### NOTICE AND CALL OF MEETING

#### LAS VEGAS VALLEY WATERSHED ADVISORY COMMITTEE

Tuesday, April 9, 2024, 2:00 p.m. MEETING TO BE HELD VIRTUALLY

Join Microsoft Teams Meeting: 1-323-776-6758 / Conference ID: 236 522 586 994

The Las Vegas Valley Watershed Advisory Committee makes reasonable efforts to assist and accommodate persons with physical disabilities who desire to attend the meeting. For assistance, please contact Keiba Crear at (702) 822-3388 at least 48 hours in advance of the meeting.

Visit our website at www.snwa.com for Las Vegas Valley Watershed Advisory Committee agenda postings, copies of supporting material and approved minutes. To receive meeting information, including supporting material, contact the Agenda Coordinator at (702) 258-3277 or agendas@snwa.com.

This meeting will be held via remote technology only pursuant to NRS 241.023, as amended by assembly bill 253 of the 81<sup>st</sup> legislative session, effective May 31, 2021. There will be no physical location for the meeting. Members of the public may hear, observe and participate in the meeting via the meeting link or telephone number identified above. If a member of the public is interested in viewing this meeting online or providing public comment, please e-mail jason.bailey@lvvwd.com no later than 5:00 p.m. on April 8, 2024, to receive remote access.

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.

| 1.  | For Information Only: | Introductions   |
|-----|-----------------------|---|
| 2.  | For Possible Action:  | Approve October 17, 2023 Meeting Minutes  |
| 3.  | For Possible Action:  | Select a Chair and Vice Chair for the Las Vegas Valley Watershed Advisory Committee (LVVWAC)  |
| 4.  | For Information Only: | Receive an Informational Update on Items Related to the LVVWAC that may appear on Future Regular Board Meetings of LVVWAC Members' Appointing Agencies  |
| 5.  | For Possible Action:  | Approve Five-Year Interlocal Agreement to Establish Funding Allocations and the Budget for Las Vegas Wash Long-Term Operating Plan Actions  |
| 6.  | For Possible Action:  | Approve 2022–2023 Accomplishments Document  |
| 7.  | For Information Only: | Receive an Update from Wastewater Dischargers   |
| 8.  | For Information Only: | Receive an Update on the Stormwater Quality Management Committee  |
| 9.  | For Information Only: | Receive an Update from Members and Staff Regarding Water Resources, Stormwater, Wastewater and Water Quality, Including but Not Limited to Regulations, Permitting and Status of the Lower Las Vegas Wash |
| 10. | For Possible Action:  | Set Next Meeting Date and Propose Items for the Next Meeting's Agenda   |

#### LAS VEGAS VALLEY WATERSHED ADVISORY COMMITTEE - APRIL 9, 2024 - PAGE TWO

#### **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 LVVWAC. Please limit your comments to three minutes or less.

Approved:

Charles Trushel, Chair

Charles Trushel

Las Vegas Valley Watershed Advisory Committee

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

City of Boulder City, City Hall 401 California Avenue Boulder City, NV 89005

City of Henderson, City Hall 240 Water Street Henderson, NV 89015

Las Vegas Valley Water District 1001 S. Valley View Boulevard Las Vegas, NV 89153

Clark County Water Reclamation District 5857 E. Flamingo Road Las Vegas, NV 89122 City of North Las Vegas, City Hall 2250 Las Vegas Boulevard North North Las Vegas, NV 89030

Clark County Government Center 500 S. Grand Central Parkway Las Vegas, NV 89155

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

City of Las Vegas, City Hall 495 S. Main Street Las Vegas, NV 89101

# Regional Water Quality Plan 2022 & 2023 ACCOMPLISHMENTS

Las Vegas Valley Watershed Advisory Committee
April 9, 2024

### **GOAL ONE**

## Protect Lake Mead as a source of water for Southern Nevada and downstream users

- Continued to implement the Las Vegas Wash Surface Water Quality Monitoring and Assessment Plan
- Conducted water quality sampling and analysis in Lake Mead, Las Vegas Wash, Muddy River, Virgin River and Colorado River above Lake Mead and below Hoover Dam
- Leveraged the Lower Colorado River Water Quality Database a database utilized by agencies in the lower Colorado River region to facilitate data sharing
- Expanded the capabilities of the Lake Mead Model to forecast potential water quality conditions under future water surface elevation scenarios

### **GOAL ONE**

## Protect Lake Mead as a source of water for Southern Nevada and downstream users

- Revegetating about 14 acres along the Las Vegas Wash to protect against erosion and limit sediment and contaminant movement to Lake Mead
- Continuing implementation of and compliance with the existing Las Vegas Valley National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit
  - New Permit expected in 2024
- Continuing wastewater pre-treatment programs to monitor and prevent contaminants and industrial wastes from entering the wastewater collection system.
- Continued to operate, innovate and expand collection and treatment systems for wastewater.
- Continued researching and identifying implications of PFAS regulation on the clean water community, including support of a statewide sampling program being implemented by the NDEP.

# GOAL TWO Meet or surpass federal, state and local standards and regulations

- Continued year-round phosphorus removal at wastewater treatment facilities to meet the 334 pounds-per-day waste load allocation for total phosphorus, surpassing permit requirements
- Continued year-round ammonia removal
- Developed and exceeded internal goals for minimizing sanitary sewer overflows
- Continued implementation of and compliance with the Las Vegas Valley NPDES MS4 Permit including wet and dry weather monitoring programs

# GOAL TWO Meet or surpass federal, state and local standards and regulations

- Performed treatment studies that examined the removal of unregulated contaminants: EDCs, PFOS, and PFOA
- Completed development of site-specific criteria for selenium in the Las Vegas Wash in partnership with the NDEP
- Southern Nevada's water quality continues to meet or surpass state and federal drinking-water regulations
- COH, CLV and CCWRD earned the National Association of Clean Water Agencies Platinum Peak Performance Award
- Continued coordination and cooperation with SNWA, CNLV, University of Nevada, Las Vegas, and other partners (Biobot) to sample, analyze and study wastewater epidemiology as a method of monitoring and predicting COVID-19 virus pervasiveness in the community;

### **GOAL THREE**

## Preserve and enhance the natural, cultural, historic and recreational values of the watershed and Lake Mead

- The Las Vegas Wash Project Coordination Team(Wash Team) surveyed for federally threatened and endangered (T&E) bird species at the Las Vegas Wash
- The Wash Team continued the general invertebrate inventory
- An estimated 13,565 pounds of trash and debris were removed from the Wetlands Park by volunteers and 960 cubic yards of trash and debris were removed from the Upper Diversion Weir
- COH provided and managed recreational opportunities in the Bird Viewing Preserve, hosting more than 46,000 visitors in 2022 and 2023

### **GOAL THREE**

## Preserve and enhance the natural, cultural, historic and recreational values of the watershed and Lake Mead

- Provided cultural resource reviews for weir maintenance activities, identifying no impacts.
- Monitored weeds at the Las Vegas Wash and focused control efforts
- Continued to monitor and evaluate quagga mussel populations in Lake Mead
- Worked with NDOW on removal efforts for the Australian Redclaw crayfish at the Wetlands Park.
- Monitoring Lake Mead for harmful algal blooms and associated toxins;

# **GOAL FOUR Sustain and coordinate water resources for future generations**

- The Wash Team implemented the Las Vegas Wash Long-Term Operating Plan
- Crews removed 695 truckloads of clean spoils and vegetation and reestablished the lines and grades of three weirs to their original designed and constructed positions
- COH, CLV, CNLV and CCWRD reclaimed 100 percent of their wastewater effluent
- The Lake Mead Model was used to forecast changes with changing water levels in Lake Mead to better advise planning for water and wastewater treatment needs

## **GOAL FOUR Sustain and coordinate water resources for future generations**

- CCWRD and SNWA (and its member agencies)continued a septic conversion program
- Enforcing policies aimed at reducing water use
- Approving revisions to Las Vegas Valley Water District service rules that aid in water conservation
  - removing non-functional grass
  - limiting the size of residential pools
  - prohibiting evaporative cooling in new development
  - prohibiting new golf course development
- CLV continued beneficial use of biosolids and exploration to sell biogas generated by its anaerobic digesters

