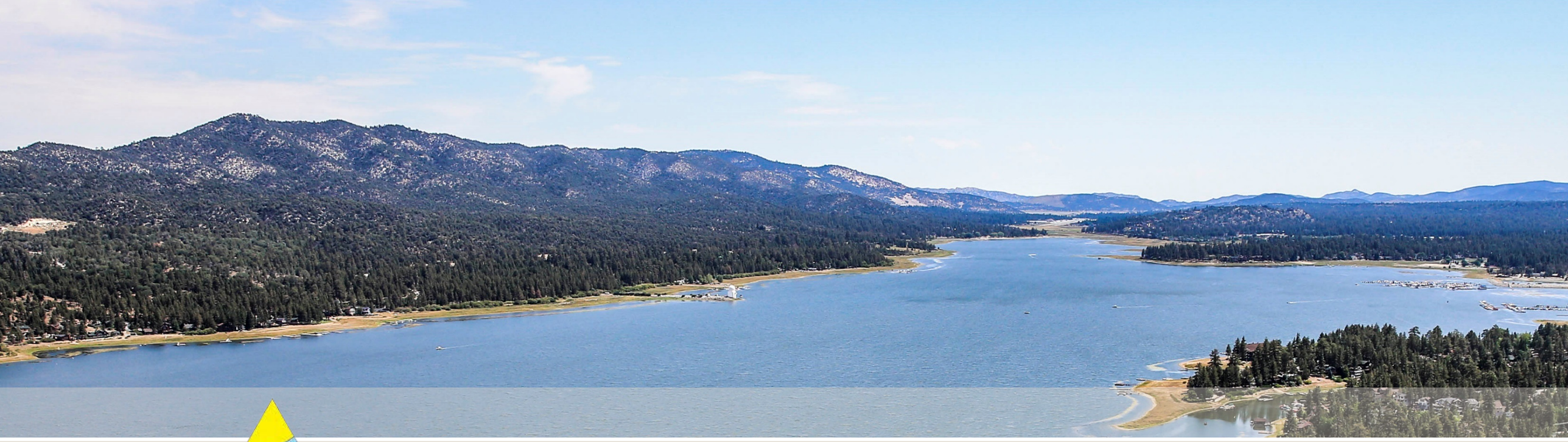


MAINTAINING SUSTAINABLE GROUNDWATER IN THE

Bear Valley Basin

Stakeholder Workshop #1: Groundwater Management Vision

September 23, 2020

Who's here

ENVIRONMENTAL / CONSERVATION GROUPS

FRIENDS OF BIG BEAR VALLEY

INTEGRATED WATER MANAGEMENT

BIG BEAR AREA REGIONAL WASTEWATER AGENCY — BBARWA — SINCE 1974

CITY of BIG BEAR LAKE — DEPARTMENT of WATER

BIG BEAR MUNICIPAL WATER DISTRICT — EST. 1964

BIG BEAR CITY CSD Community Services District

BEAR VALLEY MUTUAL WATER COMPANY

LAND USE / MUNICIPALITIES

CITY OF BIG BEAR LAKE — INCORPORATED 1980

PRIVATE WATER USERS

MOONCAMP PRIVATE WELL OWNERS

Presenters

Tiffany Meyer
Stakeholder Engagement Lead
Water Systems Consulting (WSC)

Tom Harder
Principal Hydrogeologist
Thomas Harder & Company

Workshop Goals

- Share what we've learned about the Basin
- Describe the role of the water budget
- Document stakeholder's vision of what a **"sustainable Bear Valley Basin"** means.

Your input will be used by the project team to **inform** the GSP's sustainability goals and projects and management actions.

Workshop Agenda

10 min	Project Overview
5 min	Groundwater 101
20 min	Key Findings from the Basin Setting
40 min	**GROUP EXERCISE:** Building a Vision for a Sustainable Bear Valley Basin
5 min	What's Next
15 min	Audience Q&A

Audience Polls

1. What brought you here today?

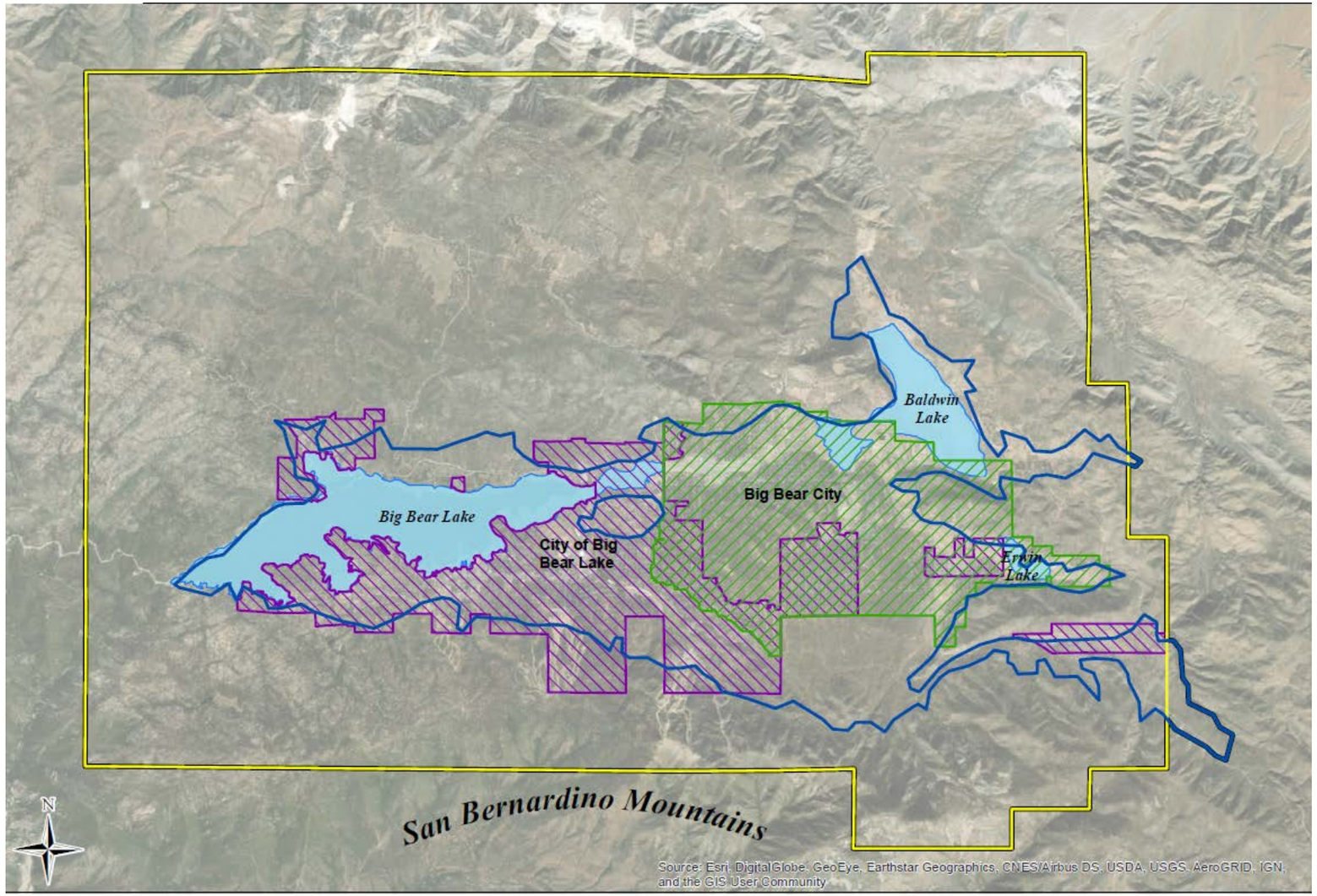
2. Rate your understanding of groundwater and its use in the Bear Valley Basin?

Project Overview

Tom Harder
Hydrogeologist, Thomas Harder Company

Maintaining sustainable groundwater in the *Bear Valley Basin*

Bear Valley Basin Groundwater Sustainability Agency (GSA)



Map Features

- Bear Valley Groundwater Basin (DWR Bulletin 118, Rev. 2018)
- Big Bear Municipal Water District
- Bear Valley Basin Groundwater Sustainability Agency Service Boundary
- Big Bear City Community Services District Service Area
- Big Bear Lake Department of Water and Power Service Area

The Sustainable Groundwater Management Act of 2014 (SGMA) Requires the Designation of GSAs for all CDWR Bulletin 118 Basins

Bear Valley Basin Governance

Sustainable Groundwater Management Act (SGMA) Deadlines

Groundwater Sustainability Plan (GSP) Complete

Bear Valley Basin Maintains Sustainability

2022
GSPs due per SGMA

2027
Evaluate Progress

2032
Evaluate Progress

2032
Evaluate Progress

2037
Evaluate Progress

2042
20 years to achieve goals stated in plan

Opportunities for stakeholders to inform the GSP

Step 1.
Establish Governance Structure

April '17 – May '17

May 25, 2017
PUBLIC MEETING

Step 2.
Document Basin Setting

Oct '19 – Sep '20

Sept. 23, 2020
STAKEHOLDER WORKSHOP:
Groundwater Management Vision

WE ARE HERE

Step 3.
Set Sustainability Goals

Sep '20 – Oct '20

Oct. 28, 2020
STAKEHOLDER WORKSHOP
Sustainable Goal Setting

Step 4.
Develop Plan to Sustainability

Oct '20 – Dec '20

Dec. 2, 2020
STAKEHOLDER WORKSHOP
Projects and Management Actions

Step 5.
Adopt the Plan

Dec '20 — Mar '21

Feb. 2021
PUBLIC COMMENT PERIOD
Full Draft of GSP

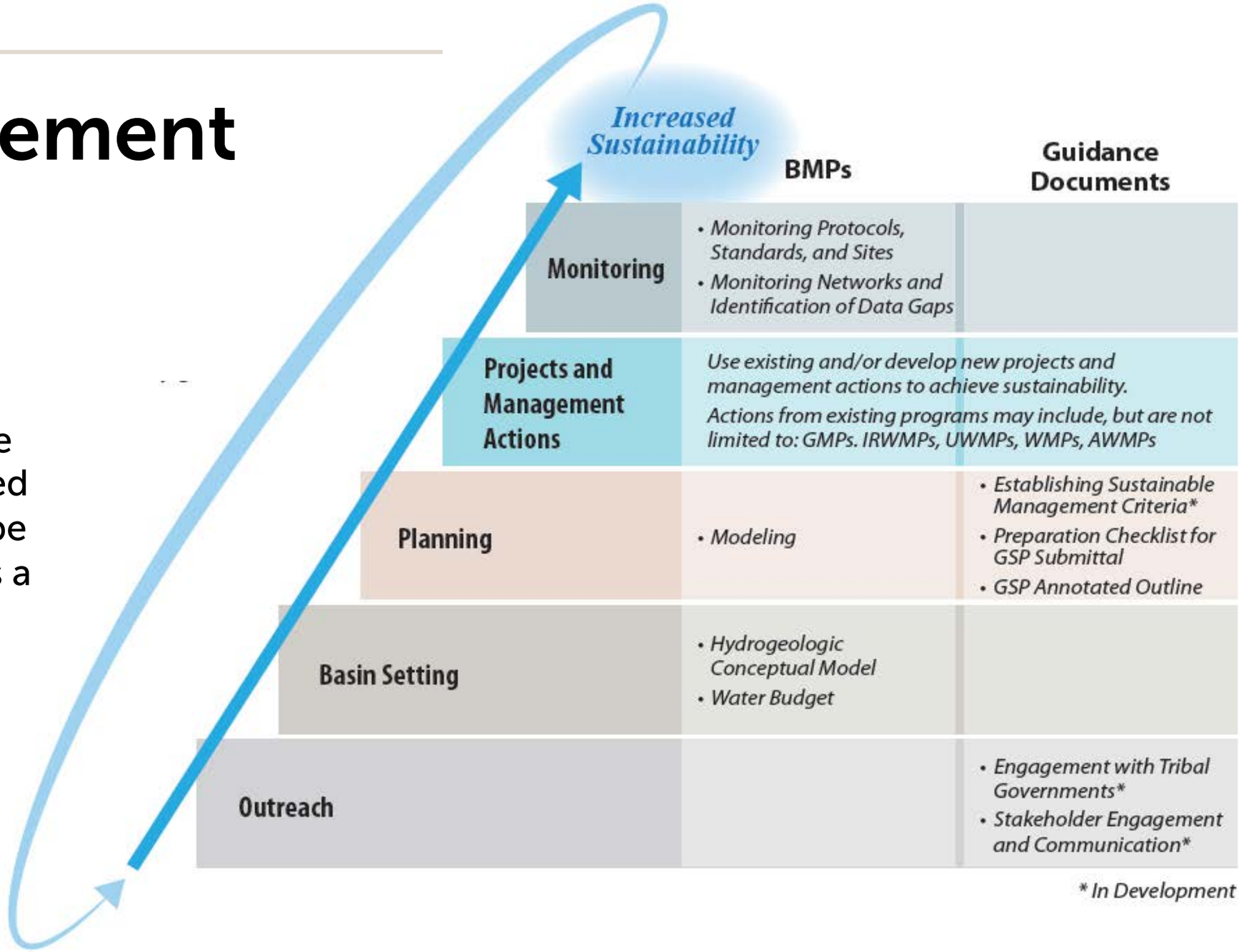
Required GSP Elements

- Introduction and Administrative Information
- Basin Setting
- Sustainable Management Criteria
- Monitoring Network
- Projects and Management Actions

Best Management Practices

The Best Management Practices and documents inform various steps in the workflow toward increased sustainability. Steps may be repeated or re-ordered as a basin approaches its sustainability goals.

Source: California Department of Water Resources, Best Management Practice Framework, Dated December 2016




Questions?

Groundwater 101

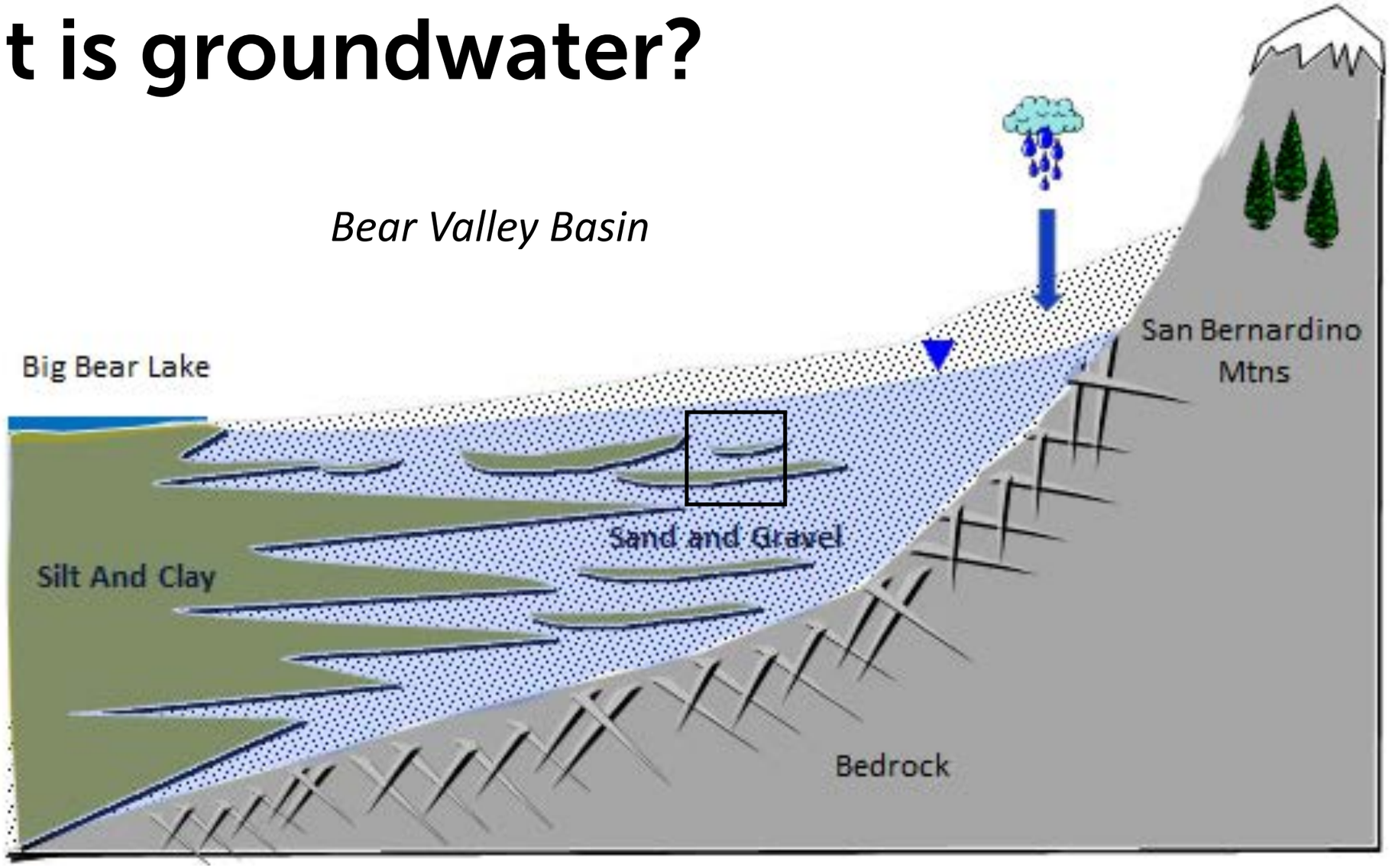
Tom Harder
Hydrogeologist, Thomas Harder Company

What is groundwater?

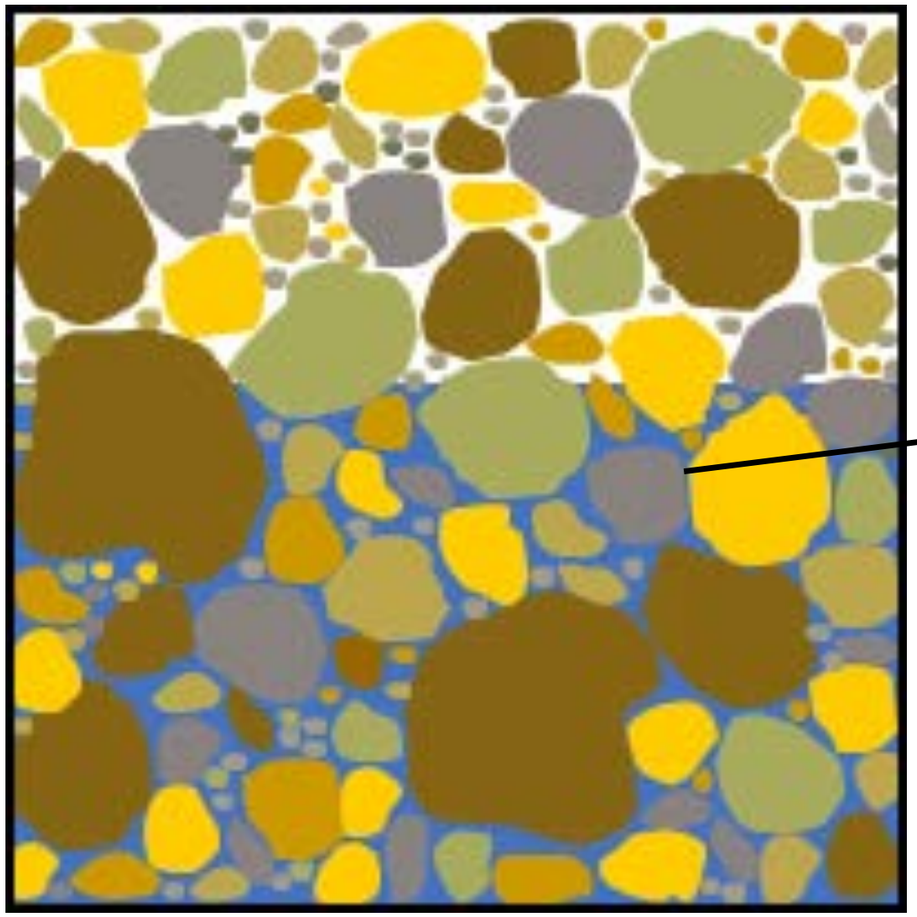
Groundwater is the water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers.

