 million in conservation measures:

- Direct customer incentives
- Administrative support of conservation programs
- Community education and outreach

Progress on the current conservation goal has been steady and, once reached, IRPAC has requested that the Board set a new goal.

Recommendation #2
CONSERVATION – Gross & Net Water Consumption

RECOMMENDATION #2: Present water usage information to the Board of Directors and the community in both "gross" and "net" terms for the purposes of 1) more accurately communicating the water resource implications associated with various conservation measures, and 2) improving comparability of our community's water consumption with that of other communities.

Use of GPCD to Measure Progress

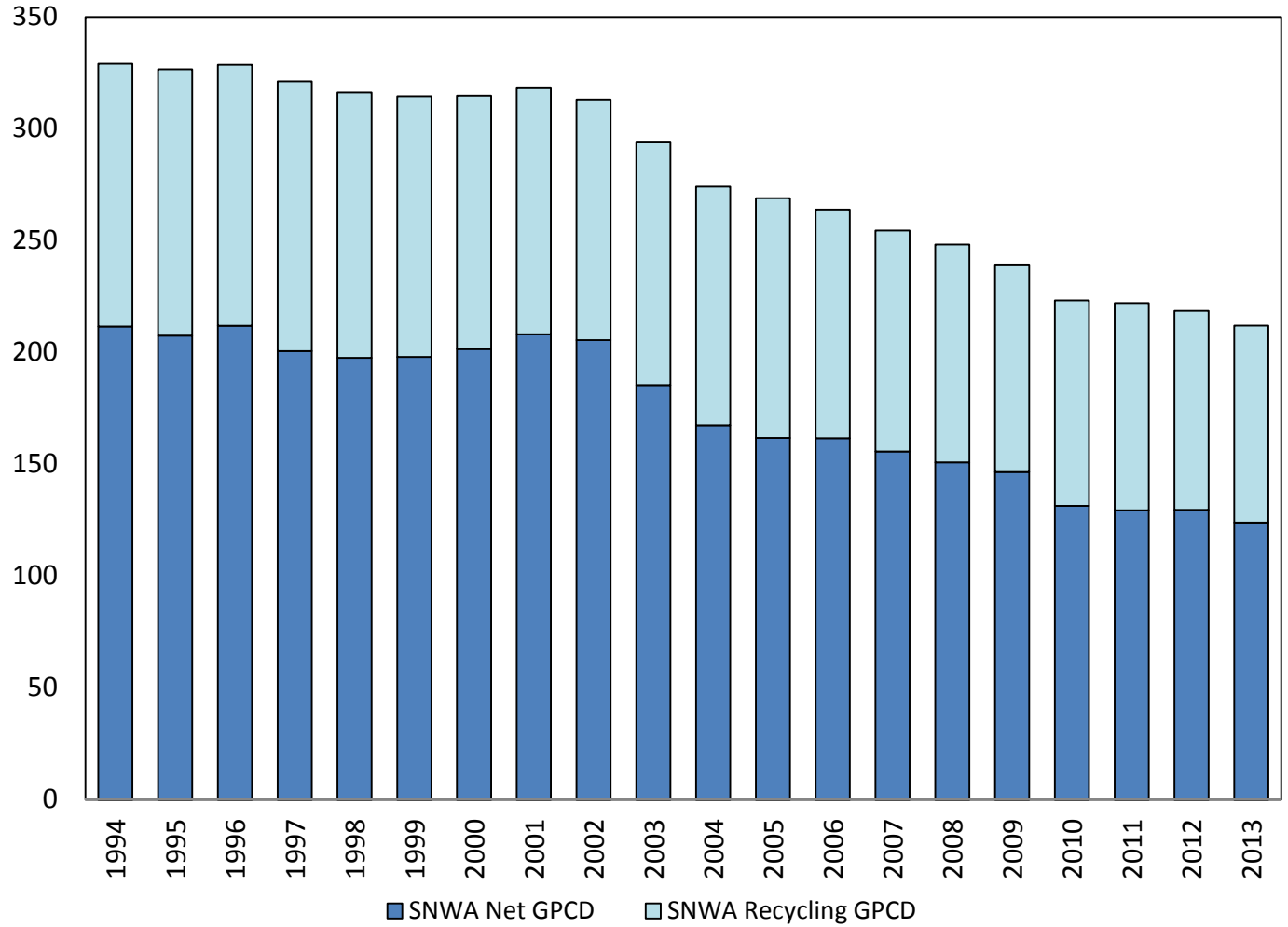
Gallons Per Capita Per Day (GPCD) is the most common method of tracking water efficiency. However, it has limitations:

