



NOTICE OF MEETING

LAS VEGAS WASH COORDINATION COMMITTEE Tuesday, October 28, 2025 8:30 a.m.

MEETING TO BE HELD VIRTUALLY VIA MICROSOFT TEAMS
Call-in Information: 1-702-625-8405, ID: 517 361 580#

The Las Vegas Wash Coordination Committee makes reasonable efforts to assist and accommodate persons with physical disabilities who desire to attend the meeting. For assistance, please contact the Agenda Coordinator at (702) 258-3905 or agendas@snwa.com at least 48 hours in advance of the meeting.

Visit our website at <https://www.lvwash.org/about-the-wash/who-we-are/index.html> for Las Vegas Wash Coordination Committee agenda postings, copies of supporting material and approved minutes. To receive meeting information, including supporting material, contact the Agenda Coordinator at (702) 258-3905 or agendas@snwa.com.

Any Committee member may combine two or more agenda items for consideration, consider an item out of order, remove an item from the agenda or delay discussions relating to an item on the agenda at any time.

COMMENTS BY THE GENERAL PUBLIC

No Action May Be Taken: This is a period devoted to comments by the general public pertaining to items on this agenda. If you wish to speak to the Committee about items within its jurisdiction, but not appearing on this agenda, you must wait until the “Comments by the General Public” period listed at the end of this agenda. Please limit your comments to three minutes or less. No action may be taken upon a matter not listed on the posted agenda.

ITEM NO.

- I. *For Information Only:*** Welcome/Call to Order
- II. *For Possible Action:*** Approve April 22, 2025 Meeting Summary
- III. *For Information Only:*** Receive Update on Las Vegas Wash Perchlorate
- IV. *For Information Only:*** Receive Update on Clark County 208 Area-Wide Water Quality Management Plan
- V. *For Information Only:*** Receive Update on Recent Activities
 - a. Las Vegas Wash Project Coordination Team
 - b. Las Vegas Valley Watershed Advisory Committee
 - c. Clark County Wetlands Park
 - d. Lake Mead Water Quality Forum
 - e. Emerging Issues
- VI. *For Possible Action:*** Set Next Meeting Date/Time and Propose Items for the Next Meeting’s Agenda

COMMENTS BY THE GENERAL PUBLIC

No Action May Be Taken: At this time, the Committee will hear general comments from the public on matters under the jurisdiction of the Las Vegas Wash Coordination Committee. Please limit your comments to three minutes or less.

**THIS MEETING HAS BEEN PROPERLY NOTICED AND POSTED IN THE FOLLOWING
LOCATIONS:**

Southern Nevada Water Authority
100 City Parkway, Ste. 700
Las Vegas, NV 89106

Nevada Division of Environmental Protection

Perchlorate Update for Las Vegas Wash Coordination
Committee Meeting

October 28, 2025

Presented by

Alan Pineda, P.E.
Chad Schoop, P.E.
Bureau of Industrial Site Cleanup



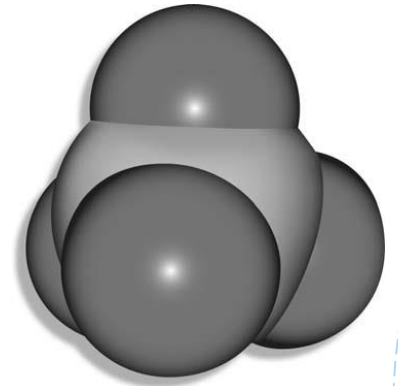
NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**



Perchlorate

Background

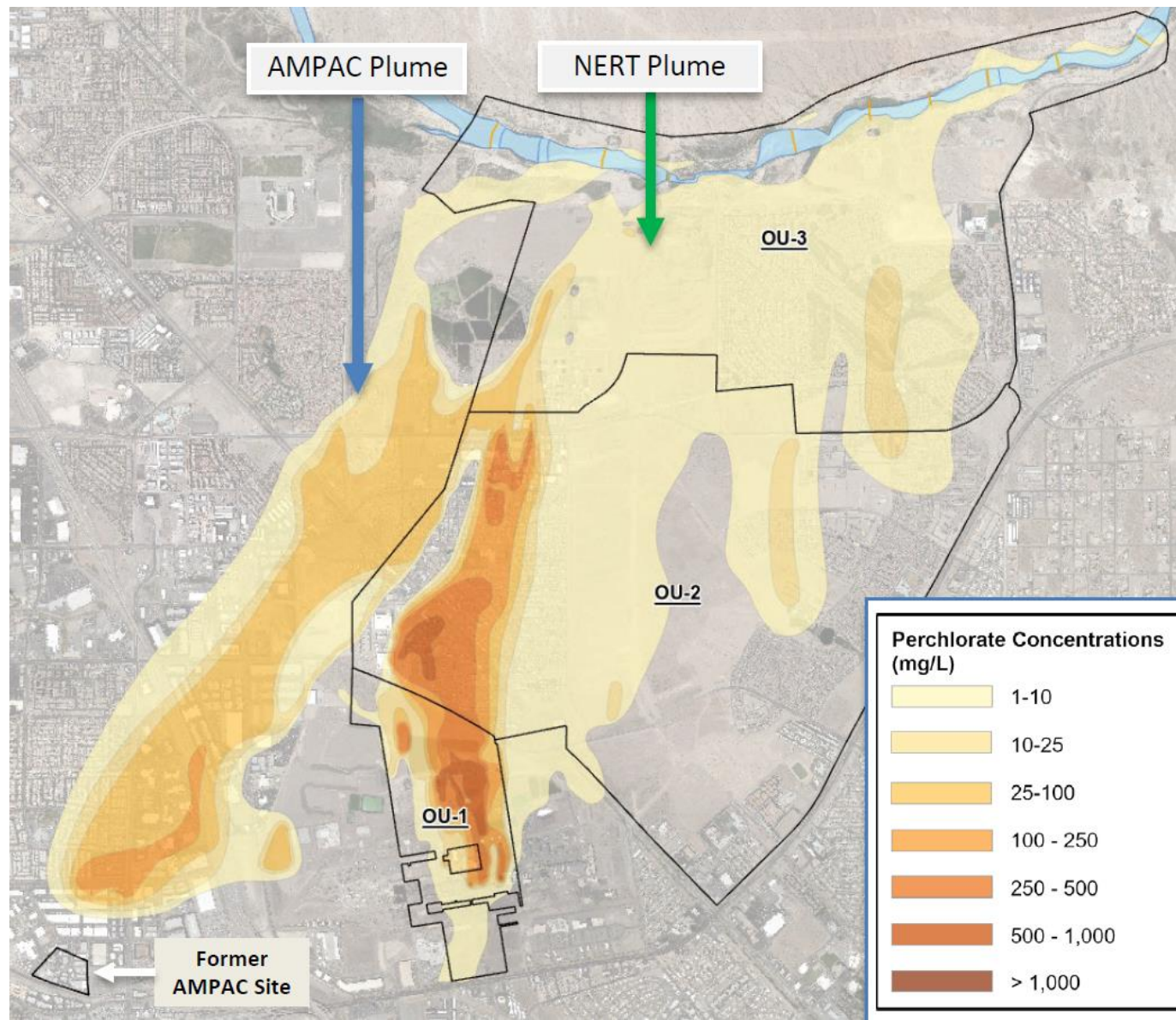
- Perchlorate is a naturally occurring and man-made anion that consists of one chlorine atom bonded to four oxygen atoms (ClO_4^-).
- An oxidizer, commonly used in solid rocket propellants, munitions, fireworks, airbag initiators for vehicles, matches, and signal flares.
- Highly soluble in water; migrates quickly from soil to groundwater.
- Primary pathways for human exposure include ingestion of contaminated food and drinking water.
- Affects thyroid gland by interfering with iodide uptake.



Perchlorate History

- Perchlorate was detected in the lower Colorado River in 1997 and was traced upstream to the Las Vegas Wash, which discharges into Lake Mead.
- It was determined that two perchlorate manufacturers, PEPCON/AMPAC and Kerr-McGee/Tronox, were the sources of the perchlorate entering the Las Vegas Wash via impacted groundwater.
- Remediation plans were subsequently implemented to begin removing perchlorate from groundwater in the late 90s/early 2000s.
- The Nevada Environmental Response Trust (NERT) was created in 2011 to continue remediating historical Kerr-McGee/Tronox perchlorate.
- Endeavour, LLC was created in 2015 to continue remediating historical PEPCON/AMPAC perchlorate.

Perchlorate Plumes



Endeavour, LLC

Groundwater Treatment System

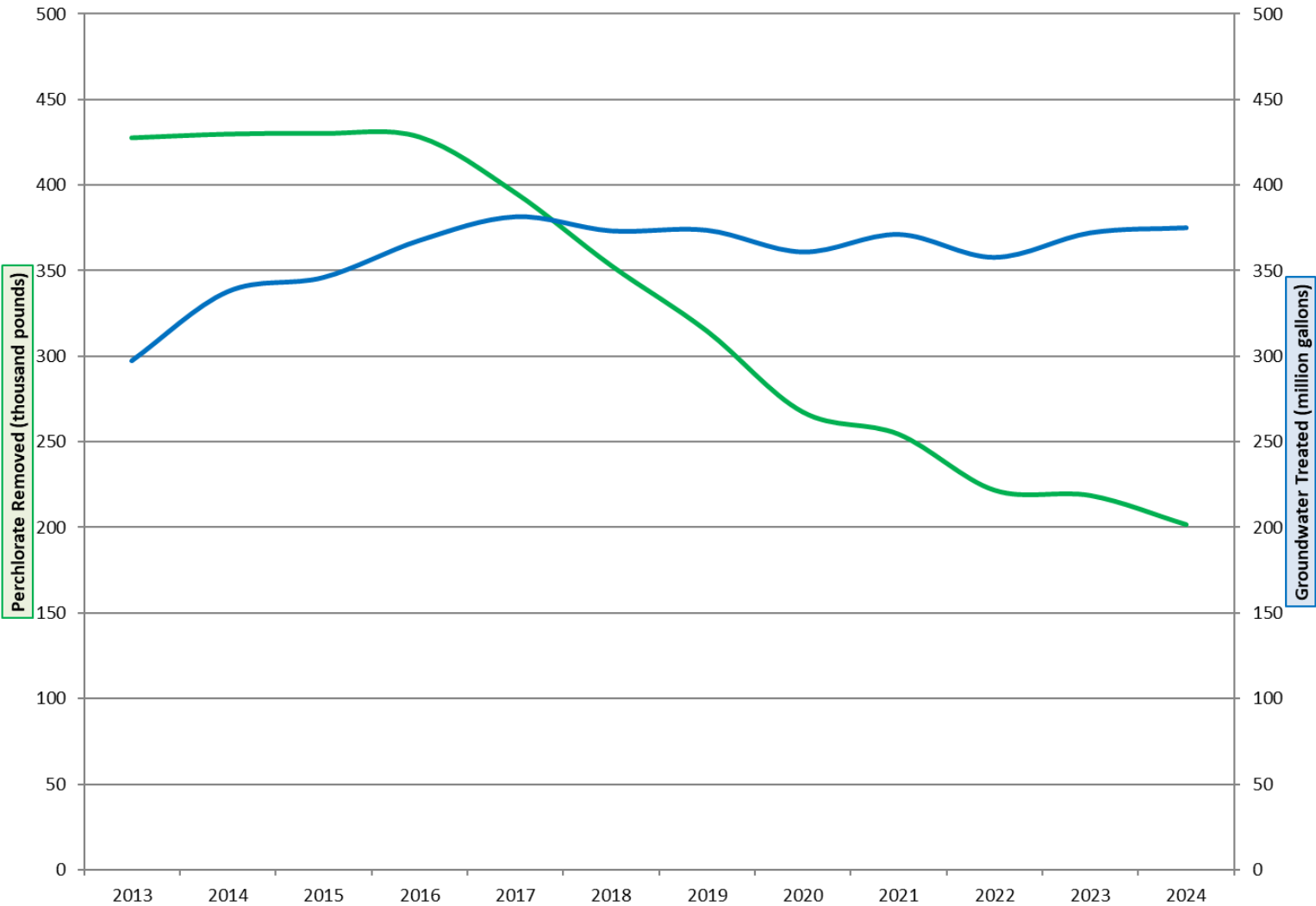


- Groundwater is biologically treated by fluidized bed reactors and discharged to Las Vegas Wash under a NPDES permit.
- Influent perchlorate: ~64,000 $\mu\text{g/L}$
- Effluent perchlorate: <1.2 $\mu\text{g/L}$
- Flow rate: ~691 gpm
- Perchlorate removed: ~527 lbs/day
- FBRs have removed >4 million lbs since 2012 startup.
- In situ bioremediation system removed ~56,000 lbs (2006-2012).

Endeavour, LLC

Perchlorate Removed

> 4 million pounds of perchlorate removed since FBR startup

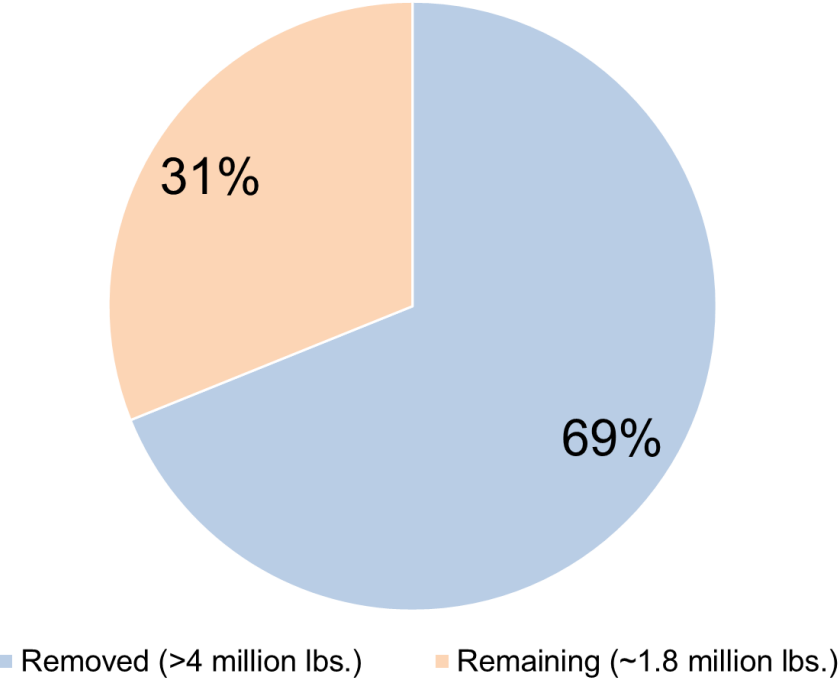


Endeavour, LLC

Cleanup Timeline

2013	2033	2034	2043
<ul style="list-style-type: none">• Focus: <u>deep</u> zone (source area)• Goal: reduce pre-extraction mass estimate (PME) by 99%• PME: 5,010,000 lbs.		<ul style="list-style-type: none">• Focus: <u>shallow</u> zone• Goal: reduce loading to Las Vegas Wash• PME: 850,000 lbs.	

Cleanup Progress



Endeavour, LLC

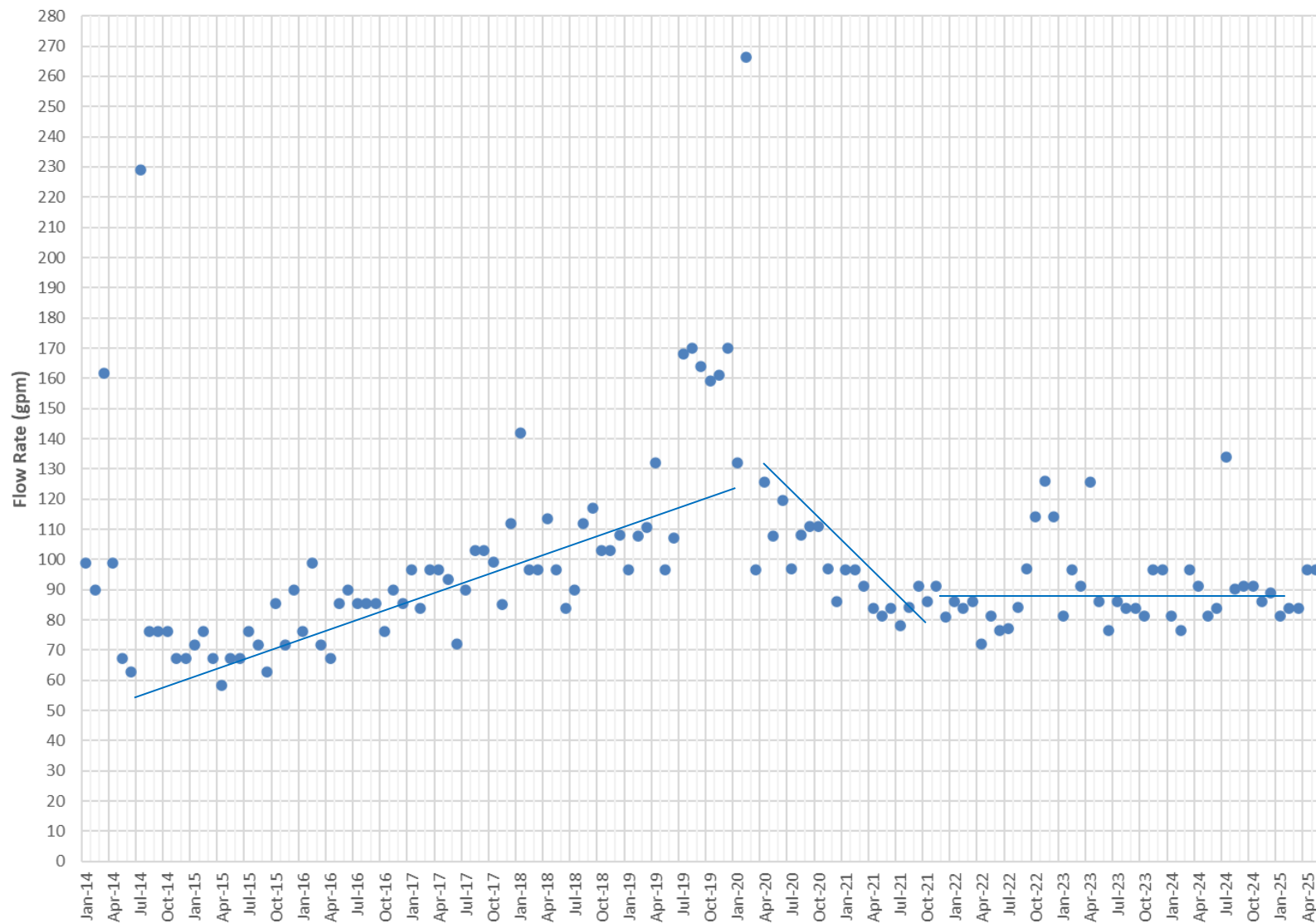
Eastgate Storm Drain Sump

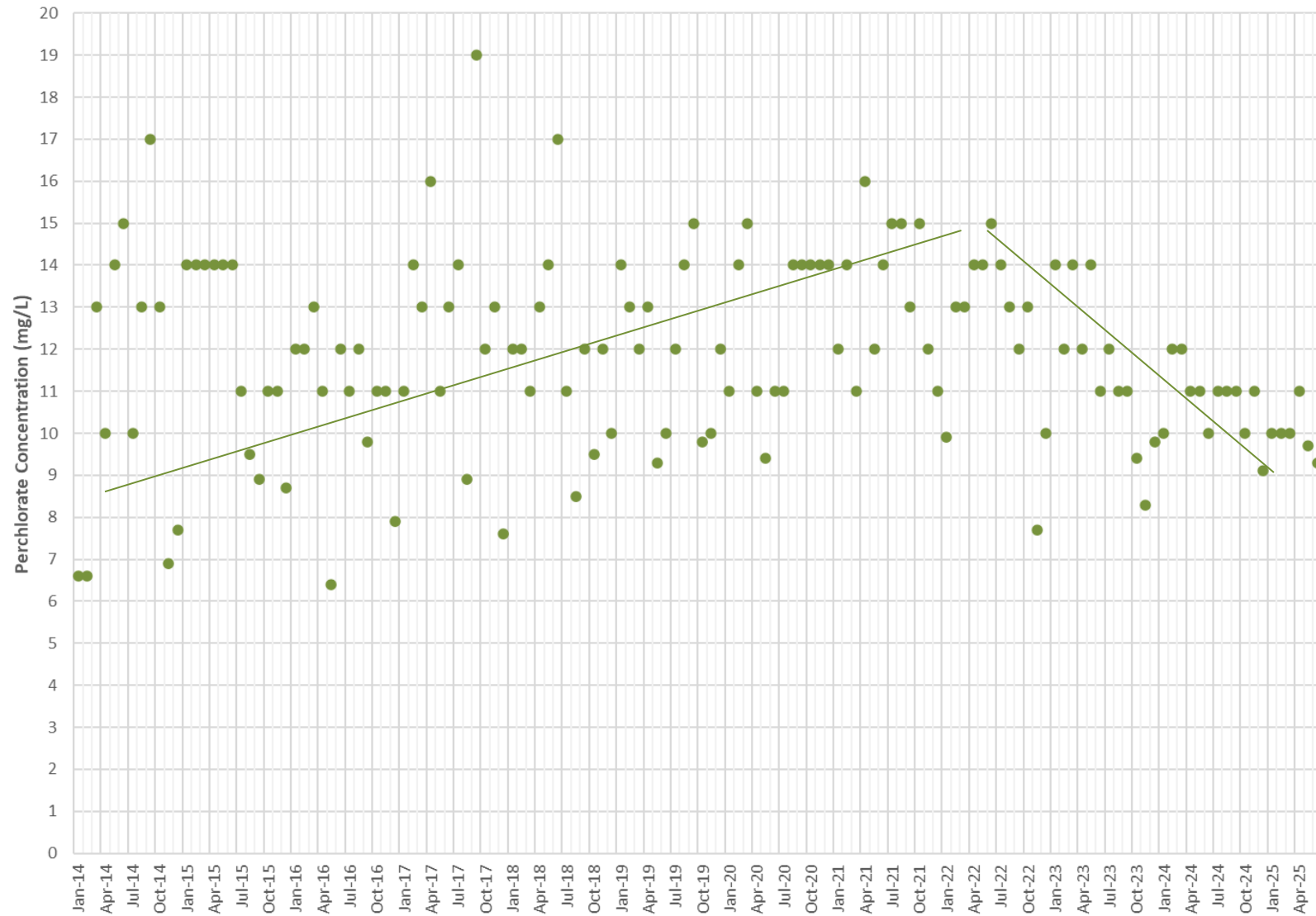


- Proposed sump expected to capture 95% (~10.3 lbs/day) of perchlorate mass currently bypassing treatment system via storm channels.
- Sump expected to be operational by end of 2025.
- Treatment plant infrastructure improvements for increased flow rate were completed summer 2023.

Endeavour, LLC

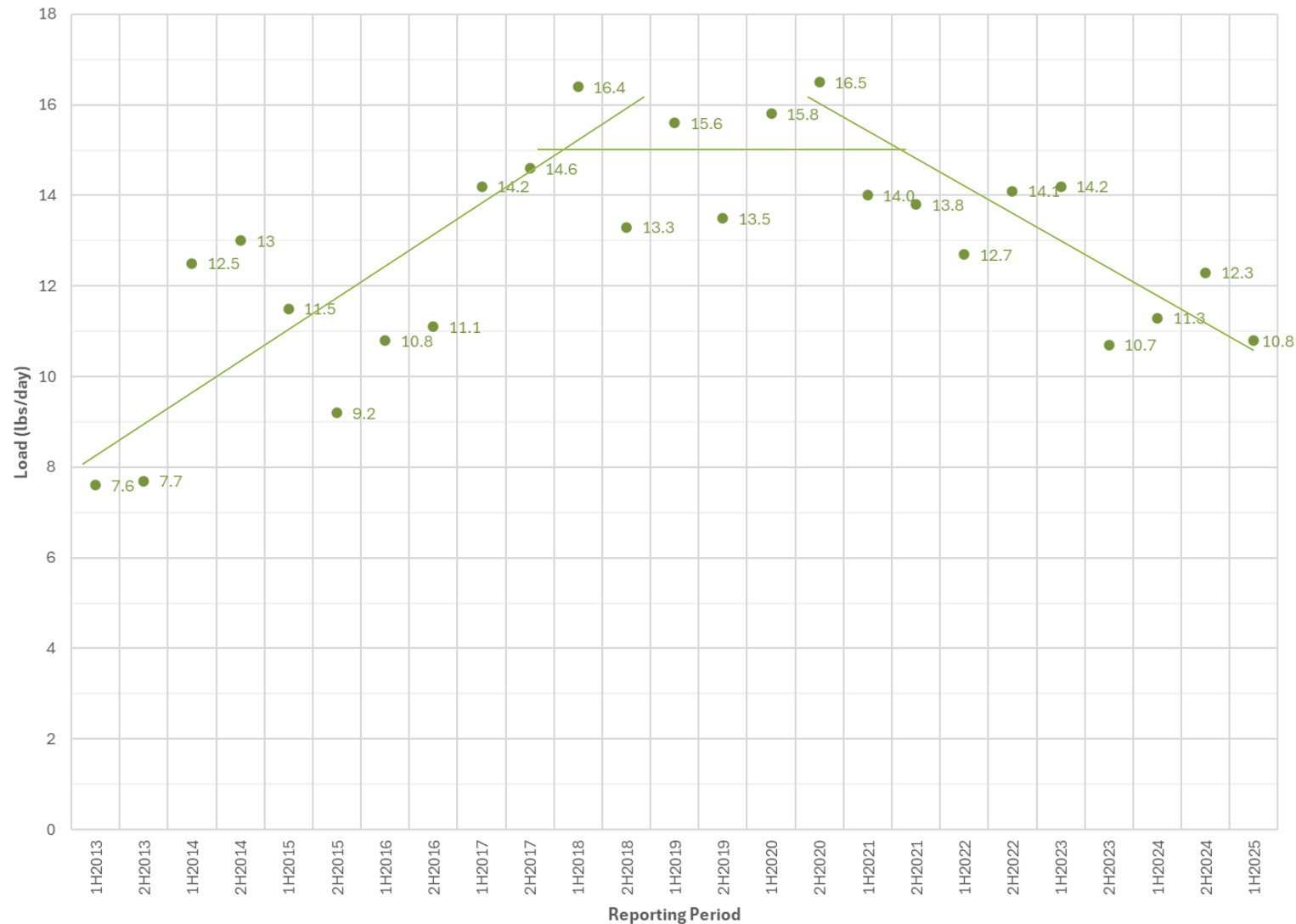
Flow Rates at Eastgate Storm Drain Sampling Point (EGSD)





Endeavour, LLC

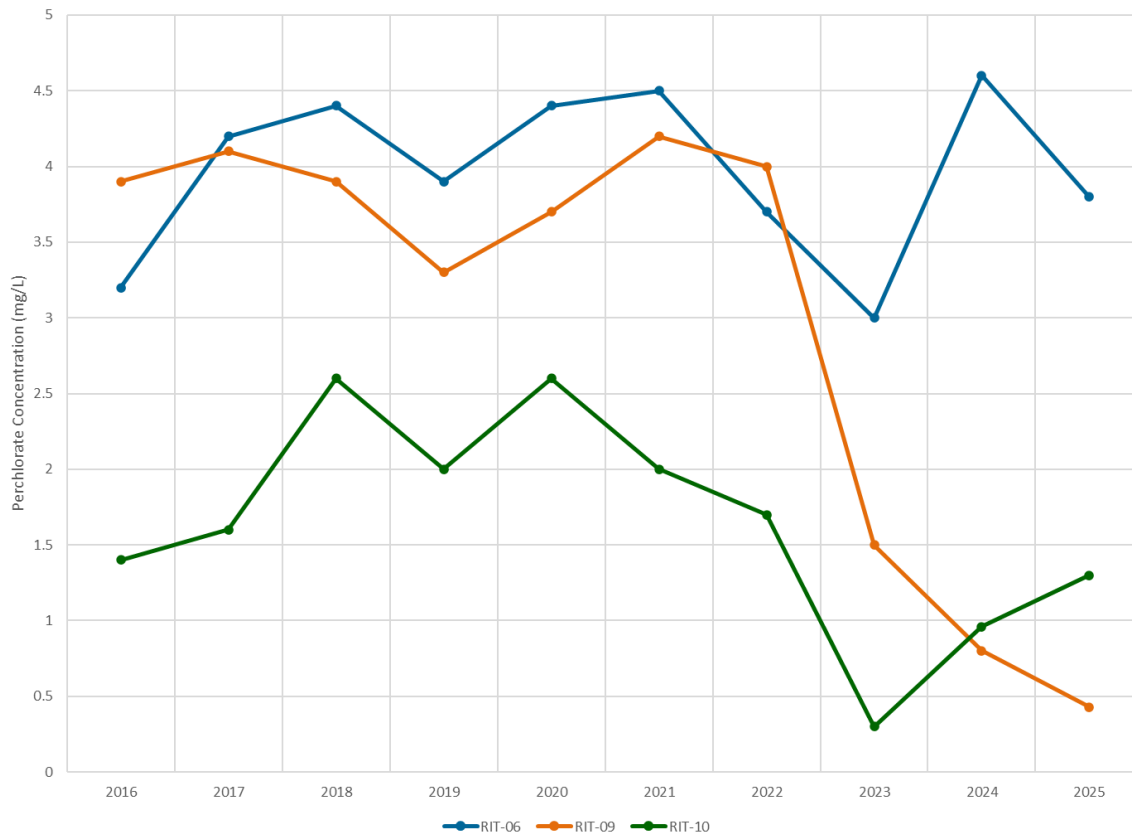
Average Perchlorate Loading at EGSD



Endeavour, LLC

Realigned Athens Drainage Channel

- Athens Drainage Channel (ADC) was realigned in 2022.
- Perchlorate concentrations in select monitoring wells downgradient of realigned ADC appear to be trending downward.



