



Safe Yield Data Collection and Evaluation

Workshop #1

December 14, 2022

Agenda

- **Welcome**
- **Background and Objectives**
- **FY 2020/21 Report**
- **Data Request**
- **Groundwater Pumping**
- **Water Conservation**
- **Next Steps and Schedule**

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Background – April 28, 2017 Court Order

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 - Approved current Safe Yield Reset methodology
 - Included a provision to update the Safe Yield Reset methodology
 - Required that the Chino Valley Model be updated and that the Safe Yield be reevaluated by June 30, 2025
 - Required annual data collection, evaluation, and reporting
 - Allowed for an interim correction of Safe Yield (+/- 2.5%)
 - Required a peer review process

Background – April 28, 2017 Court Order

- Watermaster obligations for data collection and evaluation:
 - Ensure that production is metered, reported, and included in Assessment Packages
 - Collect data on cultural conditions
 - Evaluate data for material changes from existing and projected conditions or threatened undesirable results
 - Develop annual budgets for data collection and evaluation

Scope to Implement Court Order

- Collect the following data:
 - Land use
 - Groundwater pumping (evaluate only)
 - Managed recharge
 - Urban outdoor water use
 - Regional water infrastructure
- Evaluate the data:
 - 2020 SYR Projection versus 2019-22 Actual Data (FY 2019-2022)
 - 2020 SYR Projection versus 2023 Projection (FY 2023-2030)

Scope to Implement Court Order – Evaluation

Answer the following questions:

- 1. Is there a potential for undesirable results that were not identified in the 2020 SYR?*
 - Specifically, is there a “potential need for prudent management discretion to avoid or mitigate undesirable results including, but not limited to, subsidence, water quality degradation, and unreasonable pump lifts”? (2017 Court Order, p. 17)
- 2. Is there a reasonable likelihood that the cumulative impact of the differences between the new datasets/projections (i.e., the 2019-22 Actual Data and the 2023 Projection) and the data and assumptions in the 2020 SYR would result in the actual Safe Yield being greater than 2.5 percent (more or less) than the current Safe Yield? (2017 Court Order, p. 17).*

Scope to Implement Court Order – Reporting

- Prepare annual report
 - Recommend future updates to data collection/evaluation process
 - Recommend additional analyses/modeling (if necessary)

Meeting Goals

- Peer reviewers clearly understand the objectives and scope of work for the data collection/evaluation effort
- Review the *Data Collection and Evaluation Report for FY 2020/2021* and the planning data request for FY 2021/2022
- *Data Collection and Evaluation Report for FY 2021/2022*
 - Communicate findings of 2020 SYR versus 2019-22 Actual Data for groundwater pumping
 - Discuss potential future impacts of urban outdoor water use regulations