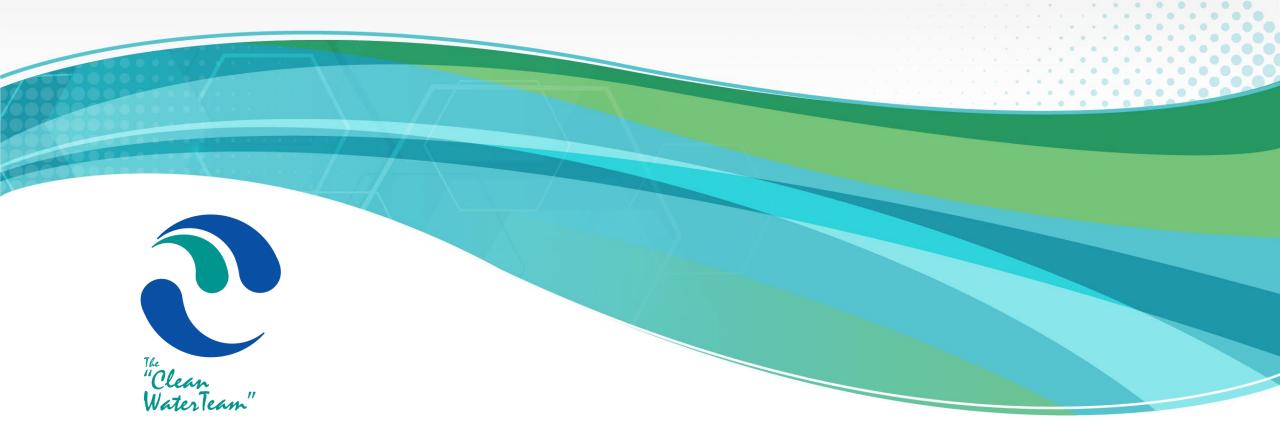
# **GOAL FIVE Manage flood risks**

- Continued implementation of the Master Plan for Flood Control Facilities
- Spent \$23 million on the maintenance work program to ensure efficient operation of the flood control network
- Continued to expand and maintain the Flood Threat Recognition System
- Carried out extensive public outreach efforts in person and through the range of media options

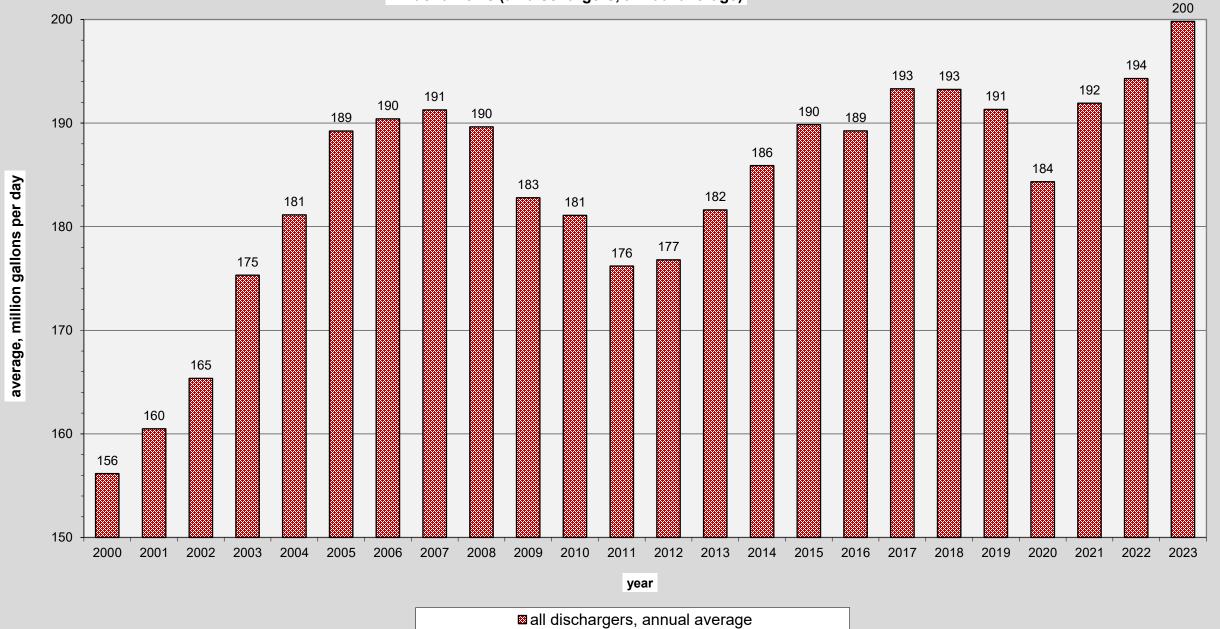
# GOAL SIX Build community awareness and support for regional watershed management

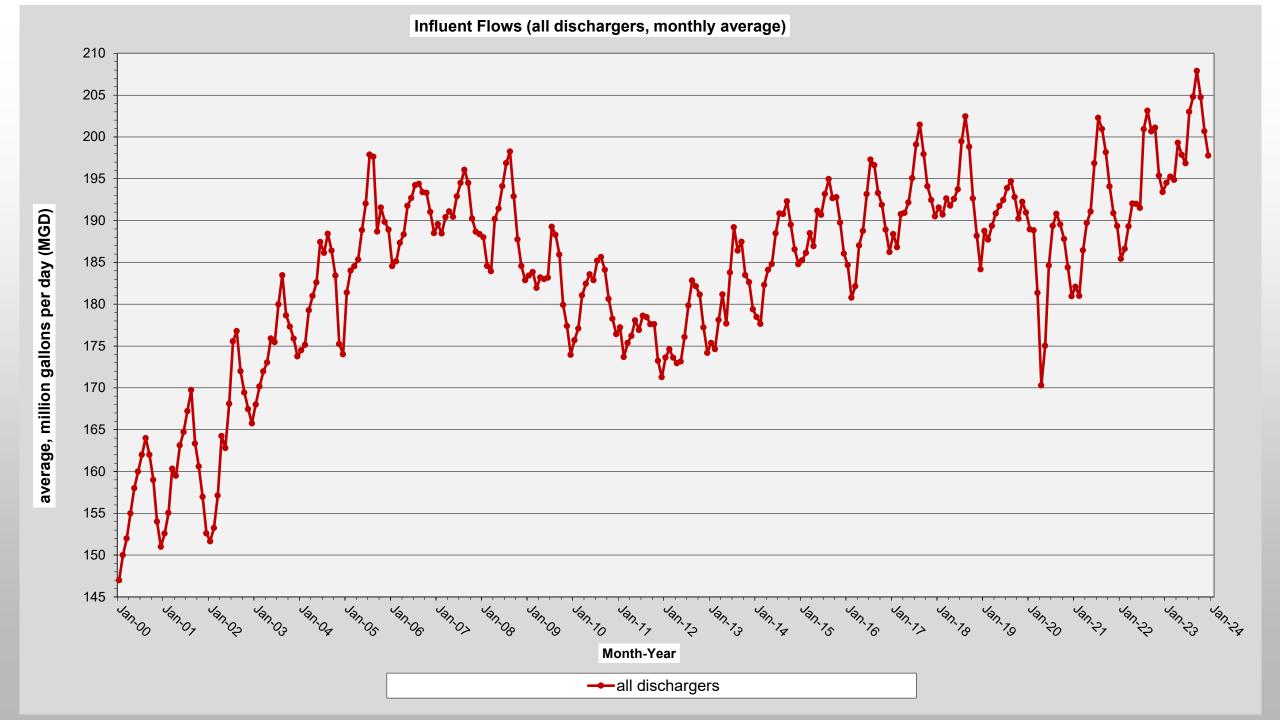
- Implemented education and outreach grants from NDEP on non-point source pollution including events with Mabel Hoggard fifth graders and two Wash Green-Ups
- Received an estimated 908,227 total visitors at the Wetlands Park
- Logged nearly 18,000 volunteer hours at the Wetlands Park
- Educated the community
  - 47 events, More than 13,000 people
  - World Wetlands Day science symposium for high school students
  - Planting events for the Howard Hughes Corporation and Hilton Hotels