- No standard formula among cities
- Doesn't account for 40 million visitors (300K+ annualized)
- Doesn't reflect indoor water recovery
- Doesn't help communities prioritize initiatives

The "Gross" versus "Net" distinction has implications for the prioritization of conservation programs and communications

- Gross GPCD is valuable in evaluating facilities because it reflects deliveries
- Because Net GPCD reflects water recycling, it is useful when considering the impact of conservation initiatives on the community's "water footprint"

SNWA Gross v. Net GPCD



Recommendation #3
RESOURCES - Colorado River System Conservation Projects

RECOMMENDATION #3: Continue to partner with other Colorado River Basin States to undertake system conservation projects designed to protect critical elevations in Lake Powell and Lake Mead, conditional upon the identification of mutually agreeable projects and shared funding responsibilities.

Recommendation #3
RESOURCES - Colorado River System Conservation Projects

- **Colorado River System Conservation Agreement**

- **Memorandum of Understanding**
  Dec. 10 SNWA Board agenda

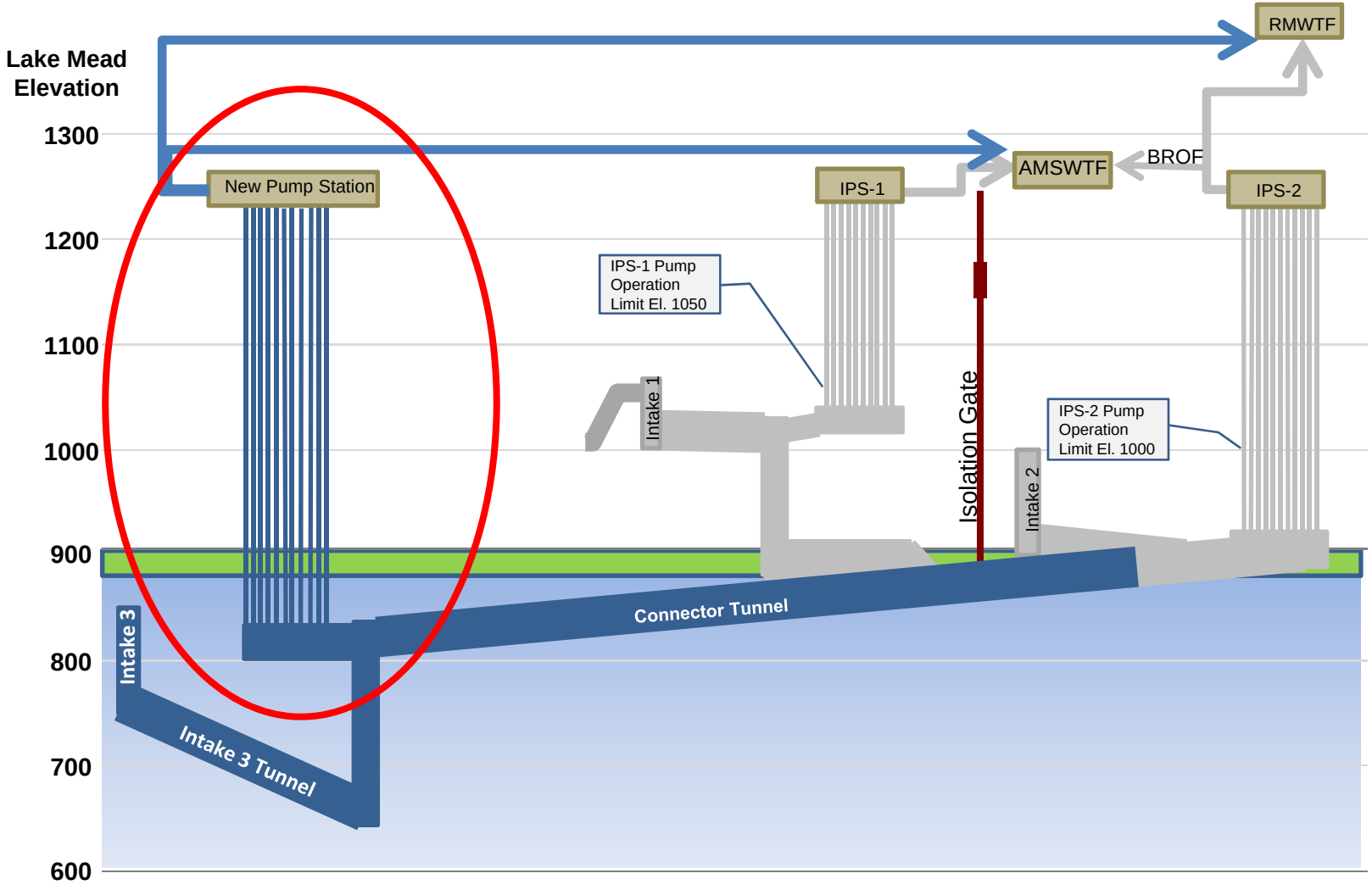
Recommendation #4
FUNDING – Colorado River System Conservation Projects To Be Funded as a One-time Capital Expenditure

RECOMMENDATION #4: Classify expenditures associated with Colorado River system conservation projects as one-time capital expenditures, thereby making funds available for these costs from Connection Charge revenues as identified in Recommendation Nos. 7 and 8 from the September 2013 Integrated Resource Planning Advisory Committee Recommendations Report.