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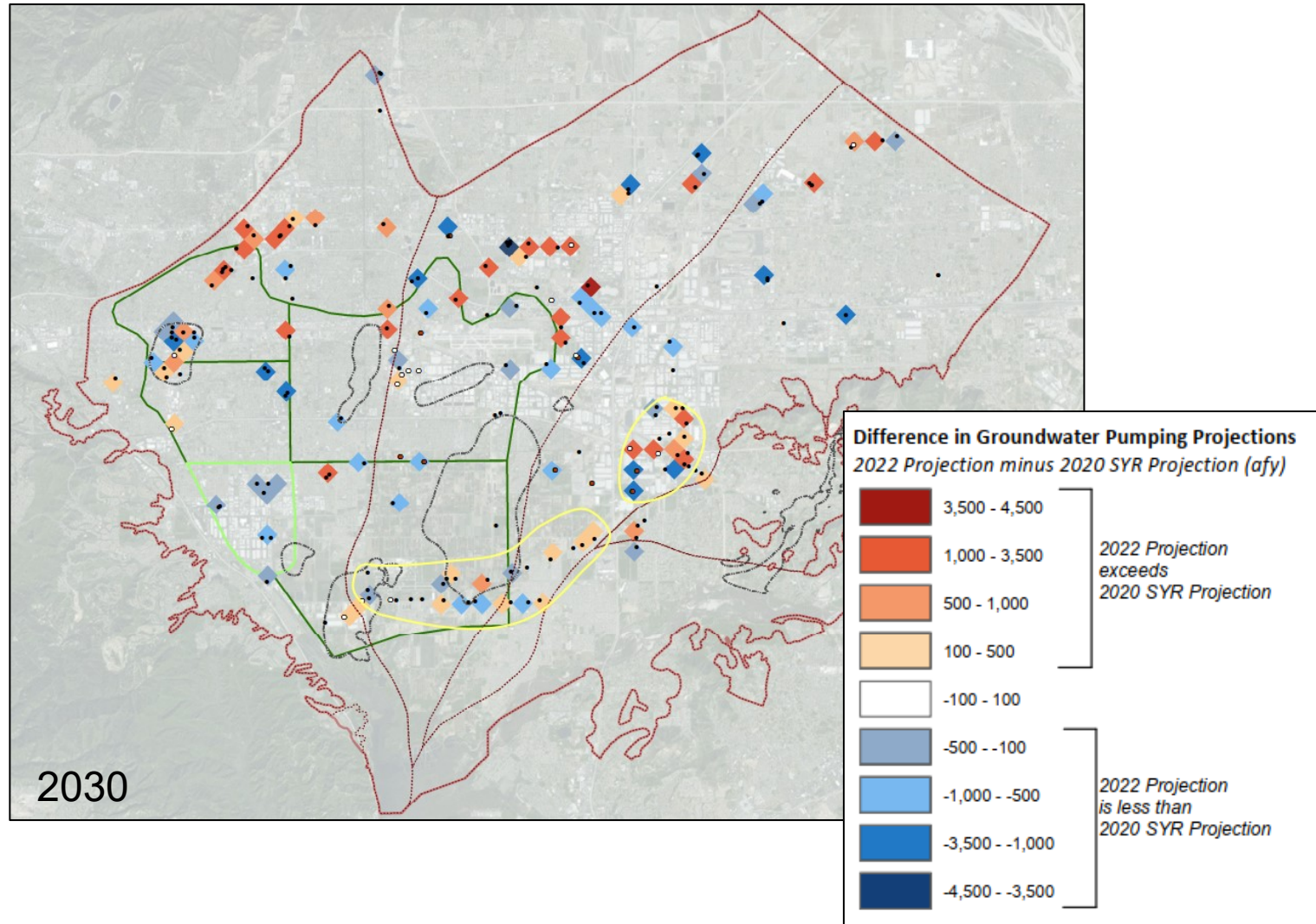
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Data Collection and Evaluation Report for FY 2020/2021

- Comparisons:
 - 2020 SYR Projection versus 2019-21 Actual Data (FY 2019-2021)
 - 2020 SYR Projection versus 2022 Projection (FY 2022-2030)
- Three peer review workshops
- Draft report completed April 2022
- Final report completed May 2022

Key Findings from FY 2020/21 Report

- The 2019-21 Actual Data and 2022 Projection for groundwater pumping indicate the potential for undesirable results related to increased risk of new land subsidence and pumping sustainability challenges that were not identified in the 2020 SYR.



Key Findings from FY 2020/21 Report

- The 2019-21 Actual Data for urban outdoor water use and the anticipated implementation of future conservation legislation indicate the potential for less net recharge and Safe Yield compared to the 2020 SYR.
- The 2019-21 Actual Data and 2022 Projection for land use, managed recharge, and regional water infrastructure are not significantly different than the 2020 SYR Projection.

Expected Changes for FY 2021/22 Report

- Omitting land use comparison
- Updating methodology for assessing urban outdoor water use to include recycled water and associated urban land uses
- Including more details on data comparisons

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FY 2021/22 Data Request

- **Parties requested to provide the following data:**
 - Current infrastructure
 - Planned facilities
 - Water supply plan
 - 20-year operating plans (NEW)
 - Urban outdoor water use (NEW)

20-Year Storage & Operation Plan

- Pursuant to Watermaster Board direction in February 2022
- *Requested to review and provide best estimate of:*
 - Projected water transactions
 - Percentage of overproduction and obligations met via transfers or managed storage vs wet-water recharge
 - Projected storage account balances (quantitative or qualitative)
- *Use information to project the use of managed storage and ability to meet Desalter Replenishment Obligations*