# CCWRD UPDATE FOR LVVWAC APRIL 9, 2024 DAN FISCHER

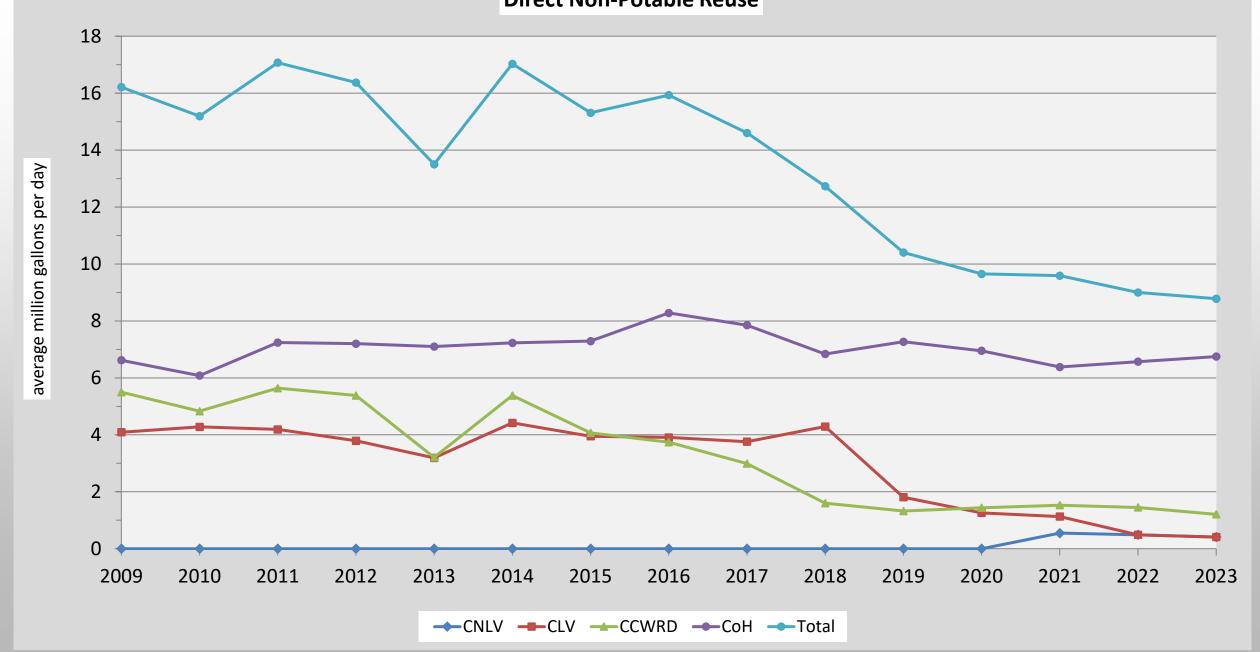




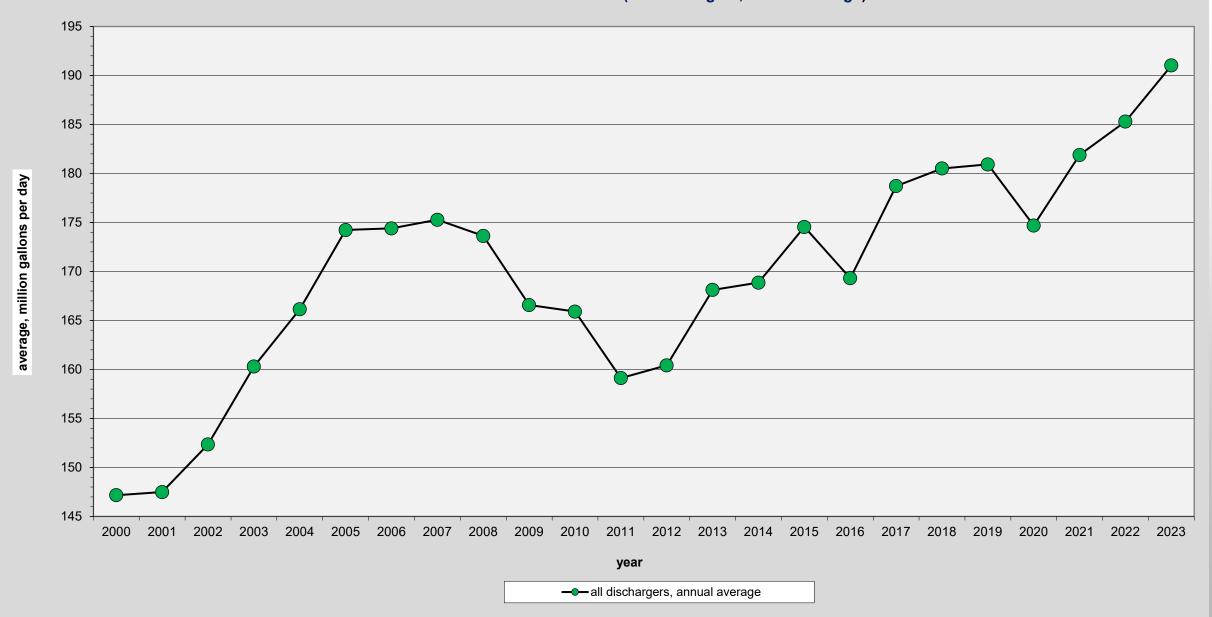




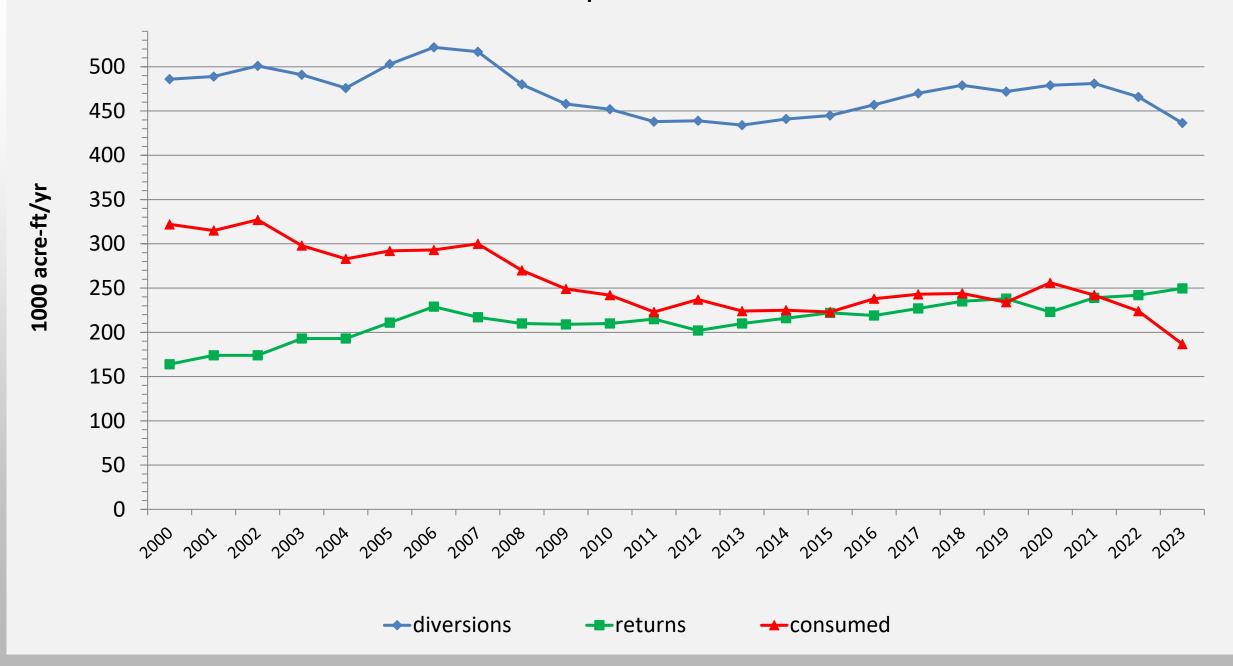
### **Direct Non-Potable Reuse**



### Effluent to Wash (all dischargers, annual average)



### **Nevada's Consumptive Use of the CO River**



# IMPACT OF INDOOR CONSERVATION CCWRD FLOW VS. STRENGTH

|      | flow     |        | loadings     |        | strength index   |        |
|------|----------|--------|--------------|--------|------------------|--------|
| year | influent |        | sludge cake  |        | sludge cake/flow |        |
|      | Mgal/day | change | dry tons/day | change | dry tons/MG      | change |
| 2018 | 105.8    |        | 98.1         |        | 0.93             |        |
| 2023 | 108.2    | 2%     | 115.6        | 18%    | 1.07             | 15%    |



