GSP Coordinating Committee

Coordinating Committee Meeting – October 22, 2018

Merced Irrigation-Urban GSA
Merced Subbasin GSA
Turner Island Water District GSA-1

Image courtesy: Veronica Adrover/UC Merced

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Agenda

1. Call to order
2. Approval of minutes for September 24, 2018 meeting
3. Stakeholder Committee update
    1. Update from October 22 morning meeting
4. Presentation by Woodard & Curran on GSP development
    1. Next Steps in GSP Development
    2. Groundwater Rights Primer
    3. Projects and Management Actions
5. Other Updates

Image courtesy: Veronica Adrover/UC Merced

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Agenda

5. CASGEM Update
6. Public Outreach Update
7. Coordination with Neighboring Basins
8. Public Comment
9. Next Steps and Adjourn

Image courtesy: Veronica Adrover/UC Merced

Approval of Minutes

Image courtesy: Veronica Adrover/UC Merced

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Stakeholder Committee Update

Image courtesy: Veronica Adrover/UC Merced

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Next Steps in GSP Development

Image courtesy: Veronica Adrover/UC Merced

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GSP Development

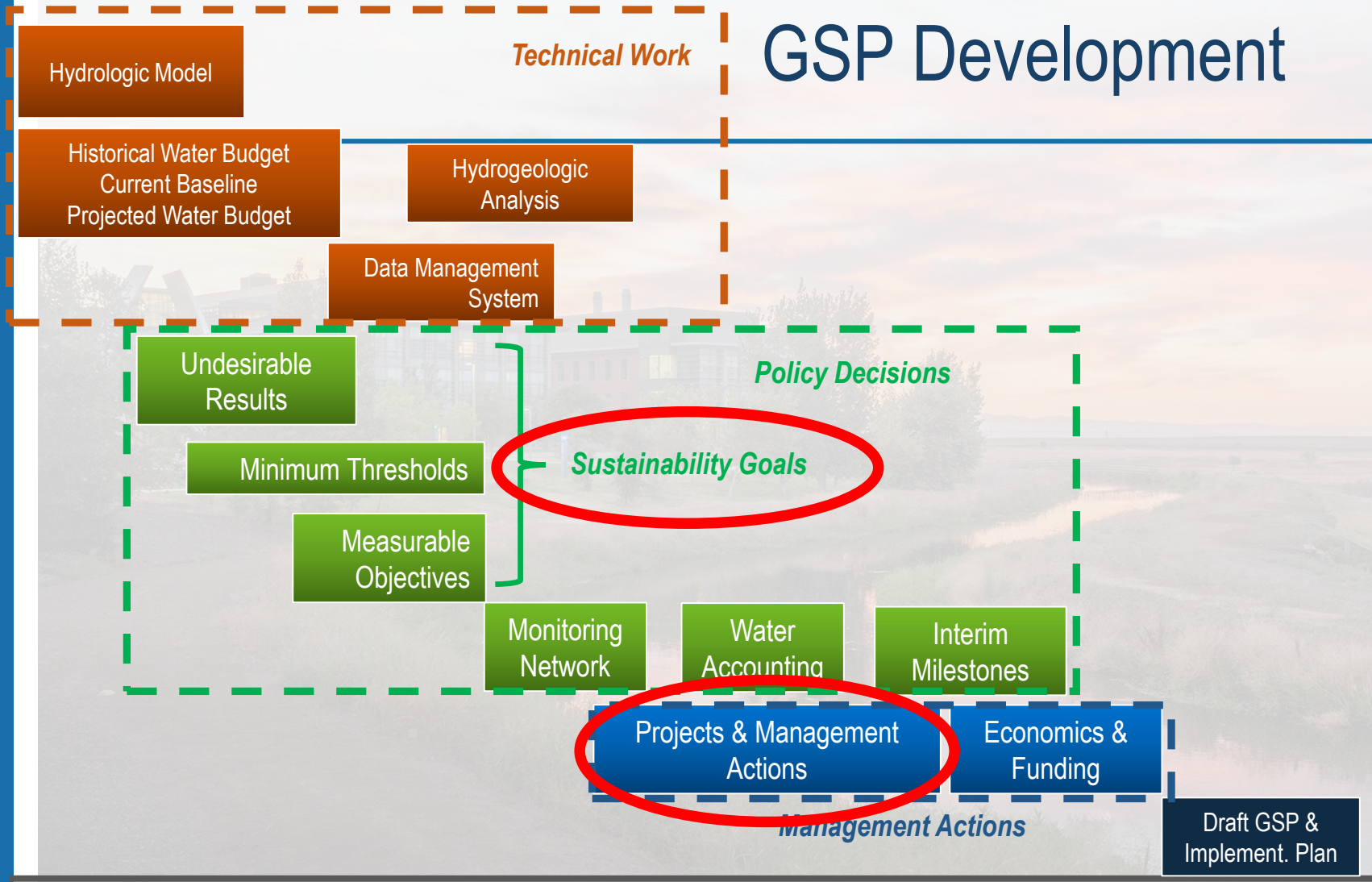

Image courtesy: Veronica Adrover/UC Merced

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Sustainable Groundwater Management Act Overview

- **Merced Groundwater Subbasin is in a state of critical overdraft**

- **SGMA requires a Groundwater Sustainability Plan** by Jan 1, 2020 for sustainable groundwater management of the basin within a 20-year timeframe

Image courtesy: Veronica Adrover/UC Merced

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Sustainable Groundwater Management Act Overview

- **SGMA has two main focus areas:**
  - Halt the overdraft (inputs to the basin = outputs from the basin)
  - Establish thresholds to monitor over time (annual reporting with 5-year progress updates required)

