Tule Subbasin Technical Advisory Committee

July 17, 2019

Prepared for:
Tule Subbasin Technical Advisory Committee

Thomas Harder & Co.
Groundwater Consulting

Status of Work Performed Since April 2019 – Projects and Management Actions

Eastern Tule GSA

No.	Lead Entity	Project Name	Description	Timeframe	Annual Volume	Water Source	Confidence
1	City of Porterville	Population Increase	Increase GW Production	2.5%/yr 2020-2040	9,500 af/yr by 2040	N/A	High
2	City of Porterville	Recycling Increase	Increase RW Applied to Ag	2.5%/yr 2020-2040	1,900 af/yr by 2040	Recycled Water	High
3	City of Porterville	Recycling Increase	Increase RW Recharge	2.5%/yr 2020-2040	1,600 af/yr by 2040	Recycled Water	High
4	City of Porterville	Tule River Recharge	Recharge Project	Starting 2019/20	900 af/yr	Tule River	High
5	City of Porterville	FKC Recharge	Recharge Project	Starting 2020/21	1,100 af/yr	FKC via Porterville ID	High
6	Porterville ID	SA 1 & 2	Expand distribution system	Starting 2018/19	3,200 af/yr	Tule River and FKC	High
7	Porterville ID	Falconer Bank	Develop water bank	Starting 2020/21	3,300 af/yr of leave-behind	FKC and others	High
8	Porterville ID	Recharge Policy	On-Farm recharge	Starting 2019/20	3,000 af/yr	Tule River and FKC	High
9	Saucelito ID	Conway Bank	Develop water bank	Starting 2020/21	1,100 af/yr of leave-behind	FKC and others	High
10	Saucelito ID	Recharge Policy	On-Farm recharge	Starting 2019/20	2,000 af/yr	FKC	High
11	Kern-Tulare WD	In-District Pricing	Pricing change	Starting 2020/21	2,600 af/yr	N/A	High
12	Kern-Tulare WD	Reservoir Storage	Surface water storage	Starting 2029/30	500 af/yr	FKC and others	Medium
13	Kern-Tulare WD	CRC Pipeline	Deliver produced water	Starting 2024/25	680 af/yr	CRC Produced water	High
14	Terra Bella ID	Deer Creek Recharge	Divert and recharge DC	Starting 2017/18	800 af/yr	Deer Creek	High
15	PWC, VWD, & CMDC	SREP	Success Dam Enlargement	Starting 2024/25	400 af/yr	Tule River	High
16	Hope WD	In-District Recharge	Recharge Project	Starting 2022/23	5,000 af/yr every 3 years	FKC and others / unknown	Medium
17	Ducor ID	In-District Recharge	Pipeline and Recharge Project	Starting 2023/24	4,000 af/yr	FKC and others / unknown	High

LTRID GSA

No.	Project Name	Description		Timeframe	Annual Volume	Water Source	Confidence
1	Creighton Ranch	Groundwater exports		Unknown	Unknown	Not applicable	N/A
2	LTRID - Pixley ID FKC	Continue FKC transfers to Pixley ID		Ongoing	To be determined	FKC	N/A
		SREP	Success Dam Enlargement	Starting 2024/25	2600	Tule River	

Pixley GSA

No.	Project Name	Description	Timeframe	Annual Volume	Water Source	Confidence
1	LTRID - Pixley ID FKC	Continue FKC transfers from LTRID	Ongoing	To be determined	FKC	N/A

DEID GSA

Tri-County GSA

No.	Project Name	Description	Timeframe	Annual Volume	Water Source	Confidence
1	Deep Pumping Reduction	Replace deep pumping with 24 new shallow wells	Start in 2019/20, completed in 2023/24	24,000 af/yr	Not applicable	N/A
2	Duck Club Project	Duck Club water transferred to farms	2019/20	5,400 af every 7 years	Unknown	N/A
3	Liberty Project	Participation in the Liberty Project surface water storage	Start in 2019/20, completed in 2022/23	5,000 af/yr	FID, FKC, KR, TR, KW, SWP	N/A
5	Recharge Scenario	Confidential. Capture and recharge flood water.	Unknown	1,200 to 1,800 af/yr	Unknown	N/A
6	Groundwater Exports	Groundwater Exports	Unknown	Unknown	Unknown	N/A

