UPDATE REGARDING GSP IMPLEMENTATION IN THE EAST TURLOCK SUBBASIN GSA

Presentation to the Stanislaus County Water Advisory Committee

July 30, 2025

TURLOCK GROUNDWATER

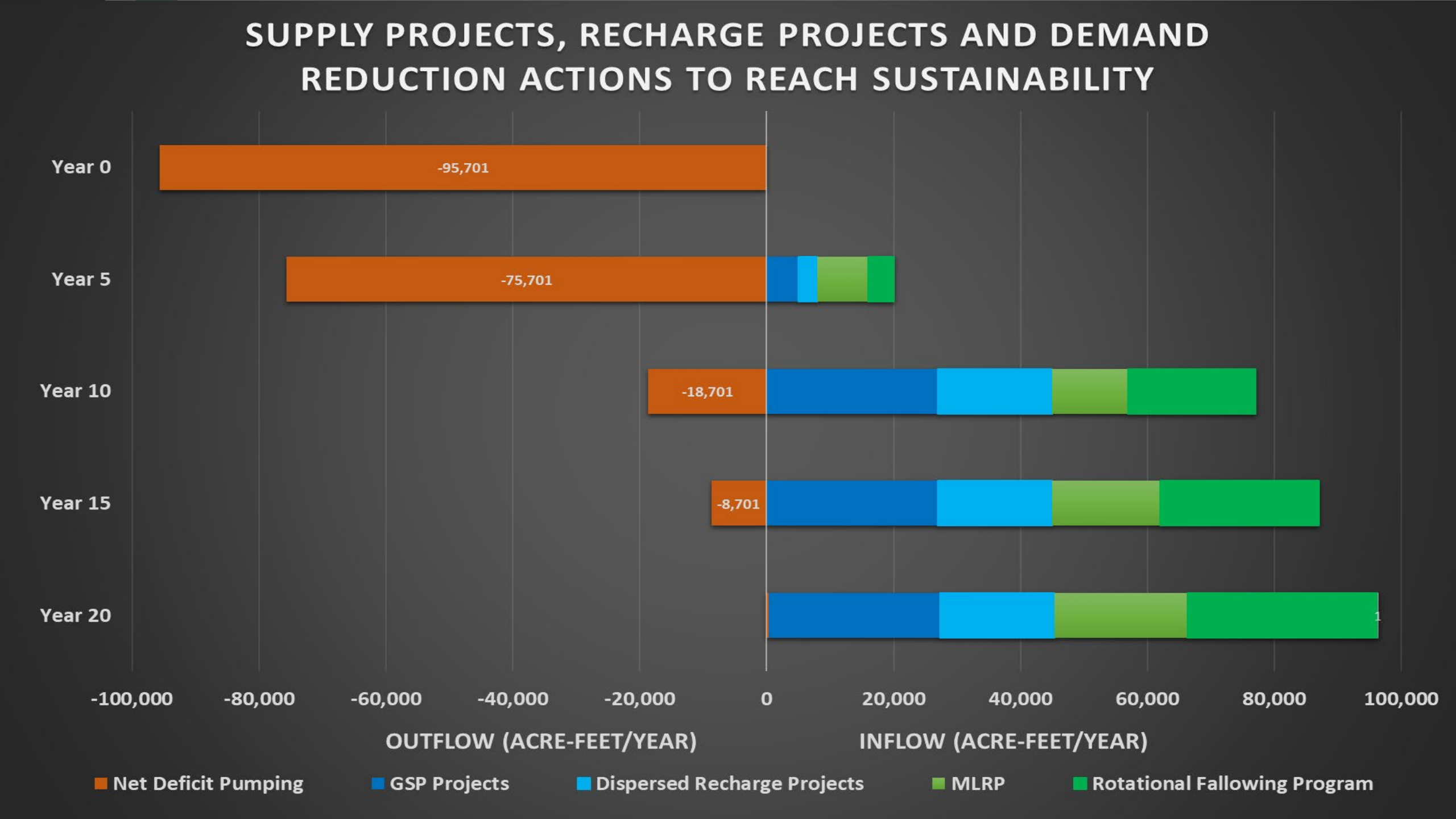
East Turlock Subbasin GSA

AGENDA

- ✓Overview
- ✓Update on Rules and Regulations
- ✓Update on Projects
- ✓Update on Adaptive Management

