

# **Colorado River Basin Study Lower Basin Perspective**

**April 5, 2013**



# Summary

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- **Climate Change Hydrology – Planning for the Worst Case**
- **Portfolios**
- **Governance / Law of the River**
- **What's Next?**



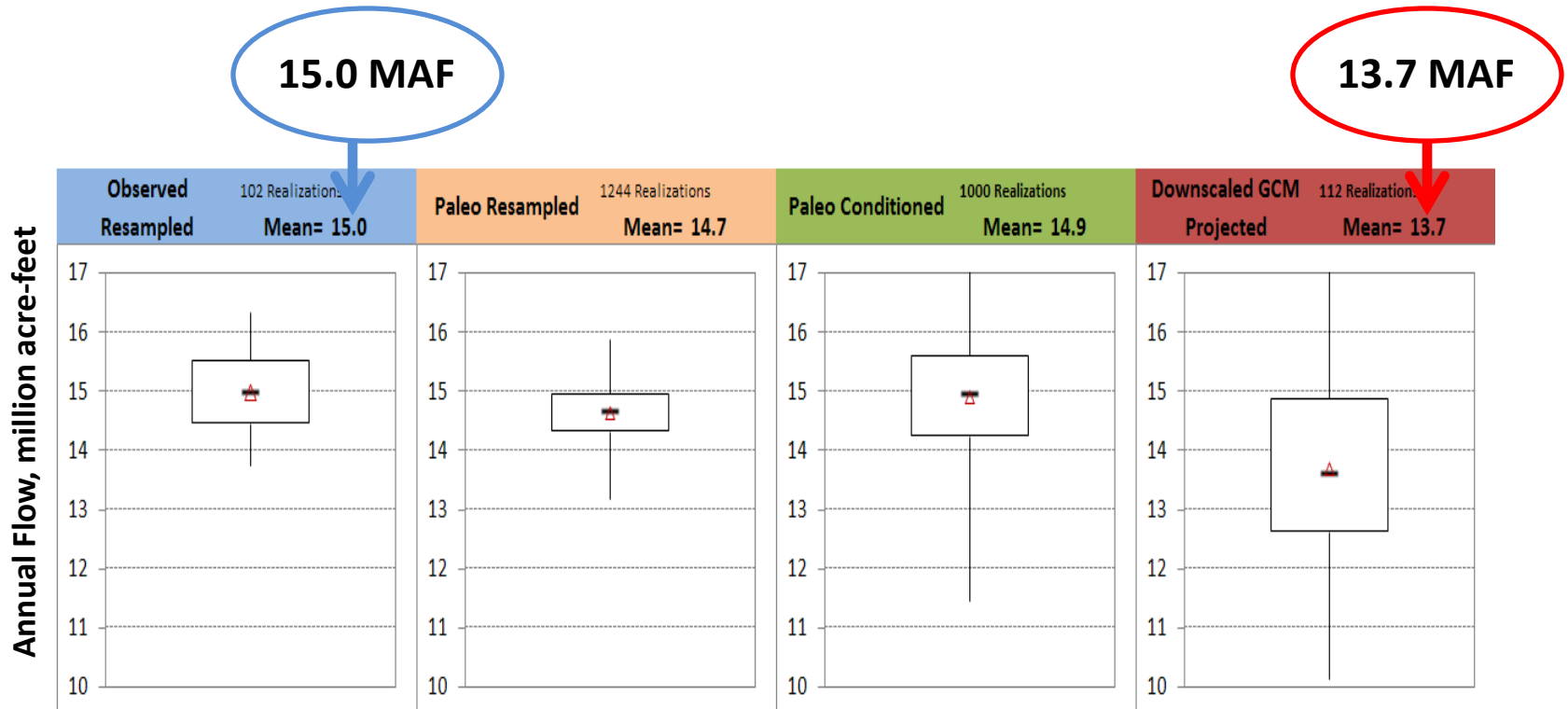
# Colorado River Basin Water Supply and Demand Study

- Purpose
  - Assess future water supply and demand imbalances over the next 50 years
  - Assess risks to Basin resources
  - Develop and evaluate opportunities for resolving imbalances and to mitigate impacts to resources
- A planning study – will *not* result in any decisions, but will provide the technical foundation for future activities