### 2023 COLLECTION SYSTEM ACCOMPLISHMENTS

- Effectively maintained:
  - o 2400 miles of pipe

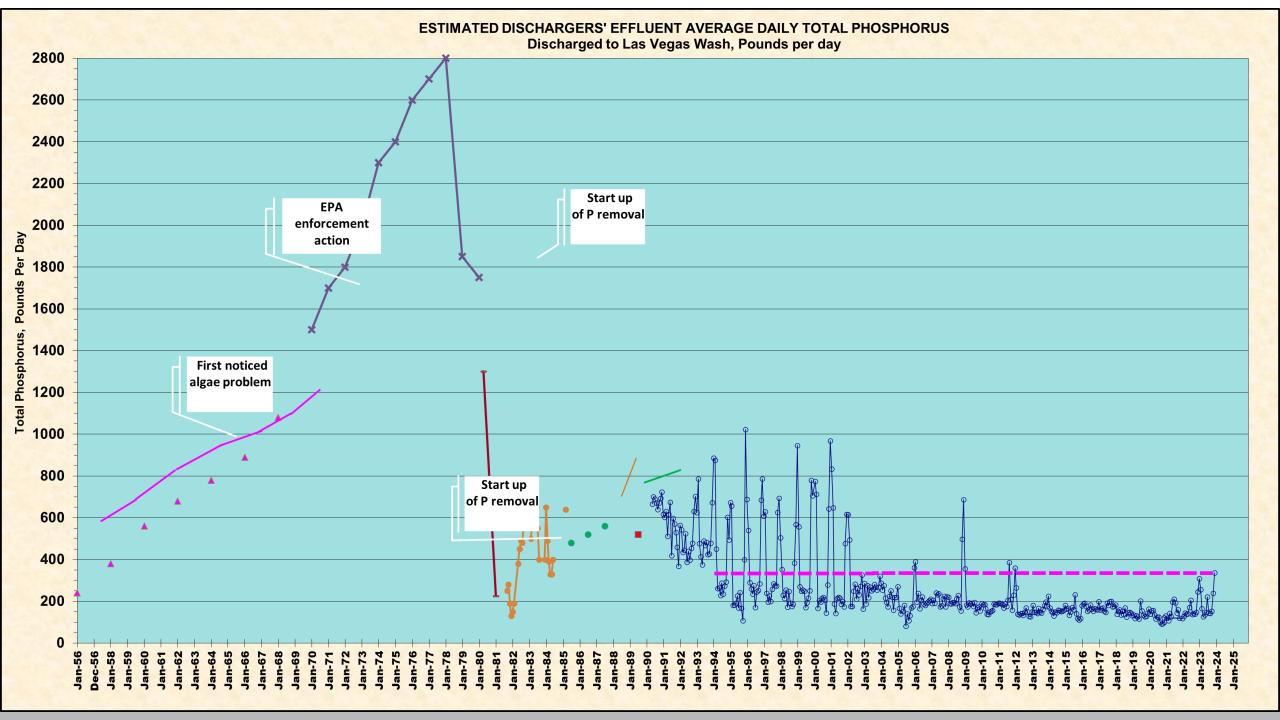
  - 24 lift stations
- Completed 1,000 sand/oil interceptor, 3000 grease interceptor, and 100 mechanical interceptor inspections
- Experienced 8 SSOs
  - 0.3 SSOs/100 miles of pipe
  - EPA standard is 2 SSOs/100 miles of pipe
- Received 5 odor complaints related to our collection systems
- Recovered and recycled 260,00 gallons of grease from the FWRC and 126,00 gallons from Lift Stations

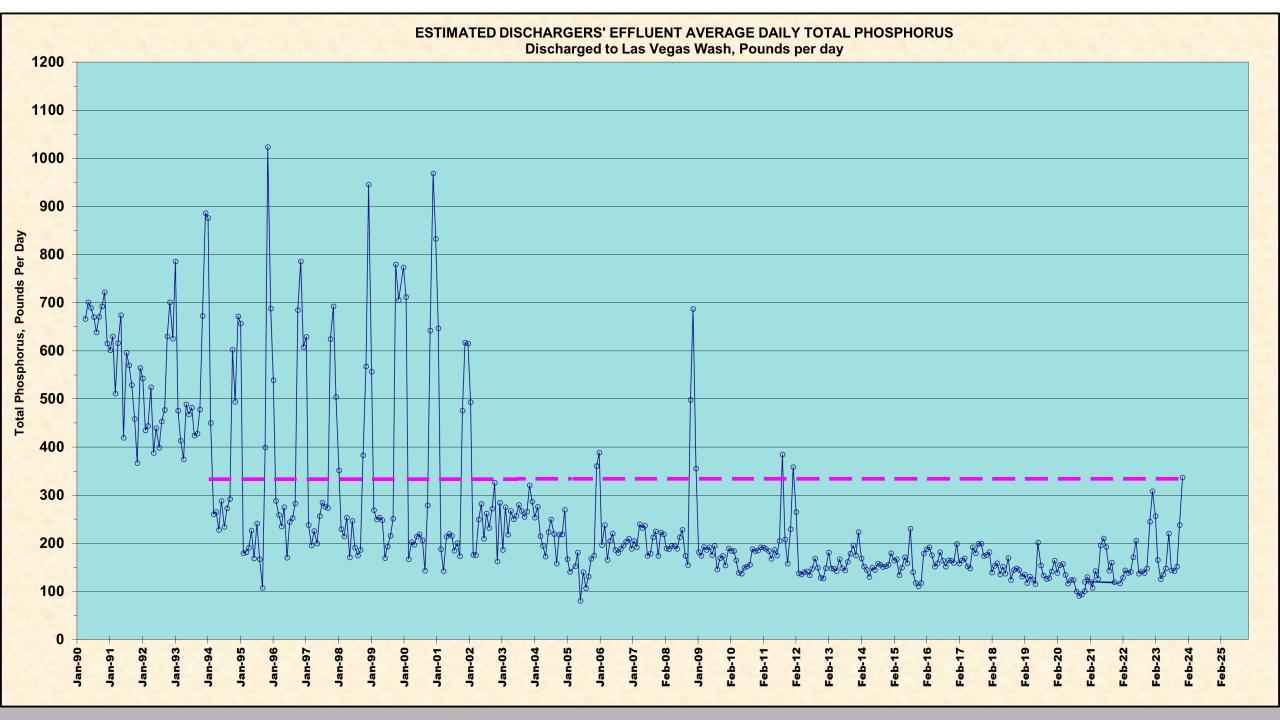


### 2023 TREATMENT PLANT ACCOMPLISHMENTS

- treated 40.0 billion gallons of sewage at 6 wastewater treatment plants (for the lovers of zeros that is 40,000,000,000 gallons)
- returned a total of 125,000 acre-ft of reclaimed water to the Colorado River System from our Flamingo and Laughlin plants
- NACWA Peak Performance Awards
  - Flamingo Platinum 12
  - Laughlin Platinum 11
  - Moapa Valley Gold
  - Indian Springs Gold
- Flamingo phosphorus removal, effluent total phosphorus
  - TMDL 0.20 mg/L, internal CCWRD goal 0.10 mg/L
  - $\circ$  Annual avg. 0.07 mg/L, 99% removal
- Recovered from a five-hour Flamingo plant-wide power failure on July 9, 2023







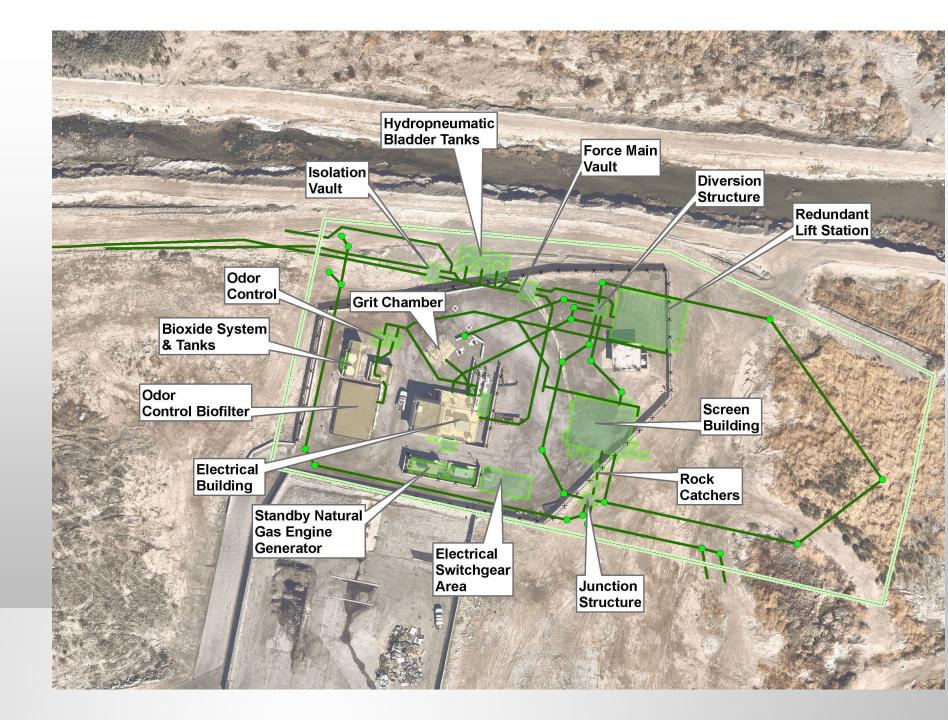
### CCWRD CAPITAL IMPROVEMENT PROGRAM

| Facility                       | 5 Year CIP FY 24-28 |   |  |  |
|--------------------------------|---------------------|---|--|--|
|                                | \$M                 | major projects  |  |  |
| Flamingo Water Resource Center | \$740               | Preliminary/Primary/Secondary expansions; DAFT 5; sludge thickening; demolition of abandoned facilities |  |  |
| LV Valley Collection System    | \$360               | Whitney and Lincoln Lift Stations; Crosstown Interceptors; Capacity Upgrades; Oversizing                |  |  |
| Outlying Areas                 | \$76                | Laughlin Lift Station and Force Main;<br>Moapa Valley Lift Station and Force Main                       |  |  |
| Reclaimed/Reuse                | \$3                 | System Improvements for on-plant systems  |  |  |
| O&M Capital                    | \$55                | Plant and Collection System Rehabilitations; Rapid Response   |  |  |
| Administration/Engineering     | \$65                | Administration, Professional/Engineering Services   |  |  |
| Total                          | \$1.3 B             |   |  |  |