What is groundwater?

Bear Valley Basin

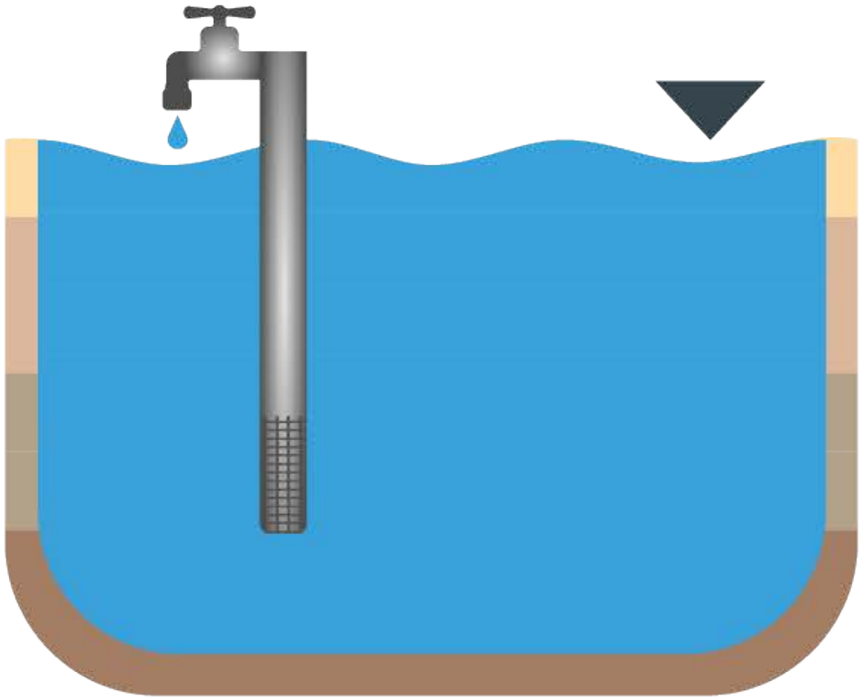


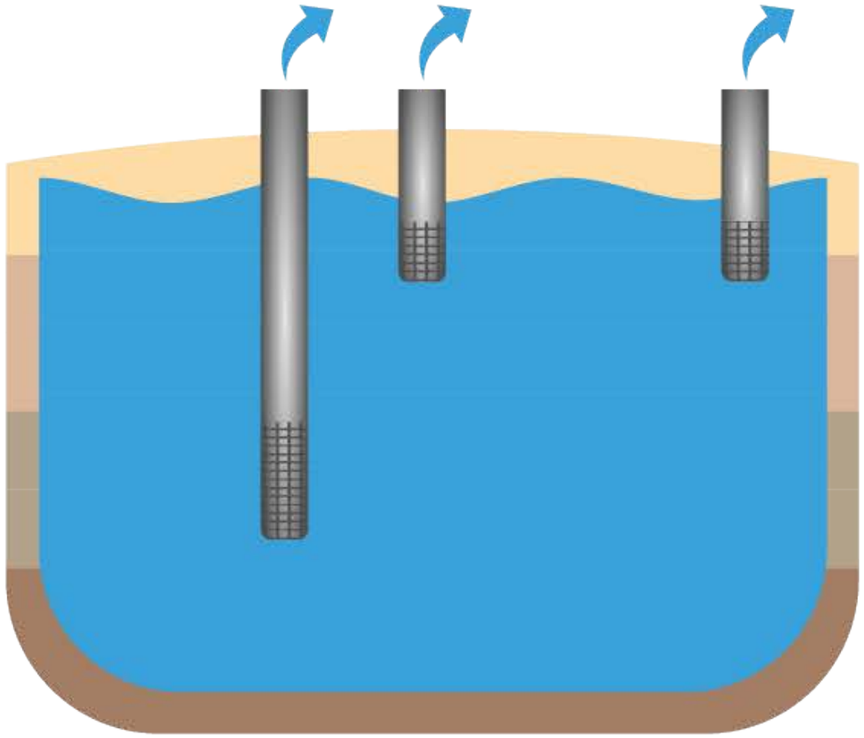
What is groundwater?



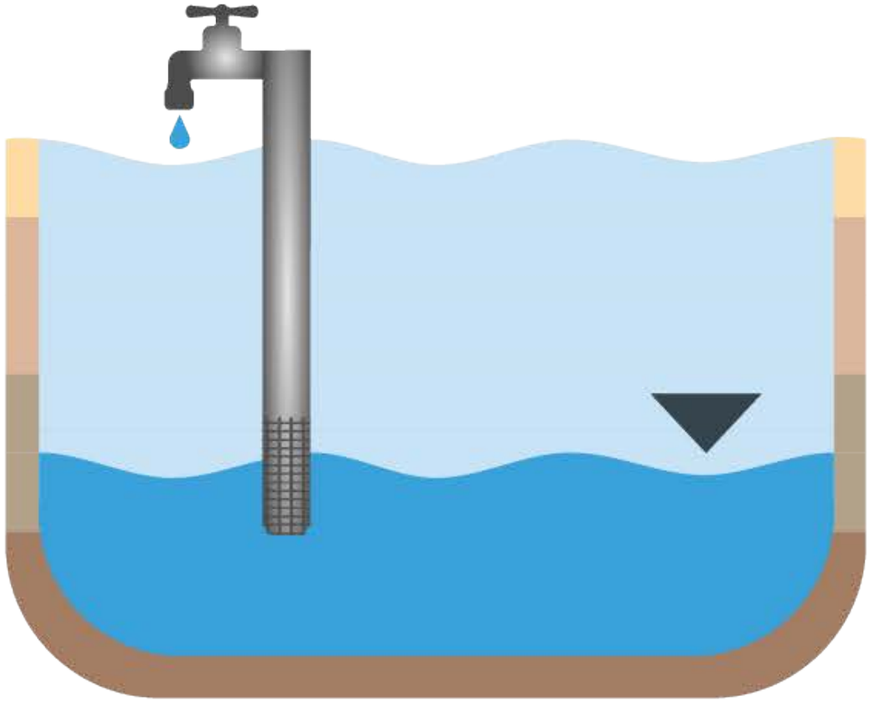
Groundwater in the alluvial aquifers of Big Bear Valley occurs under the ground in the spaces between the sand and gravel grains.

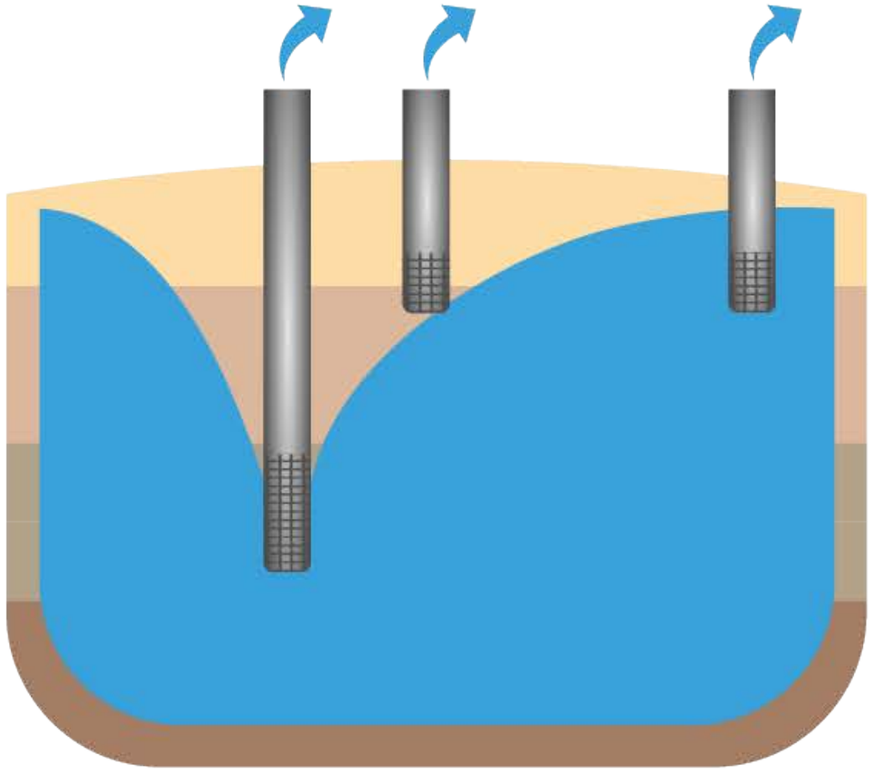
Surface water vs. groundwater





Surface water vs. groundwater






Questions?

Key Findings from the Basin Setting

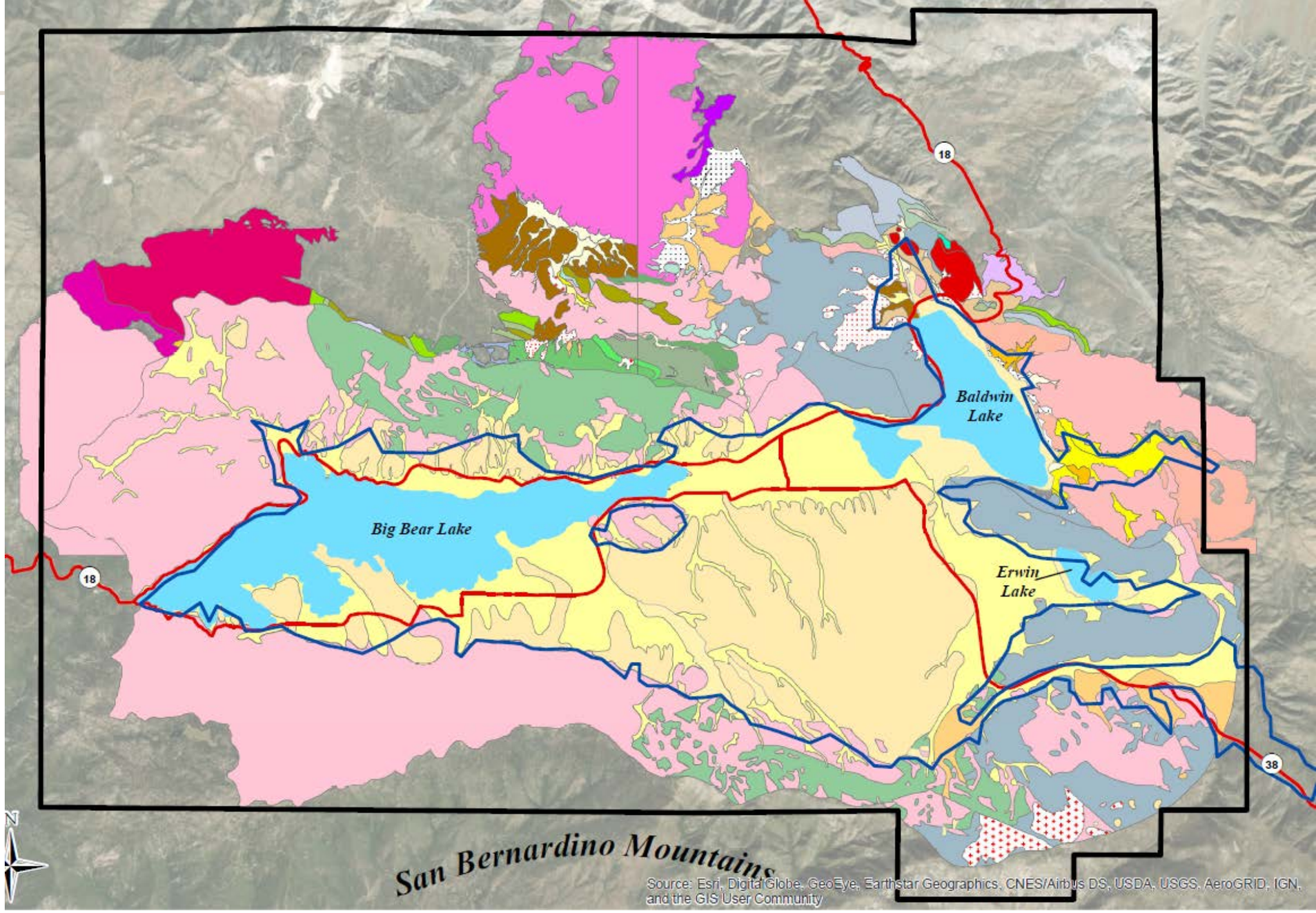
Tom Harder
Hydrogeologist, Thomas Harder Company

4 Elements of the Basin Setting

- Hydrogeologic Conceptual Model
- Groundwater Conditions
- Water Budget
- Management Areas

Hydrogeologic Conceptual Model

- **Geologic Setting**
- **Basin Boundaries**
- Surface Water Features
- Areas of Recharge and Discharge
- Principal Aquifers and Aquitards
- Areas of Uncertainty in the Conceptual Model



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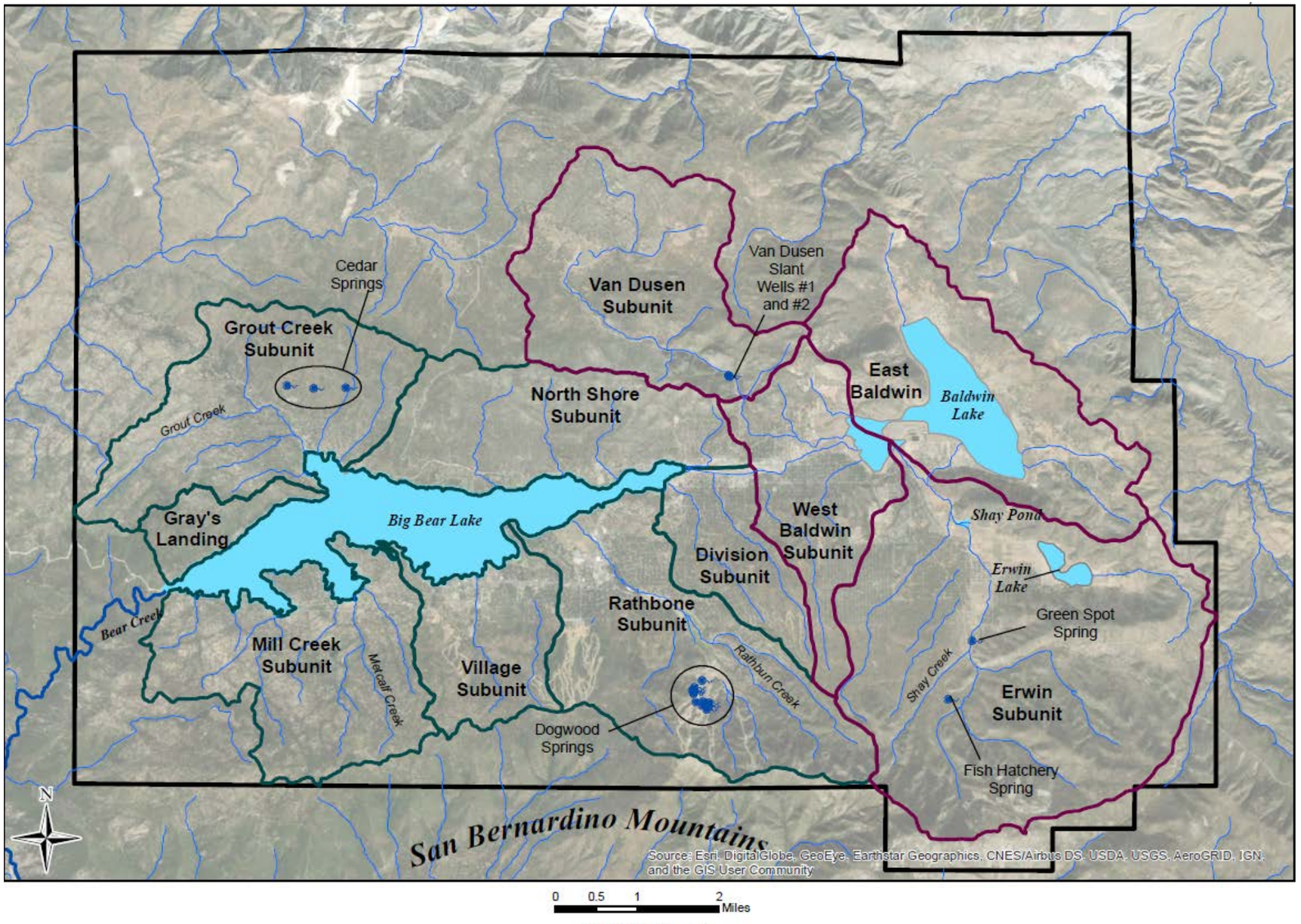