# Projections of Natural Flow at Lees Ferry

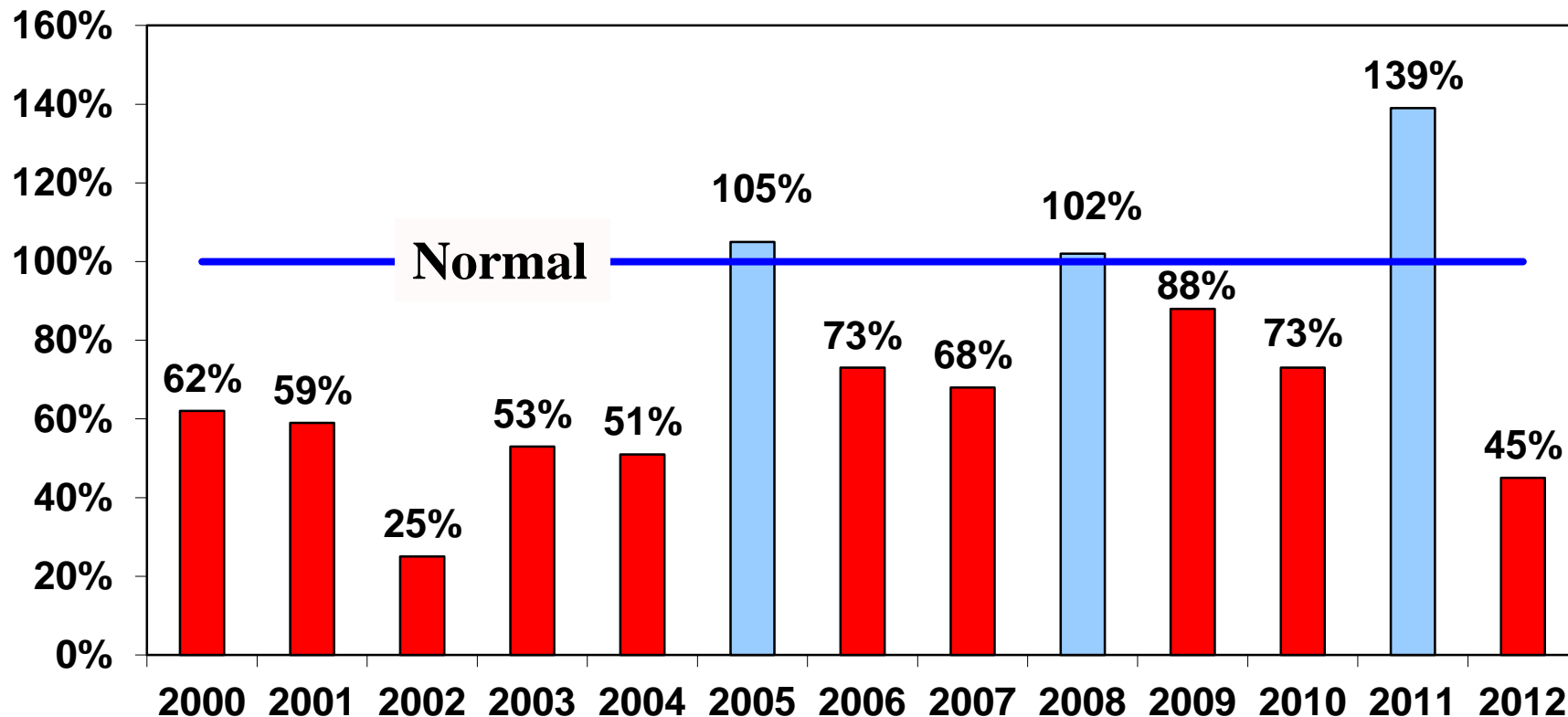


- The Downscaled GCM Projected scenario indicates higher variability and a mean less than other scenarios, ~ 9% less than the observed record by 2060.