Alpaugh GSA

No.	Project Name	Description	Timeframe	Annual Volume	Water Source	Confidence
1	Water Capture	Deer Creek flood capture	Starting in 2022/23	1,100 af 2.5x per yr every 2 yrs	Deer Creek	N/A
2	Cropping Changes	Install drip irrigation on 1,900 acres	Starting 2019/20 ?	Not applicable	Not applicable	N/A

Table 2-5 of Subbasin Setting Report

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Status of Work Performed Since April 2019 – Transitional Pumping Schedules

Planned Transitional Pumping by GSA

	Eastern Tule GSA	LTRID GSA	Pixley ID GSA	DEID GSA	Tri-Co GSA	Alpaugh GSA
	2	A	A	-	-	-
2020-2025	90% of over-pumping	2.0 af/ac Over Cons. Use Target	Fallow 5,000 acres; Remaining no change	No Change	No Change	Reduce cropped acres by 880 acres
2025-2030	80% of over-pumping	1.5 af/ac Over Cons. Use Target	Fallow 5,000 acres; Remaining 1.5 af/ac Over Cons. Use Target	Linear Transitional Pumping (Annex Management Area)	Reduce pumping 10,000 af/yr	
2030-2035	30% of over-pumping	1.0 af/ac Over Cons. Use Target	Fallow 5,000 acres; Remaining 1.0 af/ac Over Cons. Use Target			Sustainable
2035-2040	Sustainable	0.5 af/ac Over Cons. Use Target	Fallow 5,000 acres; Remaining 0.5 af/ac Over Cons. Use Target	Sustainable	Sustainable	
2040+		Sustainable	Sustainable			

