GROUNDWATER DEPENDENT ECOSYTEM MONITORING YEAR 2024

SCV GSA Board Meeting
January 13, 2025
Item No. 4.1

SCV GSA

GDE EVALUATION PROCESS OVERVIEW

- GDE Wells and GDE Triggers
- GSP Defines Undesirable Results to GDEs
- Protocol for Field Work and Evaluation
- Management Actions (if needed)

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UNDESIRABLE RESULTS

- 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.

PROTOCOL FOR FIELD WORK AND EVALUATION

- **Two Part Evaluation Process**

- **Field Evaluation to determine if undesirable results are present**
  - Three Methods utilized
  - Method A reviews Extent of Riparian Canopy Edge (1X per year)
  - Method B documents presence of surface water (1 X per year)
  - Method C conducts vegetation mapping (As needed)

- **Review of Hydrographs**
  - Follows the field evaluation
  - In 2022, 23, and 24 no UD's identified so hydrograph evaluation allows an annual look and comparison between groundwater elevations and GDE conditions.

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FIELD WORK SUMMARY 2024

- Monitoring protocols A and B conducted.
  - Protocol A is extent of riparian canopy edge
  - Protocol B is documentation of surface water
- Monitoring Protocol C verified with aerial photos in some cases- other cases re verification not necessary
  - Protocol C is vegetation mapping
- Some dryness observed, consistent with late summer conditions, but no signs of acute water stress that could be associated with reduced access to groundwater
- Specific changes from 2022-2024 at each location are described in detail in Attachment A of the Board Memo

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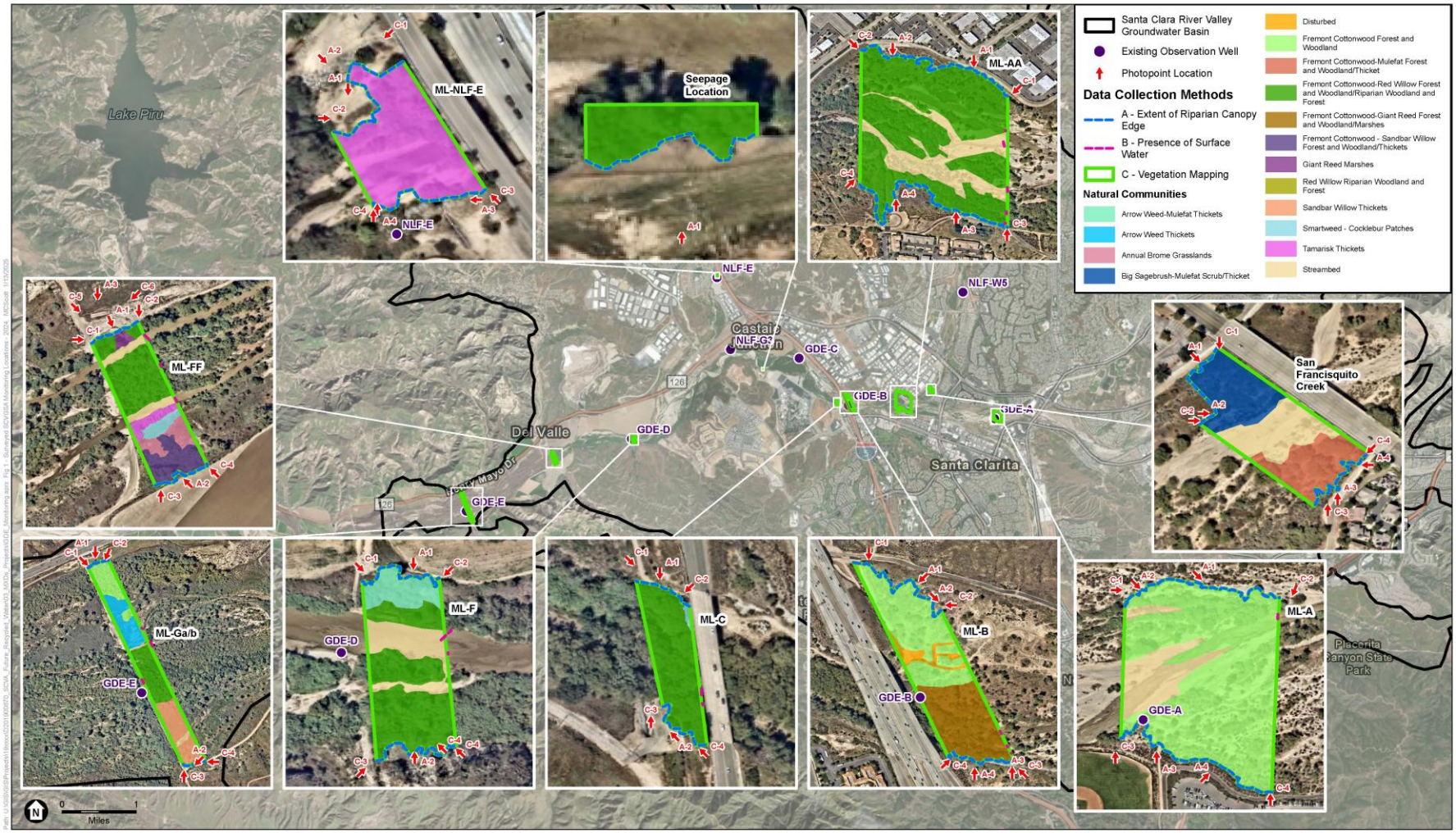
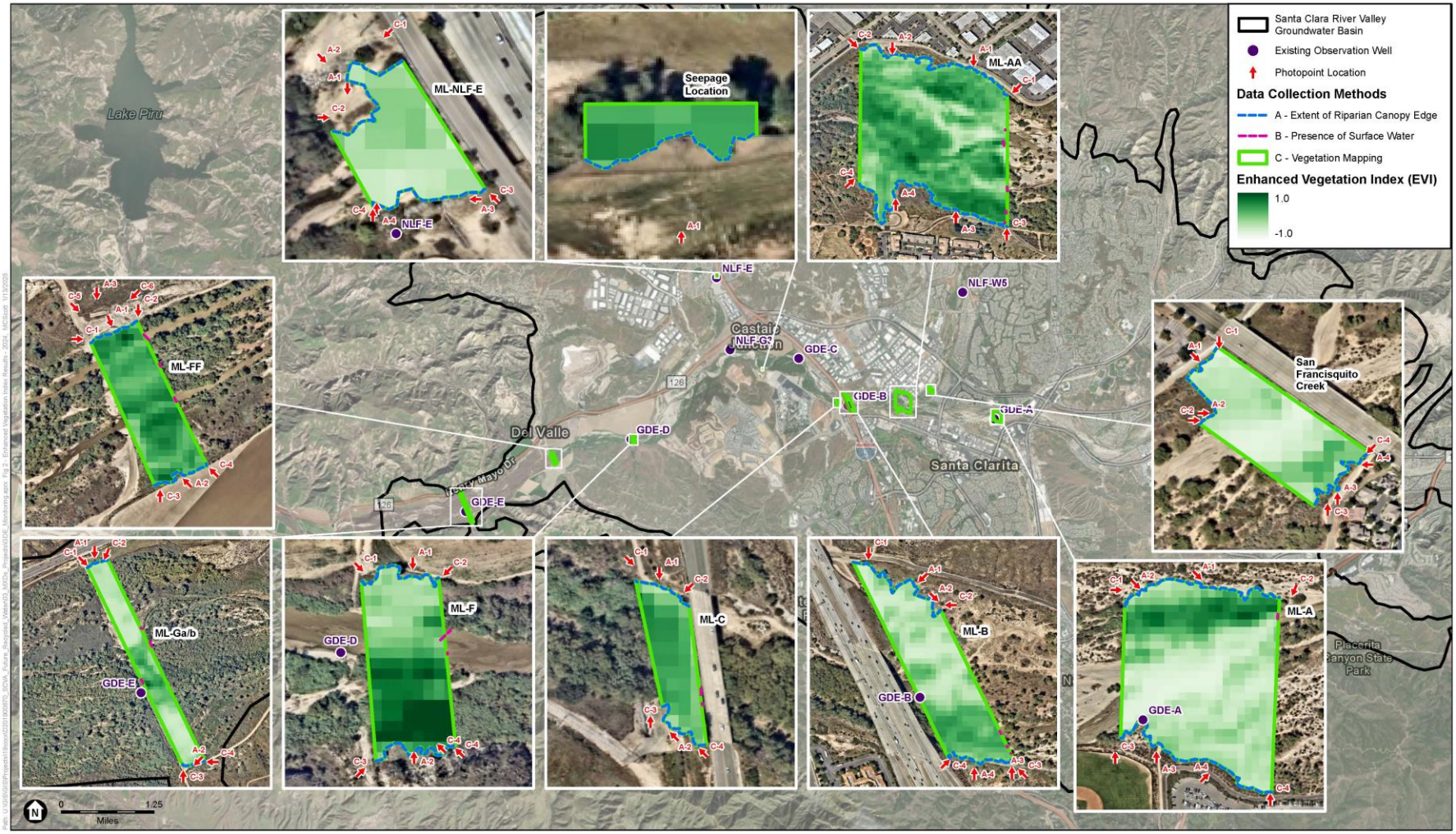