# Historical Lake Powell Annual Inflows

2000 – 2008: Natural Flow 11.8 Million Acre-Feet or 79% of Average



10-Year Average (2003-2012): 80% of normal

Historical 13-Year Average Inflow: 73% of normal



# **Future Colorado River Water Supply and Demand**

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- **Median supply and demand imbalance in 2060 is 3.2 million acre-feet / year**
- **The range of supply and demand imbalances ranges from 0 to nearly 8 million acre-feet / year**



## Portfolios B and C

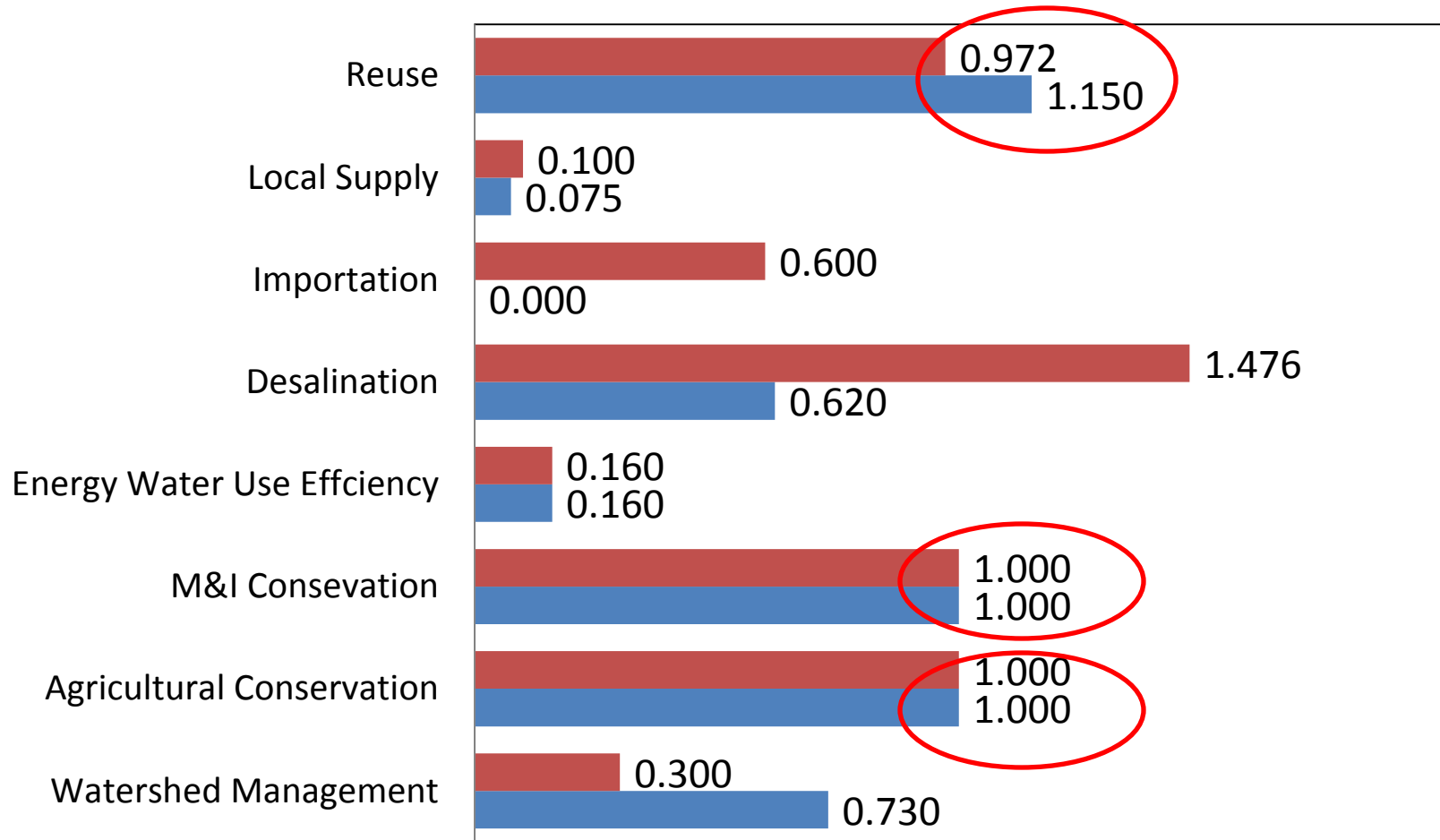
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- **Portfolio B – More reliability**
  - Includes augmentation projects (importation and ocean desalination)
- **Portfolio C – More energy sensitive**
  - Augmentation projects are not included (less water available by 2060)



# Portfolio Profile

## Resource Options and Volumes in Million Acre-Feet



■ Portfolio B (5.608)    ■ Portfolio C (4.735)





# Uncertain

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- **How big will the imbalance be?**
- **Can we achieve an additional 3 million acre-feet / year by 2060 through conservation, reuse, and agricultural transfers?**