### WHITNEY LIFT STATION

- \$60M CMAR
- 100% design
- 2024 2027
- New redundant lift station to 12 MGD
- New flood wall
- Rock catchers and screenings
- Electrical and generator redundancy
- New 20-inch force main to plant



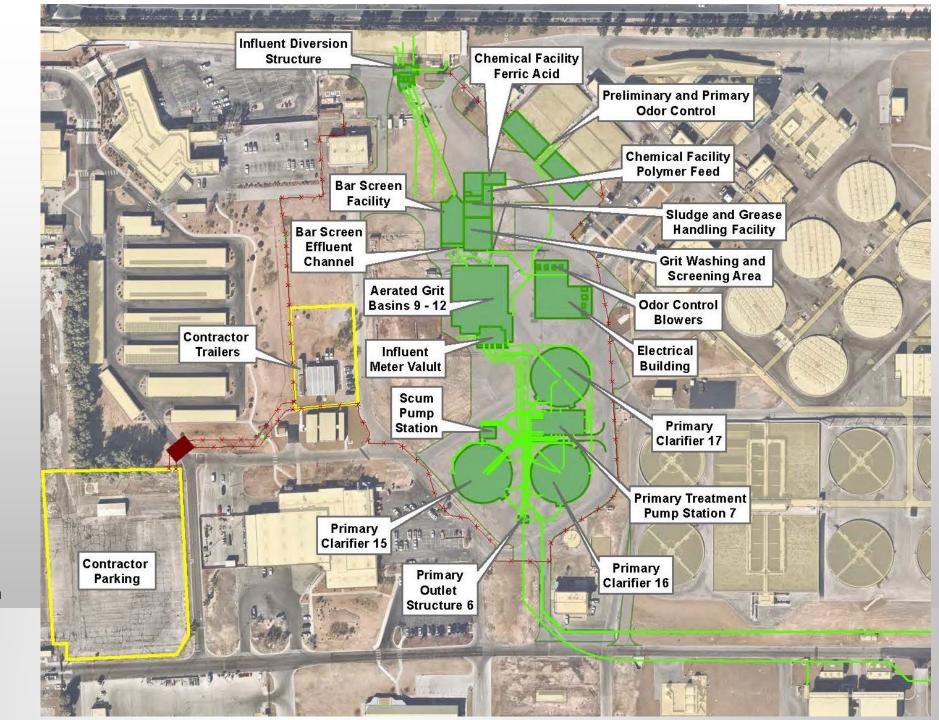






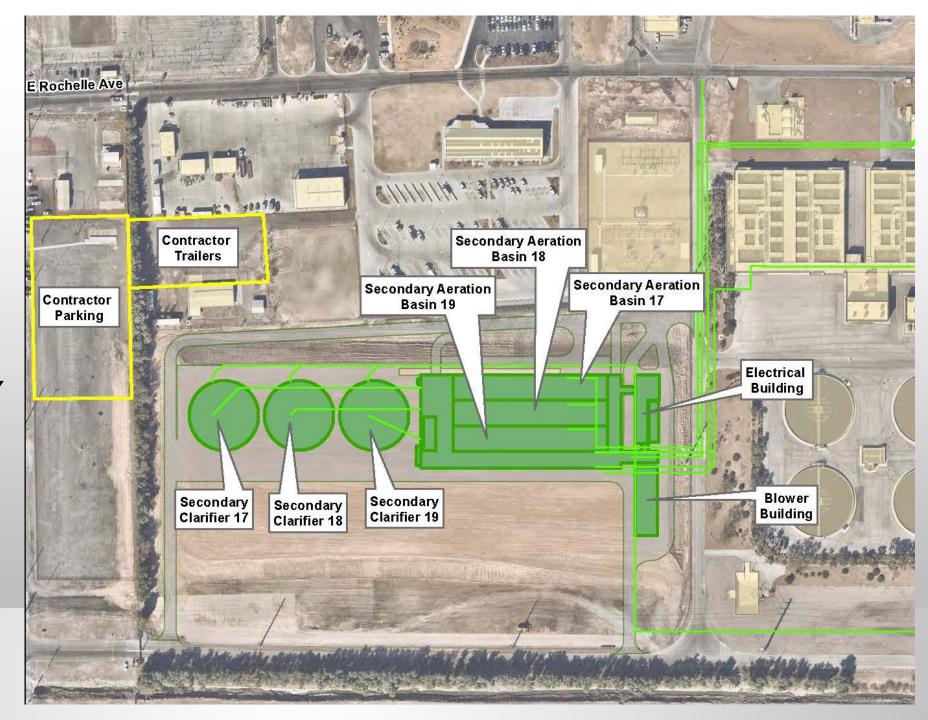
# PRELIMINARY AND PRIMARY TREATMENT

- \$210M CMAR
- 30 MGD
- Construction 44% complete
- Final Completion October 2025
- New Bar Screen Facility
- 4 Grit Basins
- New Blower Facility
- Odor Control Biofilters
- 3 Primary Clarifiers
- Primary Sludge Pumping Station



### SECONDARY TREATMENT

- \$240M CMAR
- 30 MGD
- construction 10% complete
- Final completion May 2027
- 3 Aeration Basins
- 3 Secondary Clarifiers
- Blower Facility
- Electrical Building



the end, questions?

Dan Fischer dfischer@cleanwaterteam.com







## Wastewater Infrastructure

### **WPCF**

- 47.5 MGD Average
- Reuse for two Golf Courses
  - 3 MW Solar Site

### **DHWRC**

- 10 MGD Capacity
- Currently off-line

### **LMLS**

• 1 MGD Average

### Collection System

- 1,916 Miles of pipeline (8-inch to 104-inch)
  - 46,000+ Manholes







## Significant Achievements in 2023

### **Wastewater Treatment**

- 17.4 billion gallons treated (47.5 MGD average)
- 151 million gallons of reclaimed water distributed, down from 177 MG in 2022
- Over 67,000 tons of biosolids disposed or repurposed (42K tons and 25K tons)



 WPCF received the NACWA Peak Performance Platinum Award for 24 years of full permit compliance in CY2022



#### **Significant Achievements in 2023**

#### **Lake Mead Sampling Program**

- Annual Lake Mead & LV Wash Sampling Plan and Reports
- Repower of Boston Whaler (\$100K)
- Cooperative agency involvement
- National Park Service Water Quality Monitoring Permit renewed until 2039
- Appreciate support from agencies during WPCF Filtration bypass periods early/later in 2023. Thank You!