- SGMA **does not** alter water rights:
  - Water Code section 10720.5(b) that states that nothing in the legislation "determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights."

Image courtesy: Veronica Adrover/UC Merced

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Path to Sustainability for Merced Subbasin

The challenge: reduce groundwater pumping in the subbasin, while minimizing how much reduction has to be made in total water use

Steps to determine how to meet sustainable yield (1) and how much additional water is needed to meet total demand (2 and 3):

1. Determine extent of groundwater pumping that can be continued within sustainable yield

2. Determine available surface water

3. Identify potential deficit between total demand and sustainable groundwater pumping + available surface water

Image courtesy: Veronica Adrover/UC Merced

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Characterizing the Challenge

- **Historical and projected water budgets were prepared to summarize basin conditions**
  - Document available information about surface and groundwater supplies and demands to tally all inputs and outputs to the basin
  - Used to estimate the extent of overdraft occurring and expected to occur in the future
- **SGMA requires determination of "sustainable yield":** the amount of groundwater that may be extracted from the basin over time without causing undesirable results
- **Sustainable yield water budget provides guidance on pumping reductions needed to halt overdraft**
  - Initial estimates are that total groundwater pumping from the Subbasin would need to be reduced by about 25% over the next twenty years to achieve sustainable yield by 2040

****Initial estimates do not reflect changes to flow projections resulting from FERC relicensing, new projects to increase recharge, etc.*

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Path to Sustainability Using Projects and Management Actions

GOAL: Halt overdraft as required by SGMA while minimizing required reduction in overall water use