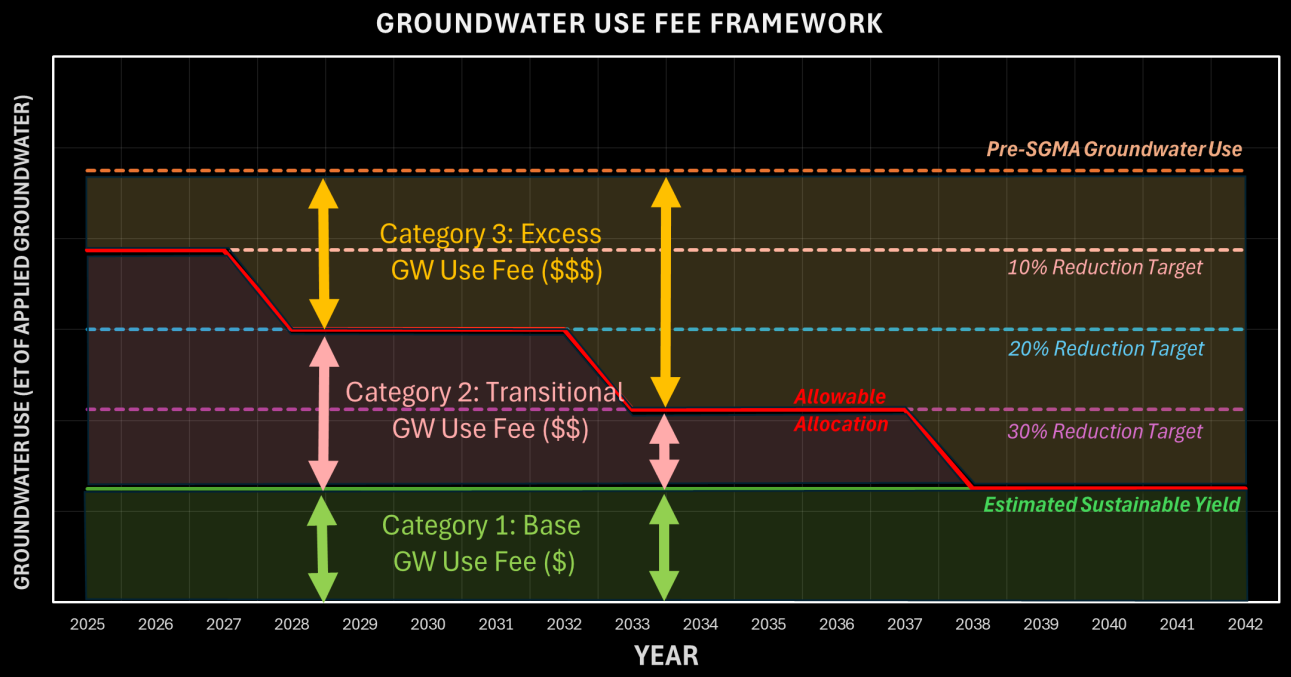
OVERVIEW

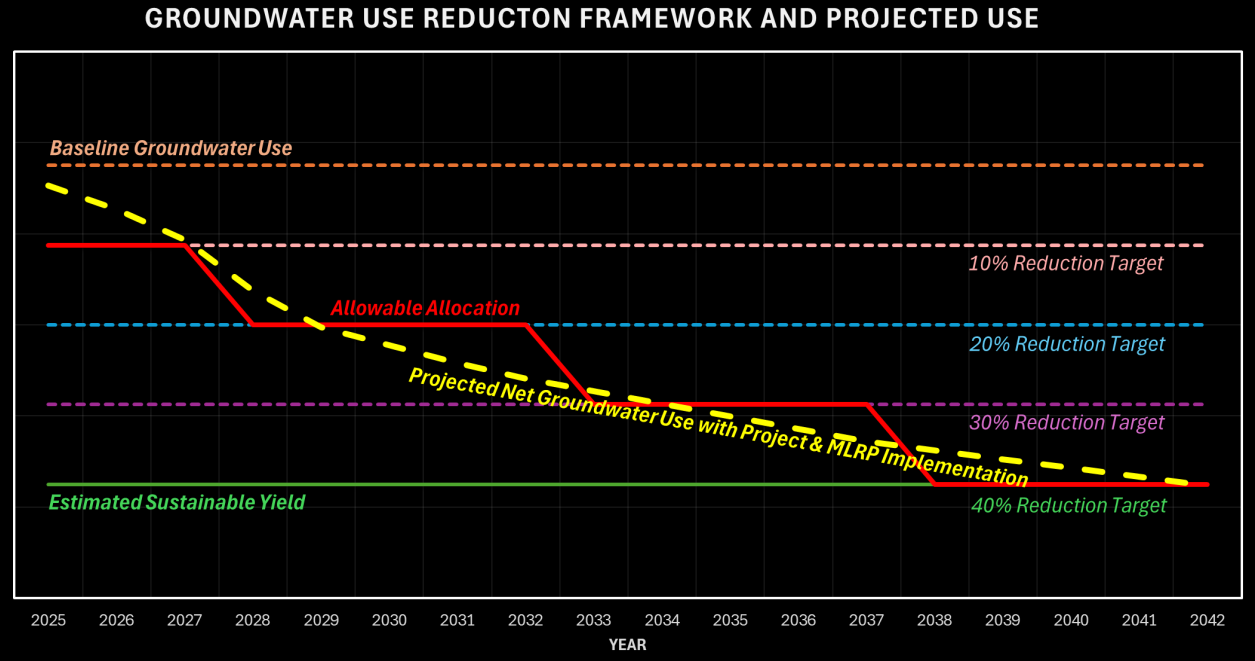
SUPPLY PROJECTS, RECHARGE PROJECTS AND DEMAND REDUCTION ACTIONS TO REACH SUSTAINABILITY



KEY COMPONENTS:

- Allocation program with phased groundwater use reduction targets
- Groundwater Use Fee Program to fund projects and management actions
- MLRP and Land Fallowing: 5,000 acres by 2027; ~21,000 acres by 2042
- Groundwater Accounting Platform to manage groundwater use and fees
- Rules & Regulations for groundwater accounting, management and fees
- Well Mitigation Program





Challenging Economics

Relative Revenue Per Acre w/o GW Use Fees

Price	Yield (lb/acre)						
	1,000	1,400	1,800	2,200	2,600	3,000	3,400
$ 1.00							
$ 1.50							
$ 2.00							
$ 2.50							
$ 3.00							
$ 3.50							
$ 4.00							

Relative Revenue/Acre w/ Fees & No Demand Reduction

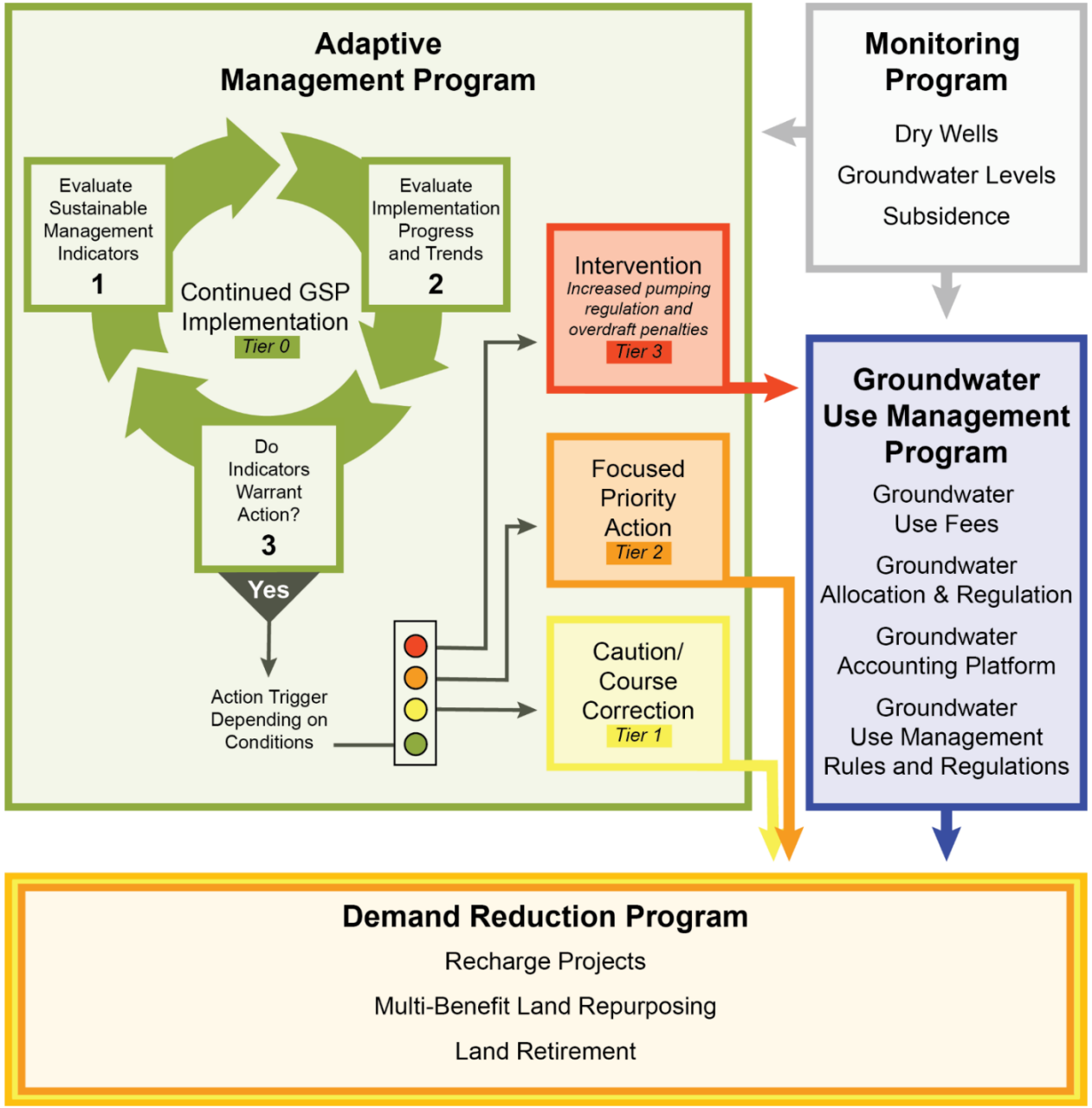
Price	Yield (lb/acre)						
	1,000	1,400	1,800	2,200	2,600	3,000	3,400
$ 1.00							
$ 1.50							
$ 2.00							
$ 2.50							
$ 3.00							
$ 3.50							
$ 4.00							

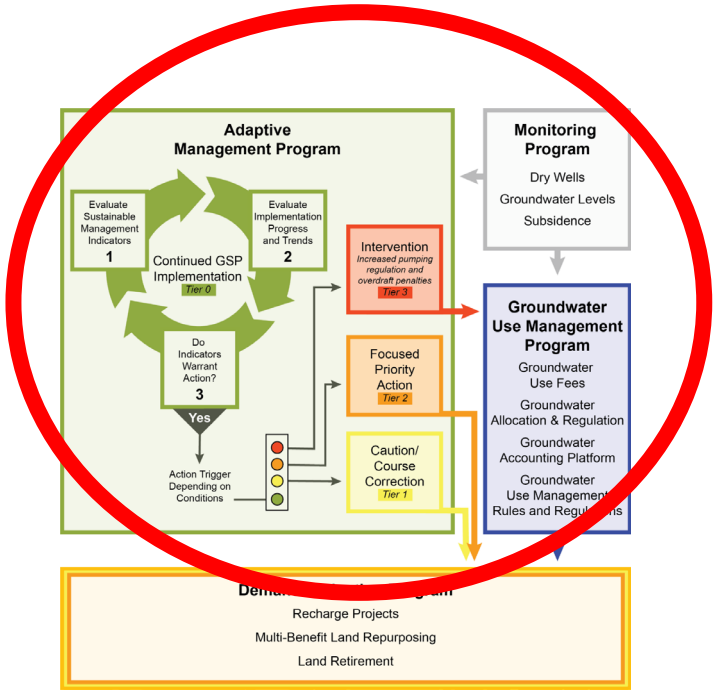
Relative Revenue/Acre with Demand Reduction

Price	Yield (lb/acre)						
	1,000	1,400	1,800	2,200	2,600	3,000	3,400
$ 1.00							
$ 1.50							
$ 2.00							
$ 2.50							
$ 3.00							
$ 3.50							
$ 4.00							

