Development of the 2018 Recharge Master Plan Update

Steering Committee Meeting #5
June 21, 2018

WEI
Wildermuth Environmental, Inc.

Chino Basin Watermaster
Partners in Basin Management

Report Organization

1. Introduction
2. Changed Conditions from the 2013 RMPU
3. Groundwater Response to Projected Pumping, Recharge, and Replenishment
4. Existing and Planned Recharge Facilities
5. Future Recharge Needs to Ensure Future Replenishment Capacity, Balance Recharge and Discharge, and to Meet Other OBMP Requirements
6. 2018 Recharge Master Plan
7. References

Report Organization

1. Introduction
2. **Changed Conditions from the 2013 RMPU**

   2.5 Replenishment Sources, Availability, and Cost
3. Groundwater Response to Projected Pumping, Recharge, and Replenishment
4. Existing and Planned Recharge Facilities
5. **Future Recharge Needs to Ensure Future Replenishment Capacity, Balance Recharge and Discharge, and to Meet Other OBMP Requirements**
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Replenishment sources, availability, and cost

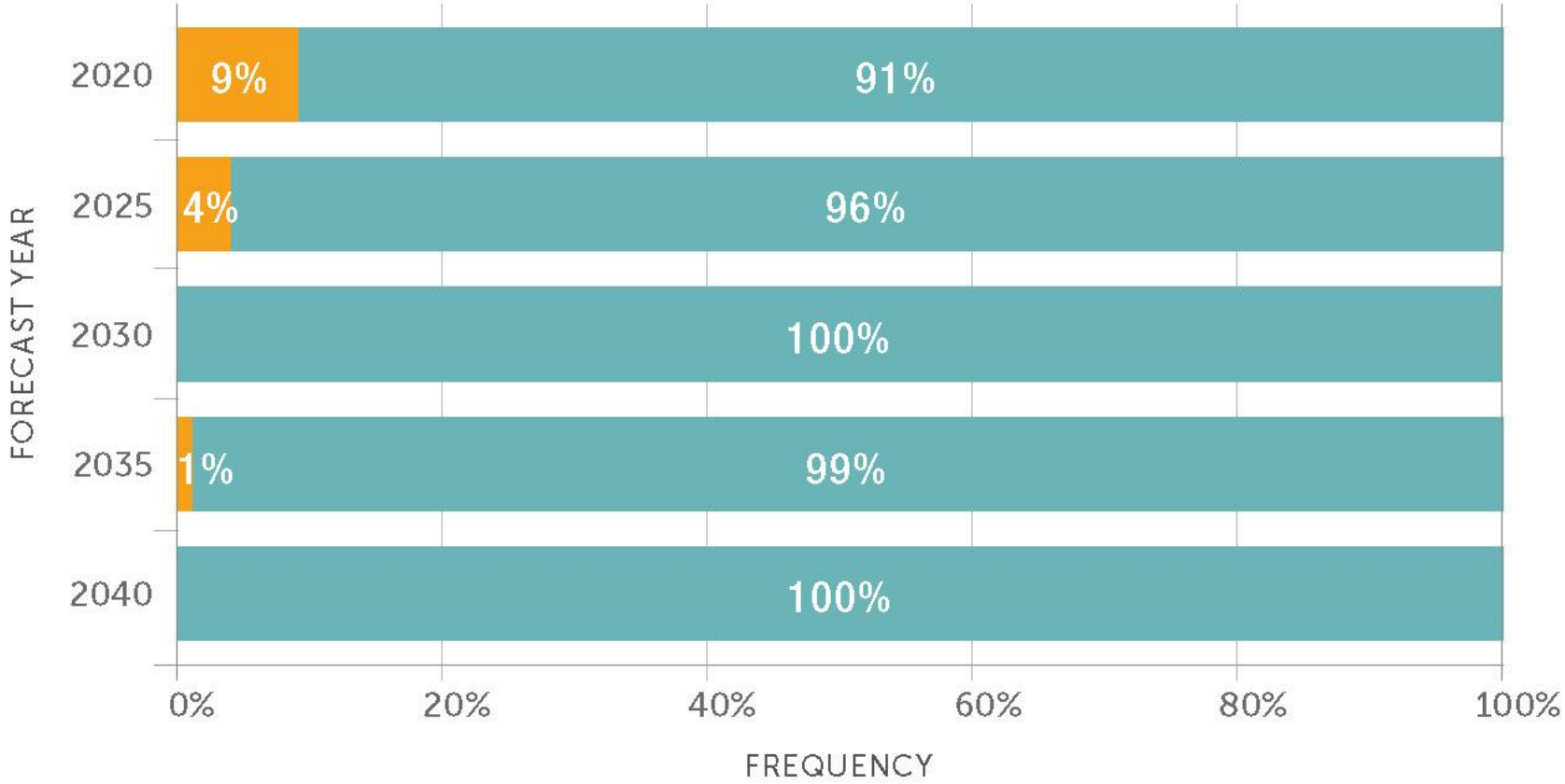
- Sources of supplemental water:
  - Metropolitan
  - Groundwater/surface water from outside Chino Basin (SAR watershed, Central Valley, Colorado River Basin, etc.)
  - Recycled water