Merced Subbasin Total Water Use

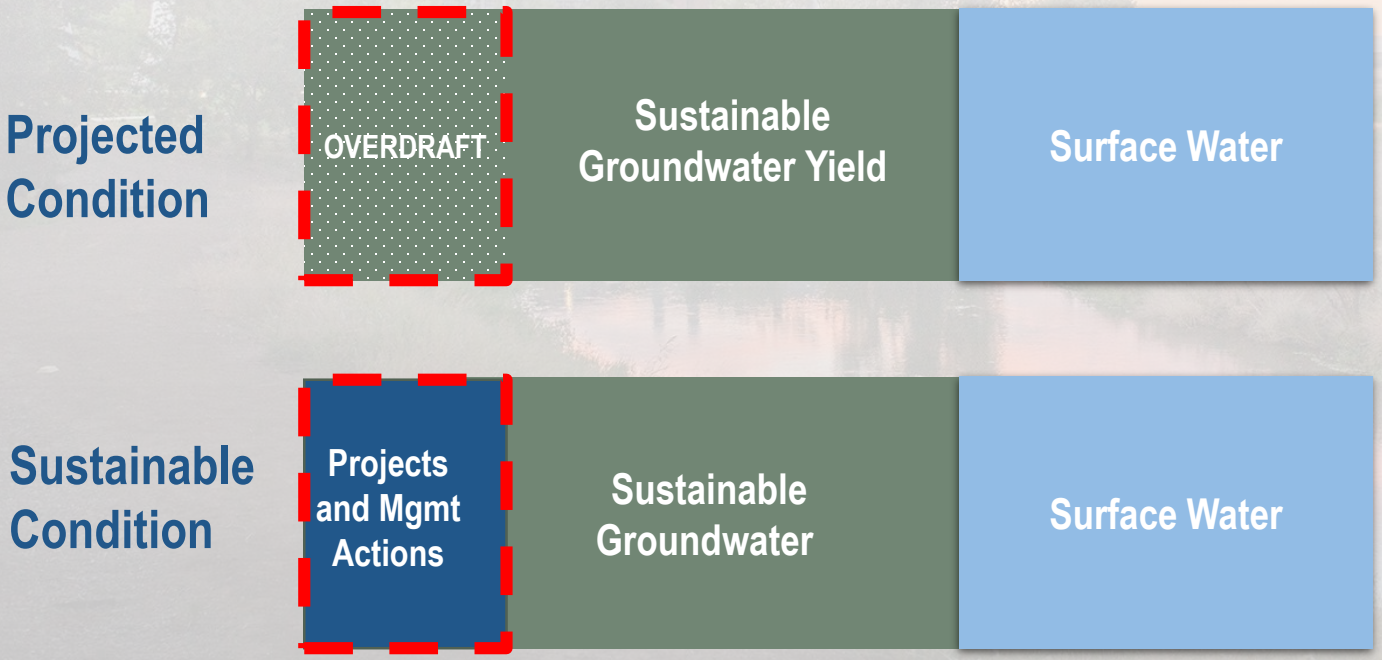

Image courtesy: Veronica Adrover/UC Merced

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Two Areas to be Addressed

WHAT?	1. Reduce Groundwater Pumping	2. Reduce Demand and Increase Available Supply
HOW?	Develop groundwater allocation strategy that respects water rights and reduces pumping	Identify projects and management actions to reduce demand and increase supply

Image courtesy: Veronica Adrover/UC Merced

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Path to Sustainability for Merced Subbasin

1. Reduce Groundwater Pumping

Develop allocation approach to determine how to share available groundwater

Image courtesy: Veronica Adrover/UC Merced

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Path to Sustainability for Merced Subbasin

2. Identify projects and management actions to reduce demand and increase supply

Groundwater recharge projects: increases stored groundwater and increases allowable pumping for participating agencies

Surface water projects: allows additional surface water to be used and enables greater total water use (e.g. flood/stormwater management)

Conservation: decreases total demand in order to reduce additional water needed beyond available groundwater and surface water (e.g., improved water use efficiency)

Image courtesy: Veronica Adrover/UC Merced

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Subbasin Sustainability Discussion

- **Does the water budget help you understand current and future conditions?**
  - Groundwater pumping
  - Surface water supplies
  - Water demand
- **Is the magnitude of the groundwater overdraft problem clear and understandable?**
- **Does this problem framing help you understand the types of actions needed to achieve sustainable groundwater?**
  - Reduce groundwater pumping
  - Increase groundwater recharge
  - Provide additional surface water supplies
  - Reduce water demand

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Groundwater Rights Primer and Allocation Approaches

Image courtesy: Veronica Adrover/UC Merced

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Projects and Management Actions

Image courtesy: Veronica Adrover/UC Merced

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Projects and Management Actions (overview)

- Projects can be implemented to help achieve sustainability management while minimizing impacts to groundwater beneficial users

- Projects and Management Actions can increase supply availability and / or reduce demand for groundwater
  - Evaluate supply-side options and their effect on yield
  - Evaluate various governance options (water market, etc.)

