Appendix Q: Well Impact Analysis Results by Well Type

Introduction

A well impact analysis was conducted to estimate the number of production wells within the Kern County Subbasin (Subbasin) that would be impacted under Minimum Thresholds (MTs) for the Chronic Lowering of Groundwater Levels. As the Subbasin's Well Mitigation Program is focused on the mitigation of impacts to drinking water wells, the results presented in Section 13.1.2.4 of the Groundwater Sustainability Plan (GSP) specifically reflect impacts to drinking water wells within the Subbasin.

The GSAs' well inventory was used in the analysis, as it provides a comprehensive list of wells within the Subbasin, including information about well location, GSA, and well construction. Wells in the GSAs' well inventory are identified as one of five well types: Domestic, Agricultural, Industrial, Municipal/Public, and Small Community. For this analysis, wells identified as Domestic, Municipal/Public, and Small Community well types were considered "drinking water wells".

Prior to conducting the analysis, wells were screened following the screening process described in Section 13.1.2.4 of the GSP. A summary of the wells by well type before and after screening is included in Table 1.

Following this screening process, a total of 5,223 wells were considered for this well impact analysis (3,686 agricultural wells, 60 industrial wells, 1,262 domestic wells, 181 municipal/public supply wells, and 34 small community wells), including 1,477 drinking water wells. Construction records for these wells were compared to spatially interpolated MT values (as a depth below ground surface) across the Subbasin. A well was considered "dewatered" if the interpolated MT depth to groundwater was below 80% of the total well depth. It is recognized that a wide range of well impacts may occur based on the various potential combinations of Representative Monitoring Wells for Chronic Lowering of Groundwater Levels (RMW-WLs) that could exceed MTs. As such, the well impact analysis considered the following five scenarios, three of which consider the criteria for Undesirable Results (i.e., 25% of RMW-WLs reaching MTs):

- Scenario #1 - Worst Case
- Scenario #2 - High-End Bracketed Results
- Scenario #3 - Low-End Bracketed Results
- Scenario #4 - Stochastic Prediction
- Scenario #5 – Modeled Projected Future Conditions

Table 1. Summary of Wells in GSAs' Well Inventory

Kern County Subbasin, Kern County

Well Type	Number of Recorded
Total Wells in GSAs' Well Inventory	**N = 7,227**
Agricultural Wells	N = 4,290
Wells dewatered at 2015 low water levels (MOs)	N = 430
Wells older than 70 years by 2040 and not dewatered at 2015 low water levels MOs	N= 174
Total Agricultural Wells after screening	N = 3,686
Industrial Wells	N = 97
Wells dewatered at 2015 low water levels (MOs)	N = 23
Wells older than 70 years by 2040 and not dewatered at 2015 low water levels MOs	N = 14
Total Industrial Wells after screening	N = 60
Municipal/Public Wells	N = 298
Wells dewatered at 2015 low water levels (MOs)	N = 32
Wells older than 70 years by 2040 and not dewatered at 2015 low water levels MOs	N = 85
Total Municipal/Public Wells after screening	N = 181
Small Community Wells	N = 41
Wells dewatered at 2015 low water levels (MOs)	N = 6
Wells older than 70 years by 2040 and not dewatered at 2015 low water levels MOs	N = 1
Total Small Community Wells after screening	N = 34
Domestic Wells	N = 2,501
Wells dewatered at 2015 low water levels MOs	N = 1,078
Wells older than 70 years by 2040 and not dewatered at 2015 low water levels MOs	N = 161
Total Domestic Wells after screening	N = 1,262
Total Wells after screening process	**N = 5,223**
Total Drinking Water Wells after screening	**N = 1,477**

Abbreviations:

GSA = groundwater sustainability agency

MO = Measurable Objective

Sources:

1. GSAs' well inventory

1.1 Scenario #1 – Worst Case

The process for Scenario #1 of the well impact analysis is described in Section 13.1.2.4 of the GSP. It is important to note that while the results discussed in the GSP only include drinking water wells, the full analysis for Scenario #1 includes all of the well types listed above. The results are provided below for each well type in Tables 2-6 and are represented in Figure 13-5 of Section 13.1.2.4 of the GSP.

1.2 Scenario #2 - High-End Bracketed Results

The process for Scenario #2 of the well impact analysis is described in Section 13.1.2.4 of the GSP. It is important to note that while the results discussed in the GSP only include drinking water wells, the full analysis for Scenario #2 was performed on three subsets of the well inventory: industrial wells, agricultural wells, and drinking water wells (municipal/public, small community, and domestic).

The Kern Subbasin's RMW-WL network contains a total of 185 RMW-WLs. However, the high-end bracketed scenario only considers the 171 RMW-WLs screened in the Principal Aquifer, as deeper wells were not considered representative of shallower domestic wells. Therefore, the 43 RMW-WLs, representing 25% of the 171 RMW-WL subset, with the highest densities were identified for each of the well subsets (industrial, agricultural, and drinking water).

For industrial wells, the 25% of RMW-WLs with the highest density were identified as those with associated well counts greater than or equal to 0; as such, all 10 of the industrial RMW-WLs with associated well counts greater than 0 were selected under the high-end bracketed scenario, along with 33 RMWs with 0 associated wells selected at random, to represent the 43 RMW-WLs with the highest density. Table 7 shows the RMW-WLs and their associated industrial well counts, with selected RMW-WLs in blue.

For agricultural wells, the 25% of RMW-WLs with the highest density were identified as those with associated well counts greater than or equal to 2; as such, 63 RMW-WLs were selected under the high-end bracketed scenario. Because the high-end bracketed scenario requires the selection of 43 RMW-WLs in total, 20 RMW-WLs with 2 associated wells were deselected based on proximity to other selected RMW-WLs. Table 7 shows the RMW-WLs and their associated agricultural well counts, with selected RMW-WLs in yellow.

For drinking water wells, the 25% of RMW-WLs with the highest density were identified as those with associated well counts greater than or equal to 3; as such, 50 RMW-WLs were selected under the high-end bracketed scenario. Because the high-end bracketed scenario requires the selection of 43 RMW-WLs, 6 RMW-WLs with 3 associated wells

were deselected based on proximity to other selected RMW-WLs. Table 7 shows the RMW-WLs and their associated drinking water well counts, with selected RMW-WLs in green.

The combined results for drinking water wells from Scenario #2 are represented in Figure 13-6 of Section 13.1.2.4 of the GSP.

1.3 Scenario #3 - Low-End Bracketed Results

The process for Scenario #3 of the well impact analysis is described in Section 13.1.2.4 of the GSP. It is important to note that while the results discussed in the GSP only include drinking water wells, the full analysis for Scenario #3 was performed on three subsets of the well inventory: industrial wells, agricultural wells, and drinking water wells (municipal/public, small community, and domestic).

Similar to Scenario #2, the 43 RMW-WLs with the lowest densities were identified for each of the well subsets (industrial, agricultural, and drinking water). In each case, the 25% of RMW-WLs with the lowest density were identified as those with associated well counts equal to 0; as such, no wells were considered dewatered. The results from Scenario #3 are represented in Figure 13-7 of Section 13.1.2.4 of the GSP.

1.4 Scenario #4 – Stochastic Prediction

The process for Scenario #4 of the well impact analysis is described in Section 13.1.2.4 of the GSP. It is important to note that while the results discussed in the GSP only include drinking water wells, the full analysis for Scenario #4 includes all five well types listed above. A histogram of the range of well impacts for each well type is shown below in Figures 1-5. The combined results for drinking water wells are represented in Figure 13-8 of Section 13.1.2.4 of the GSP.

Table 2. Scenario #1 - Dewatered Domestic Wells by GSA

Kern County Subbasin, Kern County

GSA	Domestic Well Count	Dewatered	%
Arvin GSA	78	12	15%
Buena Vista Water Storage District GSA	63	16	25%
Cawelo Water District GSA	19	6	32%
Greenfield County Water District GSA	6	4	67%
Henry Miller Water District GSA	1	0	0%
Kern Groundwater Authority GSA	81	37	46%
KGA - EWMA	9	0	0%
Kern River GSA	527	187	35%
Kern-Tulare Water District GSA	3	0	0%
Kern Water Bank GSA	1	0	-
North Kern Water Storage District GSA	17	2	12%
Olcese Water District GSA	1	1	100%
Pioneer GSA	1	0	0%
Rosedale-Rio Bravo Water Storage District GSA	169	46	27%
Semitropic Water Storage District GSA	114	29	25%
Shafter-Wasco Irrigation District GSA	83	32	39%
Southern San Joaquin Municipal Utility District	69	18	26%
Tejon-Castac Water District GSA	2	0	0%
West Kern Water District GSA	2	1	50%
Westside District Water Authority GSA	6	0	0%
Wheeler Ridge-Maricopa GSA	10	0	0%
TOTAL	**1262**	**391**	**31%**

Abbreviations:

EWMA = Eastside Water Management Area

KGA = Kern Groundwater Authority GSA

GSA = groundwater sustainability agency

Sources:

1. GSAs' well inventory

Table 3. Scenario #1 - Dewatered Industrial Wells by GSA

Kern County Subbasin, Kern County

GSA	Industrial Well Count	Dewatered	%
Arvin GSA	3	0	0%
Buena Vista Water Storage District GSA	3	0	0%
Cawelo Water District GSA	5	1	20%
Greenfield County Water District GSA	0	0	-
Henry Miller Water District GSA	0	0	-
Kern Groundwater Authority GSA	6	1	17%
KGA - EWMA	2	0	0%
Kern River GSA	18	4	22%
Kern-Tulare Water District GSA	0	0	-
Kern Water Bank GSA	1	0	0%
North Kern Water Storage District GSA	0	0	-
Olcese Water District GSA	0	0	-
Pioneer GSA	1	0	0%
Rosedale-Rio Bravo Water Storage District GSA	3	2	67%
Semitropic Water Storage District GSA	1	0	0%
Shafter-Wasco Irrigation District GSA	1	0	0%
Southern San Joaquin Municipal Utility District	5	2	40%
Tejon-Castac Water District GSA	0	0	-
West Kern Water District GSA	5	0	0%
Westside District Water Authority GSA	5	0	0%
Wheeler Ridge-Maricopa GSA	1	0	0%
TOTAL	**60**	**10**	**17%**

Abbreviations:

EWMA = Eastside Water Management Area

KGA = Kern Groundwater Authority GSA

GSA = groundwater sustainability agency

Sources:

1. GSAs' well inventory

Table 4. Scenario #1 - Dewatered Agricultural Wells by GSA

Kern County Subbasin, Kern County

GSA	Agricultural Well Count	Dewatered	%
Arvin GSA	340	17	5%
Buena Vista Water Storage District GSA	343	43	13%
Cawelo Water District GSA	157	5	3%
Greenfield County Water District GSA	4	1	25%
Henry Miller Water District GSA	5	1	20%
Kern Groundwater Authority GSA	58	13	22%
KGA - EWMA	26	3	12%
Kern River GSA	708	89	13%
Kern-Tulare Water District GSA	45	8	18%
Kern Water Bank GSA	61	4	7%
North Kern Water Storage District GSA	128	14	11%
Olcese Water District GSA	2	0	0%
Pioneer GSA	16	3	19%
Rosedale-Rio Bravo Water Storage District GSA	289	26	9%
Semitropic Water Storage District GSA	722	43	6%
Shafter-Wasco Irrigation District GSA	254	29	11%
Southern San Joaquin Municipal Utility District	307	9	3%
Tejon-Castac Water District GSA	1	0	0%
West Kern Water District GSA	7	0	0%
Westside District Water Authority GSA	73	0	0%
Wheeler Ridge-Maricopa GSA	140	2	1%
TOTAL	**3,686**	**310**	**8%**

Abbreviations:

EWMA = Eastside Water Management Area

KGA = Kern Groundwater Authority GSA

GSA = groundwater sustainability agency

Sources:

1. GSAs' well inventory

Table 5. Scenario #1 - Dewatered Small Community Wells by GSA

Kern County Subbasin, Kern County

GSA	Small Community Well Count	Dewatered	%
Arvin GSA	0	0	-
Buena Vista Water Storage District GSA	0	0	-
Cawelo Water District GSA	0	0	-
Greenfield County Water District GSA	0	0	-
Henry Miller Water District GSA	0	0	-
Kern Groundwater Authority GSA	4	2	50%
KGA - EWMA	0	0	-
Kern River GSA	16	2	13%
Kern-Tulare Water District GSA	0	0	-
Kern Water Bank GSA	0	0	-
North Kern Water Storage District GSA	0	0	-
Olcese Water District GSA	1	0	0%
Pioneer GSA	0	0	-
Rosedale-Rio Bravo Water Storage District GSA	8	0	0%
Semitropic Water Storage District GSA	1	0	0%
Shafter-Wasco Irrigation District GSA	1	0	0%
Southern San Joaquin Municipal Utility District	3	0	0%
Tejon-Castac Water District GSA	0	0	-
West Kern Water District GSA	0	0	-
Westside District Water Authority GSA	0	0	-
Wheeler Ridge-Maricopa GSA	0	0	-
TOTAL	**34**	**4**	**12%**

Abbreviations:

EWMA = Eastside Water Management Area

KGA = Kern Groundwater Authority GSA

GSA = groundwater sustainability agency

Sources:

1. GSAs' well inventory

Table 6. Scenario #1 - Dewatered Municipal/Public Wells by GSA

Kern County Subbasin, Kern County

GSA	Municipal/Public Well Count	Dewatered	%
Arvin GSA	10	1	10%
Buena Vista Water Storage District GSA	3	0	0%
Cawelo Water District GSA	4	0	0%
Greenfield County Water District GSA	3	0	0%
Henry Miller Water District GSA	0	0	-
Kern Groundwater Authority GSA	3	0	0%
KGA - EWMA	0	0	-
Kern River GSA	89	12	13%
Kern-Tulare Water District GSA	0	0	-
Kern Water Bank GSA	0	0	-
North Kern Water Storage District GSA	2	0	0%
Olcese Water District GSA	0	0	-
Pioneer GSA	1	0	0%
Rosedale-Rio Bravo Water Storage District GSA	11	0	0%
Semitropic Water Storage District GSA	5	0	0%
Shafter-Wasco Irrigation District GSA	12	0	0%
Southern San Joaquin Municipal Utility District	23	1	4%
Tejon-Castac Water District GSA	0	0	-
West Kern Water District GSA	9	0	0%
Westside District Water Authority GSA	3	0	0%
Wheeler Ridge-Maricopa GSA	3	0	0%
TOTAL	**181**	**14**	**8%**

Abbreviations:

EWMA = Eastside Water Management Area

KGA = Kern Groundwater Authority GSA

GSA = groundwater sustainability agency

Sources:

1. GSAs' well inventory

Table 7. Scenario #2 Well Counts
Kern County Subbasin, Kern County

Industrial		Agricultural		Drinking Water	
RMW-WL	Associated Well Count	RMW-WL	Associated Well Count	RMW-WL	Associated Well Count
29S29E33N001M	0	29S29E33N001M	1	29S29E33N001M	8
30S29E11N001M	0	30S29E11N001M	1	30S29E11N001M	0
30S30E19E001M	0	30S30E19E001M	3	30S30E19E001M	0
30S29E29A001M	0	30S29E29A001M	2	30S29E29A001M	4
31S29E05E001M	0	31S29E05E001M	3	31S29E05E001M	3
31S29E12M001M	0	31S29E12M001M	1	31S29E12M001M	0
31S30E17K001M	0	31S30E17K001M	1	31S30E17K001M	2
31S29E34A001M	0	31S29E34A001M	0	31S29E34A001M	0
31S30E30J001M	0	31S30E30J001M	0	31S30E30J001M	0
ACSD Well #14	0	ACSD Well #14	0	ACSD Well #14	1
32S29E12P001M	0	32S29E12P001M	0	32S29E12P001M	1
32S29E20L001M	0	32S29E20L001M	3	32S29E20L001M	1
32S28E23H001M	0	32S28E23H001M	0	32S28E23H001M	0
32S29E31N001M	0	32S29E31N001M	0	32S29E31N001M	0
12N20W36G001S	0	12N20W36G001S	0	12N20W36G001S	0
11N20W05J001S	0	11N20W05J001S	0	11N20W05J001S	0
DMW01	0	DMW01	2	DMW01	0
DMW02	0	DMW02	1	DMW02	0
DMW04	0	DMW04	0	DMW04	1
DMW05	0	DMW05	2	DMW05	1
DMW06	0	DMW06	8	DMW06	6
DMW07	0	DMW07	15	DMW07	5
DMW08	0	DMW08	8	DMW08	4
DMW10a	0	DMW10a	12	DMW10a	3
DMW12b	0	DMW12b	0	DMW12b	0
Well 12H	0	Well 12H	0	Well 12H	0
Well 4R	0	Well 4R	1	Well 4R	1
Well 28L	0	Well 28L	1	Well 28L	1
Well 24R	0	Well 24R	0	Well 24R	3
Well 11M	0	Well 11M	0	Well 11M	0
Well 6C	0	Well 6C	1	Well 6C	2
Well 33C	0	Well 33C	2	Well 33C	1
EWMA #41	0	EWMA #41	0	EWMA #41	3
HMWD #20	0	HMWD #20	1	HMWD #20	2
HMWD #28	0	HMWD #28	0	HMWD #28	0
HMWD #27	0	HMWD #27	0	HMWD #27	0
HMWD #26	0	HMWD #26	0	HMWD #26	0
HMWD #18	0	HMWD #18	0	HMWD #18	0
RMW-017	0	RMW-017	5	RMW-017	0
RMW-018	0	RMW-018	5	RMW-018	3
RMW-019R	0	RMW-019R	0	RMW-019R	7
RMW-020	0	RMW-020	1	RMW-020	4
RMW-021	0	RMW-021	0	RMW-021	0
RMW-025	0	RMW-025	2	RMW-025	1
RMW-026	0	RMW-026	0	RMW-026	0
RMW-029	0	RMW-029	0	RMW-029	2
RMW-030	0	RMW-030	5	RMW-030	17
RMW-031	0	RMW-031	1	RMW-031	0
RMW-032	0	RMW-032	5	RMW-032	8
RMW-034	0	RMW-034	4	RMW-034	8
RMW-035R	0	RMW-035R	0	RMW-035R	0
RMW-037	0	RMW-037	1	RMW-037	1
RMW-038	0	RMW-038	7	RMW-038	20
RMW-040	0	RMW-040	2	RMW-040	1
RMW-041	0	RMW-041	3	RMW-041	1
RMW-042	0	RMW-042	0	RMW-042	1
RMW-192	0	RMW-192	4	RMW-192	18
RMW-193	0	RMW-193	1	RMW-193	2
RMW-195	0	RMW-195	4	RMW-195	9
RMW-196	1	RMW-196	8	RMW-196	20