Nevada Environmental Response Trust (NERT)

Groundwater Extraction and Treatment System

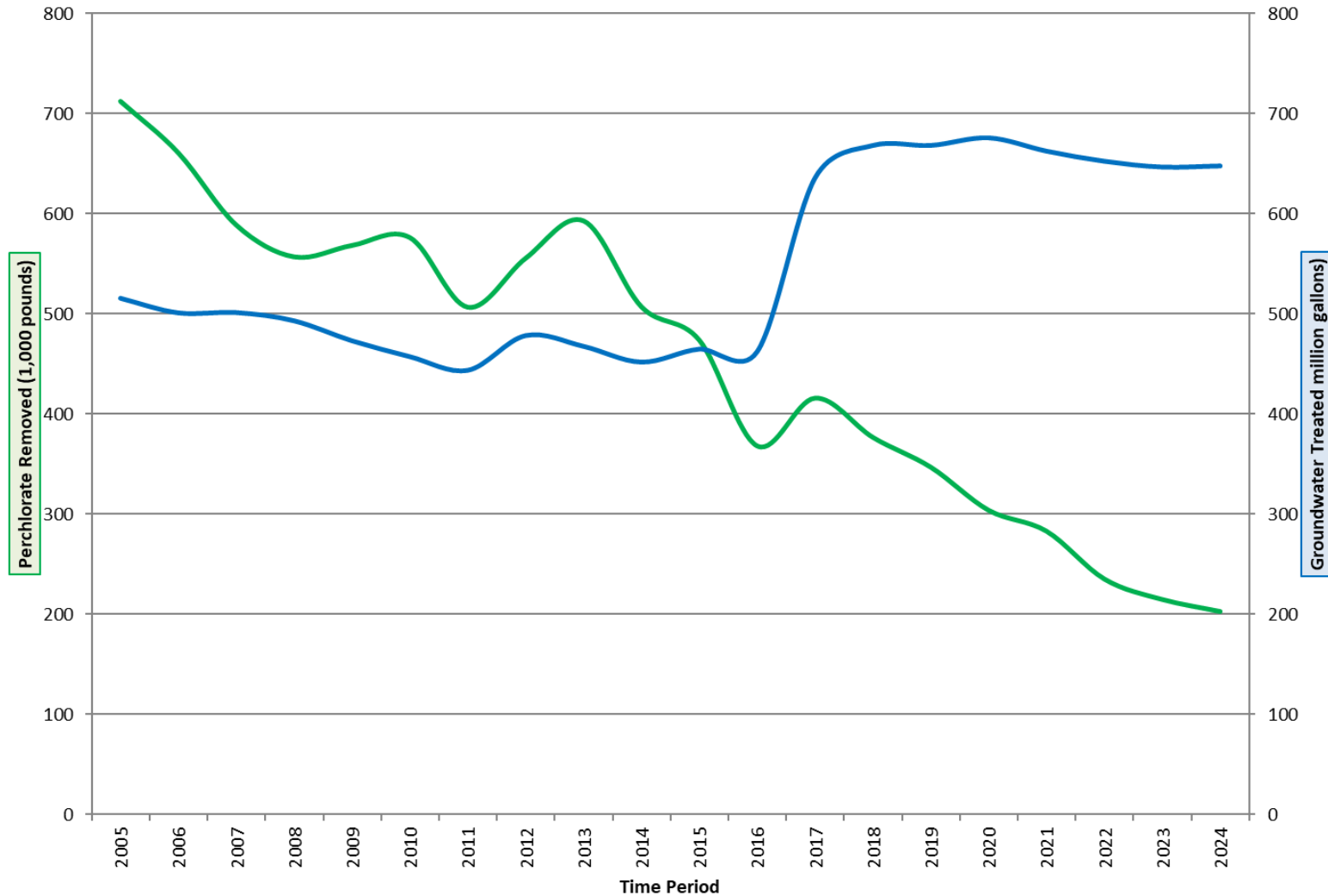


- Extracted groundwater is biologically treated by fluidized bed reactors and discharged to Las Vegas Wash under a NPDES permit.
- Influent perchlorate: $\sim 42,000 \mu\text{g/L}$
- Effluent perchlorate: $< 0.5 \mu\text{g/L}$
- Flow rate: $\sim 933 \text{ gpm}$
- Perchlorate removed: $\sim 470 \text{ lbs/day}$
- > 13 million lbs have been removed since 2002.

NERT

Perchlorate Removed

> 11.9 million pounds of perchlorate removed since FBR startup in 2004



NERT

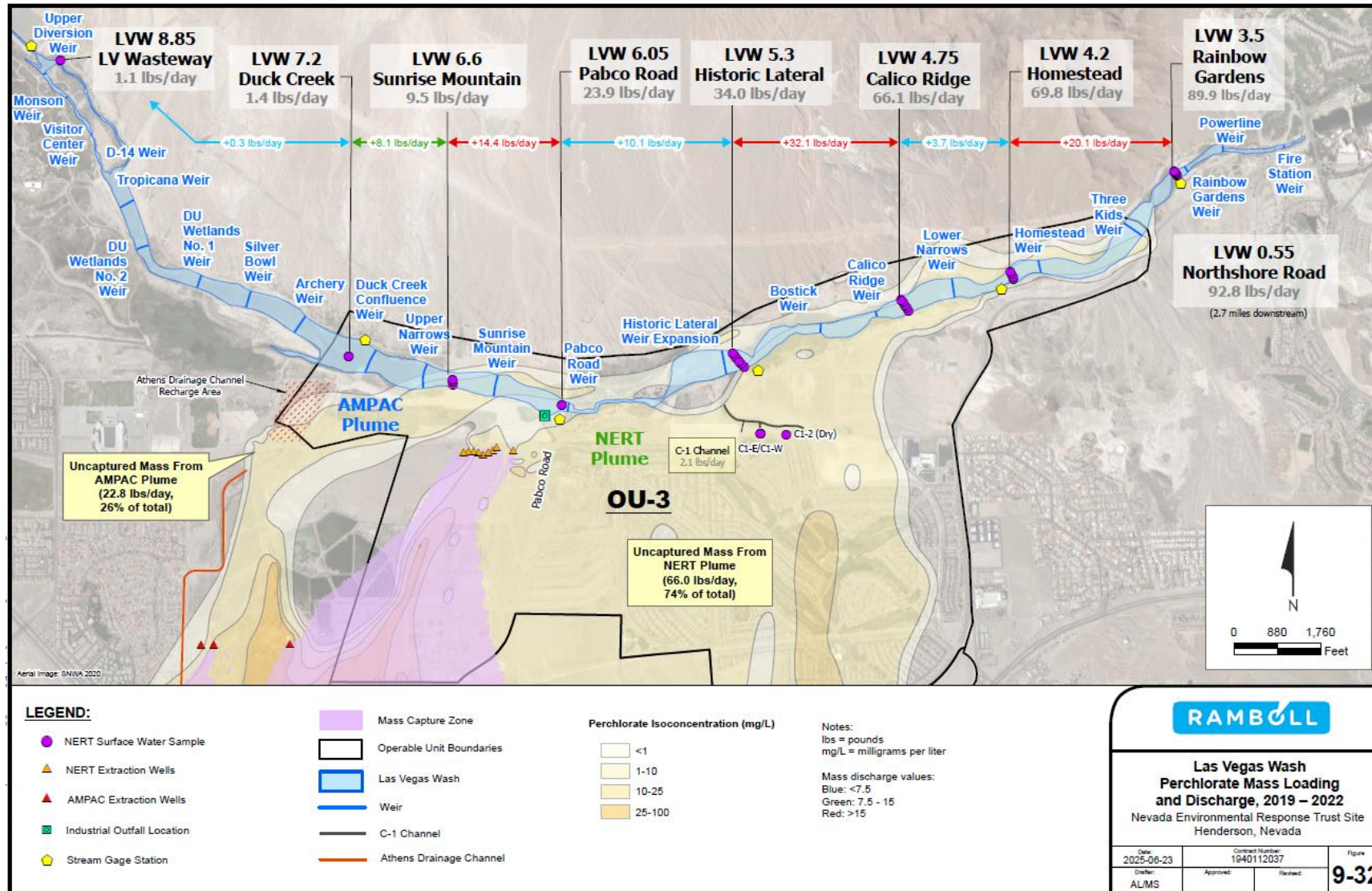
Next Steps

- Existing GWETS is a temporary system.
- NERT is following the CERCLA process to identify and implement a final remedy.
- Remedial Investigation and several pilot studies have been completed.
- Feasibility Study currently underway.
- Followed by:
 - Proposed Plan
 - Record of Decision
 - Remedial Design
 - Remedial Action



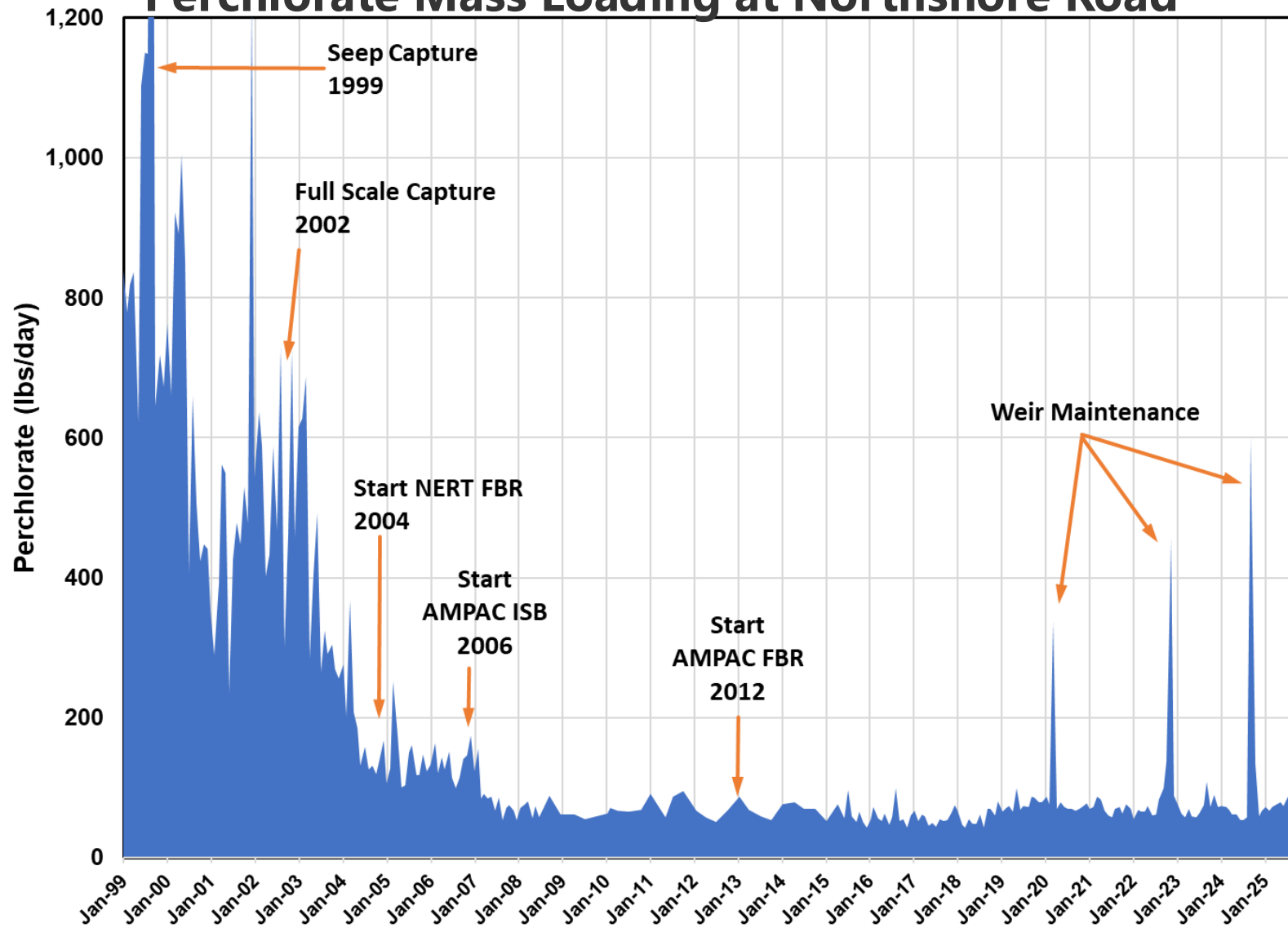
Las Vegas Wash

Perchlorate Mass Loading and Mass Discharge



Las Vegas Wash

Perchlorate Mass Loading at Northshore Road





Perchlorate

Regulation

- 2011 – EPA issued a determination to regulate perchlorate in drinking water.
- 2019 – EPA proposed a MCL of 56 µg/L and three alternatives:
 - 18 µg/L
 - 90 µg/L
 - Withdrawal of the 2011 determination to regulate perchlorate
- 2020 – EPA issued a determination not to regulate perchlorate.
- 2023 – EPA was ordered to establish new deadlines to propose and finalize a MCL.
- EPA has committed to issue a proposed MCL by November 21, 2025, and a final regulation by May 21, 2027, as required by court orders.
- NDEP has established 18 µg/L as Nevada’s provisional action level.

Thank You

Alan Pineda, P.E.

Chad Schoop, P.E.

NDEP Bureau of Industrial Site Cleanup

Phone: 702-668-3925

Email: alan.pineda@ndep.nv.gov



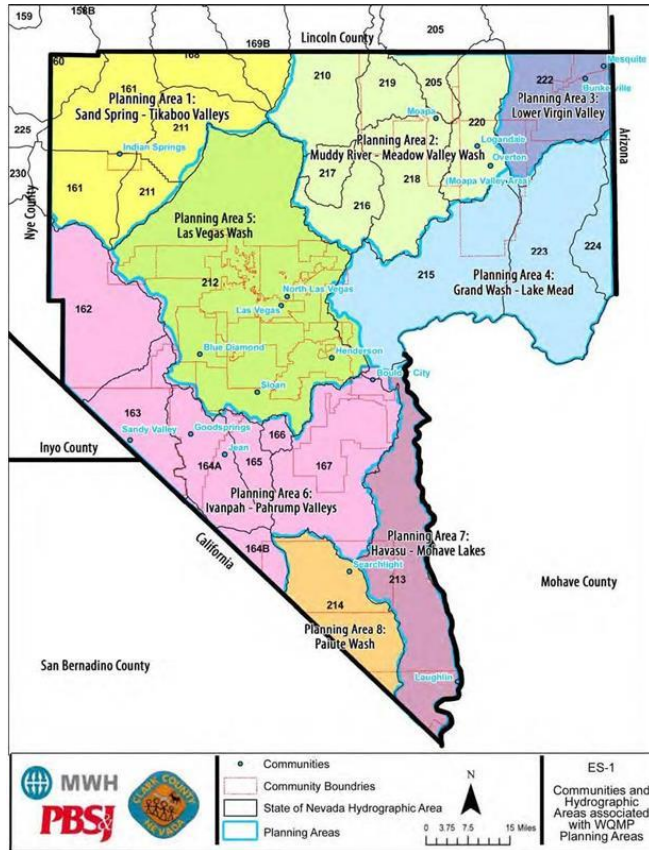


Clark County Area-Wide Water Quality Management Plan Project Overview

John Solvie, Water Quality Manager
Clark County Water Quality



Required by Federal and State Statutes



- Federal: Section 208 of the Clean Water Act (“208 Plan”)
- State: NRS 244A.571
 - *“The officers of the county shall develop an areawide waste management plan pursuant to NRS 244A.459...”*
- Primary focus: wastewater treatment and urban stormwater runoff
- Clark County Water Quality is responsible for developing and managing the 208 Plan
- Stakeholders:
 - Nevada Division of Environmental Protection
 - Sewage and Wastewater Advisory Committee
 - Wastewater Agencies
 - Stormwater/Watershed Agencies
 - Outlying Communities and General Public



Area-Wide Water Quality Management Plan



Current 208 Plan

- Adopted in 2009
- Merged five regional water quality plans from across Clark County into one consolidated plan
- Identifies eight hydrographic watershed planning areas across Clark County

FINAL
March 2009



Current Status

Treatment plant information and population projections are no longer current

Regulatory permitting requirements have evolved

Watershed planning is moving towards a One Water approach

NDEP has provided grant funding to launch development of a new streamlined plan



Project Objective

- Develop a new streamlined 208 Plan that fulfills Clark County requirements under NRS 244A.571 with a 20-year planning horizon, and associated implementation procedures.



Project Scope

Phase I

- Evaluate the status of area-wide water quality planning in similar metropolitan areas, and establish framework for a unified watershed-based approach to water quality planning efforts.
- Develop a new streamlined 208 Plan across diverse watersheds in Clark County that addresses each element specified in NRS 244A.571.
- Develop associated implementation procedures to ensure ongoing compliance with the 208 Plan .

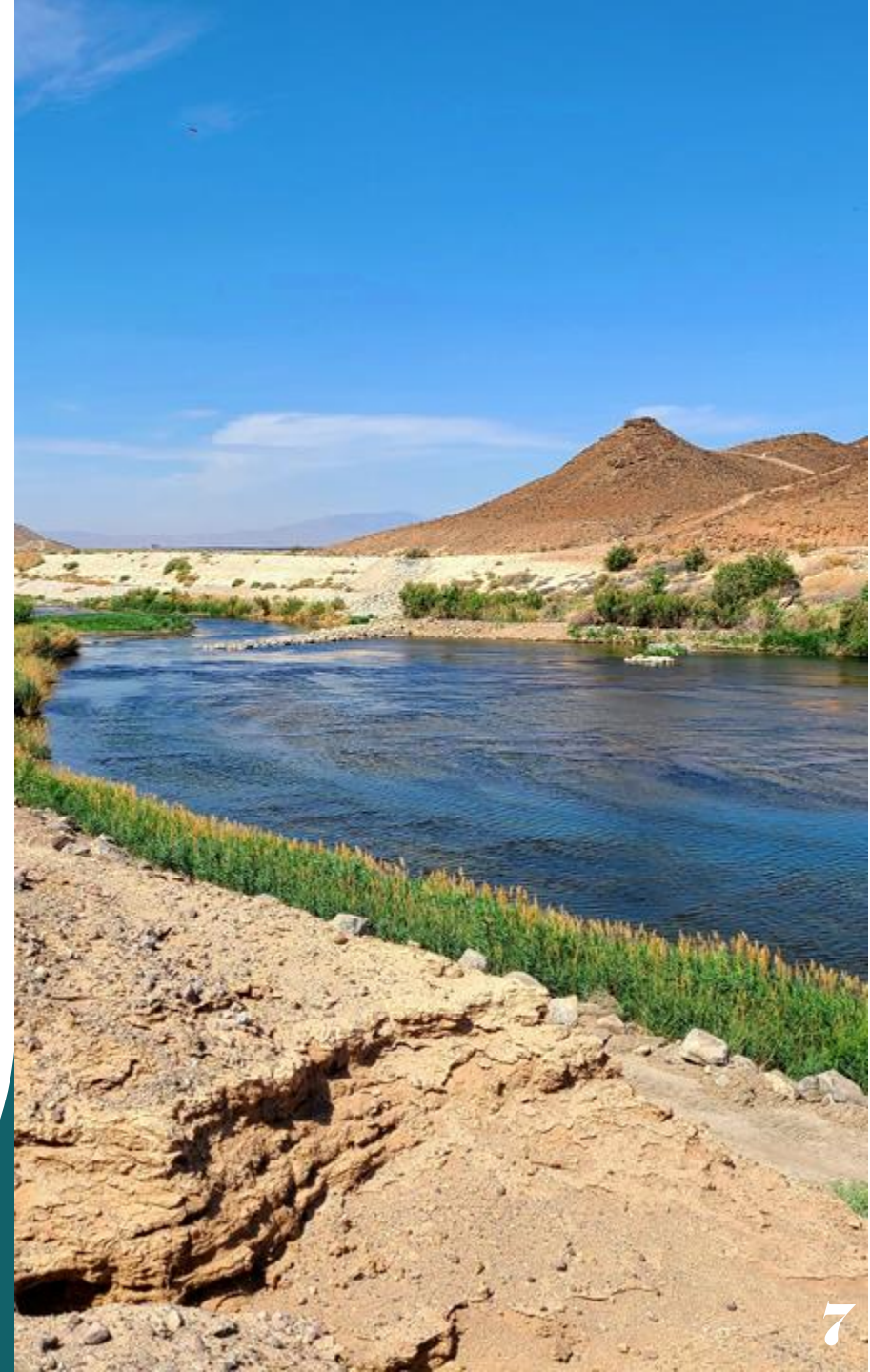
Phase II

- Coordinate public outreach, develop comment responsiveness summary, and finalize the 208 Plan through required approvals.
 1. Clark County Commission
 2. NDEP (Bureau of Water Quality Planning)
 3. EPA



Outcomes

- NDEP collaborations
 - Bureau of Water Quality Planning
 - Bureau of Water Pollution Control
- A streamlined Plan that will serve as a resource for wastewater, stormwater, and watershed agencies.
- Implement new procedures to ensure ongoing compliance with the 208 Plan
- Annual reporting to the Clark County Commission



Initial Data Gathering

Wastewater Treatment Plant Data Example

- Current Facility Master Plan(s)
- Capital Improvement Projects
- Wastewater Flow Projections
- Treatment Train overviews
- Permits (NPDES and Reuse)
- Collection System Mapping
- Collection System Expansion Planning
- Septic System Conversions
- Ivanpah Southern Nevada Supplemental Airport Project
- Budget documentation



Questions?