20-Year Storage & Operation Plan

New data requested

Planning year	Fiscal Year	Historical/Projected Pumping less DYY (af)	Historical/Projected Water Transactions To/(From) ¹ (af)	Historical/Projected Response to Overproduction ²		Historical/Projected Response to Desalter Replenishment Obligation		End-of-Year Managed Storage Account Balance ³ (af)
				Percentage Met through Transfers or Managed Storage	Percentage Met through Wet-Water Recharge	Percentage Met through Transfers or Managed Storage	Percentage Met through Wet-Water Recharge	
-	2018	9,286	(2,500)	-	-	-	-	44,849
-	2019	10,840	(3,800)	-	-	-	-	45,704
-	2020	10,551	-	-	-	-	-	46,850
-	2021	9,192	-	-	-	-	-	47,779
-	2022	10,184	-	-	-	-	-	47,355
1	2023	10,409		100	0	100	0	47,355
2	2024	10,633		100	0	100	0	47,355
3	2025	10,858		100	0	100	0	47,355
4	2026	11,023		100	0	100	0	47,355
5	2027	11,189		100	0	100	0	47,355
6	2028	11,354		100	0	100	0	47,355
7	2029	11,520		100	0	100	0	47,355
8	2030	11,685		100	0	100	0	47,355

Data from FY 2020/21 Data Request

Outdoor Water Use Conservation

- *Provided* a description of AB 1668 and SB 606, in which Parties must:
 - Define urban water use objectives
 - Report actual urban water use, and
 - Document progress towards urban water use objectives
- *Requested* information on projected changes to urban outdoor water use and/or progress towards setting or complying with outdoor water use objectives
- *Use information to* inform updated projections

Next Steps

- Using data received to develop 2023 Projections
- Integrating this data into CBWM data portal

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Groundwater Pumping in the CVM

- How is groundwater pumping used in the CVM?
 - Historical data → Model calibration
 - Water-supply plans → Developing model scenarios for projections
- Why is it important to evaluate differences between projected and actual pumping?
 - Pumping (rate and location) affects groundwater levels, water budget, and net recharge
 - Net recharge = pumping + change in storage – supplemental water recharge

Groundwater Pumping Data Collection and Evaluation

- 2019-22 Actual Data for groundwater pumping:
 - Appropriative Pool – Metered data provided by the Parties
 - Overlying Non-Ag Pool – Metered data provided by the Parties
 - Agricultural Pool – Metered data provided by the Parties and estimated data provided by Watermaster Staff

