Santa Clarita Valley Groundwater Sustainability Plan
Groundwater Dependent Ecosystem Monitoring Protocol

GDE Evaluation Process Overview

- Groundwater Sustainability Plan (GSP) adopted January 2022 recognizes importance of Groundwater Dependent Ecosystems (GDE)

- If groundwater elevations go below the GDE triggers, a GDE Evaluation Process takes place
  - Evaluates presence or absence of undesirable results, and
  - Need for management actions (if any)

GDE Evaluation Process Overview- Undesirable Results to GDEs

- "Permanent loss or significant degradation of existing native riparian or aquatic habitat due to lowered groundwater levels caused by groundwater pumping throughout the GDE area."

- "In areas that currently provide essential habitat to UTS and native fishes (sensitive aquatic species in the vicinity of I-5 Bridge), cessation of surface flow and pools during low-flow conditions in the river channel caused by groundwater extraction is an undesirable result."

GDE Evaluation Process Overview

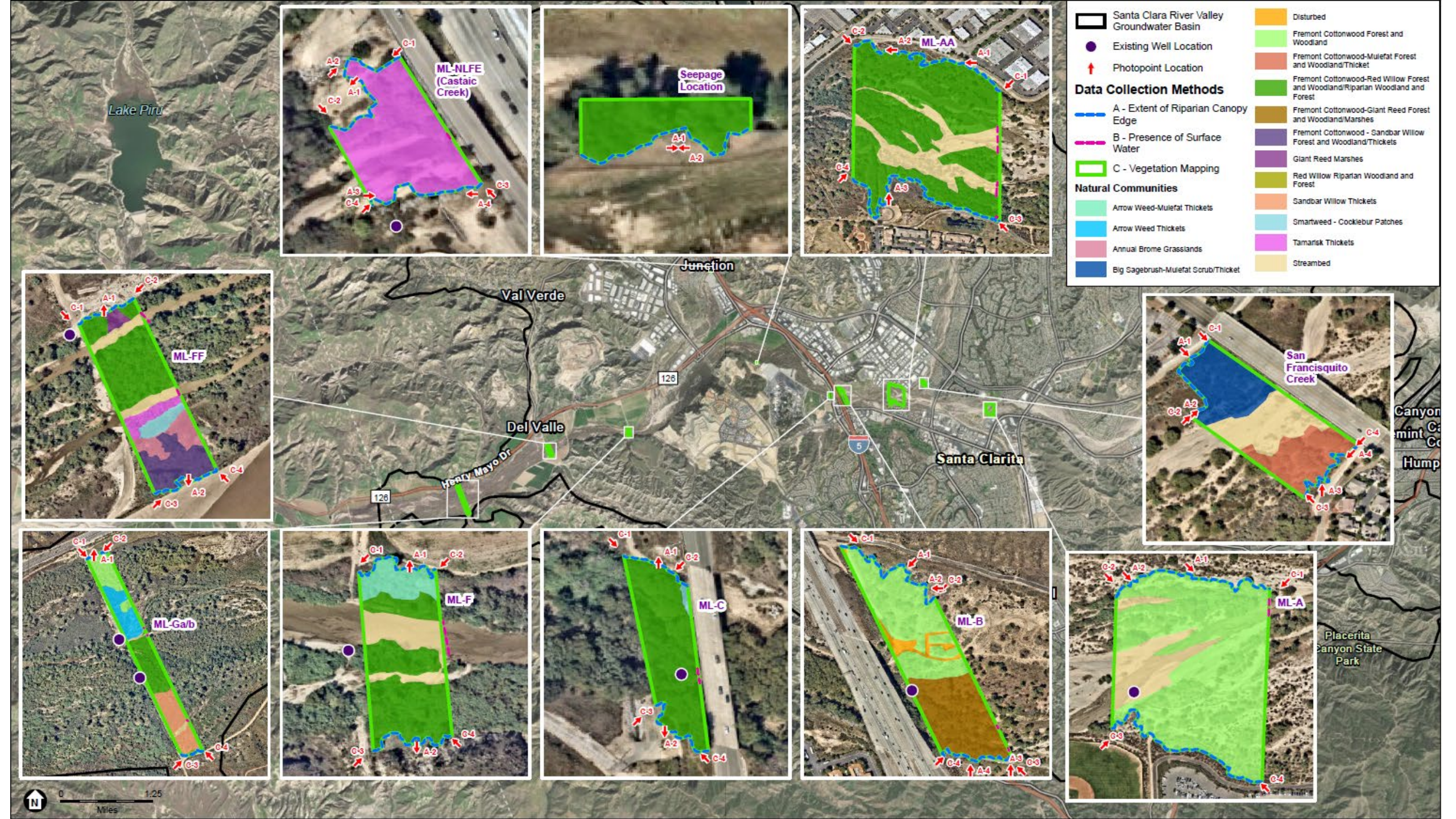
- The GDE evaluation must assess biological conditions coupled with groundwater level trends
- The GDE Monitoring Protocol was implemented in 2023
  - Protocol developed a 3-step process shown in Table 1
  - Protocol identified GDE monitoring locations
- No Undesirable Results identified. Further described in report.