LAS VEGAS WASH
COORDINATION COMMITTEE

Las Vegas Wash Project Coordination Team Update

Environmental Resources,
Outreach and Funding
October 28, 2025





Macroinvertebrate Sampling

- Previous surveys in 2000–2013
- Quarterly sampling in 2024/2025
 - Sept – June
 - 11 sites: 9 weirs, 2 backwaters
 - New species:
 - Freshwater jellyfish
 - Cherry shrimp
 - Last sample undergoing lab analysis



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Bird Surveys



Southwestern willow flycatcher

- Avian point counts: biweekly year-round
 - 136 species in 6 months (Mar–Sept); >250 species to date
 - Significant increases in richness and abundance
- Marsh birds covering Yuma Ridgway's rail: early April–early May
 - 7 in 2025; 5–7 annually since 2021
- Southwestern willow flycatcher: late May–June (terr. mon. into August)
 - 1 territory in 2025 (nests failed), same pair that successfully fledged 1 in 2024
- Yellow-billed cuckoo: late June–early August
 - 1 probable breeding territory with a pair in 2025

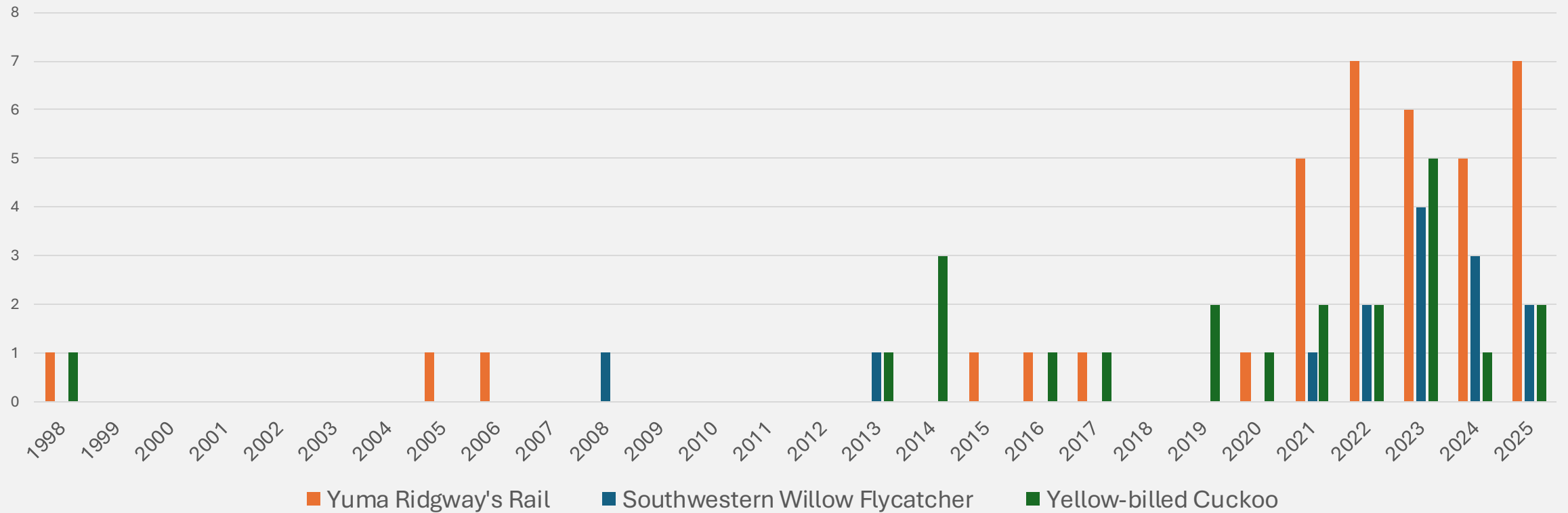


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T&E Birds since 1998

Estimated # Individuals



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Large Mammal Surveys

- Large mammal = > 1 lbs
 - 7 trail motion-triggered cameras
 - 4 study sites
 - April 2025 – June 2026
 - Set for 1 week/month
 - Some baited
- Snapshot USA
 - 7 cameras set continuously for multiple weeks
 - Sept 1 – Nov 12



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Bat Surveys

- Mist Netting
 - Spring emergence sampling occurred in April for WNS
 - 35 captures
 - 4 species
 - All samples came back negative! Sampling will occur every spring.
 - Oct. 15 CSN Outreach
 - 1 night
 - 3 captures
 - 3 species



Red bat



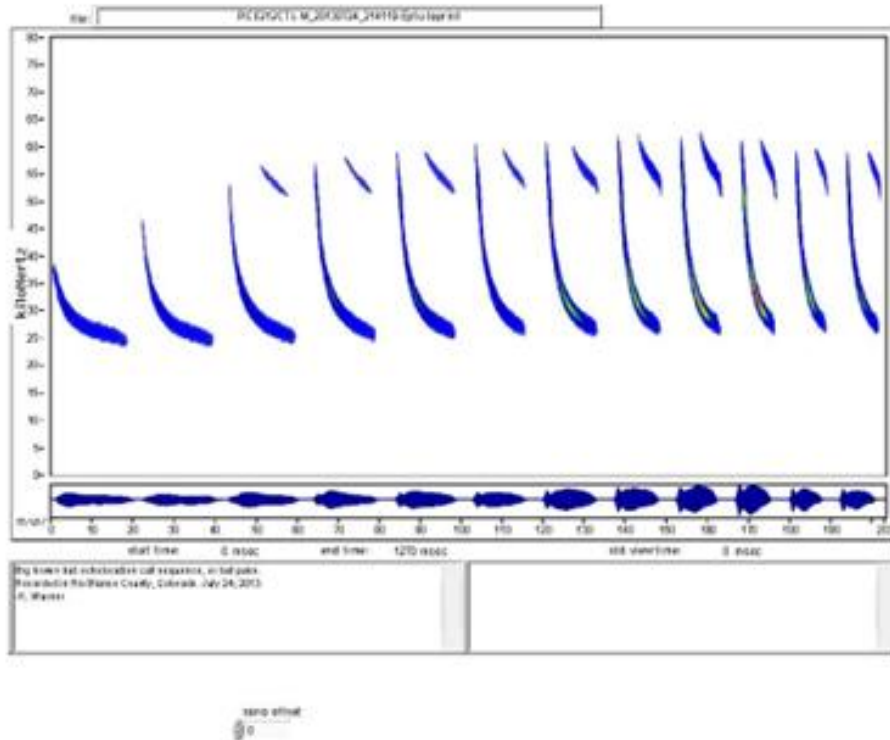
Townsend's big-eared bat



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Bat Surveys



- Acoustic Monitoring
 - Vesper Bat Detection Services has completed analysis for 2023/24 acoustic data and is working on finalizing the report
- 2023/24 netting and acoustic monitoring data presented at REM meeting



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Revegetation

Vegetation Monitoring



- 2019–2024 annual reports on lvwash.org
- 2024 report includes new timed-meander survey protocol
 - 17 upland and riparian sites along the north side of the Wash were surveyed
 - Results suggest 2 sites are good candidates for enhancement with 2 additional sites as possible candidates following additional monitoring
- 2025 surveys were conducted in Sept/Oct
 - 20 upland and riparian sites along the south side of the Wash were surveyed plus survival at Green-Up sites



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Revegetation

Wash Green-Up Spring 2026



- 42nd event
- Date: April 11
- Site: Sunrise Mountain South
 - Previously planted in 2021
 - Goal: Fill in areas with gaps
 - ~9.5 acres
 - ~4,500 plants
- Registration will open in February



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Revegetation

BOR EWRP 2022 Pabco Riparian Restoration Project



- Construction started Oct. 6
- Material removal portion complete
- Plant in winter – spring
 - Cottonwoods
 - Willows
 - Milkweed
 - Emergent vegetation
- Grant expires Sept. 30, 2026



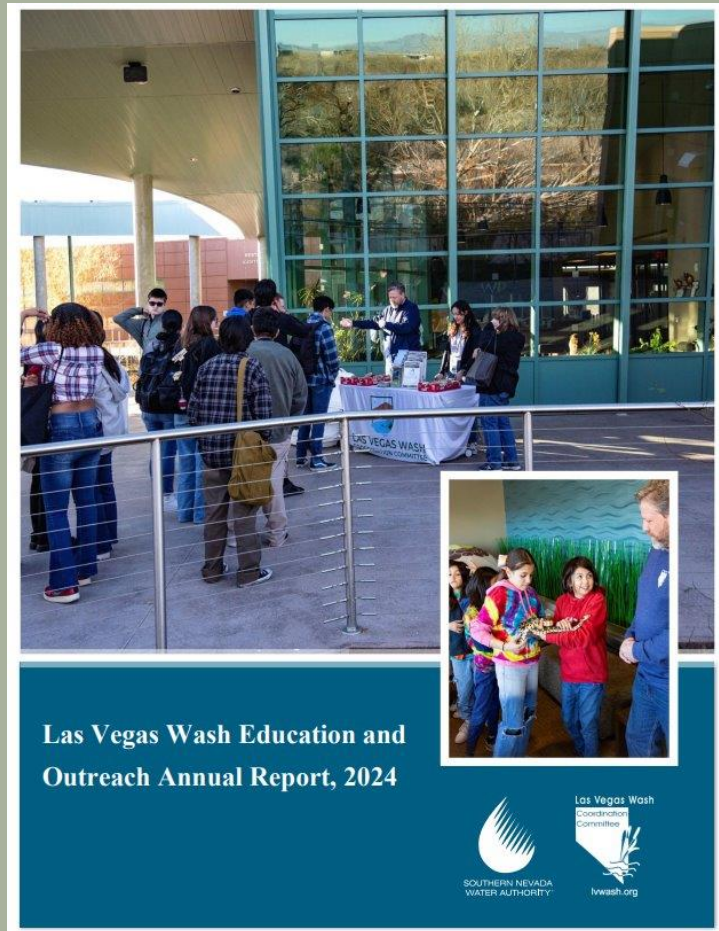
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Outreach

Annual Reporting

- Annual reporting began in 2023
- Summarizes all events and outreach conducted within the calendar year
- 2024 report available at lvwash.org
 - 25 events
 - 14,775 contacts
 - 25% increase over 2023



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Outreach

Mabel Hoggard Field Trips



- Pre-field trip presentation and assessment on February 24, 2026
- Three field trips will be conducted in March
 - Morning tour of Kurt R. Segler Water Reclamation Facility
 - Afternoon at the Wetlands Park
- Post-field trip activity and assessment will occur on March 11



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Outreach

World Wetlands Day



- February 3–4, 2026
- Aim to have ~250 juniors and seniors from local high schools
- Conference-style event with scientific presentations and reps from UNLV and UNR
- Finish the day exploring the Nature Preserve
- Photo and essay contests



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Outreach

Other Events



- **Presented:**
 - CCWP Summer Evening Lecture Series, Aug 21
“A Walk along the Uplands”
- **Scheduled:**
 - Mission High School field trip
 - Mabel Hoggard
 - Nevada Day event at Springs Preserve
 - Homeschool Day event at Springs Preserve
 - Kids Day event at Lost City Museum
- **Future Outreach:**
 - Youth Conservation Council field trip
 - Earth Day
 - BioBlast
 - Las Vegas Science and Technology Festival
 - Wetlands Park Discovery Day



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Grant Funding Awarded

- BOR
 - \$400,000 in funding for FY25 for 5Y agreement
 - Revegetation
 - Water quality monitoring
 - WMP implementation
 - LVWCC program management
 - Special projects: e.g., irrigation clean-up
 - \$900,500 Pabco riparian restoration grant
- NDEP
 - \$28,000 for FY24/25 for 2025 Wash Green-Up
 - Drafting final report



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Grant Funding

Processing

- \$1,048,553 – SNPLMA RD 20 – approved
 - Historic Lateral North area
 - Riparian and wetland restoration
- \$663,875 – BOR EWRP FY24 – drafting agreement
 - Wildlife habitat enhancement of ~12.5 acres
 - Pabco South, Three Kids North and Powerline on both sides
 - Riparian and wetland restoration
 - Invasive weed removal



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QUESTIONS?





Stabilization Update



Las Vegas Wash Coordination Committee

October 28, 2025



Wash Activities

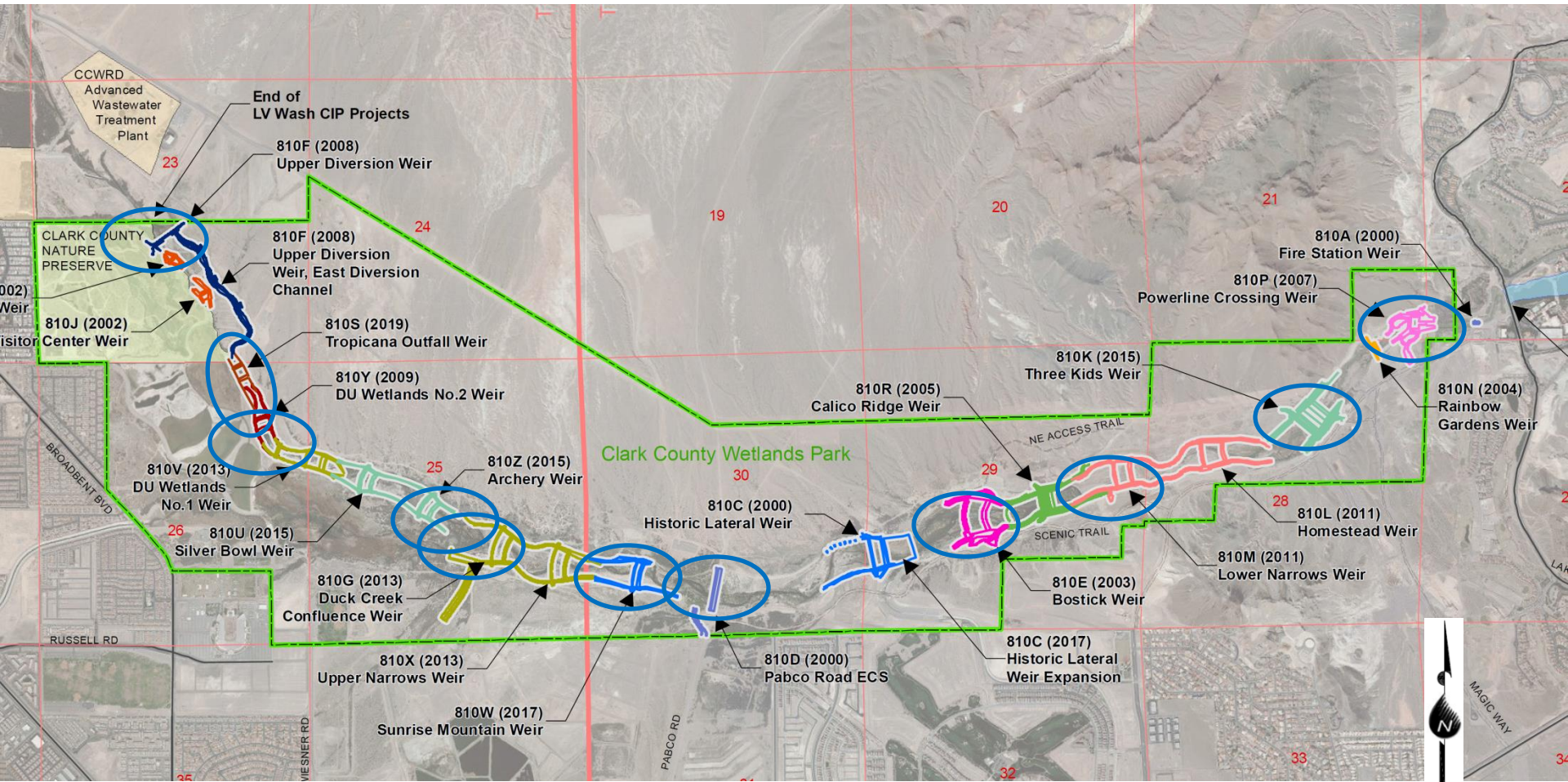
- Wash Maintenance Contract
 - Place Facilities Back to Originally Constructed Lines and Grades
 - Sites
 - Tropicana Weir
 - DU Wetlands No. 2
 - Archery
 - Duck Creek Confluence
 - Sunrise Mountain Weir
 - Bostic
 - Lower Narrow
 - Three Kids
 - Powerline Crossing
 - Clear Backwater to allow Uniform Flow over Structures
 - Upper Diversion
 - Pabco



Wash Activities

- Wash Maintenance Contract
 - Schedule
 - Construction Start November 3, 2025
 - Completion – prior to March 1, 2026
 - Construction Funding – \$3.3M
 - Permitting
 - Modified Temp. Working in Waterways monitoring locations
 - Outfall 2 is now downstream of the next downstream weir
 - Land Owner Authorization Pending

Locations



Upper Diversion



Tropicana



DU Wetlands No. 2



Archery



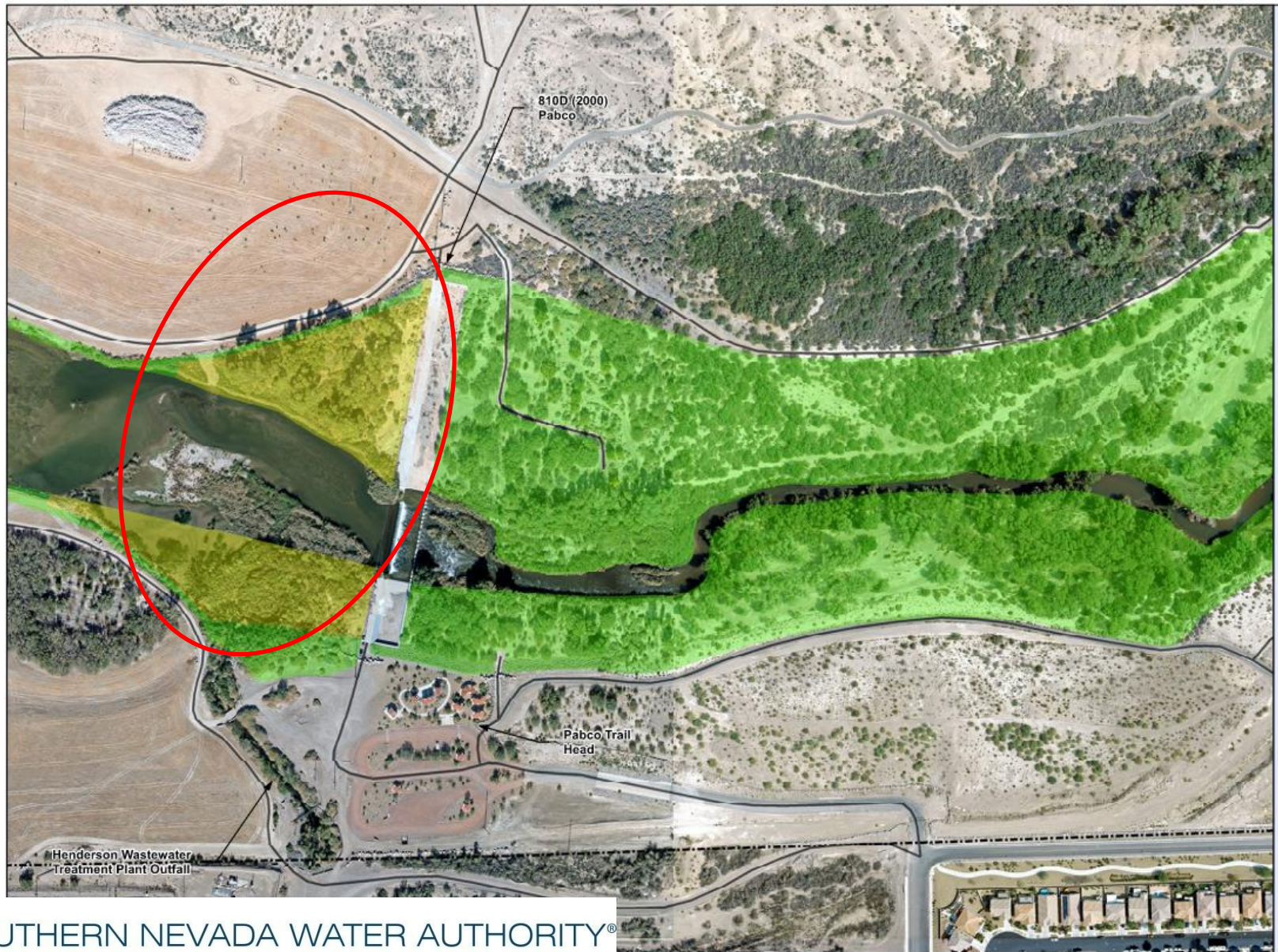
Duck Creek Confluence



Sunrise Mountain



Pabco



Bostic



Lower Narrows



Three Kids



Powerline Crossing



FY26/27 Maintenance

- Final Locations to be Determined
 - Anyone have sights to recommend
 - Annual inspection in Spring
 - Permitting to commence as soon as sites identified

Questions



Water Quality Monitoring Update

October 28, 2025

Water Quality Data from the Mainstream Las Vegas Wash

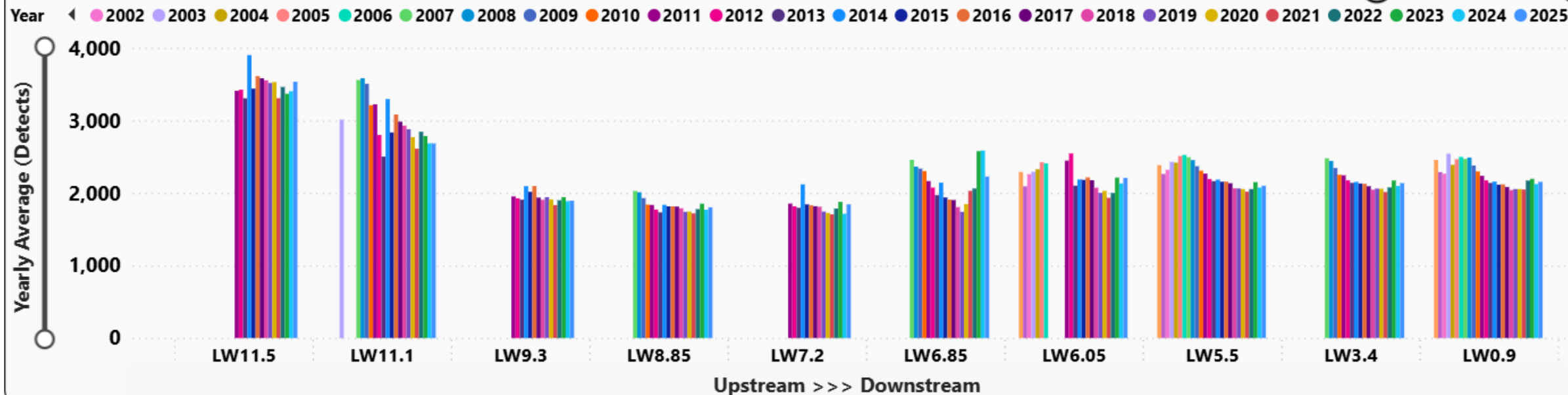
(2025 vs. previous years)

[Click: Full Timeseries including non-detects](#)

Conductivity
 $\mu\text{S}/\text{cm}$

2000

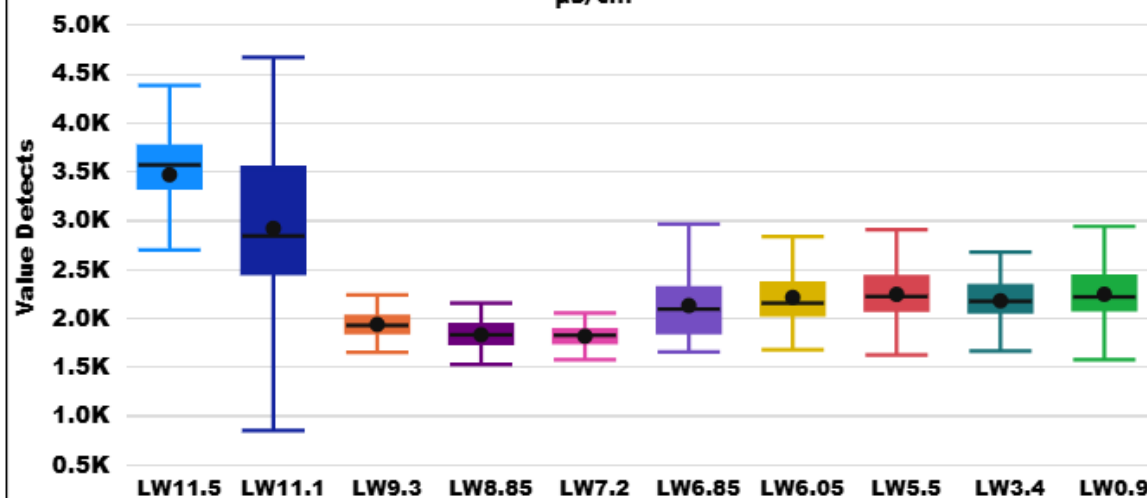
2025



Sampling Sites



Conductivity
 $\mu\text{S}/\text{cm}$



Site Name

- ☒ Select all
- ☒ LW11.5
- ☒ LW11.1
- ☒ LW9.3
- ☒ LW8.85
- ☒ LW7.2
- ☒ LW6.85
- ☒ LW6.05
- ☒ LW5.5
- ☒ LW3.4
- ☒ LW0.9

Parameter

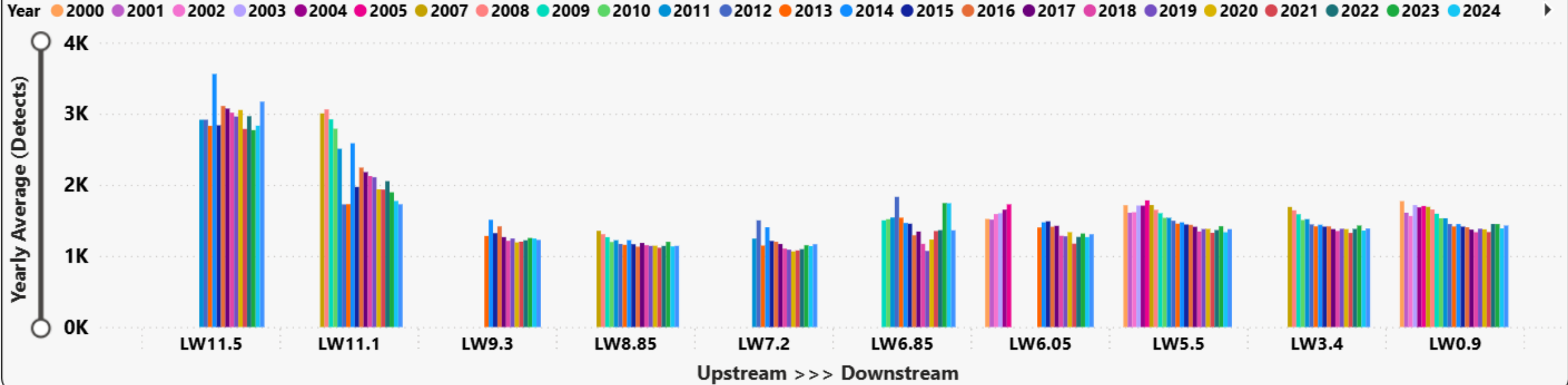
- ☒ Conductivity
- ☐ Dissolved Oxygen FIELD
- ☐ pH FIELD
- ☐ Temperature Water FIELD

[Click: Full Timeseries including non-detects](#)