RMW-197	0	RMW-197	1	RMW-197	1
RMW-200	0	RMW-200	0	RMW-200	1
RMW-201	0	RMW-201	4	RMW-201	16
RMW-202	0	RMW-202	1	RMW-202	15
RMW-209	0	RMW-209	4	RMW-209	6
RMW-210	1	RMW-210	3	RMW-210	7
RMW-211	1	RMW-211	0	RMW-211	2
RMW-212	0	RMW-212	4	RMW-212	4
RMW-213	0	RMW-213	1	RMW-213	7
RMW-214	1	RMW-214	7	RMW-214	7
RMW-215	0	RMW-215	0	RMW-215	3
RMW-216	0	RMW-216	1	RMW-216	8
RMW-217	0	RMW-217	4	RMW-217	6
RMW-218	1	RMW-218	2	RMW-218	0
RMW-219	0	RMW-219	4	RMW-219	3
Well 12A	0	Well 12A	0	Well 12A	2
Well 15D1	0	Well 15D1	5	Well 15D1	1
Well 4D1	0	Well 4D1	2	Well 4D1	0
30S/26E-16L01	0	30S/26E-16L01	0	30S/26E-16L01	0
88-03-009R	0	88-03-009R	1	88-03-009R	0
88-09-009	0	88-09-009	2	88-09-009	0
88-21-005	0	88-21-005	2	88-21-005	1
88-29-014	0	88-29-014	0	88-29-014	0
99-00-003	0	99-00-003	0	99-00-003	1
99-00-081	0	99-00-081	5	99-00-081	0
99-22-084	0	99-22-084	2	99-22-084	0
Shafter Well 18	0	Shafter Well 18	1	Shafter Well 18	0
3361-62	0	3361-62	0	3361-62	1
DW097	0	DW097	0	DW097	0
30S/26E-04D003M	0	30S/26E-04D003M	2	30S/26E-04D003M	5
30S/26E-10P004M	0	30S/26E-10P004M	1	30S/26E-10P004M	0
30S/26E-15N003M	0	30S/26E-15N003M	1	30S/26E-15N003M	0
30S/26E-04J003M	0	30S/26E-04J003M	0	30S/26E-04J003M	0
30S/26E-04J002M	0	30S/26E-04J002M	0	30S/26E-04J002M	0
Bushnell	0	Bushnell	2	Bushnell	2
L.R. Stout	0	L.R. Stout	10	L.R. Stout	7
RBG School	1	RBG School	1	RBG School	2
P. Enns Domestic	0	P. Enns Domestic	0	P. Enns Domestic	0
Section 18	0	Section 18	1	Section 18	15
Blacco HQ	0	Blacco HQ	1	Blacco HQ	0
Cauzza	0	Cauzza	0	Cauzza	0
Parsons	0	Parsons	0	Parsons	0
West I-5	0	West I-5	0	West I-5	0
Virgil Bussell	0	Virgil Bussell	0	Virgil Bussell	0
27N Mayer	0	27N Mayer	1	27N Mayer	0
25M Enos	0	25M Enos	2	25M Enos	5
Chet Reed	0	Chet Reed	3	Chet Reed	14
Home Place	1	Home Place	1	Home Place	3
31H Greeley	0	31H Greeley	0	31H Greeley	2
Harvest Ranch	0	Harvest Ranch	0	Harvest Ranch	0
35H RRBWSD Shop	0	35H RRBWSD Shop	1	35H RRBWSD Shop	4
32N Triple	0	32N Triple	1	32N Triple	0
28J Triple	0	28J Triple	1	28J Triple	0
SSJMUD 8	0	SSJMUD 8	2	SSJMUD 8	0
SSJMUD 14	0	SSJMUD 14	0	SSJMUD 14	3
SSJMUD 23	0	SSJMUD 23	1	SSJMUD 23	3
SSJMUD 53	0	SSJMUD 53	1	SSJMUD 53	6
SSJMUD 59	0	SSJMUD 59	0	SSJMUD 59	2
SSJMUD 62	1	SSJMUD 62	5	SSJMUD 62	3
SSJMUD 42	0	SSJMUD 42	1	SSJMUD 42	2
Delano 30	0	Delano 30	0	Delano 30	0
Delano 34	1	Delano 34	2	Delano 34	3
Shafter Well 15	0	Shafter Well 15	3	Shafter Well 15	10
Shafter Well 7	0	Shafter Well 7	6	Shafter Well 7	4
Superior Mutual Well 1	0	Superior Mutual Well 1	3	Superior Mutual Well 1	1

28S/24E-35C	0	28S/24E-35C	3	28S/24E-35C	1
Shafter Well 12	0	Shafter Well 12	1	Shafter Well 12	0
Wasco 12	0	Wasco 12	0	Wasco 12	0
Shafter Well 14	0	Shafter Well 14	1	Shafter Well 14	0
Wasco 8A	0	Wasco 8A	1	Wasco 8A	2
28S25E19G	0	28S25E19G	7	28S25E19G	6
Wasco 11	0	Wasco 11	1	Wasco 11	6
S-2	0	S-2	0	S-2	1
S-4	0	S-4	1	S-4	0
S-5	0	S-5	1	S-5	2
S-6	0	S-6	4	S-6	1
S-8A Cluster 1 of 2	0	S-8A Cluster 1 of 2	2	S-8A Cluster 1 of 2	0
S-9A Cluster 1 of 2	0	S-9A Cluster 1 of 2	12	S-9A Cluster 1 of 2	5
S-11	0	S-11	3	S-11	1
S-12	0	S-12	3	S-12	1
S-13A Cluster 1 of 2	0	S-13A Cluster 1 of 2	3	S-13A Cluster 1 of 2	1
S-14B Cluster 2 of 2	0	S-14B Cluster 2 of 2	1	S-14B Cluster 2 of 2	1
26S-23E-15A1	0	26S-23E-15A1	4	26S-23E-15A1	4
948L02 Cluster1 of 2	0	948L02 Cluster1 of 2	0	948L02 Cluster1 of 2	2
S-1	0	S-1	1	S-1	2
28/23/16/G	0	28/23/16/G	2	28/23/16/G	3
28/23/36/R	0	28/23/36/R	9	28/23/36/R	1
Caratan Well (RMS-1)	0	Caratan Well (RMS-1)	1	Caratan Well (RMS-1)	0
7106-63	0	7106-63	2	7106-63	0
7108-66	0	7108-66	0	7108-66	0
S#14	0	S#14	0	S#14	0
Berenda Mesa #3	0	Berenda Mesa #3	0	Berenda Mesa #3	0
WKWD 23M-M	0	WKWD 23M-M	4	WKWD 23M-M	0
NWM1-M	0	NWM1-M	2	NWM1-M	0
7-01	0	7-01	1	7-01	0
North Ag	0	North Ag	0	North Ag	0
South Ag	0	South Ag	0	South Ag	0
32S26E20G001M	0	32S26E20G001M	0	32S26E20G001M	0
32S27E30N001M	0	32S27E30N001M	0	32S27E30N001M	1
32S27E35R001M	0	32S27E35R001M	0	32S27E35R001M	0
32S26E24K001M	0	32S26E24K001M	0	32S26E24K001M	0
11N22W01D001S	0	11N22W01D001S	0	11N22W01D001S	0
11N22W06H001S	0	11N22W06H001S	1	11N22W06H001S	0
11N21W16E001S	0	11N21W16E001S	0	11N21W16E001S	0
12N21W34N001S	0	12N21W34N001S	0	12N21W34N001S	0
11N21W09C001S	0	11N21W09C001S	0	11N21W09C001S	0
32S26E34P001M	0	32S26E34P001M	1	32S26E34P001M	0
32S26E36P002M	0	32S26E36P002M	0	32S26E36P002M	0
32S25E29Q001M	1	32S25E29Q001M	0	32S25E29Q001M	0
32S28E16P001M	0	32S28E16P001M	2	32S28E16P001M	4
12N21W35Q001S	0	12N21W35Q001S	0	12N21W35Q001S	0
Total Industrial Dewatered Wells	**10**	**Total Agricultural Dewatered Wells**	**226**	**Total Drinking Water Dewatered Wells**	**327**

Notes:

(a) Highlighted cells indicate selected RMW-WLs. Wells associated with these RMW-WLs were considered dewatered under Scenario #2.