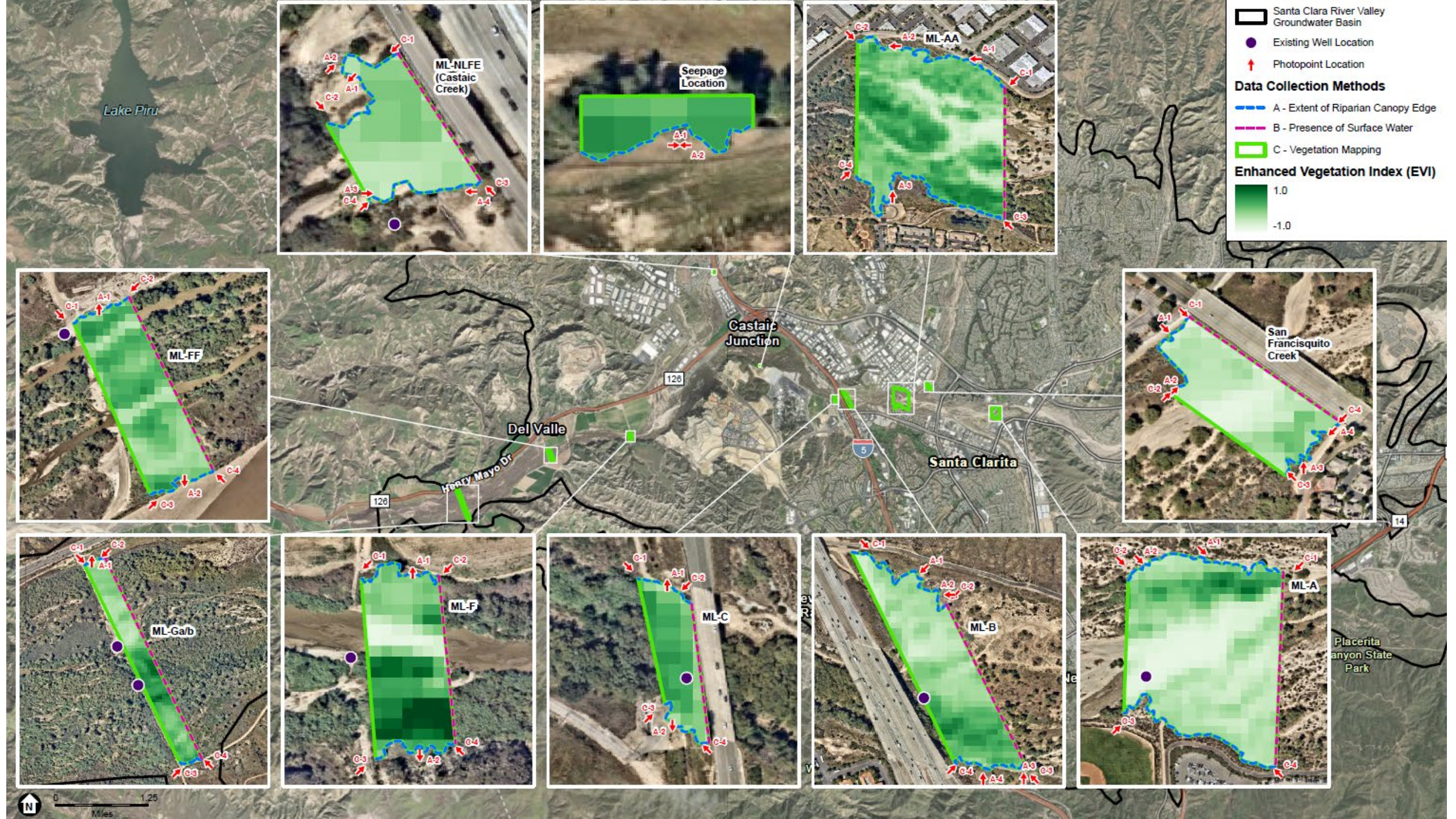
GDE Evaluation Process Overview

Method	Name	Seasonality	Suggested Frequency	Priority
A	Extent of Riparian Canopy Edge	Late Summer and when groundwater levels approach established trigger levels at the nearest monitoring well	Once or twice per year when groundwater levels approach established trigger levels at the nearest monitoring well	High
B	Surface Water	Late Summer	Concomitant with Method A	High
C	Vegetation Mapping	Late Summer	Once every 5 years	Medium

2023 Monitoring Event

- Ten GDE monitoring locations were monitored in September and October of 2023
- Monitoring Protocol was implemented including A, B, and C methods
- The Report mapped vegetation and documented health of riparian vegetation at the outer edges of the riparian corridor
- The Report found strong surface water flows within the Santa Clara River channel and no signs of water stress at the edges of the riparian corridor