Recommendation #5
FACILITIES – Low lake level pumping station

RECOMMENDATION #5: Begin design and construction of a new low lake level pumping station within the swiftest feasible timeframe.

Above Ground Pumping Station



Above Ground Pumping Station

Low Lake Level Pumping Station Tentative Details:

- **Design for 900 million gallons per day capacity**
- **Pump from 875 feet**

The pumping station would be constructed to provide replacement capacity in the event Intake Pumping Station Nos. 1 and 2 are offline due to low lake levels – not to accommodate growth.

Recommendation #6
FUNDING – Generate needed revenue for the construction of a new water pumping station

RECOMMENDATION #6: Generate needed revenue for the construction of a new low lake level water pumping station exclusively through fixed charges based upon meter size.

New Pump Station Estimated Cost

Rate Model Assumptions:

- **Cost Estimate = $650 million**
- **Bond Issuances of $490 million in 2016, and $130 million in 2019**
- **Connection Charge revenues above $16.1 million a year and Fund Balance above $280 million used to fund $30 million in year one for design and engineering (consistent with Phase 1 recommendations)**
- **Schedule bond issuances to optimize the use of resources and minimize interest costs (June 2016 and June 2019)**

Summary of Rate Adjustments

100% Fixed Charge
Phased-in Increase

	2016	2017	2018	2019	2021
Residential - 5/8" & 3/4" meter sizes	$2.41	$3.61	$4.81	$4.81	$4.81
Residential - 1" meter size	$4.56	$6.84	$9.11	$9.11	$9.11
Residential - 1.5" meter size	$9.13	$13.67	$18.22	$18.22	$18.22
Residential - 2" meter size	$14.61	$21.88	$29.15	$29.15	$29.15
Residential - 3" meter size	$29.21	$43.76	$58.30	$58.30	$58.30
Residential - 4" meter size	$45.64	$68.37	$91.10	$91.10	$91.10
Residential - 6" meter size	$91.29	$136.74	$182.20	$182.20	$182.20
Residential - 8" meter size and larger	$146.06	$218.79	$291.52	$291.52	$291.52
Non-Residential - 5/8" & 3/4" meter sizes	$2.41	$3.61	$4.81	$4.81	$4.81
Non-Residential - 1" meter size	$4.56	$6.84	$9.11	$9.11	$9.11
Non-Residential - 1.5" meter size	$9.13	$13.67	$18.22	$18.22	$18.22
Non-Residential - 2" meter size	$14.61	$21.88	$29.15	$29.15	$29.15
Non-Residential - 3" meter size	$29.21	$43.76	$58.30	$58.30	$58.30
Non-Residential - 4" meter size	$45.64	$68.37	$91.10	$91.10	$91.10
Non-Residential - 6" meter size	$91.29	$136.74	$182.20	$182.20	$182.20
Non-Residential - 8" meter size	$146.06	$218.79	$291.52	$291.52	$291.52
Non-Residential - 10" and larger meter sizes	$209.96	$314.51	$419.05	$419.05	$419.05