SOURCE: NearMap, 2023-09-12 (Aerial); ESA, 2024

Santa Clarita Valley Groundwater Sustainability Plan
Groundwater Dependent Ecosystem Monitoring Protocol

Figure 1
Surveyed SCVGSA Monitoring Locations

ESA



SOURCE: NearMap, 2023-09-12 (Aerial); ESA, 2024

Santa Clarita Valley Groundwater Sustainability Plan
Groundwater Dependent Ecosystem Monitoring Protocol

Figure 2
Enhanced Vegetation Index Results

ESA

HYDROGRAPH SUMMARY

- Hydrographs GDE A, B, and C reflect similar groundwater elevations to the same time the previous year.

- Hydrograph GDE-E reflects slightly lower groundwater elevations and reflects migration of stream channel

- Not included in Board Memo, but GDE wells NLF-E, NLF-W5, and NLF-G3 had water levels above GDE Triggers.

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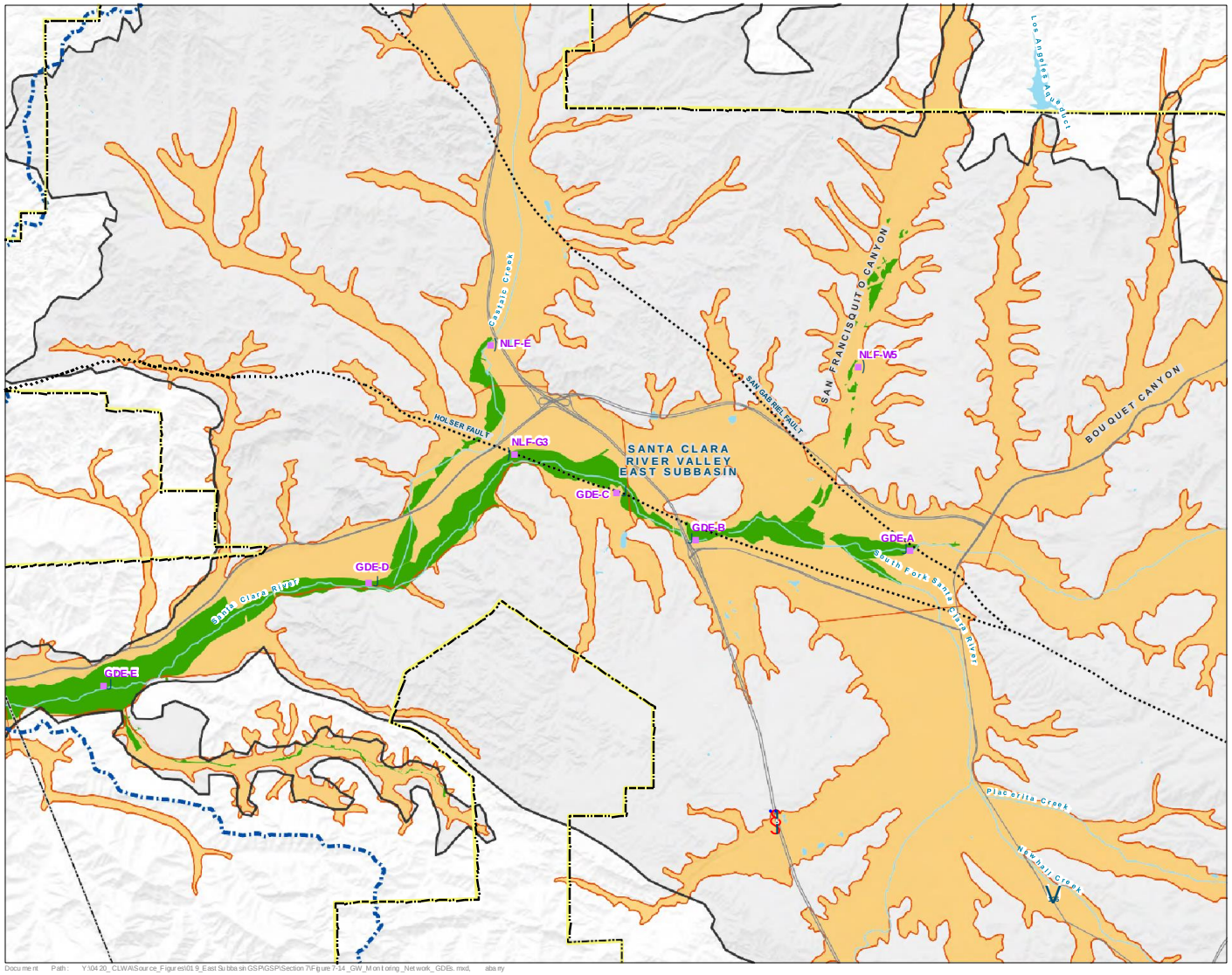