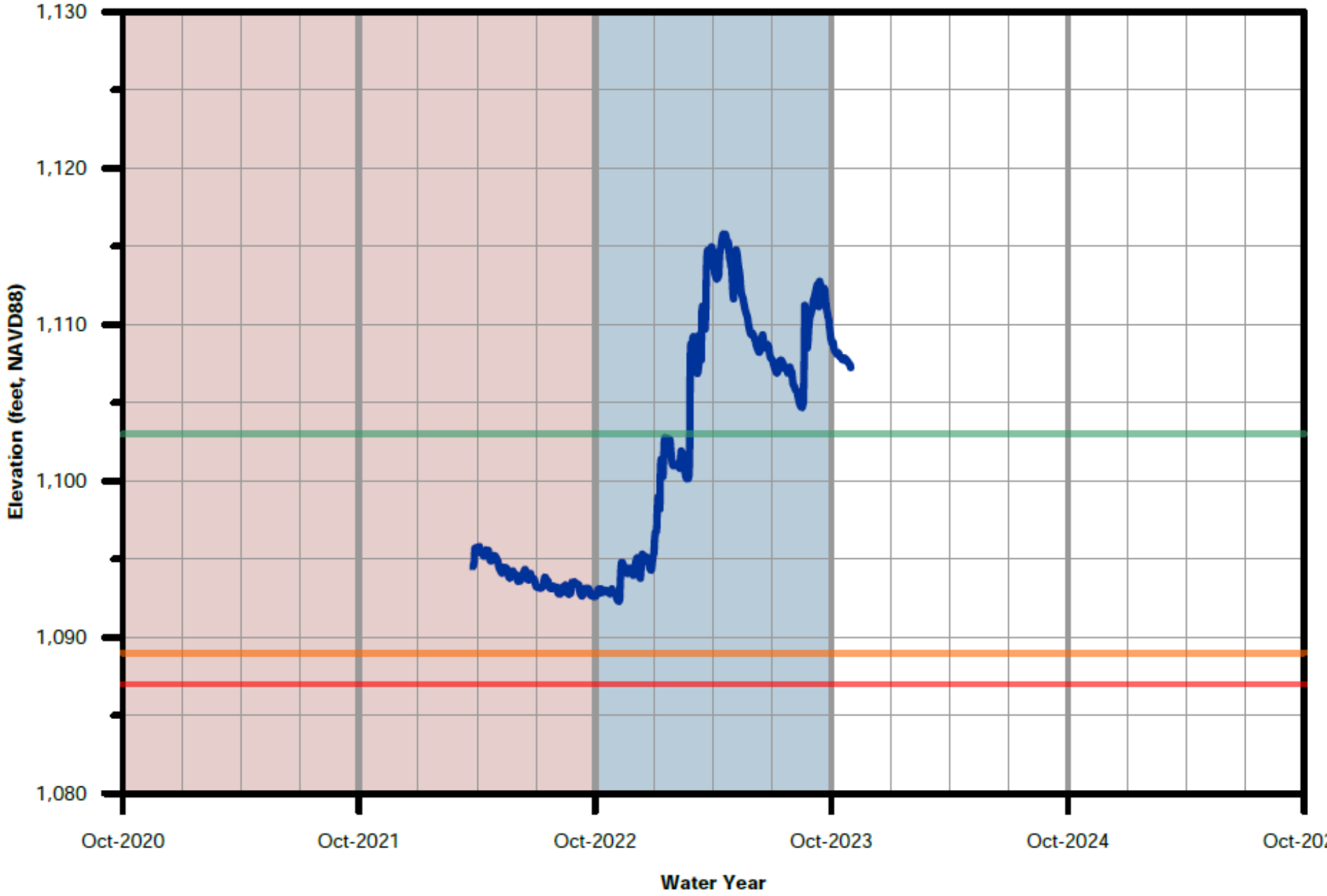

Lake Piru
ML-NLFE (Castaic Creek)
Seepage Location
ML-AA
ML-FF
ML-Ga/b
ML-F
ML-C
ML-B
ML-A
San Francisquito Creek
Junction
Val Verde
Del Valle
Henry Mayo Dr
Santa Clarita
126
5
Placerita Canyon State Park
Santa Clara River Valley Groundwater Basin
Existing Well Location
Photopoint Location
Data Collection Methods
A - Extent of Riparian Canopy Edge
B - Presence of Surface Water
C - Vegetation Mapping
Natural Communities
Arrow Weed-Mulefat Thickets
Arrow Weed Thickets
Annual Brome Grasslands
Big Sagebrush-Mulefat Scrub/Thicket
Disturbed
Fremont Cottonwood Forest and Woodland
Fremont Cottonwood-Mulefat Forest and Woodland/Thicket
Fremont Cottonwood-Red Willow Forest and Woodland/Riparian Woodland and Forest
Fremont Cottonwood-Giant Reed Forest and Woodland/Marshes
Fremont Cottonwood - Sandbar Willow Forest and Woodland/Thickets
Giant Reed Marshes
Red Willow Riparian Woodland and Forest
Sandbar Willow Thickets
Smartweed - Cocklebur Patches
Tamarisk Thickets
Streambed
N
0
1.25
Miles


Lake Piru
ML-NLFE (Castaic Creek)
Seepage Location
ML-AA
ML-FF
Castaic Junction
Del Valle
Henry Mayo Dr
126
5
Santa Clarita
San Francisquito Creek
ML-Ga/b
ML-F
ML-C
ML-B
ML-A
14
Placerita anyon State Park
Santa Clara River Valley Groundwater Basin
Existing Well Location
Photopoint Location
Data Collection Methods
A - Extent of Riparian Canopy Edge
B - Presence of Surface Water
C - Vegetation Mapping
Enhanced Vegetation Index (EVI)
1.0
-1.0
N
0
1.25
Miles