Availability and cost of water supplied by Metropolitan for replenishment

- 2015 IRP

FIGURE 4-3

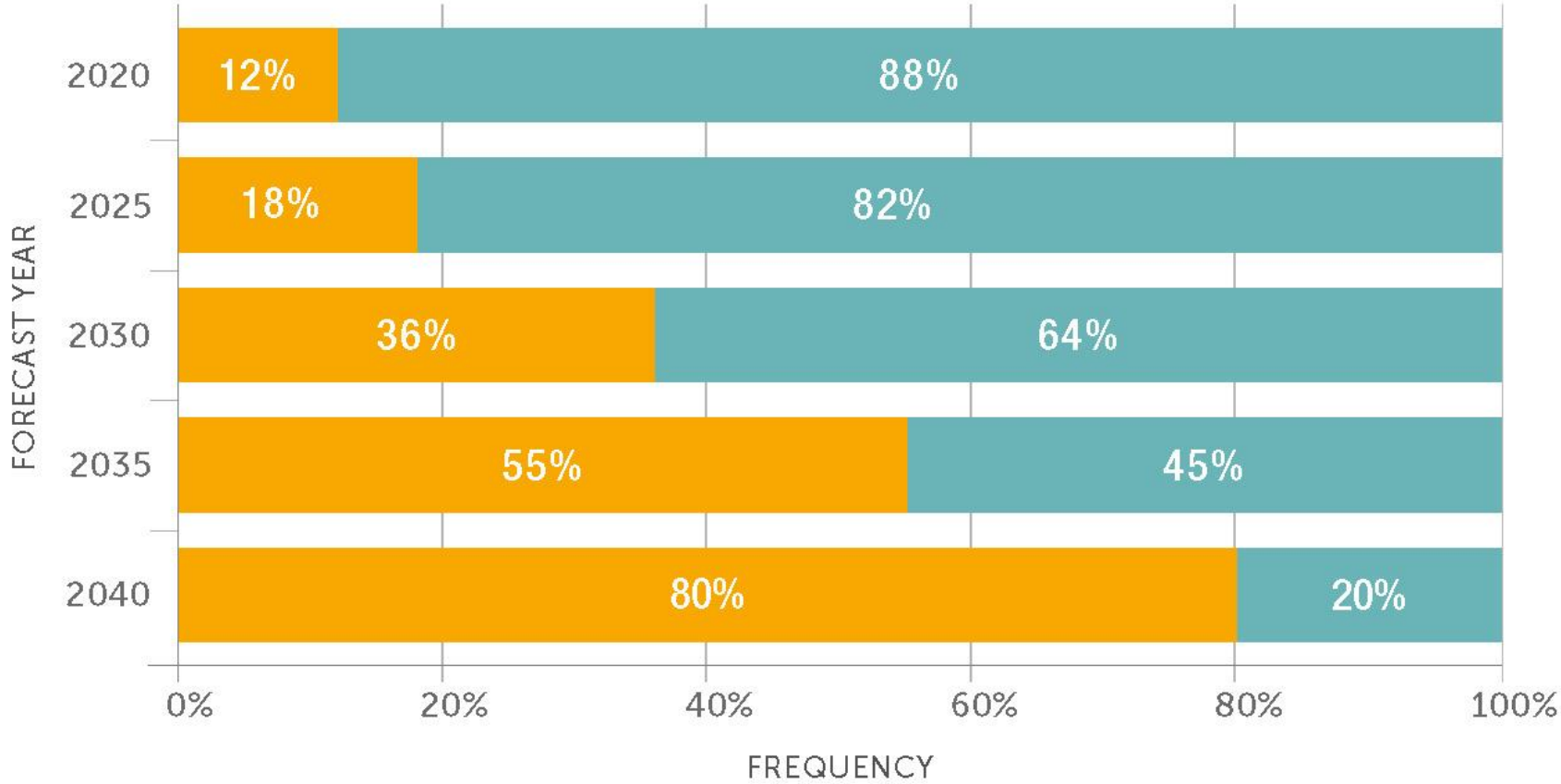
Summary of Allocation Probabilities Under the "IRP Approach" Case[1]



[1]IRPSIM results represent 91 modeled outcomes based on weather/climate and hydrology from 1922-2012. This is intended to be an indicator of reliability.