FIGURE 7-14

Groundwater Monitoring Network for GDEs

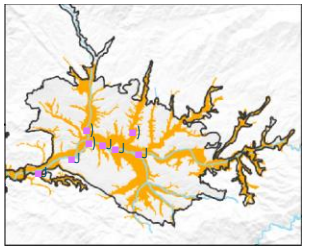
Santa Clara River Valley
East Groundwater Basin
Groundwater Sustainability Plan

LEGEND

GDE Monitoring Well in the Alluvial Aquifer
- Existing Observation Well
- New Observation Well (to be constructed)

Phreatophyte Locations
- Riparian Mixed Hardwood

All Other Features
- Santa Clara River Valley Groundwater Basin
- Alluvial Aquifer
- Watershed Boundary
- Service Area Boundary for SCV Water
- Major Road
- Watercourse
- Waterbody



NOTE
SCV Water: Santa Clarita Valley Water Agency

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Date: December 17, 2021
Data Sources: USGS, DWR Bulletin 118, ESA

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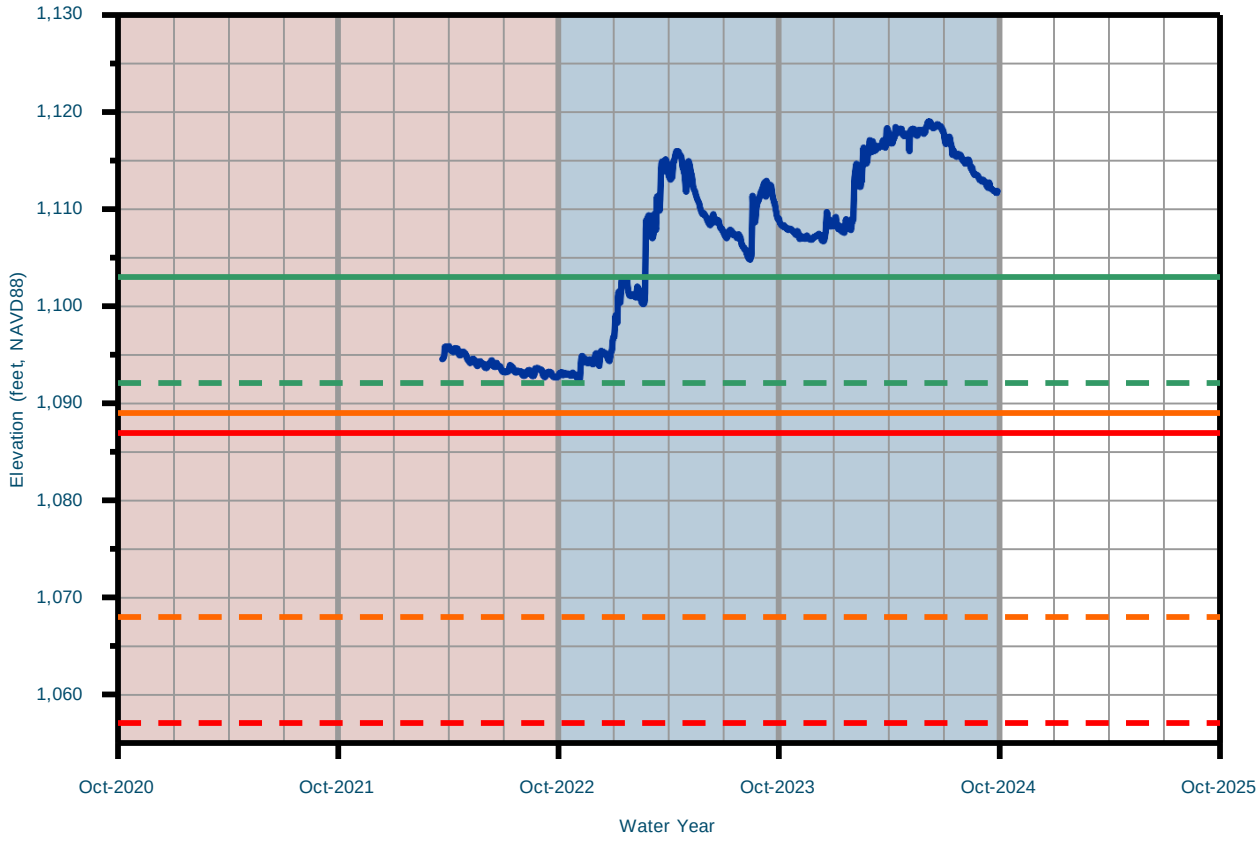

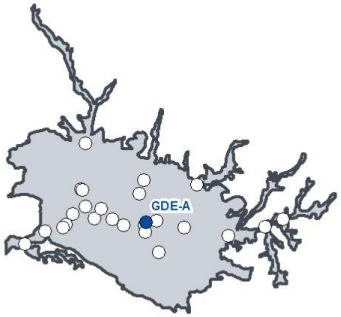

FIGURE D-17

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Piezometer GDE-A in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin

LEGEND

- Measured Static Groundwater Elevation
- Initial Measurable Objective (MO)
- Initial GDE Trigger Level
- Initial Minimum Threshold (MT)
- Tentative Revised Measurable Objective (MO)
- Tentative Revised GDE Trigger Level
- Tentative Revised Minimum Threshold (MT)

Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

NOTE(S)
- NAVD 88: North American Vertical Datum of 1988

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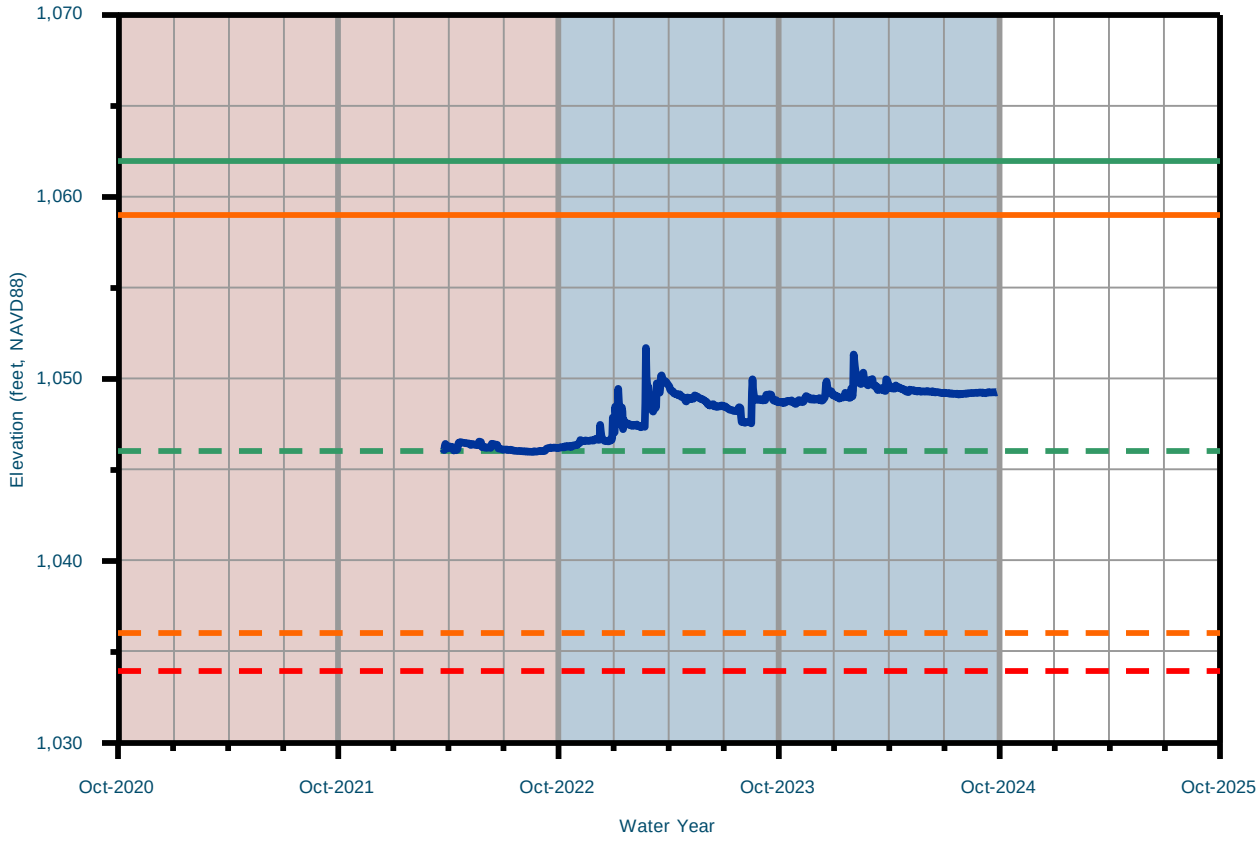
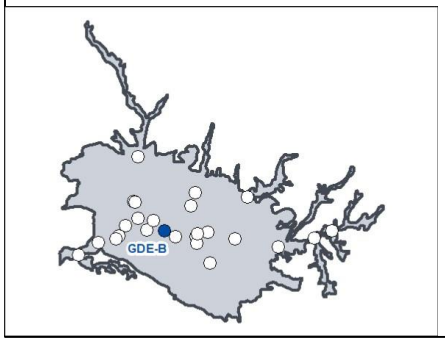
FIGURE D-18

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Piezometer GDE-B in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin





LEGEND

- Measured Static Groundwater Elevation
- Initial Measurable Objective (MO) and Initial GDE Trigger Level
- Initial Minimum Threshold (MT)
- Tentative Revised Measurable Objective (MO)
- Tentative Revised Minimum Threshold
- Tentative Revised GDE Trigger Level

Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

NOTE(S)
- NAVD 88: North American Vertical Datum of 1988

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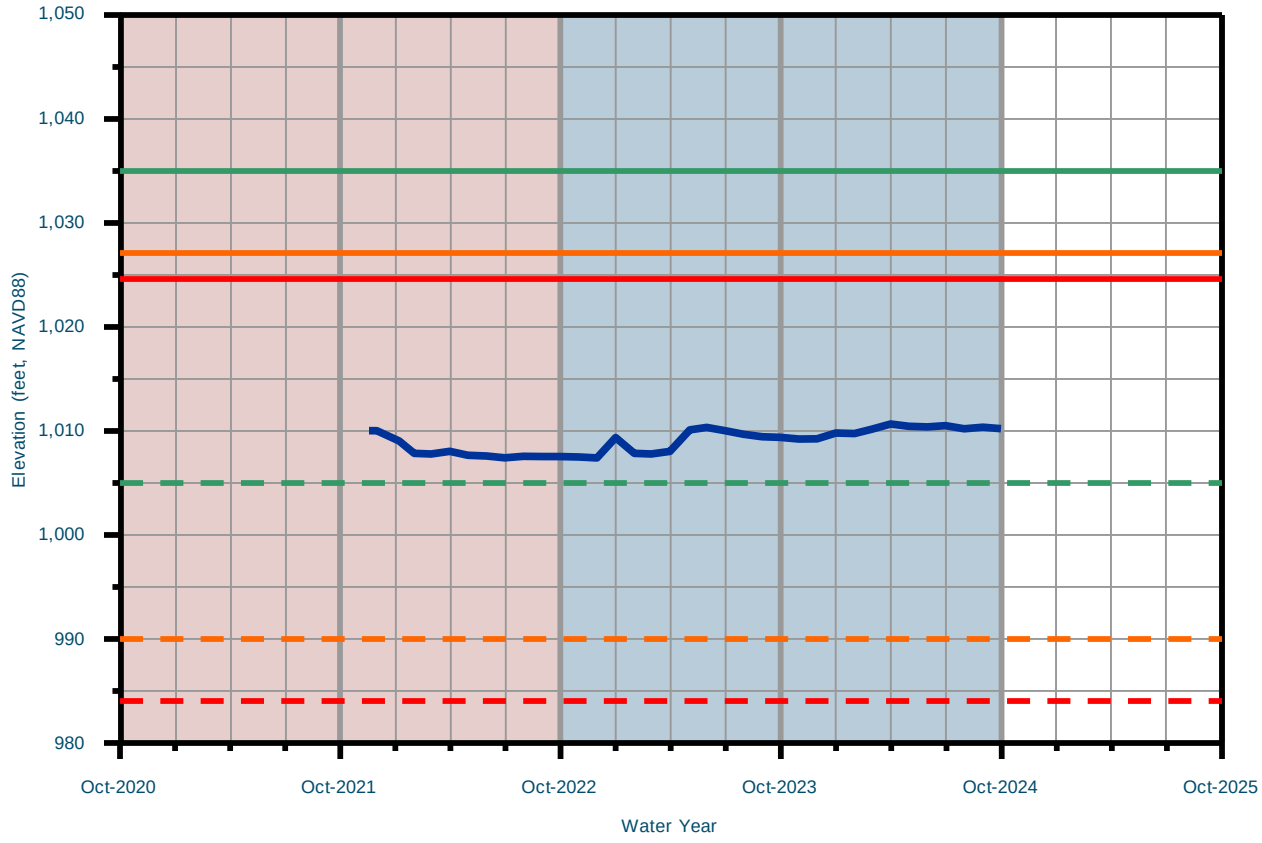

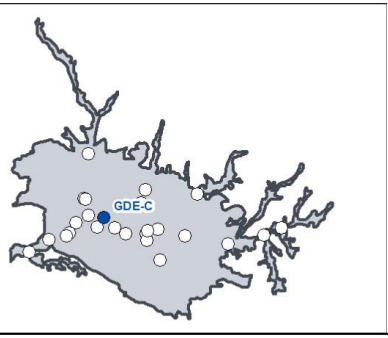

FIGURE D-19

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Piezometer GDE-C in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin

LEGEND

- Measured Static Groundwater Elevation
- Initial Measurable Objective (MO)
- Initial GDE Trigger Level
- Initial Minimum Threshold (MT)
- Tentative Revised Measurable Objective (MO)
- Tentative Revised GDE Trigger Level
- Tentative Revised Minimum Threshold

Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

NOTE(S)

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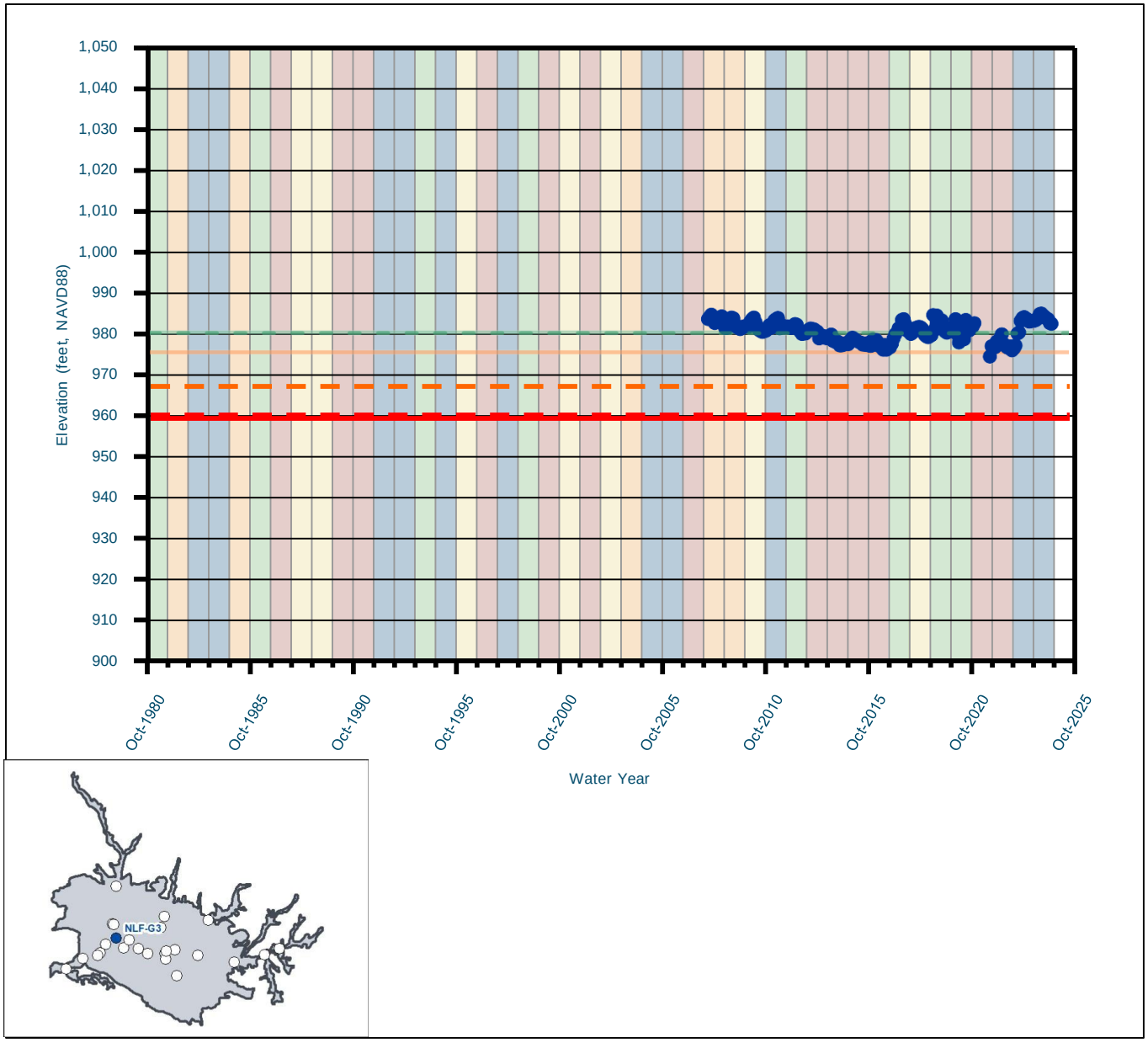

FIGURE D-15

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Monitoring Well NLF-G3 in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin

LEGEND

- Measured Static Groundwater Elevation
- Initial Measurable Objective (MO)
- Initial GDE Trigger Level
- Initial Minimum Threshold (MT)
- Tentative Revised Measurable Objective (MO)
- Tentative Revised GDE Trigger Level
- Tentative Revised Minimum Threshold (MT)

Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

NOTE(S)

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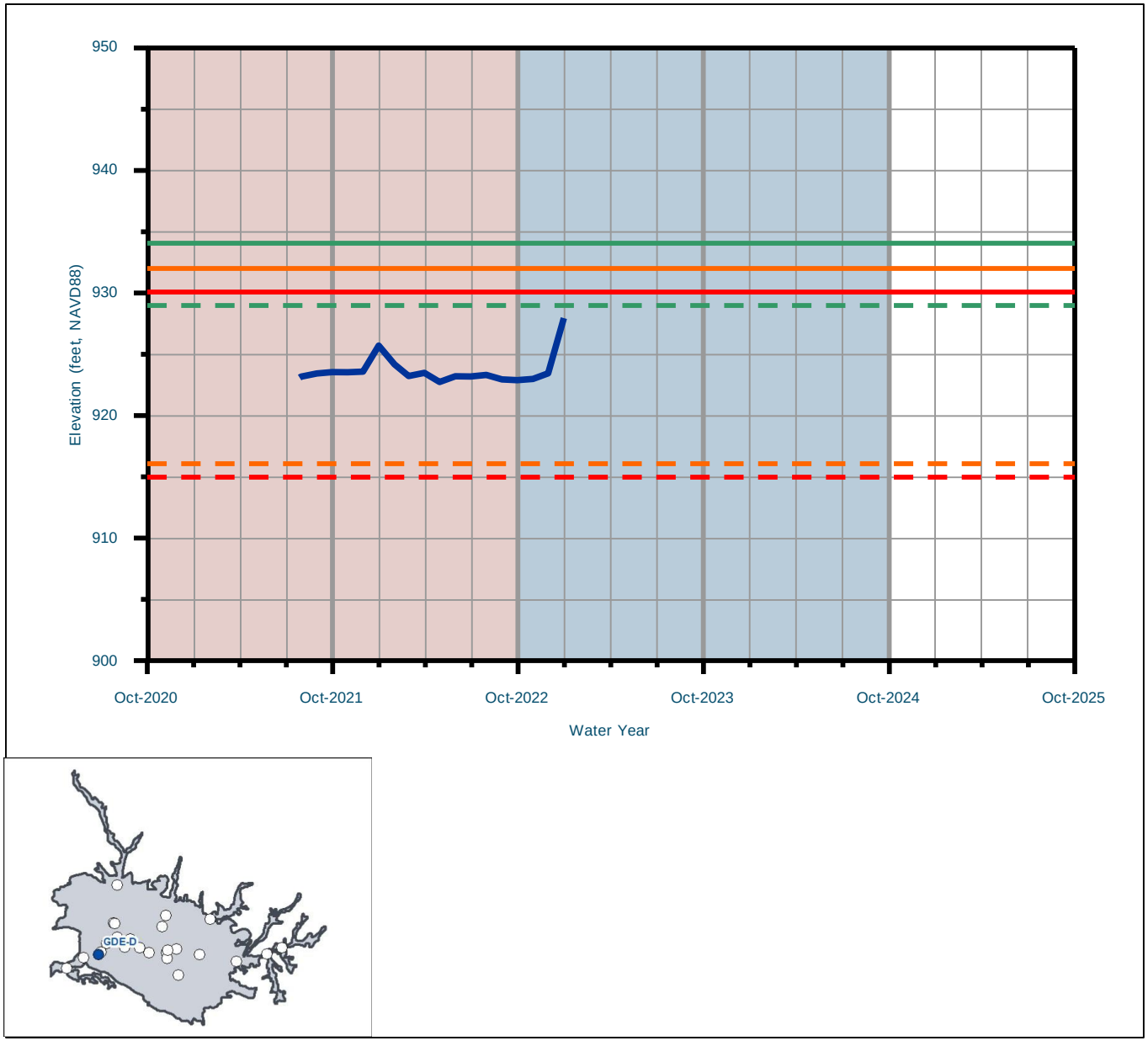