Image courtesy: Veronica Adrover/UC Merced

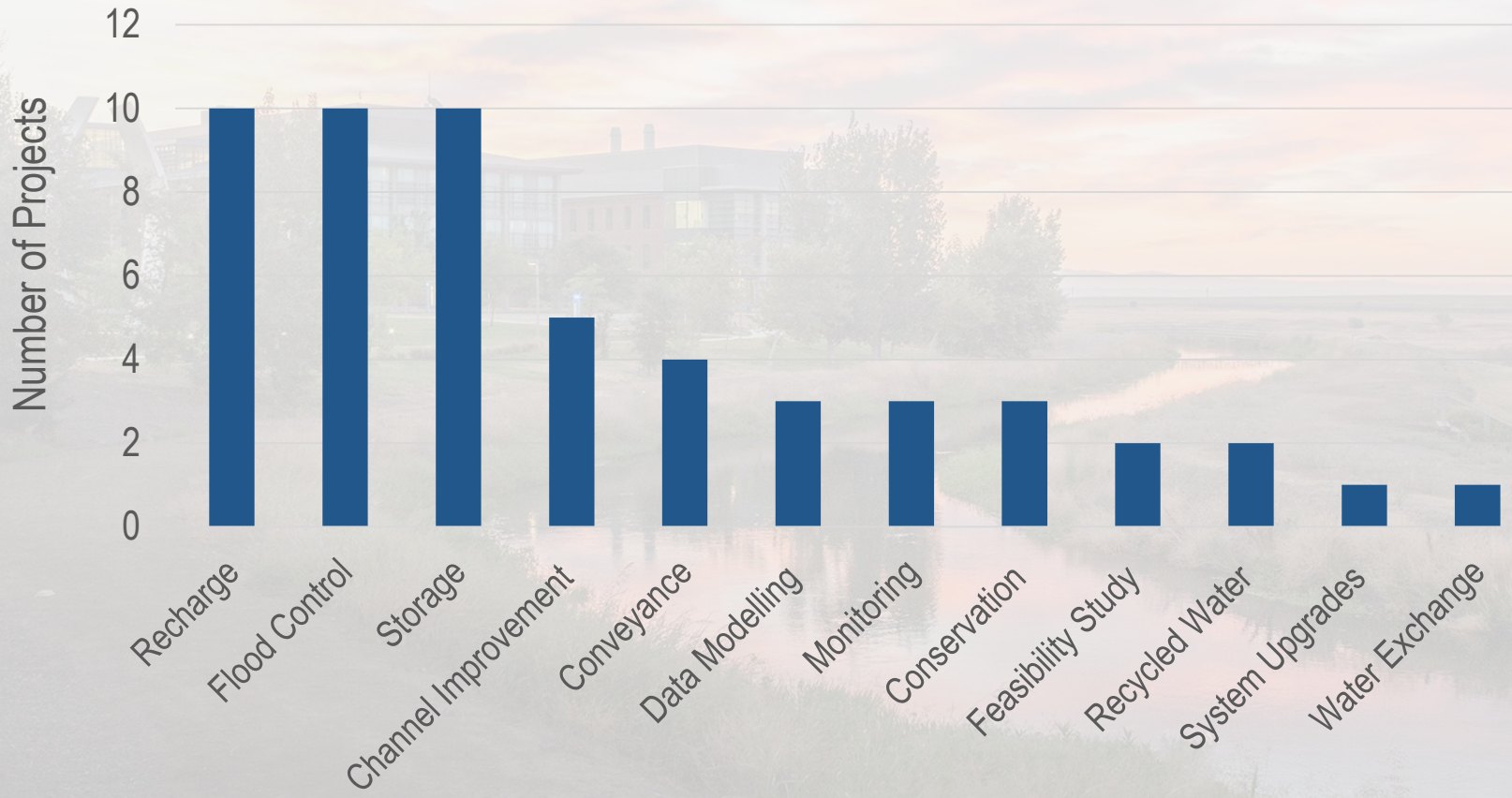
Projects and Management Actions:
collecting existing project information for discussion

- Initial ideas and information on existing projects have been collected to be used for discussion purposes
- Woodard & Curran team contacted GSAs and reviewed the following plans for project information:

Merced Integrated Regional Water Management Plan (Merced IRWMP)
DAC projects in the Merced GSP DWR Grant Application
City of Atwater General Plan
Merced General Plan
Merced County General Plan
City of Livingston UWMP
City of Merced UWMP
Merced Water Master Plan
Merced Subbasin Groundwater Management Plan

Image courtesy: Veronica Adrover/UC Merced

Projects and Management Actions:
Preliminary Projects



many projects are relevant for several of the above. Placeholder & example projects not included.