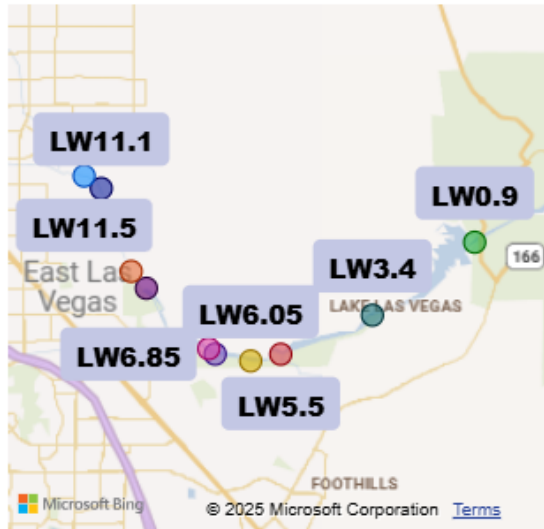
Total Dissolved Solids LAB mg/L

2000

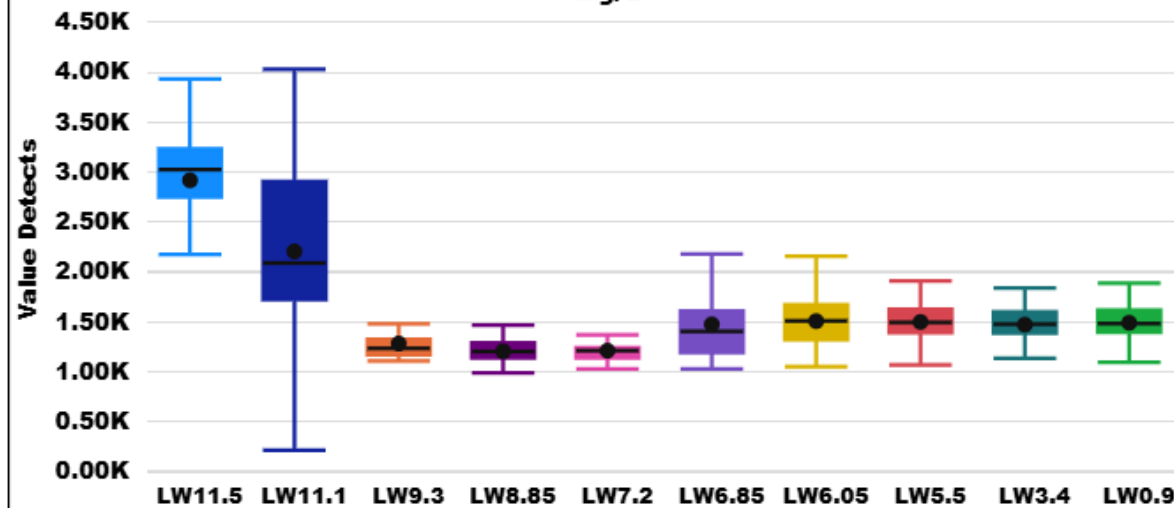
2025



Sampling Sites



Total Dissolved Solids LAB mg/L



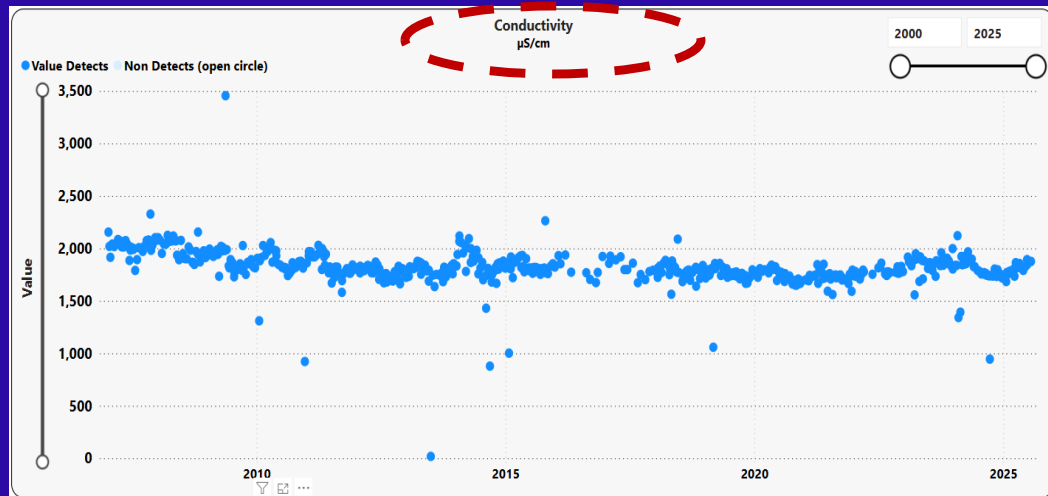
Site Name

- ☒ Select all
- ☒ LW11.5
- ☒ LW11.1
- ☒ LW9.3
- ☒ LW8.85
- ☒ LW7.2
- ☒ LW6.85
- ☒ LW6.05
- ☒ LW5.5
- ☒ LW3.4
- ☒ LW0.9

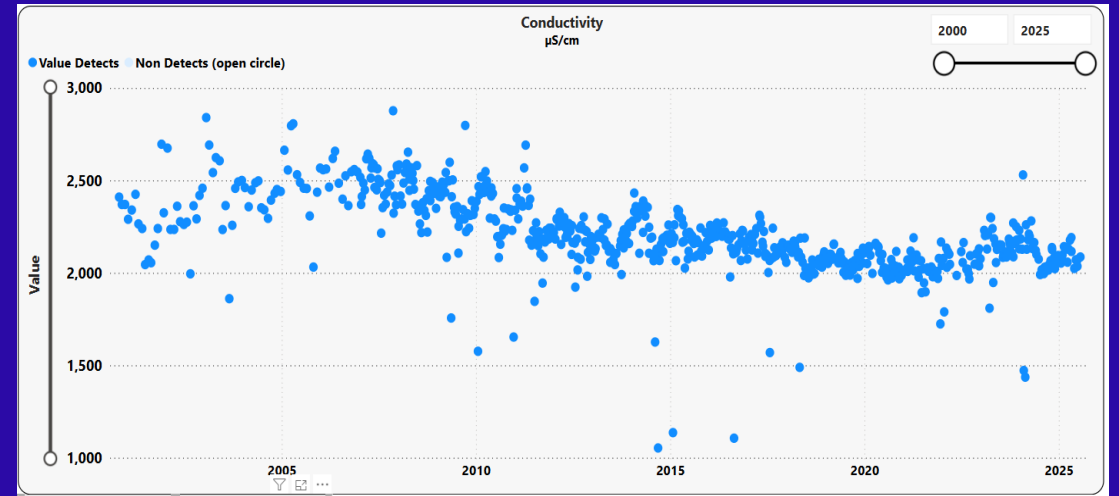
Parameter

- ☐ Magnesium Total
- ☐ MBAS
- ☐ Potassium Total
- ☐ Silica Total
- ☐ Sodium Total
- ☐ Sulfate
- ☒ Total Dissolved Solids ...
- ☐ Total Organic Carbon (..
- ☐ Total Suspended Solids
- ☐ Turbidity LAB

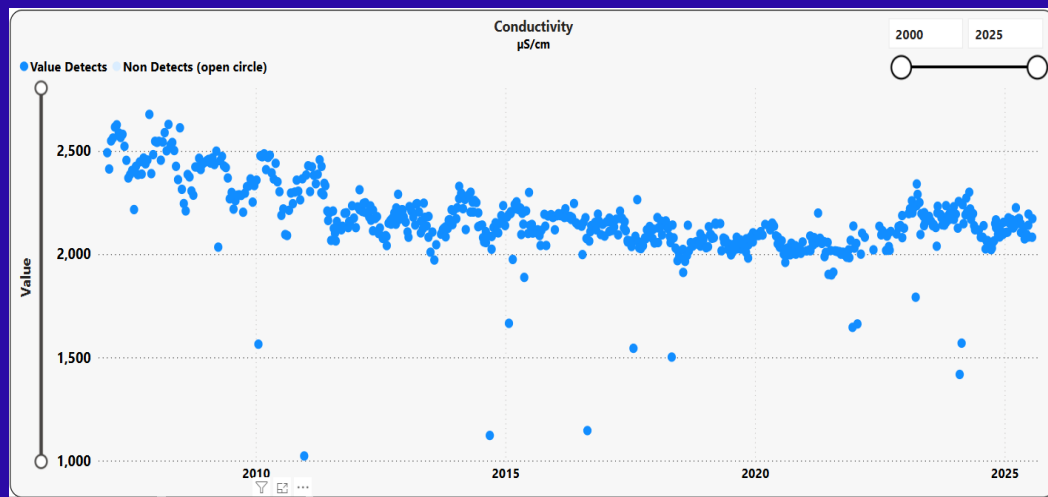
LW8.85



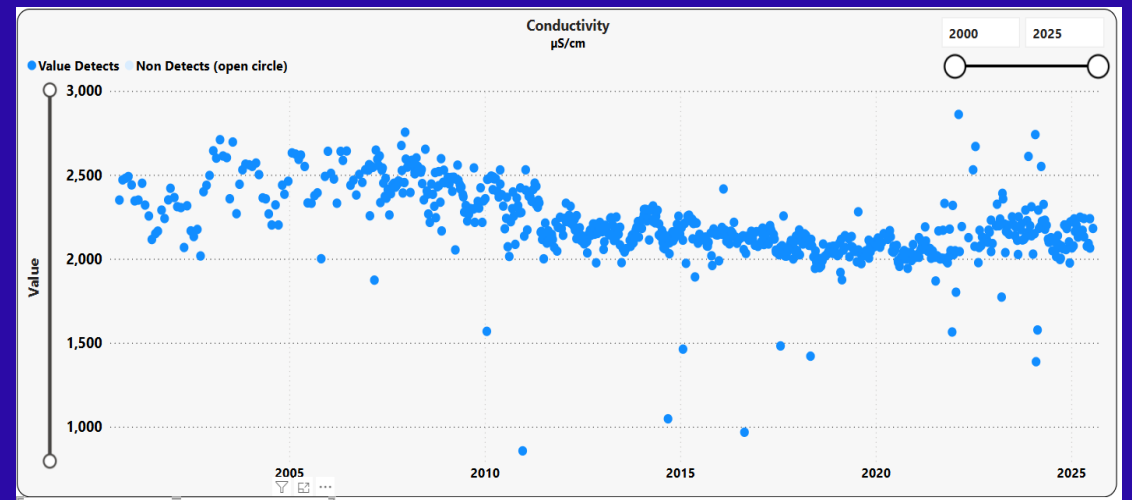
LW5.5



LW3.4



LW0.9

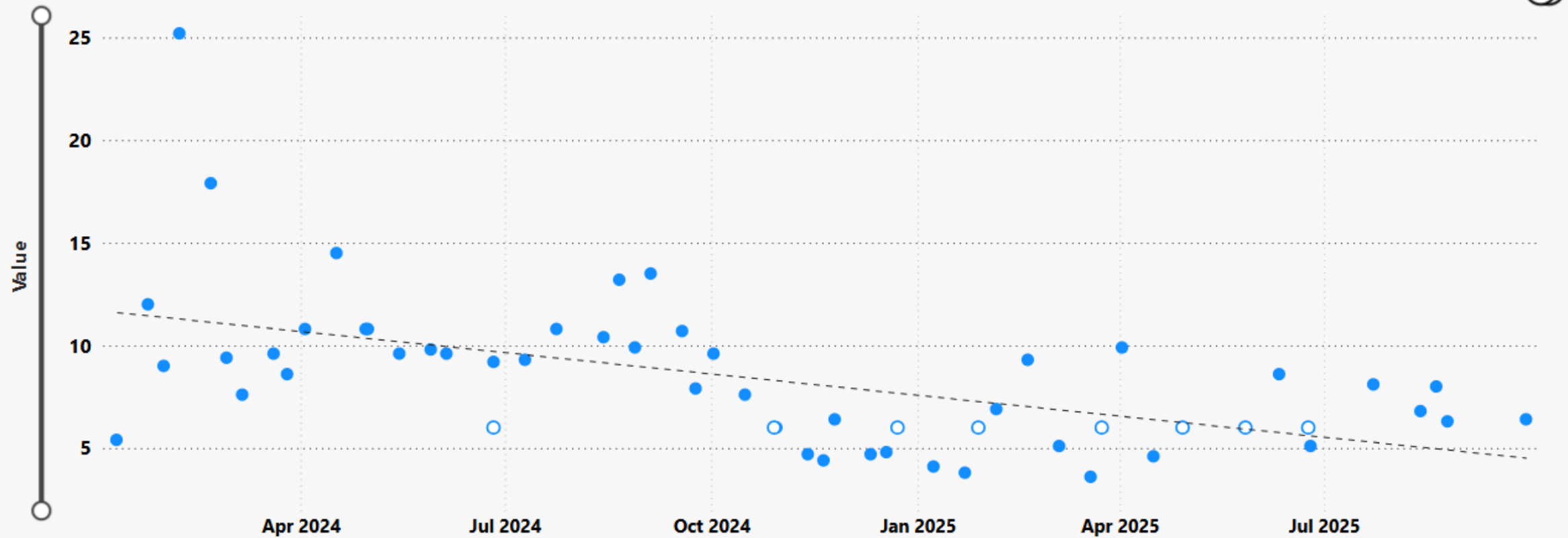


Total Suspended Solids mg/L

2024

2025

● Value Detects ● Non Detects (open circle)



Site Name

LW11.5	LW9.3	LW7.2	LW6.05	LW3.4
LW11.1	LW8.85	LW6.85	LW5.5	LW0.9

Parameter

Alkalinity Total	Calcium Total	Fluoride	Potassium Total	Sulfate	Total Suspended Solids
Bromide	Chloride	Magnesium Total	Sodium Total	Total Dissolved Solids LAB	Turbidity LAB

[Click: Full Timeseries including non-detects](#)

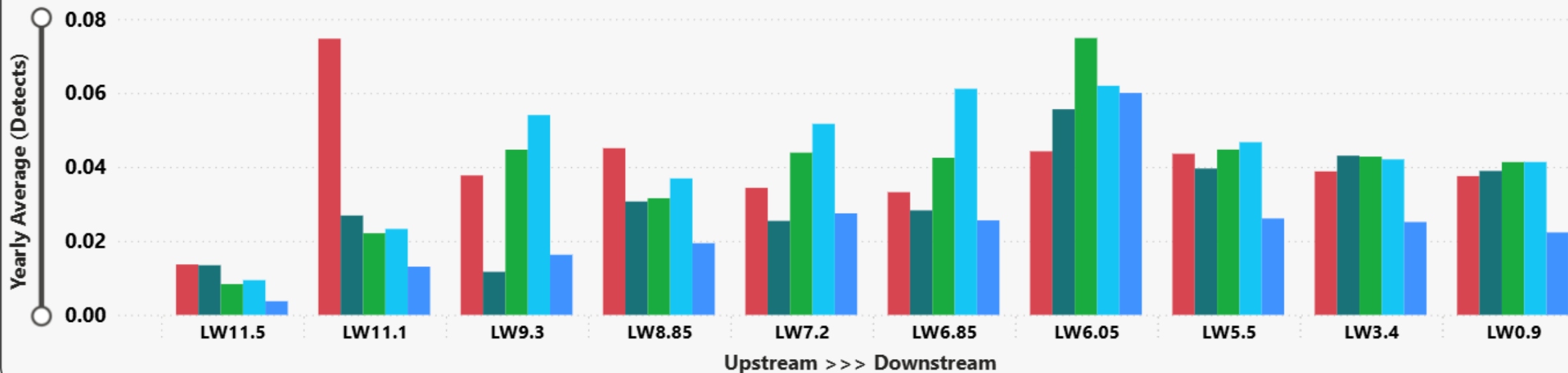
Phosphorus Orthophosphate Dissolved mg/L as P

2021

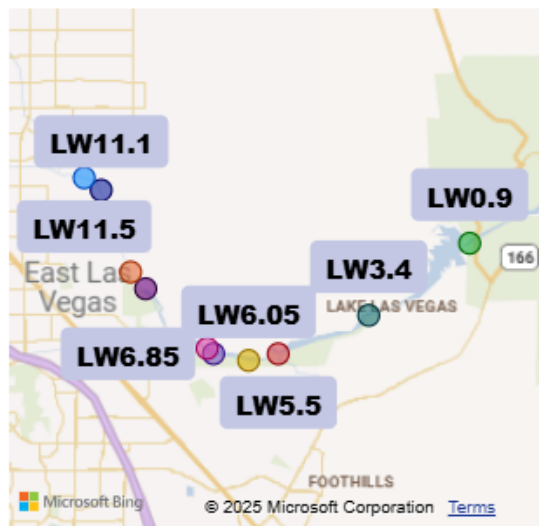
2025



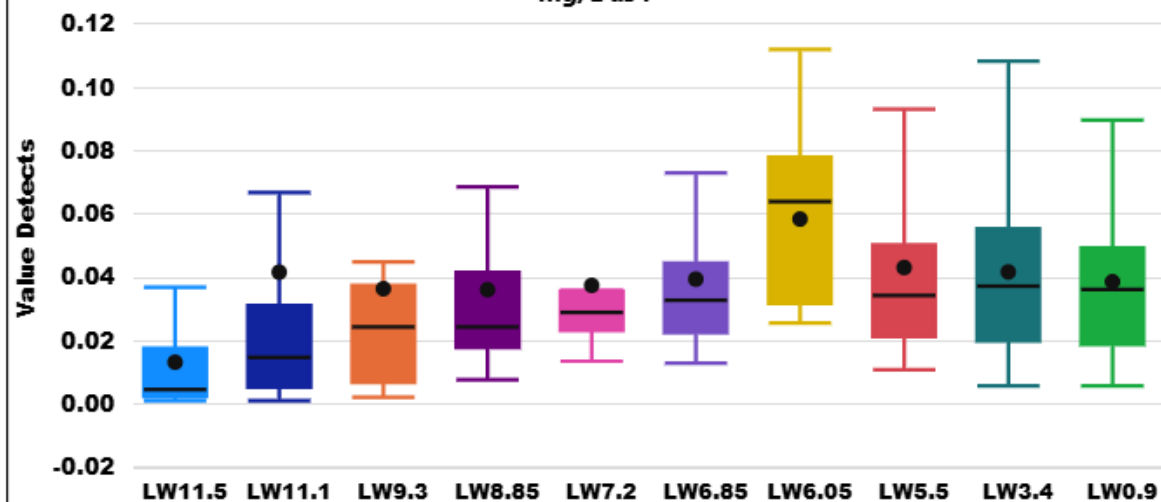
Year ● 2021 ● 2022 ● 2023 ● 2024 ● 2025



Sampling Sites



Phosphorus Orthophosphate Dissolved mg/L as P



Site Name

- ☒ Select all
- ☒ LW11.5
- ☒ LW11.1
- ☒ LW9.3
- ☒ LW8.85
- ☒ LW7.2
- ☒ LW6.85
- ☒ LW6.05
- ☒ LW5.5
- ☒ LW3.4
- ☒ LW0.9

Parameter

- ☐ Nitrogen Inorganic Total
- ☐ Nitrogen Kjeldahl Dissolv...
- ☐ Nitrogen Nitrate Dissolved
- ☐ Nitrogen Nitrite Plus Nitr..
- ☐ Nitrogen Nitrite Total
- ☐ Nitrogen Organic Total
- ☐ Nitrogen Total
- ☐ Nitrogen Total Kjeldahl
- ☒ Phosphorus Orthophosph.
- ☒ Phosphorus Orthophosph.
- ☐ Phosphorus Total

[Click: Full Timeseries including non-detects](#)

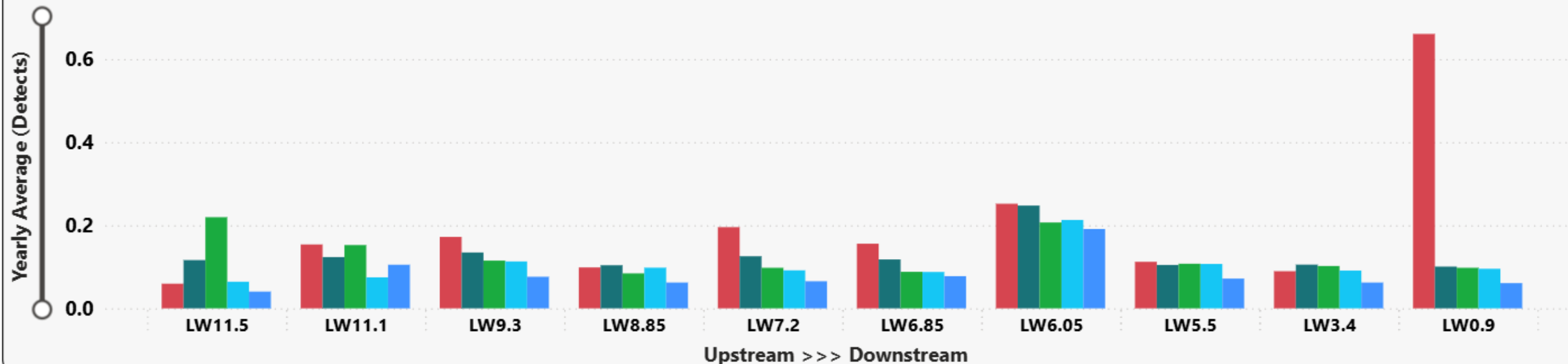
Phosphorus Total mg/L as P

2021

2025



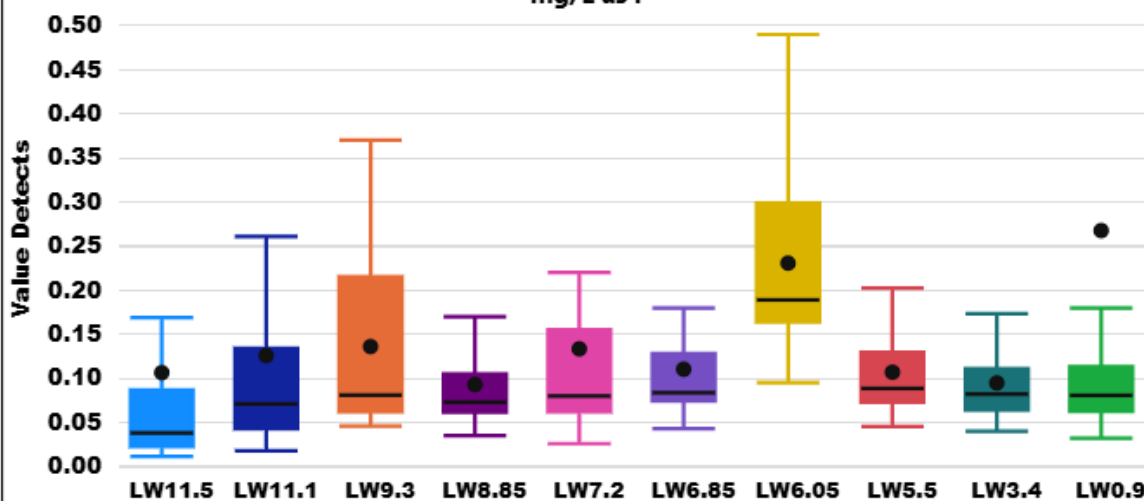
Year ● 2021 ● 2022 ● 2023 ● 2024 ● 2025



Sampling Sites



Phosphorus Total mg/L as P



Site Name

- ☒ Select all
- ☒ LW11.5
- ☒ LW11.1
- ☒ LW9.3
- ☒ LW8.85
- ☒ LW7.2
- ☒ LW6.85
- ☒ LW6.05
- ☒ LW5.5
- ☒ LW3.4
- ☒ LW0.9

Parameter

- ☐ Nitrogen Inorganic Total
- ☐ Nitrogen Kjeldahl Dissolv...
- ☐ Nitrogen Nitrate Dissolved
- ☐ Nitrogen Nitrite Plus Nitr...
- ☐ Nitrogen Nitrite Total
- ☐ Nitrogen Organic Total
- ☐ Nitrogen Total
- ☐ Nitrogen Total Kjeldahl
- ☐ Phosphorus Orthophosph.
- ☐ Phosphorus Orthophosph.
- ☒ Phosphorus Total

[Click: Full Timeseries including non-detects](#)

Perchlorate

µg/L

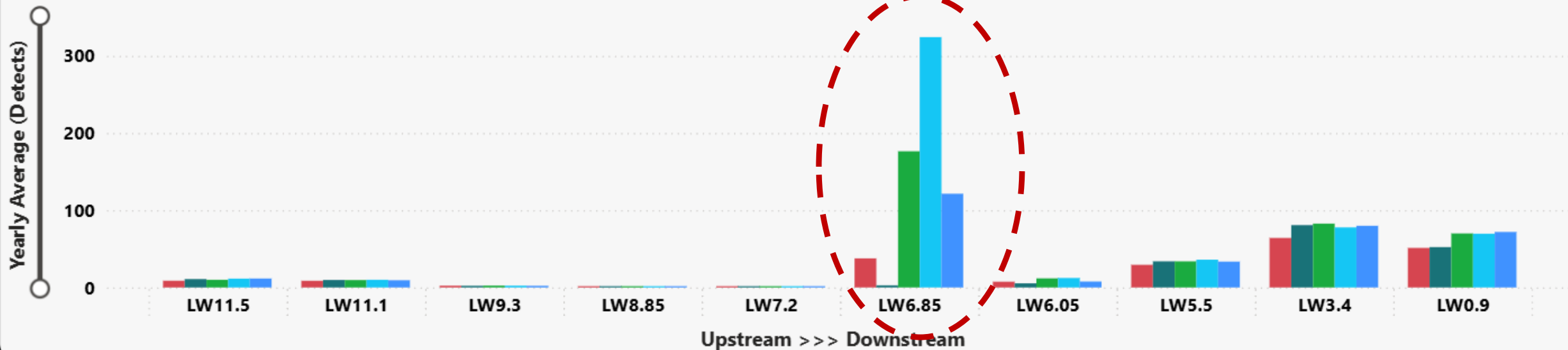


2021

2025



Year ● 2021 ● 2022 ● 2023 ● 2024 ● 2025

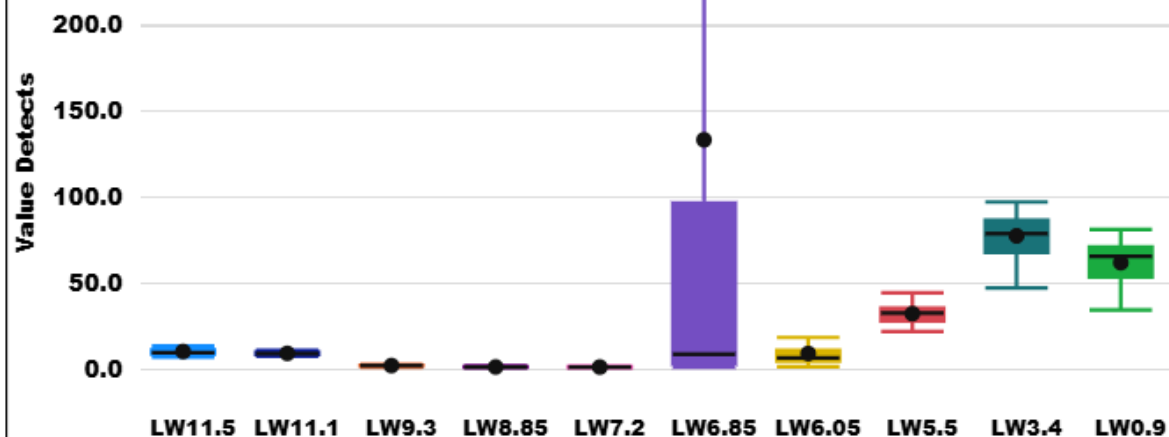


Sampling Sites



Perchlorate

µg/L



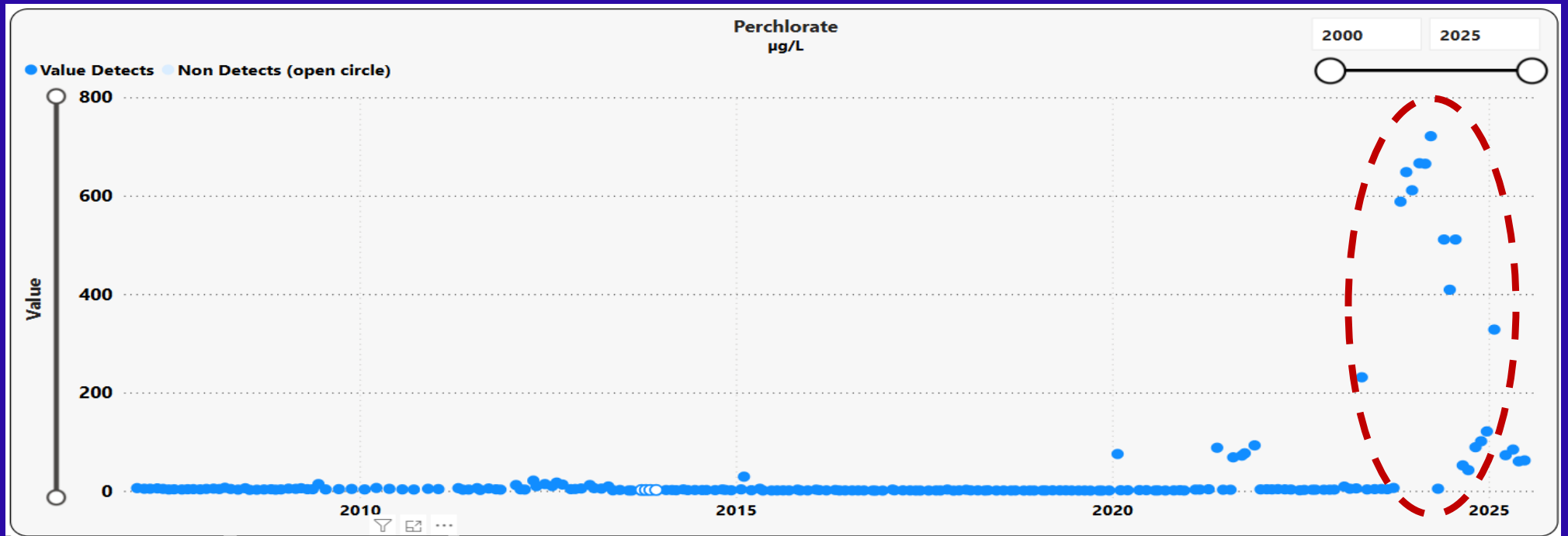
Site Name

- ☒ Select all
- ☒ LW11.5
- ☒ LW11.1
- ☒ LW9.3
- ☒ LW8.85
- ☒ LW7.2
- ☒ LW6.85
- ☒ LW6.05
- ☒ LW5.5
- ☒ LW3.4
- ☒ LW0.9