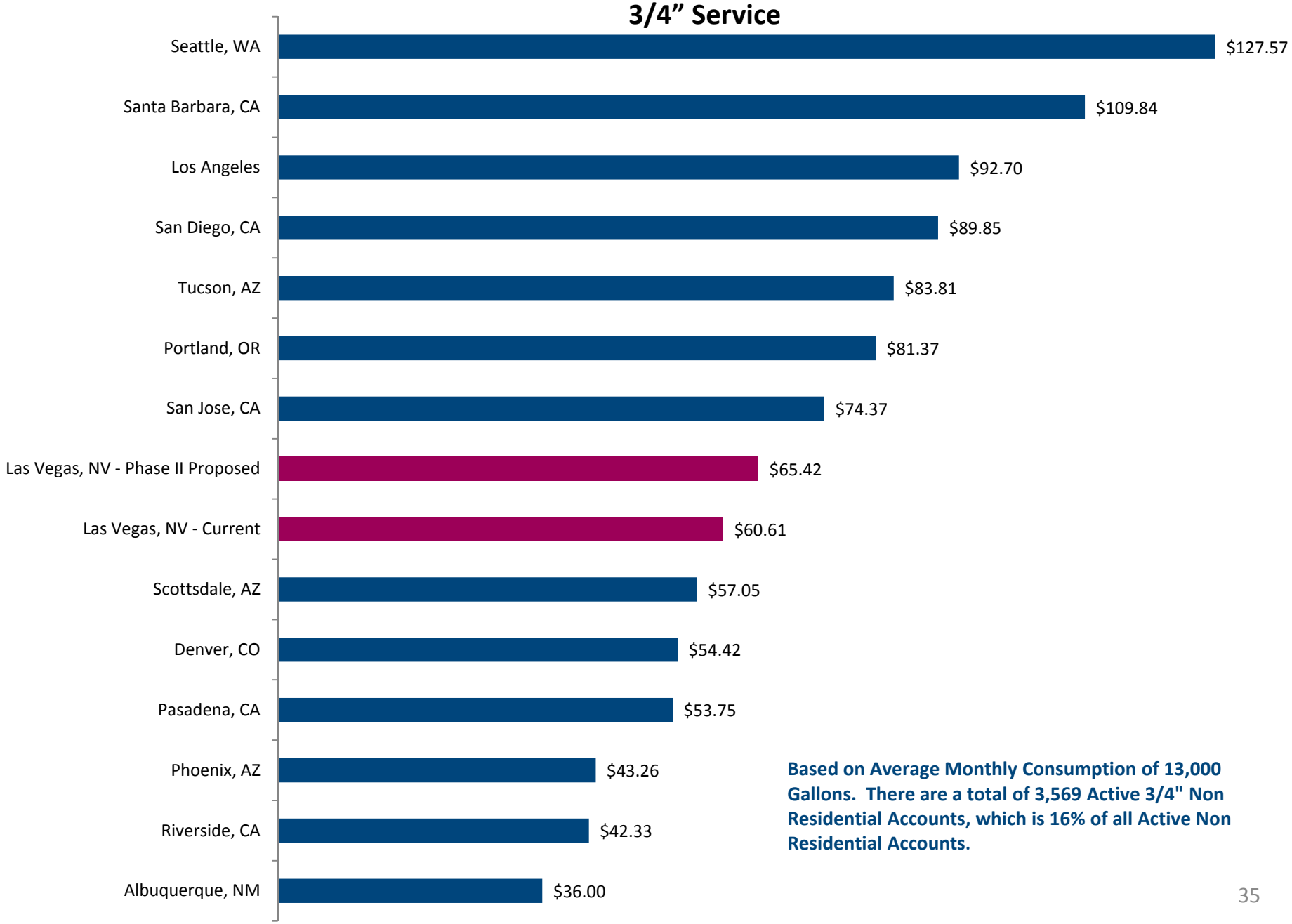
With the increase, the average LVVWD customer bill remains below the average among 62 comparable cities in the western United States.

Utility	$10 - $20	$20 - $30	$30 - $40	$40 - $50	$50 - $60	$60 - $70	$70 - $80	$80 - $90	$90 - $100	Over $100
Santa Barbara, CA (OC)										113.37
Santa Fe, NM										110.33
Colorado Springs, CO (OC)										109.22
Seattle, WA (OC)									96.33	
Santa Cruz, CA (OC)									94.23	
Reno, NV (Unmetered)									91.37	
San Francisco, CA								89.33		
Santa Barbara, CA								87.20		
Seattle, WA								84.46		
Portland, OR								83.08		
San Diego, CA							74.05			
Santa Cruz, CA							73.97			
Colorado Springs, CO							72.78			
Flagstaff, AZ (OC)							72.43			
Marin, CA (MMWD)						66.82				
Flagstaff, AZ						65.83				
Los Angeles, CA						63.40				
Santa Rosa, CA						60.52				
San Jose, CA (Company)					59.44					
Oakland, CA (EBMUD)					59.36					
San Jose, CA (City)					56.00					
Pasadena, CA (OC)					51.53					
62 City Average					51.24					
Houston, TX				48.94						
Tacoma, WA (OC)				48.59						
Phoenix, AZ (OC)				48.16						
Cheyenne, WY				45.92						
Tucson, AZ				45.17						
Reno, NV (Metered)				45.14						
Las Vegas, NV (SNWA Phase II Full Rate)				44.07						
Riverside, CA (OC)				43.73						
Kingman, AZ (OC)				42.74						
Pasadena, CA				42.14						
Victorville, CA				41.90						
San Antonio, TX (OC)				41.02						
Long Beach, CA				40.81						
Tacoma, WA				40.48						
Las Vegas, NV (SNWA Phase I Full Rate)			39.26							
Henderson, NV			38.60							
North Las Vegas, NV			38.37							
Boulder, CO (OC)			38.30							
Scottsdale, AZ			37.01							
Denver, CO (OC)			36.78							
Billings, MT (OC)			36.07							
Billings, MT			35.47							
San Antonio, TX			35.30							
Dallas, TX			34.47							
Boulder, CO			33.60							
Denver, CO			33.38							
Kingman, AZ			32.85							
Pheonix, AZ			32.35							
Anaheim, CA (OC)			32.12							
Salt Lake City, UT (OC)			31.51							
Boise, ID			31.43							
San Bernardino, CA			30.95							
Albuquerque, NM		29.93								
Anaheim, CA		29.20								
Riverside, CA		29.15								
St. George, UT		28.62								
Cedar City, UT		26.20								
El Paso, TX		26.18								
Redding, CA		25.91								
Salt Lake City, UT		25.13								
Boulder City, NV		22.53								