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Projects Summary – Part 1 of 4

Project #	Project Name	Project Type	Source of Information
1	Brasil Recharge Project	Recharge/Conveyance	Bob Kelley, Merced Subbasin GSA/Stevinson Water District
2	TIWD Merced GSP Projects Reservoir	Storage	Larry Harris, TIWD
3	TIWD Merced GSP Projects Recharge	Recharge	Larry Harris, TIWD
4	Merced I.D. to Lone Tree MWC conveyance canal	Conveyance	George Park, Lone Tree MWC
5	Vander Woude Dairy Offstream Temporary Storage	Storage	Brad Samuelson for Simon Vander Woude, Sandy Mush MWC
6	Go Big Super-Connect Conveyance Project	Conveyance	Brad Robson
7	Marguerite Water Retention Facility	Storage/Flood Control	Brad Robson
8	Planada Groundwater Recharge Basin Pilot Project (DAC project)	Recharge	GSP Grant Application
9	El Nido Groundwater Monitoring Wells (DAC project)	Monitoring	GSP Grant Application
10	Meadowbrook Water System Intertie Feasibility Study (DAC project)	Feasibility Study	GSP Grant Application

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Projects Summary – Part 2 of 4

Project #	Project Name	Project Type	Source of Information
11	El Nido Recharge Basin	Recharge	2018 IRWMP
12	Atwater-McSwain Regulating/Recharge Basin	Recharge	2018 IRWMP
13	Bear Reservoir Enlargement and Downstream Levee and Channel Improvements	Flood Control/Storage/ Channel Improvement	2018 IRWMP
14	Black Rascal Creek Flood Control Bypass/ Supplemental Groundwater Supply Improvements	Flood Control/Recharge	2018 IRWMP
15	Black Rascal Creek Flood Control Project	Storage/Flood Control	2018 IRWMP
16	Burns Reservoir Enlargement and Downstream Levee and Channel Improvements	Storage/Flood Control/Channel Improvements	2018 IRWMP
17	Crocker Dam Modification	Flood Control/Storage/ Recharge	2018 IRWMP
18	Exchange Recycled Water for Surface Water in Parks	Recycled Water/ Water Exchange	2018 IRWMP
19	Fairfield Canal/ El Nido Superhighway	Flood Control/Recharge	2018 IRWMP
20	Le Grand-Athlone WD Surface Water Extension	Flood Control/Conveyance	2018 IRWMP
21	Lake Yosemite Booster Pump Station	Storage	2018 IRWMP

Projects Summary – Part 3 of 4

Project #	Project Name	Project Type	Source of Information
22	Livingston Canal Lining Project	Channel Improvement	2018 IRWMP
23	Mariposa Reservoir Enlargement and Downstream Levee and Channel Improvements	Storage/Channel Improvement	2018 IRWMP
24	Merced Groundwater Subbasin LIDAR	Data Modeling	2018 IRWMP
25	Merced Irrigation Flood-MAR Canal Automation	Flood Control/Recharge	2018 IRWMP
26	Merced IRWM Region Climate Change Modeling	Data Modeling	2018 IRWMP
27	Merced Region Water Use Efficiency Program	Conservation	2018 IRWMP
28	Merquin County Water District Recharge Basin	Recharge	2018 IRWMP
29	Owens Reservoir Enlargement and Downstream Levee and Channel Improvements	Storage/Channel Improvements	2018 IRWMP
30	Planada Northwest 2019 Water System Improvement Project	System Upgrades	2018 IRWMP
31	Real Time Simulation Flood Control Modeling - Bear Creek	Data Modeling/Flood Control	2018 IRWMP
32	Rice Field Pilot Study Monitoring Wells	Monitoring	2018 IRWMP

Image courtesy: Veronica Adrover/UC Merced

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Projects Summary – Part 4 of 4

Project #	Project Name	Project Type	Source of Information
33	Study for Potential Water System Intertie Facilities from Merced I.D. to LeGrand-Athlone W.D. and Chowchilla W.D.	Feasibility Study	2018 IRWMP
34	University of California Merced Surface Water Augmentation	Recycled Water	2018 IRWMP
35	Water Efficiencies Rebate Program	Conservation	2018 IRWMP
36	Water Meter Conservation Project	Conservation/Monitoring	2018 IRWMP
37	Weather Based Irrigation Controllers	Control System	2018 IRWMP
38	Well 20 TCP Treatment	Well Redesign & Install	2018 IRWMP
39	Residential Toilet Replacement Program (Example)	Conservation	Woodard & Curran
40	Residential Turf Replacement Program (Example)	Conservation	Woodard & Curran
41	Remote Sensing (Placeholder)	Monitoring	TBD
42	Water Market (Placeholder)	Water Exchange	TBD
43	Monitoring Network (Placeholder)	Monitoring	TBD
44	Metering Projects (Placeholder)	Monitoring	TBD