Abbreviations:

RMW-WL = Representative Monitoring Well for Chronic Lowering of Groundwater Levels

Sources:

1. GSAs' Well Inventory

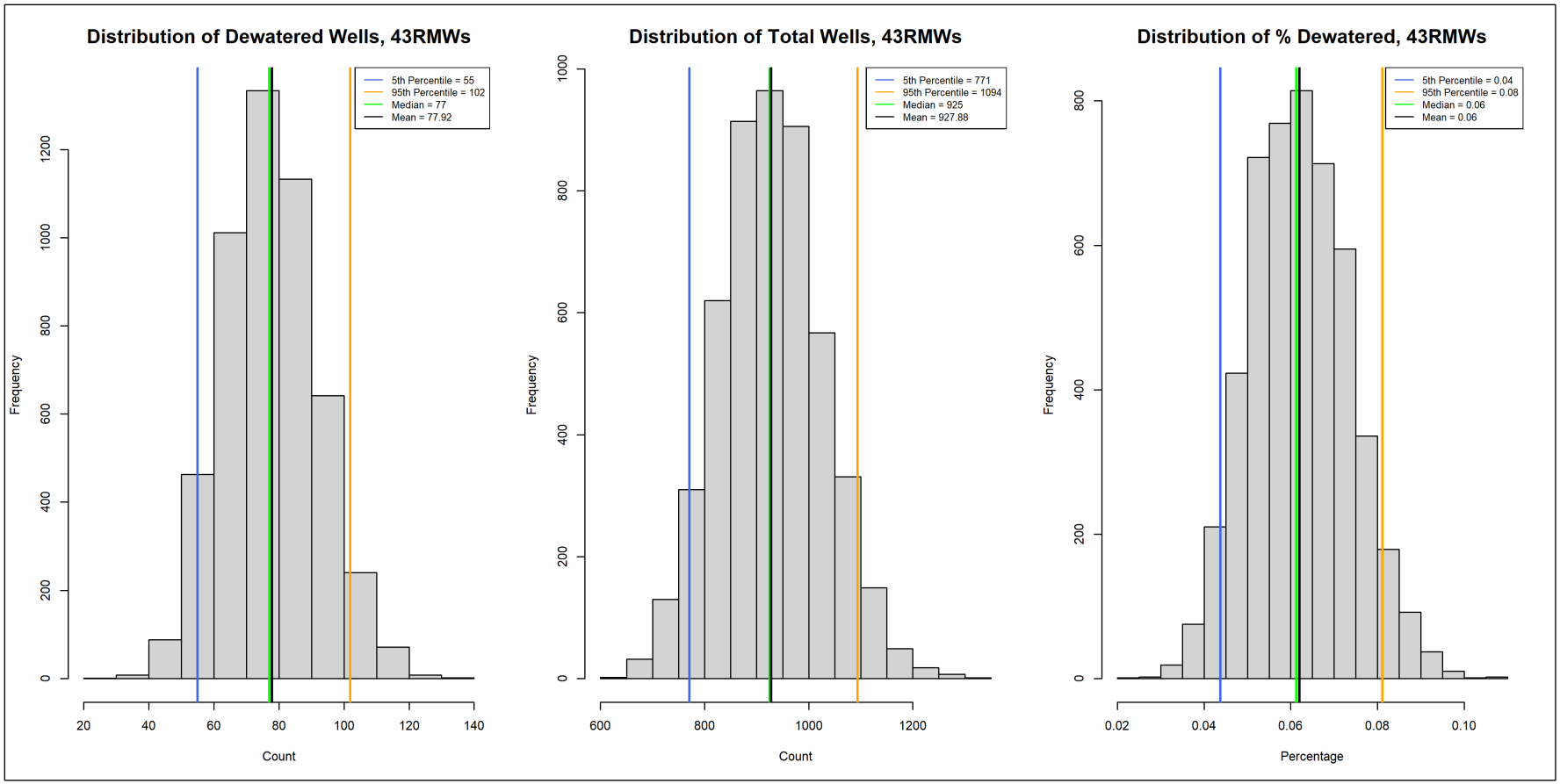

Figure 1. Scenario #4 - Stochastic Prediction for Agricultural Wells

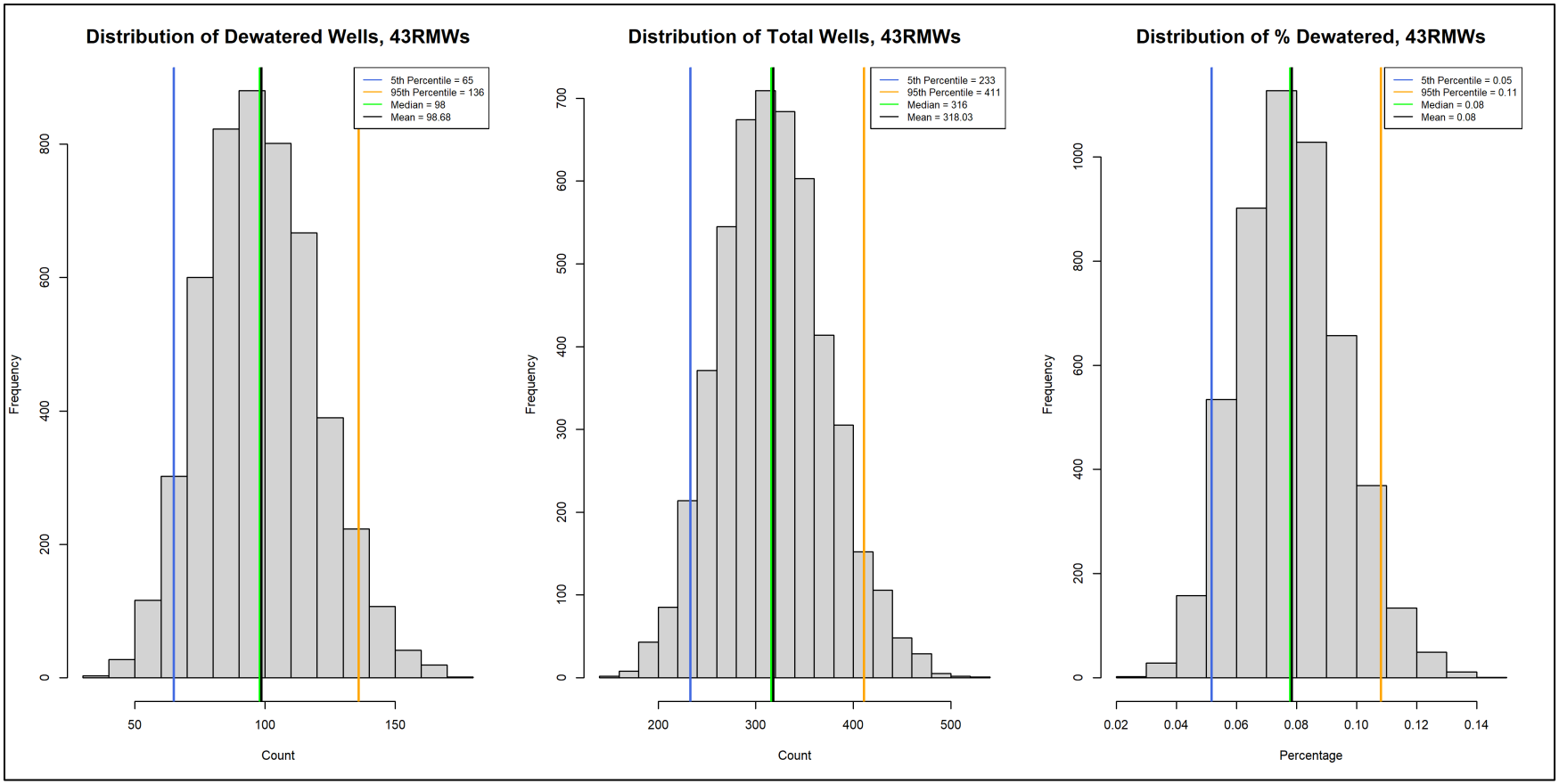

Figure 2. Scenario #4 - Stochastic Prediction for Domestic Wells

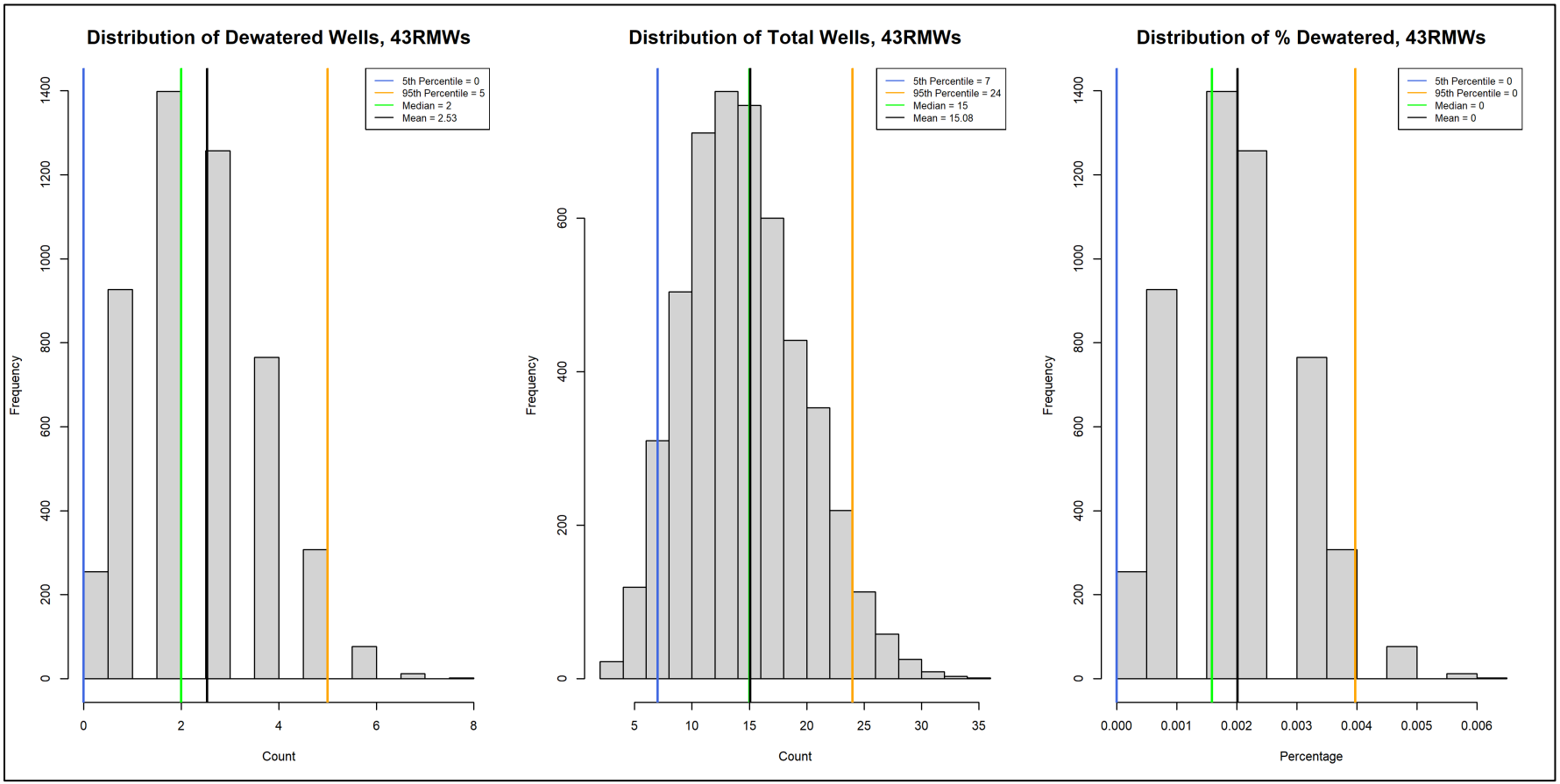

Figure 3. Scenario #4 - Stochastic Prediction for Industrial Wells

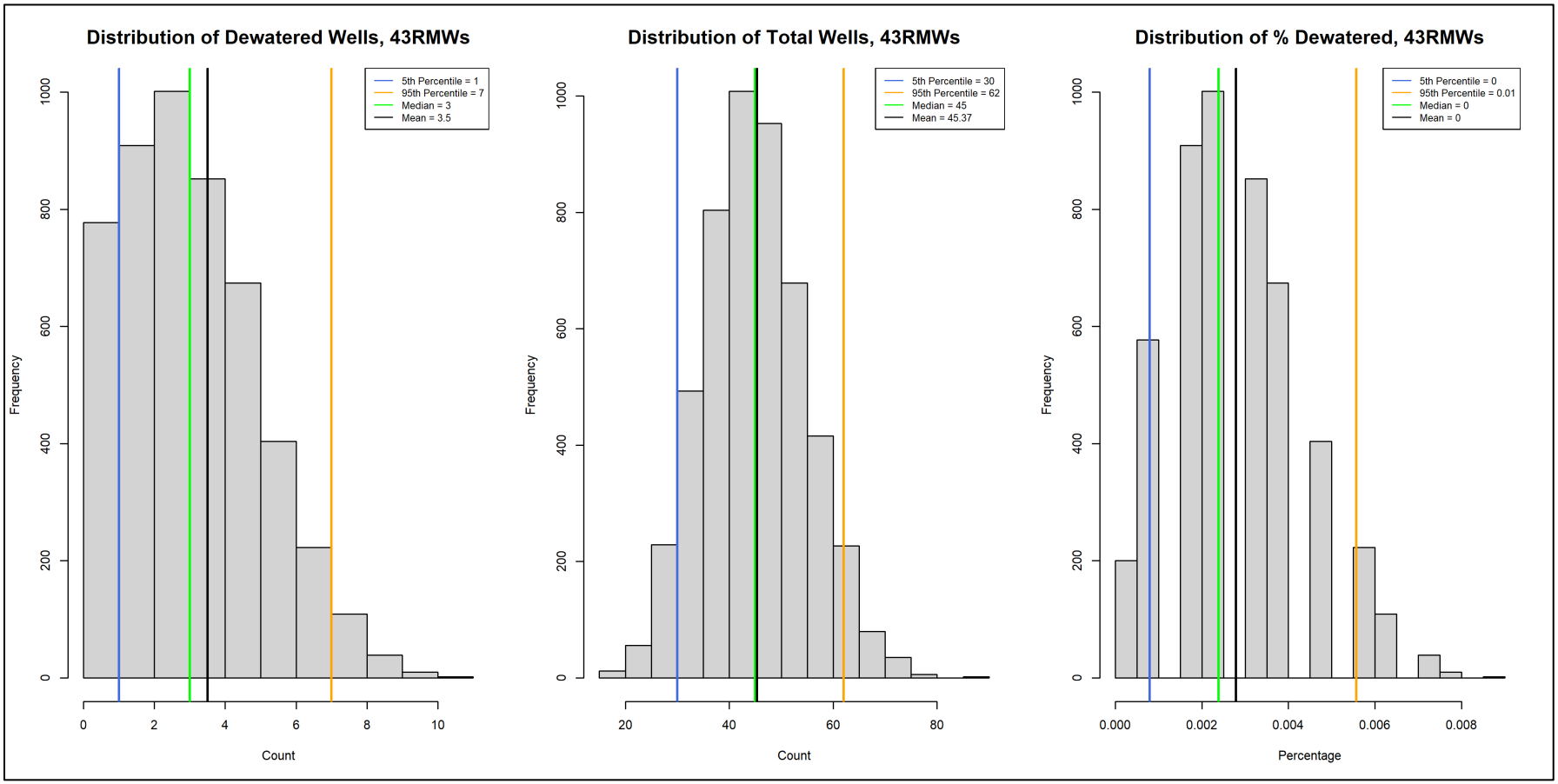

Figure 4. Scenario #4 - Stochastic Prediction for Municipal/Public Wells

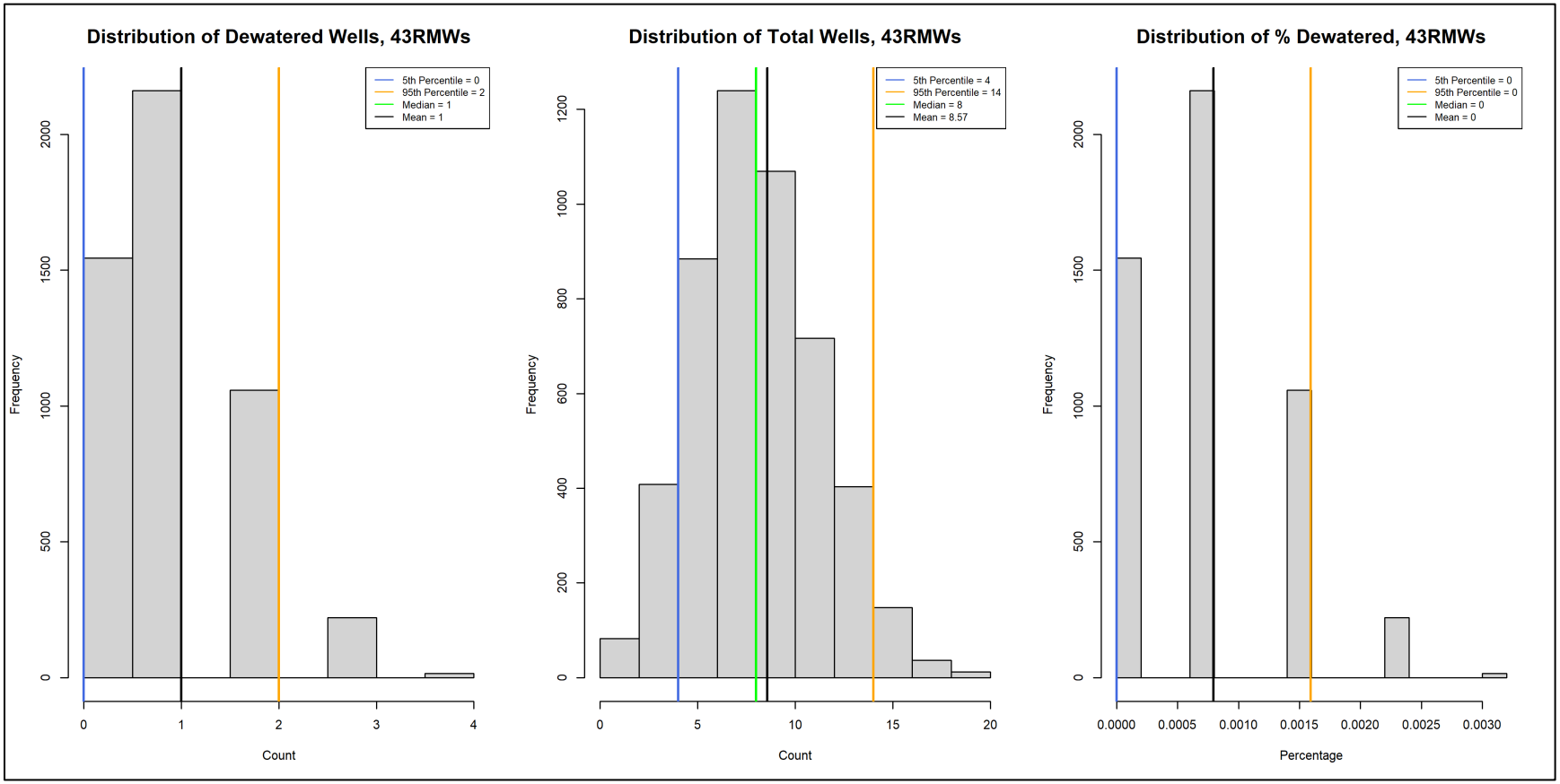

Figure 5. Scenario #4 - Stochastic Prediction for Small Community Wells

1.5 Scenario #5 – Modeled Projected Future Conditions

The process for Scenario #5 of the well impact analysis is described in Section 13.1.2.4 of the GSP. It is important to note that while the results discussed in the GSP only include drinking water wells, the full analysis for Scenario #5 includes all of the well types listed above. The results for each well type are shown below in Figures 6-15. The combined results for drinking water wells under modeled projected 2030 climate conditions and future conditions with P/MAs are represented in Figure 13-8 and Figure 13-9 of Section 13.1.2.4 of the GSP, respectively.