Based on LVVWD Average Monthly Single-Family Consumption of 10,000 gallons and a 5/8 or 3/4 Inch Service Charge for Comparison.

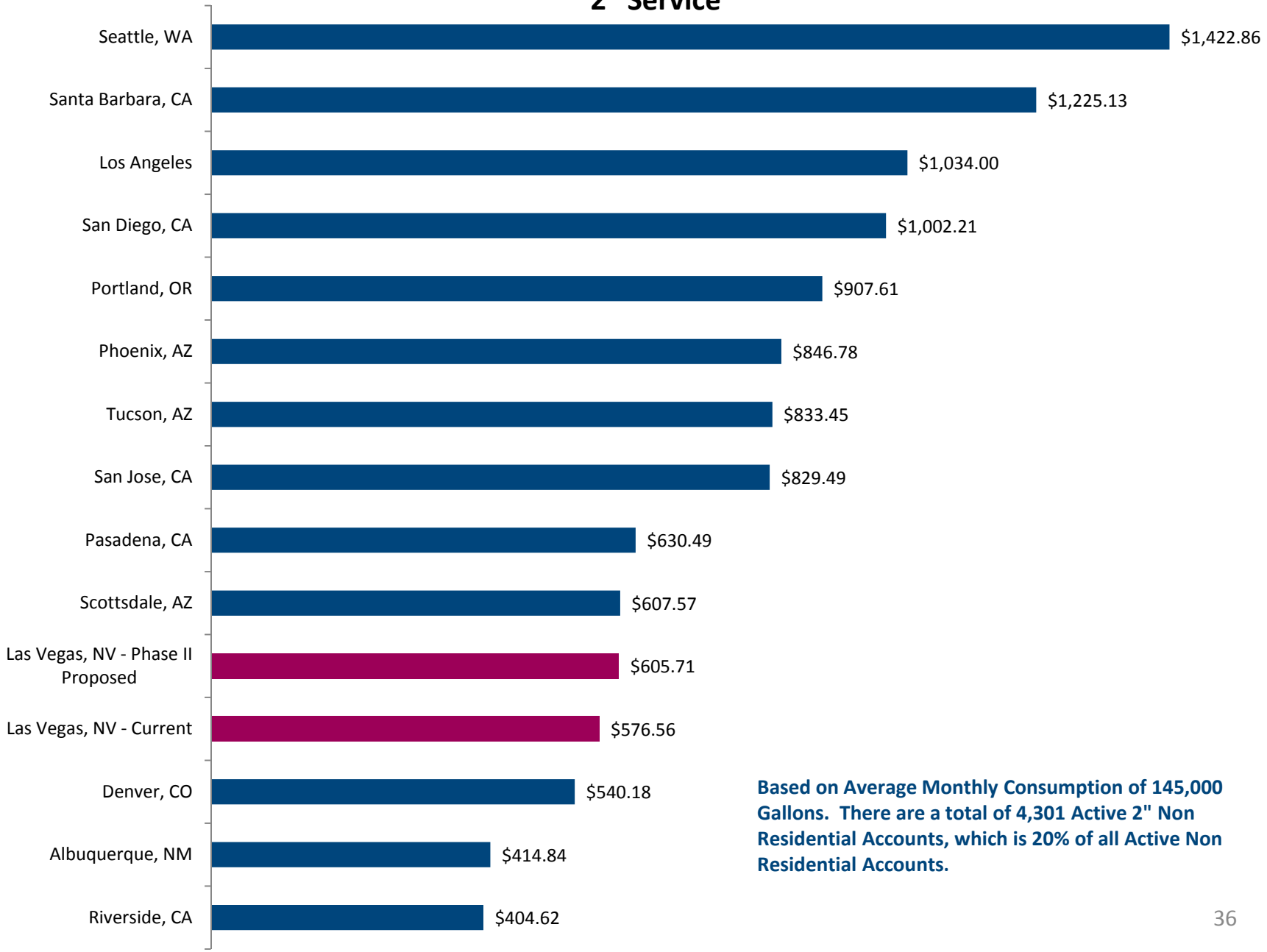
OC - Outside City
MMWD - Marin Municipal Water District
EBMUD - East Bay Municipal Utilities District