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Next Steps

- Continue coordination with GSAs and local agencies to gather additional information on what project and management options exist
- Develop and apply criteria to assess and evaluate projects
- Identify projects for inclusion in the GSP implementation plan
- Determine effects of projects / management actions on basin conditions
- Review and revise thresholds and projects as required
- Revise implementation plan as needed to achieve sustainability in terms of overdraft and threshold compliance

Image courtesy: Veronica Adrover/UC Merced

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Projects and Management Actions Discussion

- Are there projects and actions we are missing?
- What criteria should be used to assess projects?
  Examples:
  - Yield
  - Location
  - Unit cost
  - Project feasibility and status
  - Project funding / financing
  - Environmental benefit / impact
  - Others?

Image courtesy: Veronica Adrover/UC Merced

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Other Updates

Image courtesy: Veronica Adrover/UC Merced

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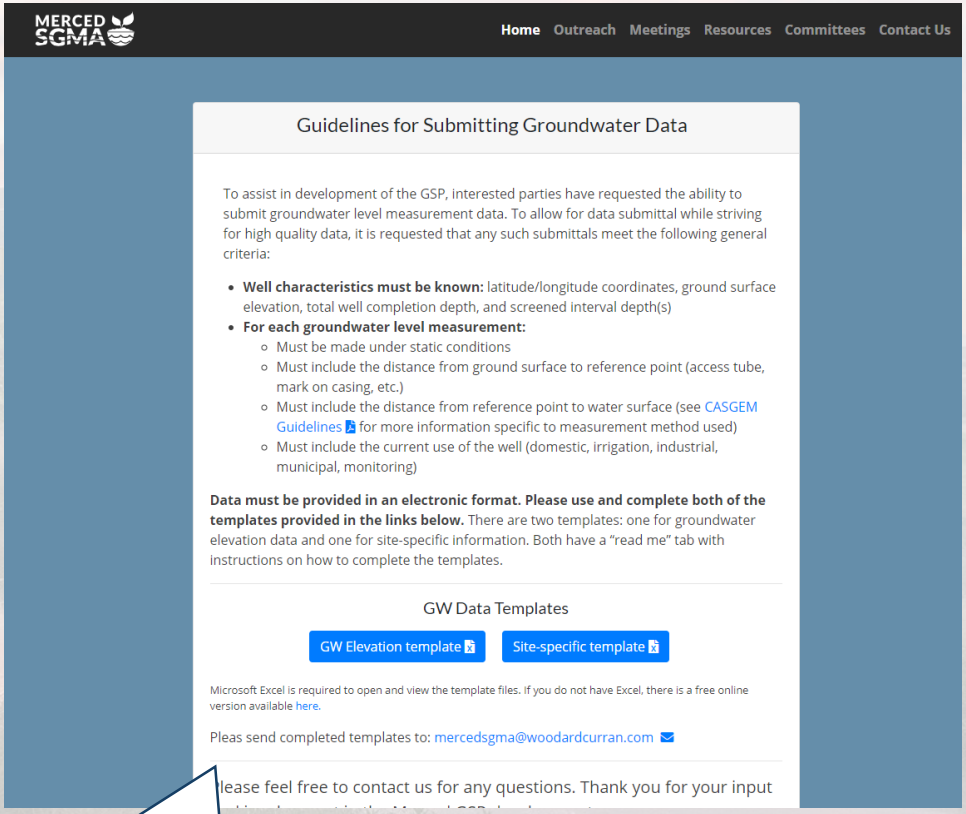
Submitting Groundwater Data

- Templates have been developed for submitting groundwater level measurement data
- Guidelines & templates for submitting groundwater data now on MercedSGMA website
- Templates have been created in connection to ongoing data collection for the **Merced Data Management System (DMS)**



Guidelines & templates for submitting data on MercedSGMA homepage

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Submitting Groundwater Data

- **In submitting data, certain well characteristics must be known:** latitude/longitude coordinates, ground surface elevation, total well completion depth, and screened interval depth(s)