- *Thin margin of profitable operation – groundwater use fees and water use restrictions can push operations from profit to loss*
- ***Strategic land repurposing to decrease demand and implementation of water-wise agricultural practices can make the difference between success and failure***

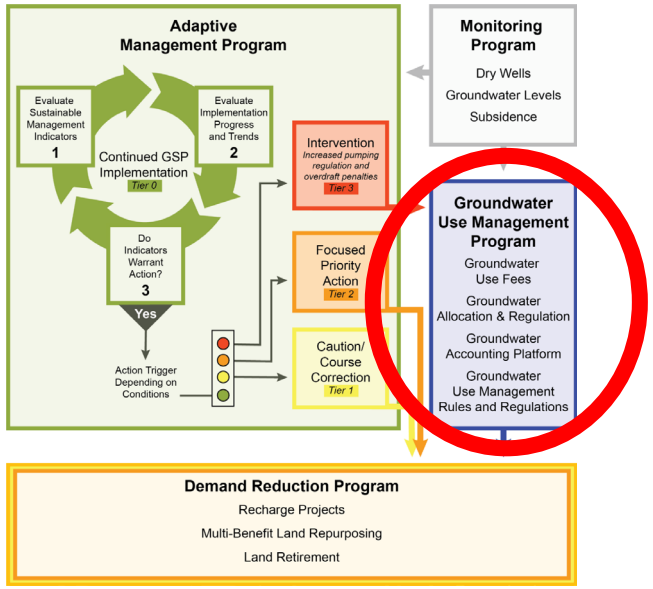
GROUNDWATER DEMAND REDUCTION FRAMEWORK





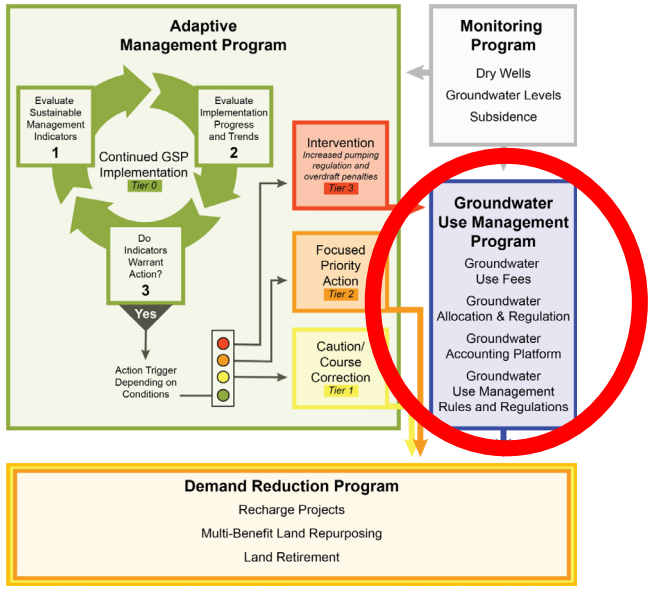
SGMA Operational Assessment

- Funds GSA Operations and Compliance
- $17.75/acre for Irrigated Parcels
- $1.54/acre for Non-Irrigated Parcels



Groundwater "Allocations" and Use

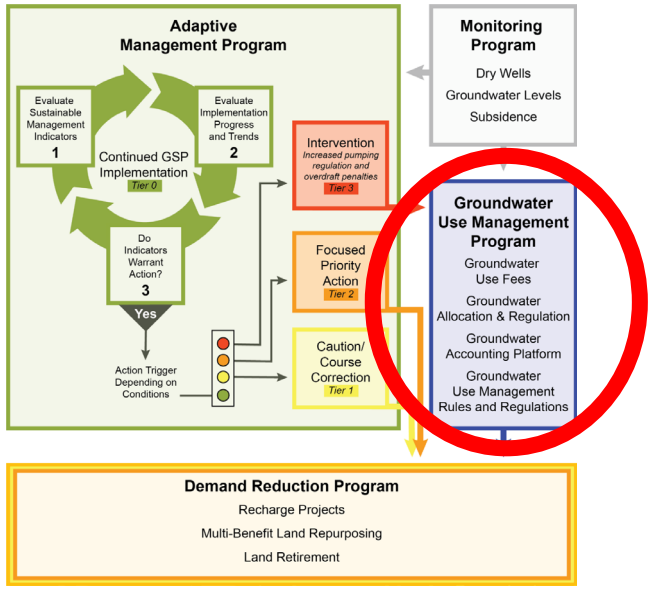
- Applied to "Irrigated Parcels"
- Consistent with Reduction Targets that decrease over time
- Consistent with GW Use Fee Program
- Use measured using ET (Land IQ)
- Tracked on Groundwater Accounting Platform



Groundwater Use Fee

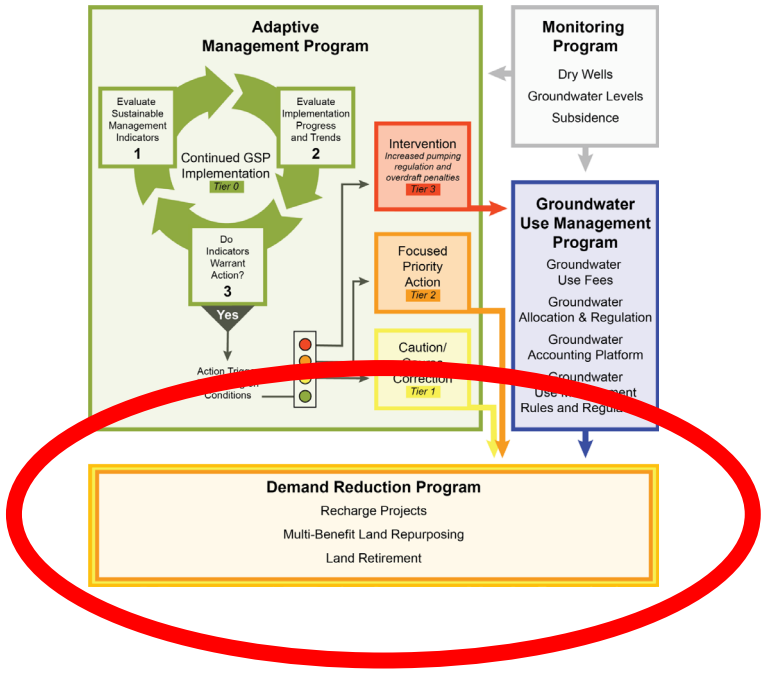
- Adopted May 2025
- Funds Projects and Management Actions
- Deposit Invoice True-Up Invoice

Category	Description	Consumed Groundwater Category Threshold (AF/Ac)	Rate (per AF)
Category 0	Estimated Native Yield (no charge)	0.0 - 0.5	$0.00
Category 1	Estimated Sustainable Yield	0.5 - 1.1	$52.27
Category 2	Use above Sustainable Yield, and below the Reduction Target	1.1 - 1.6	$138.61
Category 3	Use above Reduction Target	Greater than 1.6	$138.61



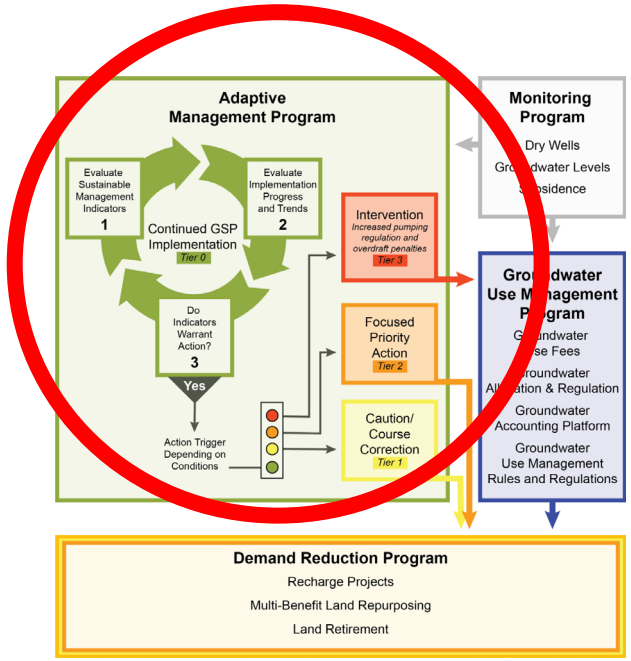
Rules and Regulations

- Phase 1 defines GW Allocations, measurement and use
- Adopted January 2025
- Phase 2 defines Carryover, Surface Water Credits, Recharge Credits and Fallowing
- Projected to be adopted this summer