Estimated Monthly Bill for Commercial Customer in Major Western US Cities
3/4" Service



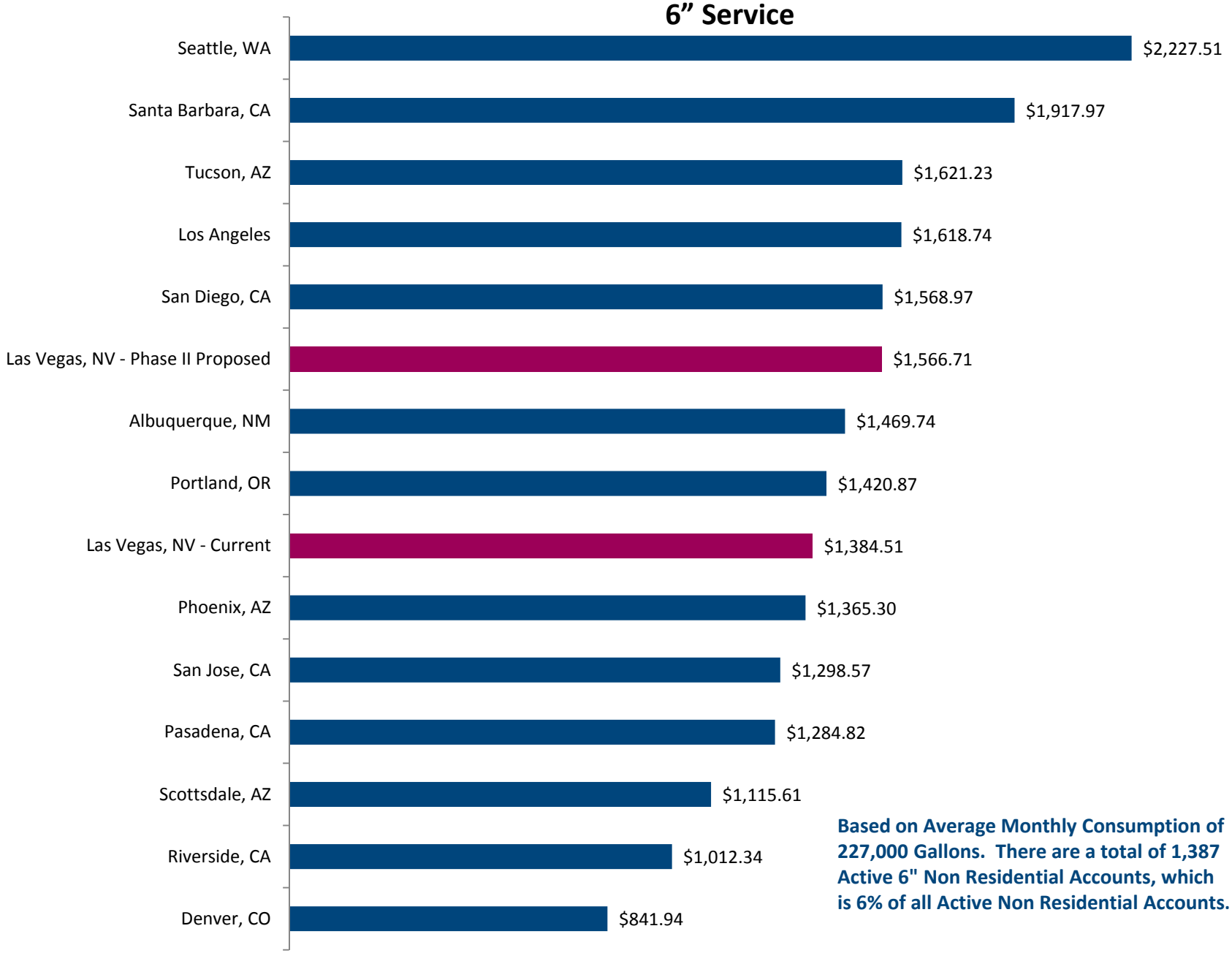
Based on Average Monthly Consumption of 13,000 Gallons. There are a total of 3,569 Active 3/4" Non Residential Accounts, which is 16% of all Active Non Residential Accounts.