FIGURE 3-6

Summary of Allocation Probabilities Under the "Do Nothing" Case[1]



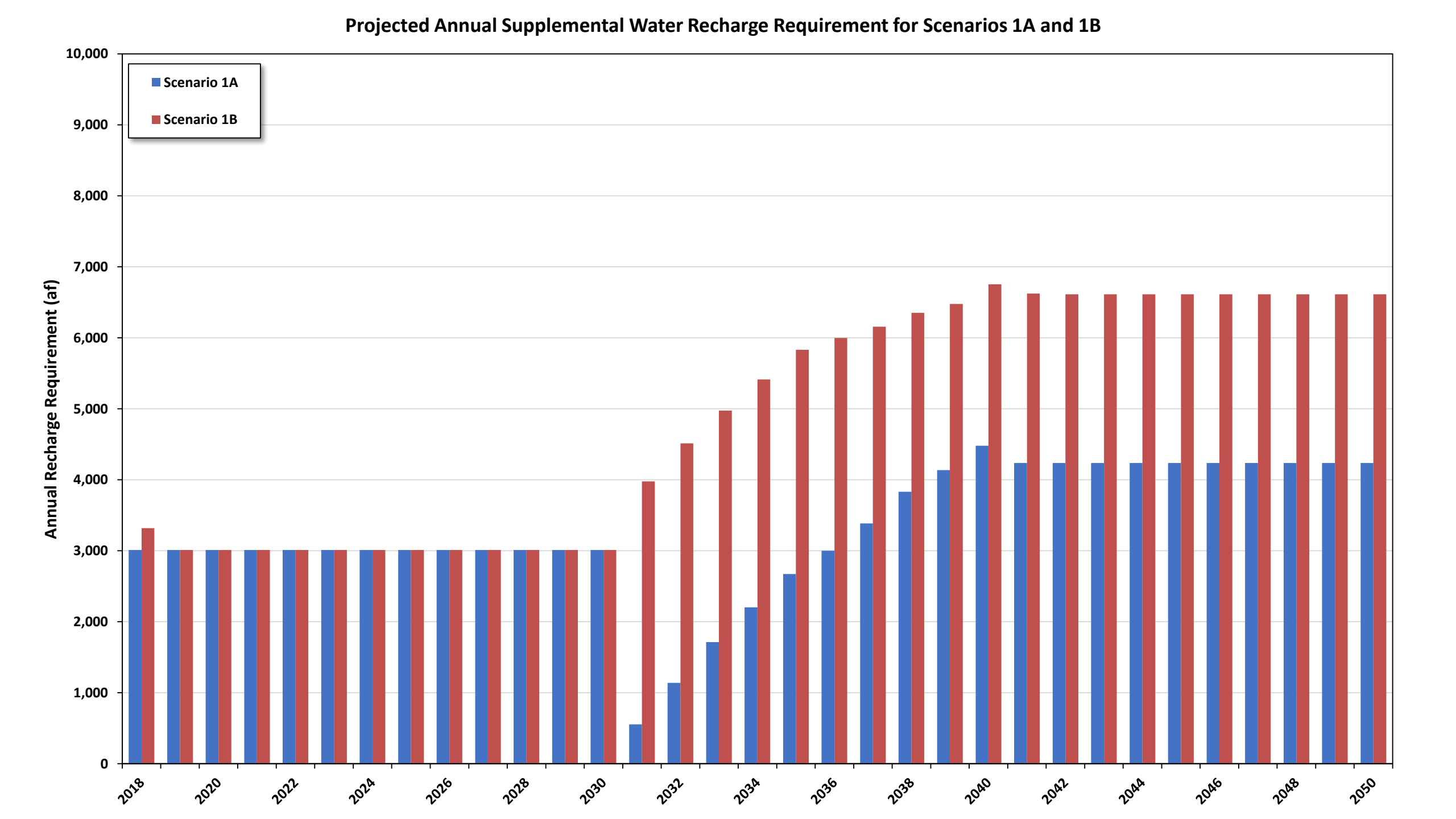
[1]IRPSIM results represent 91 modeled outcomes based on weather/climate and hydrology from 1922-2012. This is intended to be an indicator of reliability.