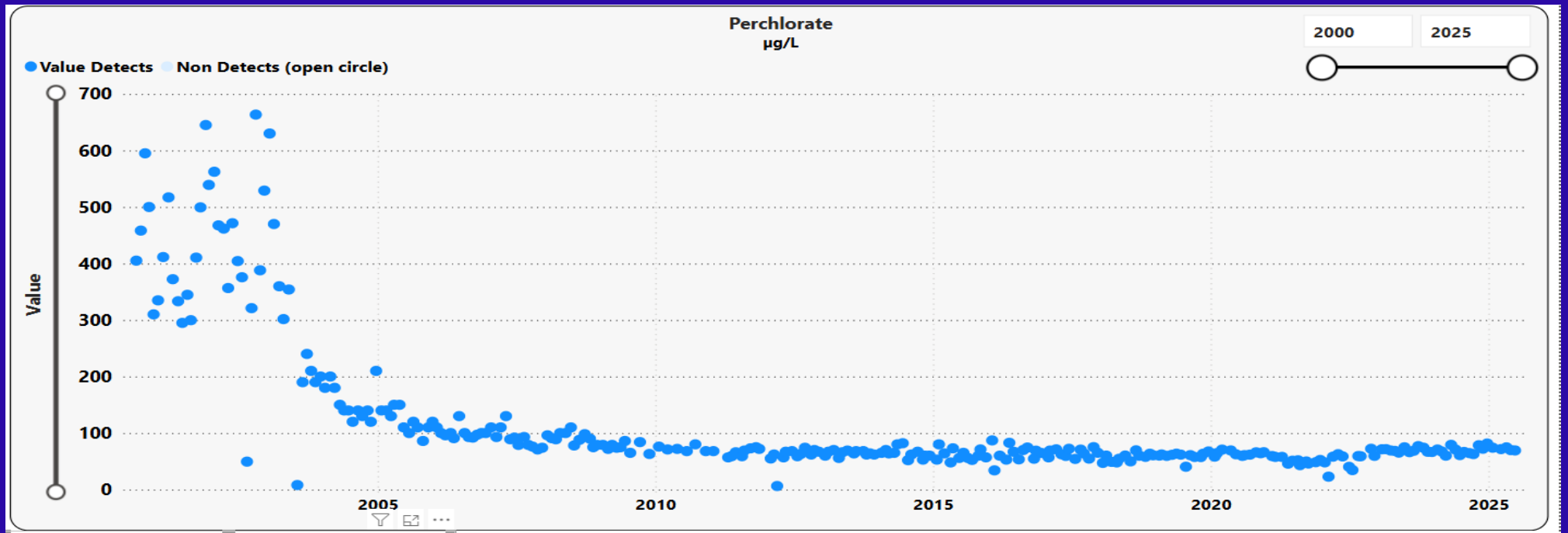
Parameter

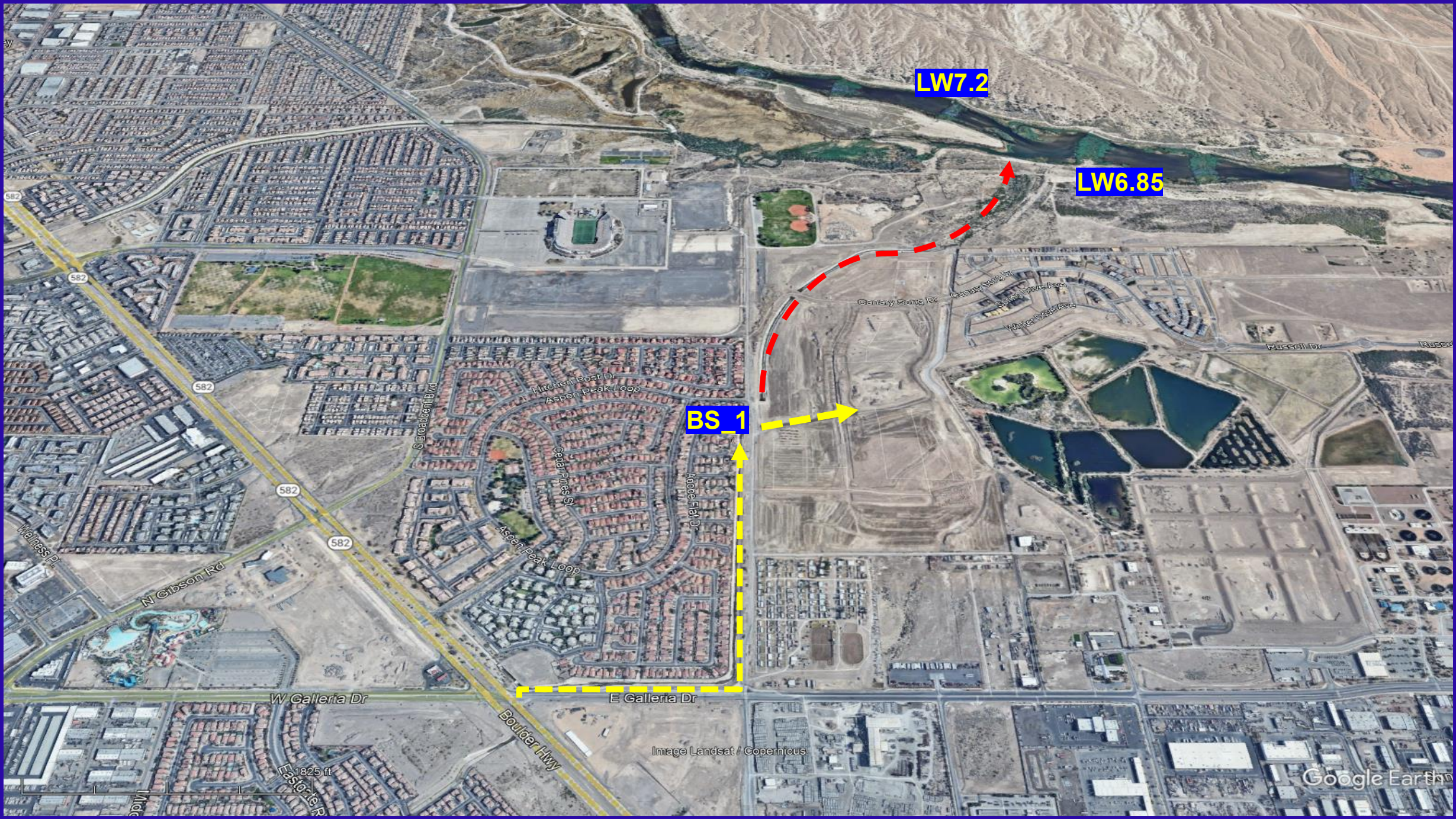
- ☐ Chlorate
- ☒ Perchlorate

LW6.85



LW0.9





LW7.2

LW6.85

BS_1

582

582

582

582

582

Wells St

N Gibson Rd

W Galleria Dr

1925 ft

Eastgate Pkwy

Boulder Hwy

E Galleria Dr

Image Landsat / Copernicus

Google Earth

Century Plaza Dr

Spring Valley Dr

Valley Vista Dr

Russell Dr

Aspen Peak Loop

Aspen Peak Loop

Cedar Ridge St

Koehn Rd

Water Quality Data from Urban Runoff Tributaries

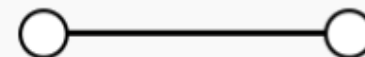
(2025 vs previous years)

[Click: Full Timeseries including non-detects](#)

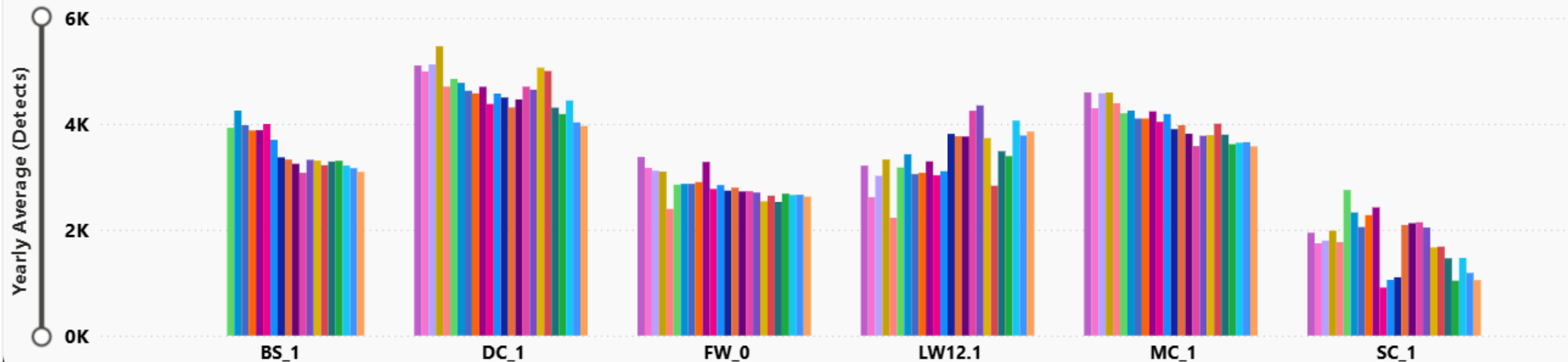
Total Dissolved Solids LAB mg/L

2000

2025



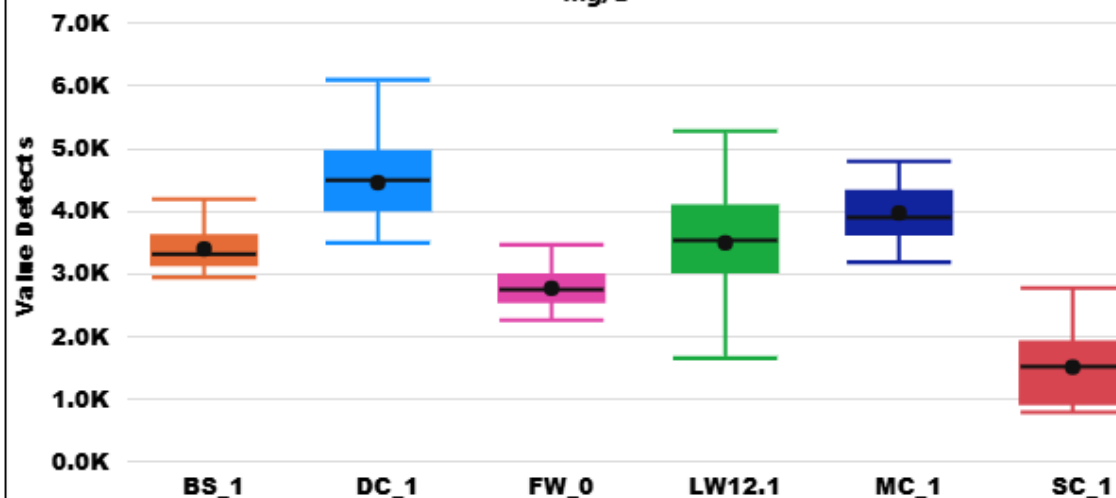
Year 2001 2002 2003 2004 2005 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025



Sampling Sites



Total Dissolved Solids LAB mg/L

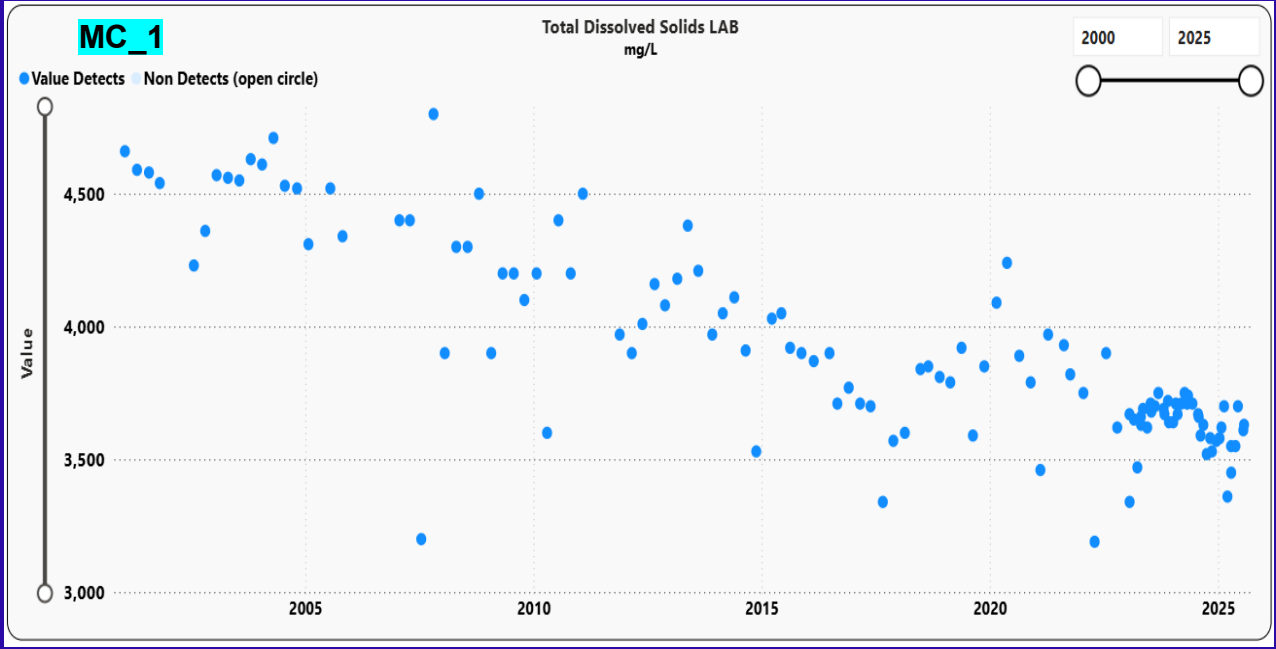
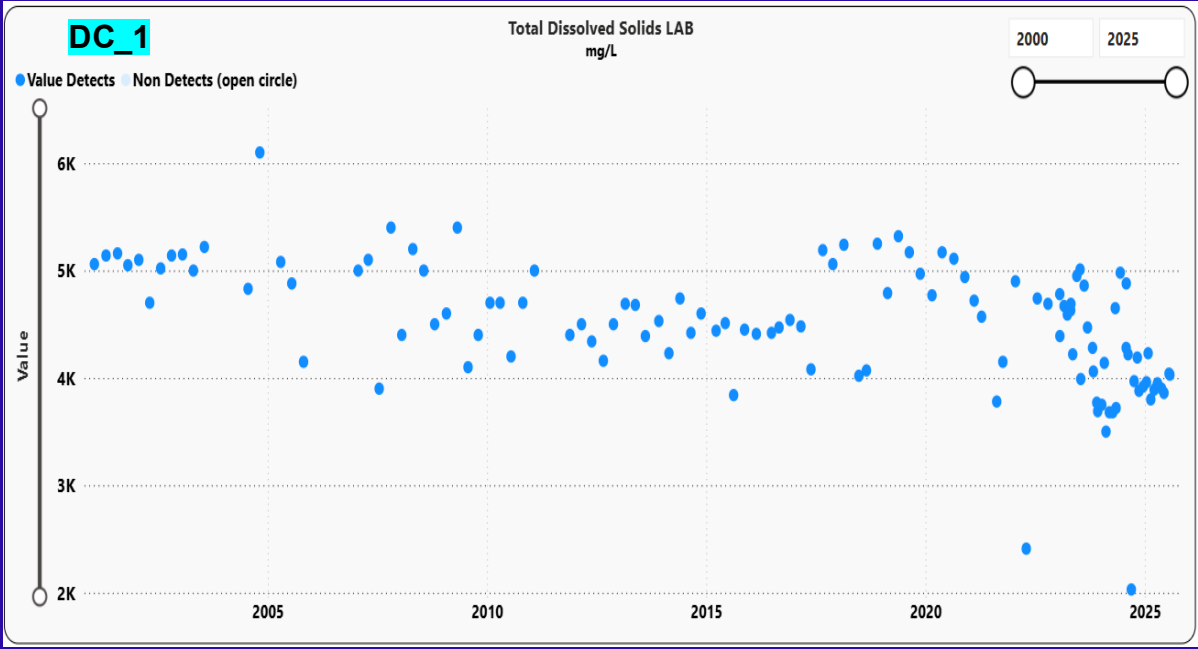
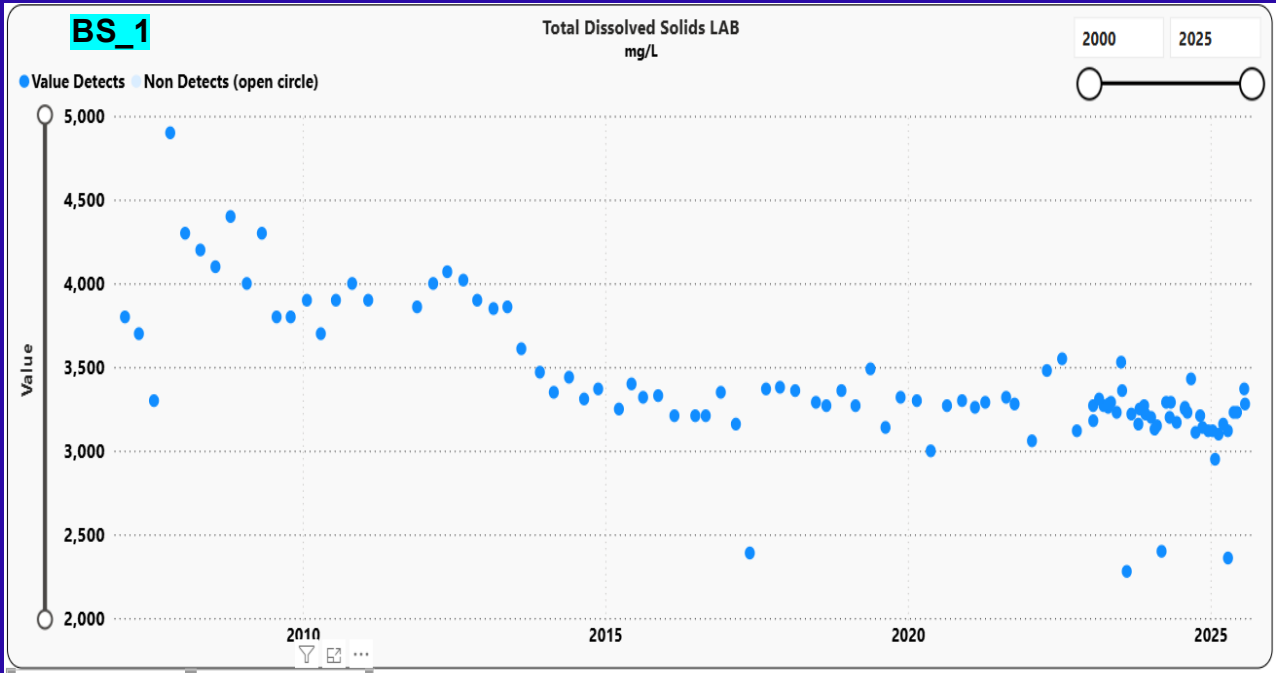
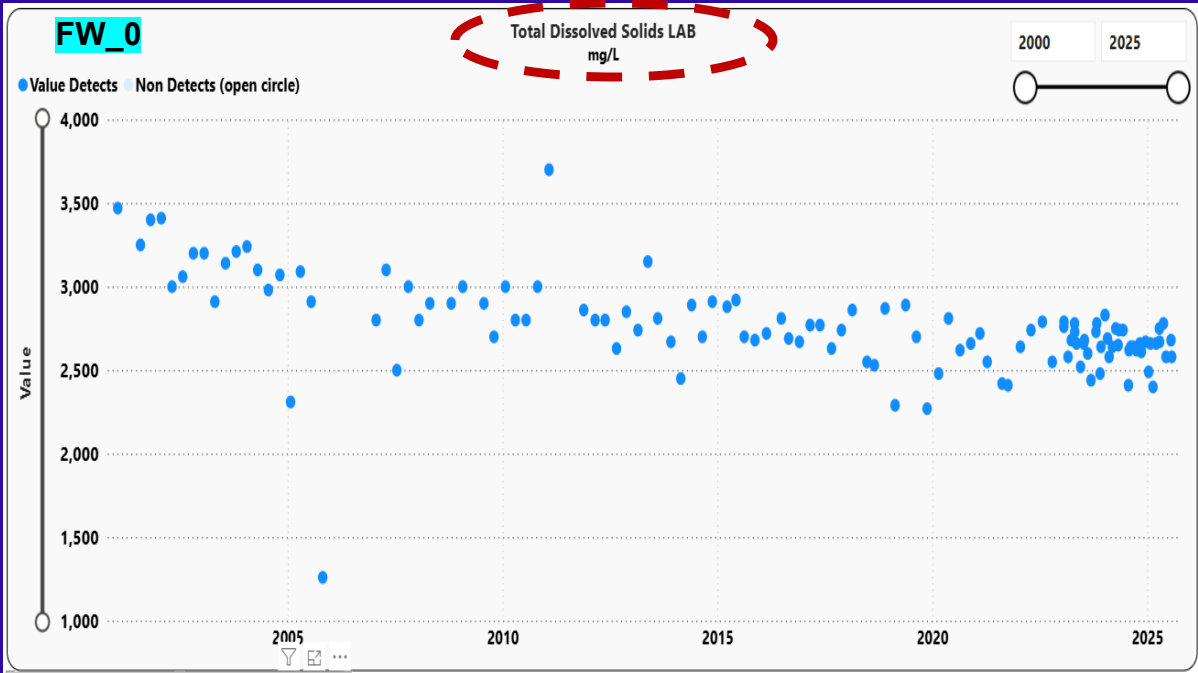


Site Name

- ☒ Select all
- ☒ BS_1
- ☒ DC_1
- ☒ FW_0
- ☒ LW12.1
- ☒ MC_1
- ☒ SC_1

Parameter

- ☐ Hardness, Total
- ☐ Magnesium Total
- ☐ Potassium Total
- ☐ Silica Total
- ☐ Sodium Total
- ☐ Sulfate
- ☒ Total Dissolved Solids LAB
- ☐ Total Organic Carbon (..
- ☐ Total Suspended Solids
- ☐ Turbidity (see remarks)



[Click: Full Timeseries including non-detects](#)

Selenium Dissolved µg/L

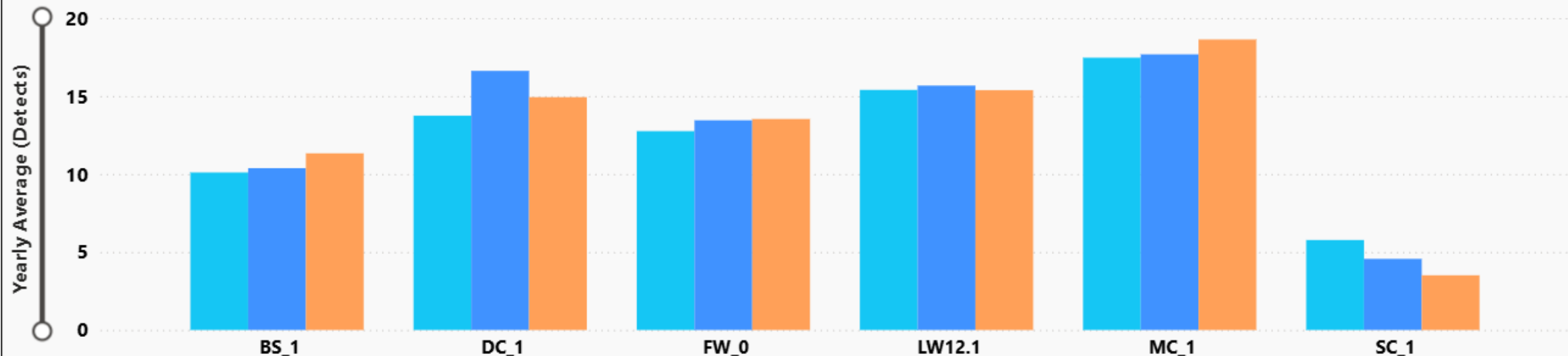


2023

2025



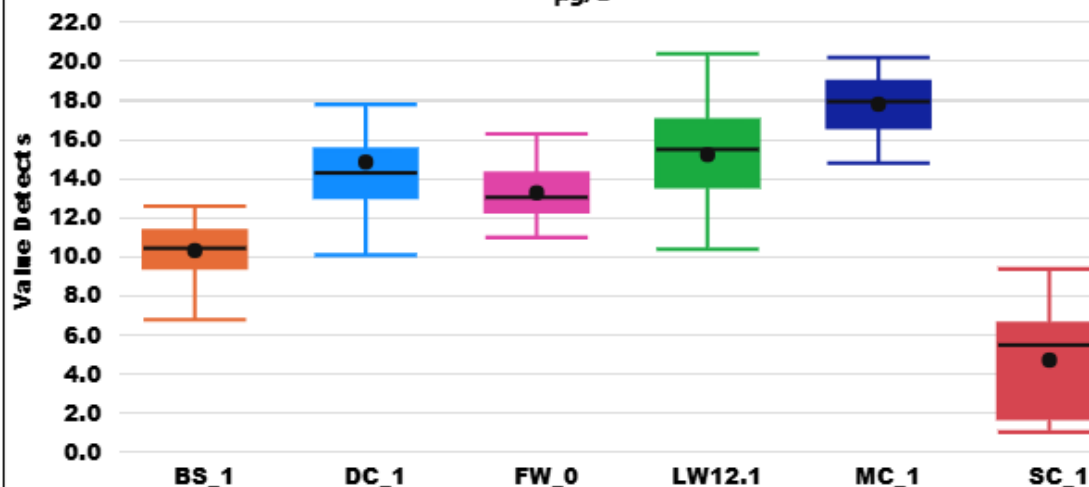
Year ● 2023 ● 2024 ● 2025



Sampling Sites



Selenium Dissolved µg/L



Site Name

- ☒ Select all
- ☒ BS_1
- ☒ DC_1
- ☒ FW_0
- ☒ LW12.1
- ☒ MC_1
- ☒ SC_1

Parameter

- ☐ Molybdenum Total
- ☐ Nickel Dissolved
- ☐ Nickel Total
- ☒ Selenium Dissolved
- ☐ Selenium Total
- ☐ Silver Dissolved
- ☐ Silver Total
- ☐ Thallium Dissolved
- ☐ Thallium Total
- ☐ Uranium Dissolved