Estimated Monthly Bill for Commercial Customer in Major Western US Cities
2" Service



Based on Average Monthly Consumption of 145,000 Gallons. There are a total of 4,301 Active 2" Non Residential Accounts, which is 20% of all Active Non Residential Accounts.

Estimated Monthly Bill for Commercial Customer in Major Western US Cities
6” Service



Based on Average Monthly Consumption of 227,000 Gallons. There are a total of 1,387 Active 6" Non Residential Accounts, which is 6% of all Active Non Residential Accounts.

Recommendation #7
FUNDING – Phase in the increase

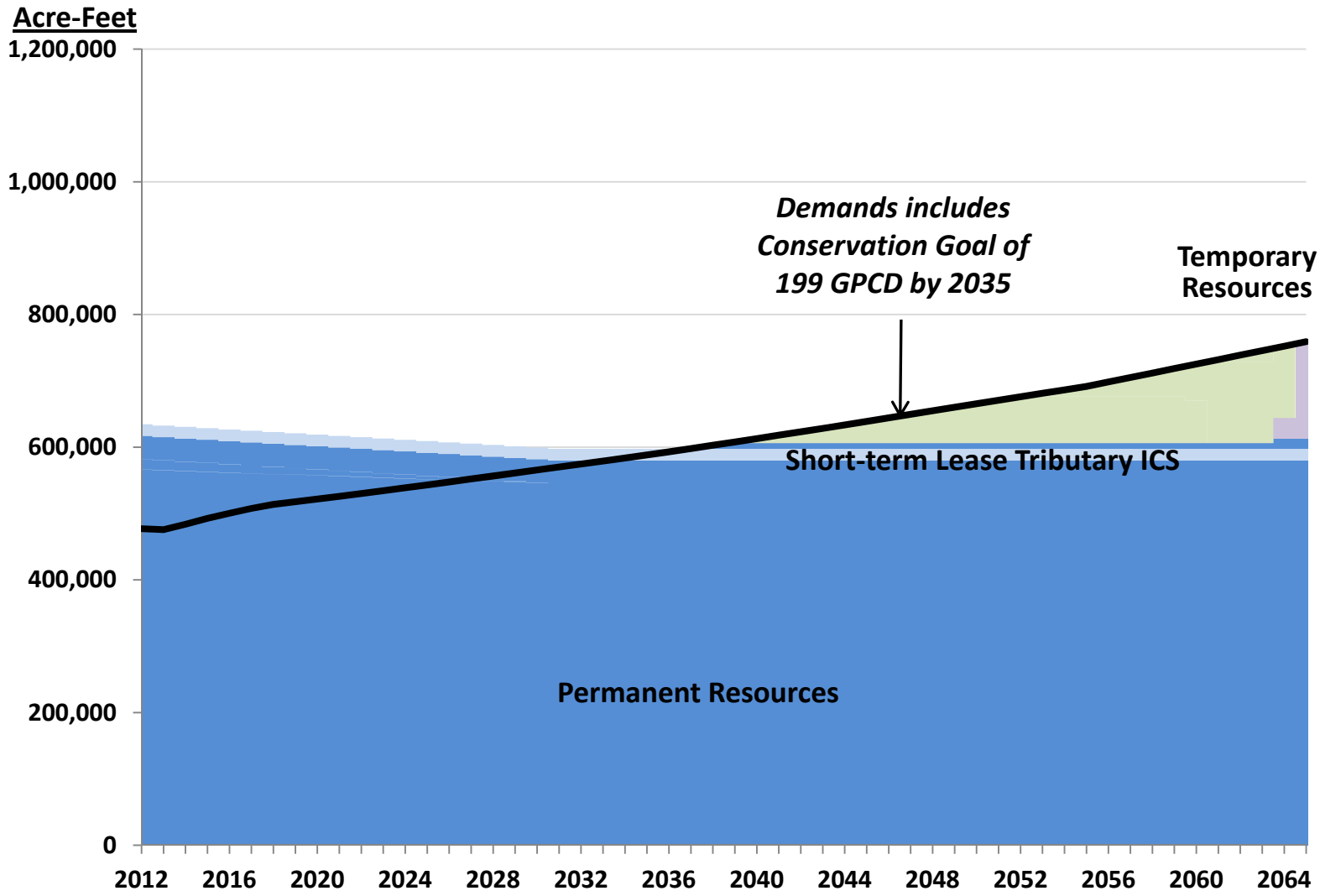
RECOMMENDATION #7: Phase in the increase to fixed monthly charges over a three-year period.