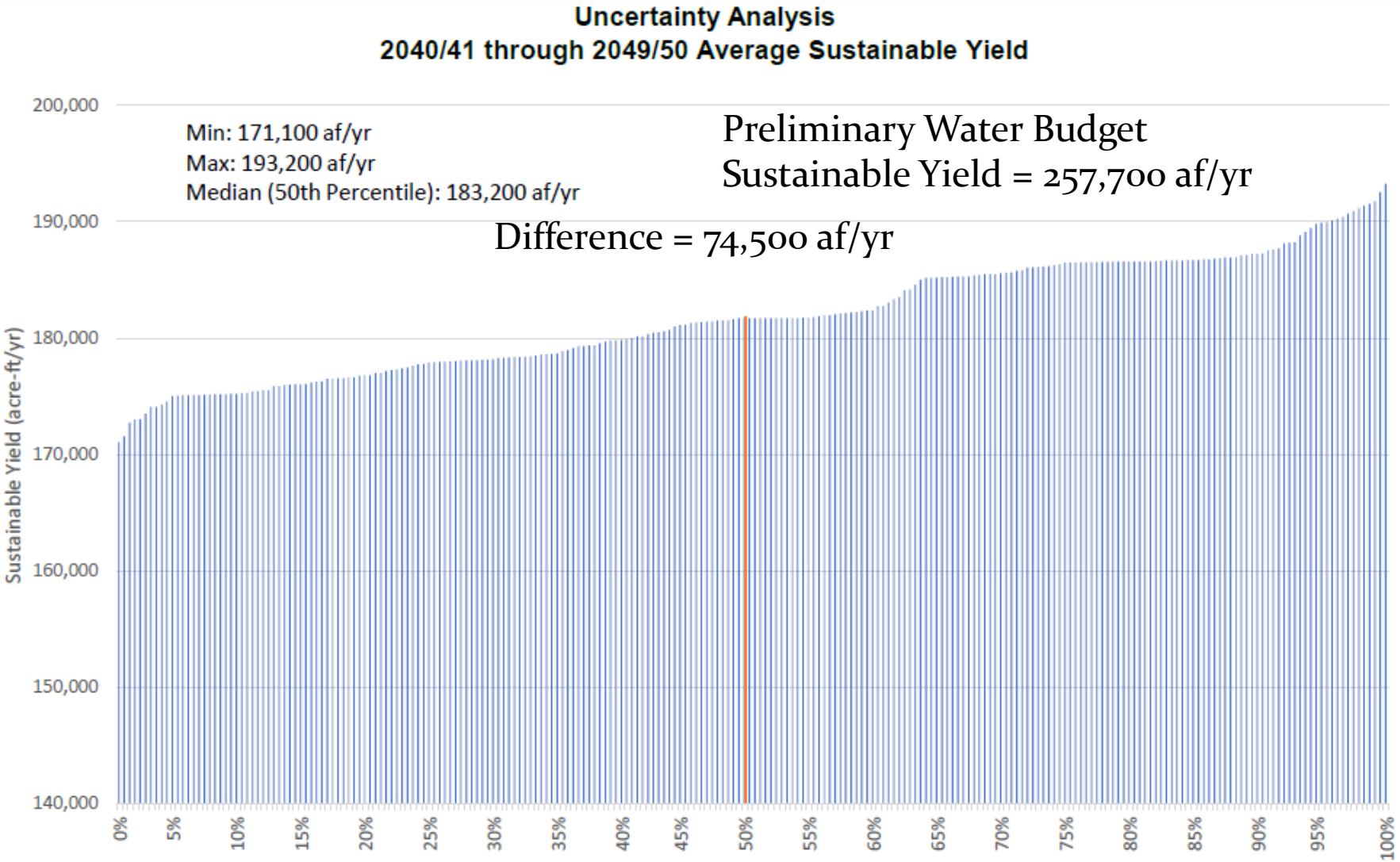
Table 2-6 of Subbasin Setting Report

Three Project and Management Action Scenarios Analyzed with the Model and Submitted May 31, 2019

Status of Work Performed Since April 2019 – Land Subsidence Analyses

- Draft Report of Detailed Analysis of Land Subsidence Along the Friant-Kern Canal – Submitted May 24, 2019

Status of Work Performed Since April 2019 – Model Uncertainty Analysis and Sustainable Yield



