Temescal Groundwater Sustainability Agency

Technical Advisory Committee

November 18, 2020

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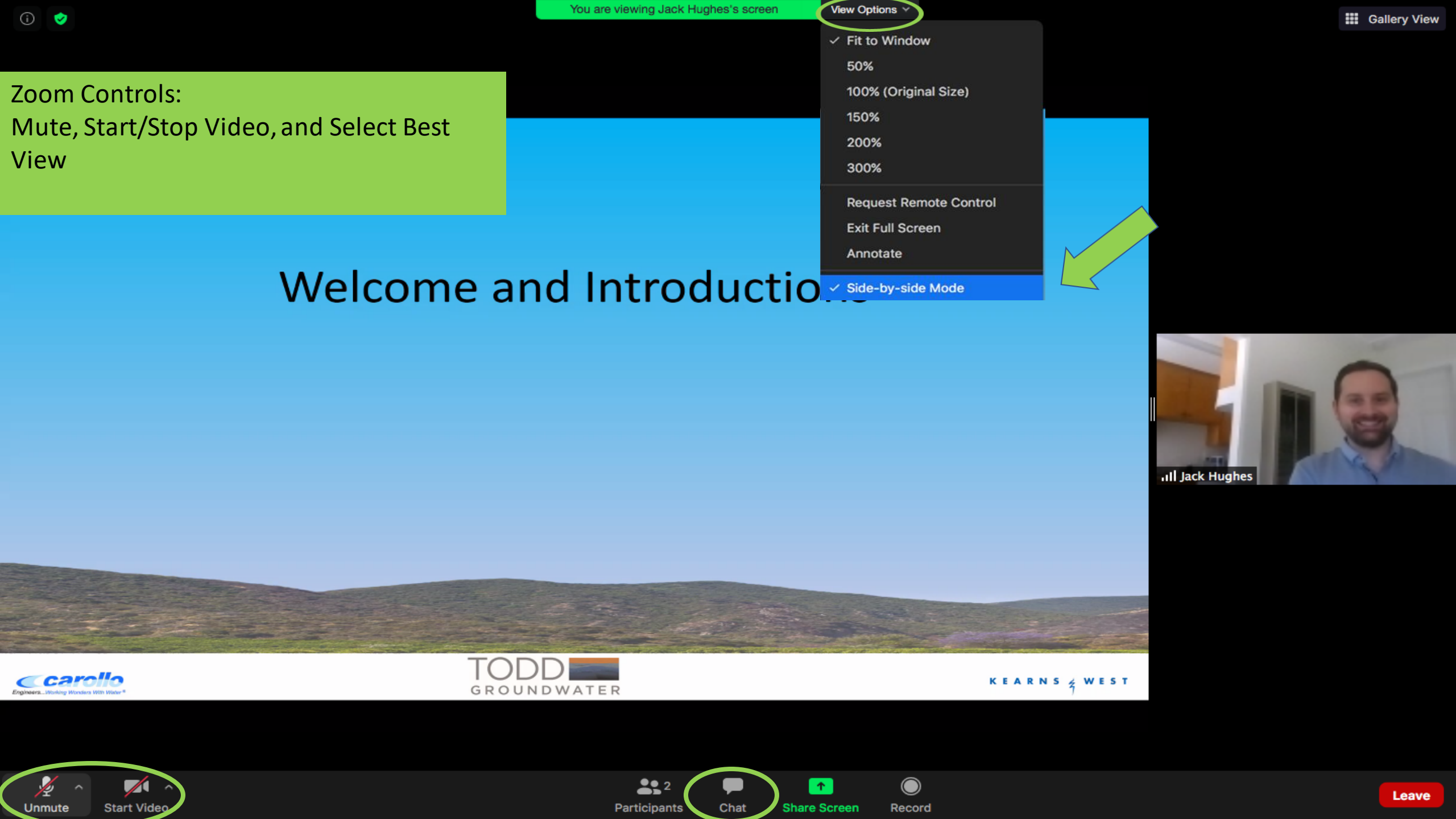
TODD GROUNDWATER

KEARNS WEST

Welcome and Introductions

Zoom Controls:
Mute, Start/Stop Video, and Select Best View



Tips for a Productive Discussion

- Let one person speak at a time
- Help make sure everyone gets equal time to give input
- Keep your input concise so others have time to participate
- Actively listen to others and seek to understand their perspectives
- Offer ideas to address questions and concerns raised by others

Overview of Meeting Agenda

Meeting Agenda

1. Welcome and Introductions
2. Overview of Meeting Agenda
3. Public Workshop 1
4. Draft GSP Chapters
5. Input on Beneficial Uses
6. Draft Sustainability Goal and Conceptual Sustainability Criteria
7. Public Comment
8. Next Steps and Final Comments

Public Workshop 1

Public Workshop 1
Attendance and Engagement

- 13 Participants on Zoom
- 452 Facebook Engagements
- 23 YouTube Views (as of 11/6)

Public Workshop 1 - Input and Feedback

Questions:

- Why might water taste bad?
- How is water cleaned?
- Why does water taste different in different areas?

Comments:

- Coordination with Chino, Riverside-Arlington, and Orange County Water District important
- Wetland behind Prado Dam has interconnected surface water and groundwater dependent ecosystems

Feedback on outreach and involvement:

- Send out questions or topics for discussion ahead of the workshops
- Make announcements at pertinent Santa Ana Watershed Project Authority task forces
- Good use of background slides, good presenters, and keeping things concise