Projects and Management Actions

- GSP Projects
  - Replenishment Water expansion
  - Dry Creek expansion
  - Backbone Projects
- Incentivized Fallowing Program
  - Implementation expected starting later this summer
- Multi-benefit Land Repurposing Program
  - Pilot Projects this fall
  - Full scale solicitation Q1 2026

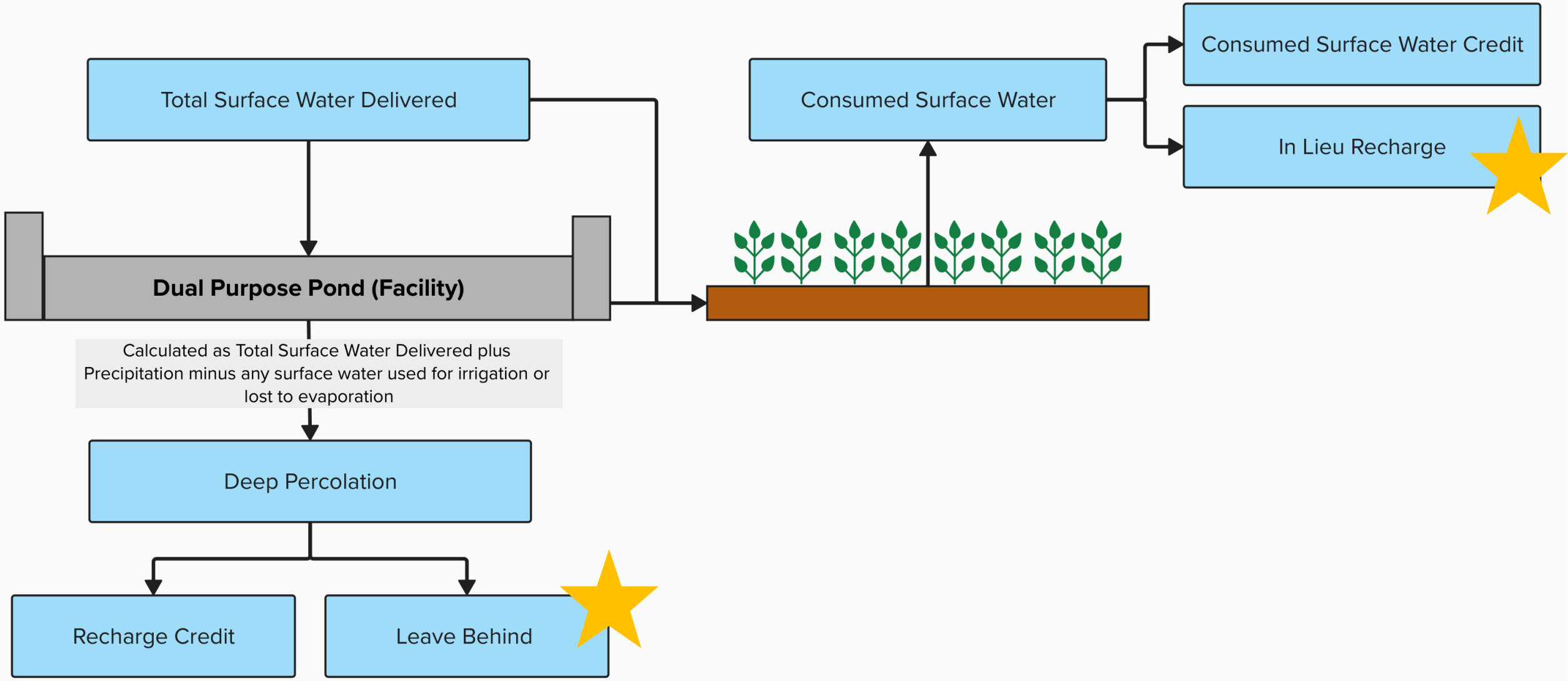


Adaptive Management Program

- Establish Priority Action Areas
  - Cortez Incipient Subsidence Area
  - ETSGSA-08 Area
- Prioritize Projects and Management Actions
- Focused analysis and monitoring

RULES & REGULATIONS

Credits from Combined Irrigation and Recharge



COST-BENEFIT ANALYSIS FOR CONSUMED SURFACE WATER CREDITS

	GSA pays for the **Water (Replenishment Water)**	**Landowner pays** for the **Water (MID, Riparian Water, Stormwater)**
GSA provide Incentive Payment for the Project	**GSA Credit %** Calculated: 88% Proposed: 75% **Grower Credit** Calculated: 12% Proposed: 25%	**GSA Credit %** Calculated: 77% Proposed: 60% **Grower Credit** Calculated: 23% Proposed: 40%
Landowner funds the entire Project	**GSA Credit %** Calculated: 65% Proposed: 60% **Grower Credit** Calculated: 35% Proposed: 40%	**GSA Credit %** Calculated: 0% Proposed: 0% **Grower Credit** Calculated: 100% Proposed: 100%

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East Turlock Subbasin GSA

COST-BENEFIT ANALYSIS FOR RECHARGE CREDITS

	GSA pays for the **Water (Replenishment Water)**	**Landowner pays** for the **Water (MID, Riparian Water, Stormwater)**
GSA provide Incentive Payment for the Project	**GSA Credit %** Calculated: 81% Proposed: 75% **Grower Credit** Calculated: 19% Proposed: 25%	**GSA Credit %** Calculated: 67% Proposed: 60% **Grower Credit** Calculated: 33% Proposed: 40%
Landowner funds the entire Project	**GSA Credit %** Calculated: 59% Proposed: 60% **Grower Credit** Calculated: 41% Proposed: 40%	**GSA Credit %** Calculated: -- Proposed: 12.5% * **Grower Credit** Calculated: -- Proposed: 87.5% *

* Based on typical “leave behind” to avoid sustainability damage to the basin.

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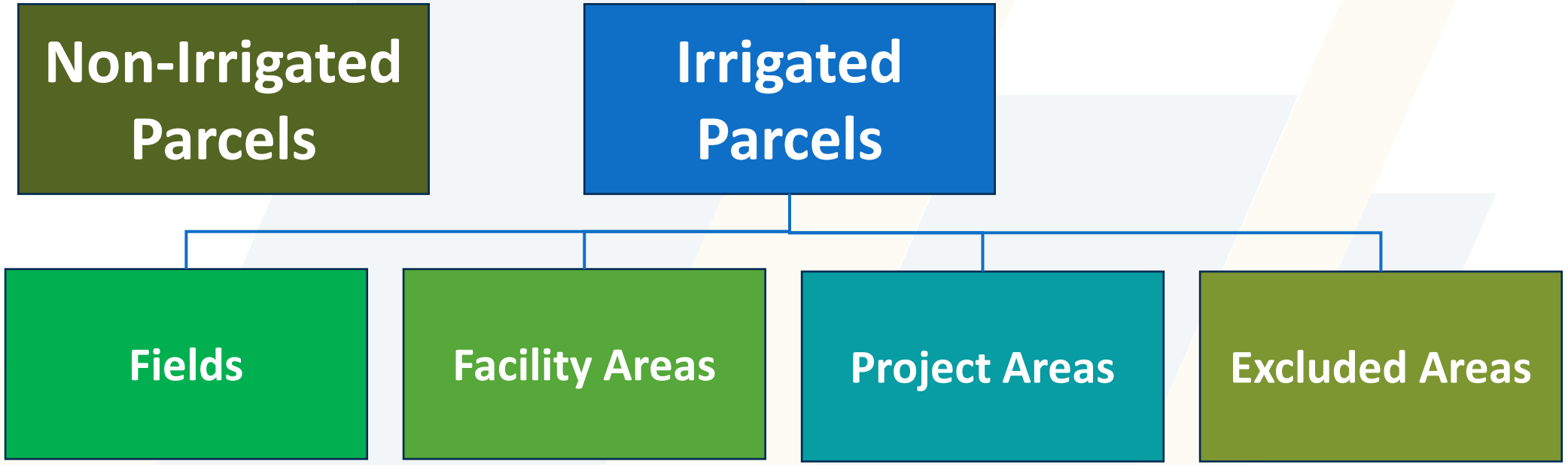
LAND USE AREA DEFINITIONS