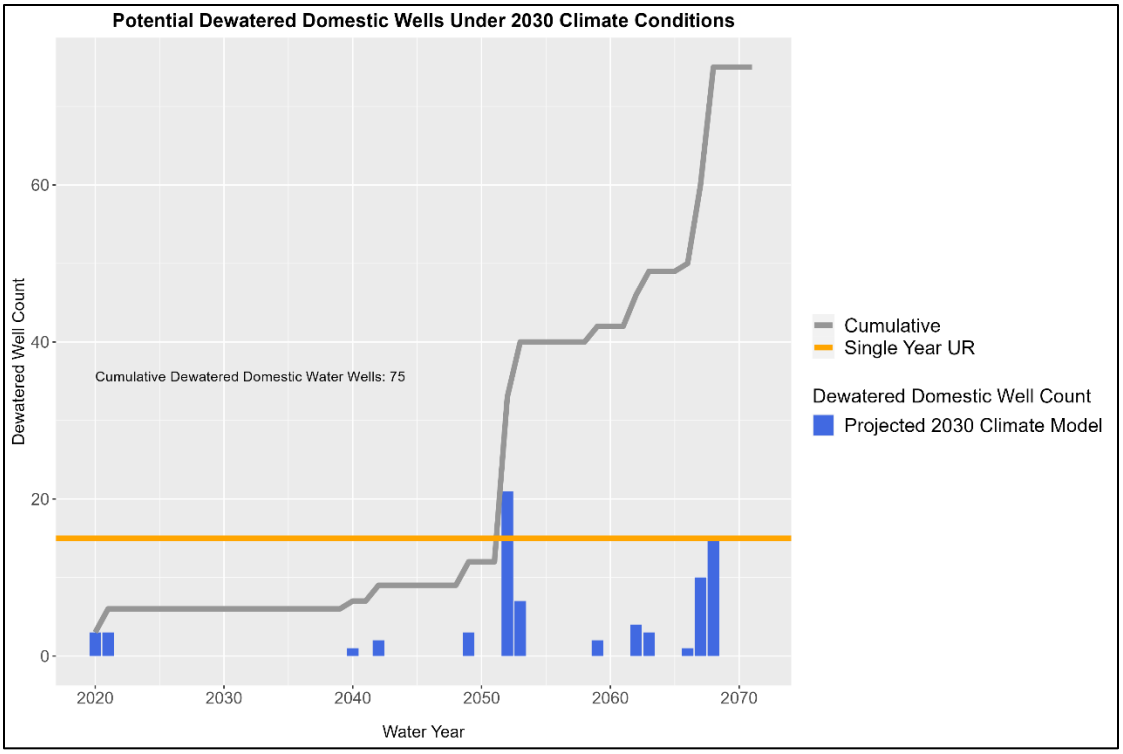

Figure 6. Scenario #5 - Potential Dewatered Domestic Wells Under Modeled Projected Future 2030 Climate Conditions

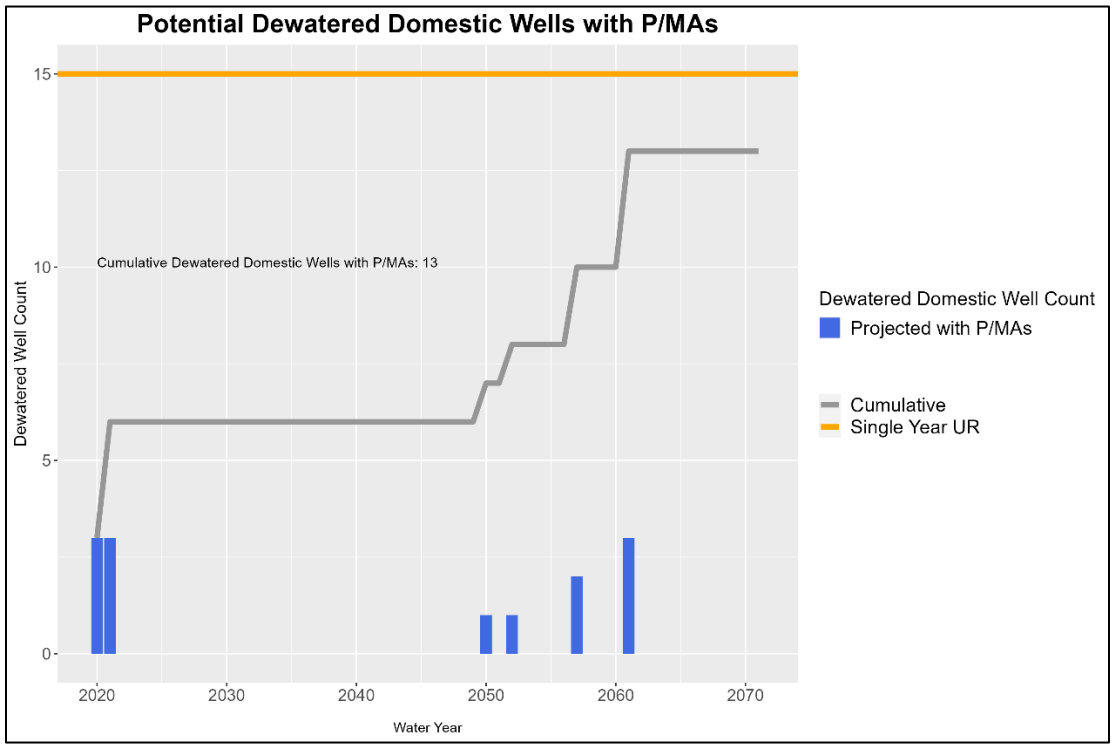

Figure 7. Scenario #5 - Potential Dewatered Domestic Wells Under Modeled Projected Future Conditions with P/MAs

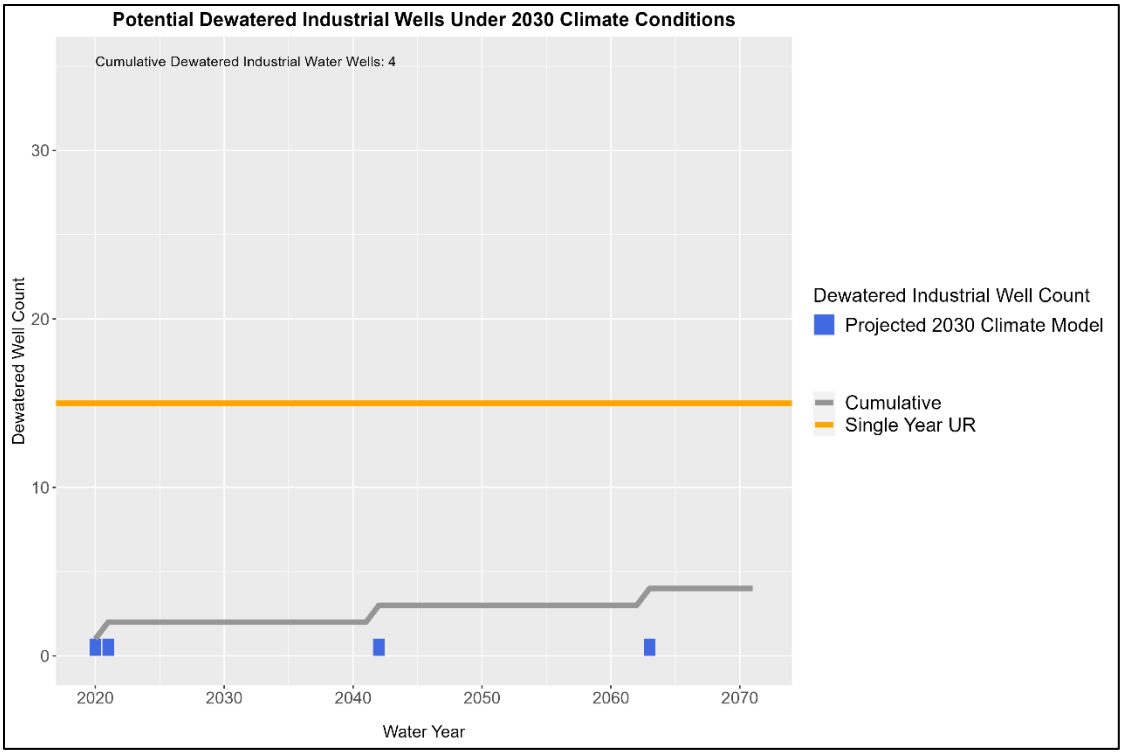

Figure 8. Scenario #5 - Potential Dewatered Industrial Wells Under Modeled Projected Future 2030 Climate Conditions