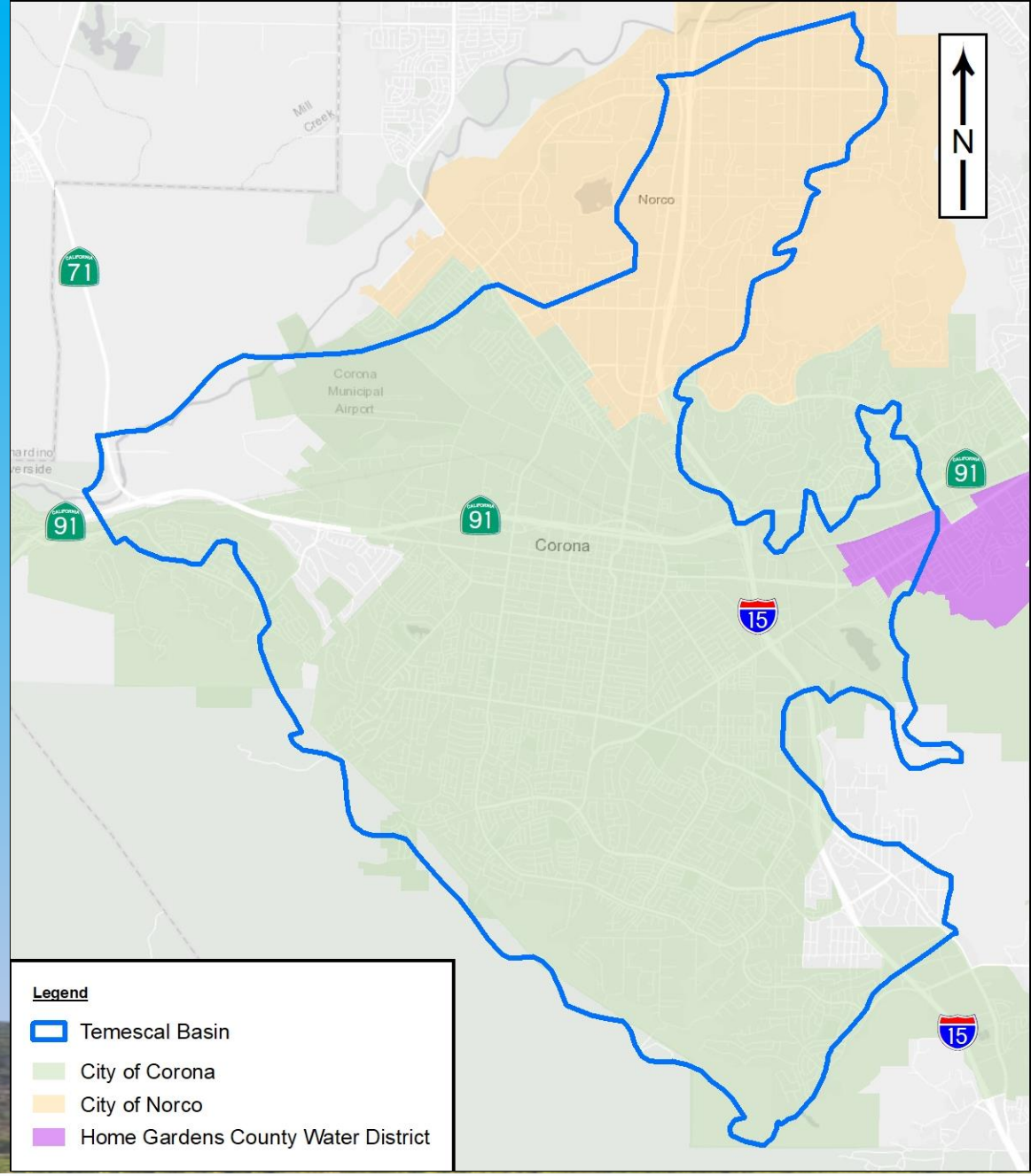
Public Workshop #2

Discussion / Q&A

Draft GSP Chapters:
Hydrogeologic Conceptual Model
and
Groundwater Conditions

The Temescal Basin

- DWR categorized as a Medium Priority Basin
- Contiguous and connected



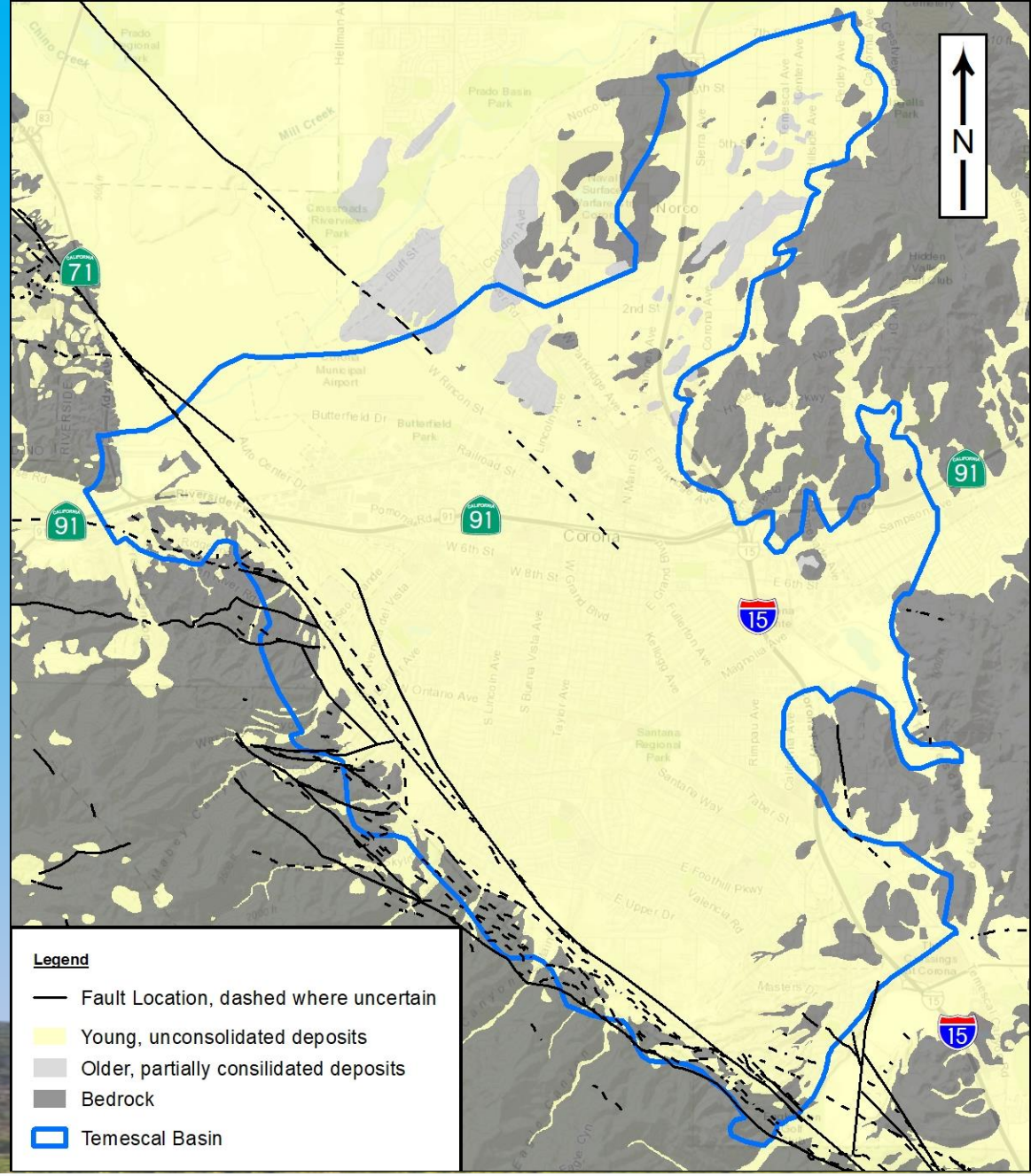
Where are we now in GSP process?

- HCM establishes physical framework of the groundwater basin
- GW Conditions chapter documents historical and current status
- Water Budget will quantify inflows, outflows and storage change
- Numerical Model will support understanding of how the groundwater system works and provide the key analytical tool to evaluate:
  - Sustainability Criteria
  - Monitoring
  - Projects and management actions

Hydrogeologic Conceptual Model Highlights

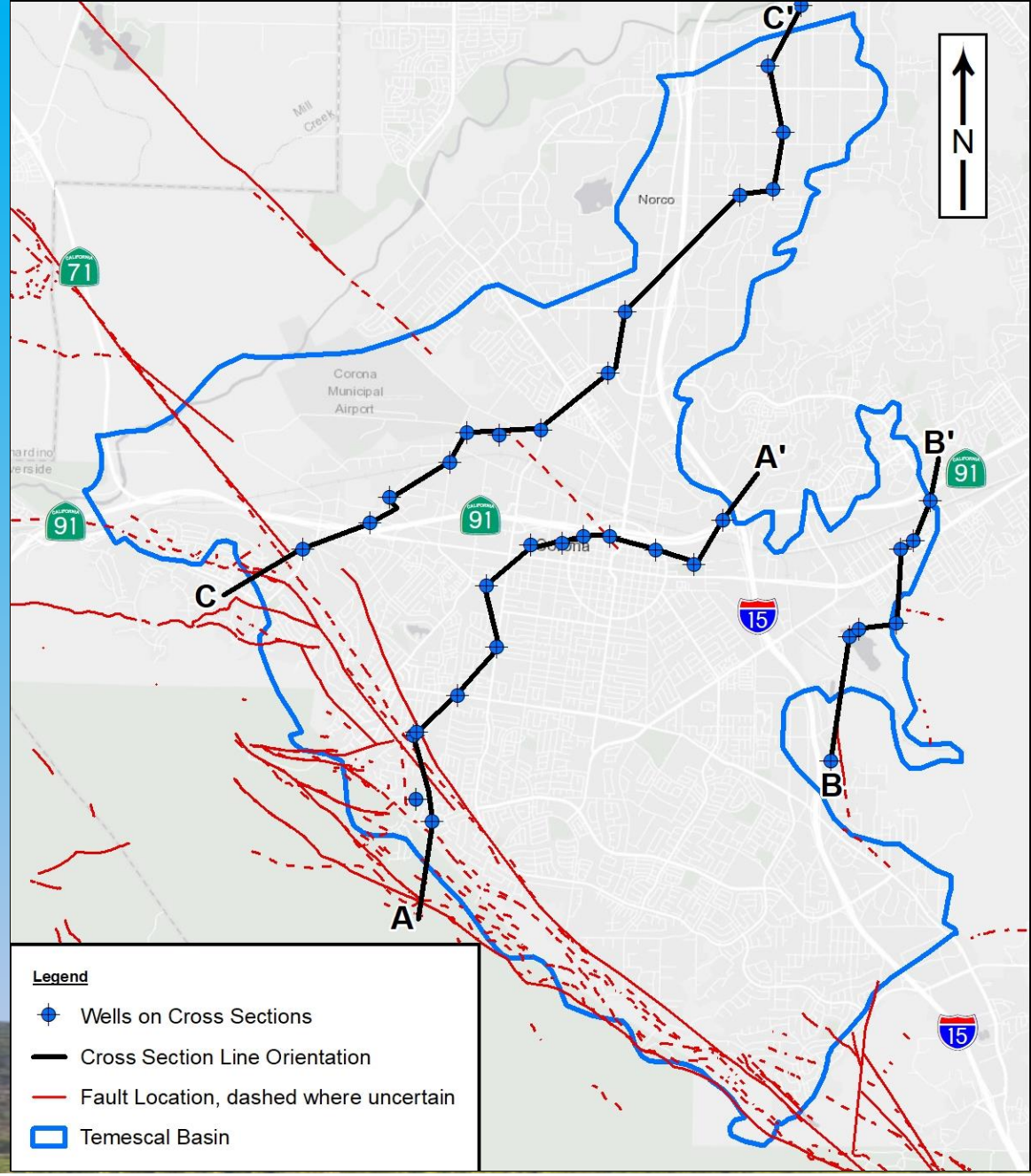
Surficial Geology

- Temescal Basin is primarily young unconsolidated deposits
- Older bedrock surrounds the Basin on the west and much of the east
- Faulting affects groundwater in much of the Basin