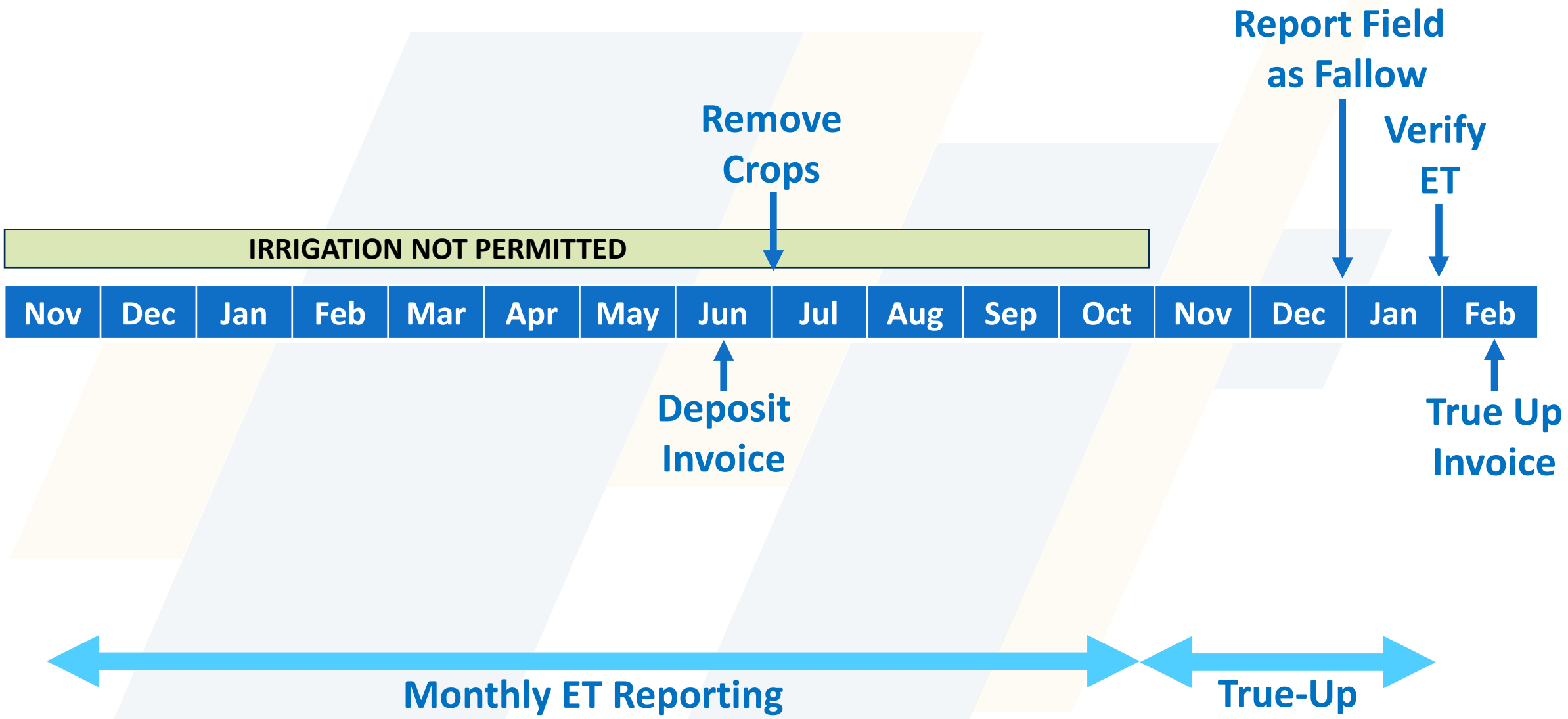
LAND USE AREA SUMMARY

Consideration	Irrigated Field	Self-Directed Fallow Field	Facility Area	Project Area (IFP, MLRP, Other)	Excluded Area
Allocation	Yes	Yes	Yes	No	Yes
Monthly ET Tracking	Yes	Yes	No	No	No
GW Use Reporting	No	No	Yes	No	No
GW Use Calculation at True-up	Yes	No (If ET – Effective Precip </= 0.5 AF/ac during Reporting Period)	Yes	No	No
Other Self Reporting	Cover Cropping Self Attestation (if applicable)	Fallowing Self Attestation @ end of Reporting Period	None	Metered or calculated inflows/outflows	None
Other Calculations	Cover Cropping adjustment (if applicable)	None	None	Credit Calculations	None

DRAFT REQUIREMENTS FOR SELF-FALLOWING

- Fallowed Fields that are not under an IFP or MLRP contract:
  - Receive a groundwater allocation
  - Are excluded from Consumed Groundwater Use accounting
- Requirements:
  - Must be registered within 60 days after the end of the Reporting Period (Dec 30)
  - Formerly irrigated crops are removed by June 30 of the Reporting Period (Nov 1 to Oct 31)
  - There must be no irrigation during the Reporting Period (Nov 1 to Oct 31)
  - There can be cover crops, dryland crops, pasture, etc. as long as there is no irrigation
  - ET – Effective Precipitation must be </= 0.5 AF/ac for the Reporting Period
  - Applies to the entire field, not a portion of a field. (For a partially fallowed field, reduced consumed groundwater will be reflected in the ET from the fallowed area.
- Procedures:
  - Reporting using the GAP Self-Reporting Module (Self-Attestation)
  - Monthly and cumulative ET – Effective Precip reported in GAP
  - Cumulative Reporting Period ET – Effective Precip calculated in True-Up after end of Reporting Period and used to verify fallow status qualification
  - Qualifying fields are excluded from Consumed Groundwater Use calculation

SELF-FALLOWING TIMELINE



RECHARGE

Recharge Definitions

- Recharge
- Recharge Facility
- Recharge Credit

Designation of a Recharge Facility

- Designation through a Project Agreement
- Self-Registration of an existing or self-funded project
- Recharge Facilities can generate Recharge Credits during the true-up calculation at the Reporting Period end
- Recharge Facilities are included in the GAP as a location polygons

Calculation of Recharge

- Recharge Facility inputs/outputs are self reported through the GAP self-reporting module (Meter Data or other approved method)
- ETSGSA applies a seasonal efficiency adjustment from April – September and October - March
- At this time, no adjustment for site-specific conditions is proposed

Calculation of Recharge Credit

- Calculate Recharge Credit based on Credit-Leave Behind split
- Add to Water Account supply as a separate line item for which there is no charge
- Credit expires after three years

Carryover Credit Topics List

Definition: Any unused portion of Category 0, Category 1, and Category 2 groundwater assigned to a Water Account in each Reporting Period may be carried forward and may be credited to the Water Account as a Carryover Credit.

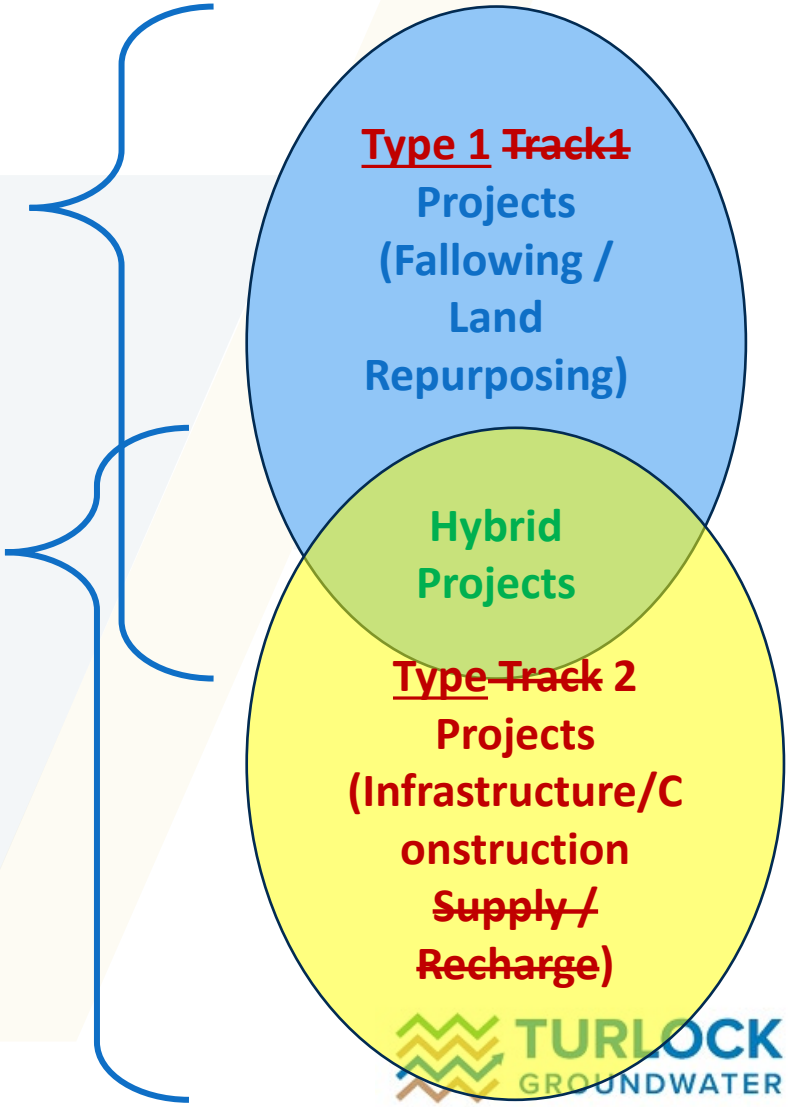
1. How does Carryover Occur
   - Unused allocations are automatically carried over to the next Reporting Period unless requested to be paid out
2. Categories Eligible for Carryover
   - Category 0, Category 1, Category 2 are eligible for carryover
   - Category 3 is not eligible for carryover
3. Expiration of Carryover
   - A Carryover Credit will expire after 3 years and amounts paid will be refunded
4. Priority of Use
   - The default priority of use shall be as follows: (1) Carryover then (2) the current Reporting Period's Allocation within a category, applied in order of increasing Category (0, then 1, then 2)
5. Payment