Recommendation #8
RESOURCES – Groundwater Development Project

RECOMMENDATION #8: Continue to include the Clark, Lincoln and White Pine Counties Groundwater Development Project within the SNWA's Water Resource Portfolio with future resource options.

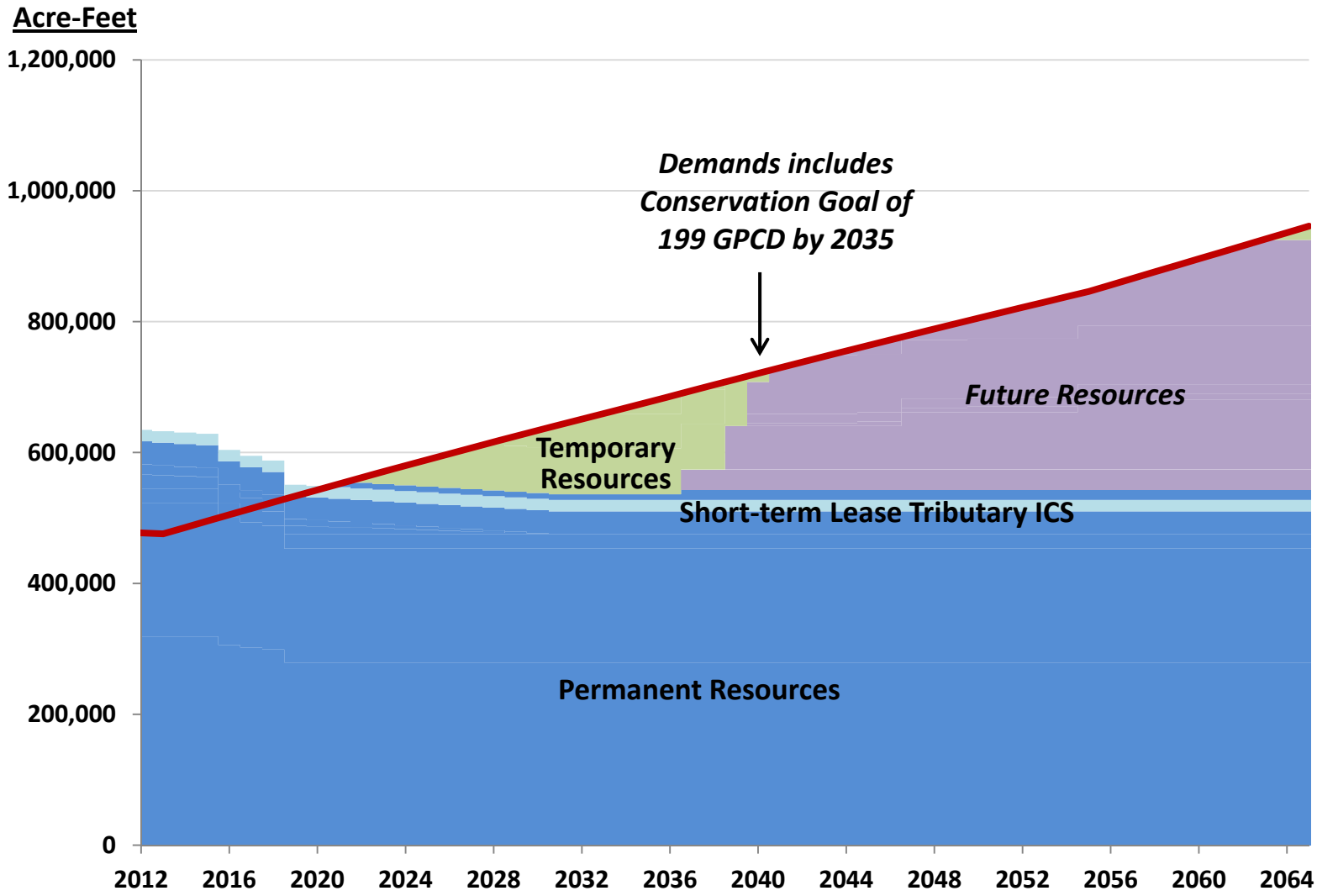
SNWA Resource Demands

CBER Scenario: Colorado River Normal Conditions



SNWA Resource Demands

Economic Recovery Scenario: Colorado River Shortage of 40,000 acre-feet



Next Steps

Work with member agencies to implement recommendations.

- Business Impact Statement process
- Public hearings

Educate community about IRPAC process and recommendations.

- Website updates
- Bill estimators
- Water bill inserts
- Radio advertisements
- Informational public meetings
- Speakers bureau
- Press releases and media
- Social media
- Newsletters

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