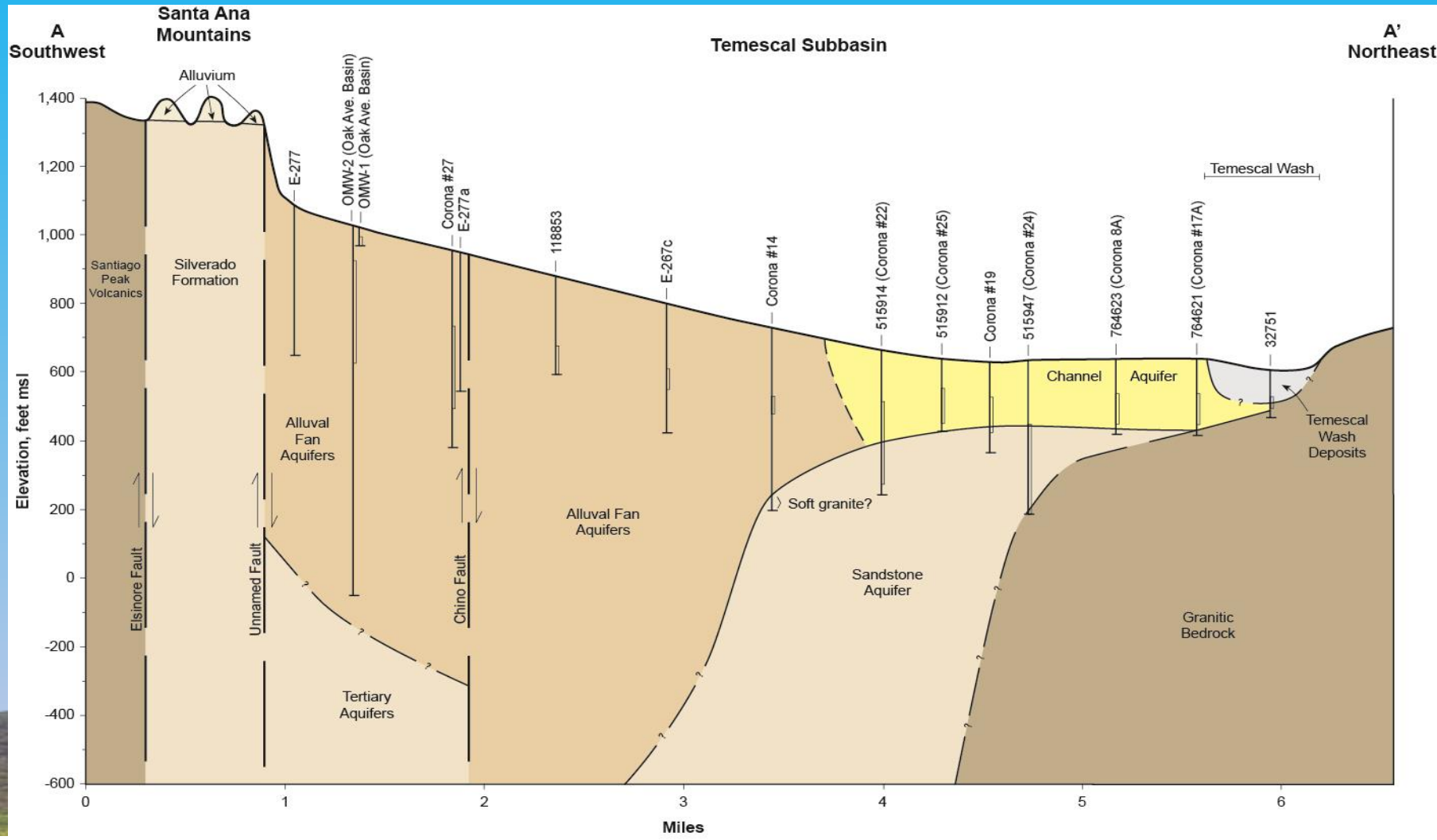
Cross Sections

- Three cross sections
- Illustrate subsurface conditions
- Relationship between aquifers in the Temescal Basin



Cross Section A

- Channel Aquifer is the principal aquifer
- Alluvial and Sandstone aquifers secondary



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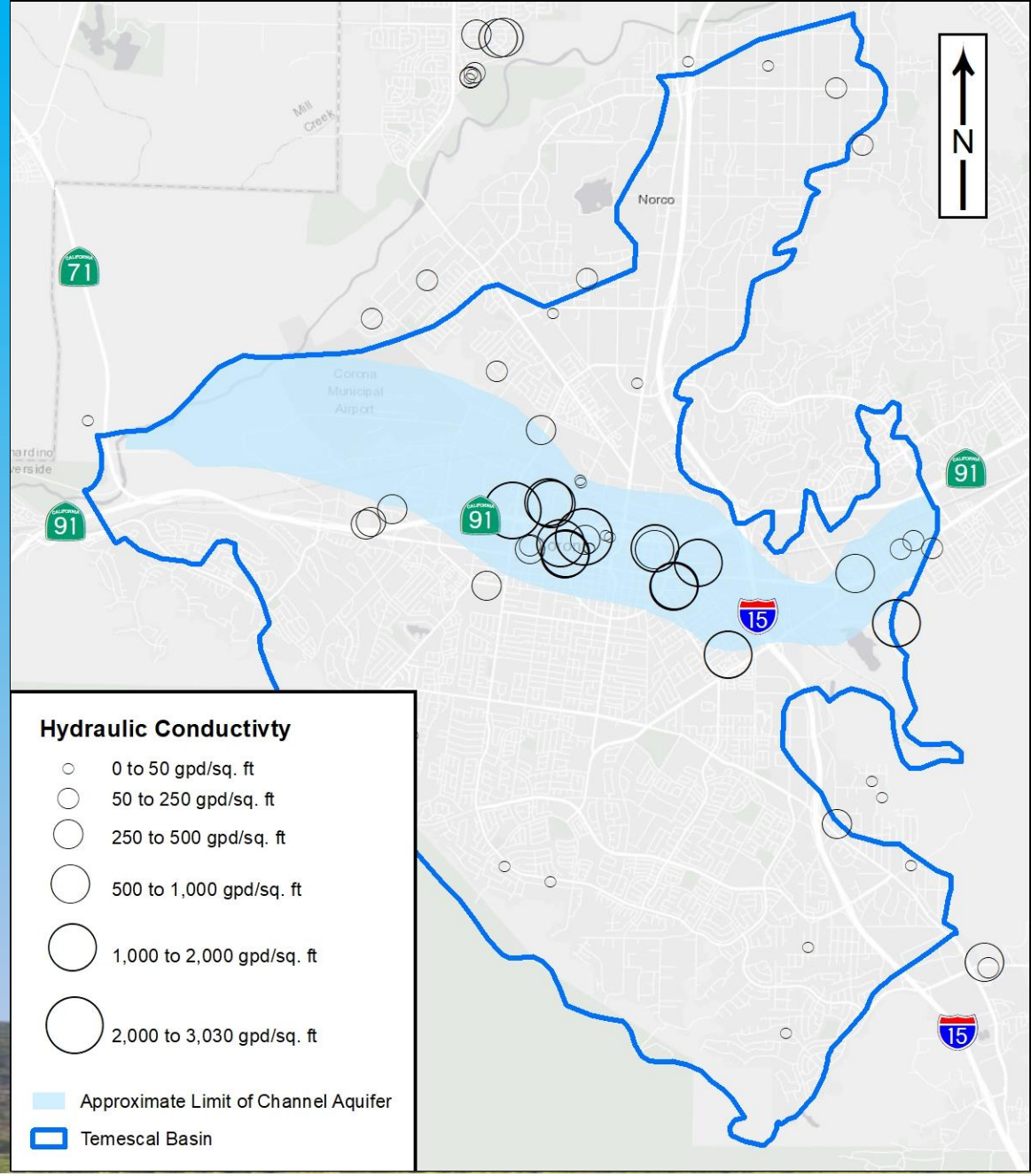
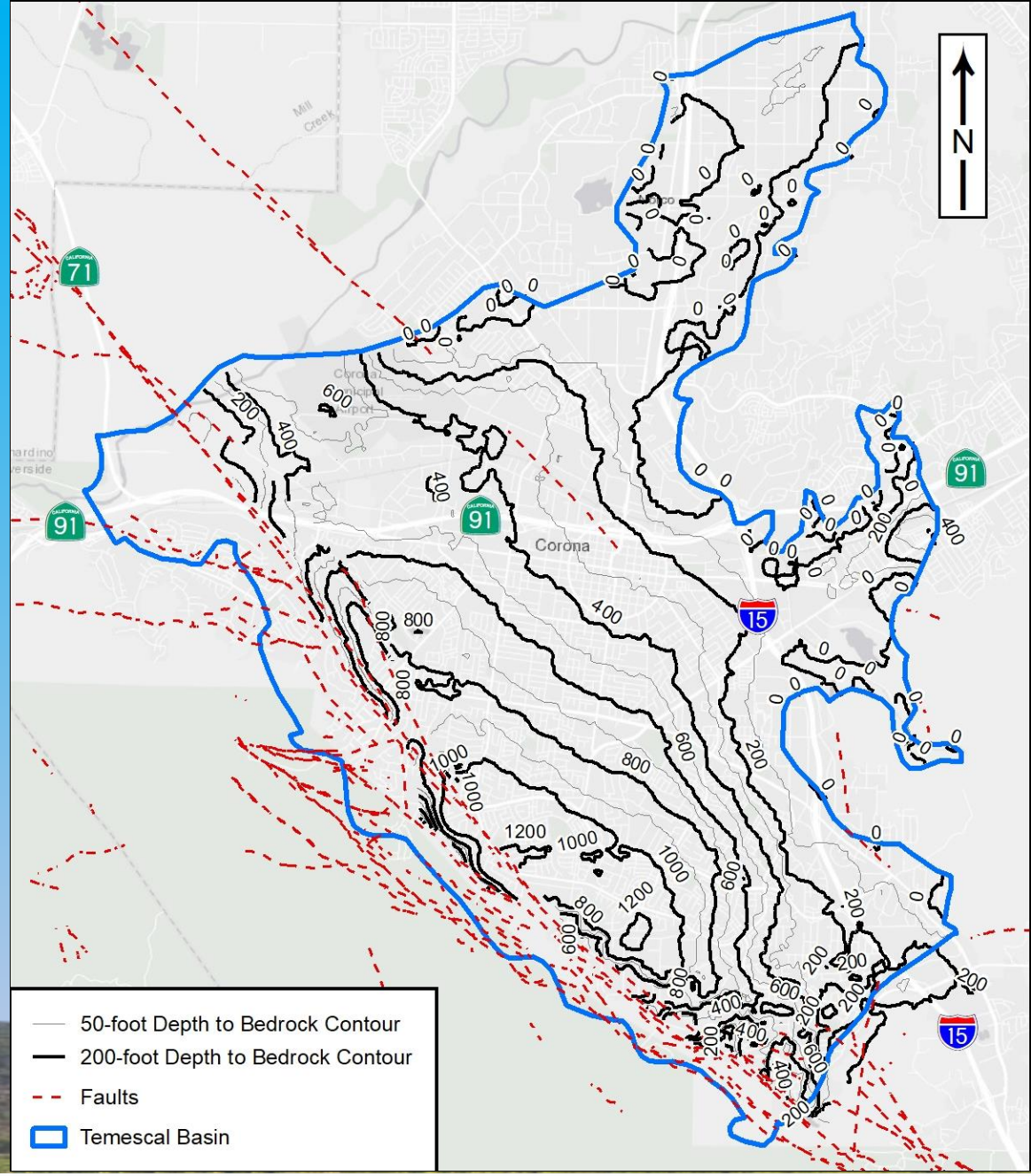
Channel Aquifer