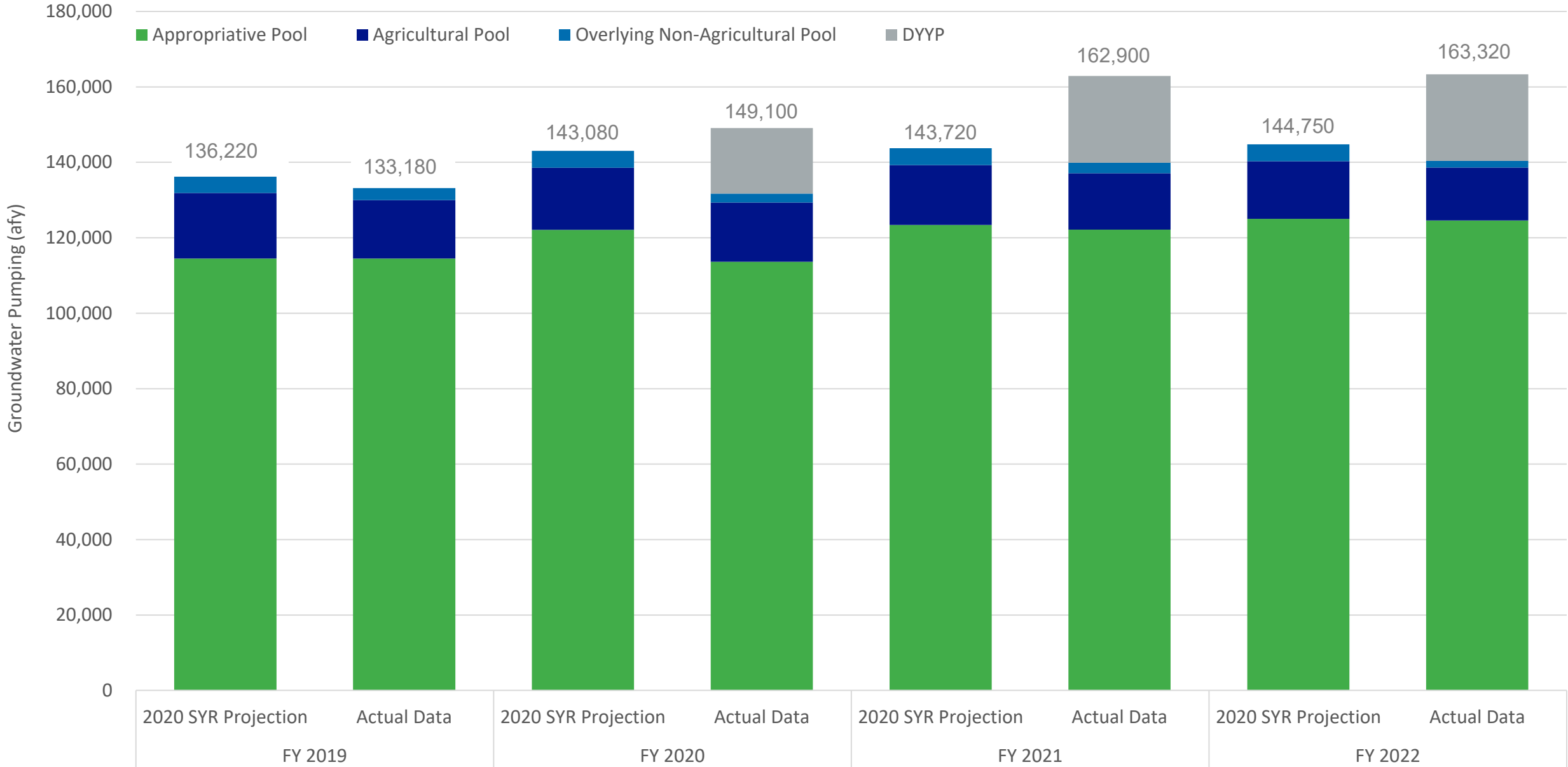


Comparison of 2020 SYR Projection and 2019-22 Actual Data for Groundwater Pumping

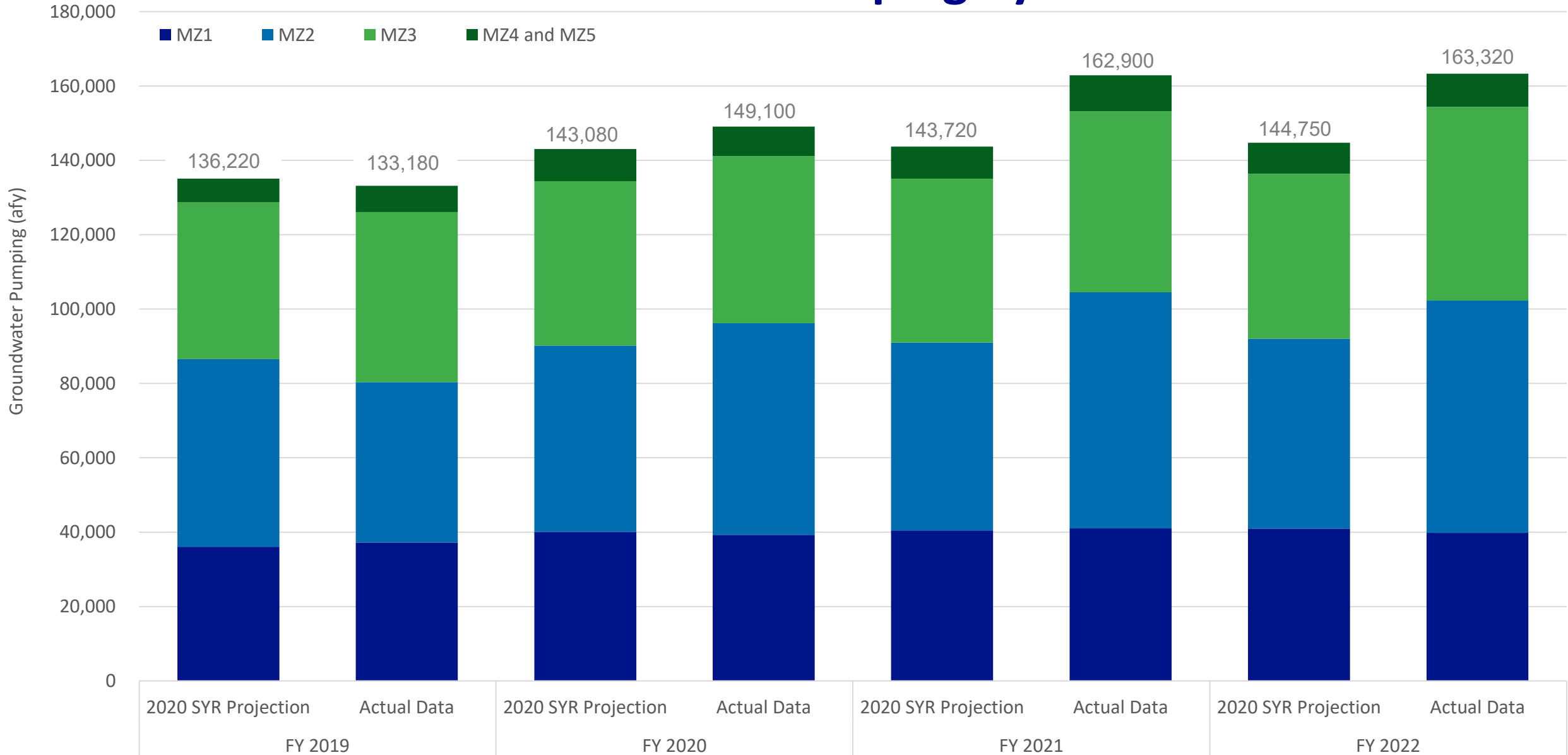
Process:

1. Compiled the 2019-22 Actual Data and 2020 SYR Projection of groundwater pumping data
2. Compared total pumping:
 - By quarter/FY
 - Spatially (agency/MZ)
3. Compared total pumping to areas with:
 - Projected pumping sustainability challenges
 - Areas of subsidence concerns
 - Water quality concerns

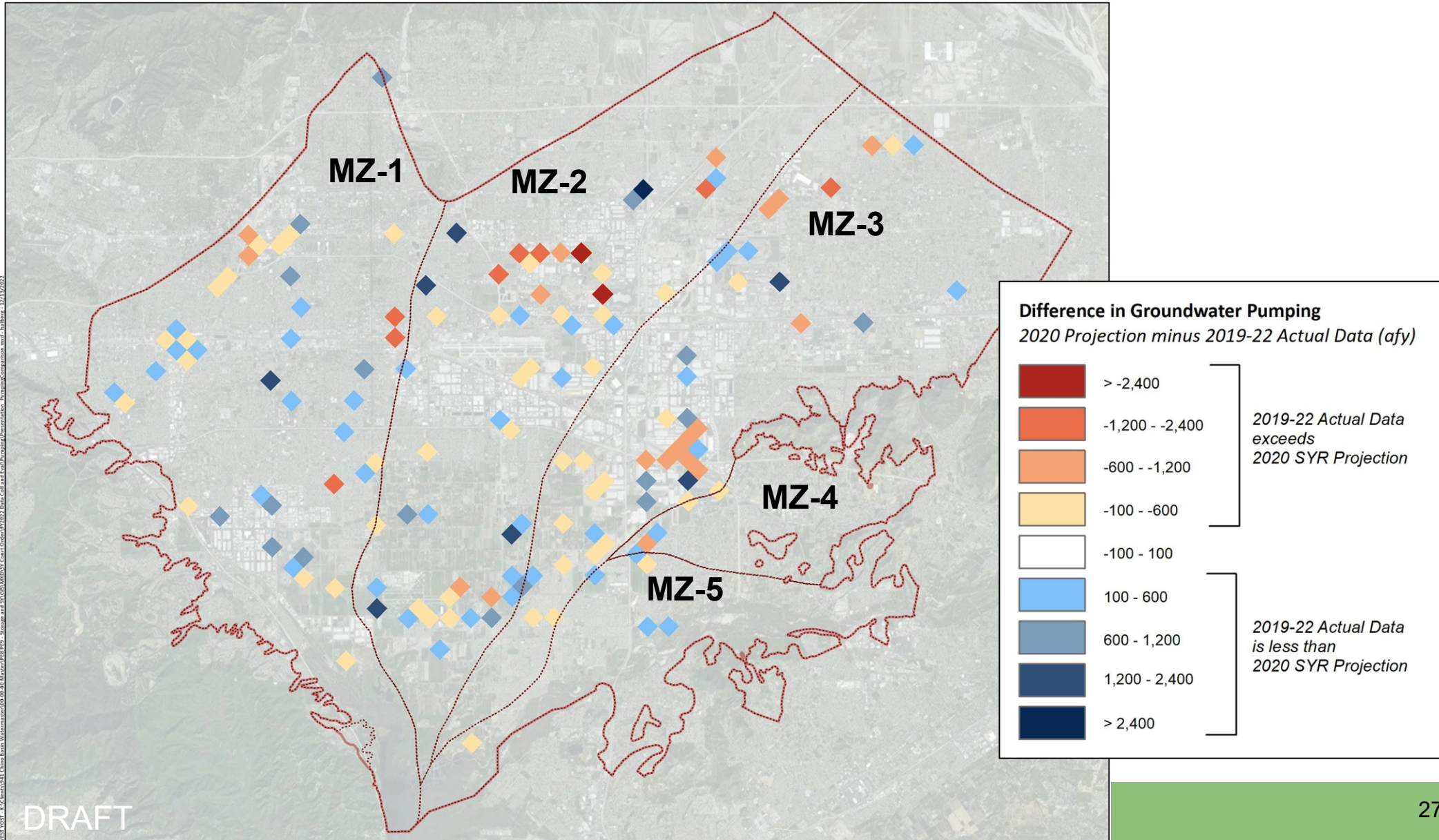
Comparison of 2020 SYR Projection and 2019-22 Actual Data for Groundwater Pumping by Pool