[Click: Full Timeseries including non-detects](#)

Arsenic Total
 $\mu\text{g/L}$

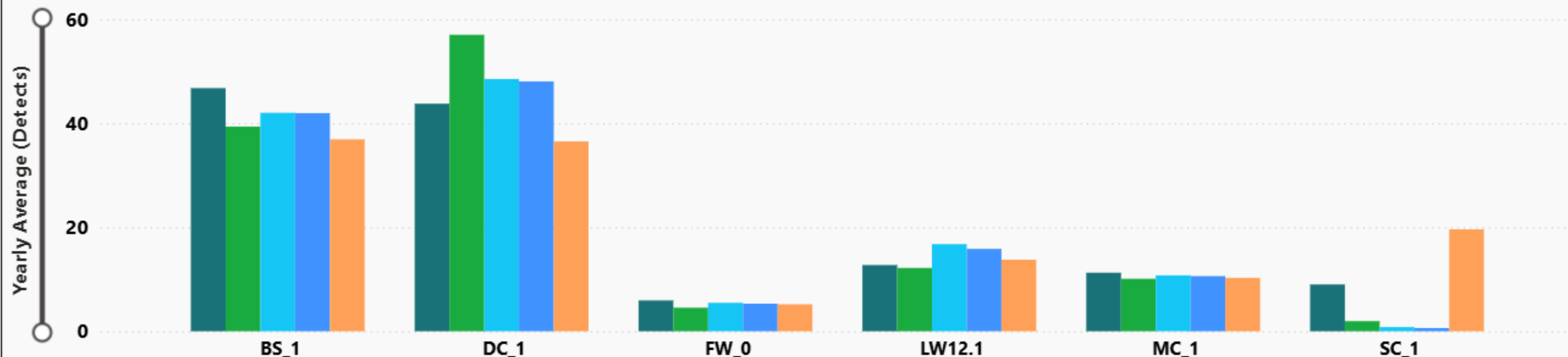


2021

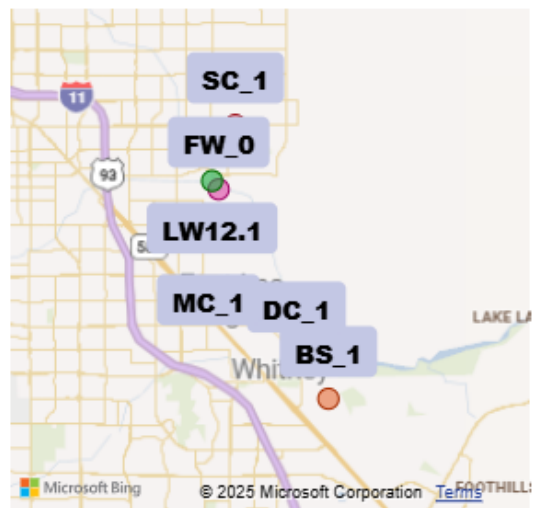
2025



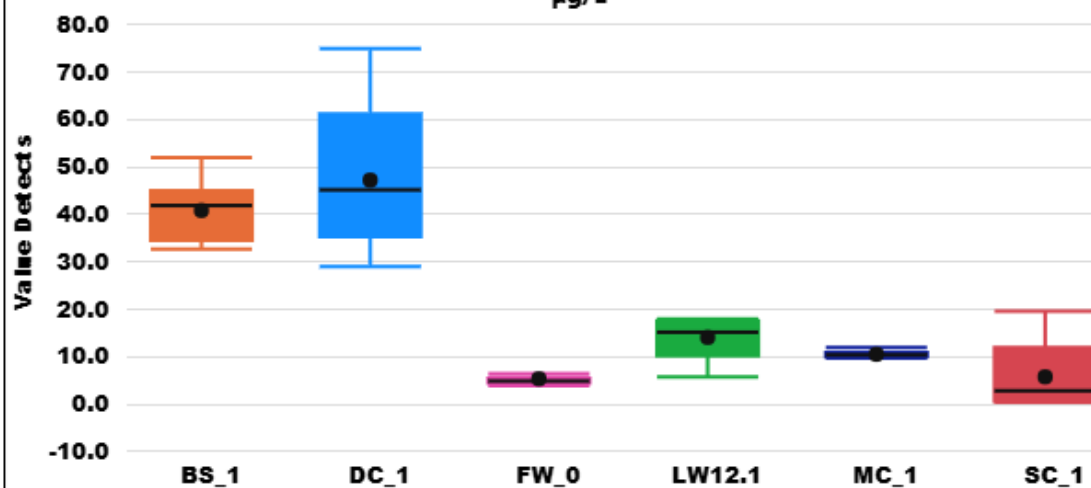
Year ● 2021 ● 2022 ● 2023 ● 2024 ● 2025



Sampling Sites



Arsenic Total
 $\mu\text{g/L}$



Site Name

- ☒ Select all
- ☒ BS_1
- ☒ DC_1
- ☒ FW_0
- ☒ LW12.1
- ☒ MC_1
- ☒ SC_1

Parameter

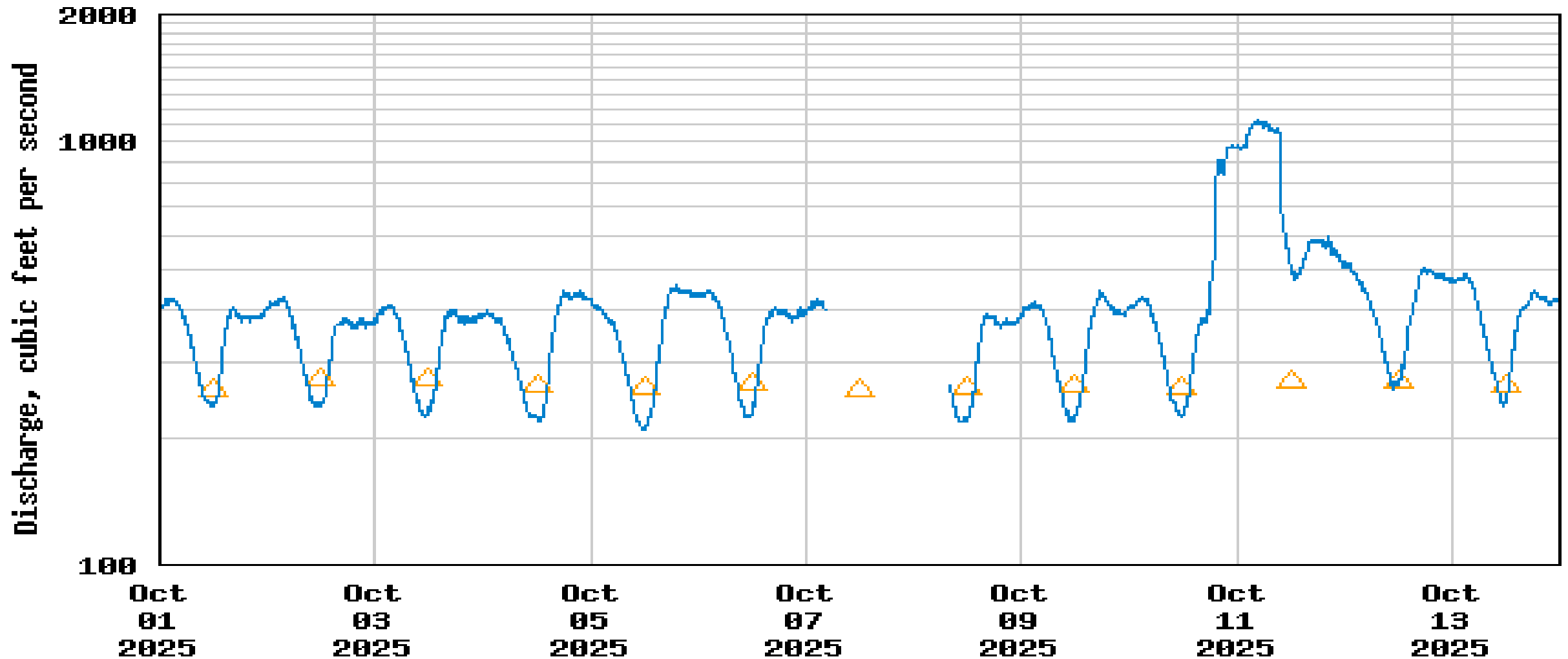
- ☐ Aluminum Dissolved
- ☐ Aluminum Total
- ☐ Antimony Dissolved
- ☐ Antimony Total
- ☐ Arsenic Dissolved
- ☒ Arsenic Total
- ☐ Barium Dissolved
- ☐ Barium Total
- ☐ Beryllium Dissolved
- ☐ Beryllium Total

Real-time Water Quality Monitoring from 3 Stations in the Las Vegas Valley

Real-time Water Quality Monitoring Stations in the Las Vegas Valley



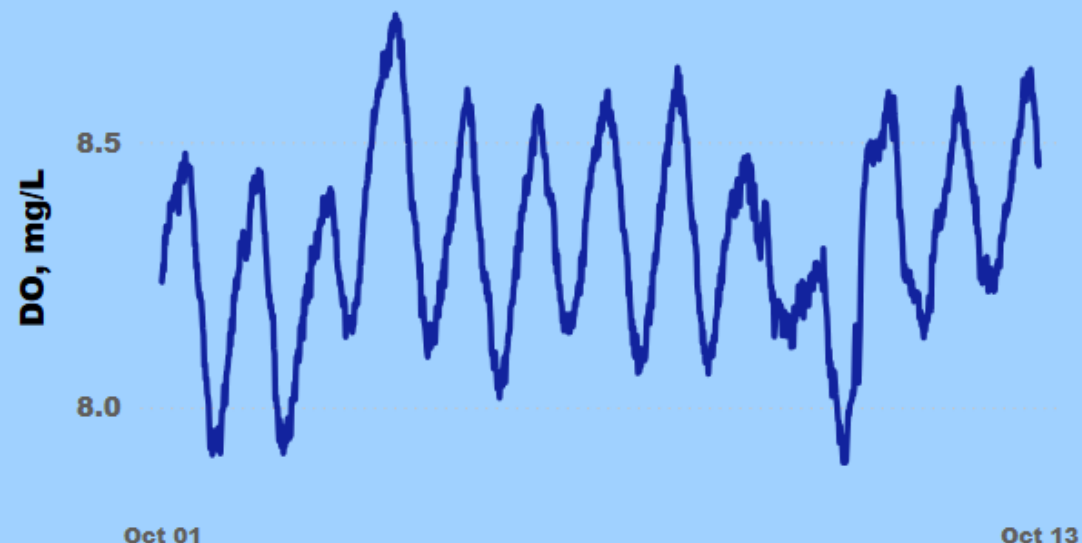
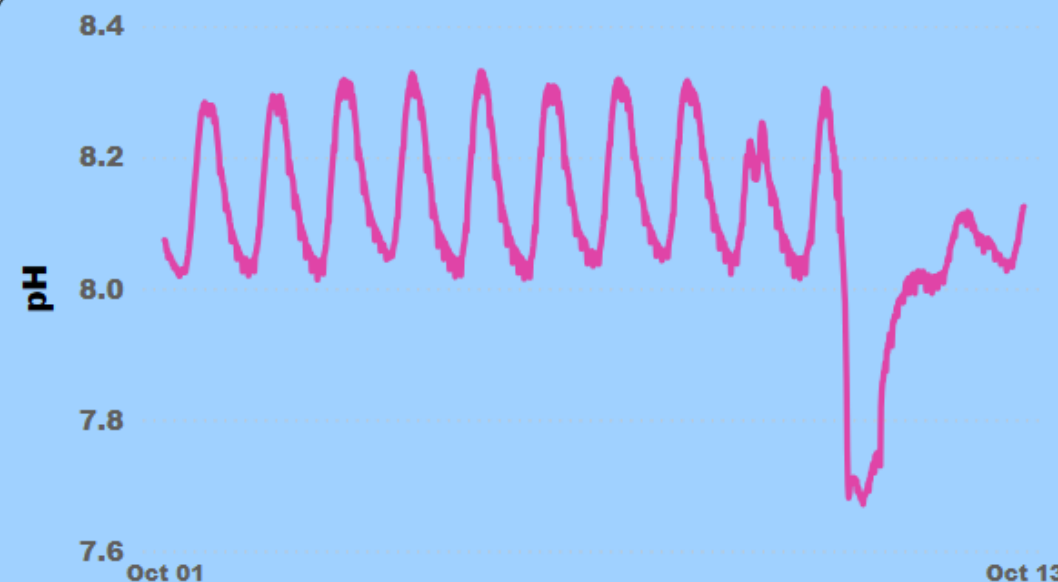
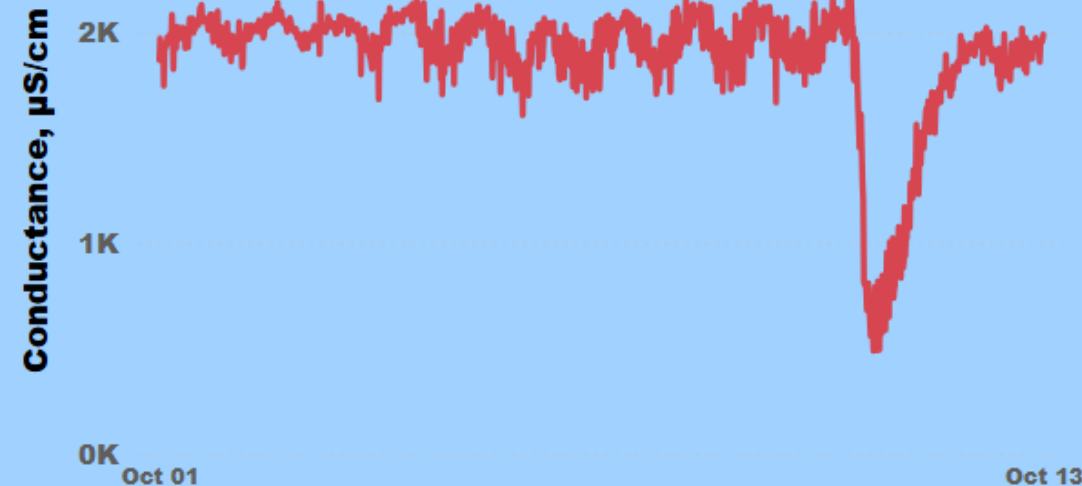
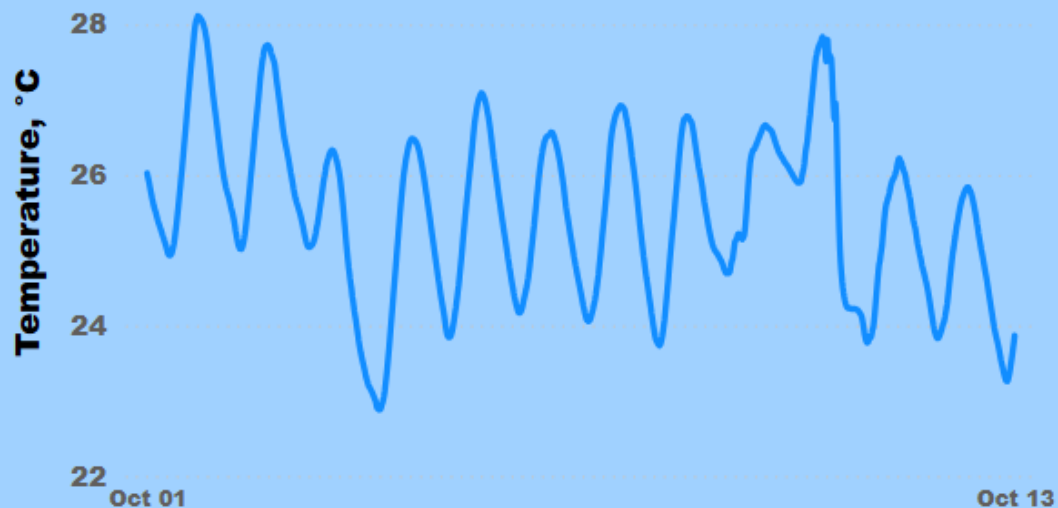
USGS 09419800 LV WASH BLW LAKE LAS VEGAS NR BOULDER CITY, NV



---- Provisional Data Subject to Revision ----

△ Median daily statistic (38 years) — Discharge

Real-time Water Quality
Data from the Lower
Wash (LW0.9)



Year, Month

- < 2020
< 2021
< 2022
< 2023
< 2024
> 2025
- January
○ February
○ March
○ April
○ May
○ June
○ July
○ August
○ Septem...
● October
○ November
○ December

Day



Las Vegas Valley Watershed Advisory Committee (LVVWAC) Update



October 28, 2025

LVVWAC Update: April 8, 2025 Meeting



Joemel Llamado (CNLV) and Andrew Trelease (CCRFCD) were selected as LVVWAC Chair and Vice Chair, respectively

LVVWAC Update:

April 8, 2025 Meeting



Received updates from wastewater dischargers:

- ☞ Clark County Water Reclamation District reported average annual influent flows from the 4 dischargers; while flows decreased in 2020 due to the pandemic, they have returned to normal and are now above the all-time high
- ☞ CCWRD's Flamingo plant received the National Association of Clean Water Agencies (NACWA) Peak Performance Platinum Award for its 13th straight year
- ☞ Last year, the City of Las Vegas treated 17.3 billion gallons of wastewater, distributed 138 million gallons of reclaimed water, and disposed of or repurposed more than 67,000 wet tons of biosolids
- ☞ The CLV Water Pollution Control Facility has received the NACWA Peak Performance Platinum Award each year for the past 25 years

LVVWAC Update:

April 8, 2025 Meeting



Wastewater dischargers continued:

- ❧ Last year, the City of Henderson treated 9 billion gallons of wastewater and delivered 2.4 billion gallons of reclaimed water, with no permit violations
- ❧ COH's Kurt Segler Water Reclamation has received the NACWA Platinum Award each year for the past 20 years
- ❧ The City of North Las Vegas reported on completed projects, including a 2.2-million-gallon flow equalization basin, and a septage dump station which receives < 50,000 gallons per week
- ❧ Current and ongoing projects include Sloan Channel repairs, membrane cassette expansion and replacement, and a headworks loading study for future infrastructure analysis

LVVWAC Update:

April 8, 2025 Meeting



Received update from CCRFCD on Stormwater Quality Management Committee

- ☞ Discussed key permit milestones; new permit makes the Stormwater Management Plan (SWMP) an enforceable part of the Municipal Separate Storm Sewer System permit
- ☞ The revised SWMP to include permit requirements, focus on program activities for compliance, and include measurable goals to assess compliance and performance
- ☞ Received report on stormwater monitoring which requires a review of historical stormwater data to characterize flows

LVVWAC Update:

October 21, 2025 Meeting



Approved FY 2026/2027 LTOP budget

- ☞ Total operating budget: \$2,843,560
 - ☞ Estimated Bureau of Reclamation contribution: \$312,625
 - ☞ Local contribution: \$2,530,935
- ☞ Budget reflects annual increase of 2.5%
- ☞ Budget received unanimous approval

LVVWAC Update:

October 21, 2025 Meeting



Reviewed and approved LTOP Reserve Fund policy

- ❧ LTOP Reserve Fund needed for emergencies
- ❧ LVVWAC approved the following:
 - ❧ Target amount - 1 FY's expenditure requirements (currently ~\$2.8M)
 - ❧ Expenditure authorization - Up to 10% without prior approval by LVVWAC
- ❧ Legal to draft reserve fund policy text for the LVVWAC bylaws for possible action in April

LVVWAC Update:

October 21, 2025 Meeting



Received update on the Las Vegas Wash Coordination Committee

- ✧ April/October meetings of LVWCC, three study teams and LVVWAC
- ✧ Completed maintenance on 5 weir sites and 3 stockpile sites for \$1.4M
- ✧ Enhanced and managed existing vegetation sites
- ✧ Community outreach and monitoring of water quality and wildlife are ongoing

LVVWAC Update:

October 21, 2025 Meeting



Received update on the Clark County Wetlands Park

- ✧ Continued coordination with CCWRD, CCPW, SNWA on several projects
- ✧ Submitted proposal for SNPLMA funding for a new interpretation and event area
- ✧ Wetlands Loop Trail completion and Barriers Plan projects under way
- ✧ BLM submitted proposal to address fuel loads throughout CCWP
- ✧ Maintenance programs, field trips, and events are ongoing

LVVWAC Update:

October 21, 2025 Meeting



Received update on regional water quality

- ❧ Lake Mead surface elevation stable for the coming year; elevation predictions for 2026 are between 1,053 and 1,059 ft
- ❧ Discussed temperature profiles, dissolved oxygen levels, algal toxin concentrations, and both quagga and zebra mussels
- ❧ Weather stations now active throughout Lake Mead displaying weather and wave data
- ❧ Continue rebuild of water quality database, utilizing Lake Mead Models to model poor water quality scenarios
- ❧ Displayed recently published work and discussed upcoming projects

LVVWAC Update:

October 21, 2025 Meeting



Received update on Lower Las Vegas Wash

- ☞ Since 2019, SNWA's focus has been on Weirs 5-9, particularly Weir 5, and work began on environmental compliance for that project
 - ☞ Erosion continued and Weir 3 failed in 2023; \$20M BOR grant was allocated for repairs
- ☞ Administrative changes in 2025 revised agreement that would require SNWA to maintain the weirs, which is not feasible
- ☞ Original cost estimate for Weirs 5-9 was \$120M, now projected at \$490M (per engineering update six months ago)
- ☞ It was determined to end the project; BOR notified of the decision
 - ☞ Approximately \$8M spent; unused funds to be returned to BOR

Next Meeting



April 14, 2025

2:00 p.m.



togetherforbetter

WETLANDS PARK Update LVVWAC

Elizabeth Bickmore
October 21, 2025



Capital Projects

SNPLMA RD20

Dragonfly Interpretive Area, Duck Creek Event Area, Tropicana Wash Extension

- Preauthorization

Conserve Nevada AB84 Bond \$10M

Wetlands Loop Trail Phase 1 \$2M - COMPLETE

- Design ~4.9 miles (paved & service road)
- Pave initial segment and associated service road

Barrier Plan \$1 M

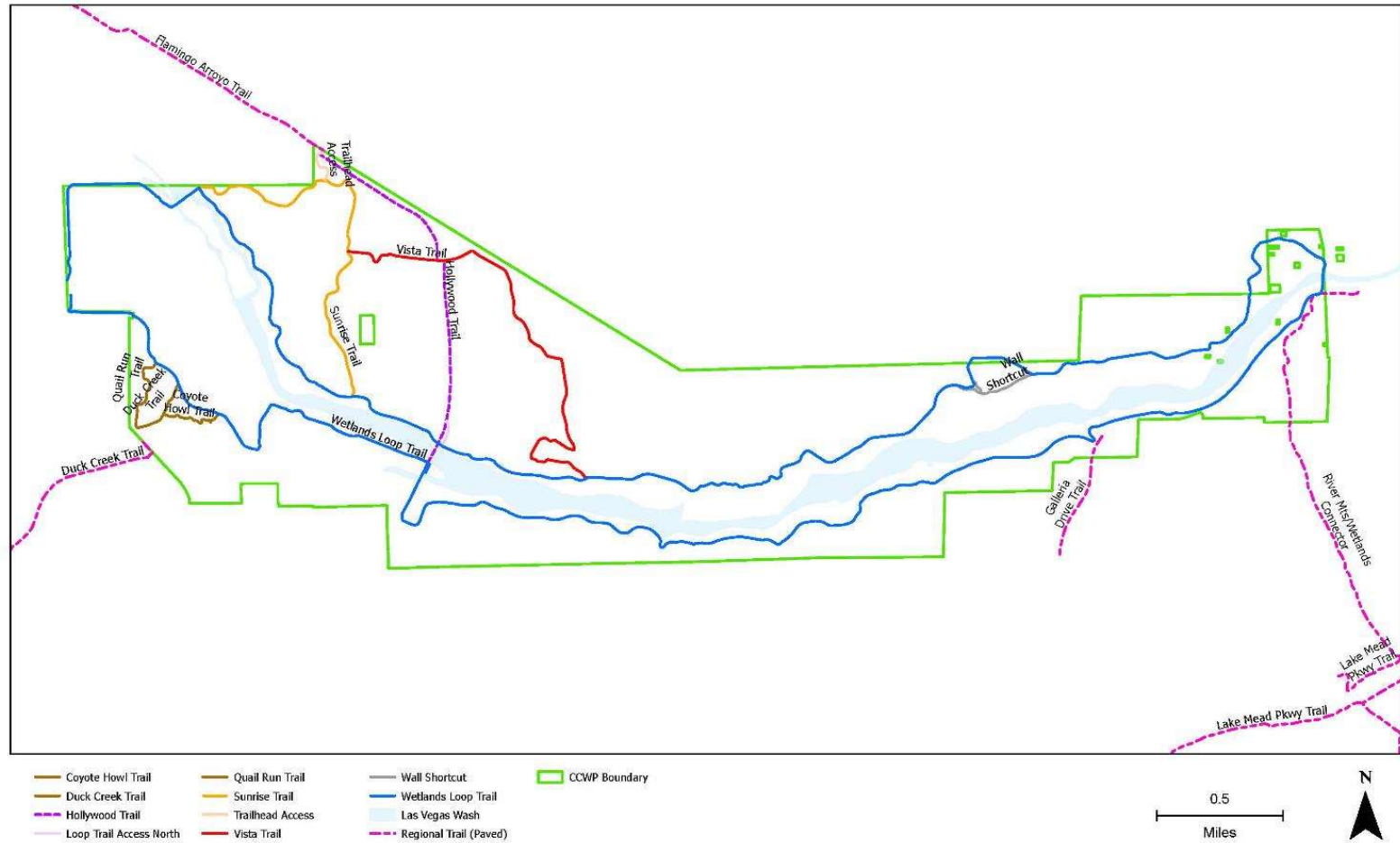
- Split rail , boulders, K-rail, gates

Wetlands Loop Trail Phase 2 \$7M+

- Awaiting revised cost estimate
- Implement Design
 - Pave remaining miles and associated service road



Clark County Wetlands Park - PROPOSED Multi-Use Trail System



Barriers Plan

Barriers completed at Hollywood Blvd, Nature Preserve, Duck Creek, and Pabco and Wells Trailheads

Barriers & Gates

- Galleria Drive
- Nature Preserve
- Hollywood Boulevard
- Pabco West



Signage Plan





Maintenance Plan

TRUXOR amphibious marsh mower

- Improve flow in ponds
- Restore habitat quality
- Reduce fuels for wildfires
- Open viewsheds