- Channel Aquifer not present everywhere
- The most productive wells (highest hydraulic conductivity) in the Temescal Basin are in the Channel Aquifer



Temescal Basin Thickness

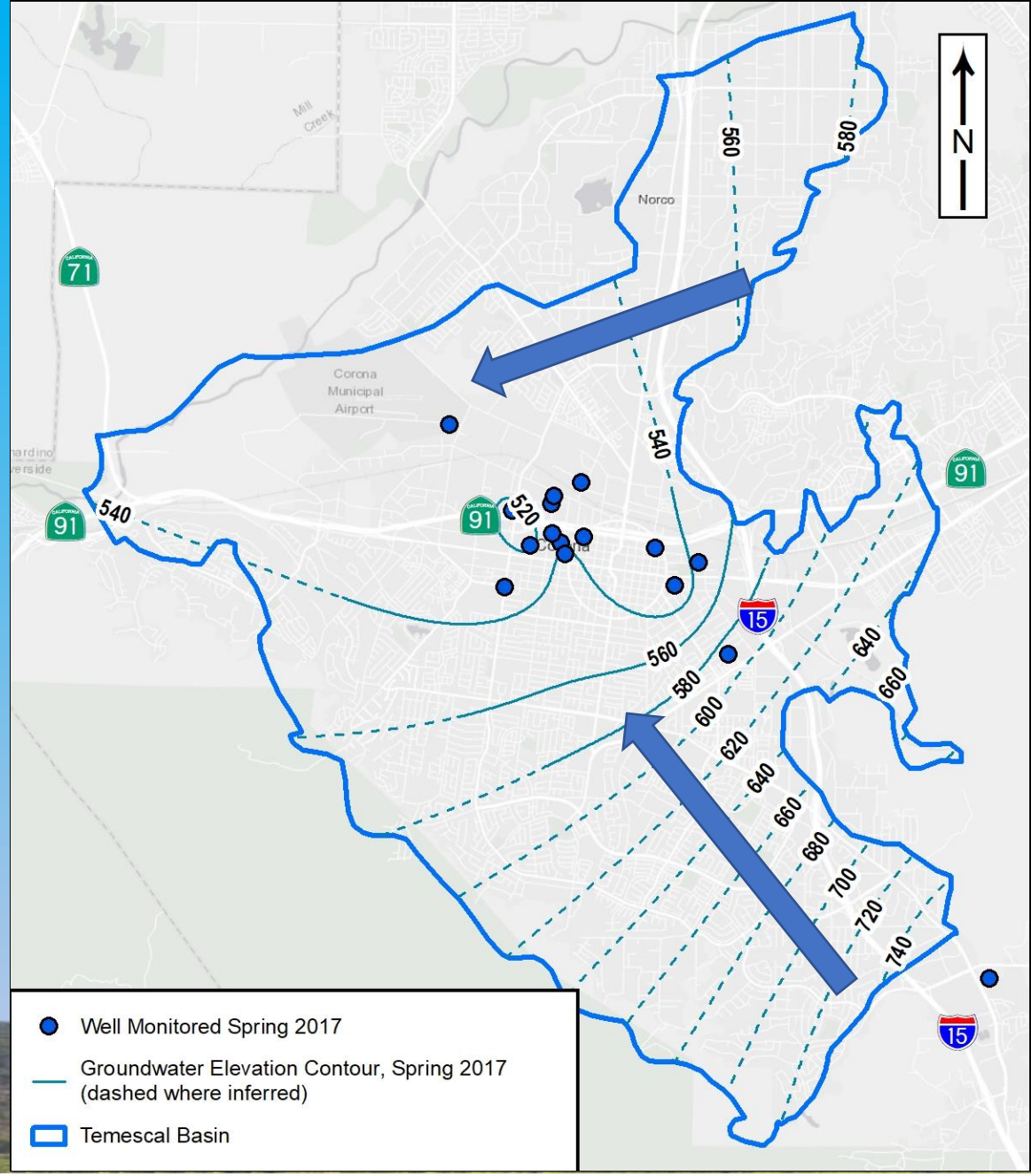
- Deepest in the southwest
- Shallower in the area of the Channel Aquifer
- Deepens near the Arlington Gap