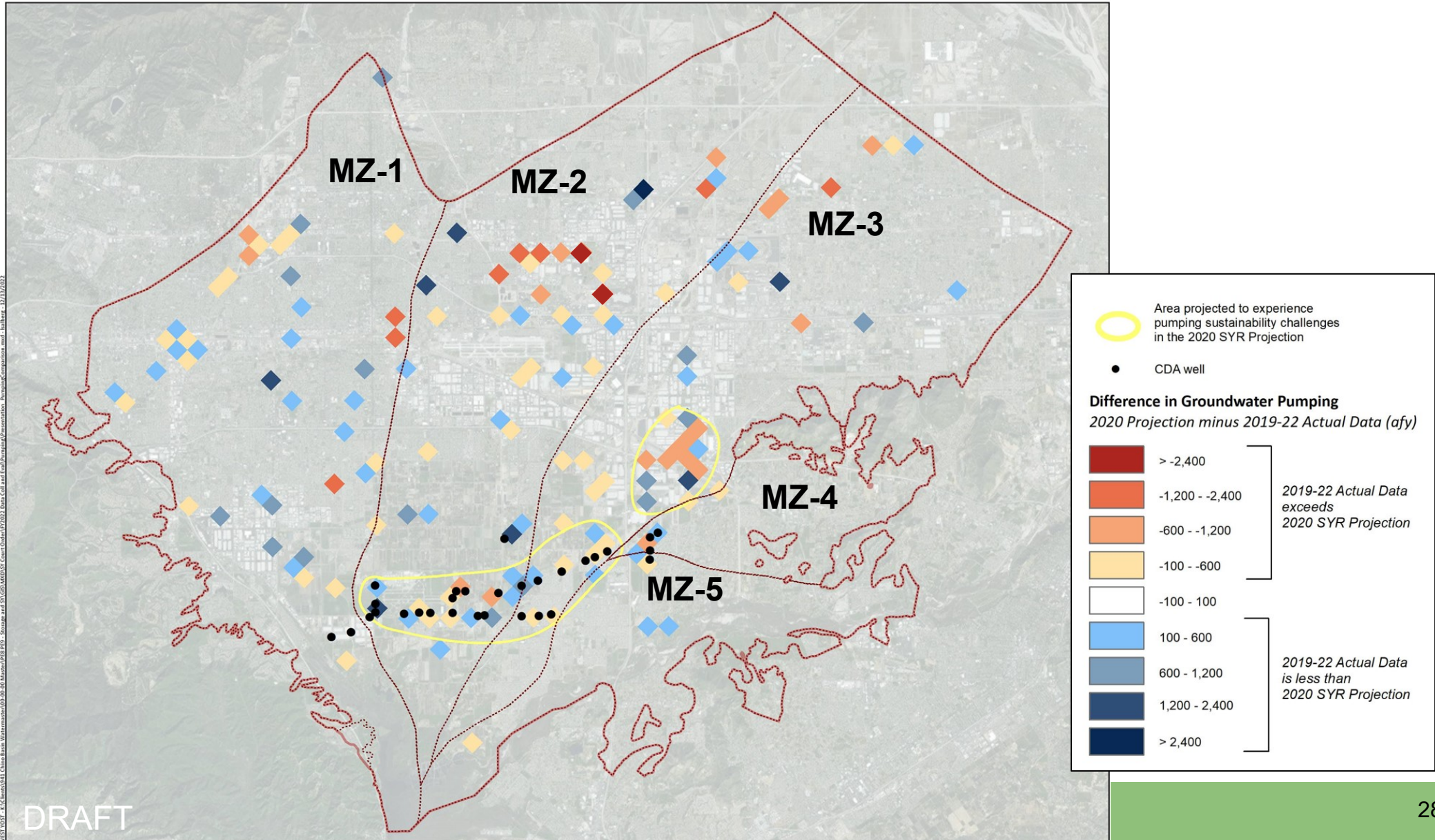
Comparison of 2020 SYR Projection and 2019-22 Actual Data for Groundwater Pumping by MZ