National Park Service

- IA 4 year
- Weed management & Restoration

Nevada Division of Forestry

- ROEntry Agreement
- Vegetation management
- Park resources

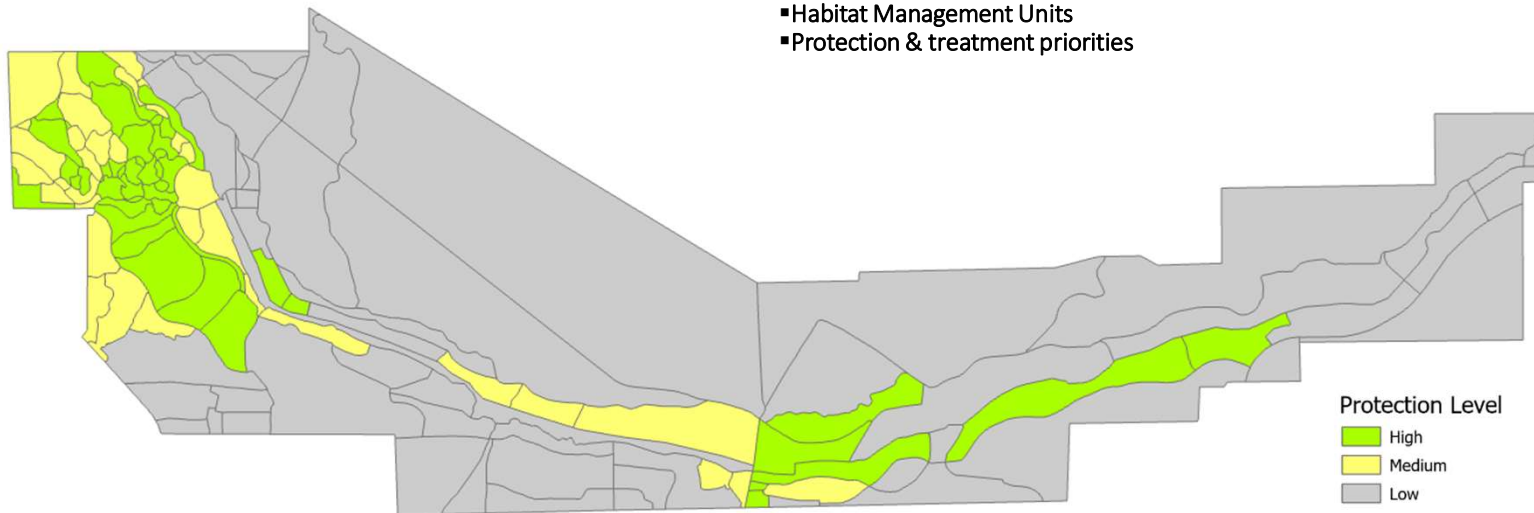
BrightView

- 5 year agreement
- Park wide maintenance



Southern Nevada Hazardous Fuels Group – Reduction Project

- NV Shared Stewardship AB578 - Better Together Grant
 - BLM Fire and Clark County Fire Department Partnership
 - Habitat Management Units
 - Protection & treatment priorities





Resource Protection

Office of Public Safety

Wetlands Park Security Officers

- 7 days

Roving Security

- Lock bathrooms & gates

24 Hour CC Parks

- Police
- Security Officers

Encampment Procedures

Trailkeepers Changed Focus





Permitted Project

UNDER WAY

CCWRD - Force Sewer Main

SNWA -Downstream Pabco Restoration, Weir Maintenance

City of Henderson - C-1 Channel

Public Works -Hollywood Extension

PLANNING

LVVWD & NV Energy

- Cathodic Protection

SNWA/LVWCC

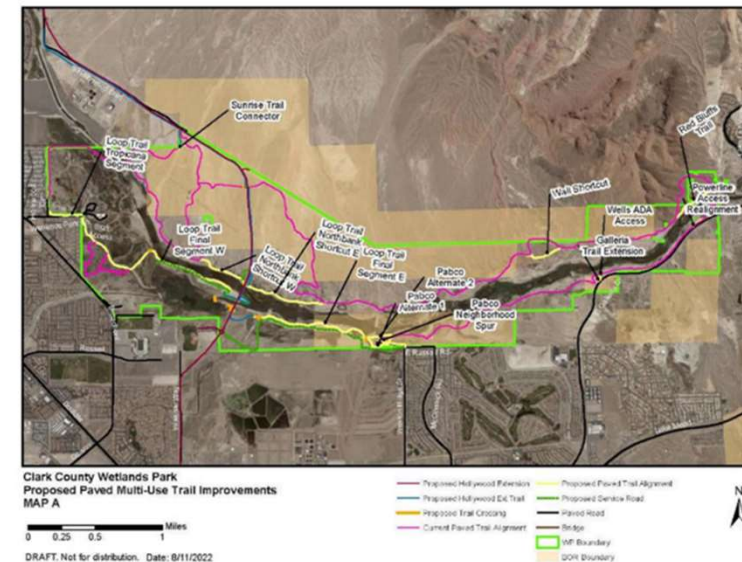
- Spring Greenup

Public Works

- Hollywood Extension

Southwest Gas

- Maintenance



Hollywood Extension

CC Public Works

- Phase 1 Complete
- Phase 2 60% Design Complete

USBOR Lead Agency

- Comment period closed
- News articles



Four Significant Fires in 2025

- March-Nature Preserve (37 acres)
- April-Las Vegas Wash (2 acres)
- May-Duck Creek (16 acres)
- June-Old Silver Bowl (110 acres)







Recreational & Educational Opportunities

Nature Center

- Operating Hours Tues- Sun
- Exhibit Gallery
- Nature Store
- 2 Art Galleries
- Auditorium
- Classrooms & Meeting Rooms
- Lizard Lounge
- Observation Deck

Park Grounds

- Open 7 days a week
- 6 trailheads
- 30 miles of trails

Visitation

- 700,000 ~ 2024

Engagement

- 2024 ~ 42,000

Community Resource

Research

Mesquite Dieback - EcoCulture

Nv State Museum - Insect Natural History Collection

UNLV -Arthropod Study, Mammalogy Survey

College of Southern Nevada

Water & Soil – bacteriophage study

Biomedical Exploration Workshop

Ant DNA Extraction

BEC Environmental CCDCP - Desert Pocket Mouse
Threats & Pop. Study

Univ. of Kansas - Wetland Delineation Coursework

Professional Presentations & Tours

Fire

CCWRD Kiosk

Forest in Cities Network

Partners in Community Forest

Metro SAR

American Water Works Association

Jacky Rosen

Sportman's Caucus

Education Writers Association

Meetings

USBOR Fire Annual Mtg

CC Dept of Environment & Sustainability

CC Social Services

Climate & Clean Energy

Friends of Nevada Wilderness

University of New York

Digital Engagement

Wetlands Park Navigator

- 1,300 individual users
- 35,000 uses of the app

Email Subscribers

- 12,445 recipients
- Footprints Quarterly Newsletter
- Monthly Programs Eblast

Facebook

- 13,208 followers
- 90 day engagement:
52,448 views

Instagram

- 5,765 followers



Apple App Store



Google Play Store

Clark County Wetlands Park Navigator

1. Open your App Store
2. Search for "Wetlands Park Navigator"
3. Download the app
4. Try it out!



2025-2026 School Year

- 19 Guided Field Trips Scheduled
- 900 Students

2025-2026 Events

- **Haunt the Wetlands**
 - Friday, October 24, 2025, 4 pm – 8 pm
- **Visitor Appreciation Days**
 - Friday & Saturday, November 28 & 29, 2025, 11 am – 1 pm
- **Wetlands Art Day**
 - Saturday, March 21, 2026, 10 am – 2 pm
- **BioBlast**
 - Saturday, April 25, 2026, 9 am – 1 pm
- **Fire Prevention Day**
 - Saturday, May 9, 2026, 10 am – 2 pm
- **Discovery Day**
 - Saturday, June 27, 2026, 10 am – 1 pm
- **Pollinator Party Tentative**
 - Saturday, August 2026, 10 am – 12 pm
- **Stalking Twilight Tentative**
 - Saturday, August 8, 2026, 7:00 pm – 9 pm



Photo by Philip DeManczuk

Programs

Kids' Programs

- School Field Trips
- Nature Tales & Storytime
- Wetlands Explorers
- Arts & Crafts for Kids
- Nature Tales
- Critters & Crafts
- Wetlands Wildlife Excursions

Art

- The Nest Gallery Space
- Spotlight on Nature Gallery
- Artist in Residence
- Annual Public Calls and Exhibits
- Guest Artist Workshops
- Summer Art Series

Stewardship

- Wetlands: Hands On!
- Trailkeepers

Adult/Family Programs

- Discovery Walks
- Watercolor for Adults
- Evening Lectures
- Java Jaunt Birding
- Wetlands Walkers

Citizen Science

- FeederWatch
- iNaturalist Nature Journal



Galleries

Spotlight on Nature Gallery



The Nest



Art Walk

Lizard Lounge

<i>In the Company of Animals</i> Juried Show	August - November 2025
<i>Buzz, Flutter, and Creep</i> Art Quilts, Etc.	November 2025 - January 2026
Fawn Douglas	February - April 2026
4th Annual Plein Air Invitational	May - July 2026
5th Annual Juried Show	August - October 2026
3rd Clark County Staff & Volunteer Show	November - December 2026

<i>The Wetlands Trails,</i> Stasia Valora Fisher, in Memoriam of Dina	August - October 2025
<i>Wetlands for the Holidays,</i> Wetlands Park Friends	November 2025 - January 2026
Casey Southard	February - April 2026
Sean Jones	May - July 2026
Taylor Pierce	August - November 2026

Temporary Outdoor Installation	March – May 2026
--------------------------------	------------------

Coral Academy K-2 Art	December 2025
Youth Art Installation, CC Public Arts	Spring 2026
Seedlings, Wetlands Park Youth Art	June 2026

Nature Store

Total FY 2025 Sales: \$58,201.50

Wetlands Park Nature Store
Revenue by Fiscal Year 2019 - 2025

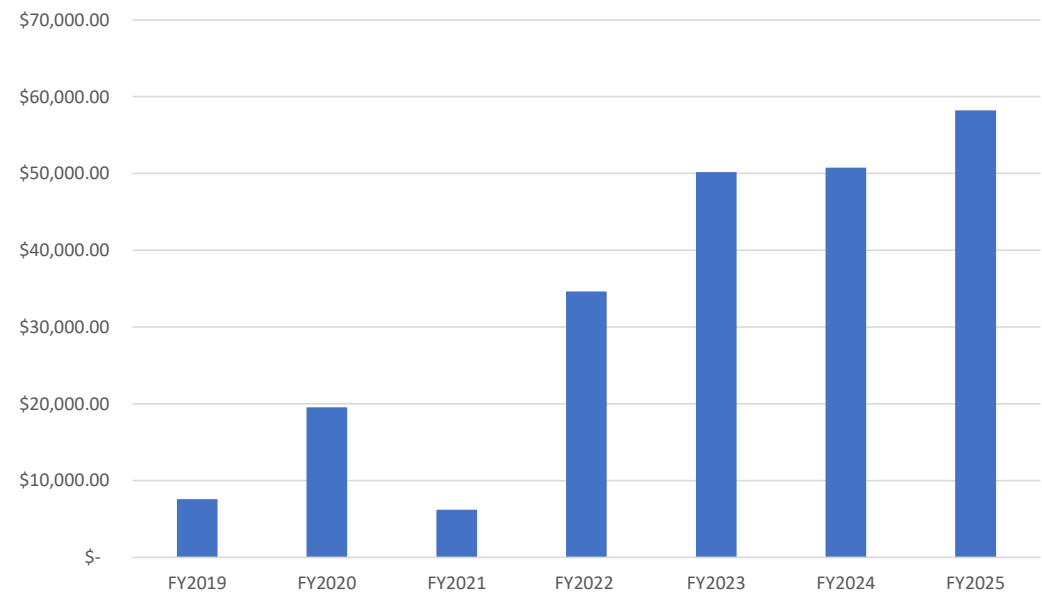




Photo by Philip DeManczuk

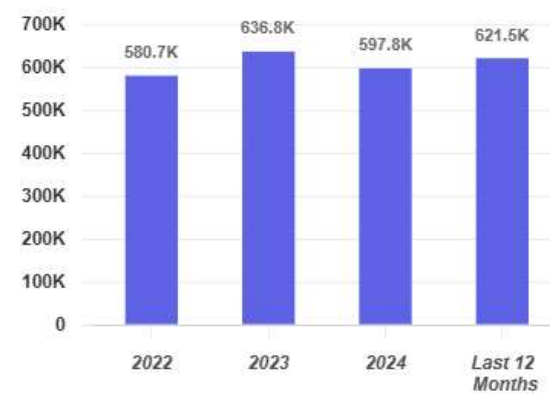
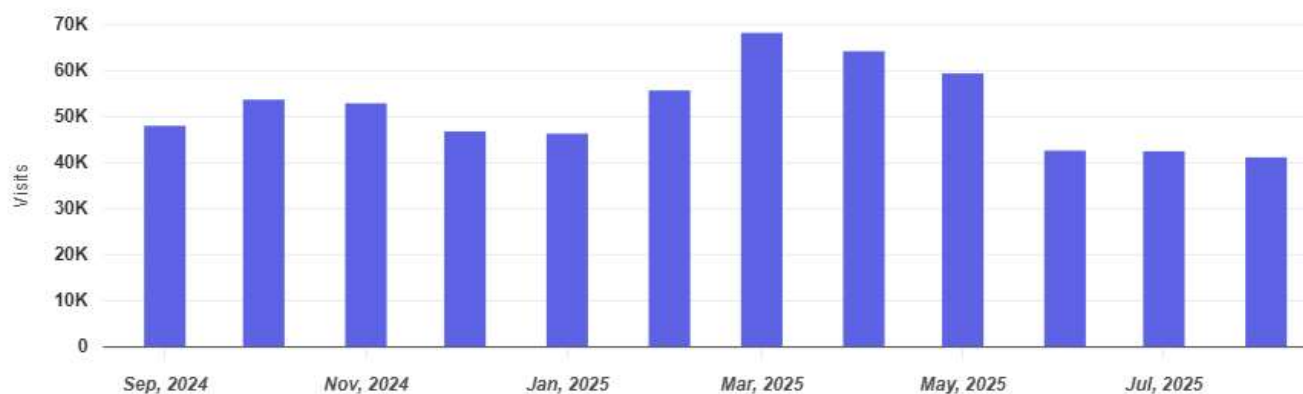
Park Visitation & Demographics

Placer.ai

Visits Trend ?

Wetlands Park
NV

Metric: Visits
Aggregation: Monthly
Annual Summary ☒



Placer.ai



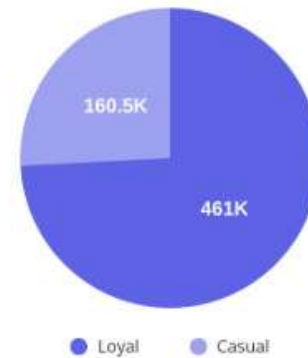
“Loyal”
2 or more visits

“Casual”
1 visit

18%
> 30 visits

Loyal Vs. Casual

Wetlands Park
NV



Sep 1st, 2024 - Aug 31st, 2025
Data provided by Placer Labs Inc. (www.placer.ai)

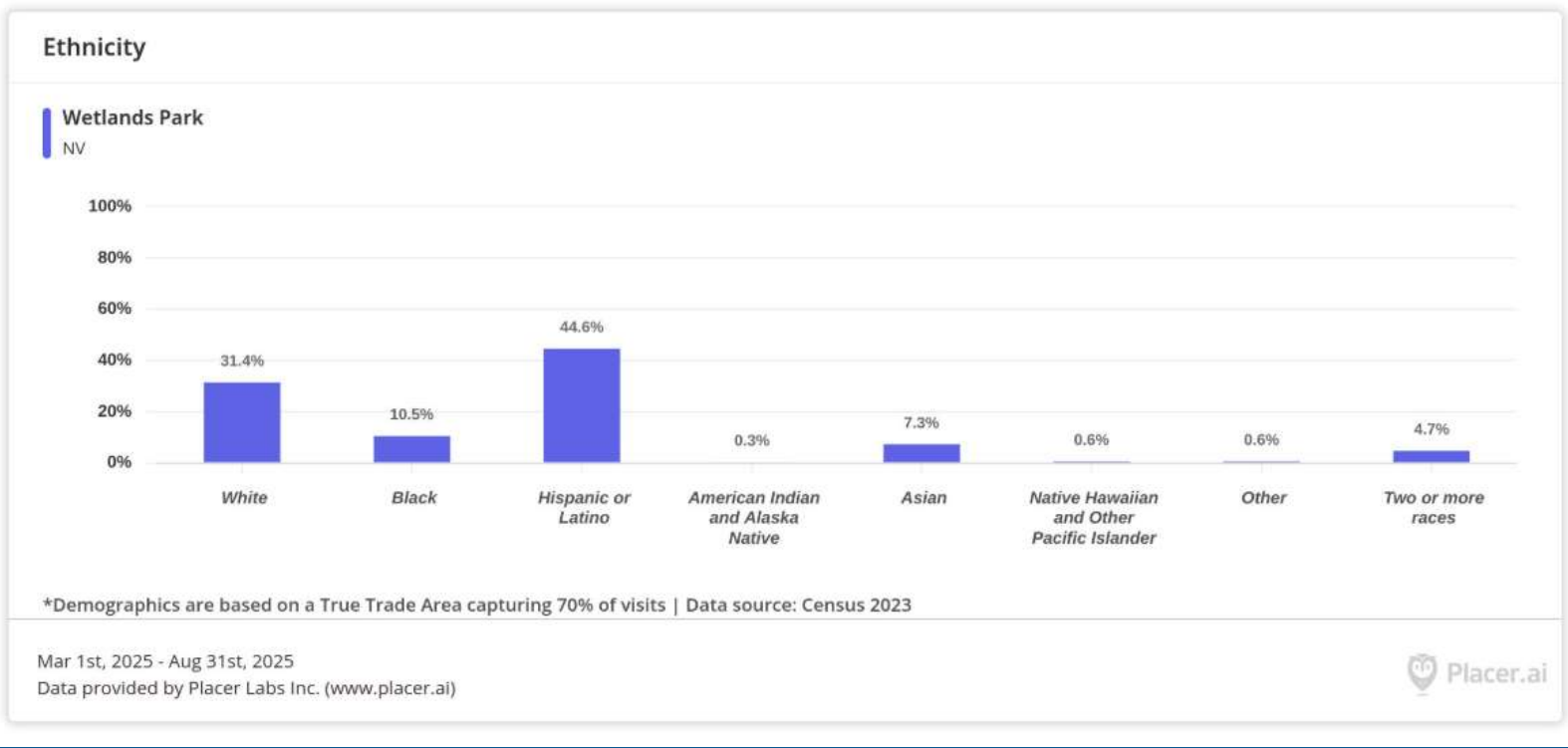




Placer.ai

Ethnicity

Mar 1 - Aug 31, 2025



Placer

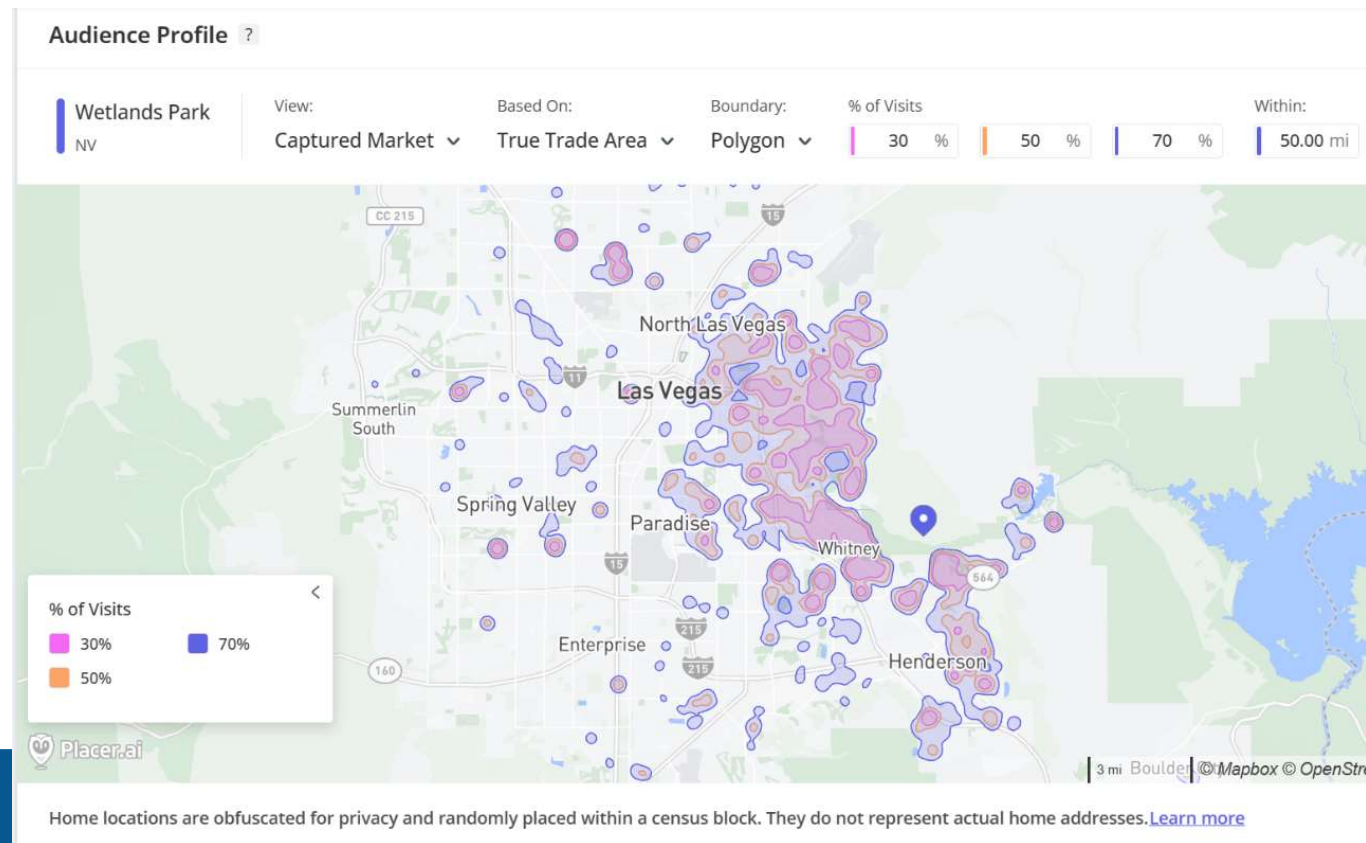




Photo by Philip DeManczuk



togetherforbetter

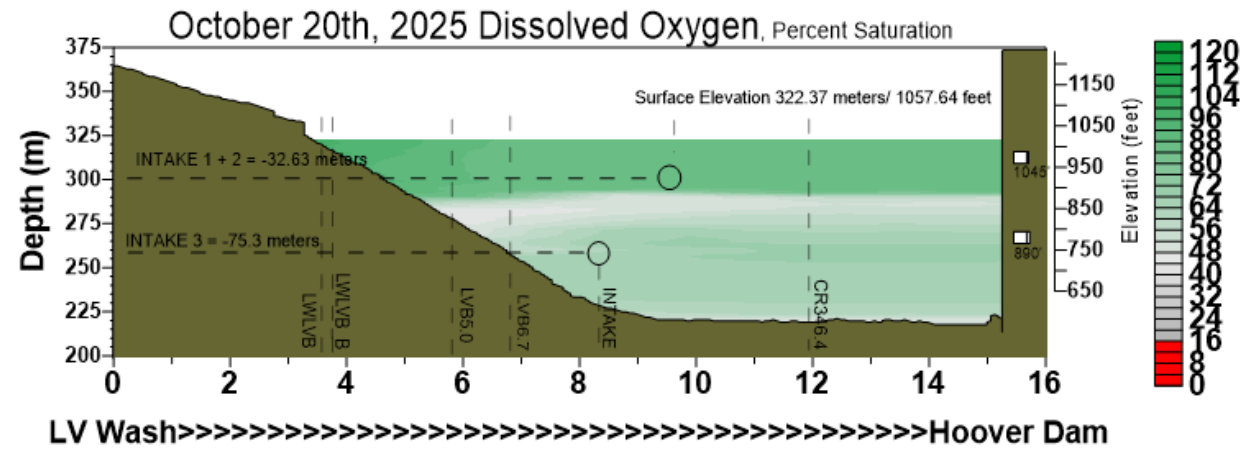
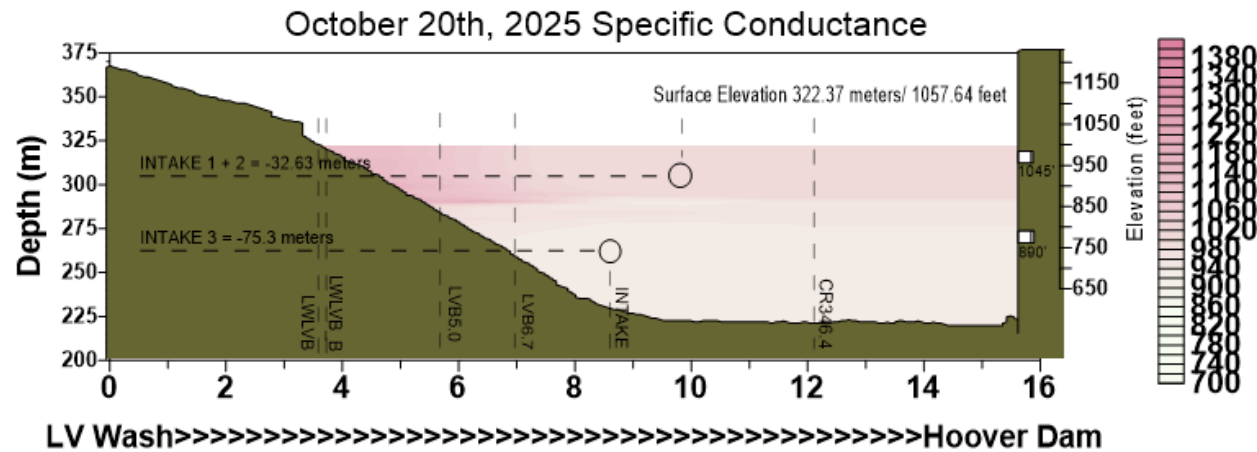
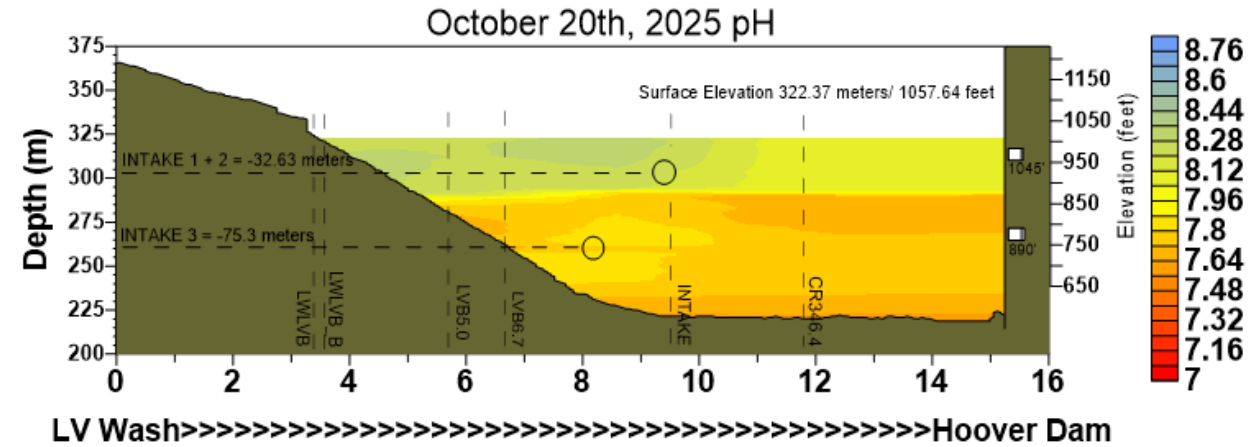
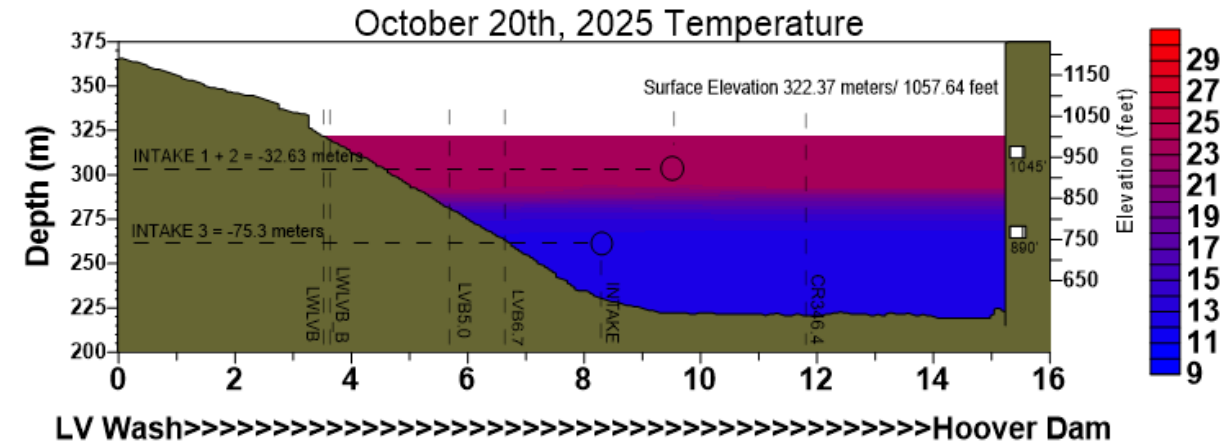
Questions?