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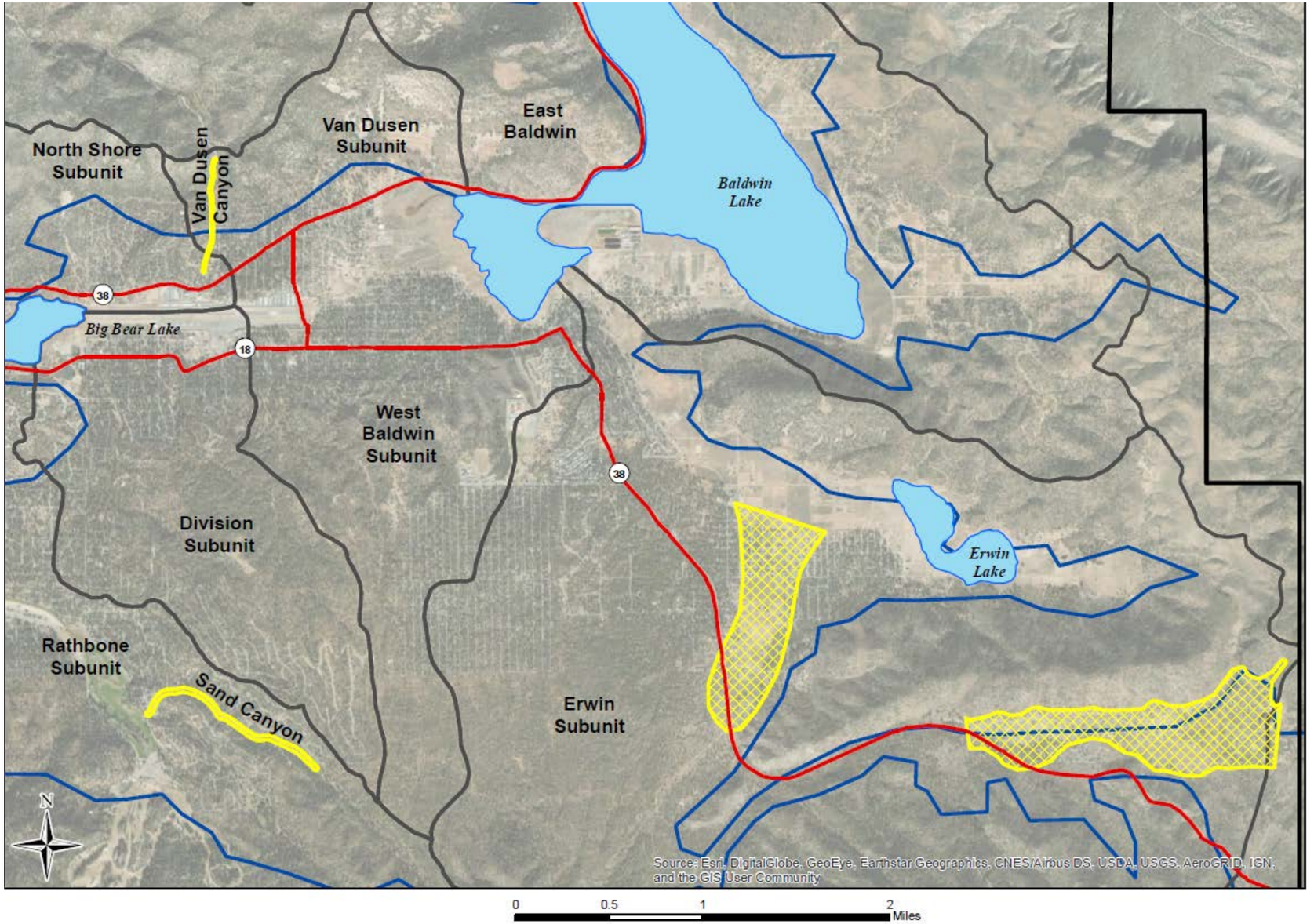

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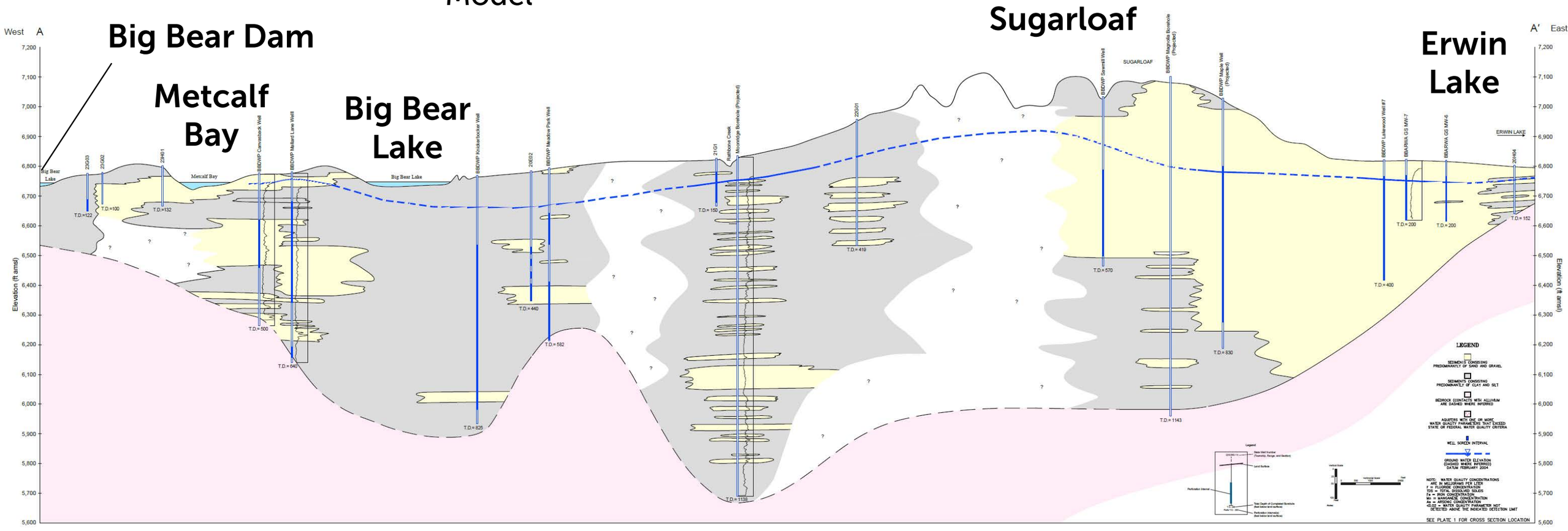

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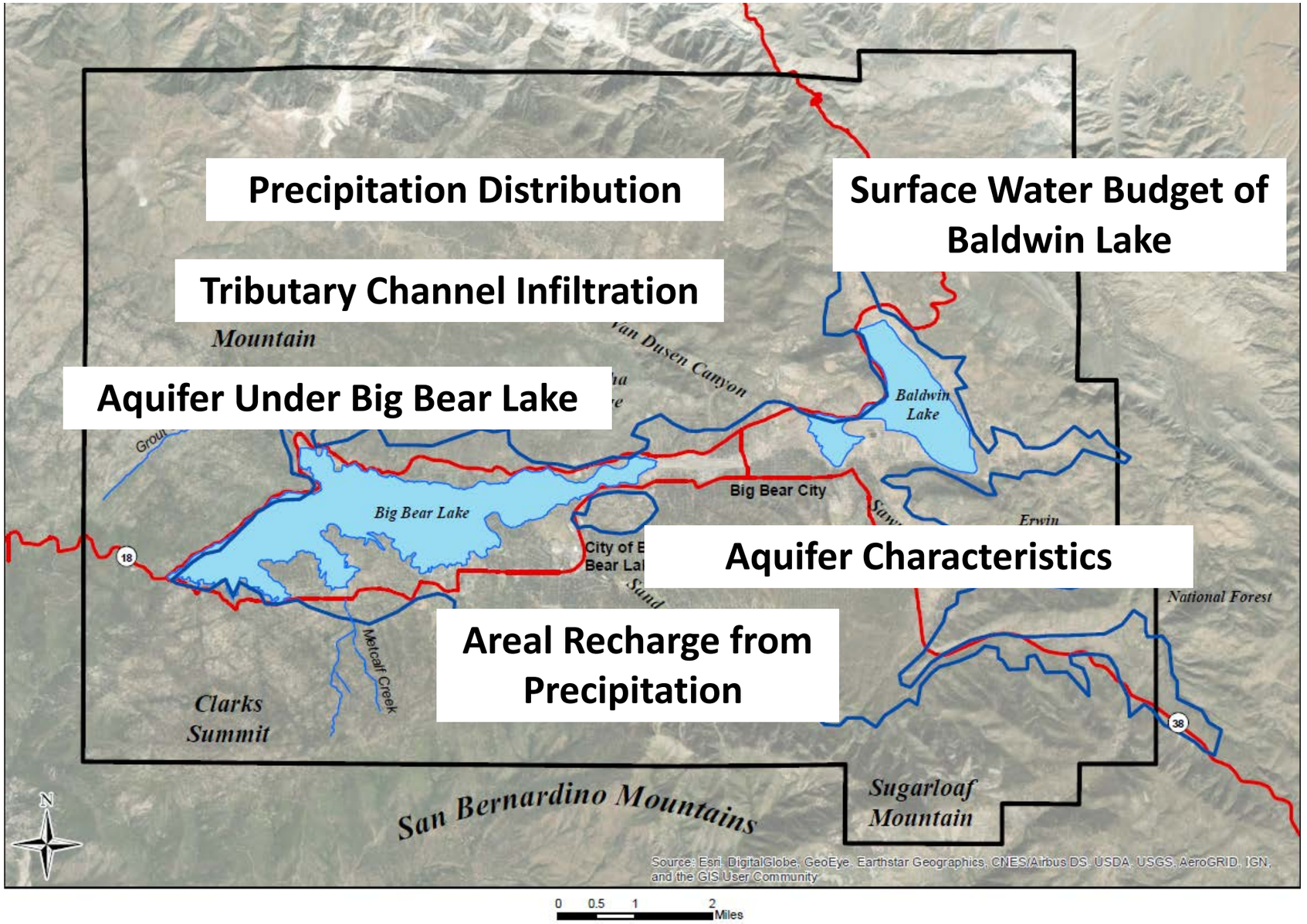
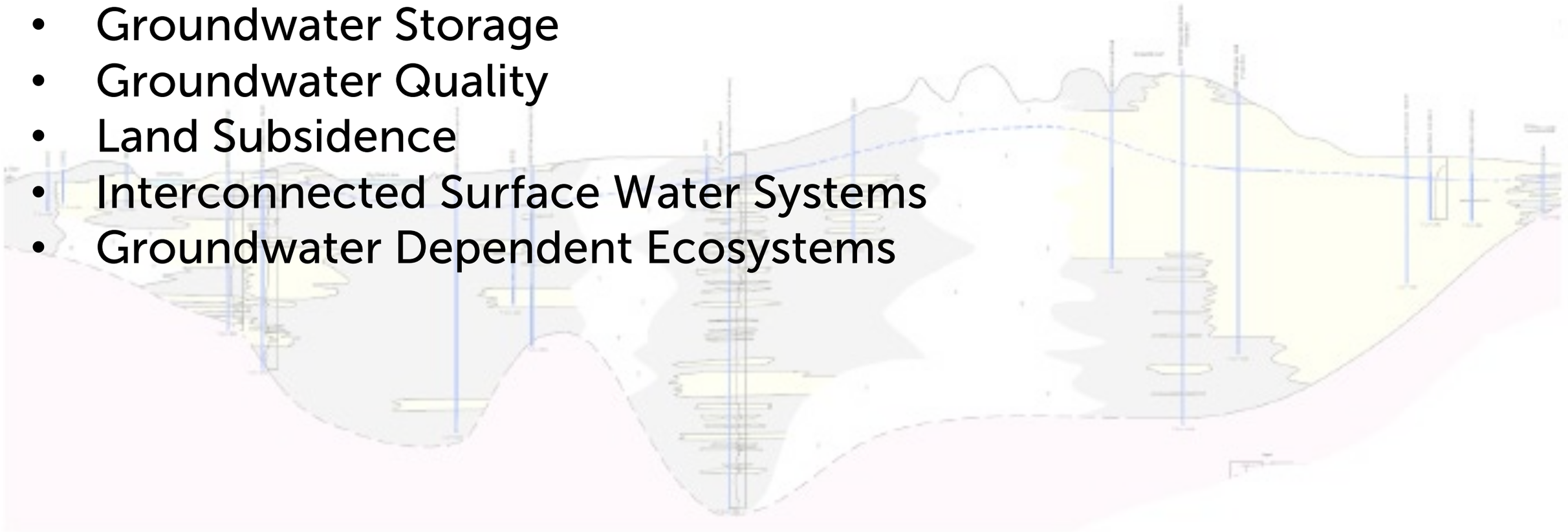


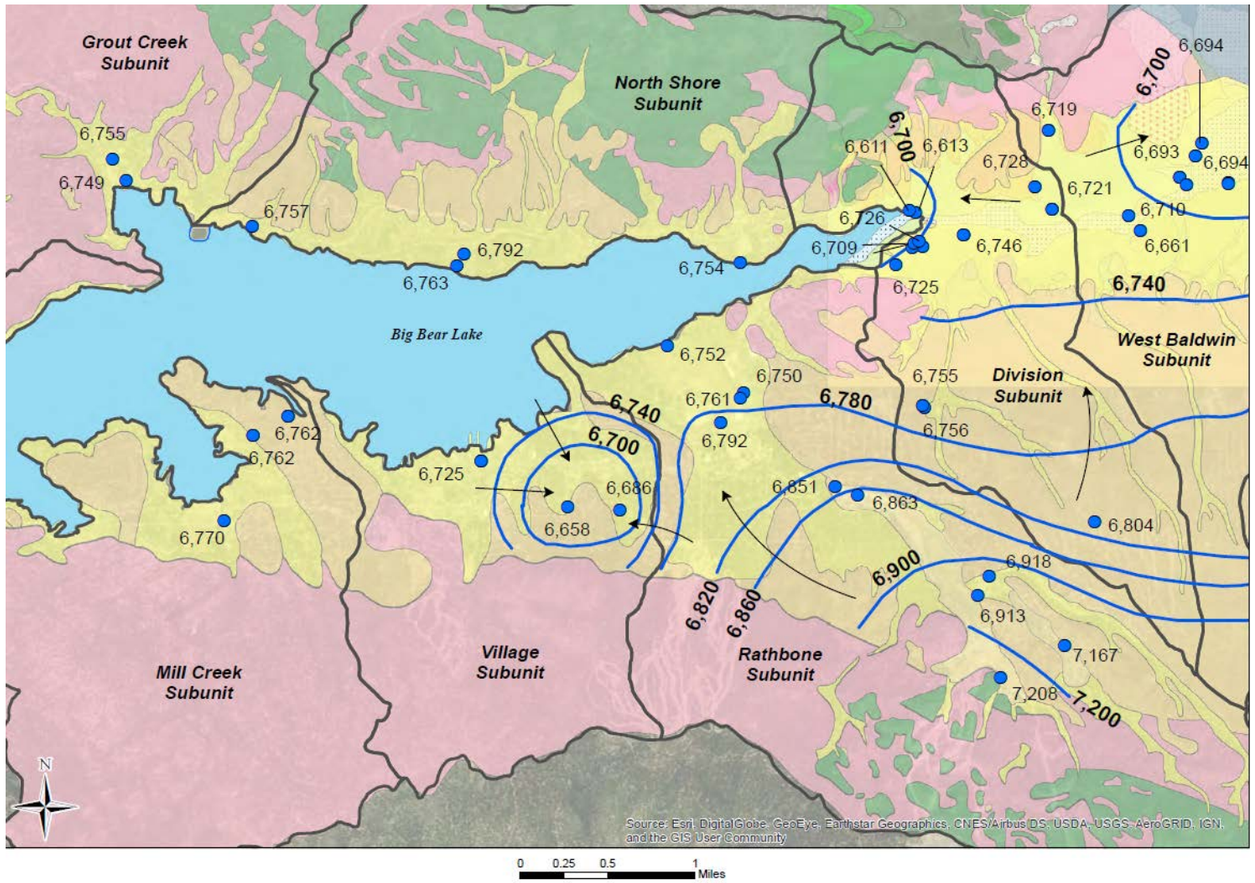
Groundwater Conditions

- Groundwater Occurrence and Flow
- Groundwater Storage
- Groundwater Quality
- Land Subsidence
- Interconnected Surface Water Systems
- Groundwater Dependent Ecosystems