*Percentile runs

Preliminary Draft – For Discussion Purposes Only

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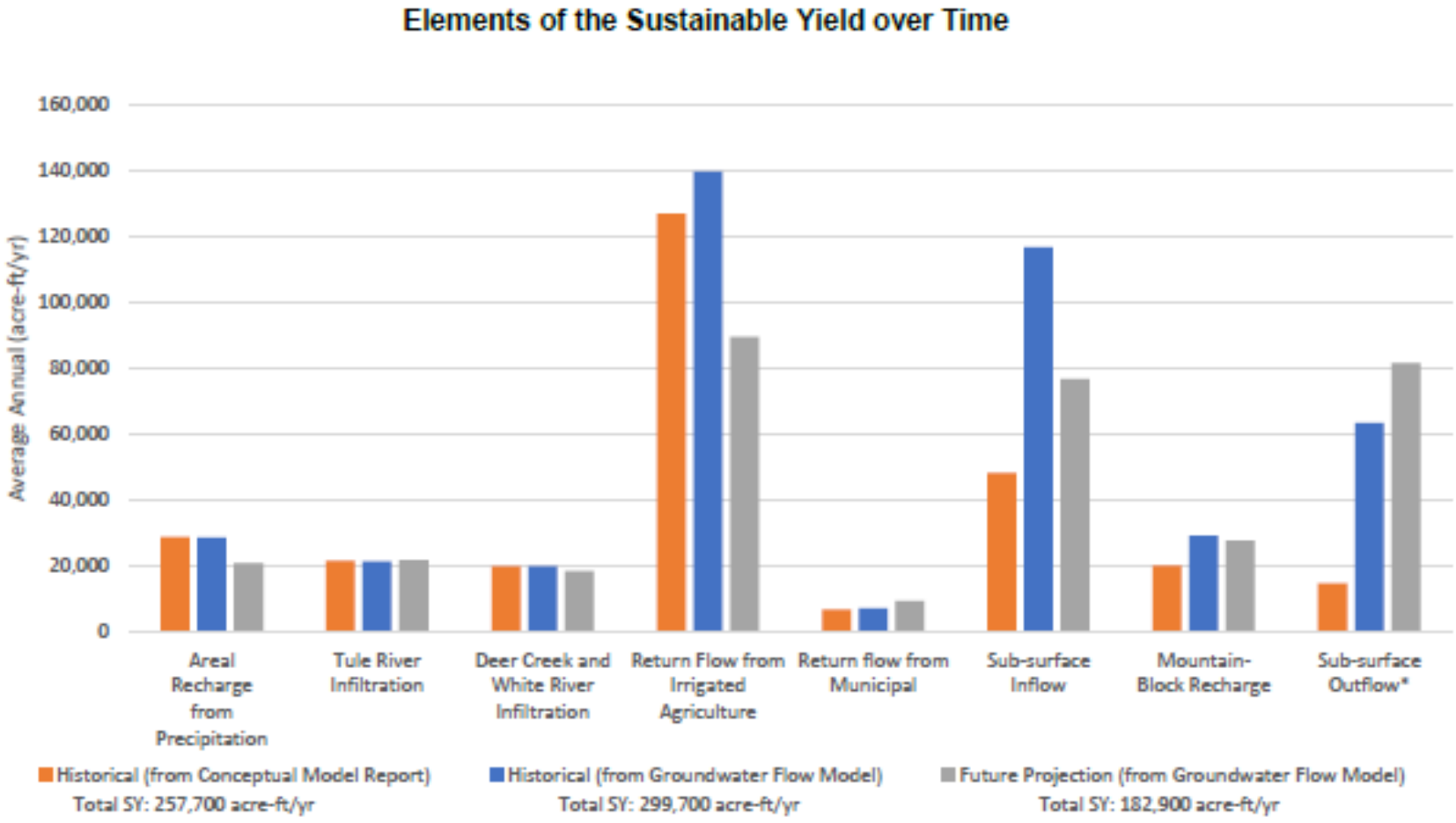
Comparison of Elements of the Sustainable Yield