#### WPCF Capital Improvements

#### Design Phase

- Dewatering Facility Rehabilitation (\$25M estimate, @100%)
- Headworks Facility Rehabilitation (\$45M estimate, CMAR @5%)
- WPCF Laboratory Rehabilitation/Expansion (\$8.5M estimate, @0%)

#### **Construction Phase**

- Filtration Facility Rehabilitation (\$28M @95% completion)
- Process Air Improvements (\$35M @30% completion)
- BNR Clarifier Replacements (\$10M @kickoff)



#### WPCF Filtration Rehabilitation Highlights







#### WPCF Filtration Rehabilitation Highlights









## **Utility Services**

LVVWAC Annual Update: April 9, 2024

# 2023 Significant Achievements

#### **Wastewater Treatment**

- 9.1 billion gallons treated
- 2.45 billion gallons reclaimed water delivered (50-million-gallon reduction from 2023)
- 0.0 permit violations
- Received NACWA Platinum Award for 19 years of full permit compliance



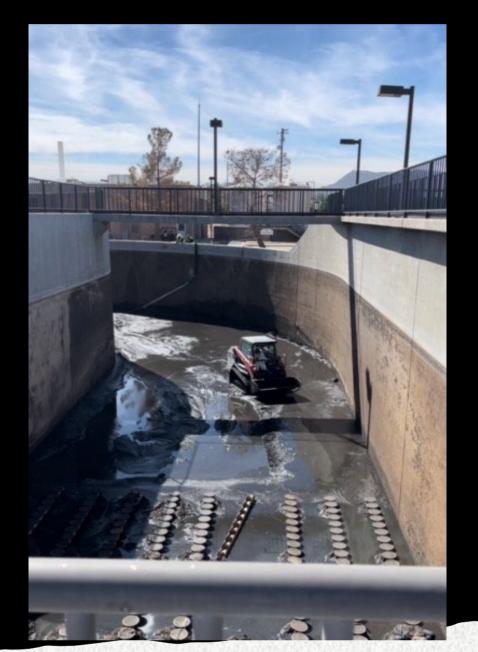




# 2023 Significant Achievements

- Projects
- SWRF Membrane upgrade plan
  - Replaced 3 trains. Part of 3-year staged project to upgrade membranes with more efficient model. 6 trains completed, 2 remaining (scheduled for FY25)
  - 24 cassettes/1092 modules







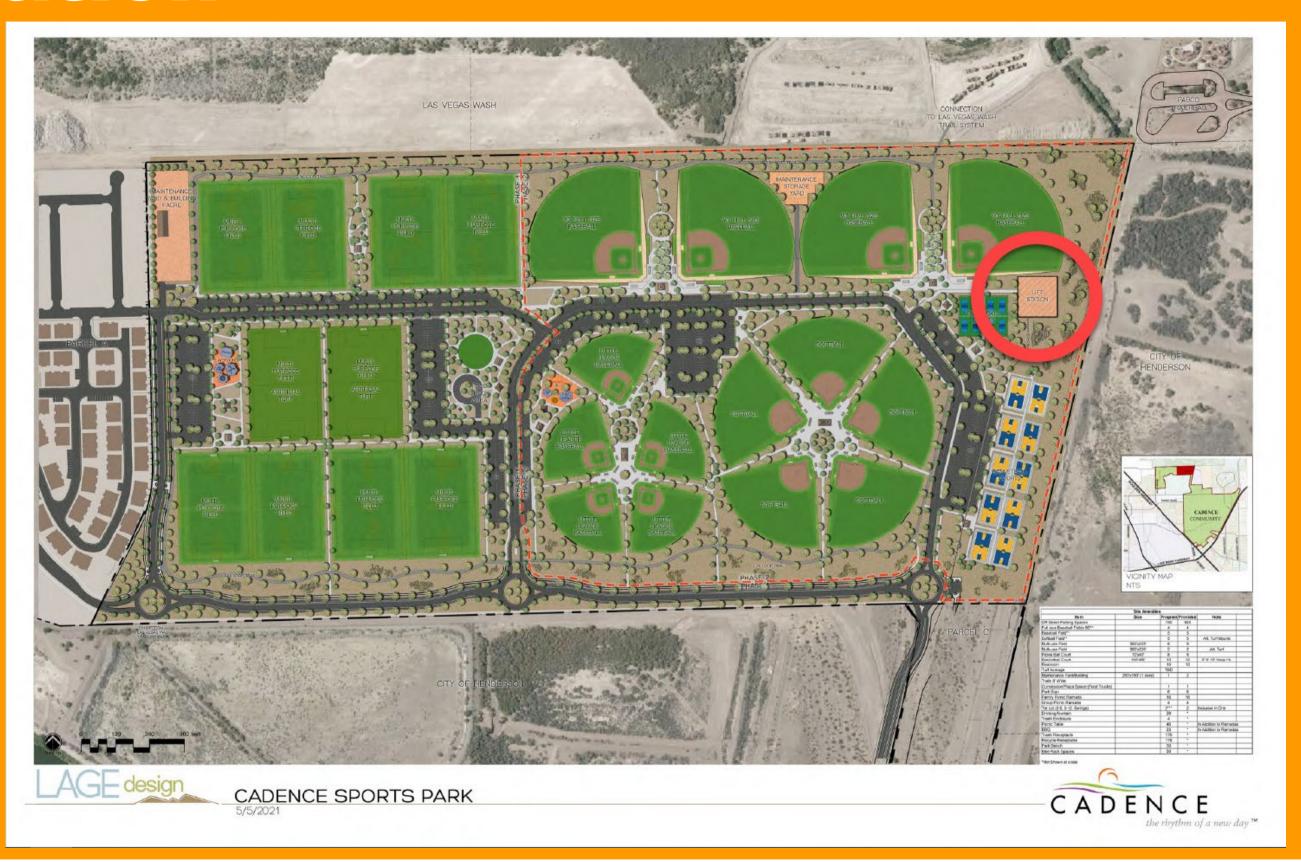
# 2023 Significant Achievements

- Projects
  - WRF
    - Removal of 500 tons of grit from Oxidation Ditch 2

### Cadence Lift Station

#### **Construction Phase**

- 3 MGD build-out
- · 3275 ERU
- Henderson's largest lift station
- Completion Fall 2024





## Cadence Lift Station







# Phase 4 KRSWRF Plant Expansion Design completion, beginning construction phase

12 mgd capacity expansion, select process enhancements

12MGD BNR basin

6 deep bed filtration structure

125' dia. Secondary Clarifier

Additional Influent Pumps (1 process, 2 Equalization)

Software updates to Headworks and Influent Pump Station

Grit line repairs

Significant completion date: December 26<sup>th</sup> 2025

# HENDERS N Jacobs MECARTHI









# THANK YOU



LVVWAC WASTEWATER DISCHARGERS UPDATES 2024





#### WATER RECLAMATION FACILITY

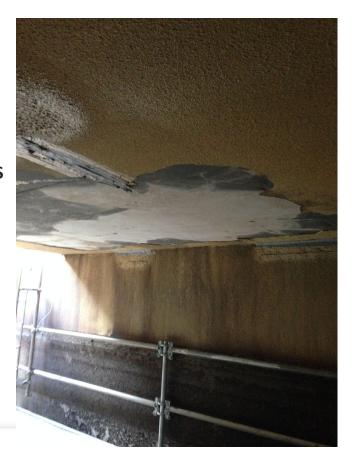
- WATER RECLAMATION FACILITY CAME ONLINE JUNE 2011
- MEMBRANE BIOREACTOR FACILITY WITH ENHANCED BIOLOGICAL NUTRIENT REMOVAL
- 30 MGD ADF CAPACITY
- 6 BIOREACTORS AND 12 MEMBRANE TRAINS
- AVERAGE DAILY INFLUENT FLOW OF 20.4 MGD
- FINAL EFFLUENT DISCHARGES TO THE LAS VEGAS WASH
- SOLIDS ARE DEWATERED UTILIZING GBT'S, CENTRIFUGES AND DISPOSED OF IN THE APEX LANDFILL





#### BIOREACTOR COATING PROJECT

- BIOREACTOR COATING PROJECT TO ENTER BID PHASE
- PROCEED WITH 1 OR 2 BIOREACTORS PER YEAR
- SURFACE PREP AND COATING OF CONCRETE AND METALLIC SURFACES AT AND ABOVE OPERATING LEVEL IN BIOREACTORS UPSTREAM OF THE AERATION ZONE



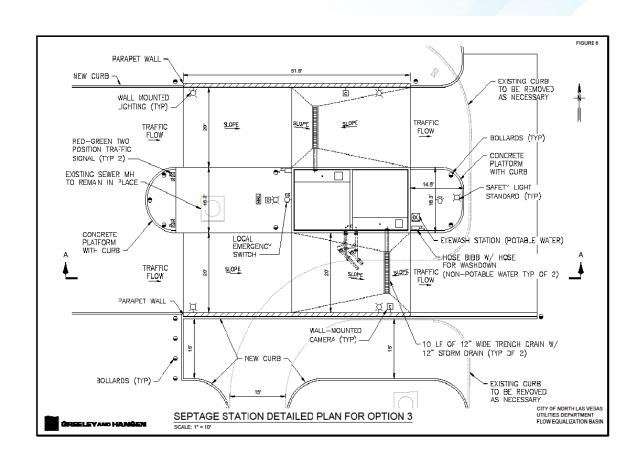




#### SEPTAGE DUMP STATION

- CNLV TO OFFER DUMP STATION FOR GARNET CUSTOMERS
   UNTIL INFRASTRUCTURE IS IN PLACE
- MULTIPLE TRUCK LOAD OUT
- ANTICIPATING 2-3 LOADS PER DAY IN 2024