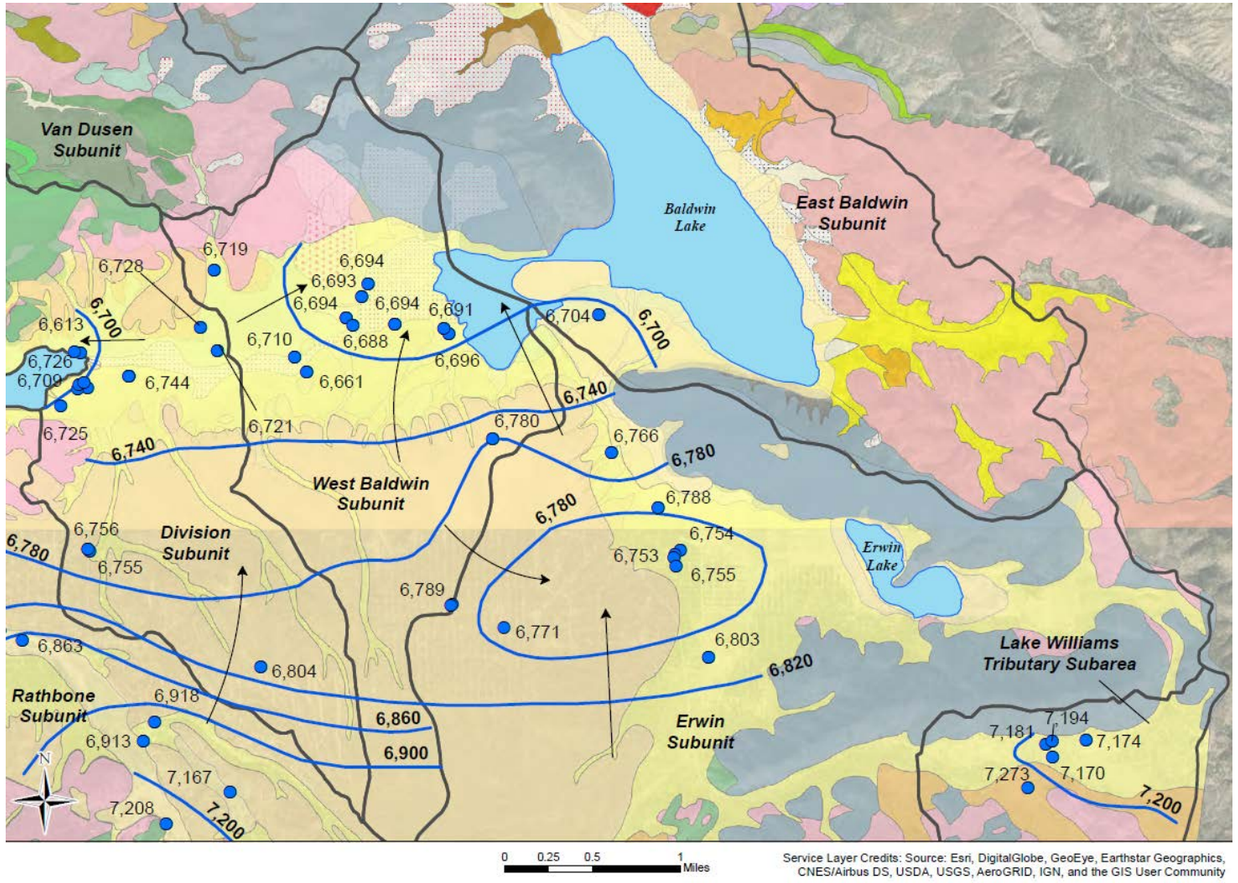


Groundwater Conditions – Occurrence and Flow

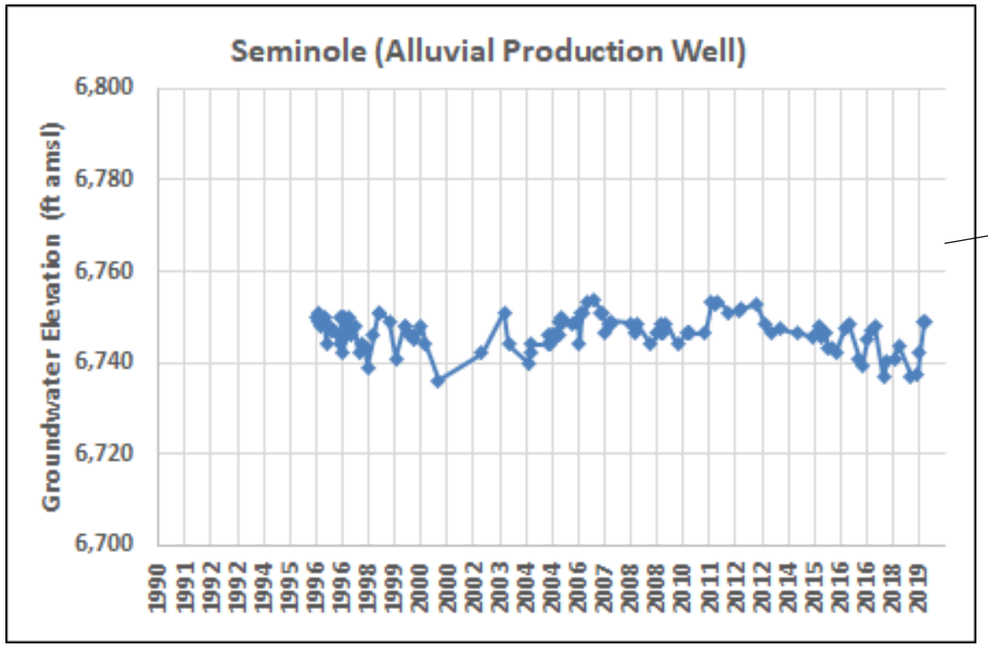
Bear Valley Basin West

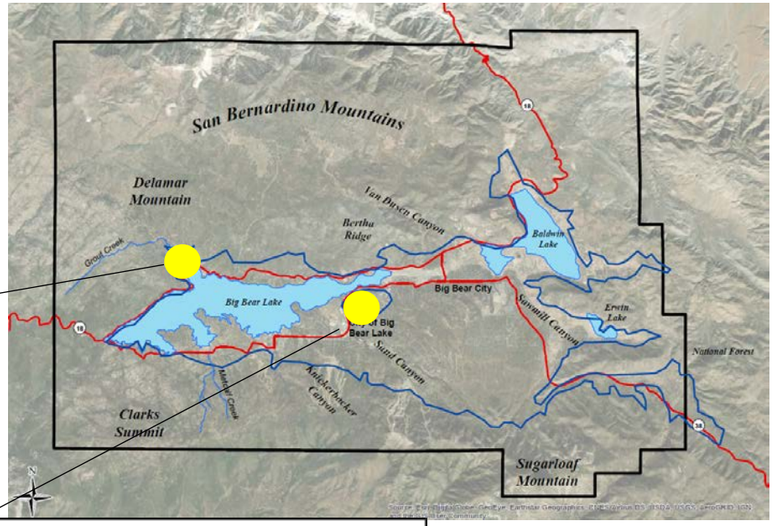


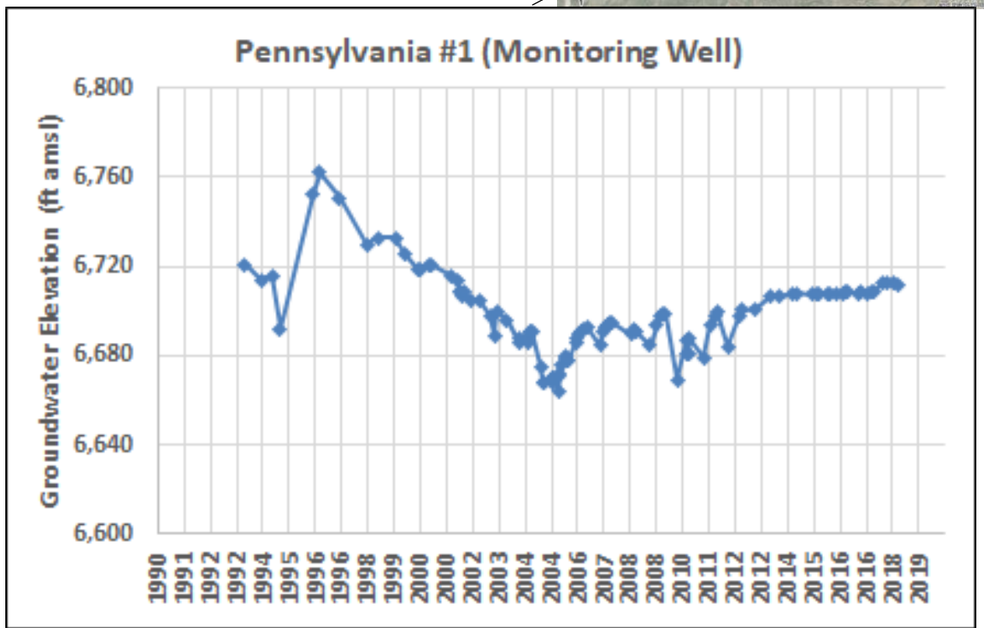
Bear Valley Basin East



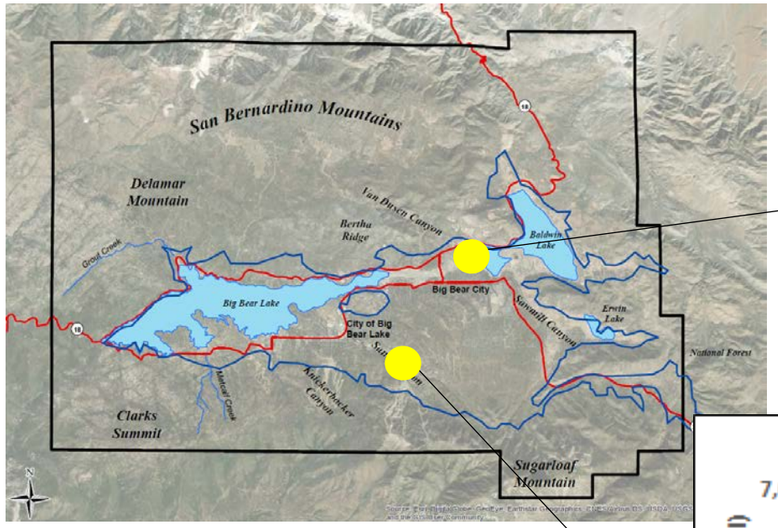
Groundwater Conditions – Groundwater Storage

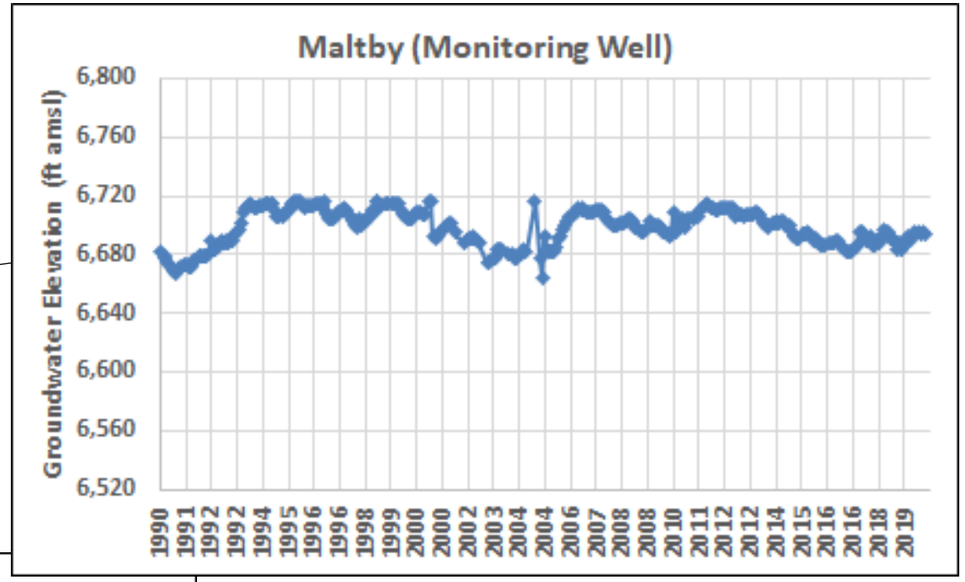


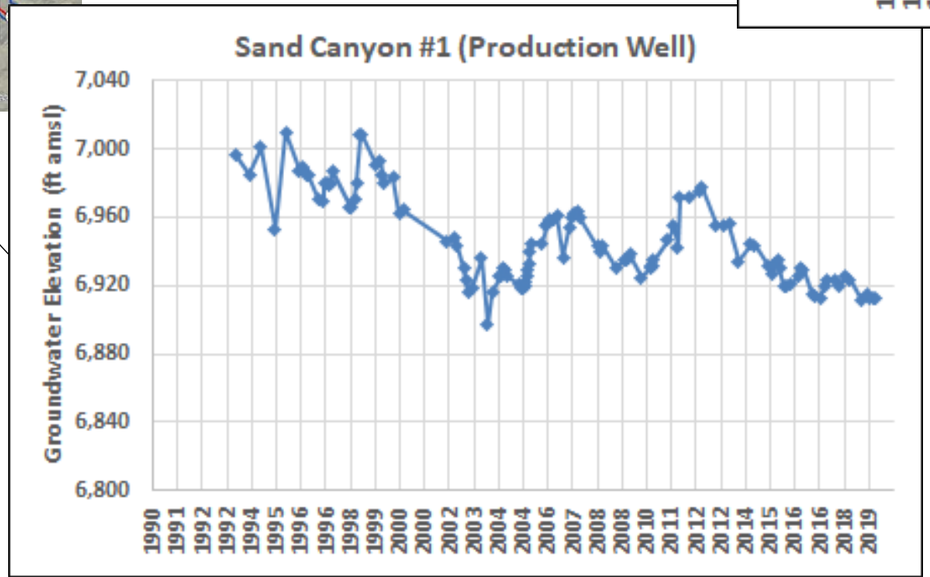




Groundwater Conditions – Groundwater Storage







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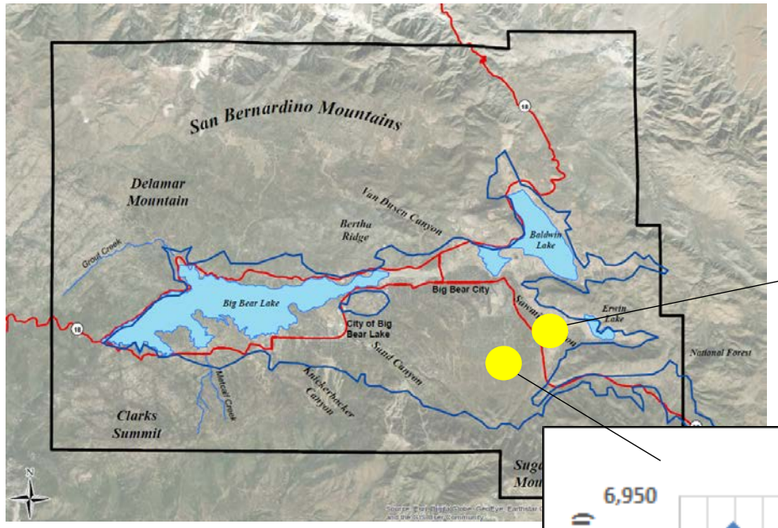
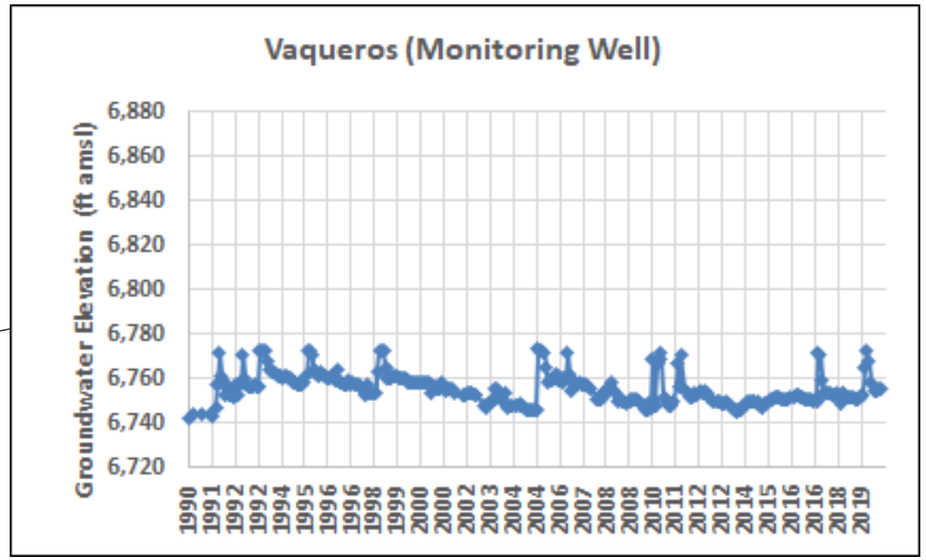
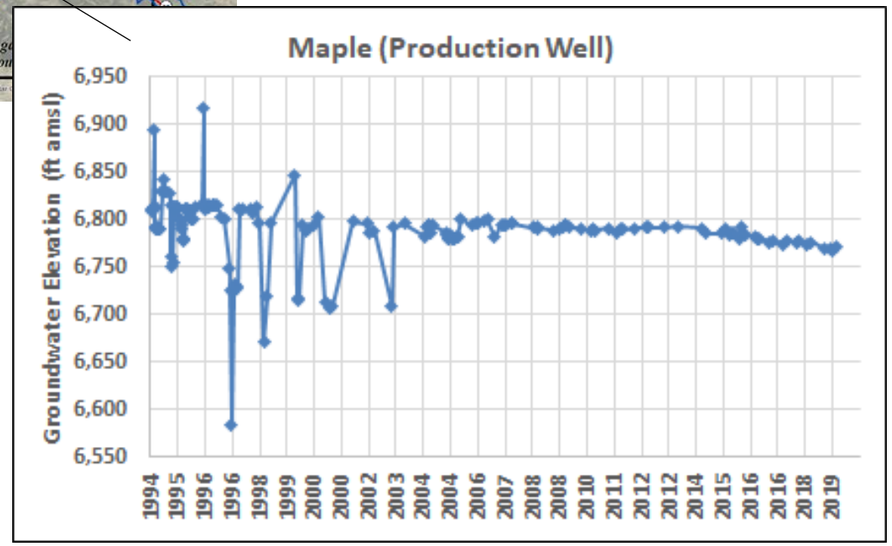
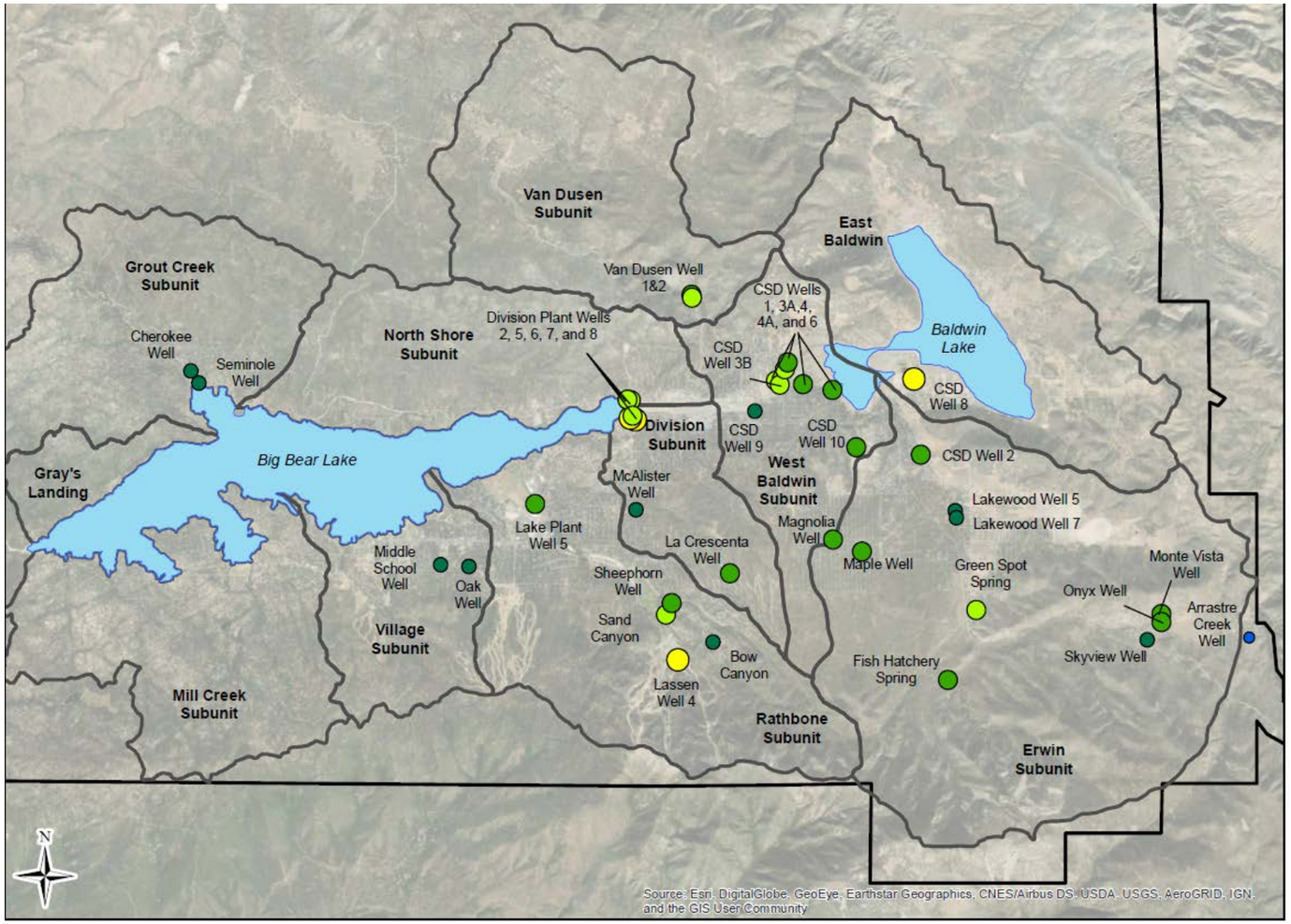
Groundwater Storage