PROJECT UPDATES

TWO TYPES OF PROJECTS & INCENTIVE PAYMENTS

- **Type 1 Recurring Annual Incentive Payments**
  - Units will typically be *$ per year per acre*

- **Type 2 One-time Incentive Payments**
  - Common self-performed items incentivized at unit rates (e.g., *$/cu yd or $/ft or $/HP*)
  - Incentive cost share of actual contracted implementation costs



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TYPE 1 INCENTIVE PAYMENTS

Land Repurposing Practice	ETSGSA Annual Incentive Rate *
Incentivized Fallowing Program (IFP)	$730
Multibenefit Land Repurposing (MLRP)	
Rotational Extended Fallowing	$890
Orchard Swale Rewilding	$1,300
Floodplain Reconnection	$1,450
Flood Flow Spreading	$1,590
Swale Ponds (maintenance)	$970
Recharge or Storage Basins (maintenance)	$1,050

* IFP rate based on Category 3 Groundwater Use Fee rate multiplied by the average almond field ET of 2.3 afy/acre. MLRP rates are based on NRCS EQIP analogs for implementation and periodic maintenance, interspersed with the baseline IFP rate.

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TYPE 2 INCENTIVE PAYMENTS

- Application Process for Type 2 Incentives
  - Sidegates, pumps, pipelines, filters, metering and other conveyance and distribution infrastructure must be installed by a qualified contractor.
  - Other improvements may be constructed by a contractor or self-implemented (e.g., basins, ponds, outlet controls, ranch roads, general earthwork, etc.)
  - Applications must include at least two quotes for contractor-implemented work
  - Applications must include quantity estimates for self-implemented work
  - Supporting details and calculations
- Type 2 Incentive Payment Amounts
  - 50% of contractor invoices outside Priority Action Areas
  - 60% of contractor invoices inside Priority Action Areas
  - Type 2 Rates based on EQIP analogs for self-implemented work

TYPE 2 INCENTIVES FOR SELF-IMPLEMENTED WORK

Project Component	Incentive Payment Rates		
	Description	Rate	Unit
Basin or Reservoir Construction	Construct water storage/recharge basins or embankment reservoirs for stream abstraction	$5,400.00	$/AF Capacity
Swale Pond	Construct detention/retention ponds in topographic swales or hollows	$3,700.00	acre
Flow Control Outlet	Install Flow Control Outlets (e.g., Double Track Weirs, Flashboard Risers, Armored Weirs/Overflow Outlets)	$2,400.00	each
Diversion Ditch and Berm	Diversion ditches and berms for flood flow spreading	$6.00	linear ft
Ranch Road	Construct new earth surface ranch roads	$6.50	foot
General Earthwork	Miscellaneous general earthwork, excavation, grading and compaction	$3.70	cy

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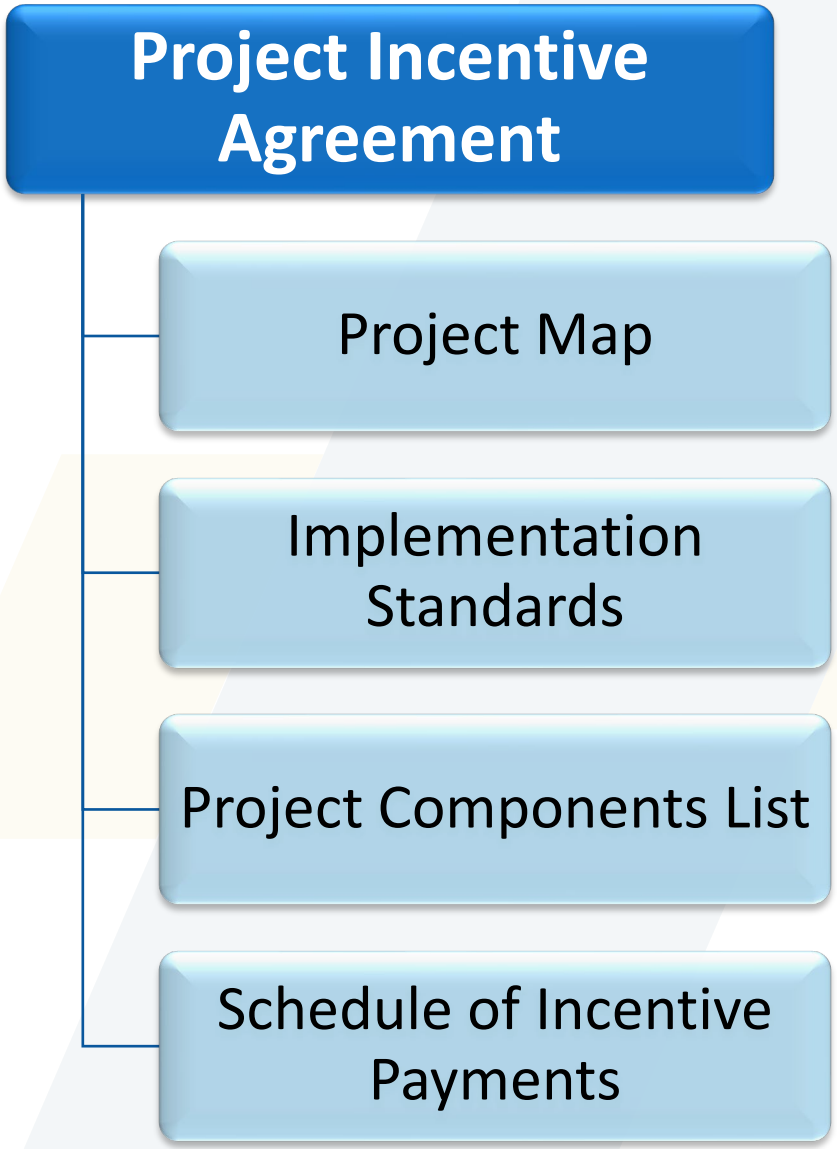
PROJECT INCENTIVE AGREEMENTS



Develop standard Project Incentive Agreement with a term of 3 to 10 years and attachments that describe requirements and payments:

1. ***Project Map*** *keyed to callouts that describe the extent of Land Repurposing and locations of standard Project Components*
2. ***Implementation Standards*** *for Type 1 Land Repurposing*
3. ***List of Project Components*** *for Type 2 project infrastructure improvements*
4. ***Schedule of Incentive Payments*** *for Land Repurposing and standard project infrastructure improvement components*

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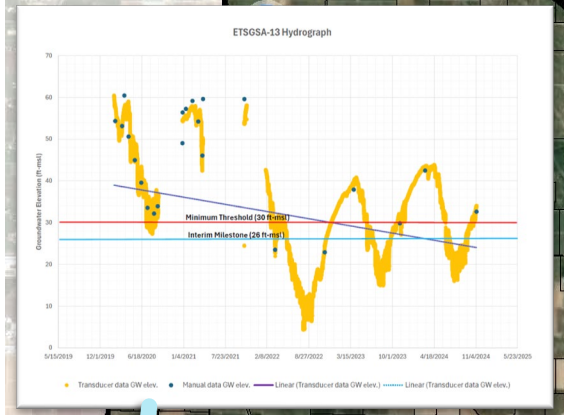
ADAPTIVE MANAGEMENT UPDATES