Availability and cost of water supplied by Metropolitan for replenishment

- Total cost to purchase water for replenishment (Tier 1 plus Readiness-to-Serve charge):
  - $760 per af in 2018
  - Projected to be $1,120 per af in 2028

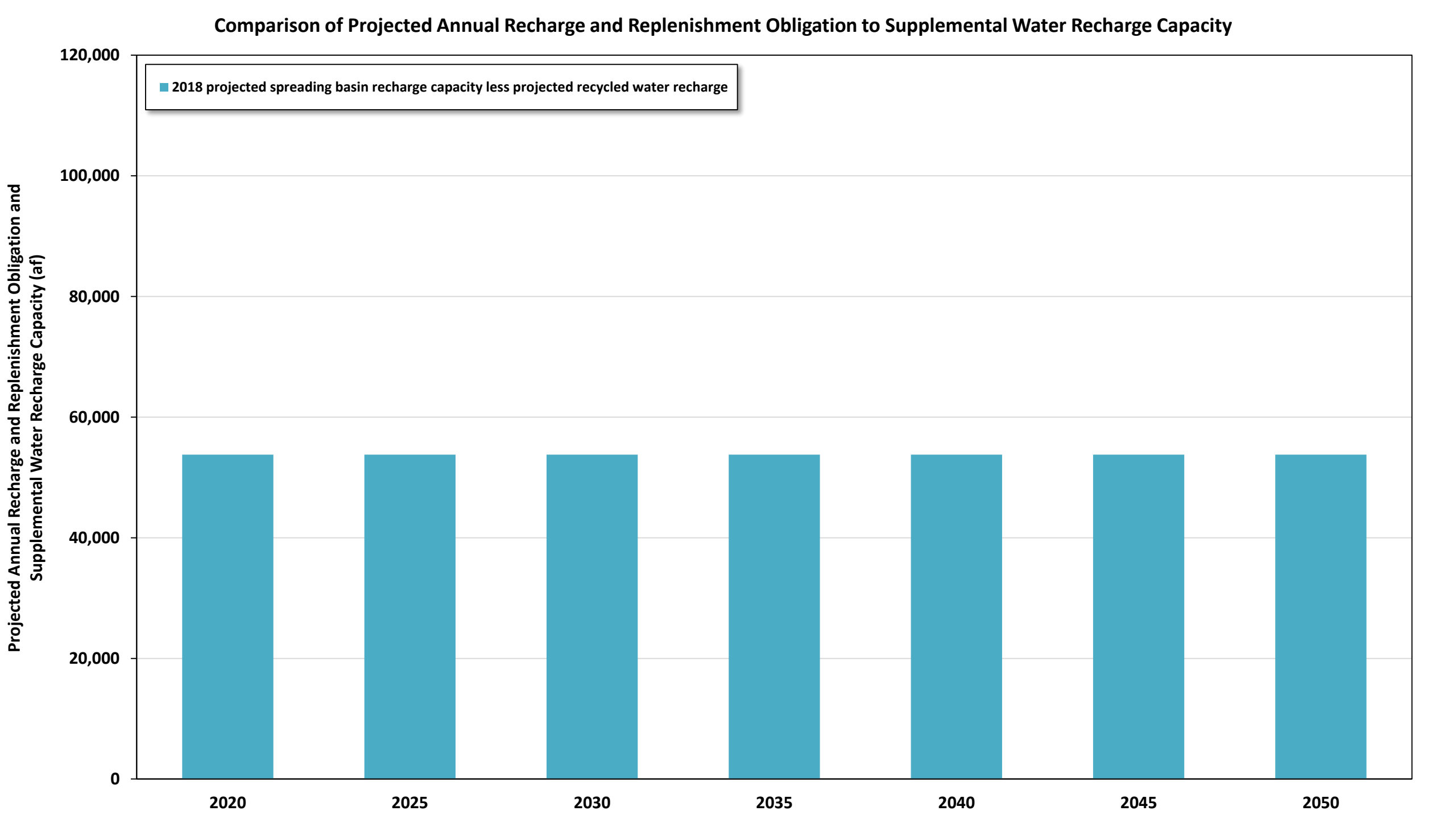
Projection of future recharge capacity requirements