Groundwater Conditions Highlights

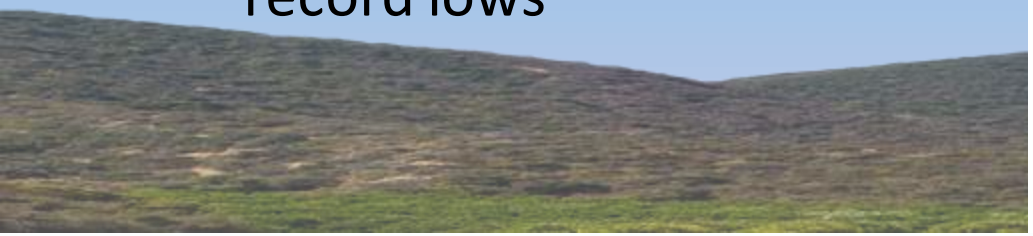
Groundwater Elevation Contours

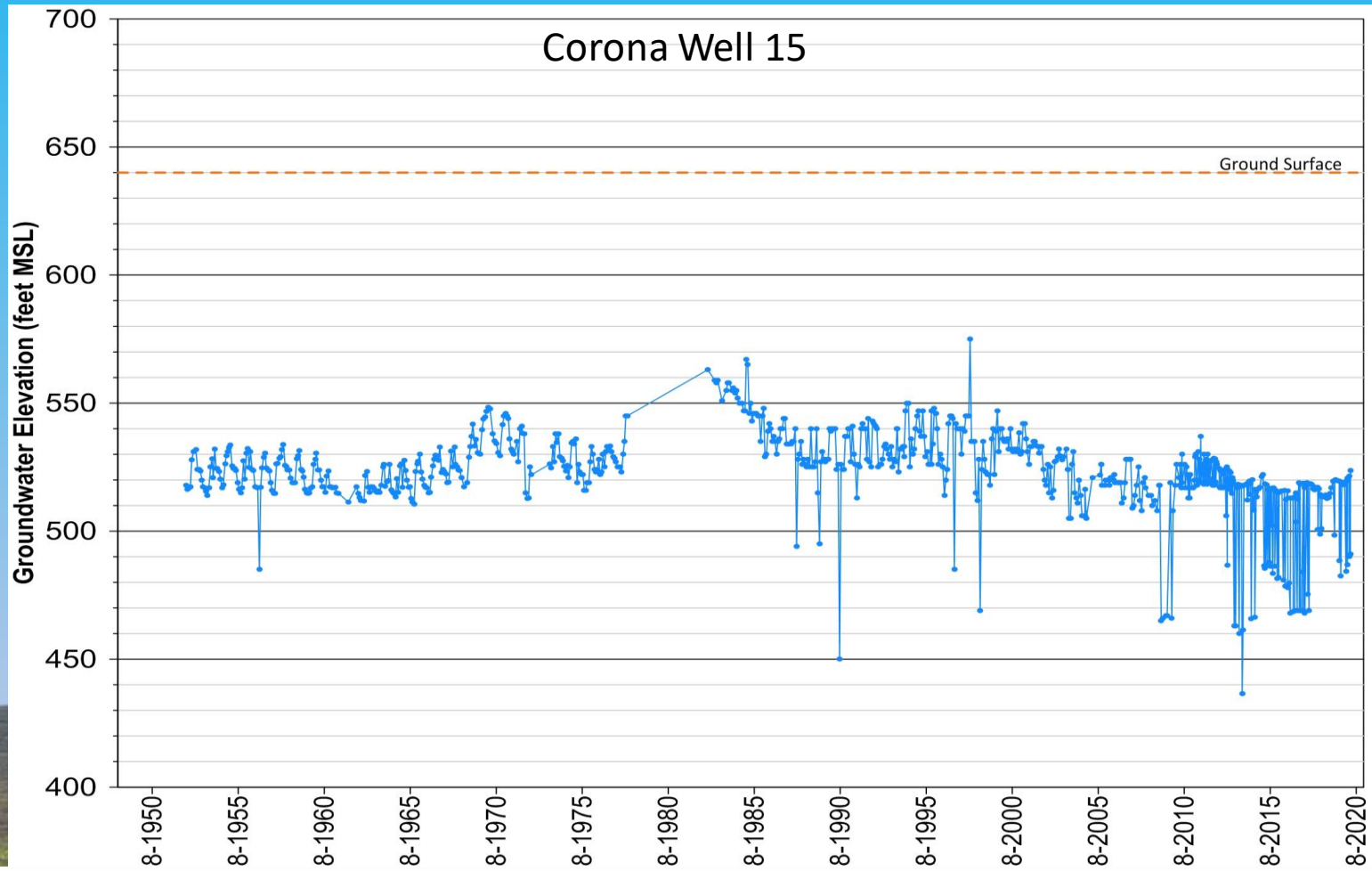
- Flow in the Temescal Basin is towards the northwest, turning to the west in Prado
- Groundwater flow direction generally consistent



Historical Groundwater Elevations

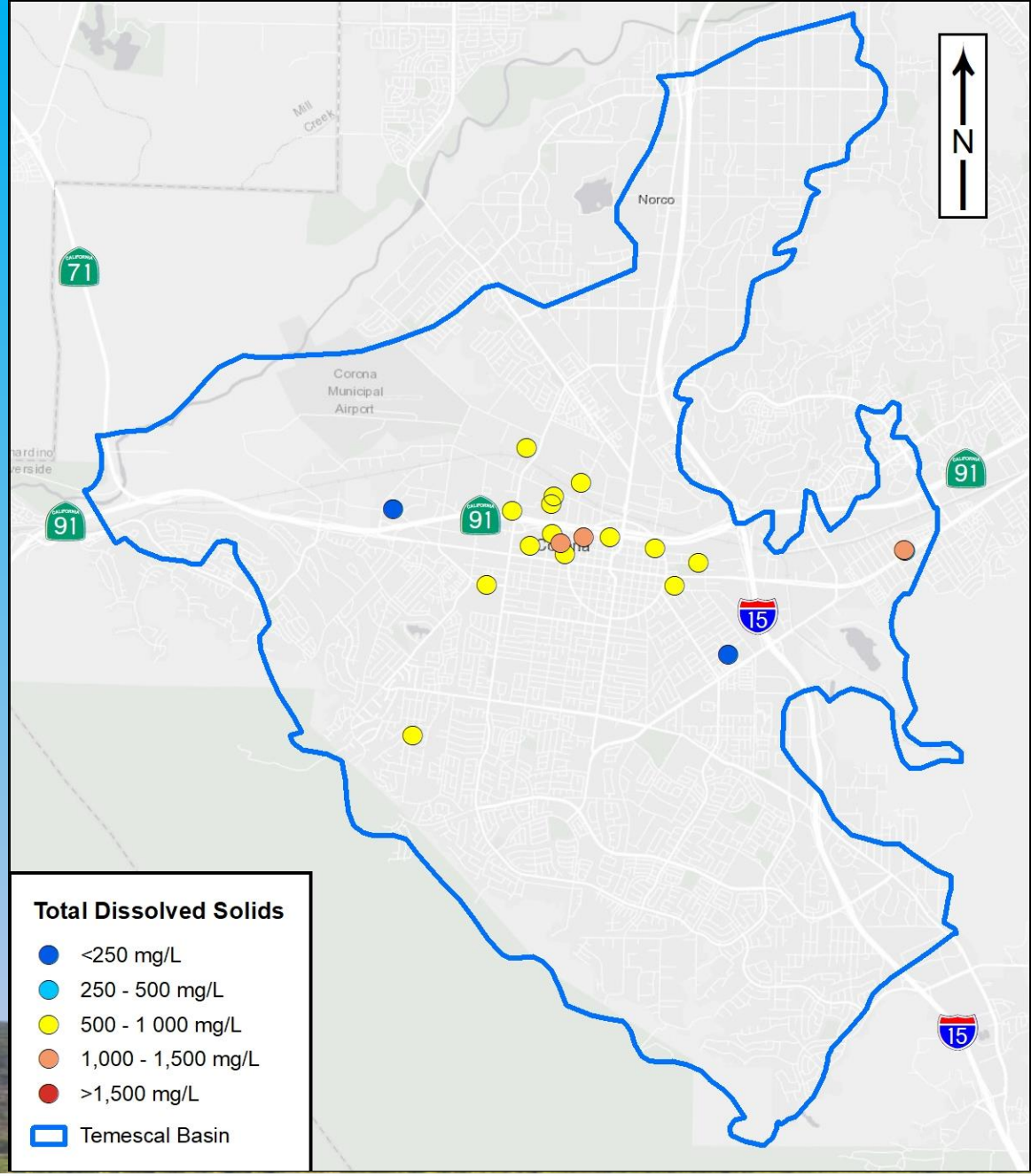
- Highest water levels in most wells measured in early 1980s
- Lowest levels generally in periods of dry conditions and increased pumping
- Most hydrographs show low water levels during 2000 to 2004, from increased pumping
- Current levels are near record lows