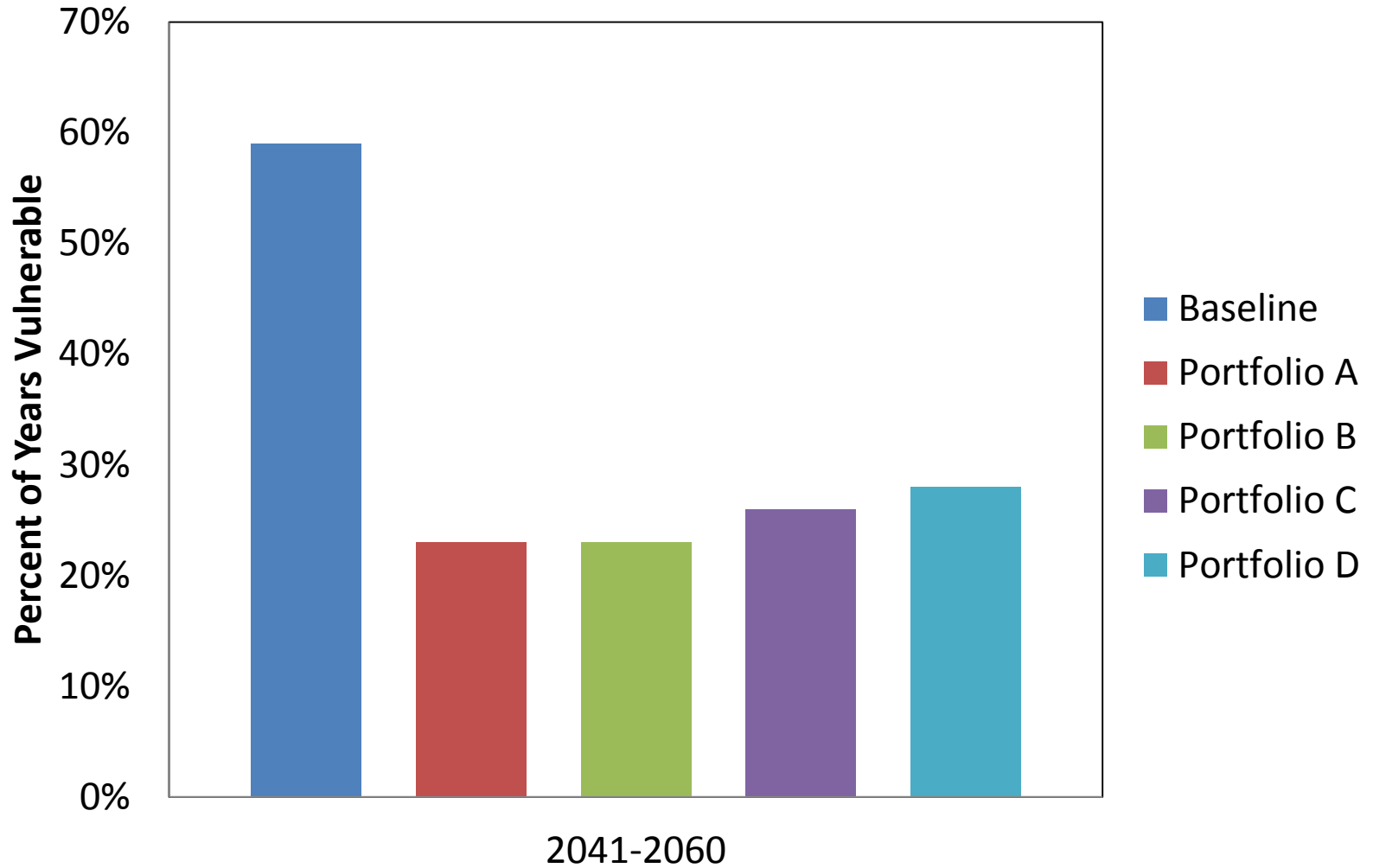
## **Certain**

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- **Need a supply of water to bring into the Colorado River Basin**
- **Augmentation Projects deliver known volumes of water (many years to build)**