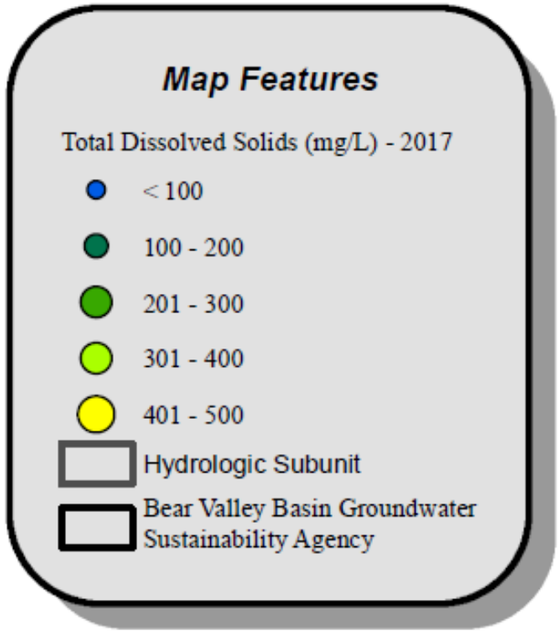




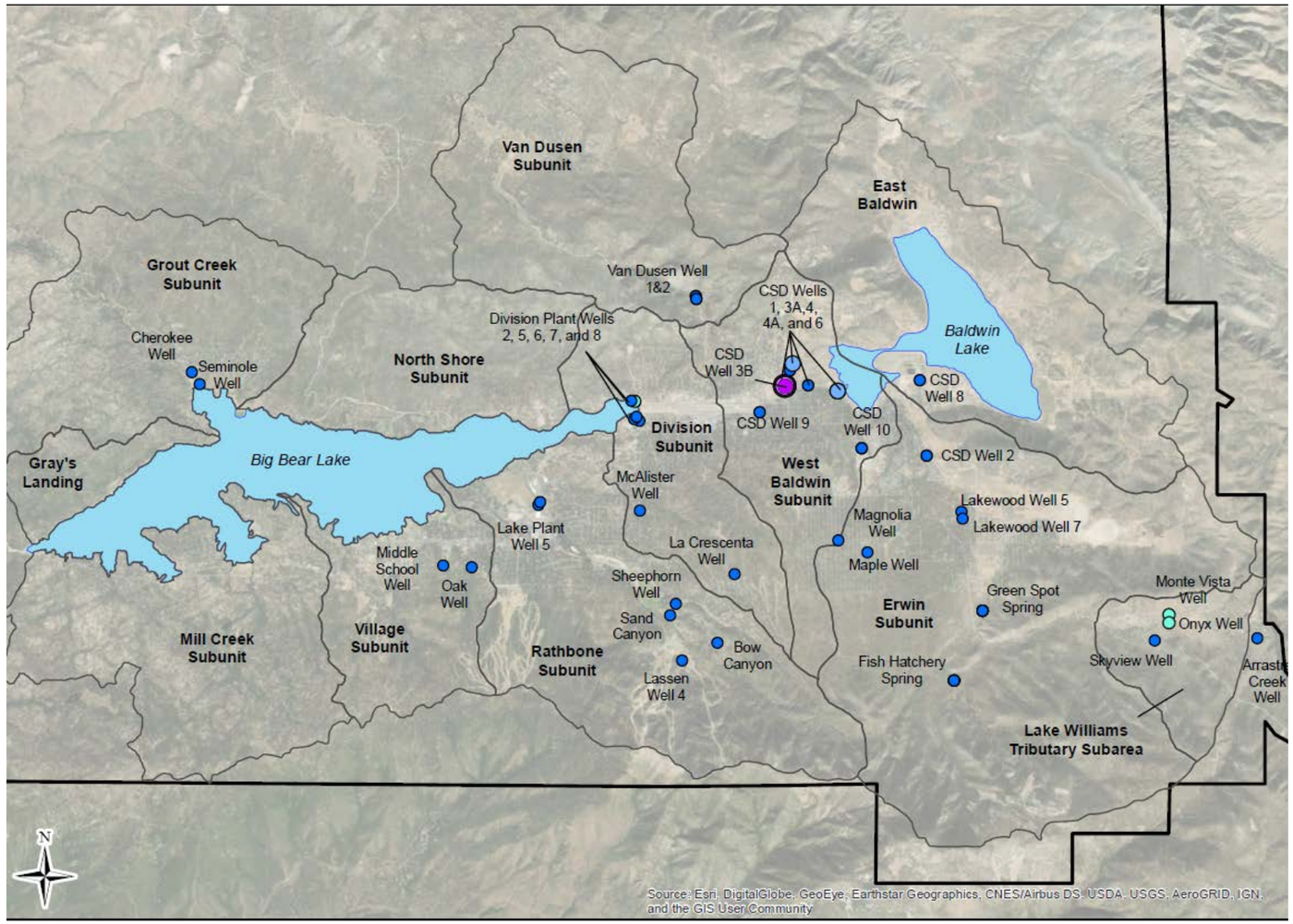


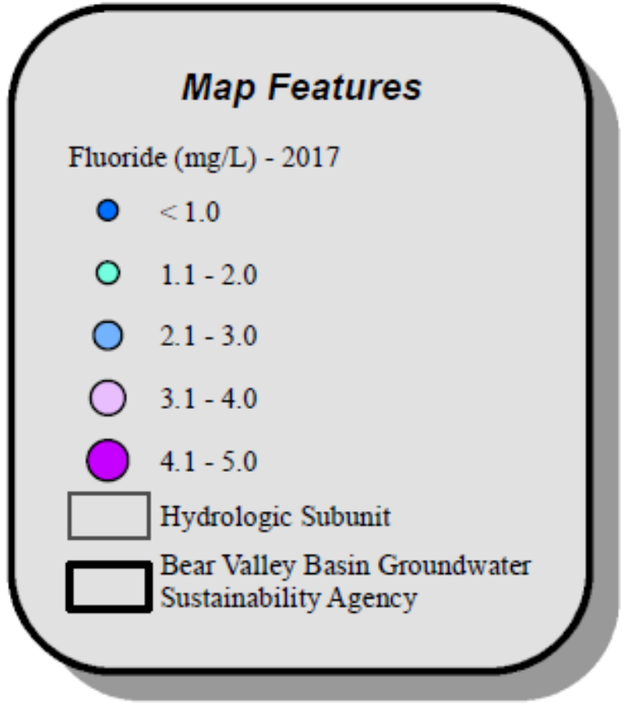
Groundwater Conditions –
Groundwater Quality Total Dissolved Solids



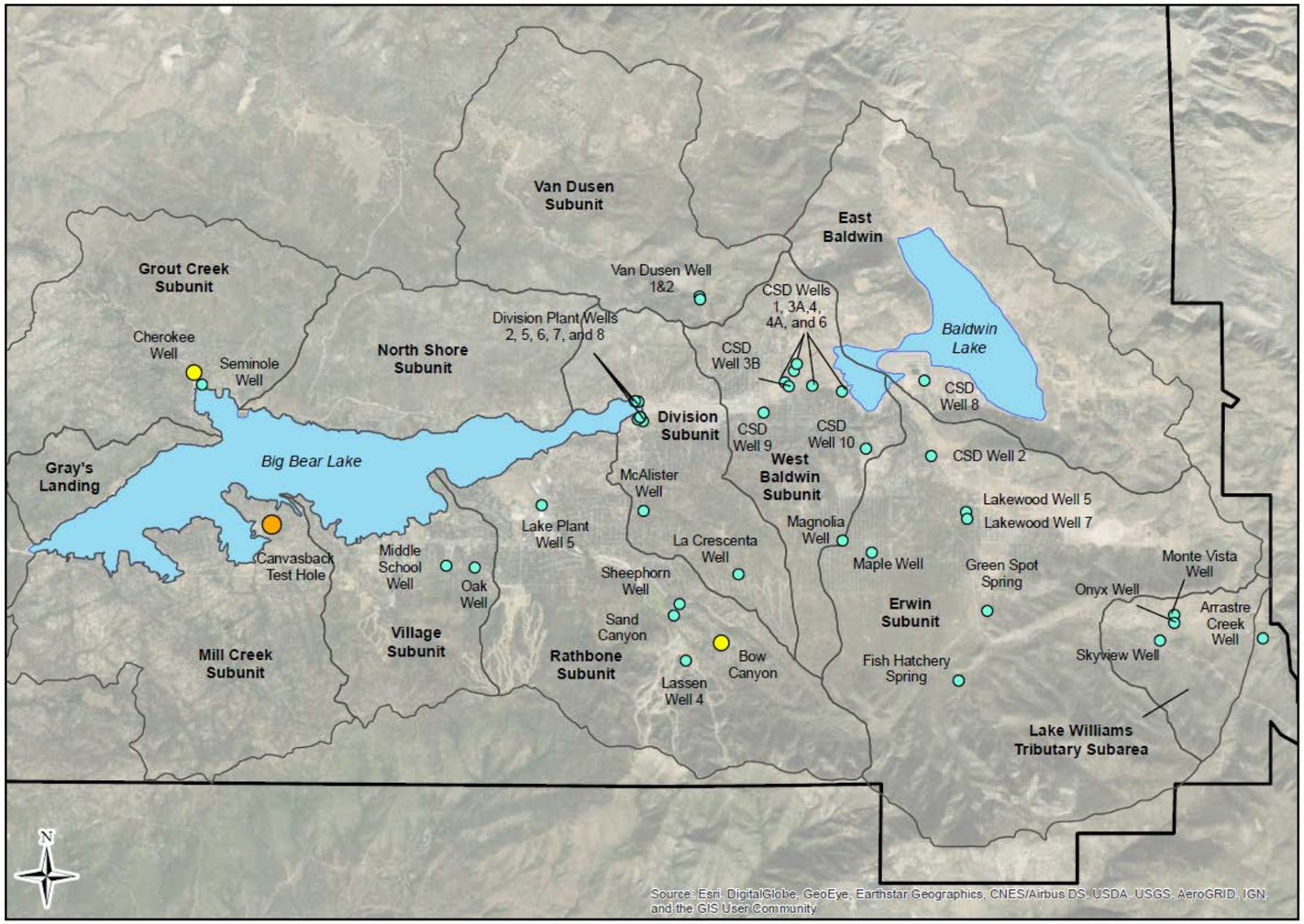


Groundwater Conditions – Groundwater Quality - Fluoride





Groundwater Conditions –
Groundwater Quality - Arsenic



Map Features

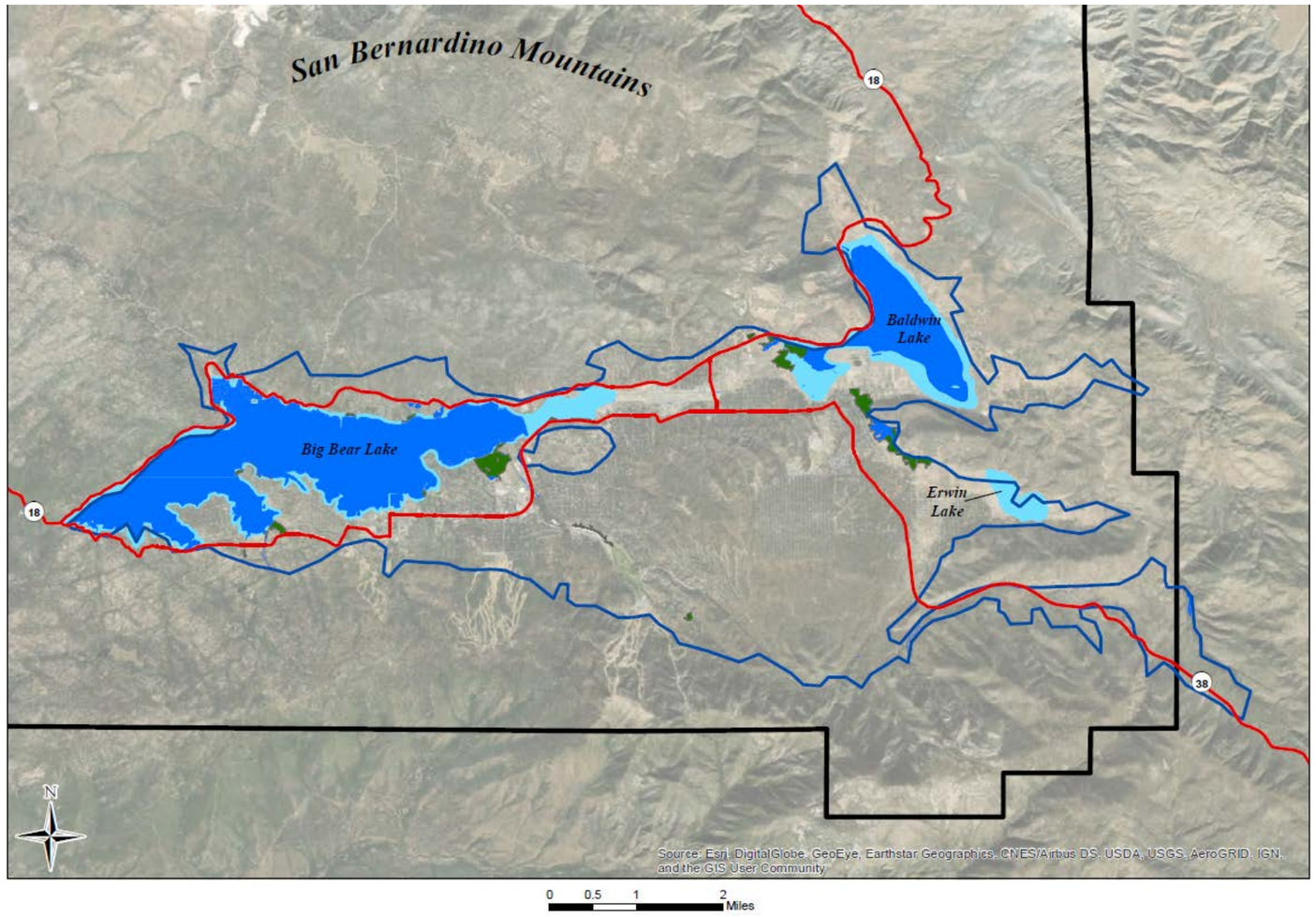
Arsenic (µg/L) - 2017

- 0
- 7 - 8
- 88

Hydrologic Subunit

Bear Valley Basin Groundwater Sustainability Agency

Groundwater Conditions – Interconnected Surface Water Systems

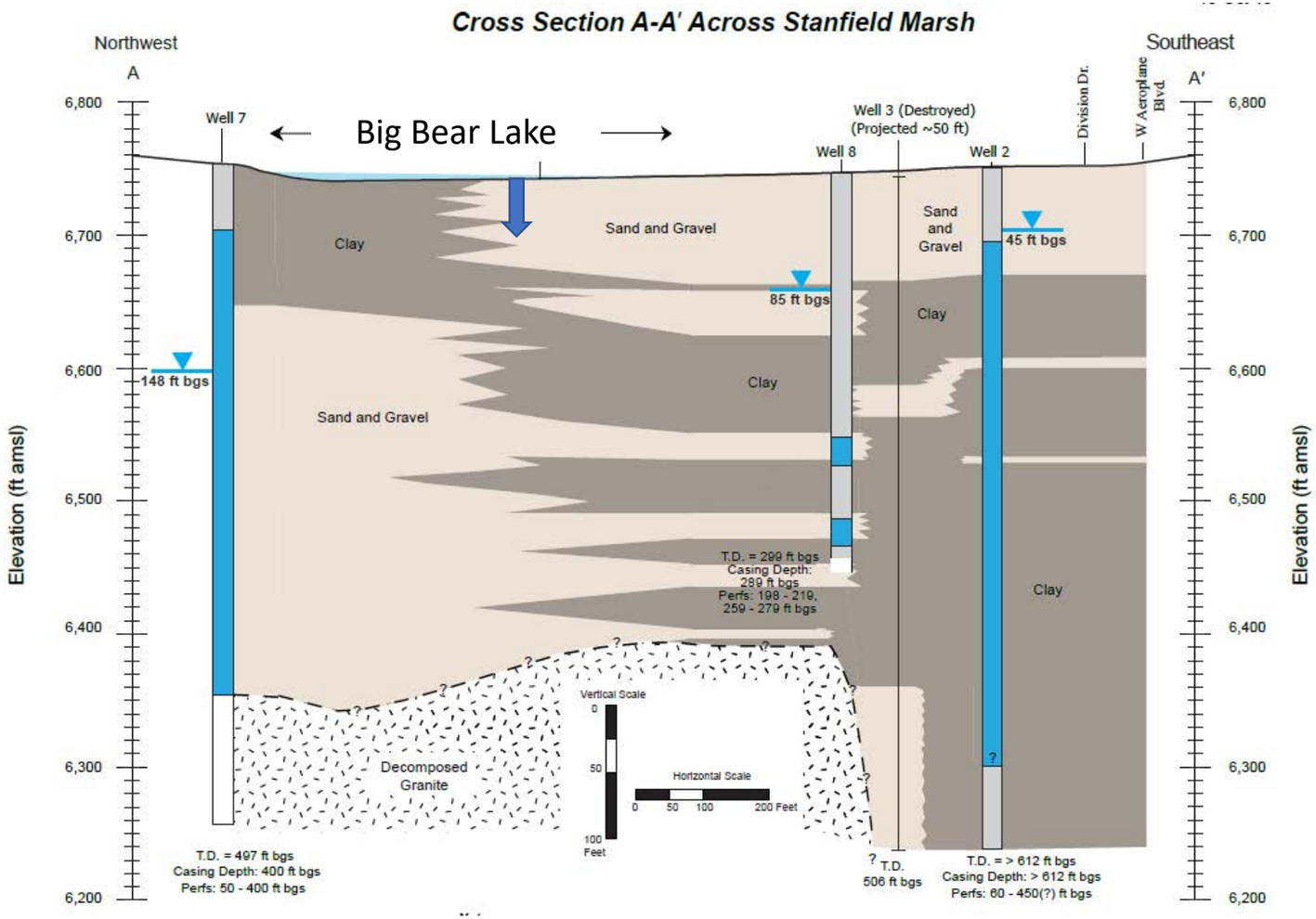


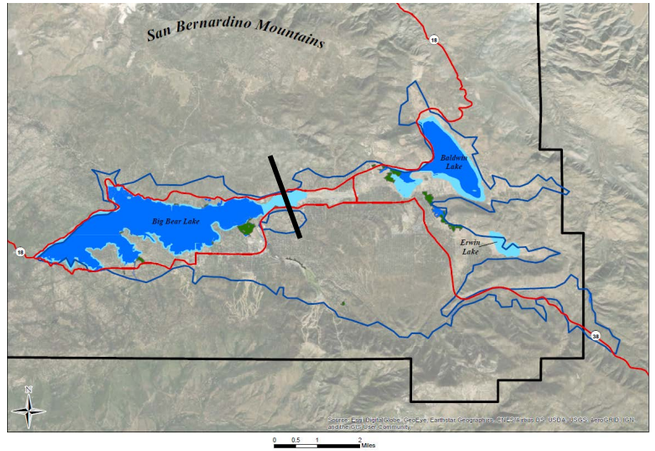
Map Features

- Bear Valley Groundwater Basin (DWR Bulletin 118, Rev. 2018)
- Bear Valley Basin Groundwater Sustainability Agency Boundary
- Groundwater Sourced Wetlands
- Groundwater Dependent Vegetation (Phreatophytes)
- Highway