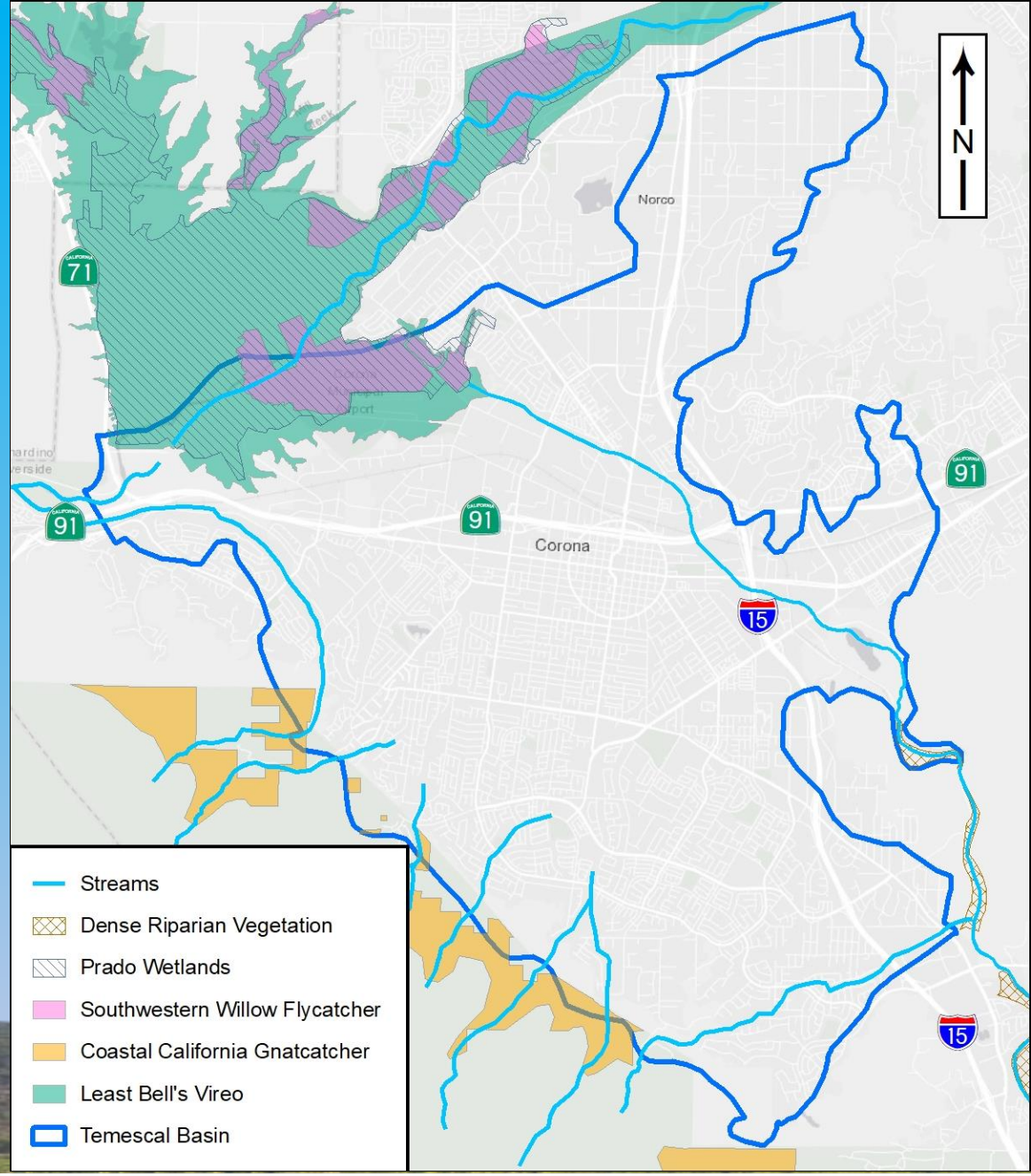
Water Quality

- Available groundwater quality data reviewed
- Primary constituents of concern in the Temescal Basin are total dissolved solids and nitrate
- Total dissolved solids (TDS) elevated in the productive portion of the Basin
- Nitrate also high in some areas



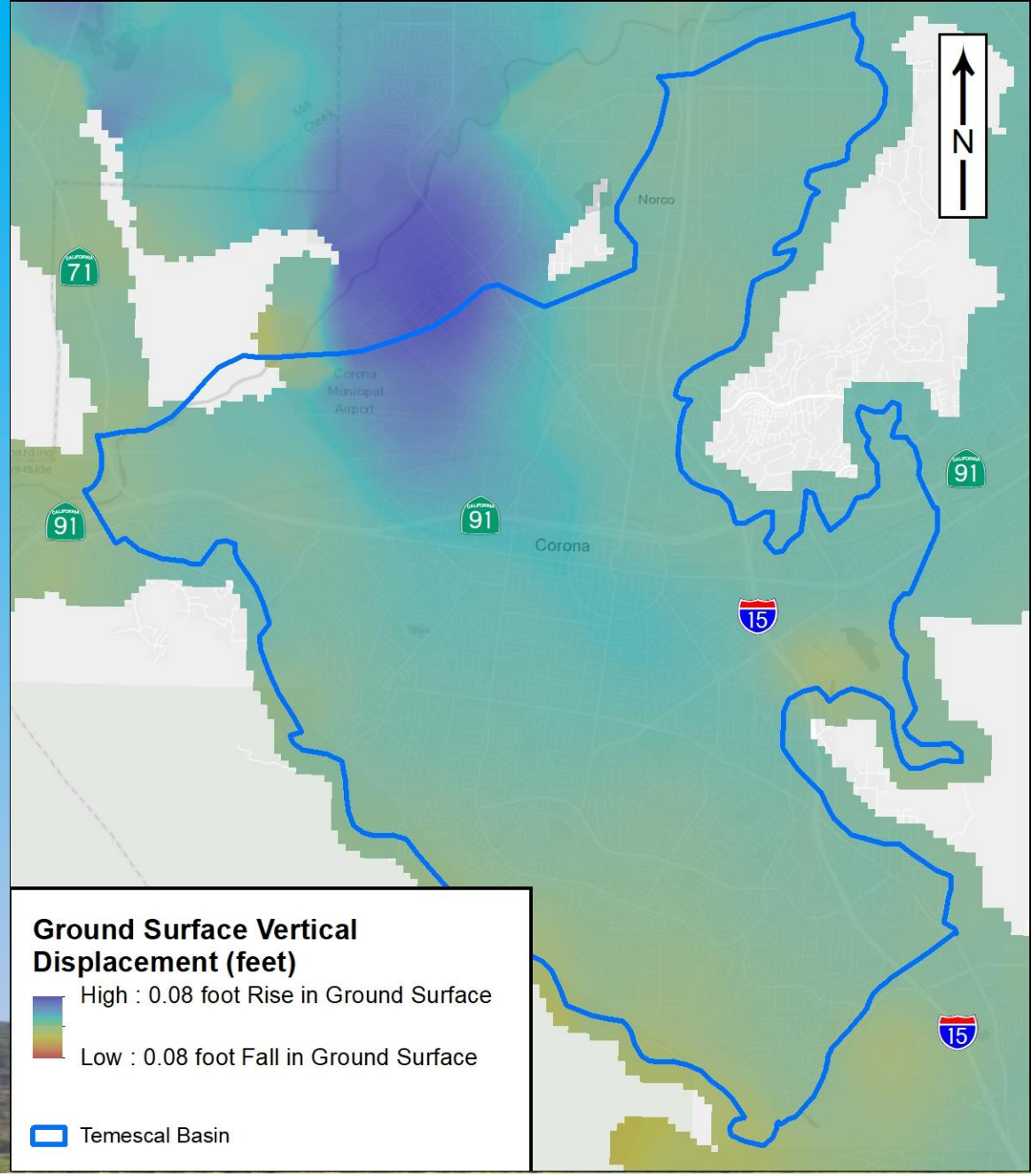
Interconnected Surface Water

- First phase of surface water groundwater evaluation
- Combined review of depth to water, aerial imagery, conceptual model, and mapped features
- There are areas of interconnected surface water in the Basin
- Also areas where there are groundwater dependent ecosystems (GDEs) that will need to be addressed



Subsidence

- Basin-wide vertical displacement estimates from satellite measurements
- No evidence of ground surface change in these measurements



Discussion / Q&A

Input on Beneficial Uses

Known Beneficial Uses

- Municipal water supply
- Industrial water supply
- Rural residential water supply
- Small community water system water supply
- Small commercial water supply
- Groundwater dependent ecosystems in Temescal Wash and Prado

Sustainability Goal and Criteria

Draft Sustainability Goal

To sustain groundwater resources for the current and future beneficial uses of the Temescal Basin in a manner that is adaptive and responsive to the following objectives:

- Provide a long-term, reliable and efficient groundwater supply for municipal, industrial, and other uses
- Provide reliable storage for water supply resilience during droughts and shortages
- Protect groundwater quality
- Support beneficial uses of interconnected surface waters, and
- Support integrated and cooperative water resource management.