- **Each groundwater level measurement must:**
  - Be made under **static conditions**
  - Include the **distance from ground surface to reference point** (access tube, mark on casing, etc.)
  - Include the **distance from reference point to water surface**
  - Include the **current use** of the well (domestic, irrigation, industrial, municipal, monitoring)
  - Be provided in **electronic format**

Image courtesy: Veronica Adrover/UC Merced

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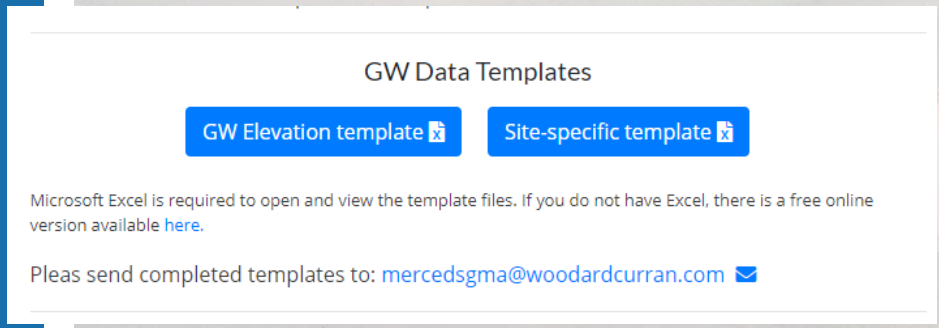
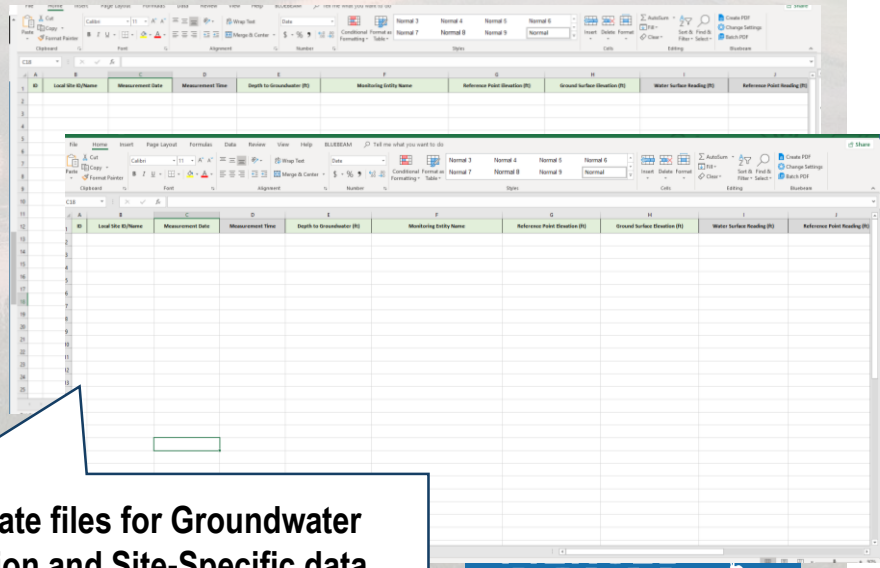
Submitting Groundwater Data

- **Please use the two templates provided:**
  - Groundwater elevation template
  - Site-specific information
- **Both have a "read me" tab** with instructions to help you complete the templates.
- **Please send completed templates to** mercedsgma@woodardcurran.com





Location for GW Data Templates

Template files for Groundwater Elevation and Site-Specific data

CASGEM Update

Image courtesy: Veronica Adrover/UC Merced

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Public Outreach Update

Image courtesy: Veronica Adrover/UC Merced

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Public Outreach

- Public Outreach Meetings/Workshop - December
  - Project Update
  - Water Budgets
  - Management Actions and Projects
- Meetings:
  - Dec. 4th Community Workshop – Planada
  - Dec. 13th Community Workshop – Franklin-Beechwood
- Update from Self-Help Enterprises and Leadership Counsel