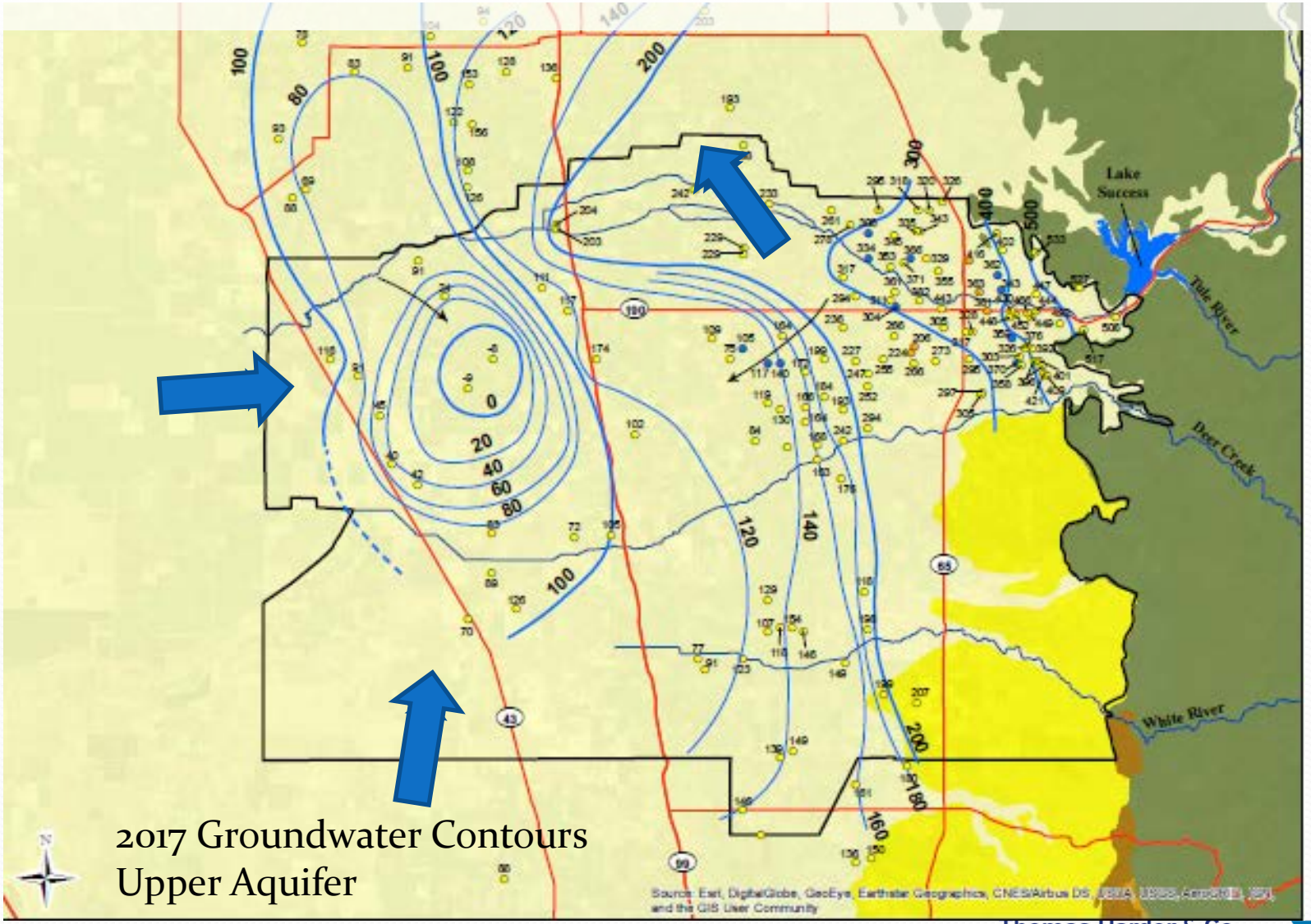
Notes:

Historical is 1990/91 through 2009/10

Future is 2040/41 through 2049/50

*Sub-surface Outflow is negative in the Sustainable Yield equation

As Groundwater Levels Stabilize in the Future, Less Water Will Be Captured and More will be Lost