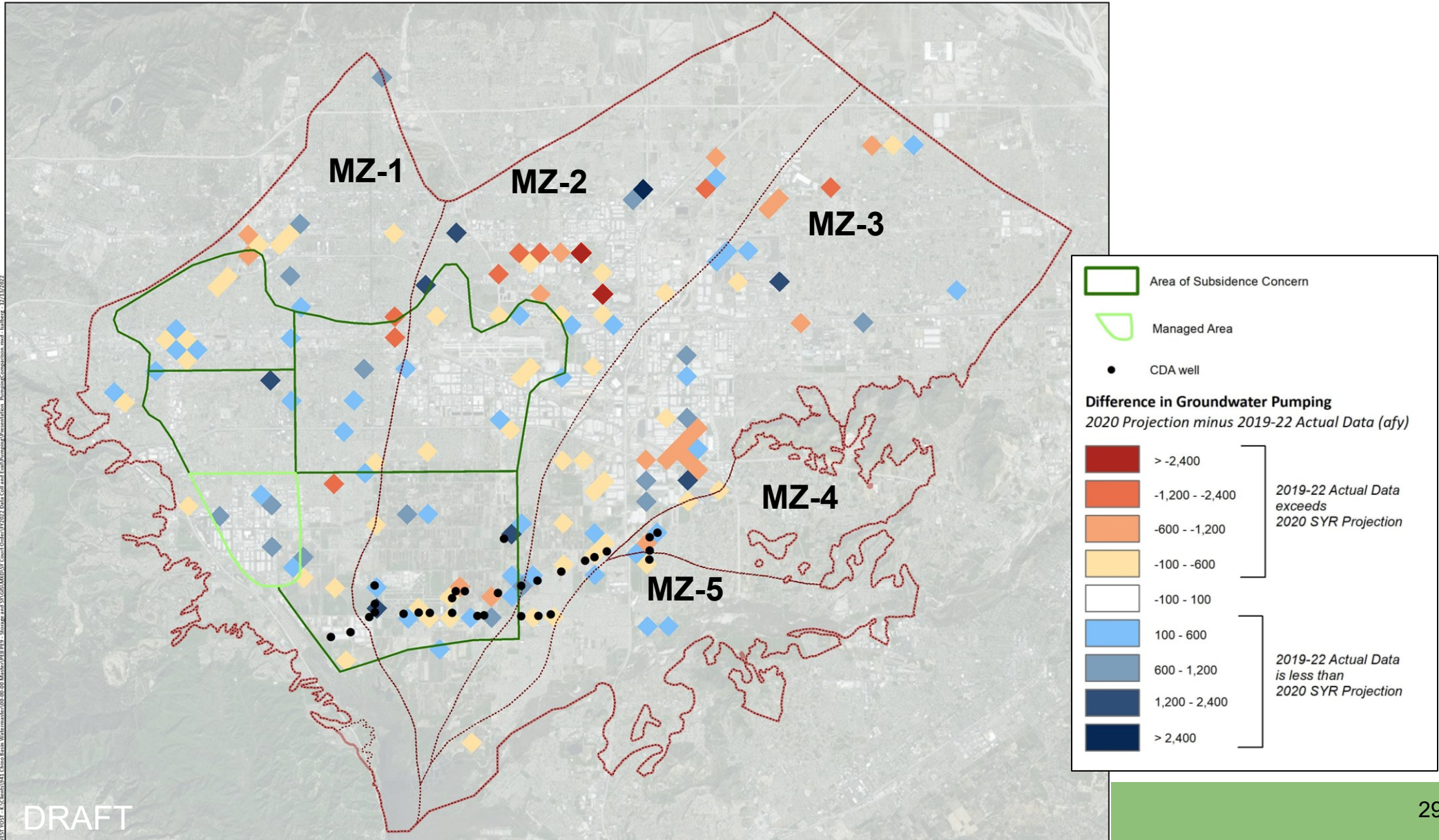
Comparison of 2020 SYR Projection and 2019-22 Actual Data for Groundwater Pumping