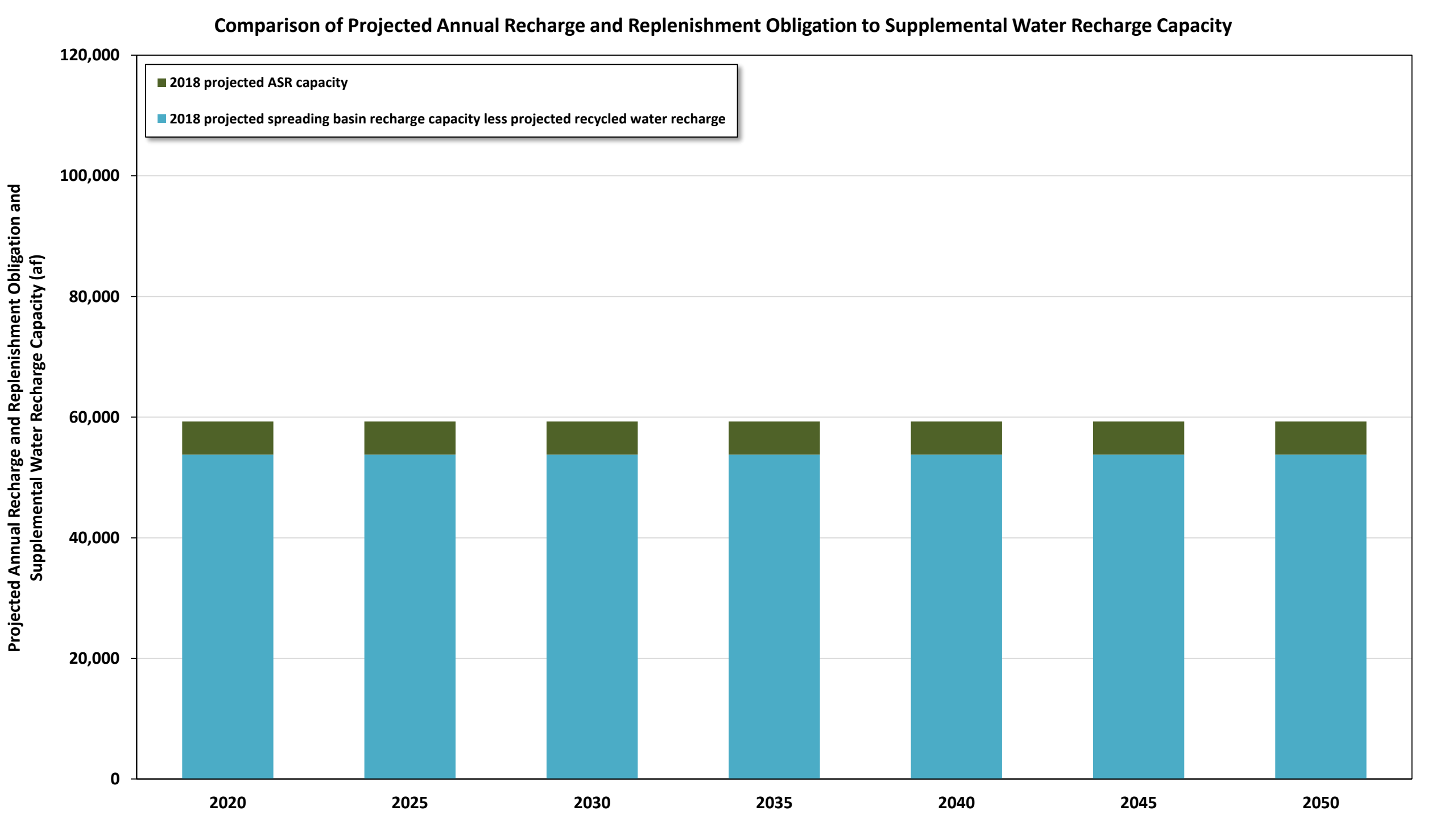
- Future recharge and replenishment projections
  - 6,500 afy supplemental water recharge obligation in MZ1 through 2030
  - Replenishment obligation