Sustainability Indicators


Chronic lowering of groundwater levels


Reduction of groundwater storage


Degradation of water quality


Depletions of interconnected surface water affecting beneficial uses


Land subsidence affecting land uses


Seawater intrusion (not applicable here)

Undesirable Results, Minimum Thresholds, and Measurable Objectives

Undesirable Result – significant and unreasonable conditions for any of the six sustainability indicators

Minimum Threshold (MT) – numeric value used to define undesirable results for each sustainability indicator

Measurable Objective (MO) – specific, quantifiable goal to track the performance of sustainable management

Sustainability Criteria Considerations for Temescal Basin

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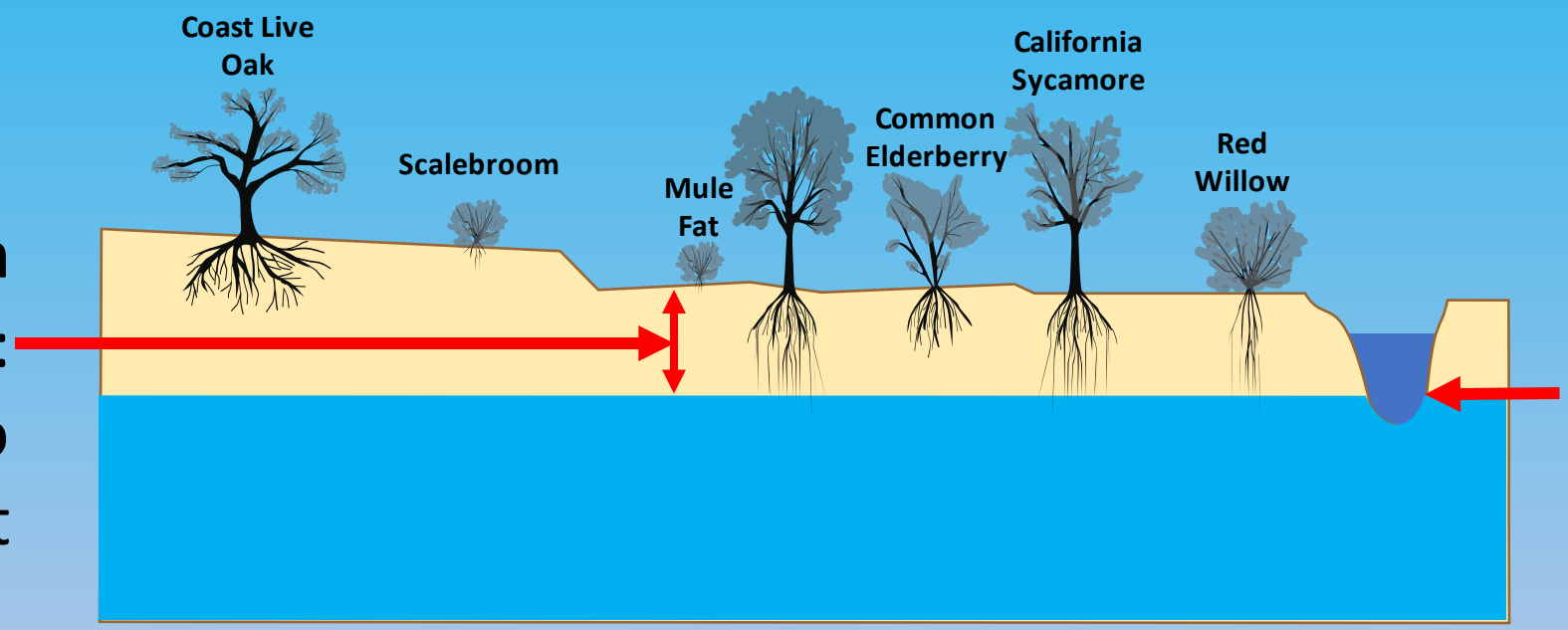
Subsidence

- Subsidence is lowered ground surface resulting from collapse of subsurface materials, commonly related to pumping and dewatering fine grained units
- Not a known issue and undesirable results not reported
- But potential exists for undesirable results
  - Reduction in drainage capacity; drainage problems
  - Impacts on grade of facilities, e.g. pipelines, roads, runways
  - Subsidence around a wellhead, e.g., casing collapse
  - Non-recoverable loss of storage capacity in the aquifers

Interconnected Surface Water

For Riparian Vegetation: About 20 to 30 feet



For Stream Flow Depletion: Stream Bed Elevation

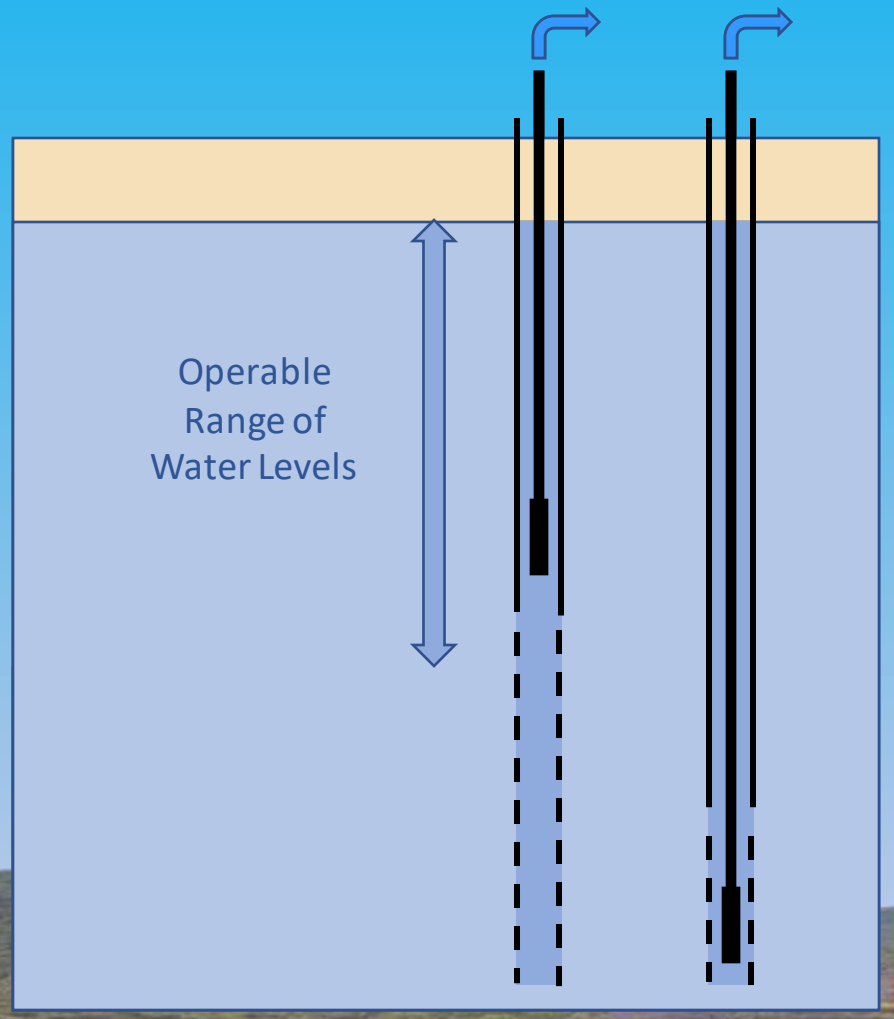
Reduction of Groundwater Storage

- Storage is connected to water levels and the intent is to make sure there is enough water to meet the needs of the beneficial uses and users
- GSP regulations allow use of groundwater level MTs and MOs as a proxy, provided that the GSP demonstrate a correlation between groundwater levels and storage

Groundwater Levels

What undesirable effects do we want to avoid?

- Impacts to shallow wells?
- Maintenance of municipal and industrial water supply?
- Other?