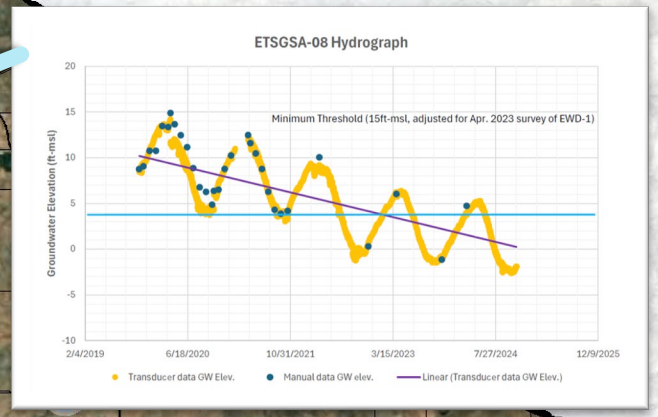
ETSGSA # 08
PAA Buffer Zone

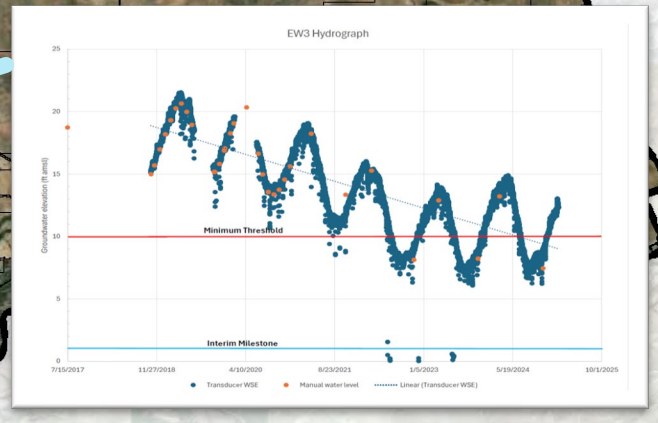
#01
#02
#6
#07
#08
#09
#10
12R
#20
#05
#21
#15
#16
#14
#13
#19
#17
#68A
#23

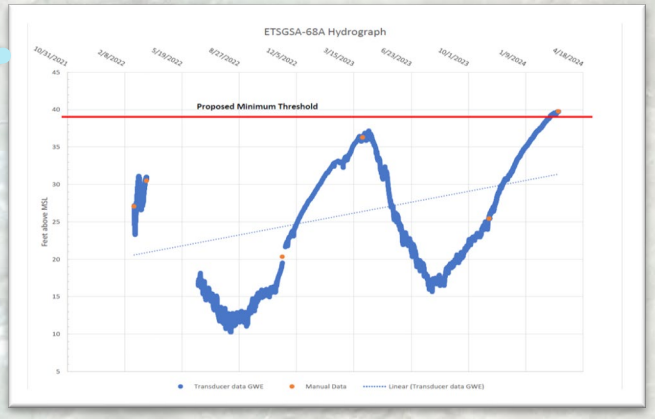
-0.25 ft
-0.3 ft
-0.35 ft

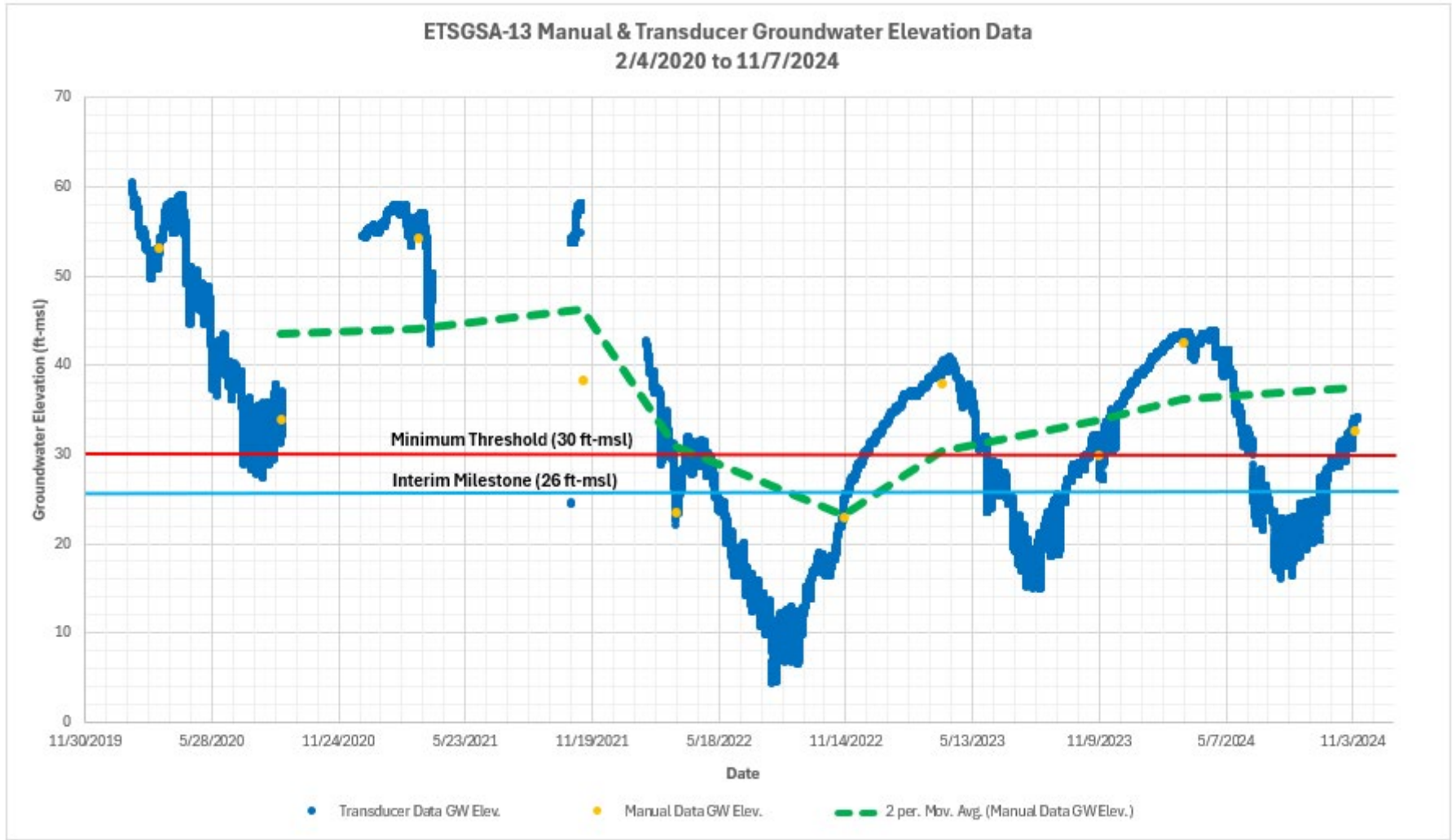
Cortez Incipient Subsidence
PAA Buffer Zone