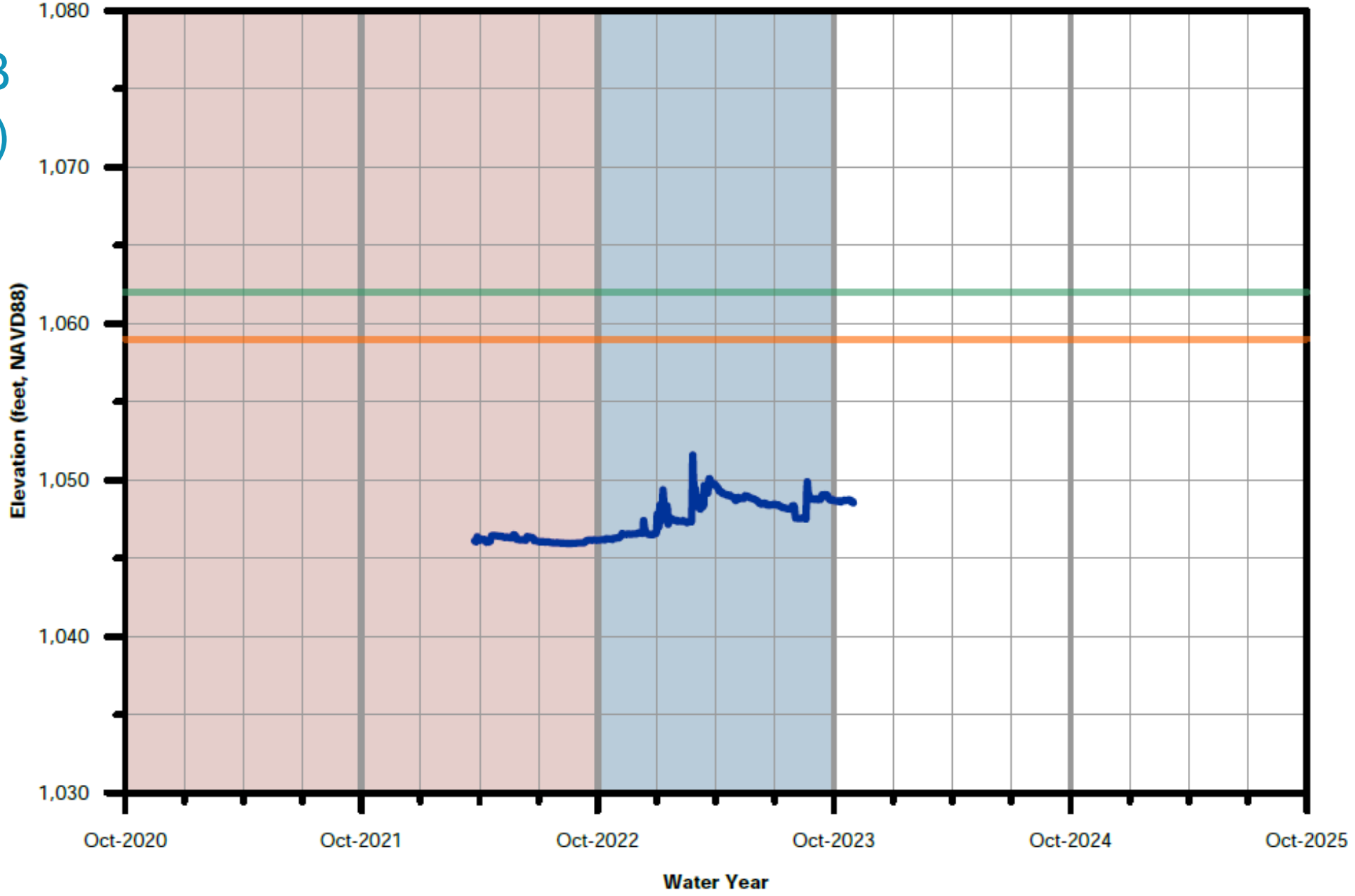
Hydrographs and Cross Sections

- Five groundwater monitoring wells were reviewed including GDE-A, GDE-B, GDE-C, GDE-D, and GDE-E
- At most monitoring wells, groundwater levels rose during the wet winter and remained higher than 2022 levels
- One monitoring well (GDE-E) exhibited slightly lower levels than in 2022 and this is related to the migration of the active stream channel away from the well (approximately 50 feet).
- No undesirable results reported