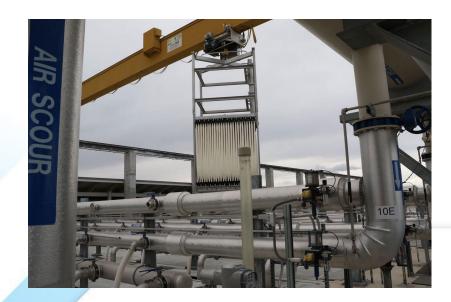


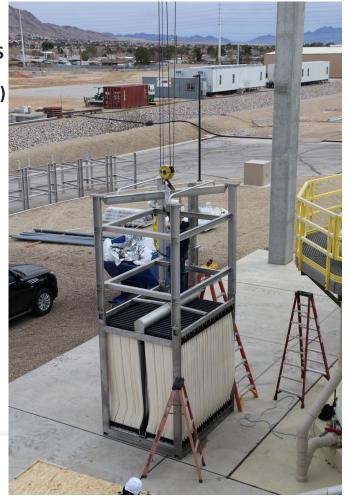




# MEMBRANE CASSETTE EXPANSION AND REPLACEMENT

- 6 TRAINS POPULATED WITH NEW CASSETTES
- 52 MODULE CASSETTES OF 430SQ FT ZEEWEED 500D MODULES
- REPLACING 12 YEAR OLD 48M CASSETTES (340SQ FT MODULES)
- EXPAND AVERAGE DAILY FLOW CAPACITY FROM 30 MGD TO 35MGD BY 2026











#### **INFLUENT BYPASS OPERATIONS**



- FULL BYPASS OF EAST BIOREACTOR INFLUENT CHANNEL TO DIAGNOSE AND REPAIR DAMAGE
- LIMITED TO 3 BIOREACTORS IN SERVICE
- LINK SEAL FAILURE AROUND RAS LINE TO BIOREACTOR #3
- LINK SEAL REPAIR AND REPLACEMENT IN 4 OUT OF 6 BIOREACTORS
- REMAINING 2 BIOREACTORS TO BE REPLACED IN FY 24/25





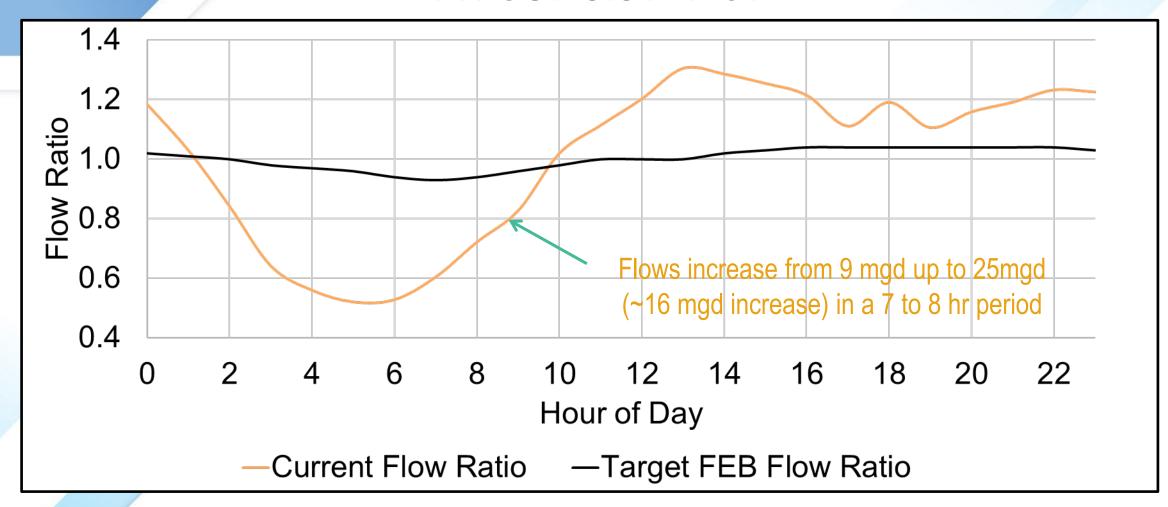
#### FLOW EQUALIZATION BASIN

- 2.2 MG FIOW EQUALIZATION BASIN
- DAMPEN DIURNAL FLOWS AND FINE TUNE RECIRCULATION RATES
- PROVIDE CONSISTENT HRT FOR BETTER BNR
- REDUCE WEAR AND TEAR ON MOTORS AND OTHER EQUIPMENT





## PROCESS CHANGES TO INCREASE EBPR CONSISTENCY





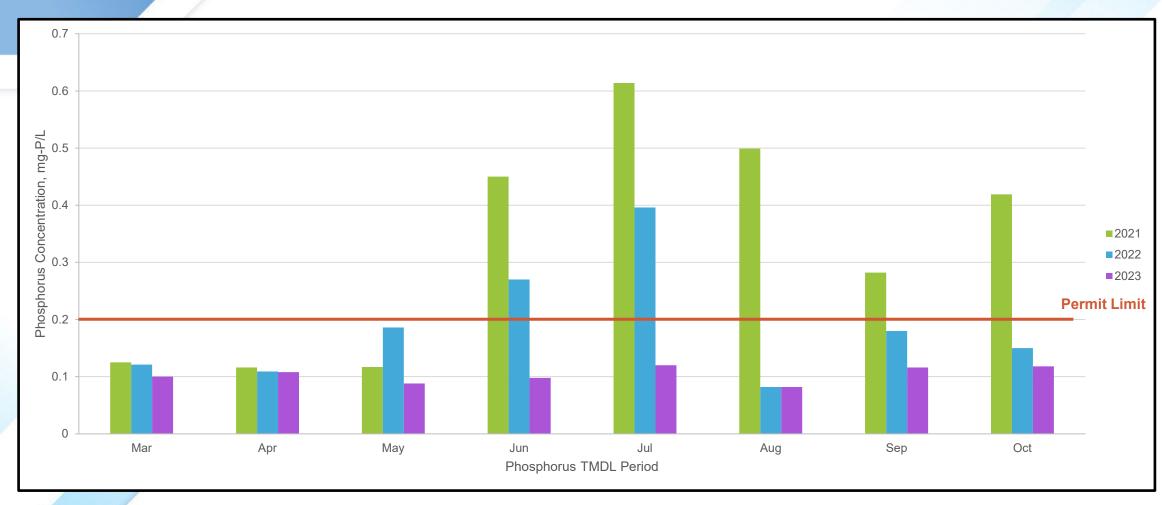
# PROCESS CHANGES TO INCREASE EBPR CONSISTENCY

- REDUCE RAPID CHANGE IN ANAEROIC HRT, STABALIZE ANAEROBIC ORP, IMPROVE PRE-ANOXIC DO QUENCH
- RAS FLOW MULTIPLIER (% of INF Q) WAS REDUCED FROM 3Q to 2.1Q
- INCLUDED A MINIMUM FLOW SETPOINT OF 30 42.5 MGD
- ALLOWED FOR A MINIMUM OF APPROXIMATELY 2 SRTS BEFORE MODIFYING RAS MULTIPLIER
- PEAK PROCESS TEMPS OF >90F IMPACTED BIO-P PERFORMANCE

| Time of Year (2023) | Duration | RAS Multiplier (%Q) | Min. RAS Setpoint | Historical Eff. P Conc. |
|---------------------|----------|---------------------|-------------------|-------------------------|
| Mar – Apr           | 13 days  | 2.75                | N/A               | 0.13 mg-P/L             |
| Apr                 | 22 days  | 2.50                | 30 MGD            | 0.15 mg-P/L             |
| May – Jul           | 69 days  | 2.25                | 30-40 MGD         | 0.23 mg-P/L             |
| Jul – Aug           | 34 days  | 2.15                | 40 MGD            | 0.28 mg-P/L             |
| Aug                 | 12 days  | 2.10                | 42.5 MGD          | 0.22 mg-P/L             |



# PROCESS CHANGES TO INCREASE EBPR CONSISTENCY





#### Questions?





#### **SQMC MEETINGS**

SQMC met quarterly during the past year (May 9, 2023; August 8, 2023; November 14, 2023; and February 13, 2024)

Topics/presentations included updates on the Construction General Permit and the MS4 permit, UNR Business Environment Program, and PFAS in stormwater





#### **SQMC MEETINGS**

Standing items include updates on wet weather monitoring and dry weather monitoring, public outreach, and updates from NDEP and other stakeholders

SQMC also monitored progress by the Permittees to meet quarterly and annual goals as reported in the quarterly and annual reports