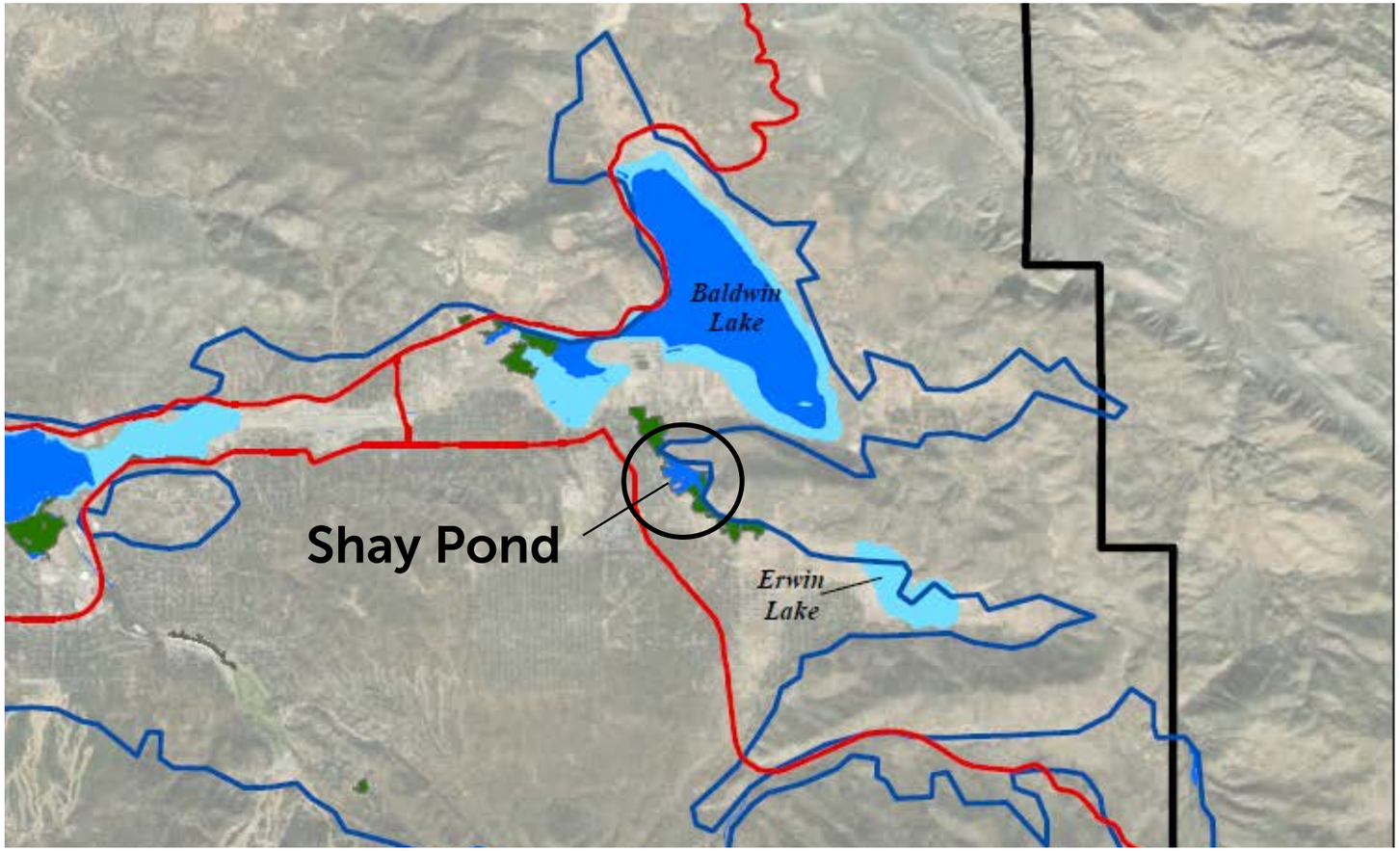
Source: CDWR Natural Communities Commonly Associated with Groundwater Dataset

Groundwater Conditions – Interconnected Surface Water Systems





Groundwater Conditions –
Groundwater Dependent Ecosystems



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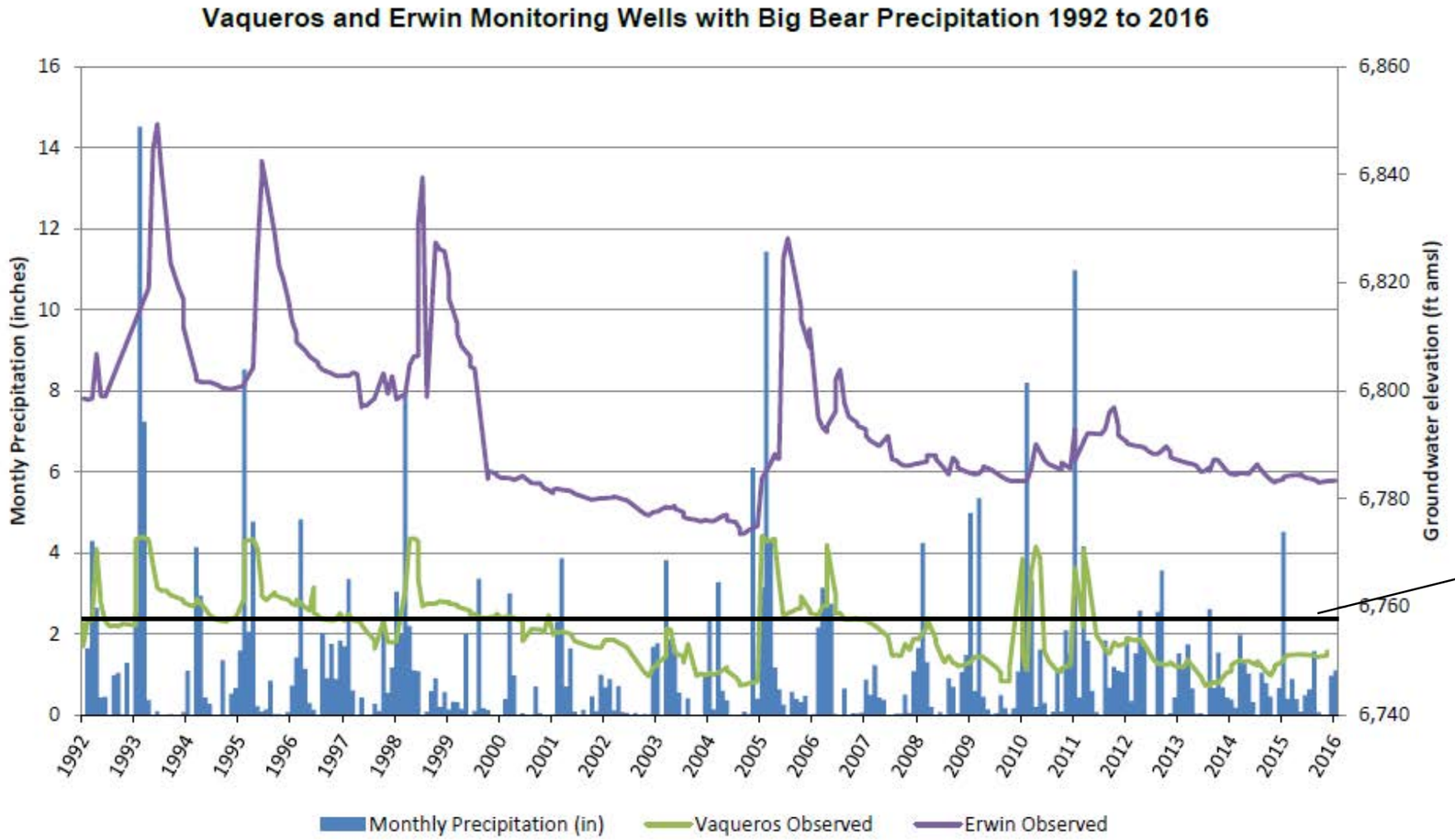
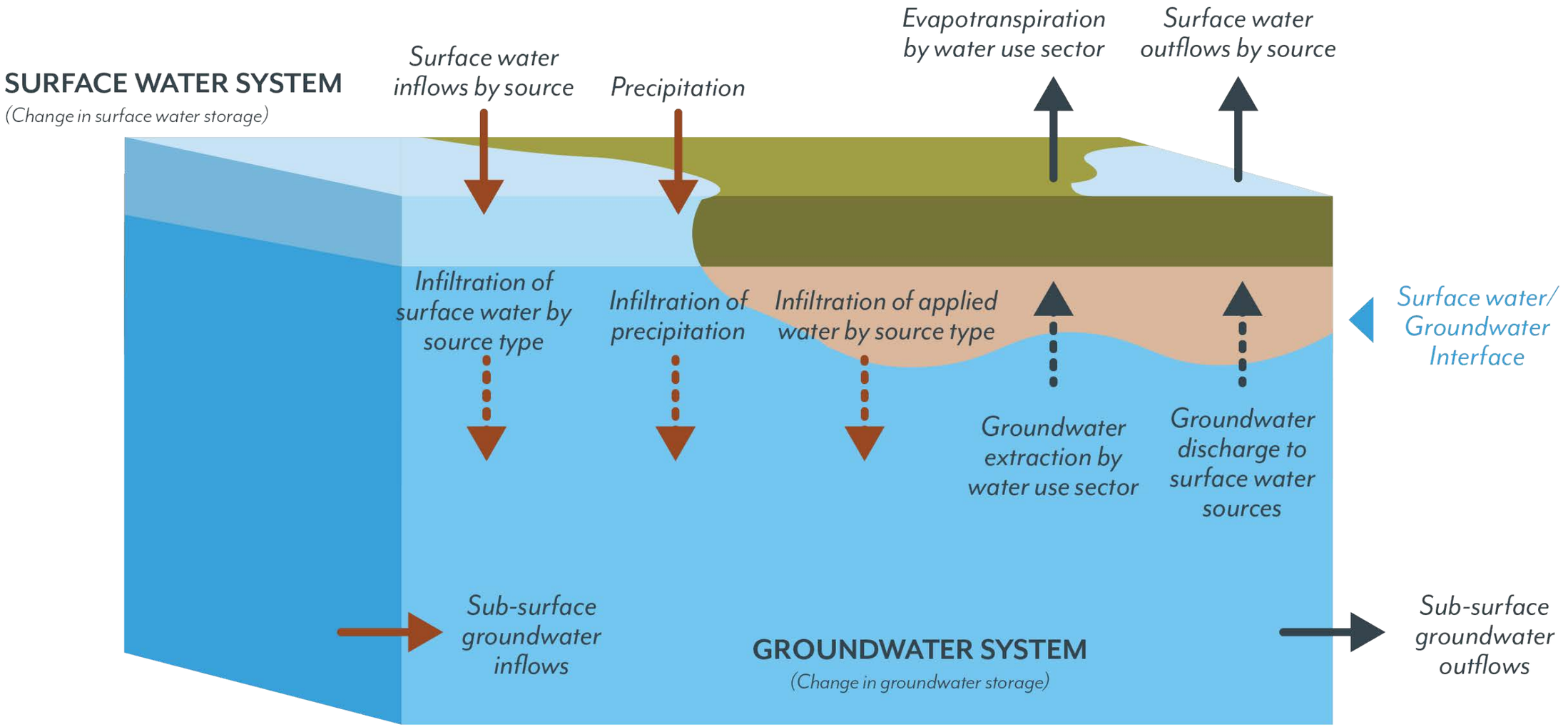


Shay Pond Bottom Elevation 6,757 ft amsl

Water Budgets



Bear Valley Basin Surface Water Budget - Inflows

Inflows (acre-ft)							
Precipitation on Land Surface[A]	Natural Lake Inflows		Water Supply from Wells			Spring Flow (Van Dusen and Greenspot)	Total
	Big Bear Lake[B]	Baldwin Lake	BBCCSD	BBLDWP	Private		

Bear Valley Basin Surface Water Budget

Date	Inflows (acre-ft)								Outflows (acre-ft)										Inflows - Outflows
	Precipitation on Land Surface[A]	Natural Lake Inflows		Water Supply from Wells			Spring Flow (Van Dusen and Greenspot)	Total	Areal Recharge from Precipitation[A]	Evaporation from Lake		Tributary Channel Infiltration	Return Flow	System Losses[C]	Evapotranspiration	Big Bear Lake Withdrawals[B]	Releases at Bear Valley Dam[B]	BBARWA Discharges to Lucerne Valley	Total	
		Big Bear Lake[B]	Baldwin Lake	BBCCSD	BBLDWP	Private				Big Bear Lake[B]	Baldwin Lake									
1990	39,822	4,855	1,190	798	2,738	230	164	49,797	2,987	9,542	3,342	462	219	433	63,398	391	0	2,237	83,012	-33,215
1991	87,093	11,658	2,857	604	2,997	230	289	105,728	6,532	9,235	3,342	1,011	234	414	63,398	514	79	2,551	87,309	18,419
1992	90,305	15,543	3,810	459	3,326	230	503	114,175	6,773	10,714	3,342	1,048	255	399	63,398	404	0	2,237	88,571	25,604
1993	147,647	48,613	11,915	133	2,817	230	922	212,277	11,074	11,716	3,342	1,714	210	367	63,398	318	11,823	3,953	107,915	104,362
1994	66,649	11,015	2,700	378	2,524	230	690	84,186	4,999	11,784	3,342	774	194	391	63,398	428	2,049	2,801	90,160	-5,974
1995	101,274	33,340	8,172	191	2,517	230	948	146,672	7,596	11,861	3,342	1,176	189	373	63,398	211	17,116	3,760	109,021	37,651
1996	88,731	13,119	3,215	464	2,639	230	644	109,043	6,655	12,262	3,342	1,030	204	400	63,398	452	315	2,660	90,718	18,325
1997	59,708	8,757	2,146	680	2,609	230	461	74,591	4,478	11,456	3,342	693	211	422	63,398	417	364	2,679	87,460	-12,869
1998	102,236	34,629	8,488	189	2,611	230	890	149,273	7,668	11,464	3,342	1,187	196	354	63,398	318	11,625	2,698	102,250	47,024
1999	30,403	3,774	925	474	2,787	230	685	39,278	2,280	12,473	3,342	353	217	392	63,398	547	271	2,643	85,916	-46,638
2000	45,064	6,930	1,699	919	2,856	230	456	58,153	3,380	11,829	3,342	523	242	421	63,398	430	511	2,550	86,626	-28,473
2001	44,791	6,915	1,695	921	2,933	230	313	57,797	3,359	11,299	3,342	520	244	443	63,398	411	562	2,298	85,877	-28,079
2002	21,971	1,717	421	1,018	3,014	230	206	28,577	1,648	10,375	3,342	255	249	324	63,398	391	649	2,530	83,161	-54,584
2003	47,453	8,295	2,033	914	2,684	230	189	61,798	3,559	9,382	3,342	551	223	290	63,398	472	601	2,373	84,190	-22,393
2004	57,780	8,404	2,060	1,006	2,688	230	156	72,324	4,334	9,025	3,342	671	221	365	63,398	439	715	3,292	85,801	-13,478
2005	80,073	39,600	9,706	247	2,500	230	854	133,210	6,005	11,525	3,342	929	196	233	63,398	305	420	4,008	90,361	42,849
2006	55,527	17,564	4,305	312	2,484	230	814	81,236	4,165	12,421	3,342	645	193	306	63,398	460	901	2,933	88,764	-7,528
2007	28,284	2,841	696	737	2,587	230	501	35,876	2,121	11,921	3,342	328	218	366	63,398	557	888	2,315	85,454	-49,578
2008	80,751	14,182	3,476	833	2,482	230	330	102,283	6,056	11,460	3,342	937	206	301	63,398	289	576	2,690	89,255	13,028
2009	64,883	9,212	2,258	849	2,345	230	296	80,072	4,866	11,233	3,342	753	222	313	63,398	414	740	2,504	87,787	-7,714
2010	143,820	32,959	8,078	570	2,242	230	536	188,436	10,787	11,374	3,342	1,669	58	194	63,398	300	2,969	3,370	97,460	90,976
2011	61,997	16,908	4,144	362	2,076	230	692	86,409	4,650	12,028	3,342	720	28	176	63,398	609	8,040	3,357	96,347	-9,938
2012	58,784	8,175	2,004	537	2,242	230	519	72,491	4,409	12,503	3,342	682	221	255	63,398	755	1,116	2,390	89,072	-16,581
2013	37,921	3,129	767	776	2,477	230	325	45,624	2,844	11,645	3,342	440	290	281	63,398	542	1,626	1,890	86,299	-40,675
2014	67,521	5,776	1,416	810	2,236	230	209	78,198	5,064	10,942	3,342	784	314	286	63,398	372	1,014	2,016	87,532	-9,334
2015	39,317	3,677	901	786	2,155	230	152	47,218	2,949	9,709	3,342	456	324	286	63,398	561	721	1,965	83,711	-36,492
2016	72,859	7,027	1,722	844	2,111	230	105	84,899	5,464	9,309	3,342	846	302	293	63,398	445	904	2,162	86,466	-1,567
2017	61,046	13,213	3,238	688	2,206	230	297	80,917	4,578	9,777	3,342	709	227	280	63,398	413	664	2,670	86,058	-5,141
2018	62,345	4,818	1,181	775	2,060	230	205	71,614	4,676	9,391	3,342	724	339	290	63,398	491	900	2,046	85,597	-13,983
2019	121,565	13,000	3,186	481	1,615	230	356	140,434	9,117	11,000	3,342	1,411	223	263	63,398	440	2,350	2,672	94,216	46,219
Average	68,921	13,655	3,347	625	2,519	230	457	89,753	# 5,169	11,022	3,342	800	222	330	63,398	437	2,350	2,675	89,746	7
Total	2,067,620	409,645	100,403	18,753	75,558	6,903	13,705	2,692,587	0 155,072	330,655	100,263	24,000	6,669	9,912	1,901,940	13,096	70,509	80,250	2,692,366	221

Bear Valley Basin Surface Water Budget - Outflows

Outflows (acre-ft)										
Areal Recharge from Precipitation[A]	Evaporation from Lake		Tributary Channel Infiltration	Return Flow	System Losses[C]	Evapotranspiration	Big Bear Lake Withdrawals[B]	Releases at Bear Valley Dam[B]	BBARWA Discharges to Lucerne Valley	Total
	Big Bear Lake[B]	Baldwin Lake								