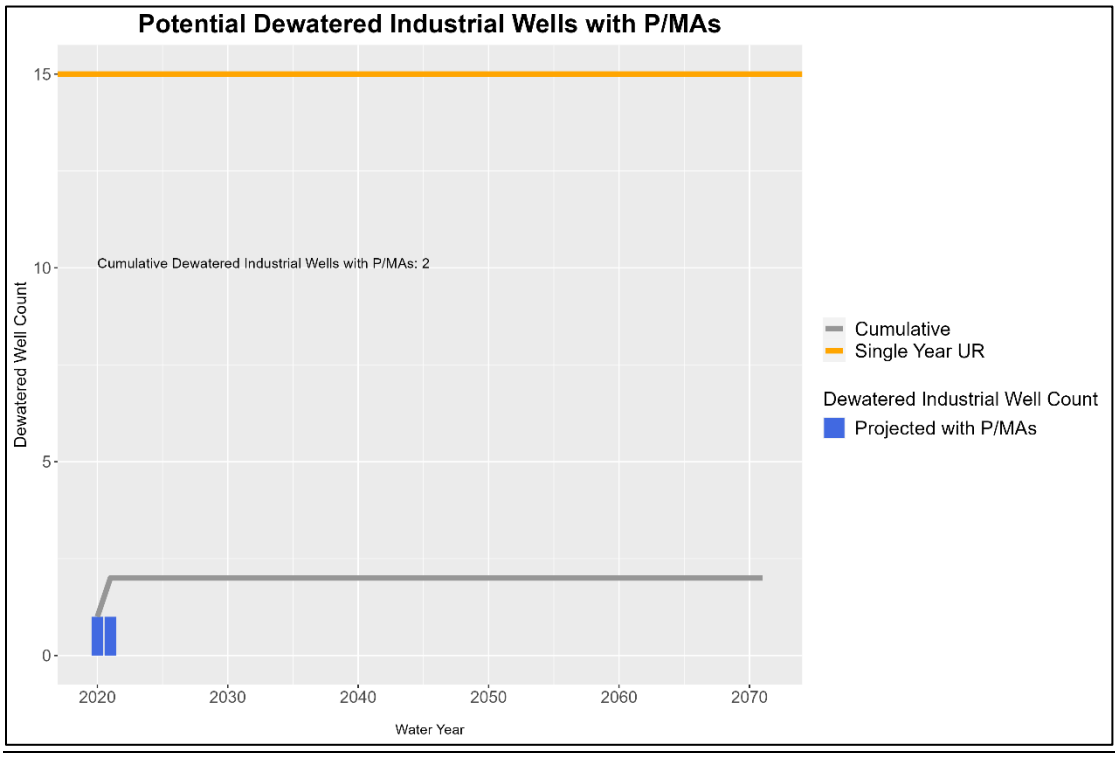

Figure 9. Scenario #5 - Potential Dewatered Industrial Wells Under Modeled Projected Future Conditions with P/MAs

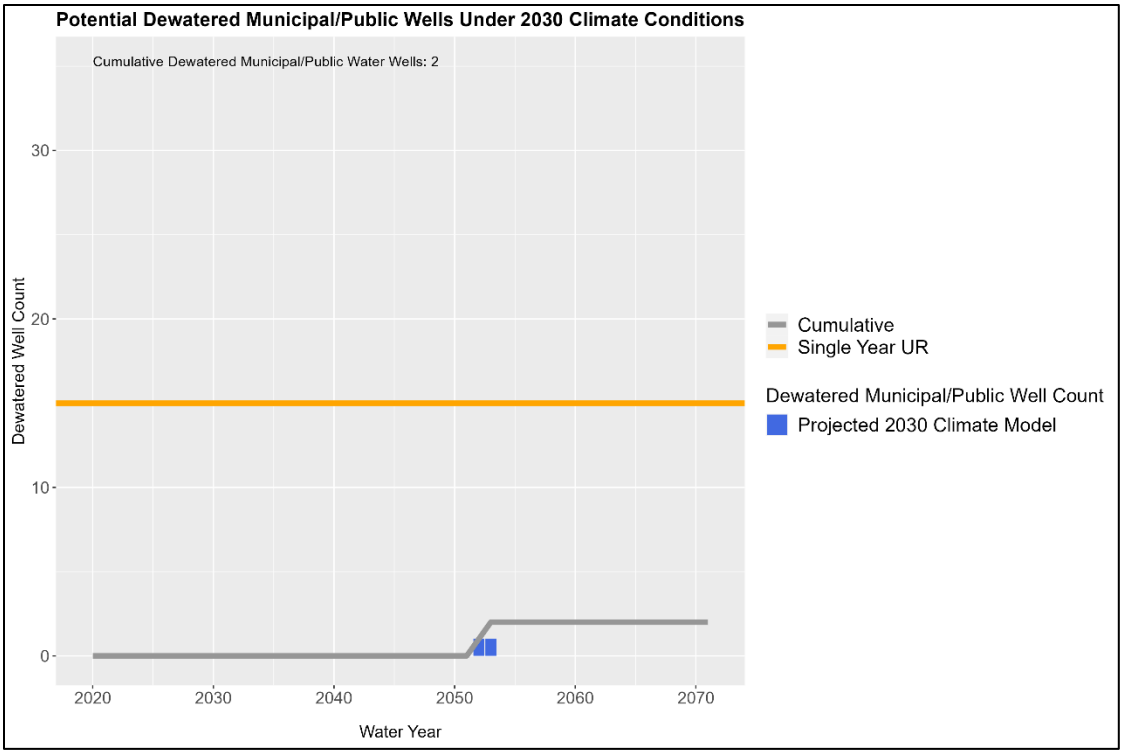

Figure 10. Scenario #5 - Potential Dewatered Municipal/Public Wells Under Modeled Projected Future 2030 Climate Conditions

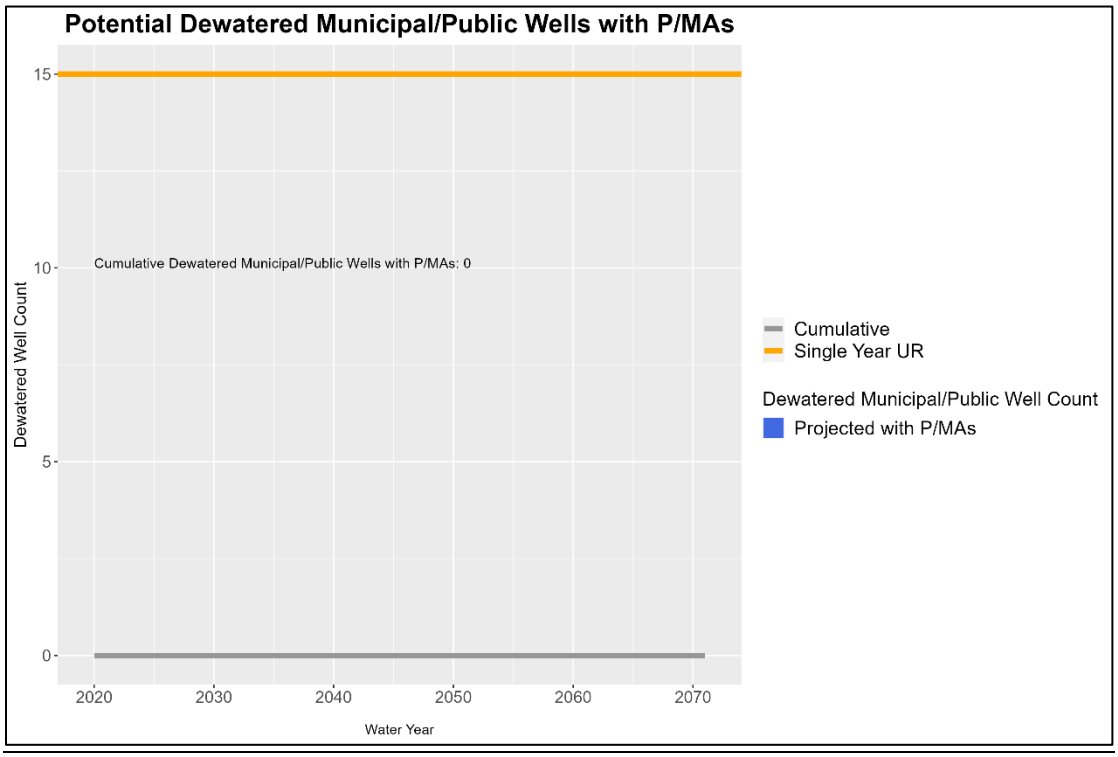

Figure 11. Scenario #5 - Potential Dewatered Municipal/Public Wells Under Modeled Projected Future Conditions with P/MAs

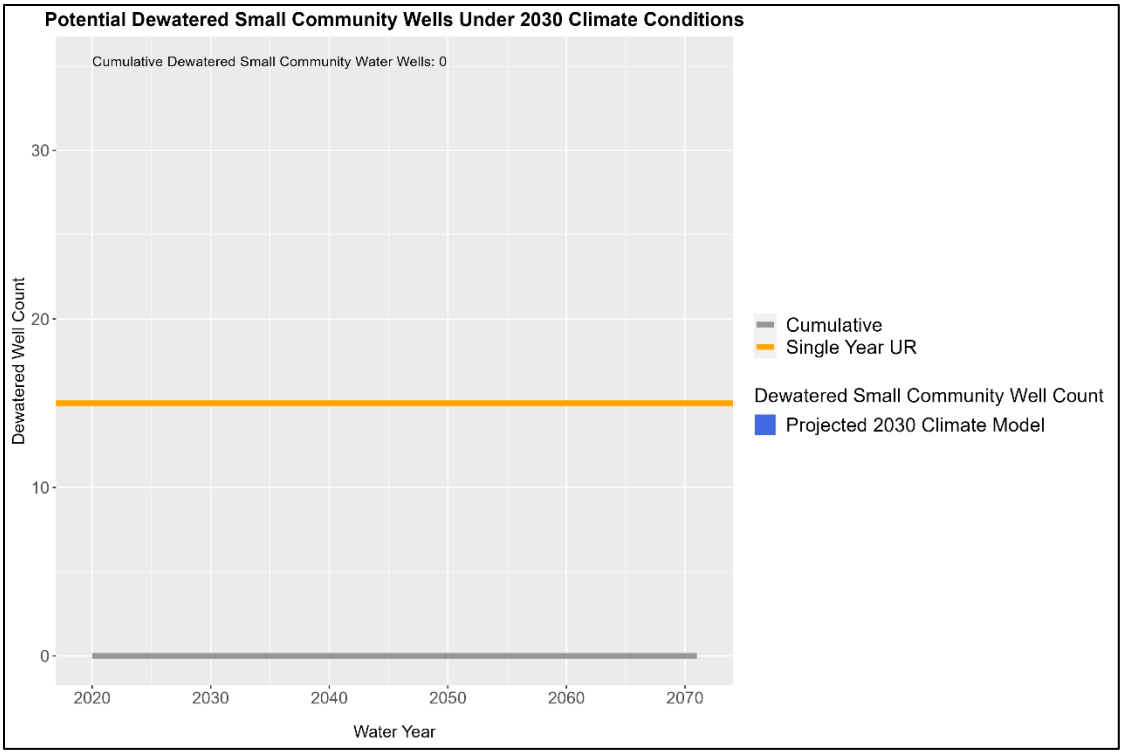

Figure 12. Scenario #5 - Potential Dewatered Small Community Wells Under Modeled Projected Future 2030 Climate Conditions