#### **NEW MS4 PERMIT**

NDEP issued the draft MS4 permit for public comment in December 2023

Public comment period closed on January 12, 2024

Permit was signed and delivered February 5, 2024





#### **CHANGES TO PERMIT**

Permit is largely similar to the previous permit

Most significant change is the requirement that the Stormwater Management Plan (SWMP) be an enforceable part of the permit

Annual Report is now due November 1 of each permit year (previously October 1)



#### **KEY REQUIRED ACTIVTIES**

Draft SWMP due 1 year from issue date of the permit (February 5, 2025)

Final SWMP due 6 months after receiving comment from NDEP



SWMP must be made available for public comment for 30 days, must hold a public hearing and the Permittees must respond to significant comments

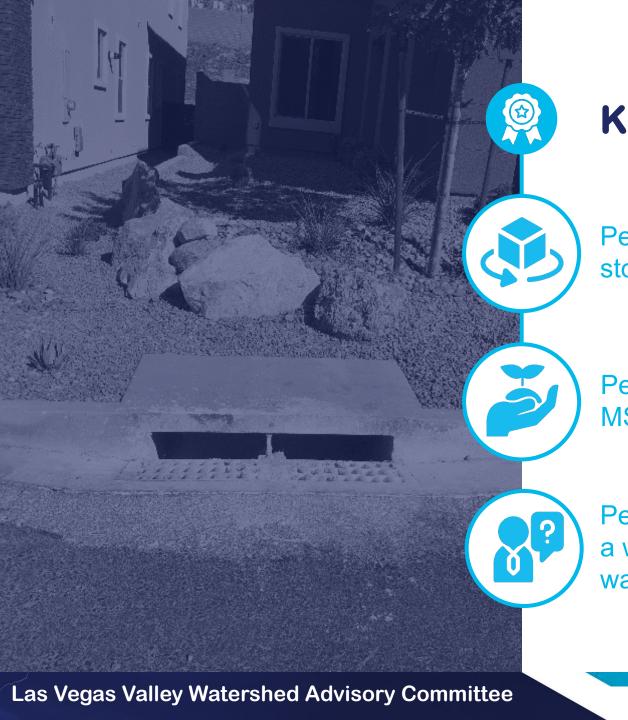


#### **KEY REQUIRED ACTIVTIES**

Revised Stormwater Monitoring Plan must be prepared and submitted to NDEP for review within 18 months of the issuance of the permit (August 5, 2025)

Revised Stormwater Monitoring Plan must also be made available for public comment for 30 days, Permittees must hold a public hearing and respond to significant comments





#### **KEY PERMIT ELEMENTS**

Permit defines authorized stormwater and nonstormwater discharges to the MS4

Permit defines non-authorized discharges to the MS4

Permittees must evaluate whether discharges to a water of the U.S. on the 303(d) list of impaired waters cause or contribute to the listing





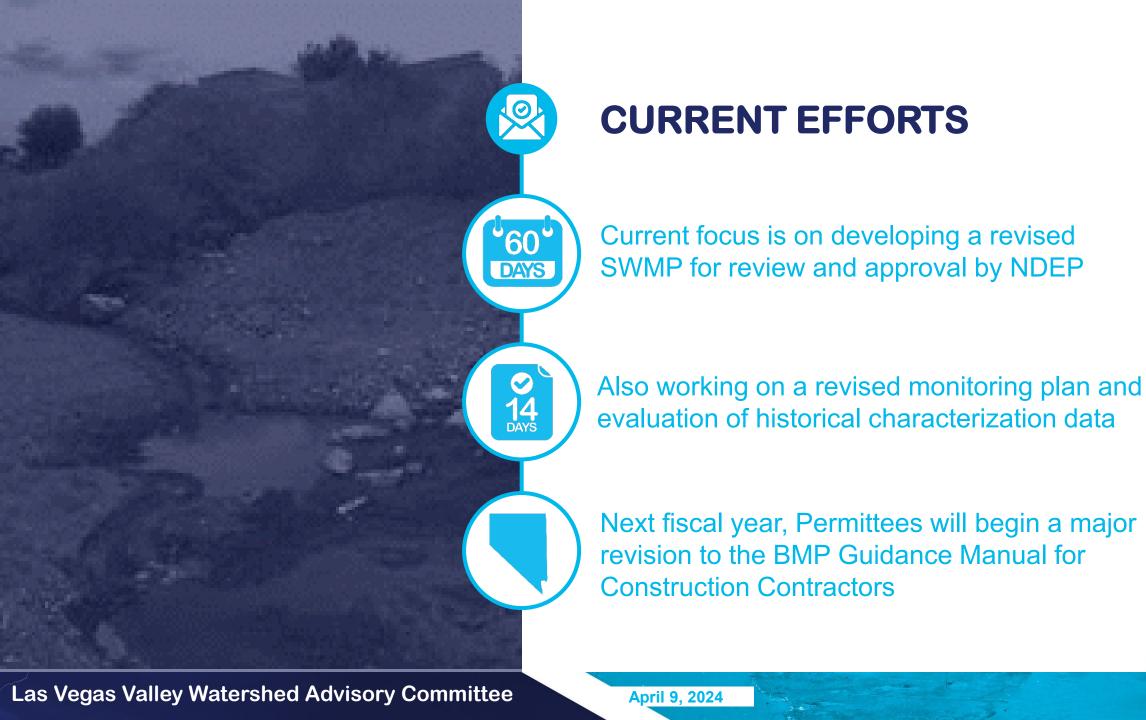
#### **MEASURABLE GOALS**

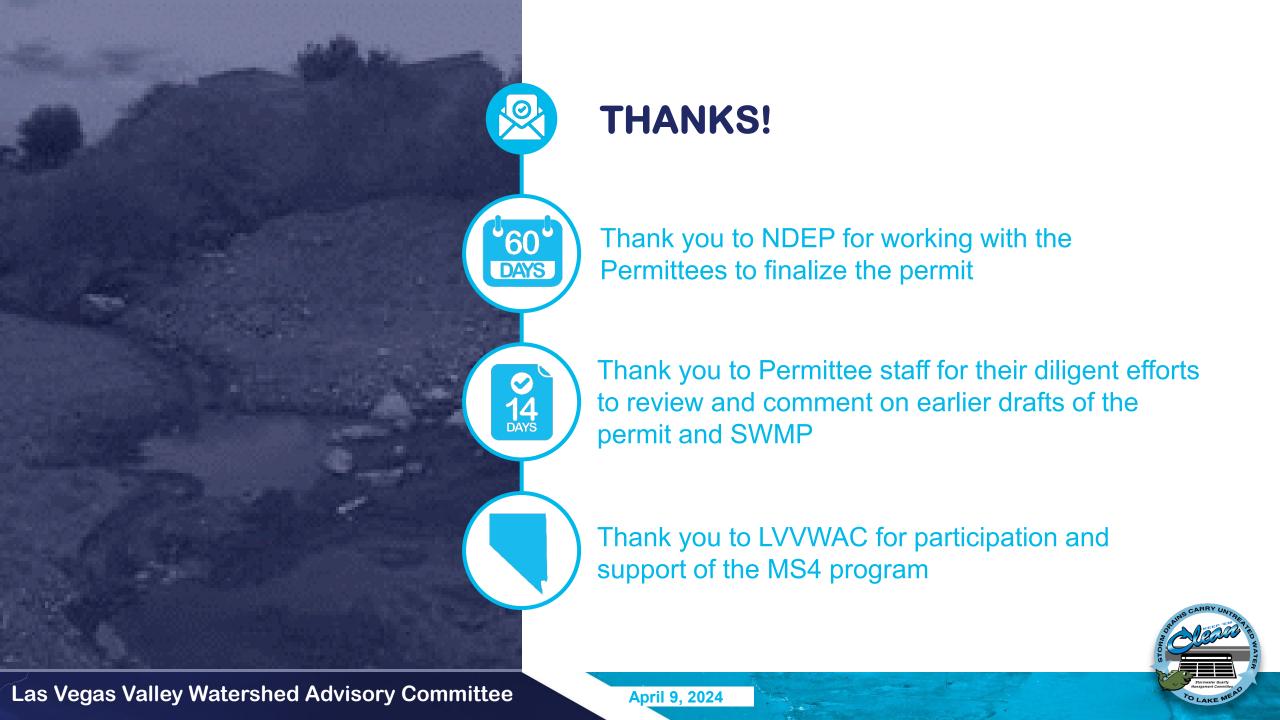
**April 9, 2024** 

Permit requires that the SWMP include "measurable goals" for tracking implementation of BMPs

Measurable goals must be numeric or narrative

Must include milestones for implementation, and title of the position responsible for implementing and coordinating each program element







#### **QUESTIONS?**