Bear Valley Basin Surface Water Budget

Date	Inflows (acre-ft)								Outflows (acre-ft)										Inflows - Outflows
	Precipitation on Land Surface[A]	Natural Lake Inflows		Water Supply from Wells			Spring Flow (Van Dusen and Greenspot)	Total	Areal Recharge from Precipitation[A]	Evaporation from Lake		Tributary Channel Infiltration	Return Flow	System Losses[C]	Evapotranspiration	Big Bear Lake Withdrawals[B]	Releases at Bear Valley Dam[B]	BBARWA Discharges to Lucerne Valley	Total	
		Big Bear Lake[B]	Baldwin Lake	BBCCSD	BBLDWP	Private				Big Bear Lake[B]	Baldwin Lake								
1990	39,822	4,855	1,190	798	2,738	230	164	49,797	2,987	9,542	3,342	462	219	433	63,398	391	0	2,237	83,012	-33,215
1991	87,093	11,658	2,857	604	2,997	230	289	105,728	6,532	9,235	3,342	1,011	234	414	63,398	514	79	2,551	87,309	18,419
1992	90,305	15,543	3,810	459	3,326	230	503	114,175	6,773	10,714	3,342	1,048	255	399	63,398	404	0	2,237	88,571	25,604
1993	147,647	48,613	11,915	133	2,817	230	922	212,277	11,074	11,716	3,342	1,714	210	367	63,398	318	11,823	3,953	107,915	104,362
1994	66,649	11,015	2,700	378	2,524	230	690	84,186	4,999	11,784	3,342	774	194	391	63,398	428	2,049	2,801	90,160	-5,974
1995	101,274	33,340	8,172	191	2,517	230	948	146,672	7,596	11,861	3,342	1,176	189	373	63,398	211	17,116	3,760	109,021	37,651
1996	88,731	13,119	3,215	464	2,639	230	644	109,043	6,655	12,262	3,342	1,030	204	400	63,398	452	315	2,660	90,718	18,325
1997	59,708	8,757	2,146	680	2,609	230	461	74,591	4,478	11,456	3,342	693	211	422	63,398	417	364	2,679	87,460	-12,869
1998	102,236	34,629	8,488	189	2,611	230	890	149,273	7,668	11,464	3,342	1,187	196	354	63,398	318	11,625	2,698	102,250	47,024
1999	30,403	3,774	925	474	2,787	230	685	39,278	2,280	12,473	3,342	353	217	392	63,398	547	271	2,643	85,916	-46,638
2000	45,064	6,930	1,699	919	2,856	230	456	58,153	3,380	11,829	3,342	523	242	421	63,398	430	511	2,550	86,626	-28,473
2001	44,791	6,915	1,695	921	2,933	230	313	57,797	3,359	11,299	3,342	520	244	443	63,398	411	562	2,298	85,877	-28,079
2002	21,971	1,717	421	1,018	3,014	230	206	28,577	1,648	10,375	3,342	255	249	324	63,398	391	649	2,530	83,161	-54,584
2003	47,453	8,295	2,033	914	2,684	230	189	61,798	3,559	9,382	3,342	551	223	290	63,398	472	601	2,373	84,190	-22,393
2004	57,780	8,404	2,060	1,006	2,688	230	156	72,324	4,334	9,025	3,342	671	221	365	63,398	439	715	3,292	85,801	-13,478
2005	80,073	39,600	9,706	247	2,500	230	854	133,210	6,005	11,525	3,342	929	196	233	63,398	305	420	4,008	90,361	42,849
2006	55,527	17,564	4,305	312	2,484	230	814	81,236	4,165	12,421	3,342	645	193	306	63,398	460	901	2,933	88,764	-7,528
2007	28,284	2,841	696	737	2,587	230	501	35,876	2,121	11,921	3,342	328	218	366	63,398	557	888	2,315	85,454	-49,578
2008	80,751	14,182	3,476	833	2,482	230	330	102,283	6,056	11,460	3,342	937	206	301	63,398	289	576	2,690	89,255	13,028
2009	64,883	9,212	2,258	849	2,345	230	296	80,072	4,866	11,233	3,342	753	222	313	63,398	414	740	2,504	87,787	-7,714
2010	143,820	32,959	8,078	570	2,242	230	536	188,436	10,787	11,374	3,342	1,669	58	194	63,398	300	2,969	3,370	97,460	90,976
2011	61,997	16,908	4,144	362	2,076	230	692	86,409	4,650	12,028	3,342	720	28	176	63,398	609	8,040	3,357	96,347	-9,938
2012	58,784	8,175	2,004	537	2,242	230	519	72,491	4,409	12,503	3,342	682	221	255	63,398	755	1,116	2,390	89,072	-16,581
2013	37,921	3,129	767	776	2,477	230	325	45,624	2,844	11,645	3,342	440	290	281	63,398	542	1,626	1,890	86,299	-40,675
2014	67,521	5,776	1,416	810	2,236	230	209	78,198	5,064	10,942	3,342	784	314	286	63,398	372	1,014	2,016	87,532	-9,334
2015	39,317	3,677	901	786	2,155	230	152	47,218	2,949	9,709	3,342	456	324	286	63,398	561	721	1,965	83,711	-36,492
2016	72,859	7,027	1,722	844	2,111	230	105	84,899	5,464	9,309	3,342	846	302	293	63,398	445	904	2,162	86,466	-1,567
2017	61,046	13,213	3,238	688	2,206	230	297	80,917	4,578	9,777	3,342	709	227	280	63,398	413	664	2,670	86,058	-5,141
2018	62,345	4,818	1,181	775	2,060	230	205	71,614	4,676	9,391	3,342	724	339	290	63,398	491	900	2,046	85,597	-13,983
2019	121,565	13,000	3,186	481	1,615	230	356	140,434	9,117	11,000	3,342	1,411	223	263	63,398	440	2,350	2,672	94,216	46,219
Average	68,921	13,655	3,347	625	2,519	230	457	89,753	# 5,169	11,022	3,342	800	222	330	63,398	437	2,350	2,675	89,746	7
Total	2,067,620	409,645	100,403	18,753	75,558	6,903	13,705	2,692,587	0 155,072	330,655	100,263	24,000	6,669	9,912	1,901,940	13,096	70,509	80,250	2,692,366	221

Bear Valley Basin Groundwater Budget

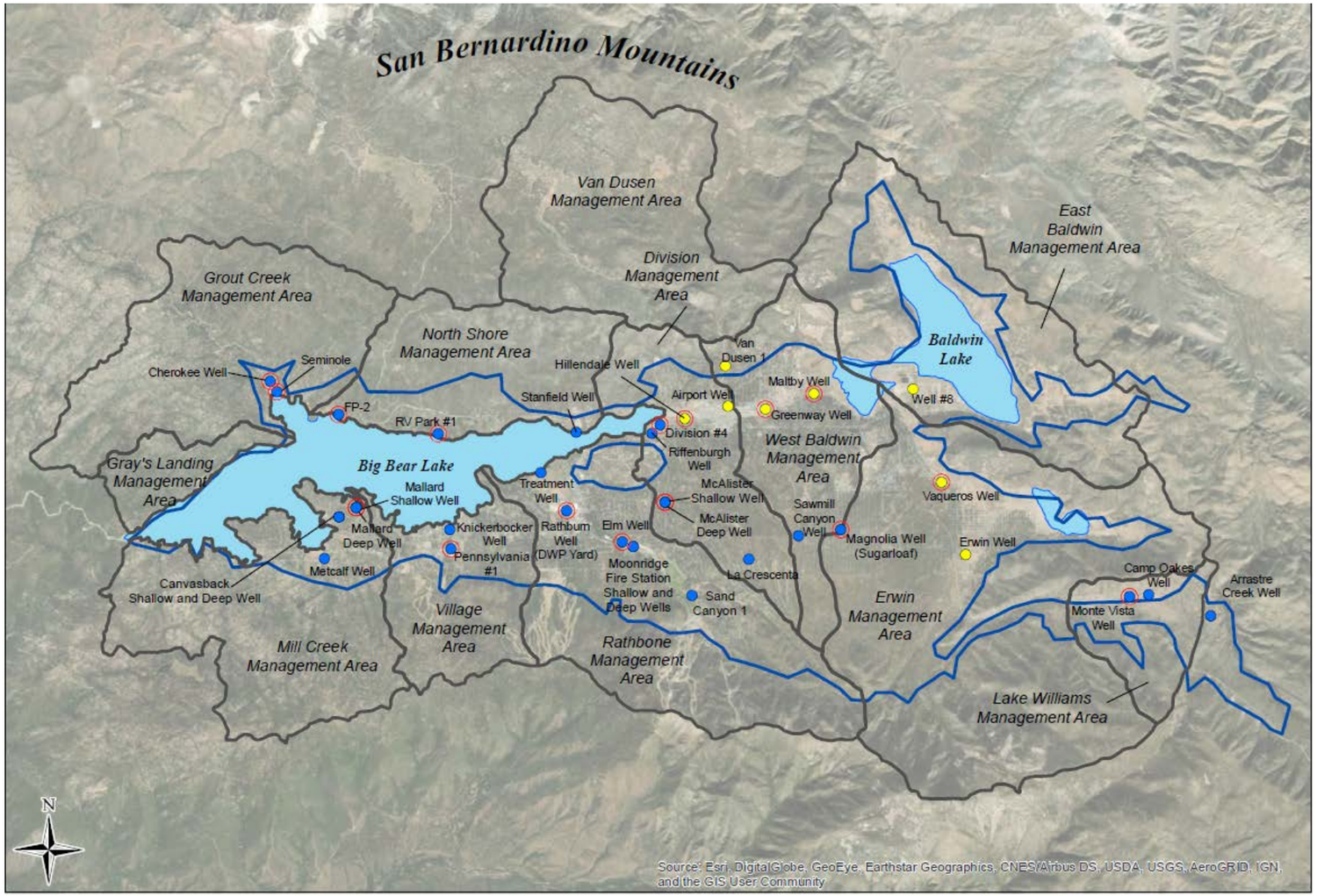
Date	Inflows (acre-ft)					Outflows (acre-ft)					Change in Storage
						Groundwater Pumping			ET	Total	
	Areal Recharge from Precipitation[A]	Tributary Channel Infiltration	Return Flow	System Losses[B]	Total	BBCCSD	BBLDWP	Other[C]			
1990	2,987	462	219	433	3,668	798	2,738	230	737	4,503	-835
1991	6,532	1,011	234	414	7,777	604	2,997	230	737	4,568	3,208
1992	6,773	1,048	255	399	8,076	459	3,326	230	737	4,753	3,323
1993	11,074	1,714	210	367	12,997	133	2,817	230	737	3,918	9,079
1994	4,999	774	194	391	5,966	378	2,524	230	737	3,870	2,097
1995	7,596	1,176	189	373	8,960	191	2,517	230	737	3,676	5,284
1996	6,655	1,030	204	400	7,889	464	2,639	230	737	4,070	3,819
1997	4,478	693	211	422	5,382	680	2,609	230	737	4,256	1,126
1998	7,668	1,187	196	354	9,050	189	2,611	230	737	3,768	5,282
1999	2,280	353	217	392	2,850	474	2,787	230	737	4,229	-1,379
2000	3,380	523	242	421	4,145	919	2,856	230	737	4,742	-597
2001	3,359	520	244	443	4,123	921	2,933	230	737	4,821	-698
2002	1,648	255	249	324	2,152	1018	3,014	230	737	4,999	-2,848
2003	3,559	551	223	290	4,333	914	2,684	230	737	4,565	-232
2004	4,334	671	221	365	5,225	1006	2,688	230	737	4,662	563
2005	6,005	929	196	233	7,130	247	2,500	230	737	3,714	3,416
2006	4,165	645	193	306	5,002	312	2,484	230	737	3,763	1,239
2007	2,121	328	218	366	2,668	737	2,587	230	737	4,292	-1,624
2008	6,056	937	206	301	7,199	833	2,482	230	737	4,282	2,917
2009	4,866	753	222	313	5,842	849	2,345	230	737	4,161	1,680
2010	10,787	1,669	58	194	12,514	570	2,242	230	737	3,780	8,734
2011	4,650	720	28	176	5,397	362	2,076	230	737	3,406	1,991
2012	4,409	682	221	255	5,312	537	2,242	230	737	3,747	1,565
2013	2,844	440	290	281	3,575	776	2,477	230	737	4,220	-645
2014	5,064	784	314	286	6,162	810	2,236	230	737	4,013	2,149
2015	2,949	456	324	286	3,729	786	2,155	230	737	3,909	-179
2016	5,464	846	302	293	6,612	844	2,111	230	737	3,923	2,689
2017	4,578	709	227	280	5,515	688	2,206	230	737	3,861	1,654
2018	4,676	724	339	290	5,739	775	2,060	230	737	3,802	1,937
2019	9,117	1,411	223	263	10,751	481	1,615	230	737	3,064	7,687
Average	5,169	800	222	330	6,191	625	2,519	230	737	4,111	
Totals	155,072	24,000	6,669	9,912	185,741	18,753	75,558	6,903	22,123	123,338	

Management Areas

MANAGEMENT AREA. An area within a basin for which the Plan may identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors.

- Criteria for Management Areas
- Minimum Thresholds and Measurable Objectives
- Monitoring Plan

Management Areas



Map Features

Monitoring Well

- BBCCSD
- BBLDWP
- RMS Well

Management Areas

Bear Valley Groundwater Basin (DWR Bulletin 118, Rev. 2018)

Sustainable Management Criteria

Tom Harder
Hydrogeologist, Thomas Harder Company

Sustainable Management Criteria

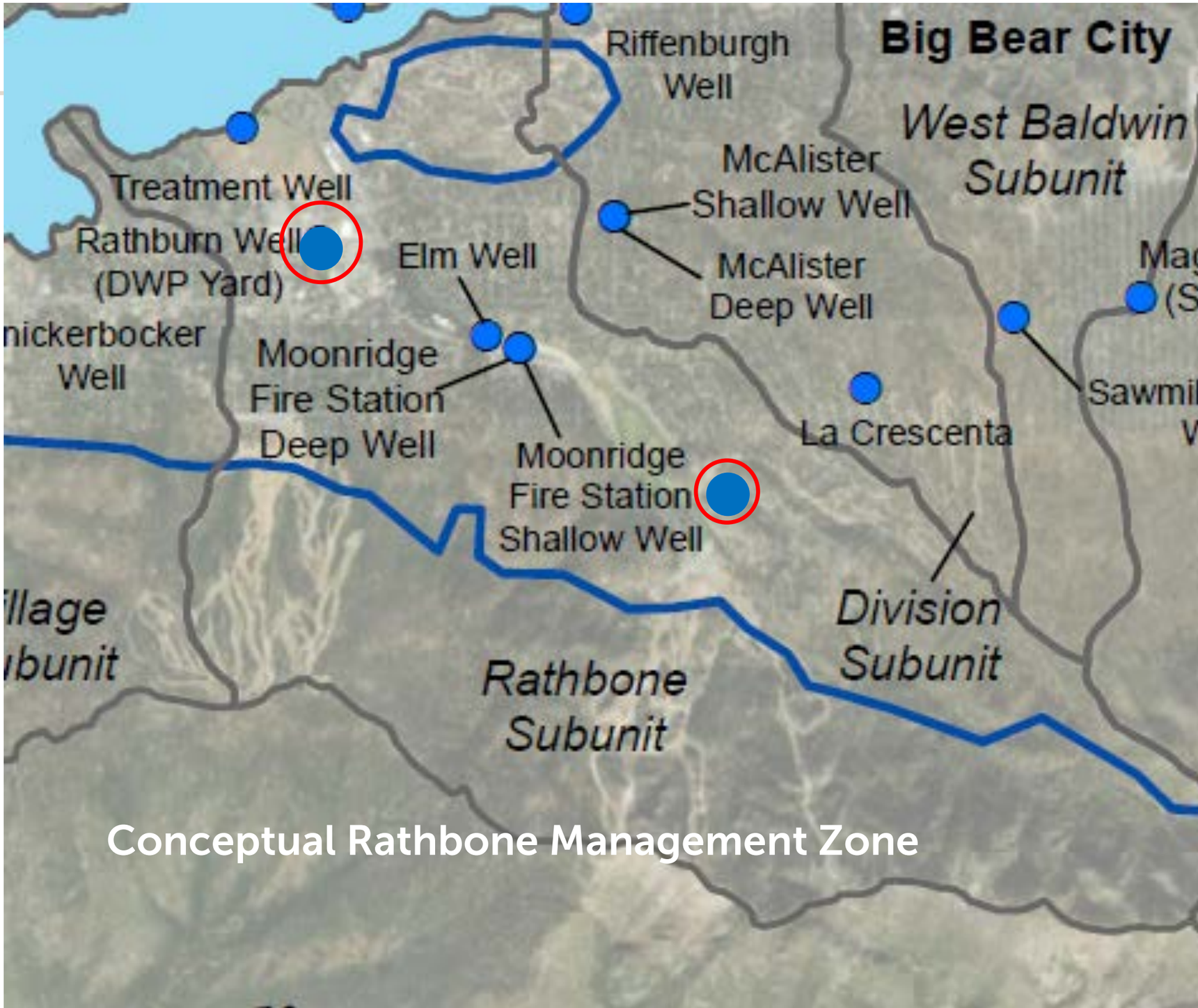
SUSTAINABILITY INDICATOR	CHRONIC LOWERING OF GROUND-WATER LEVELS	REDUCTION OF GROUND-WATER STORAGE	INTER CONNECTED SURFACE WATER DEPLETIONS	WATER QUALITY DEGRADATION	LAND SUBSIDENCE	SEAWATER INTRUSION
METRIC(S) DEFINED IN GSP REGULATIONS	Groundwater Elevation	Total Volume	Volume or rate of surface water depletion	- Migration Plumes - # of Supply Wells - Volume - Location of Isocontour	Rate and extent of land subsidence	Chloride Concentration Isocontour

SGMA allows all indicators but water quality to be assessed using water levels as a proxy metric for direct measurement.