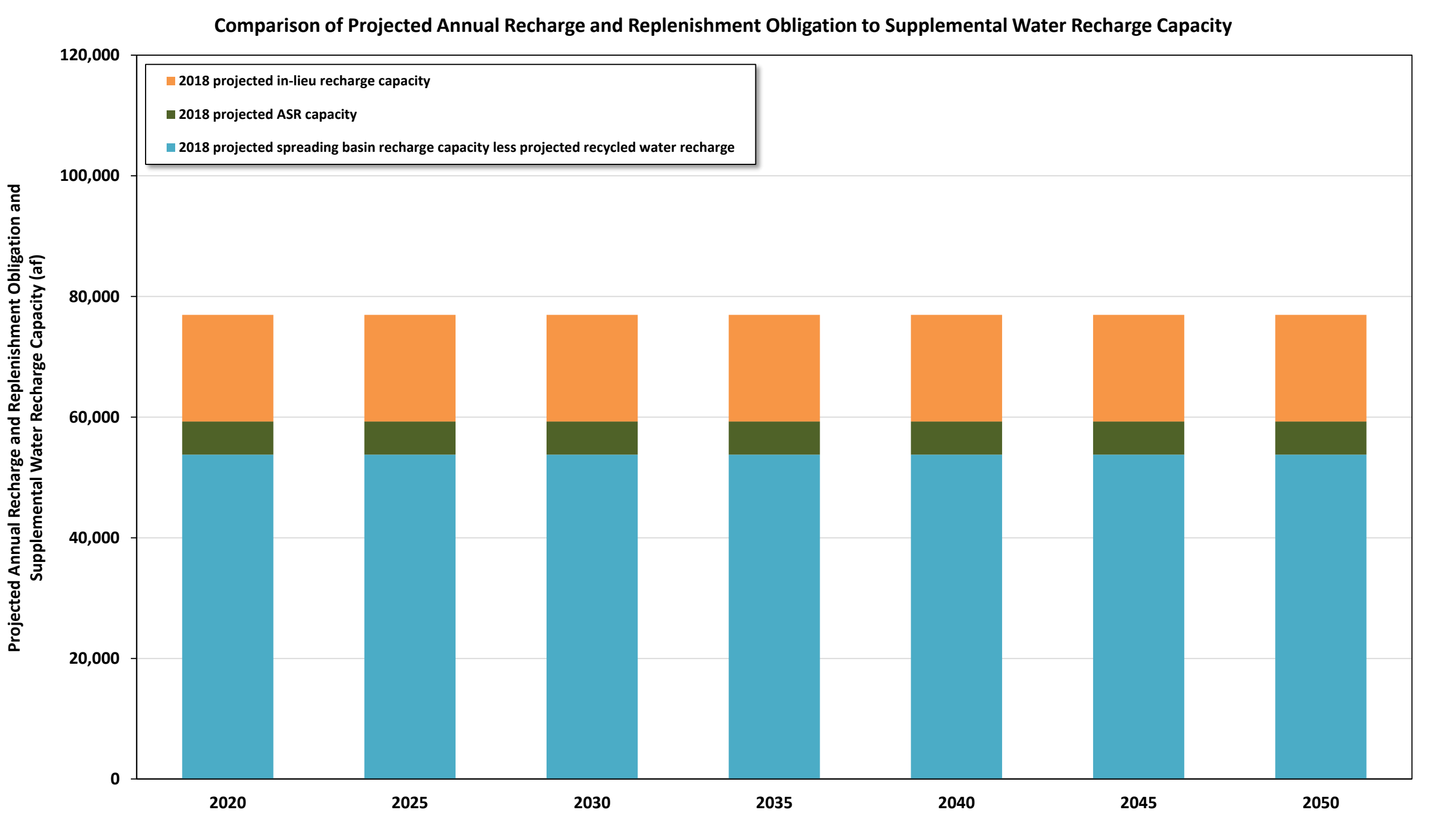

Projected Annual Supplemental Water Recharge Requirement for Scenarios 1A and 1B
Scenario 1A
Scenario 1B
Annual Recharge Requirement (af)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050