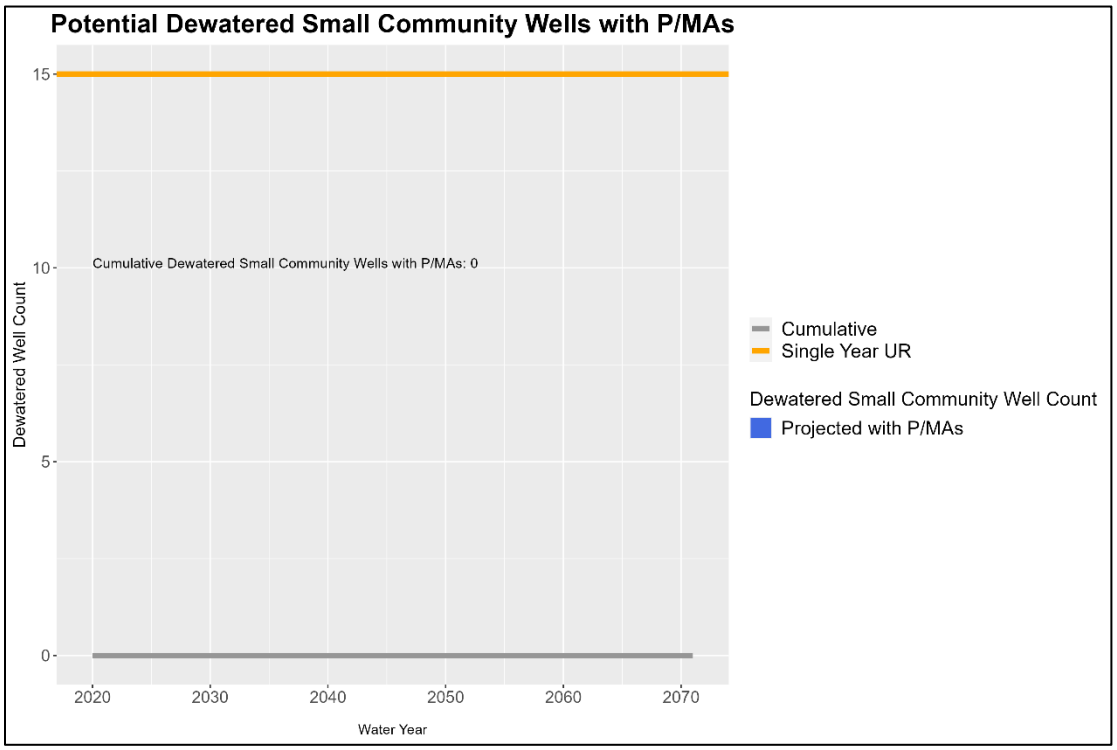

Figure 13. Scenario #5 - Potential Dewatered Small Community Wells Under Modeled Projected Future Conditions with P/MAs

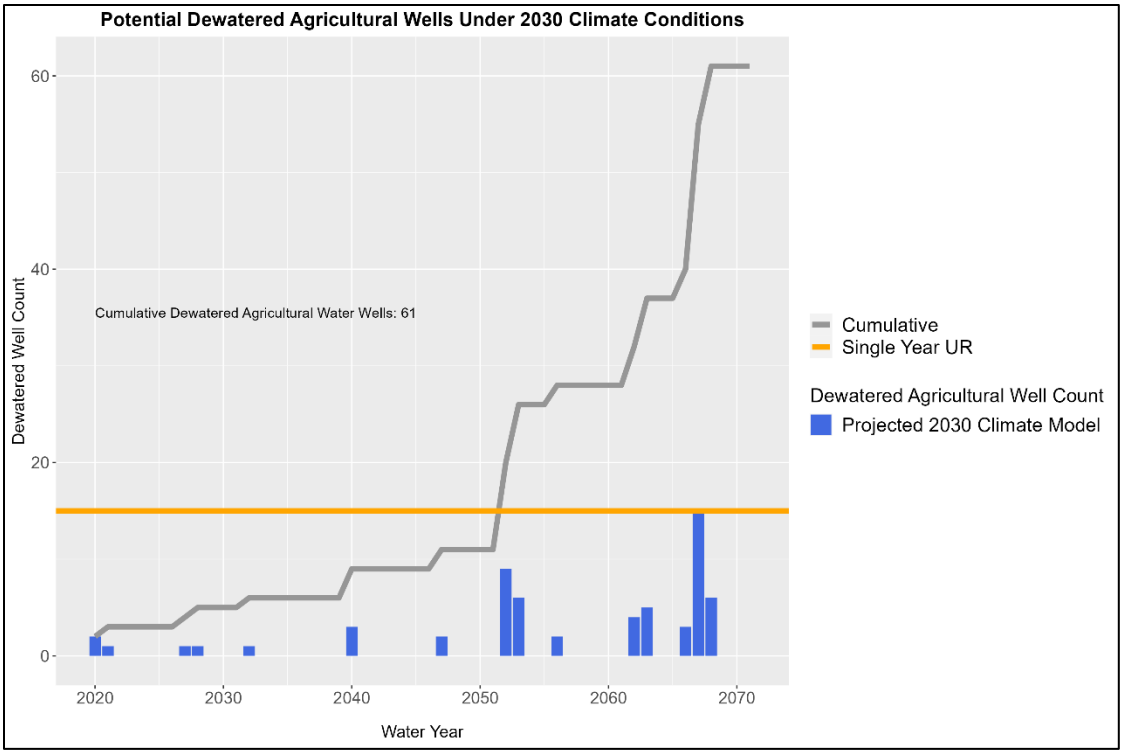

Figure 14. Scenario #5 - Potential Dewatered Agricultural Wells Under Modeled Projected Future 2030 Climate Conditions

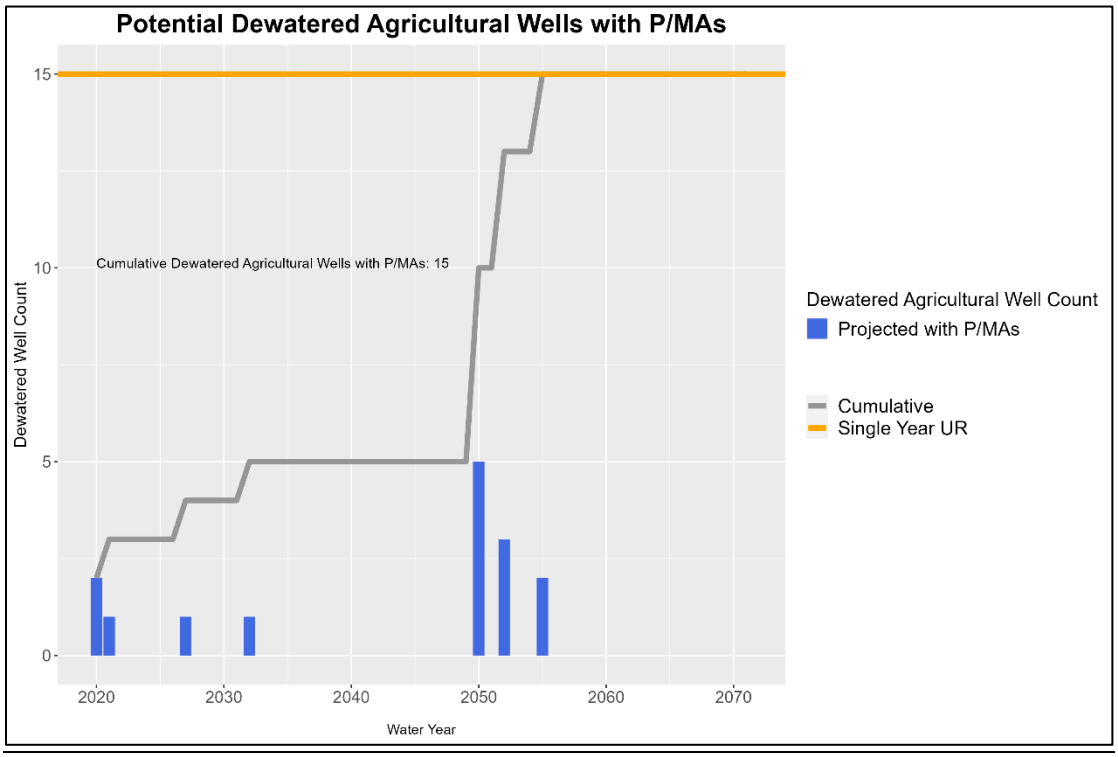

Figure 15. Scenario #5 - Potential Dewatered Agricultural Wells Under Modeled Projected Future Conditions with P/MAs