Representative Monitoring Sites

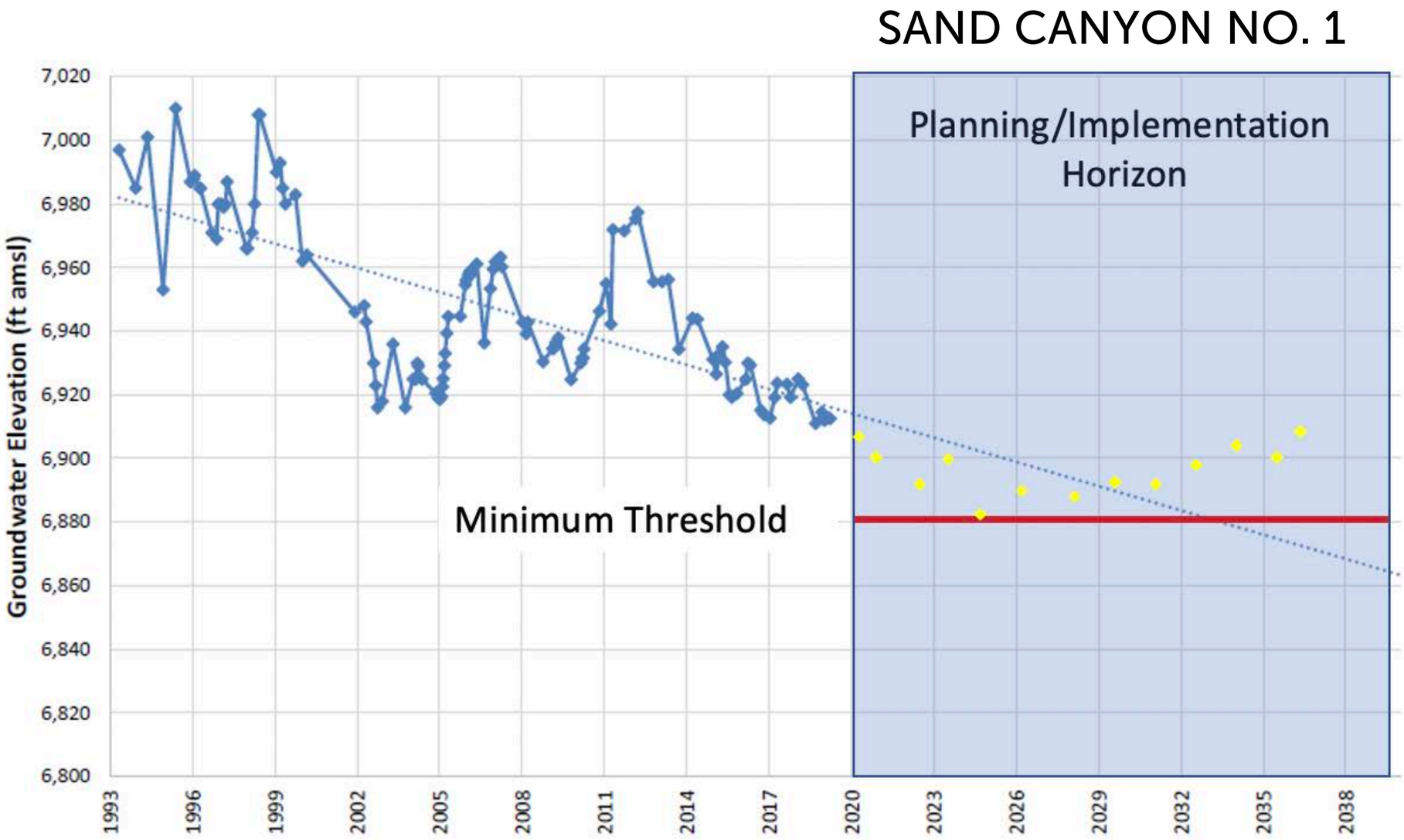
A subset of a basin's complete monitoring network, where minimum thresholds, measurable objectives, and interim milestones are set.

Conceptual Representative Monitoring Site



Minimum Threshold

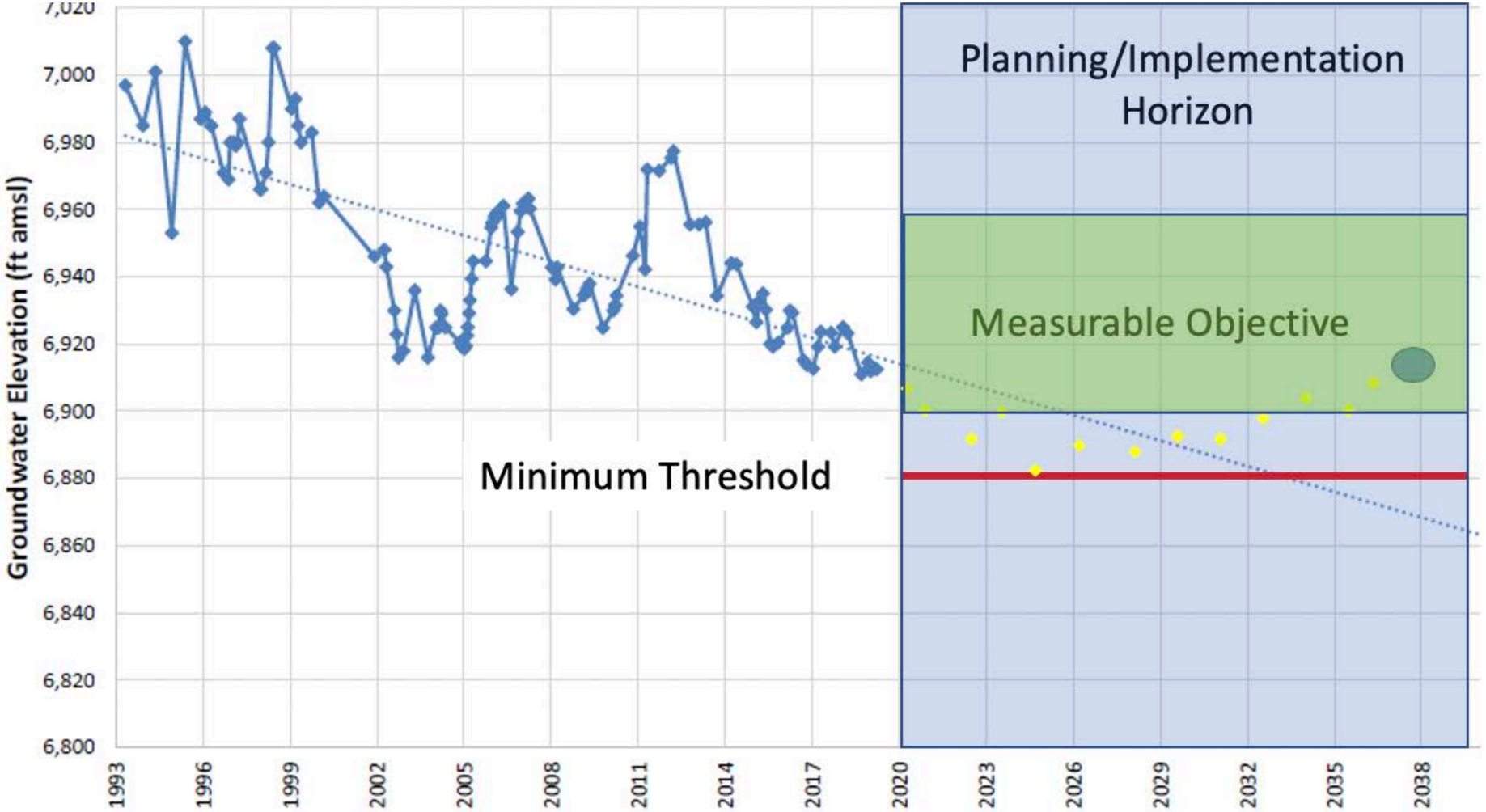
The quantitative value that represents the groundwater conditions at a representative monitoring site that, when exceeded individually or in combination with minimum thresholds at other monitoring sites, may cause an undesirable result(s) in the basin.



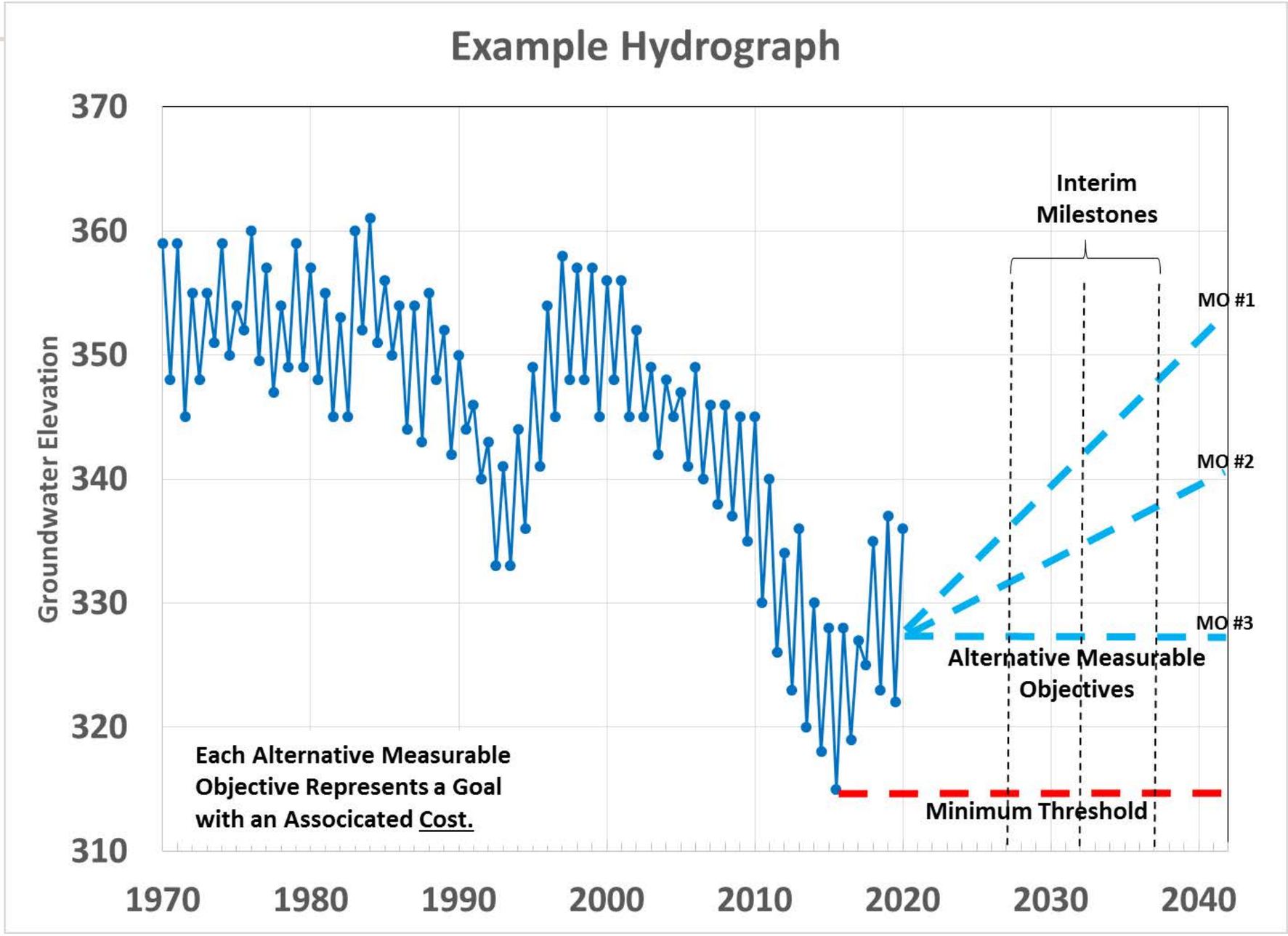
Measurable Objective

Measurable objectives are quantitative goals that reflect the basin's desired groundwater conditions and allow the GSA to achieve the sustainability goal within 20 years.

SAND CANYON NO. 1

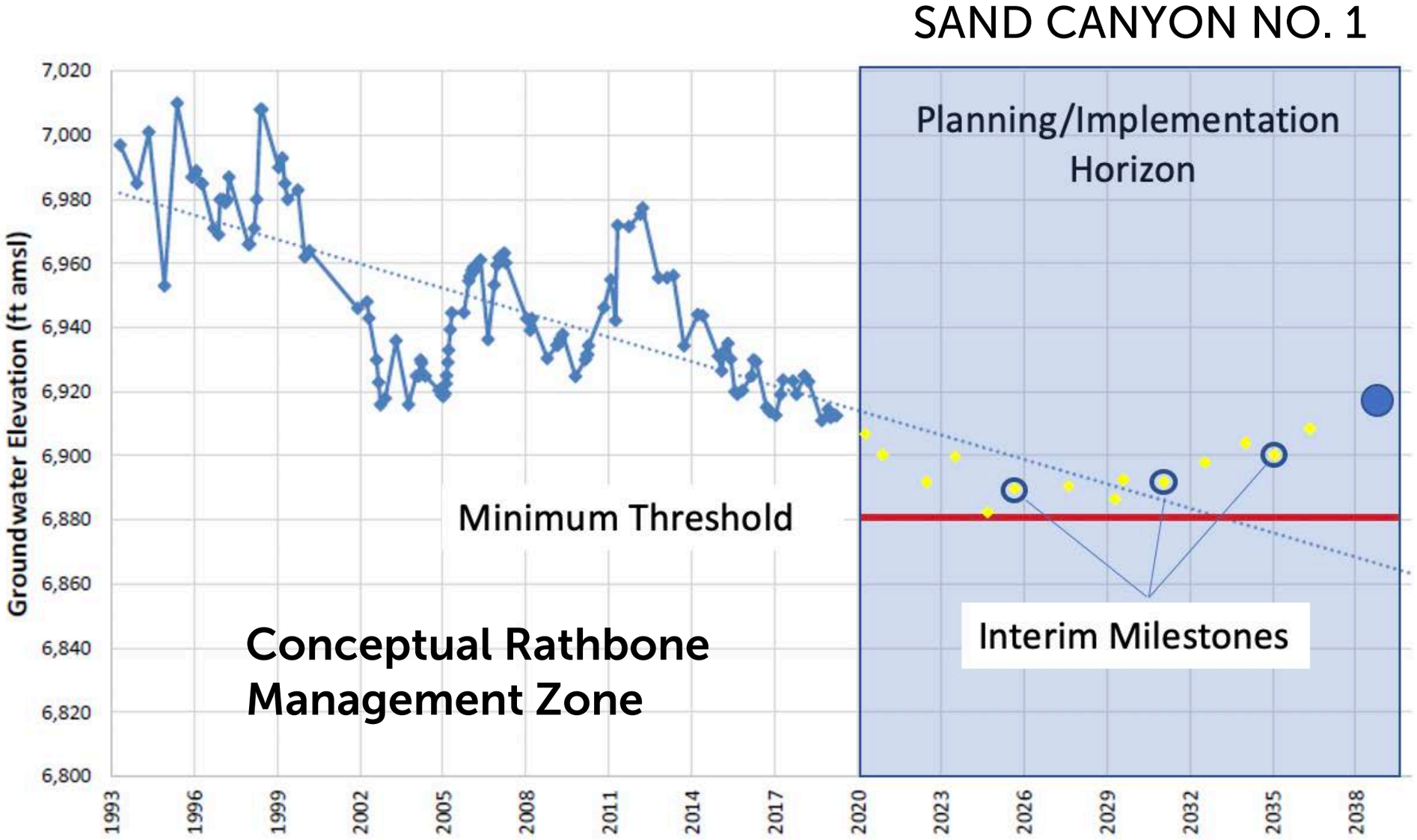


Example: Sustainable Management Criteria (SMCs)



Interim Milestones

A target value representing measurable groundwater conditions, in increments of five years, set by an Agency as part of a plan.




Questions?

Visioning Exercise

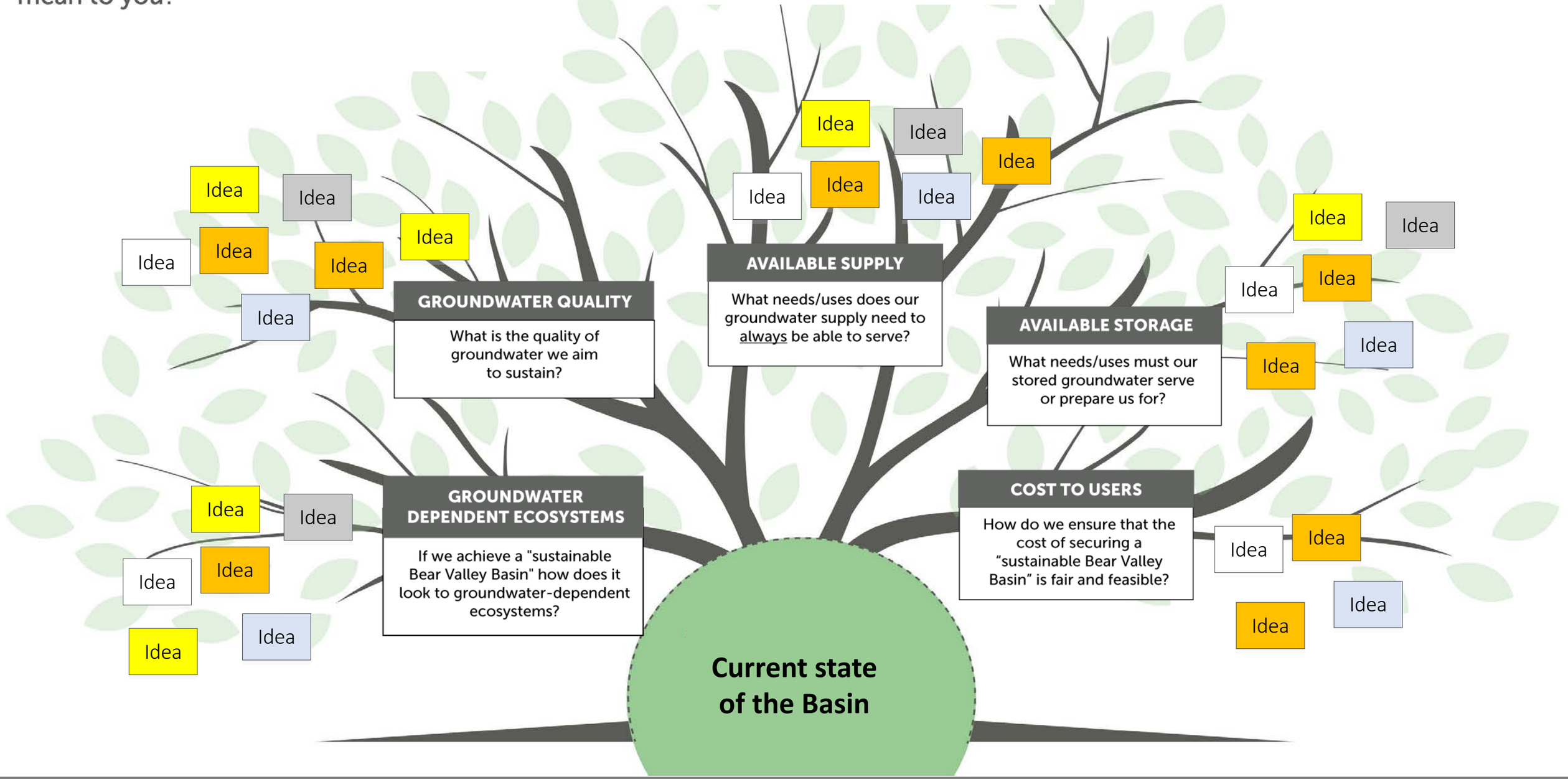
Tiffany Meyer
Water Systems Consulting

Stakeholder Visioning Exercise

What does a "Sustainable Bear Valley Basin" mean to you?

Future State of the Basin:

Groundwater Sustainability



What's Next

Tiffany Meyer
Water Systems Consulting

Workshop #1 Summary

Comment period opens within 2 weeks

Comment at **BVBGSA.org**

Workshop #2:
Sustainable Goal Setting

Wednesday, October 28, 2020 •
3:00pm-5:00pm • Zoom Meetings

Register at **BVBGSA.org**


Questions?