FIGURE D-20

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Piezometer GDE-D in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin

LEGEND

- Measured Static Groundwater Elevation
- Initial Measurable Objective (MO)
- Initial GDE Trigger Level
- Initial Minimum Threshold (MT)
- Tentative Revised Measurable Objective (MO)
- Tentative Revised GDE Trigger Level
- Tentative Revised Minimum Threshold

Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

NOTE(S)

- This piezometer was destroyed by flooding in late January 2023
- NAVD 88: North American Vertical Datum of 1988

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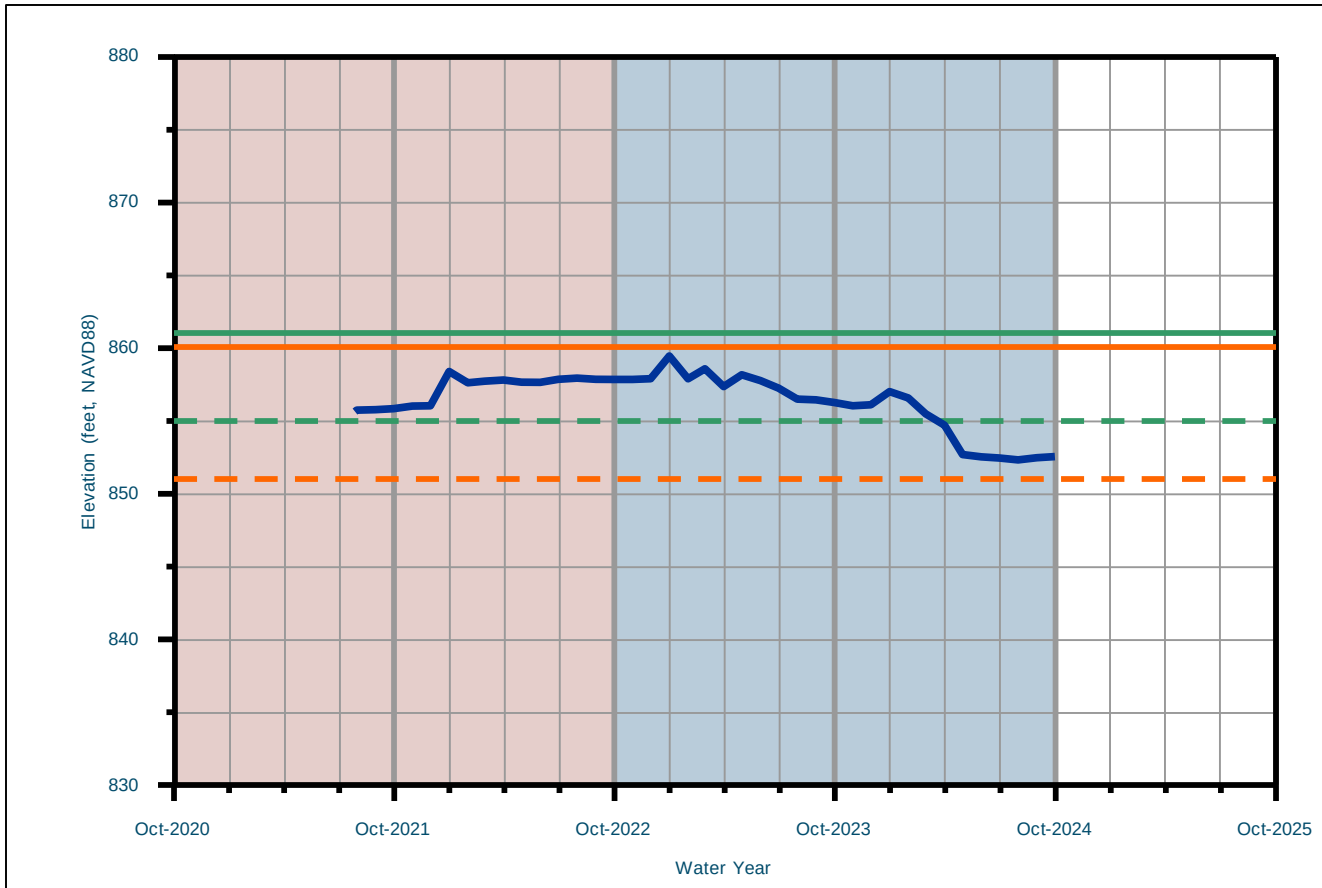

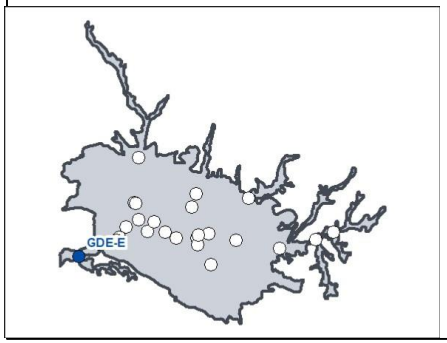

FIGURE D-21

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Piezometer GDE-E in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin

LEGEND

- Measured Static Groundwater Elevation
- Initial Measurable Objective (MO)
- Initial Minimum Threshold (MT) and Initial GDE Trigger Level
- Tentative Revised Measurable Objective (MO)
- Tentative Revised GDE Trigger Level

Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

NOTE(S)
- NAVD 88: North American Vertical Datum of 1988

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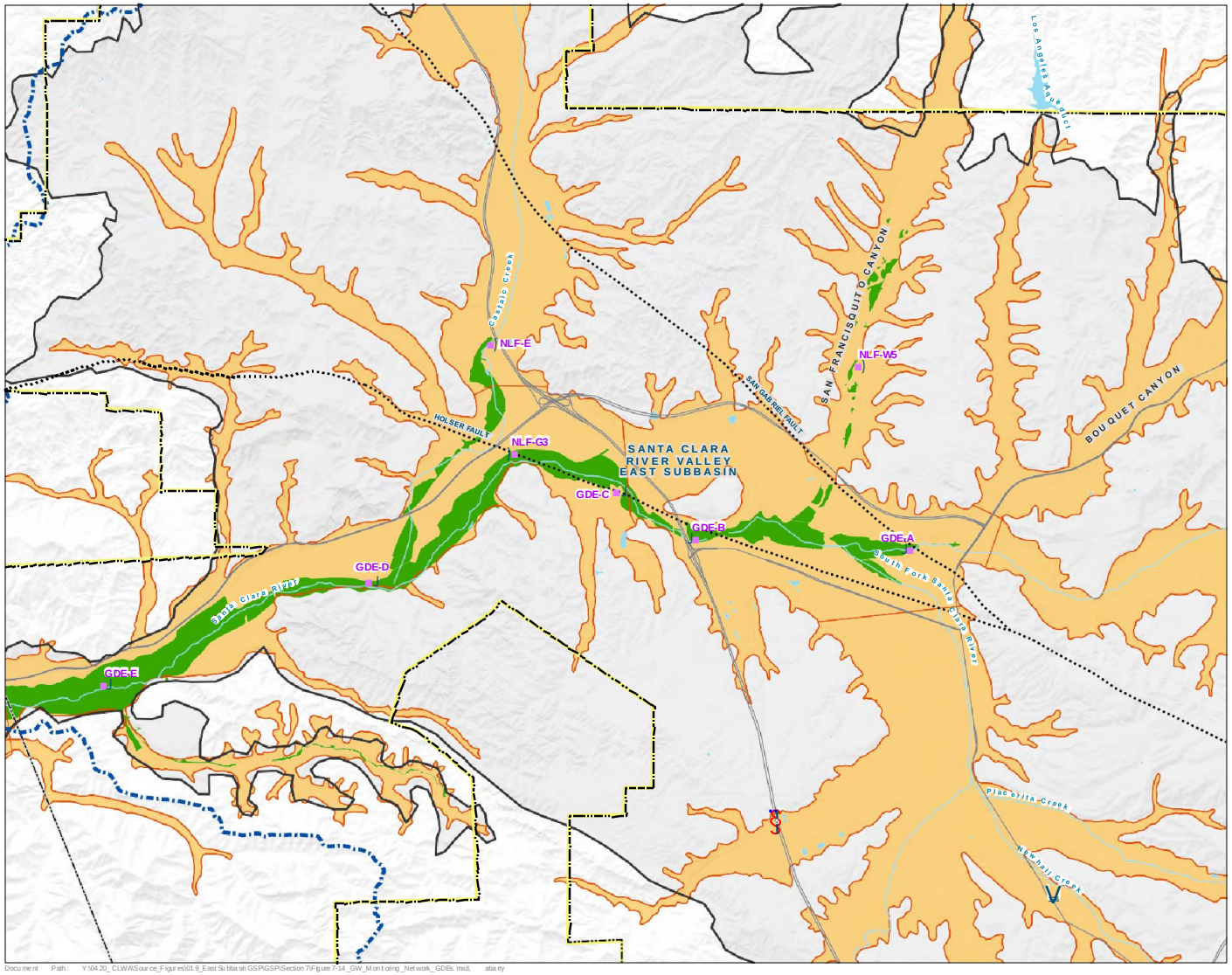

FIGURE 7-14

Groundwater Monitoring Network for GDEs

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East Groundwater Basin
Groundwater Sustainability Plan

LEGEND

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Phreatophyte Locations
- Riparian Mixed Hardwood

All Other Features
- Santa Clara River Valley Groundwater Basin
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- Watershed Boundary
- Service Area Boundary for SCV Water
- Major Road
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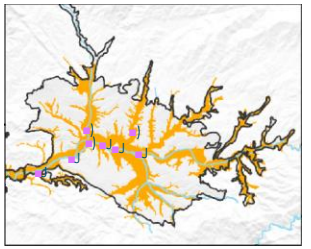
- Waterbody



NOTE
SCV Water: Santa Clarita Valley Water Agency

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Feet

Date: December 17, 2021
Data Sources: USGS, DWR Bulletin 118, ESA

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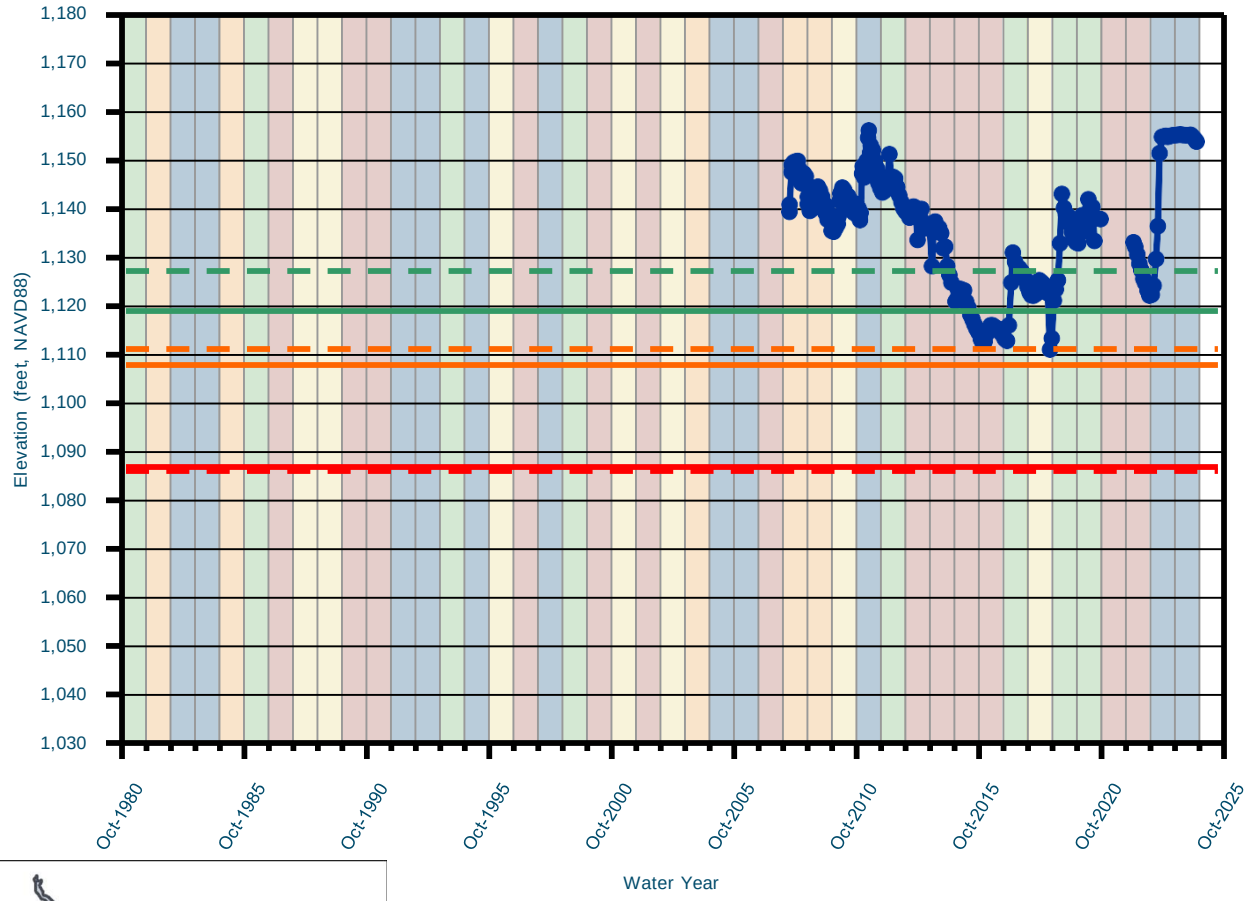
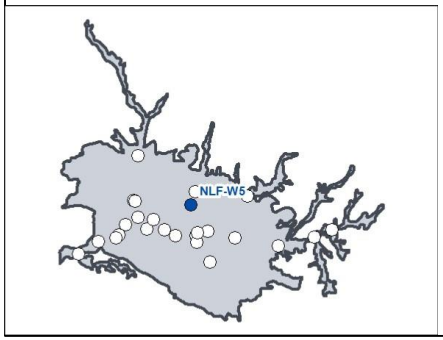
FIGURE D-16