Water Quality

- Numeric value used to define significant and unreasonable degraded water quality throughout the basin
- In setting MTs for degraded water quality, GSAs shall consider local, state, and federal water quality standards applicable to the basin
- Basin Plan and Maximum Concentration Limits
  - 10 mg/L Nitrate as N (both)
  - 770 mg/L TDS (basin plan) and 500 mg/L (MCL)

Discussion / Q&A

- Are you aware of undesirable results that have occurred in the past?
- Are there specific undesirable results you are concerned about?
- Comments on the Sustainability Goal:

  To sustain groundwater resources for the current and future beneficial uses of the Temescal Basin in a manner that is adaptive and responsive to the following objectives:

  - Provide a long-term, reliable and efficient groundwater supply for municipal, industrial, and other uses
  - Provide reliable storage for water supply resilience during droughts and shortages
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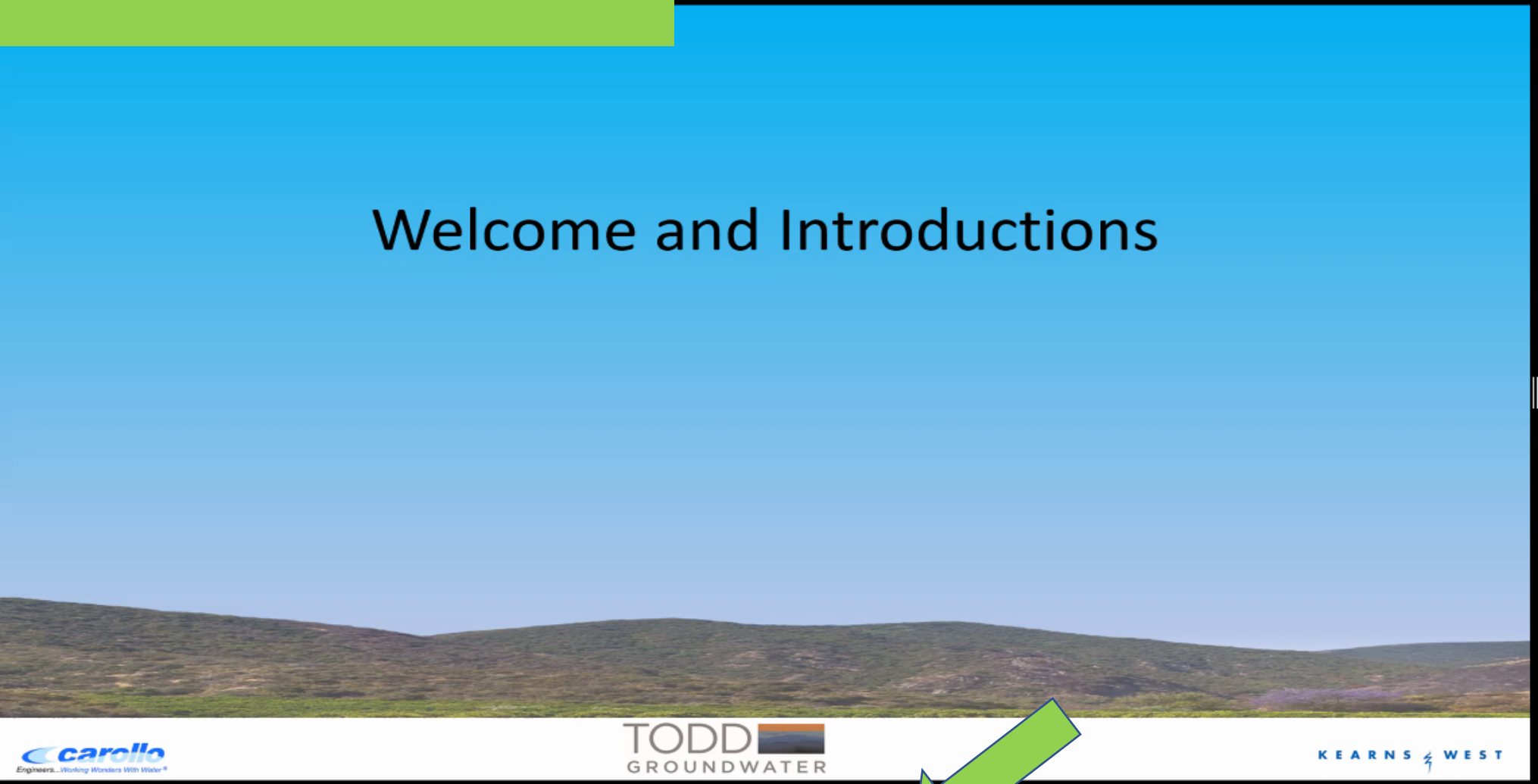
Public Comment

You are viewing Jack Hughes's screen View Options

Gallery View

How to Raise Your Hand– Step 1



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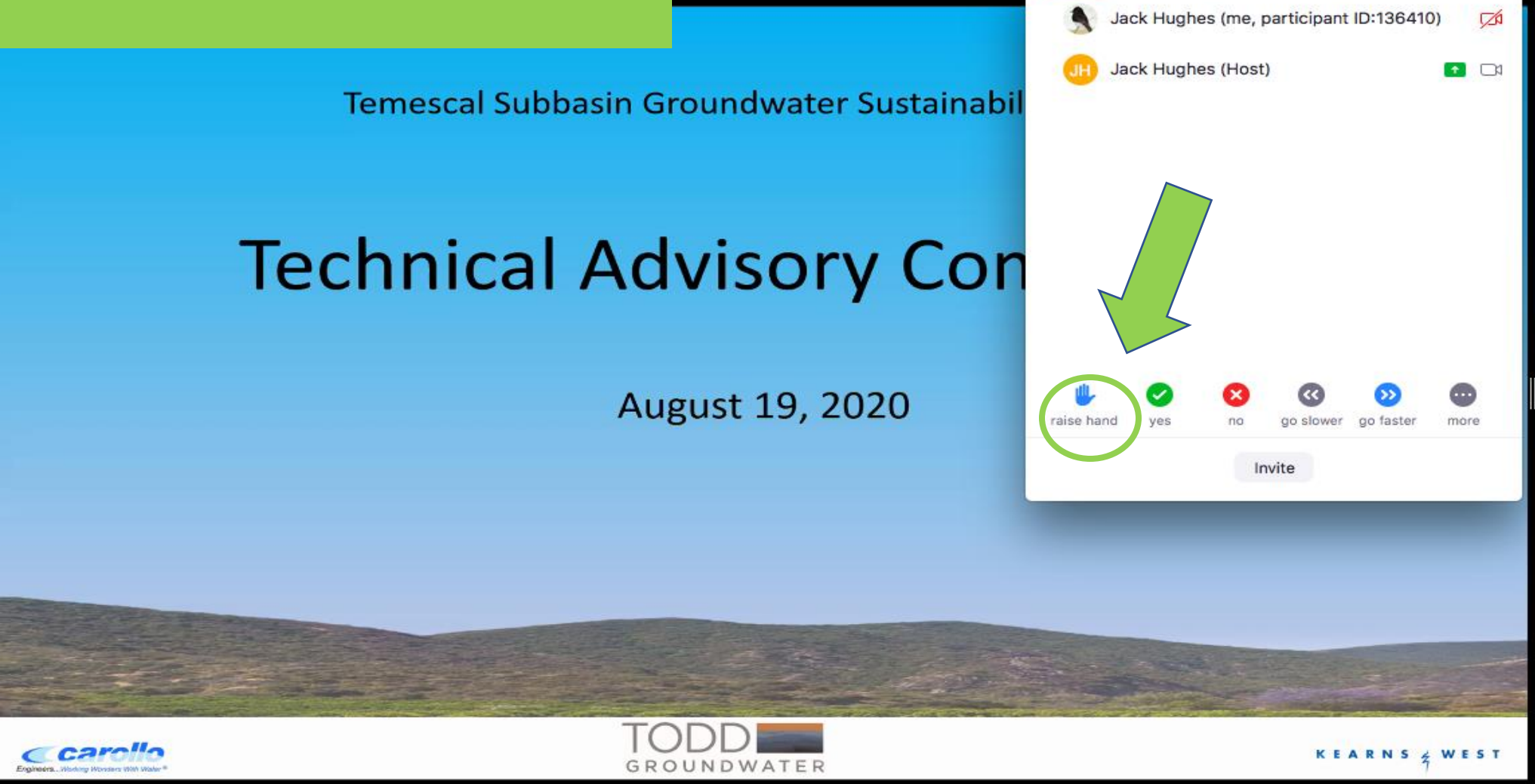
How to Raise Your Hand – Step 2



Next Steps and Final Comments

Next Steps

- Continue Technical Analyses
  - Prepare internal draft Water Budget chapter of the GSP
  - Continue numerical model analysis
  - Continue sustainability criteria development
- Administrative Draft HCM and GW Conditions chapters of the GSP provided to TAC November 17th, all ***comments back by December 4th***.
- Prepare for and hold Public Workshop 2 (date TBD)
- Next TAC meeting February 17, 2021
  - Update on technical analyses
  - Present sustainability criteria

Thank You!