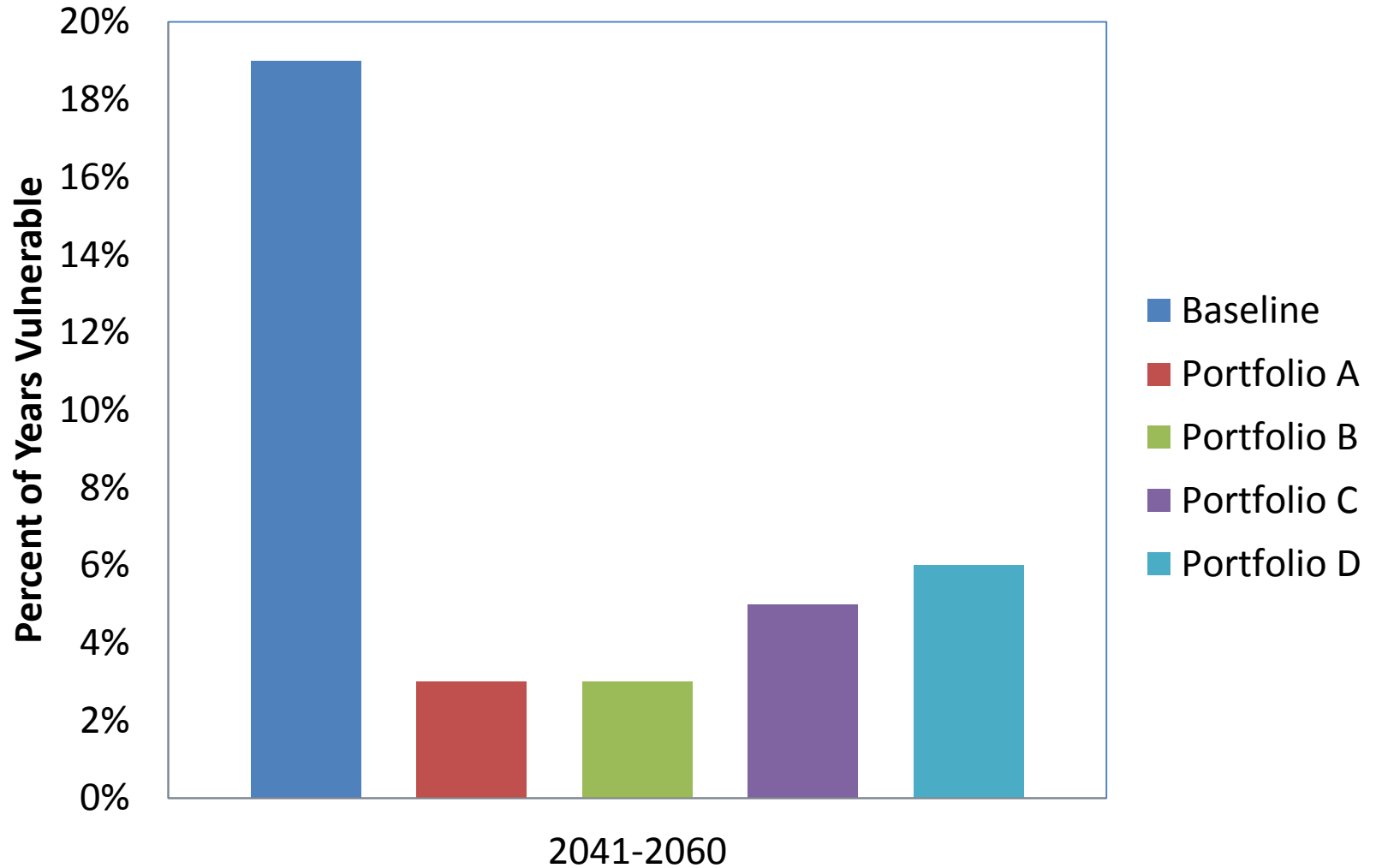
# Lower Basin Shortage – Exceeds 1.5 MAF Over 5 Years





# Lake Mead Pool Elevation Below 1,000 feet

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## **Governance / “Law of the River”**

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**“Law of the River” has proven to be flexible to develop solutions.**



## **Next Steps**

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### **We have a problem**

We are all in this together

### **Additional Conservation and Reuse**

Analysis regarding actual water savings to be gained

### **Augmentation**

Begin feasibility studies – must bring water into the Basin



## **Call to Action**

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- **Possibility of supply and demand imbalances in the Colorado River Basin identified as early as 1960's**
- **Greater uncertainty because of climate change**
- **Various options and strategies take years to develop**
- **We must start now**



# **SOUTHERN NEVADA WATER AUTHORITY**