Comparison of 2020 SYR Projection and 2019-22 Actual Data: Areas with Projected Pumping Sustainability Challenges



Comparison of 2020 SYR Projection and 2019-22 Actual Data: Areas of Subsidence Concern



Summary and Conclusion of Impact - 2020 SYR Projection versus 2019-22 Actual Data for Groundwater Pumping

- 2019-22 comparison is similar to the 2019-21 comparison
- 2019-22 Actual groundwater pumping was greater than the 2020 SYR Projection by about 10,200 afy
- Differences between 2020 SYR Projection and 2019-22 Actual Data may increase the risk of future land subsidence and pumping sustainability
 - Watermaster has existing processes to address these risks

Next Step: Compare 2020 SYR Projection to 2023 Projection

- Process data received during FY 2021/22 data request to develop FY 2023 Projection
- Compare 2020 SYR Projection and 2023 Projection by:
 - Quarter/FY
 - Spatially (agency/MZ)
 - Projected pumping sustainability challenges
 - Areas of subsidence concerns
 - Water quality concerns
- Draft results will be presented during Workshop #2

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Urban Outdoor Water Use



- How is urban outdoor water use incorporated into the CVM?
 - Indoor/outdoor water use → Calibration of the R4 model and applied water assumptions
 - Applied water → Deep Infiltration of Precipitation and Applied Water → **Recharge**

Objectives of Today's Discussion

- Understand the nature of the expected changes in future outdoor water use
- Determine range in future projections of outdoor water use

Water Conservation Regulations and Behaviors Continue to Evolve

- MWD recommends that member agencies “should consider preparing their governing bodies and communities for mandatory restrictions.”¹
 - Call for immediate voluntary outdoor water use reductions and extraordinary conservation in Blended and Colorado River Exclusive Areas
- State Board/DWR developing urban outdoor water use requirements pursuant to 2018 Water Conservation Legislation (AB 1668 and SB 606)
 - State Board expecting to begin rulemaking process in February/March 2023 and release draft documents for public comment
 - Goal for adoption of outdoor water use regulations: early 2024

¹ <https://mwdh2o.legistar.com/View.ashx?M=F&ID=11423120&GUID=72835E00-A37B-475A-BB04-E9EBD6621DB5>

Responses to Data Request

- Agencies' projected changes to urban outdoor water use cover a range of expected futures
 - No change to expected outdoor water use patterns
 - Current voluntary restrictions on urban outdoor water use
 - Limited information to estimate changes to urban outdoor water use

Discussion

- How do agencies plan to respond to the State and MWD calls for reduced outdoor water use?
- What are the biggest challenges you anticipate in responding to conservation regulations or reduced imported water availability?
- To what extent are data available on urban outdoor water use? Are there plans to collect more data in the future?
- What are the largest sources of uncertainty in estimating future urban outdoor water use?

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Next Steps and Schedule

- Summarize feedback from today's workshop
- Finalize data request and process data
- Workshop #2 (March 2023) will cover the following:
 - Managed recharge and storage
 - Groundwater pumping projections
 - Outdoor water use
 - Regional water infrastructure
 - Draft conclusions



THANK YOU