

GSP Sustainable Management Actions Modeling Scenarios Description

IWVGA TAC: JUNE 6, 2019

ITEM 3A

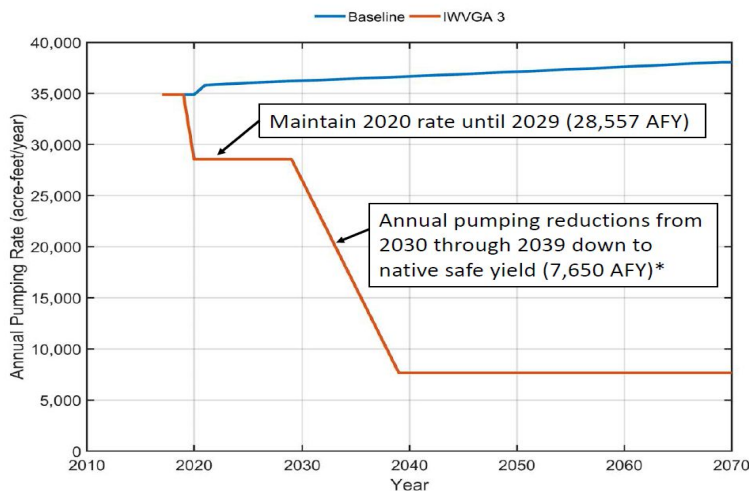
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Scenario 3: White Paper

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- Start of Management Action – January 2022
 - 2020 through 2029: Total Annual Pumping 28,557 AFY
 - 2030 through 2039 (10 years): Reduce Pumping By Equal Increments Each Year (Ramp Down) to Reach 7,650 AFY
 - 2039 through 2070: Total Annual Pumping 7,650 AFY
 - Direct use of imported and recycled water used to meet demands in excess of natural safe yield (no recharge).

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Scenario 3: White Paper



Producers not subject to reductions:
 De Minimis (800 AFY)
 Navy (2,041 AFY)
 City of Ridgecrest (339 AFY)

Direct use of imported and recycled water to meet demands in excess of natural safe yield.

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2020 Pumping: Scenario #3 White Paper

Pumping Group	Notes	Total 2020 Pumping (AF) ¹
Meadowbrook Dairy	2	7,524
Mojave Pistachio	3	6,400
Simmons Farm	2	0
Quist Farms	2	750
Sierra Shadows	4	228
Amberglow	4	19
Terese Farms	4	93
Hickle	4	25
Blubaugh	4	0
Bellino	4	15
McGee	4	120
Kern County	5	18
City of Ridgecrest	2	339
IWVWD	2	7,319
Inyokern CSD	2	108
Mutuals	6	300
SVM	2	2,458
Domestic Wells	6	800
Navy	7	2,041
Total		28,557

Notes

- 1) Based on the lowest historical pumping from 2010 - 2014 under California water rights law, unless specified otherwise.
- 2) Historical pumping per the "IWV Ground Water Production Estimates: 1975 - Present" spreadsheet developed by the Indian Wells Valley Cooperative Groundwater Management Group.
- 3) Includes water demand for mature pistachio trees.
- 4) Data not available to determine lowest historical pumping from 2010 - 2014. Total 2020 pumping for small agriculture assumed to equal 500 acre-feet per year, distributed proportionally to individual small agriculture farmers.
- 5) Data not available to determine lowest historical pumping from 2010 - 2014. Total 2020 pumping assumed to equal 18 acre-feet per year based on recent pumping.
- 6) Data not available to determine lowest historical pumping from 2010 - 2014. The sum of pumping for Mutuals (300 AFY) and Domestic Wells (800 AFY) is equal to total 2020 di minimus pumping (1,100 AFY) as stated in the White Paper: Issues and Options for Groundwater Management in the Indian Wells Valley under the Sustainable Groundwater Management Act.
- 7) Total 2020 pumping equal to value provided by the Navy at October 1, 2018 allocation meeting.

2040 to 2070 Pumping: Scenario #3 White Paper

Pumping Group	Notes	Total 2040 Pumping (AF)
Meadowbrook Dairy	1	1,325
Mojave Pistachio	1	1,127
Simmons Farm	1	0
Quist Farms	1	132
Sierra Shadows	1	40
Amberglow	1	3
Terese Farms	1	16
Hickle	1	4
Blubaugh	1	0
Bellino	1	3
McGee	1	21
Kern County	1	3
City of Ridgecrest	2	339
IWVWD	1	1,289
Inyokern CSD	1	19
Mutuals	1	53
SVM	1	433
Domestic Wells	3	800
Navy	4	2,041
Total		7,650

Notes

- 1) Result of 10-year annual pumping ramp-downs (in proportional increments) to the basin native safe yield of 7,650 acre-feet per year.
- 2) Exempt from pumping ramp-downs due to status as a public entity with overlying rights, per the allocation group meeting on April 11.
- 3) Exempt from pumping ramp-downs due to lack of access to alternate water sources.
- 4) Exempt from pumping ramp-downs due to federal reserve right.