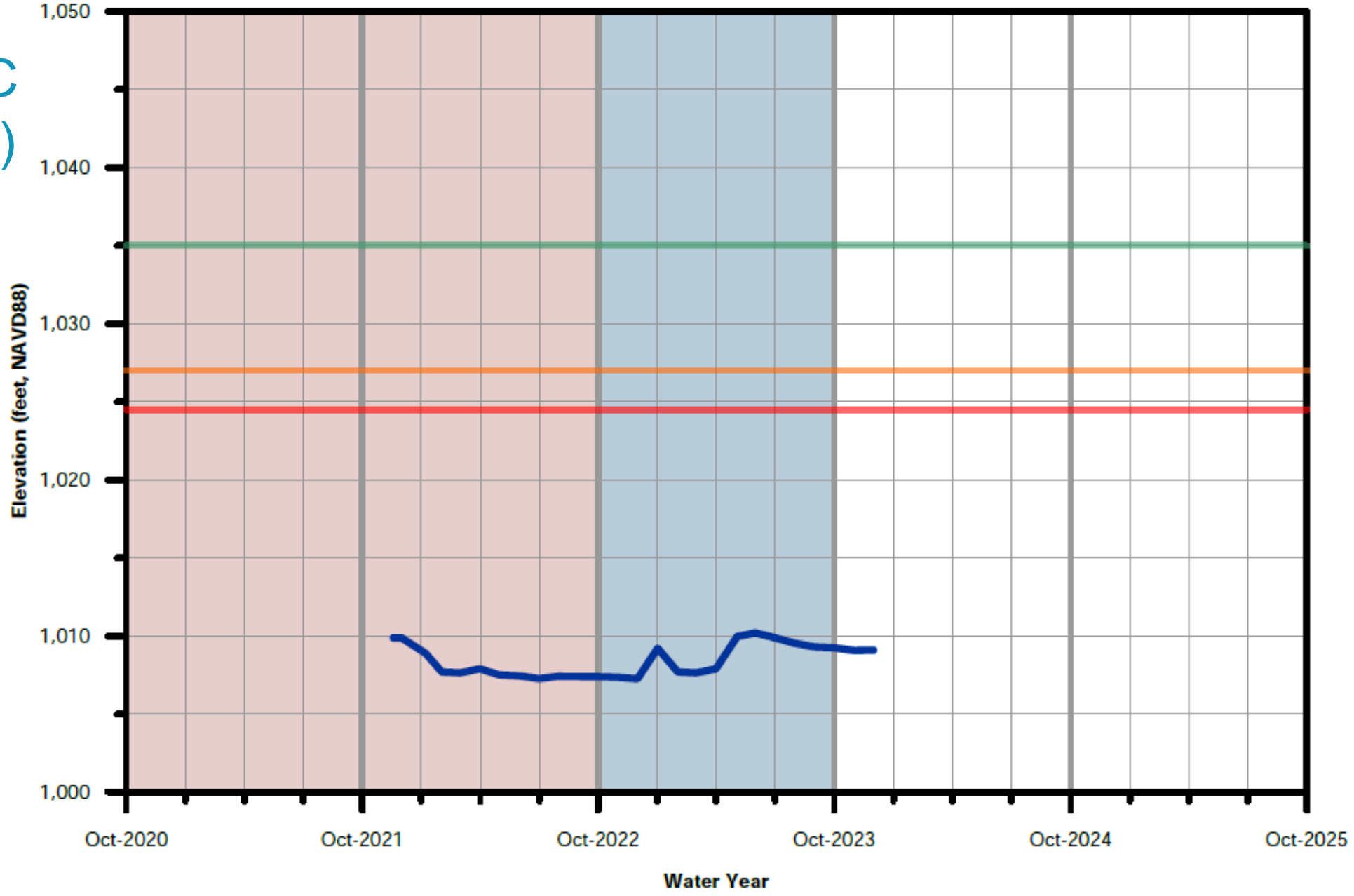
GDE A (ML-A)


1,130
1,120
1,110
1,100
1,090
1,080
Elevation (feet, NAVD88)
Oct-2020
Oct-2021
Oct-2022
Oct-2023
Oct-2024
Oct-2025
Water Year