Availability of supplemental water for replenishment

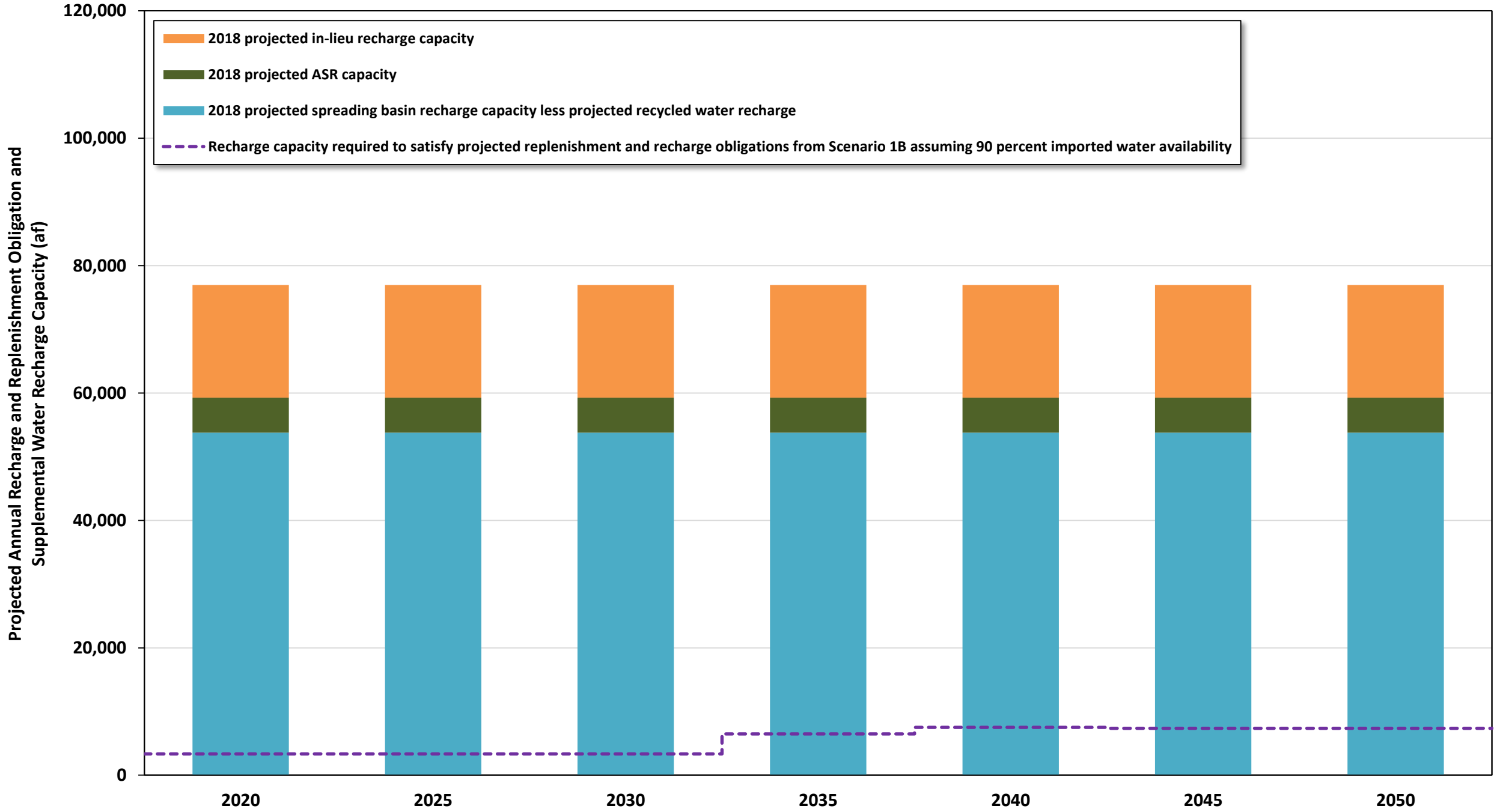
- Assuming that imported water will be available from Metropolitan one out of five years ("do nothing" case)