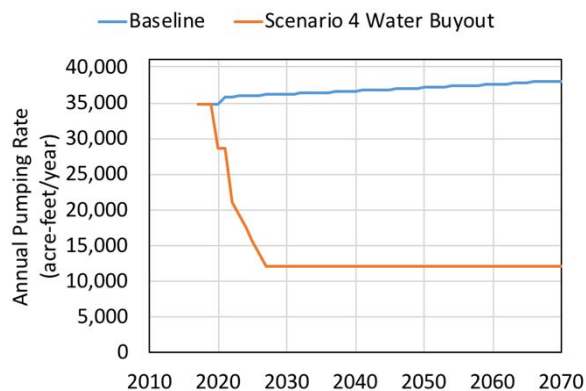
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Scenario 4: Water Buyout

- 2020: Total pumping of 28,551 AFY
 - Maintained for two years (through 2021)
- Start of Management Action – January 2022
- 2022: Total Pumping Includes Reduced Pumping for Unprotected Allocation (subject to ramp down), Plus Protected Pumping (not subject to ramp down)
- 2022 through 2027: Unprotected Allocations Reduced by Equal Increments Each Year for Total Allocations of ~12,000 AFY in 2027
- 2025: Recycled Water is available to help reduce overdraft
- 2028 through 2070: Total Annual Pumping of ~12,000 AFY
- 2035 through 2070: Total Pumping is Augmented by Imported Water Supply (recharge) for basin to be sustainable

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Scenario 4: Water Buyout



Producers not subject to ramp downs:

- De Minimis (800 AFY)
- Navy (2,041 AFY)
- City of Ridgecrest (339 AFY)
- 86% of municipal pumping (Extension of Federal Reserve Rights)
 - IWVWD (6,294 AFY)
 - Inyokern CSD (93 AFY)
 - Mutuals (258 AFY)
 - SVM (Trona supply only) (194 AFY)

Lease Market:

- Meadowbrook discontinues pumping after 2021, allocation made available to lease to others

Imported and recycled water used to augment the natural safe yield to bring basin into balance.

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2022 Allocation and Pumping: Scenario #4 Water Buyout

Pumping Group	Notes	Total 2022 Allocations (AF)	Total 2022 Pumping (AF) ¹
Meadowbrook Dairy	2	6,464	0
Mojave Pistachio	2,6	558	6,785
Simmons Farm	3	0	0
Quist Farms	2	644	644
Sierra Shadows	2	196	196
Amberglow	2	16	16
Terese Farms	2	80	80
Hickle	2	21	21
Blubaugh	2	0	0
Bellino	2	13	13
McGee	2	103	103
Kern County	2	15	15
City of Ridgecrest	4	339	339
IWVWD	2,5	7,175	7,175
Inyokern CSD	2,5	106	106
Mutuals	2,5	294	294
SVM	2,5,6	2,139	2,377
Domestic Wells	7	800	800
Navy	8	2,041	2,041
Total		21,006	21,006

Notes

- 1) Total pumping consists only of allocated rights (both Federal Reserved Rights and State Rights).
- 2) Result of 1 year of pumping ramp-downs.
- 3) Allocation under California water rights standard equal to zero due to lack of historical pumping prior to 2013.
- 4) Exempt from pumping ramp-downs due to status as a public entity with overlying rights, per the allocation group meeting on April 11.
- 5) Navy federal reserve rights (exempt from ramp-downs) extended to 86% of municipal pumping from the IWVWD, Inyokern CSD, Mutuals, and SVM (only Trona supply).
- 6) SVM and Mojave lease allocation from Meadowbrook to continue industrial and agricultural pumping beyond allocated rights.
- 7) Exempt from pumping ramp-downs due to lack of access to alternate water sources.
- 8) Exempt from pumping ramp-downs due to federal reserve right.