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Monitoring Well NLF-W5 in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin





LEGEND

- Measured Static Groundwater Elevation
- Initial Measurable Objective (MO)
- Initial GDE Trigger Level
- Initial Minimum Threshold (MT)
- Tentative Revised Measurable Objective (MO)
- Tentative Revised GDE Trigger Level
- Tentative Revised Minimum Threshold (MT)

Water Year Type

- Wet
- Above Normal
- Below Normal
- Dry
- Critical

NOTE(S)

- NAVD 88: North American Vertical Datum of 1988

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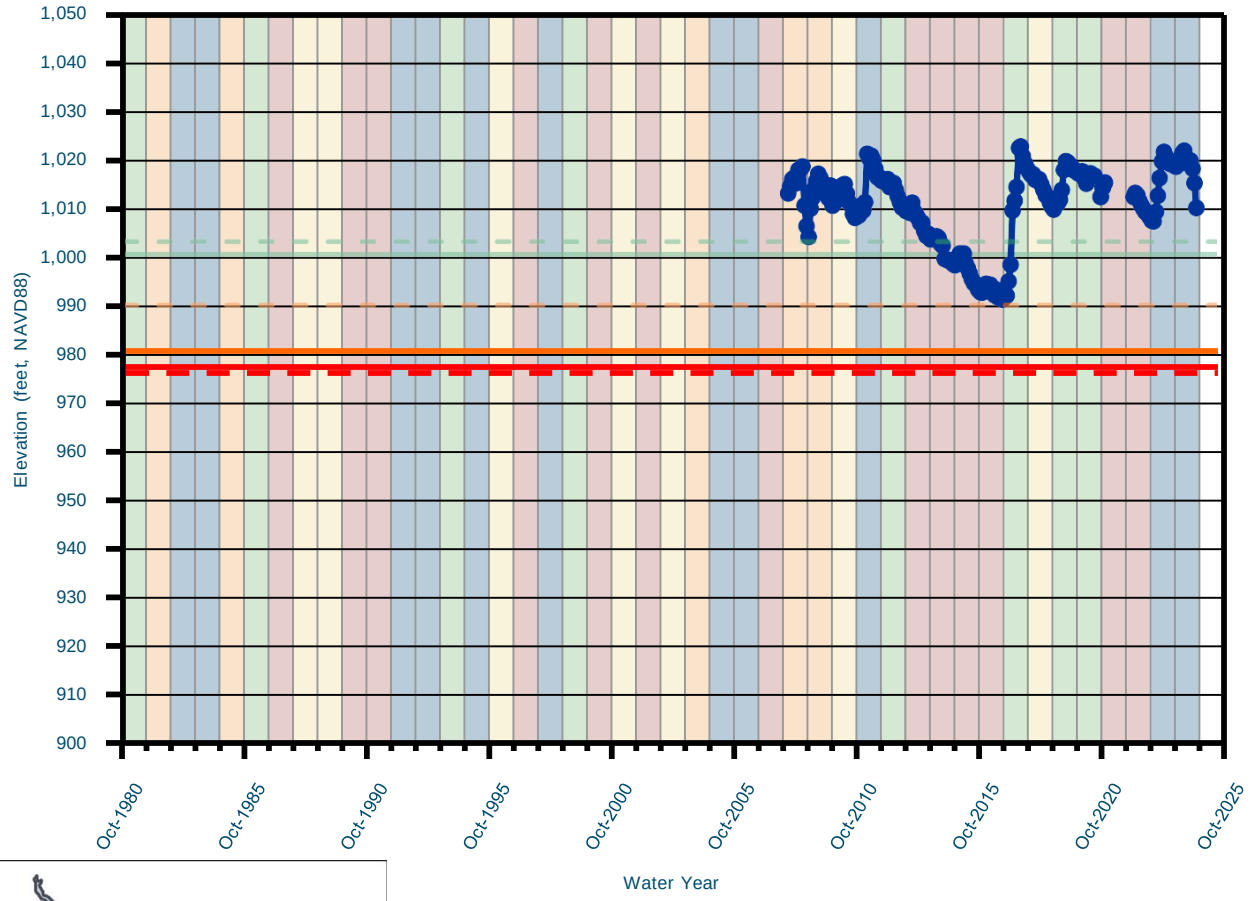
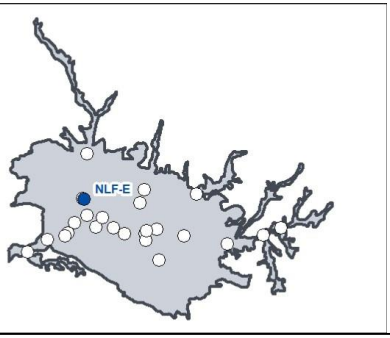
FIGURE D-14

Measured Groundwater Elevations and Sustainable Management Criteria - Existing GDE Monitoring Well NLF-E in the Alluvial Aquifer

Santa Clara River Valley East Groundwater Subbasin





LEGEND

- Measured Static Groundwater Elevation
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- Initial GDE Trigger Level
- Initial Minimum Threshold (MT)
- Tentative Revised Initial Measurable Objective (MO)
- Tentative Revised GDE Trigger Level
- Tentative Revised Minimum Threshold (MT)

Water Year Type

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- Below Normal
- Dry
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NOTE(S)
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SUMMARY OF 2024 EVALUATION

- GDE evaluation process is working well and developing good data
- No Undesirable Results to GDEs from groundwater extraction identified in 2024
- WY 2024 lower precipitation than WY 2023, but still above long-term average
- Revision of GDE Triggers is part of the GSP 5 Year Update.

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Questions?

SCV
GSA