Image courtesy: Veronica Adrover/UC Merced

Coordination With Neighboring Basins Update

Image courtesy: Veronica Adrover/UC Merced

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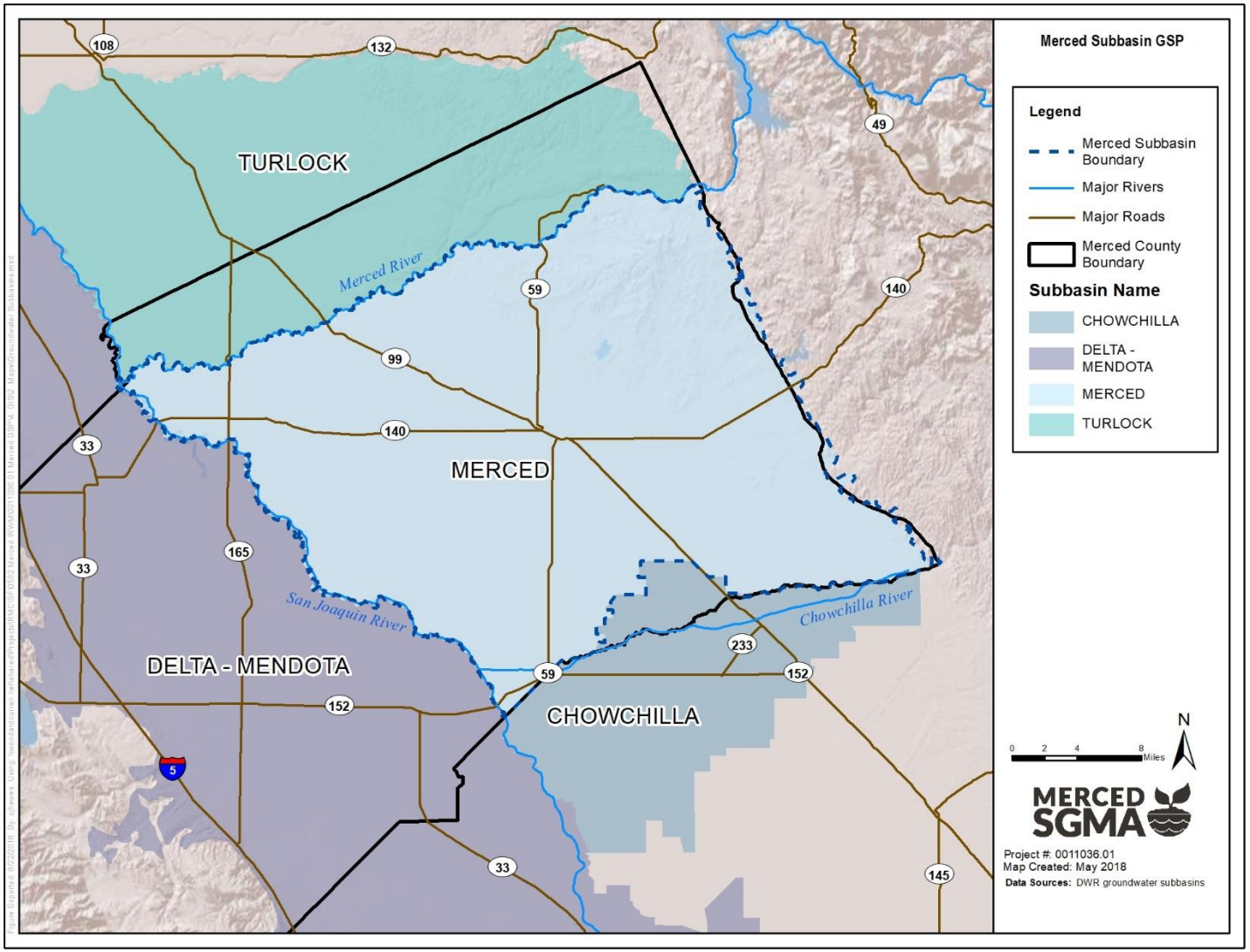
Coordination with Neighboring Basins



Questions/Comments from Public

Image courtesy: Veronica Adrover/UC Merced

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Next Steps

Image courtesy: Veronica Adrover/UC Merced

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Next Steps

- GSP Development Items:
  - Water Budgets and document assumptions for review and approval by GSAs
  - Complete draft Hydrogeologic Conceptual Model (HCM) section
  - Finalize Sustainable Yield analysis
  - Assess projects and management actions

- Focus for November meeting
  - Projects and management actions (continued)
  - Data Management System

- Adjourn to next meeting (Monday, November 26, 2018 @ 1:30 PM, location Castle Airport)

Image courtesy: Veronica Adrover/UC Merced

GSP Coordinating Committee

Coordinating Committee Meeting – October 22, 2018

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Turner Island Water District GSA-1

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