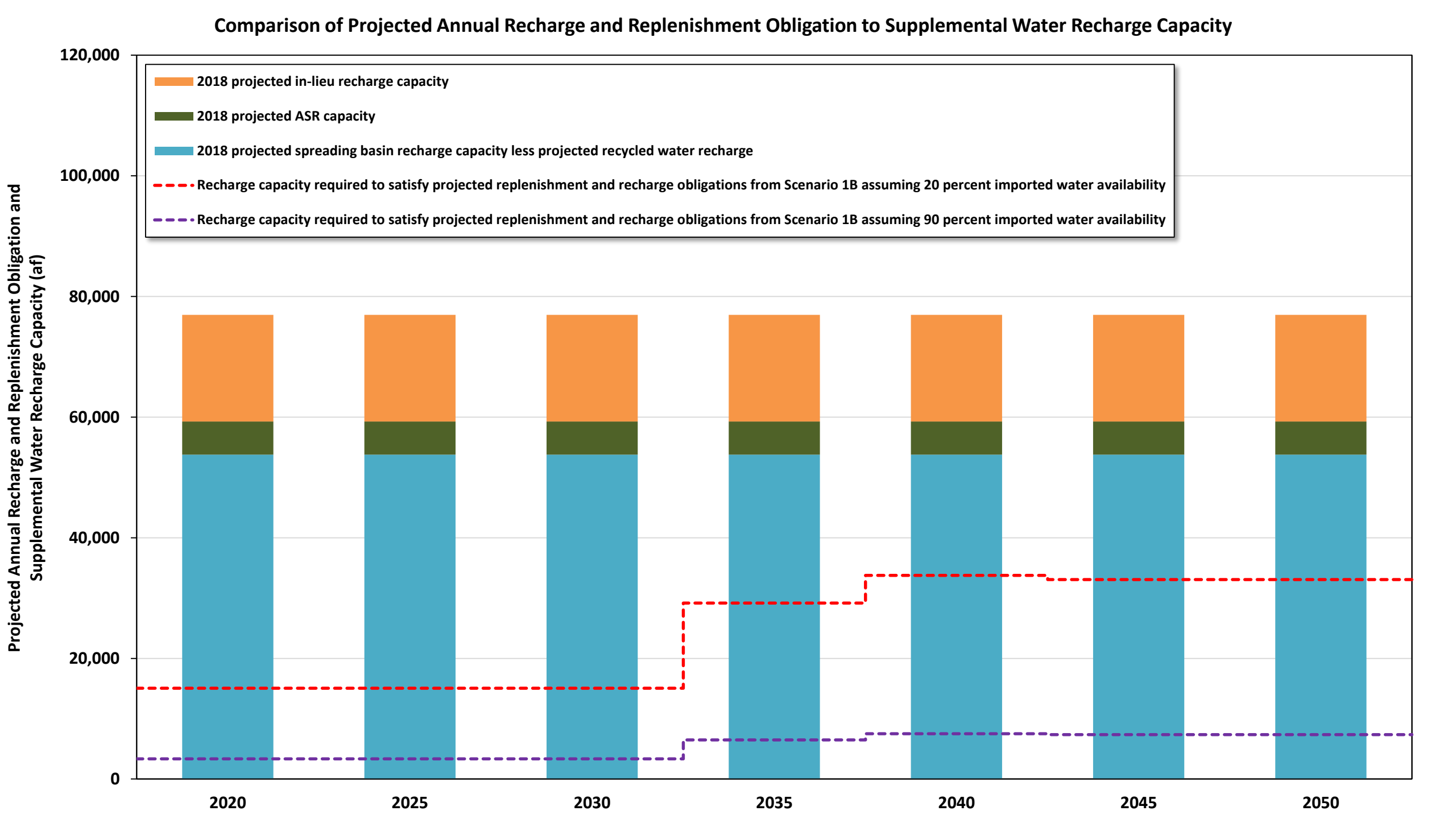

Comparison of Projected Annual Recharge and Replenishment Obligation to Supplemental Water Recharge Capacity
2018 projected spreading basin recharge capacity less projected recycled water recharge
Projected Annual Recharge and Replenishment Obligation and Supplemental Water Recharge Capacity (af)
120,000
100,000
80,000
60,000
40,000
20,000
0
2020
2025
2030
2035
2040
2045
2050


Comparison of Projected Annual Recharge and Replenishment Obligation to Supplemental Water Recharge Capacity
2018 projected ASR capacity
2018 projected spreading basin recharge capacity less projected recycled water recharge
Projected Annual Recharge and Replenishment Obligation and Supplemental Water Recharge Capacity (af)
120,000
100,000
80,000
60,000
40,000
20,000
0
2020
2025
2030
2035
2040
2045
2050


Comparison of Projected Annual Recharge and Replenishment Obligation to Supplemental Water Recharge Capacity
2018 projected in-lieu recharge capacity
2018 projected ASR capacity
2018 projected spreading basin recharge capacity less projected recycled water recharge
Projected Annual Recharge and Replenishment Obligation and Supplemental Water Recharge Capacity (af)
120,000
100,000
80,000
60,000
40,000
20,000
0
2020
2025
2030
2035
2040
2045
2050

Comparison of Projected Annual Recharge and Replenishment Obligation to Supplemental Water Recharge Capacity

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100,000
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2020
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2018 projected in-lieu recharge capacity
2018 projected ASR capacity
2018 projected spreading basin recharge capacity less projected recycled water recharge
Recharge capacity required to satisfy projected replenishment and recharge obligations from Scenario 1B assuming 20 percent imported water availability
Recharge capacity required to satisfy projected replenishment and recharge obligations from Scenario 1B assuming 90 percent imported water availability

Recharge to manage land subsidence and pumping sustainability

- Interim work to develop a Subsidence Management Plan for Northwest MZ1 (WEI, 2017):
  - Land subsidence in northwest MZ1 could be reduced if the recharge in northwest MZ1 is increased by at least 20,000 afy, pumping is decreased by at least 20,000 afy, or some combination of both totaling about 20,000 afy
- This and other strategies will be further evaluated in the next few years and incorporated into future RMPUs

Recharge required to ensure balance of recharge and discharge

- Prior recommendations for location and magnitude of supplemental water recharge for replenishment:
  - Maximize recharge in MZ1 first
  - Recharge in MZ3 up to capacity
  - Recharge in MZ2

Recharge required to ensure balance of recharge and discharge

- The existing strategy and the facilities on which it relies are sufficient at least until the next RMPU occurs in 2023
  - Includes 6,500 afy supplemental water recharge requirement in MZ1

Next Steps

- Comments on Sections 2.5 and 5
  - Please provide comments before next meeting
- Present draft Section 6 at next meeting (7/26)
- Other

Task 1 Project Management

Feb 1 - Nov 1

Task 2 Collect, Compile and Review Data and Reports

Feb 1 - Feb 28

Task 3 Develop Groundwater Production and Replenishment Projections

Feb 1

Task 4 Describe Existing Recharge Facilities

Feb 1 – Apr 27

Task 5 Evaluate Recharge Needs to Ensure Future Replenishment Capacity, Balance of Recharge and Discharge and to Meet Other OBMP Requirements

Apr 1 – May 31

Task 6 Develop Implementation Plan

June 4 – June 28

Task 7 Prepare 2018 RMPU Report

Feb 1 - Sep 13

Conduct workshops for the Watermaster and IEUA Boards

Aug 16

IEUA Board approves the 2018 RMPU

Sep 19

Submit 2018 RMPU to Court

Oct 12

Sections 2 and 3

Apr 18

Section 4

May 16

Section 5

Jun 20

Section 6

Jul 25

Draft Report

Aug 8

2018

Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov

2018

Today

Sep 27

Watermaster Board approves 2018 RMPU

Sep 13

Submit final 2018 RMPU report to Watermaster and IEUA

◆ Section of 2018 RMPU is submitted to Steering Committee for review and comment