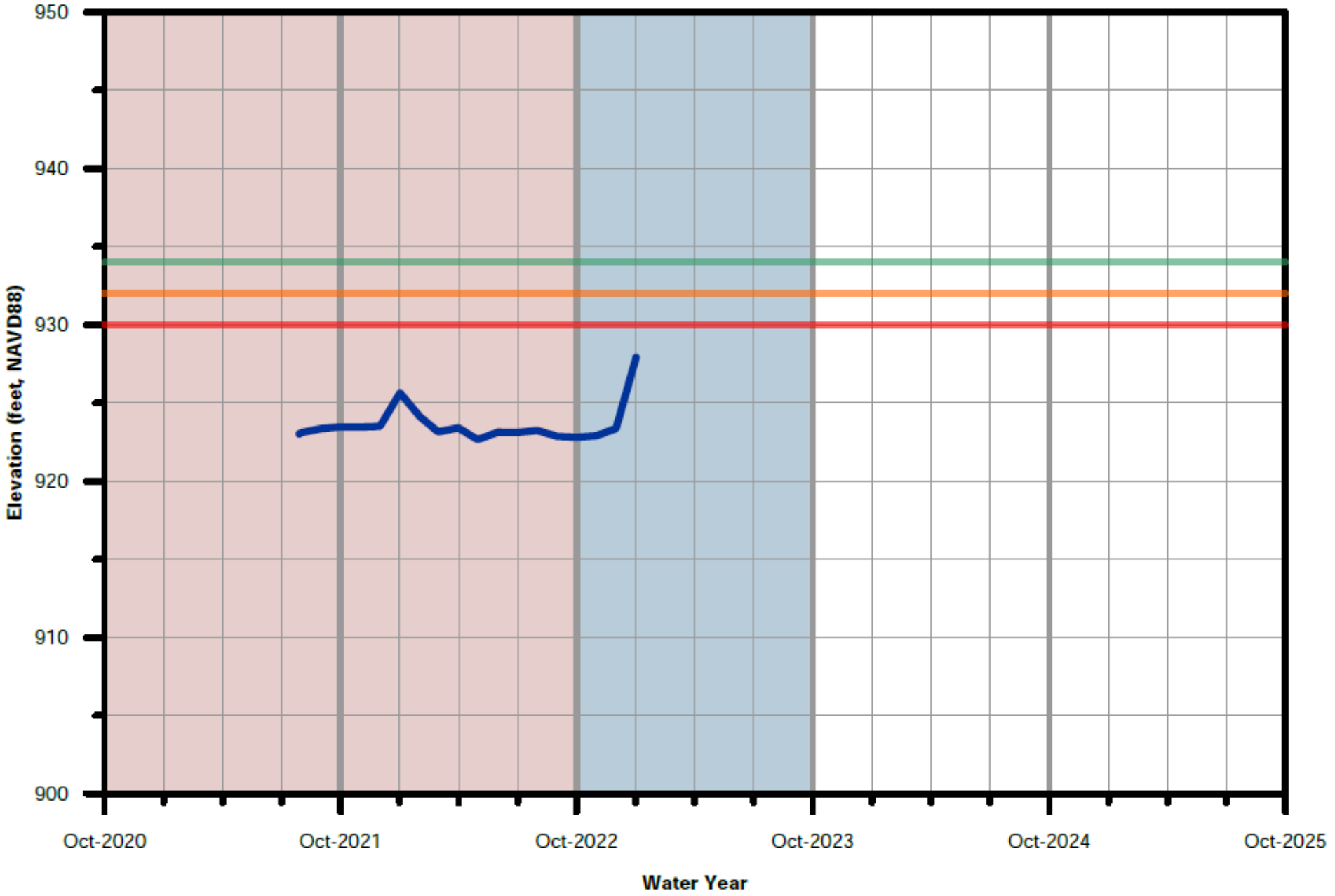
GDE B (ML-B)


1,080
1,070
1,060
1,050
1,040
1,030
Elevation (feet, NAVD88)
Oct-2020
Oct-2021
Oct-2022
Oct-2023
Oct-2024
Oct-2025
Water Year