2027 - 2070 Allocation and Pumping: Scenario #4 Water Buyout

Pumping Group	Notes	Total 2027-2040 Allocations (AFY)	Total 2027-2040 Pumping (AFY) ¹
Meadowbrook Dairy	2	1,166	0
Mojave Pistachio	2	101	101
Simmons Farm	3	0	0
Quist Farms	2	116	116
Sierra Shadows	2	35	35
Amberglow	2	3	3
Terese Farms	2	14	14
Hickle	2	4	4
Blubaugh	2	0	0
Bellino	2	2	2
McGee	2	19	19
Kern County	2	3	3
City of Ridgecrest	4	339	339
IWVWD	2,5	6,453	6,453
Inyokern CSD	2,5	95	95
Mutuals	2,5	265	265
SVM	2,5,6	544	1,710
Domestic Wells	7	800	800
Navy	8	2,041	2,041
Total		12,000	12,000

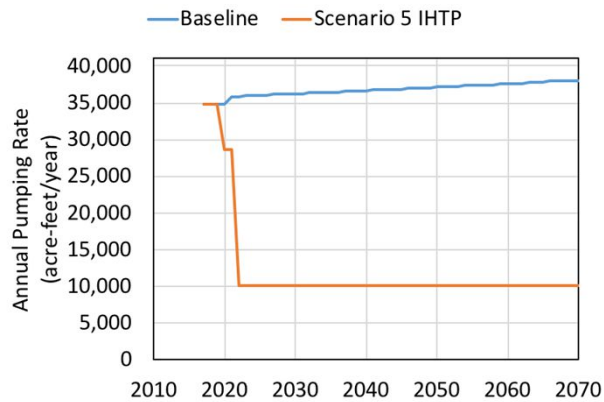
Notes

- 1) Total pumping consists only of allocated rights (both Federal Reserved Rights and State Rights).
- 2) Result of 6 years of pumping ramp-downs.
- 3) Allocation under California water rights standard equal to zero due to lack of historical pumping prior to 2013.
- 4) Exempt from pumping ramp-downs due to status as a public entity with overlying rights, per the allocation group meeting on April 11.
- 5) Navy federal reserve rights (exempt from ramp-downs) extended to 86% of municipal pumping from the IWVWD, Inyokern CSD, Mutuals, and SVM (only Trona supply).
- 6) SVM leases allocation from Meadowbrook to continue industrial pumping beyond allocated rights.
- 7) Exempt from pumping ramp-downs due to lack of access to alternate water sources.
- 8) Exempt from pumping ramp-downs due to federal reserve right.

Scenario 5: Immediate Halt to Pumping

- 2020: Total pumping of 28,551 AFY
 - Maintained for two years (through 2021)
- Start of Management Actions – January 2022
- Negotiate/Fallow All AG Pumping to Zero
- Searles to Find New Supply-Recycled Water?
- Total Annual Pumping 2022 through 2070: ~10,000 AFY
 - Includes IWVWD, Navy, De Minimis, Mutuals, Inyokern, City of Ridgecrest, and Searles/Trona.
- 2025: Recycled Water is available to help reduce overdraft
- 2035 through 2070: Total Pumping is Augmented by Imported Water Supply (recharge) for basin to be sustainable

Scenario 5: Immediate Halt to Pumping



Starting 2022: Zero pumping by large ag, small ag, SVM

Producers not subject to ramp downs:

- De Minimis (800 AFY)
- Navy (2,041 AFY)
- City of Ridgecrest (339 AFY)
- 86% of municipal pumping (Extension of Federal Reserve Rights)
 - IWVWD (6,294 AFY)
 - Inyokern CSD (93 AFY)
 - Mutuals (258 AFY)
 - SVM (Trona supply only) (194 AFY)

Imported and recycled water used to augment the natural safe yield to bring basin into balance.

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2022 - 2070 Allocation and Pumping: Scenario #5 Immediate Halt to Pumping

Pumping Group	Notes	Total 2022-2040 Allocations (AFY)	Total 2022-2040 Pumping (AFY)
Meadowbrook Dairy	1	0	0
Mojave Pistachio	1	0	0
Simmons Farm	1	0	0
Quist Farms	1	0	0
Sierra Shadows	1	0	0
Amberglow	1	0	0
Terese Farms	1	0	0
Hickle	1	0	0
Blubaugh	1	0	0
Bellino	1	0	0
McGee	1	0	0
Kern County	1	0	0
City of Ridgecrest	2	339	339
IWVWD	3	6,294	6,294
Inyokern CSD	3	93	93
Mutuals	3	258	258
SVM	3	194	194
Domestic Wells	4	800	800
Navy	5	2,041	2,041
Total		10,019	10,019

Notes

- 1) Total allocations and pumping from 2022-2040 consist only of Federal Reserve rights, extensions of Federal Reserve rights to municipal pumping, or overlying rights of public entities (City of Ridgecrest).
- 2) Exempt from pumping reductions due to status as a public entity with overlying rights, per the allocation group meeting on April 11.
- 3) Navy federal reserve rights (exempt from reductions) extended to 86% of municipal pumping from the IWVWD, Inyokern CSD, Mutuals, and SVM (only Trona supply).
- 4) Exempt from pumping reductions due to lack of access to alternate water sources.
- 5) Exempt from pumping reductions due to Federal Reserve right.

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