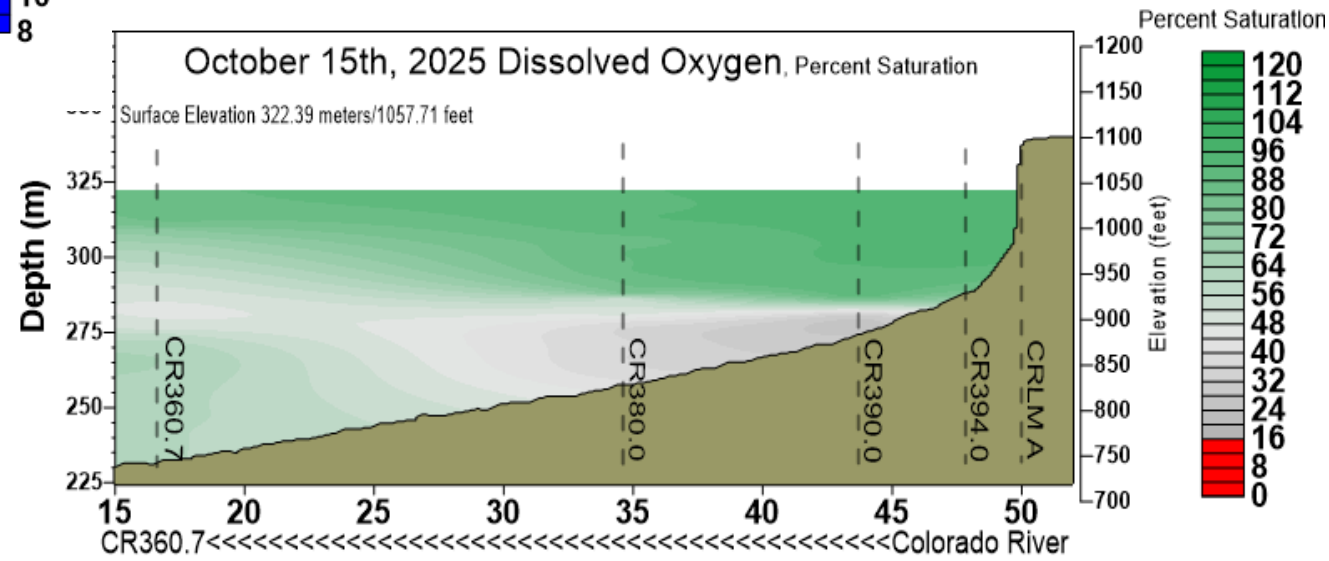
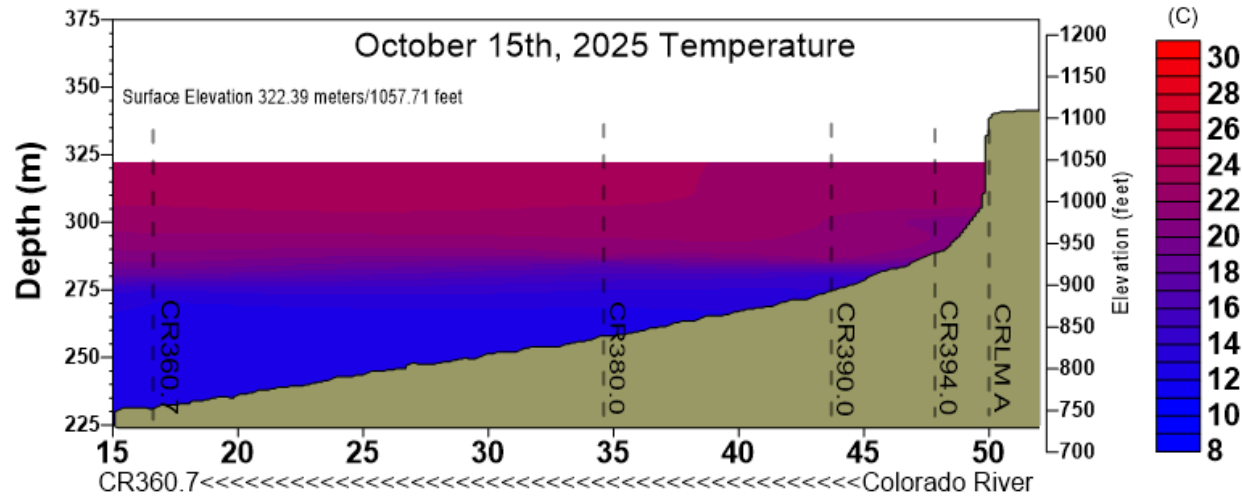
Regional Water Quality Updates

Todd Tietjen, Ph.D., Deena Hannoun, Ph.D.
Regional Water Quality
Southern Nevada Water Authority

Current Lake Mead Conditions



Current Lake Mead Conditions

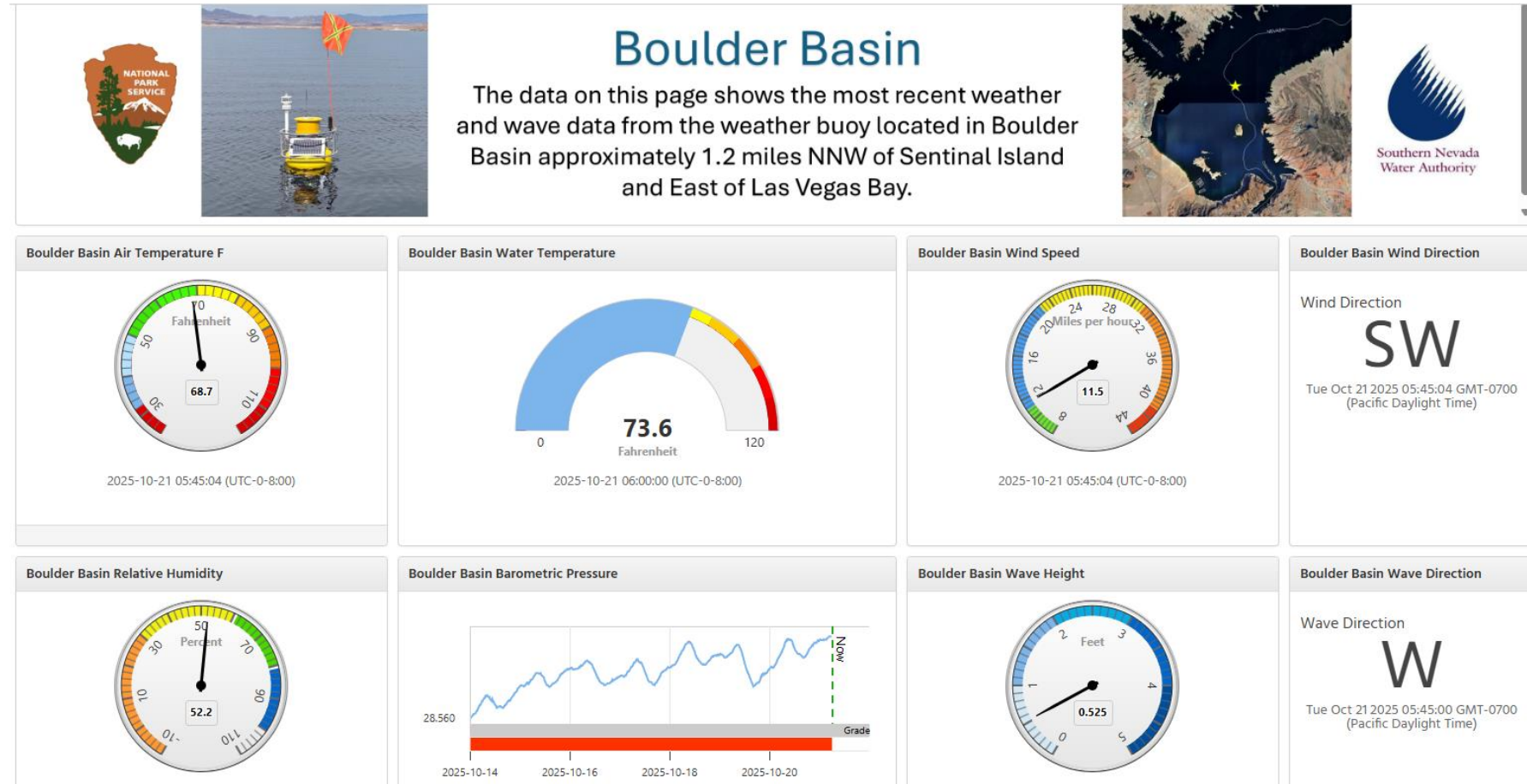


Other Water Quality Issues

- Algal Toxins
 - Continue to have occasional very low-level detections in Lake Mead
 - A few high and extremely high detections in Lake Mohave
 - Placer Cove and Cottonwood Cove
 - Wind appears to still be a factor aggregating surface algae
- Lake Levels
 - Current lake elevation: 1057.64 ft ASL
 - Projected end of 2025 most probable elevation: 1059.79 ft ASL
 - Projected end of 2026 most probable elevation: 1053.31 ft ASL
- Mussels
 - Zebra Mussels have been confirmed in the Colorado River in Colorado
 - The Golden Mussel has

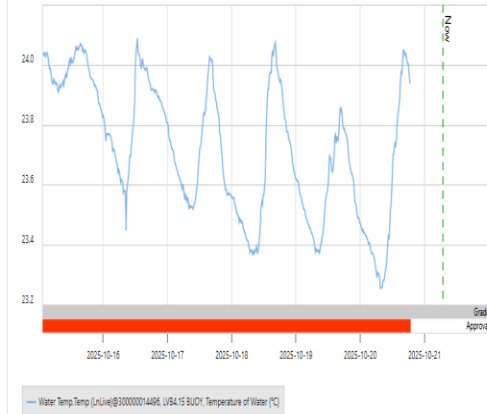
Weather Stations

- Weather Stations
 - Boulder Basin
 - Overton Arm
 - Greg Basin
 - Virgin Basin
 - Katherine's Landing
 - Cottonwood Cove
- Air and Water Temperature
- Wind Speed and Direction
- Wave Height and Direction
- Relative Humidity and Barometric Pressure



Las Vegas Bay/Wash Realtime

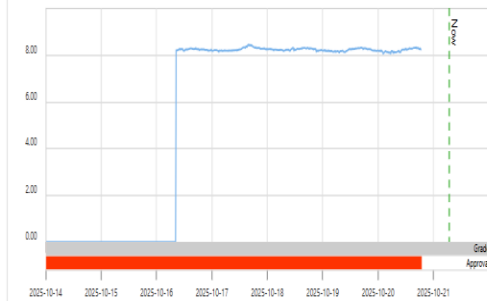
Confluence Buoy Temperature



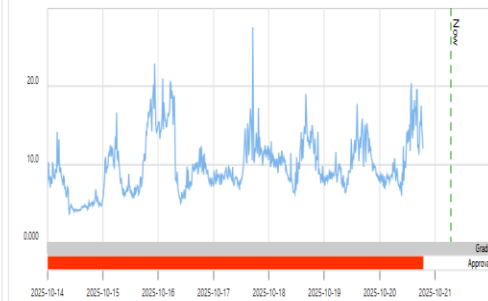
Confluence Buoy Specific Conductance



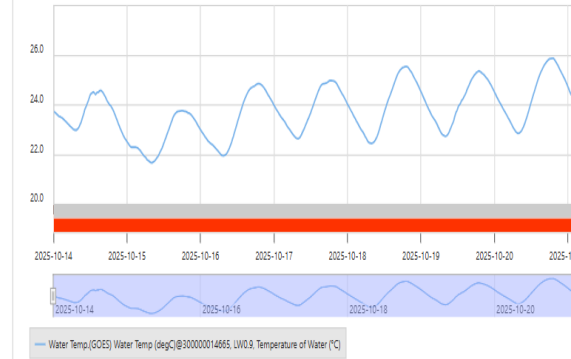
Confluence Buoy pH



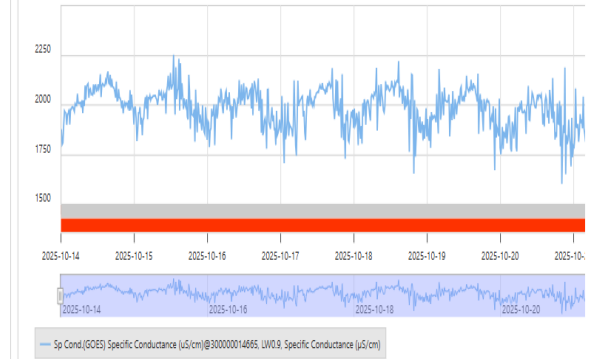
Confluence Buoy Chlorophyll



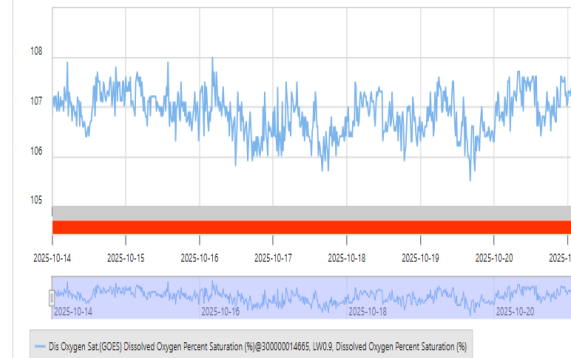
LW0.9 Water Temperature



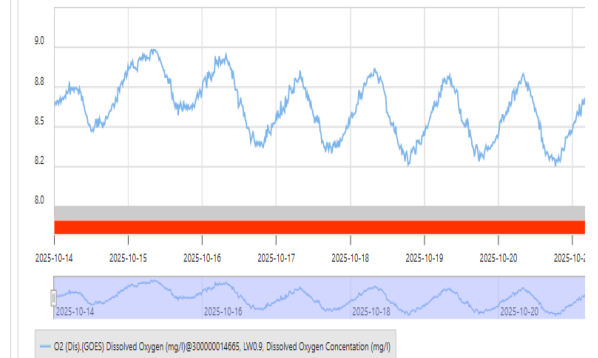
LW0.9 Specific Conductance



LW0.9 Dissolved Oxygen % Saturation



LW0.9 Dissolved Oxygen mg/L

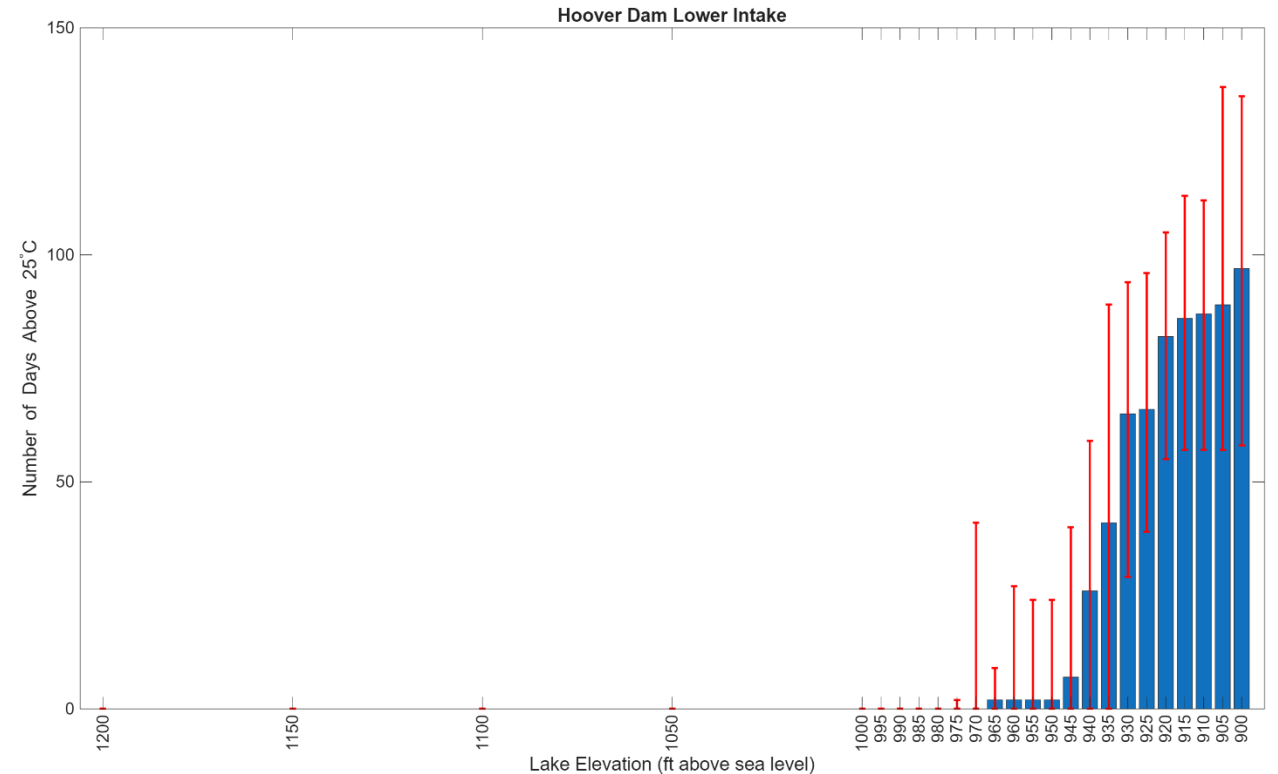


Lower Colorado River Water Quality Database

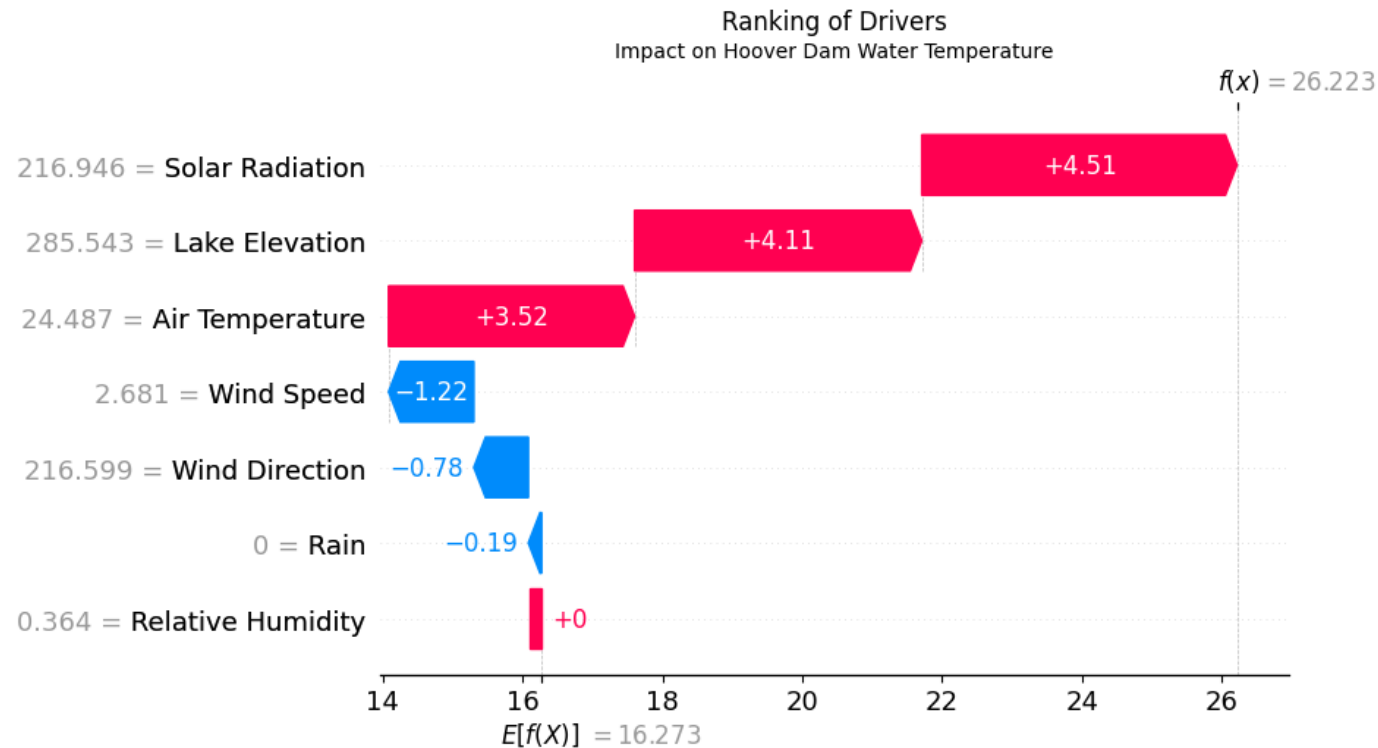
- Database rebuild is underway, interface "complete" and undergoing internal testing.
 - More intuitive approach.
 - "Smarter" predictive interface.
- Data cleanup beginning. Attempting to remove from immediate view sampling locations that are seldom used and far removed in space.
- Hope to have it available for outside agency testing early next year.

Decision Making Under Deep Uncertainty

- **Goal:** Determine elevation where Hoover Dam intake water temperatures exceed 25°C
- Machine Learning Model used (Random Forest)
- Nearly 10,000 model runs performed
- Uncertainty quantification was included



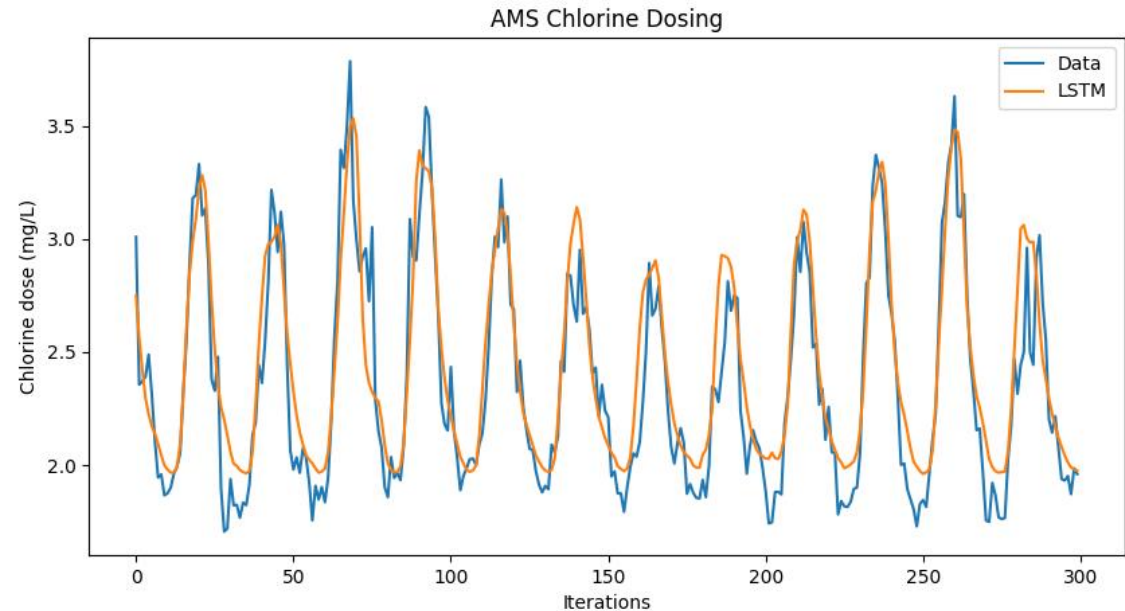
Backcasting



- **Goal:** Force negative water quality outcomes with the 3D model to determine drivers of negative water quality scenarios
- Negative scenarios considered
 - Rising air temperatures
 - Lake drawdown
 - Changes to inflow and outflow volumes
 - Other
- Drivers quantified through Machine Learning surrogate model
 - Long-short term memory model
 - Shapley values

Chlorine Dose Modeling at AMS

- **Goal:** Create an operator training and guidance tool for chlorine dosing at Alfred Merrit Smith water treatment facility
- Cannot replace human operator
- Long-short term memory model performs best



Other Updates

- Investigation of CCRFCD's wet and dry Wash data
- Two new postdocs starting in November
- Calibration update for Lake Mohave Model
- Ground-up build for Lake Havasu Model
- Phytoplankton dynamics paper part 2
- Literature review on 3D lake model calibration
- New paper published on using 3D versus Machine Learning models to place location of Las Vegas Wash plume