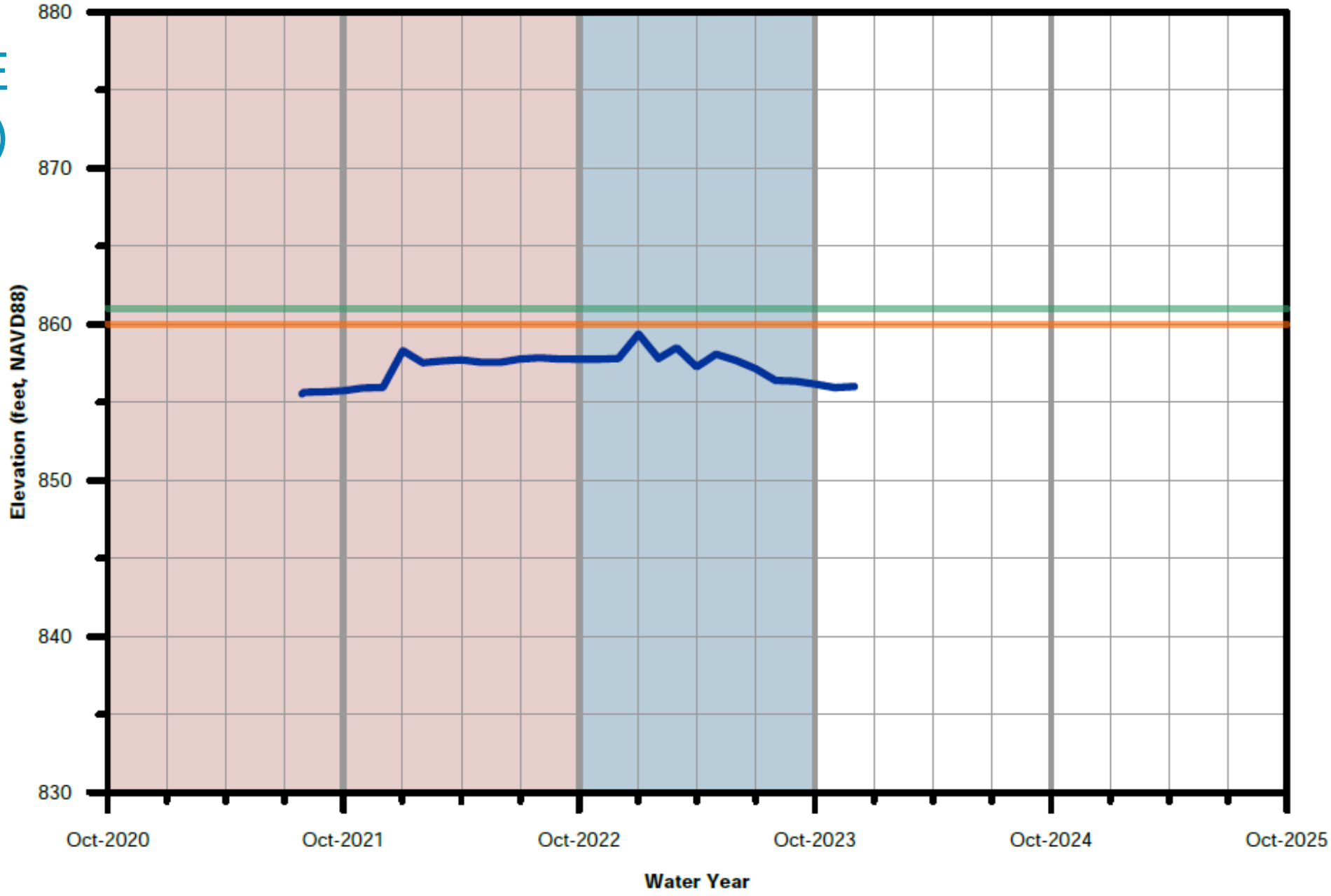
GDE C (ML-C)


1,050
1,040
1,030
1,020
1,010
1,000
Elevation (feet, NAVD88)
Oct-2020
Oct-2021
Oct-2022
Oct-2023
Oct-2024
Oct-2025
Water Year

GDE D (ML-D)


950
940
930
920
910
900
Elevation (feet, NAVD88)
Oct-2020
Oct-2021
Oct-2022
Oct-2023
Oct-2024
Oct-2025
Water Year

GDE E (ML-E)


880
870
860
850
840
830
Elevation (feet, NAVD88)
Oct-2020
Oct-2021
Oct-2022
Oct-2023
Oct-2024
Oct-2025
Water Year

2023 GDE Evaluation Findings and Recommendations

- No undesirable results to GDEs were identified in 2023.
- Groundwater levels reflected the wet winter of 2022/2023
- Trigger levels and minimum thresholds should be refined to better reflect the approach in the GSP and the newly collected empirical data.
- Continue collecting continuous groundwater elevation data and visit ML-B in the late summer and fall to confirm surface flow.
- Continue to track climate and rainfall trends to better understand potential impacts of climate change to the GDEs.

Questions