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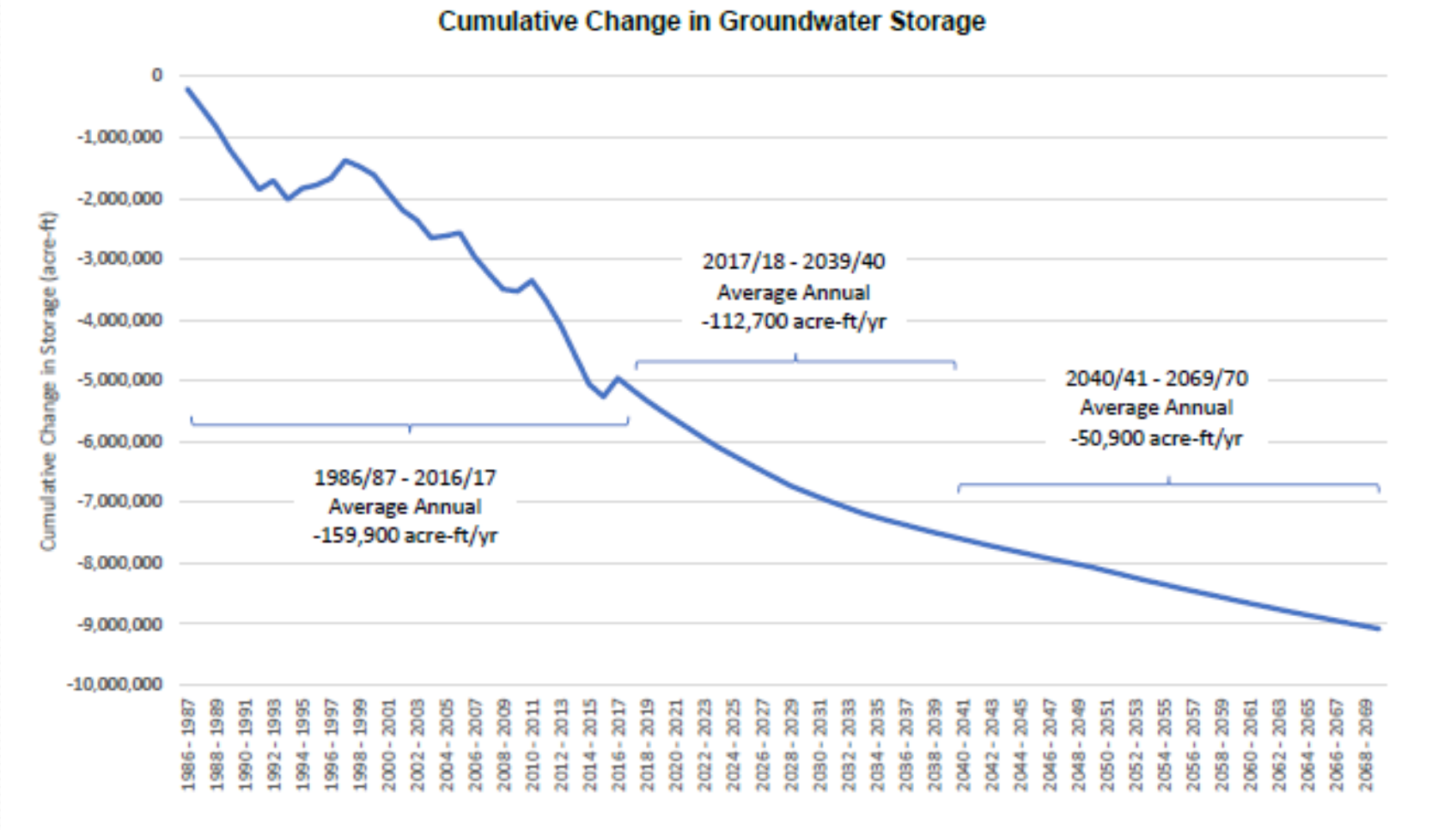
Projected Change in Groundwater Storage



Status of Work Performed Since April 2019 – Land Subsidence Analyses

- Draft Subbasin Setting Report Submitted on June 20, 2019
- Draft Tule Subbasin Monitoring Plan Submitted on June 21, 2019

Next Steps and Schedule

- Address Comments to the Subbasin Setting Report and Monitoring Plan Including:
  - Revisions to Some Hydrology Assumptions
  - Revisions, as Necessary to Some Water Budget Terms
  - Analysis of Consumptive Use Target that Won't Result in Long-Term Negative Change in Groundwater Storage
  - Adjusting Minimum Thresholds and Measurable Objectives
- Revised Subbasin Setting to be Submitted August 16, 2019

Next Steps and Schedule

- In Parallel with Revisions to the Subbasin Setting, On-Going Work is being Conducted to Address Mitigation of Land Subsidence at the Friant-Kern Canal

Questions