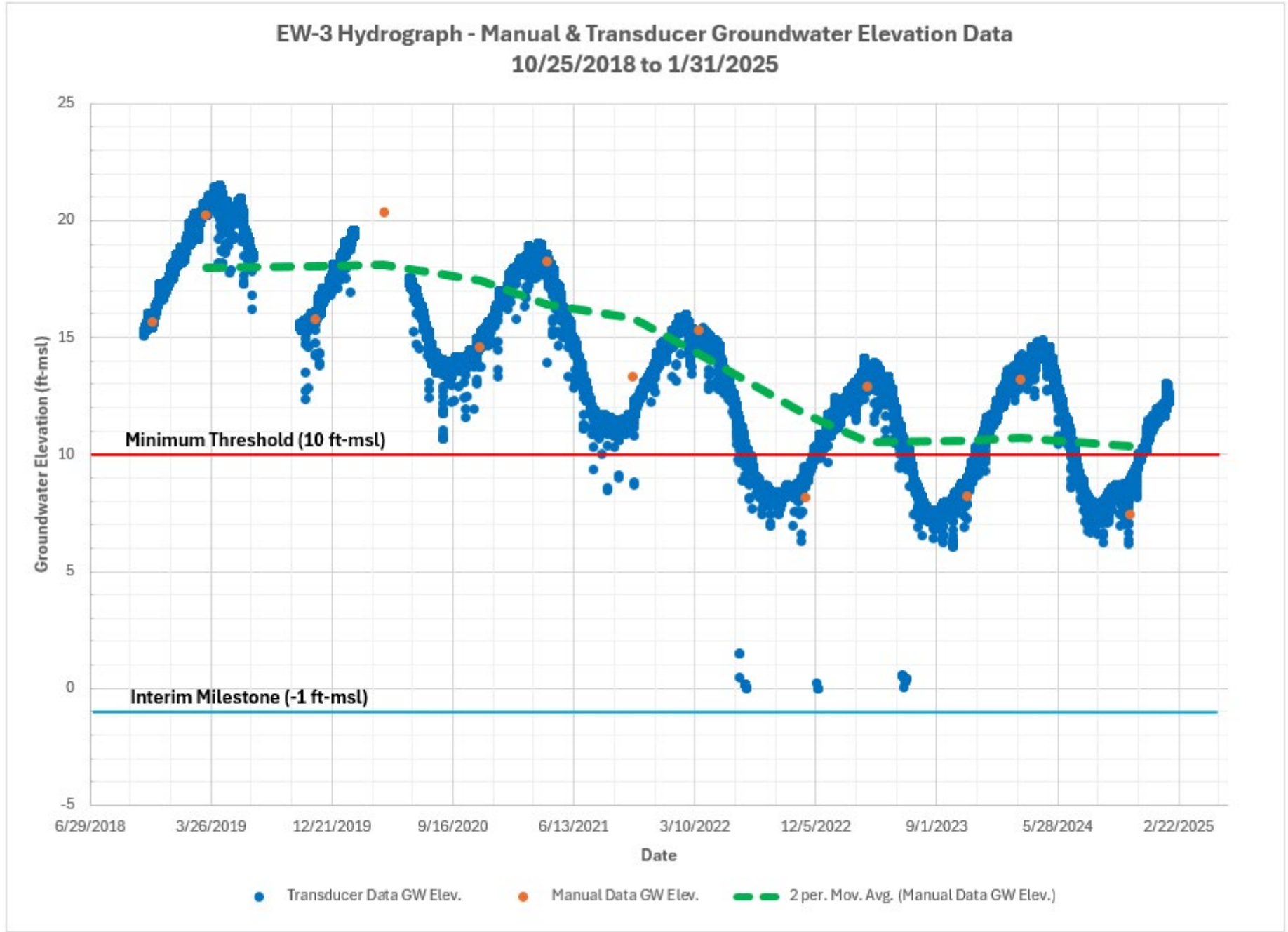


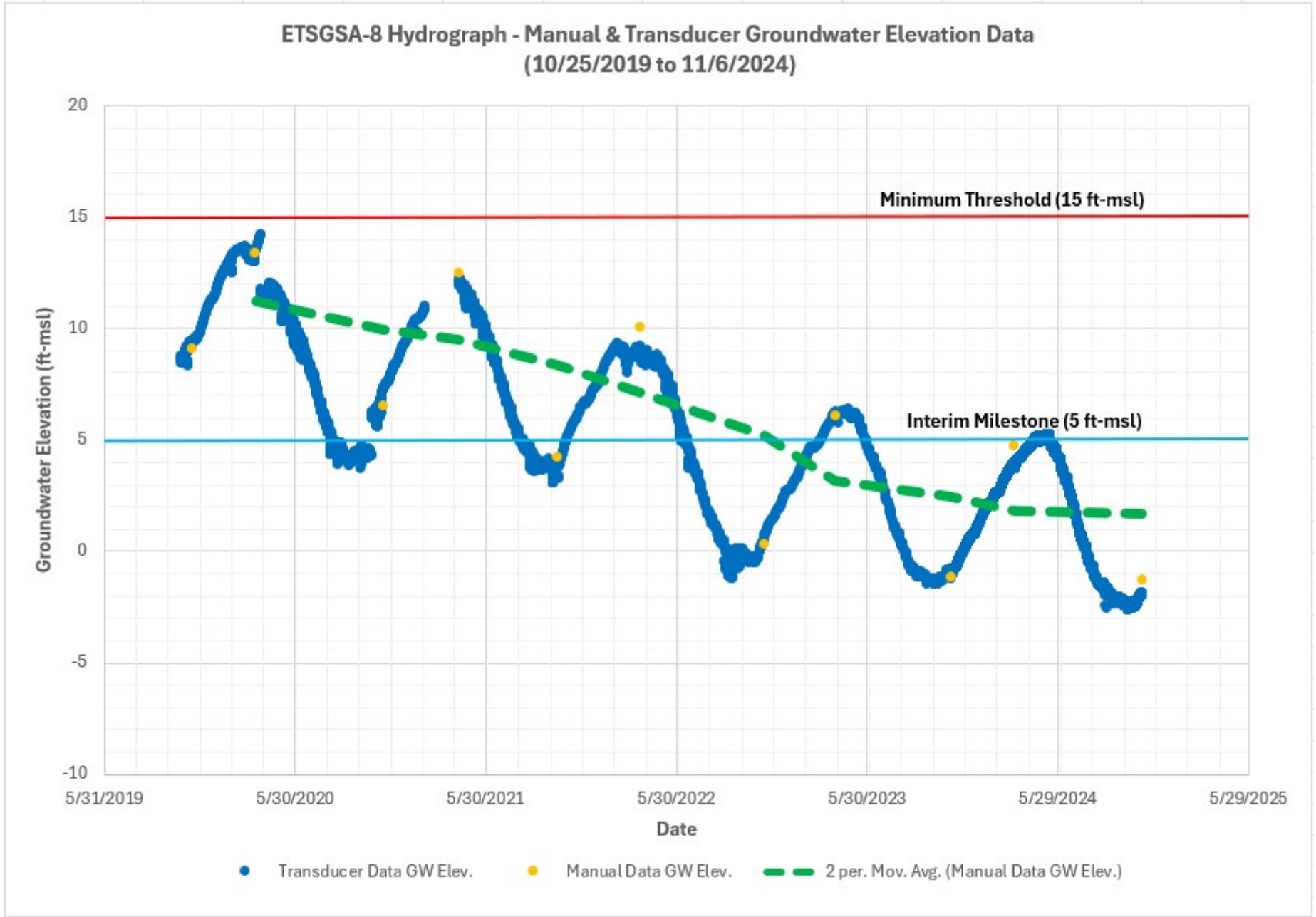







ETSGSA-13 Manual & Transducer Groundwater Elevation Data
2/4/2020 to 11/7/2024
Groundwater Elevation (ft-msl)
70
60
50
40
30
20
10
0
Minimum Threshold (30 ft-msl)
Interim Milestone (26 ft-msl)
11/30/2019
5/28/2020
11/24/2020
5/23/2021
11/19/2021
5/18/2022
11/14/2022
5/13/2023
11/9/2023
5/7/2024
11/3/2024
Date
Transducer Data GW Elev.
Manual Data GW Elev.
2 per. Mov. Avg. (Manual Data GW Elev.)


EW-3 Hydrograph - Manual & Transducer Groundwater Elevation Data
10/25/2018 to 1/31/2025
Groundwater Elevation (ft-msl)
25
20
15
10
5
0
-5
Minimum Threshold (10 ft-msl)
Interim Milestone (-1 ft-msl)
6/29/2018
3/26/2019
12/21/2019
9/16/2020
6/13/2021
3/10/2022
12/5/2022
9/1/2023
5/28/2024
2/22/2025
Date
Transducer Data GW Elev.
Manual Data GW Elev.
2 per. Mov. Avg. (Manual Data GW Elev.)


ETSGSA-8 Hydrograph - Manual & Transducer Groundwater Elevation Data
(10/25/2019 to 11/6/2024)
Minimum Threshold (15 ft-msl)
Interim Milestone (5 ft-msl)
Groundwater Elevation (ft-msl)
20
15
10
5
0
-5
-10
5/31/2019
5/30/2020
5/30/2021
5/30/2022
5/30/2023
5/29/2024
5/29/2025
Date
Transducer Data GW Elev.
Manual Data GW Elev.
2 per. Mov. Avg. (Manual Data GW Elev.)