



# CITY OF NORTH LAS VEGAS

LVVWAC WASTEWATER DISCHARGERS UPDATES 2024



# CITY OF NORTH LAS VEGAS

- CNLV POPULATION: 274,000
- 79,345 SEWER LATERALS
- 1,209 MILES OF SEWER PIPE





# WATER RECLAMATION FACILITY

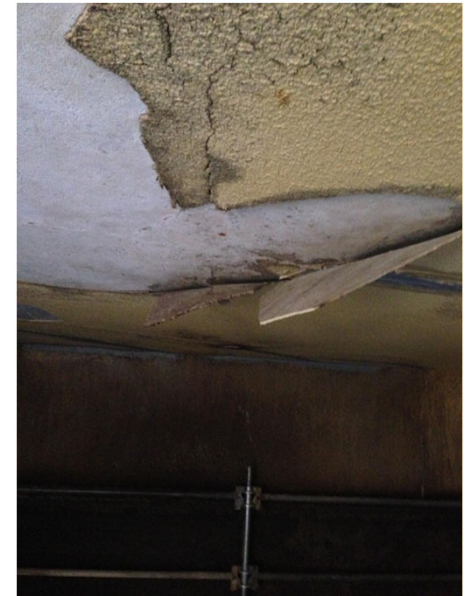
- **WATER RECLAMATION FACILITY CAME ONLINE JUNE 2011**
- **MEMBRANE BIOREACTOR FACILITY WITH ENHANCED BIOLOGICAL NUTRIENT REMOVAL**
- **30 MGD ADF CAPACITY**
- **6 BIOREACTORS AND 12 MEMBRANE TRAINS**
- **AVERAGE DAILY INFLUENT FLOW OF 20.4 MGD**
- **FINAL EFFLUENT DISCHARGES TO THE LAS VEGAS WASH**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





# BIOREACTOR COATING PROJECT

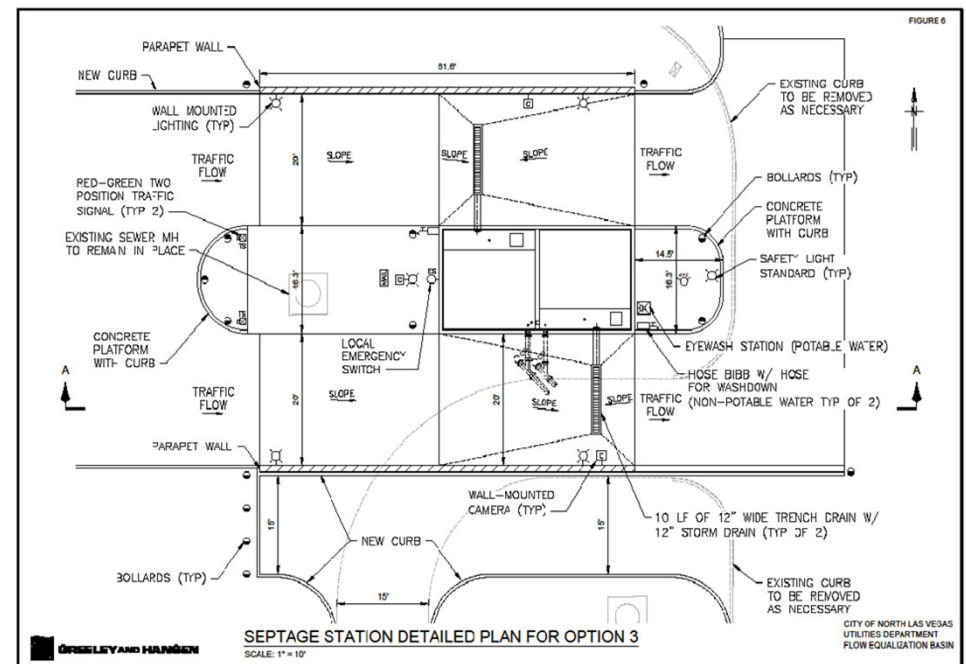
- BIOREACTOR COATING PROJECT TO ENTER BID PHASE
- PROCEED WITH 1 OR 2 BIOREACTORS PER YEAR
- SURFACE PREP AND COATING OF CONCRETE AND METALLIC SURFACES AT AND ABOVE OPERATING LEVEL IN BIOREACTORS UPSTREAM OF THE AERATION ZONE





# 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**

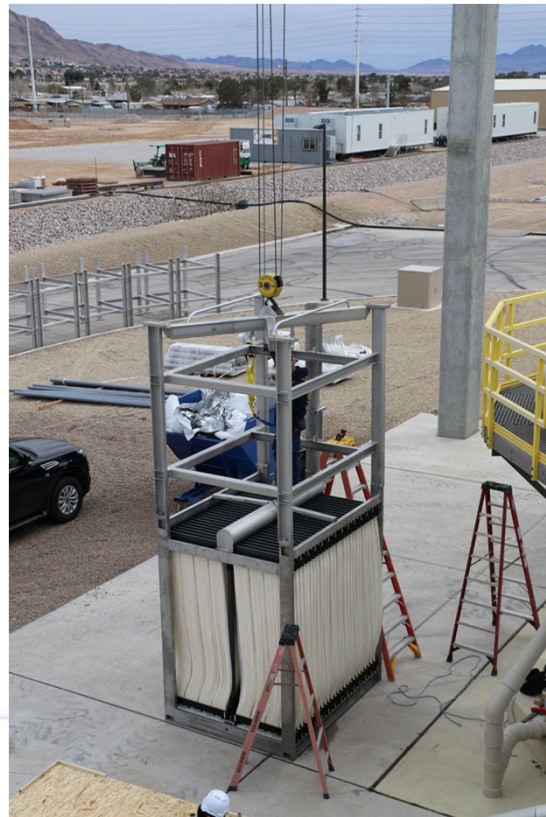






# MEMBRANE CASSETTE EXPANSION AND REPLACEMENT

- 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

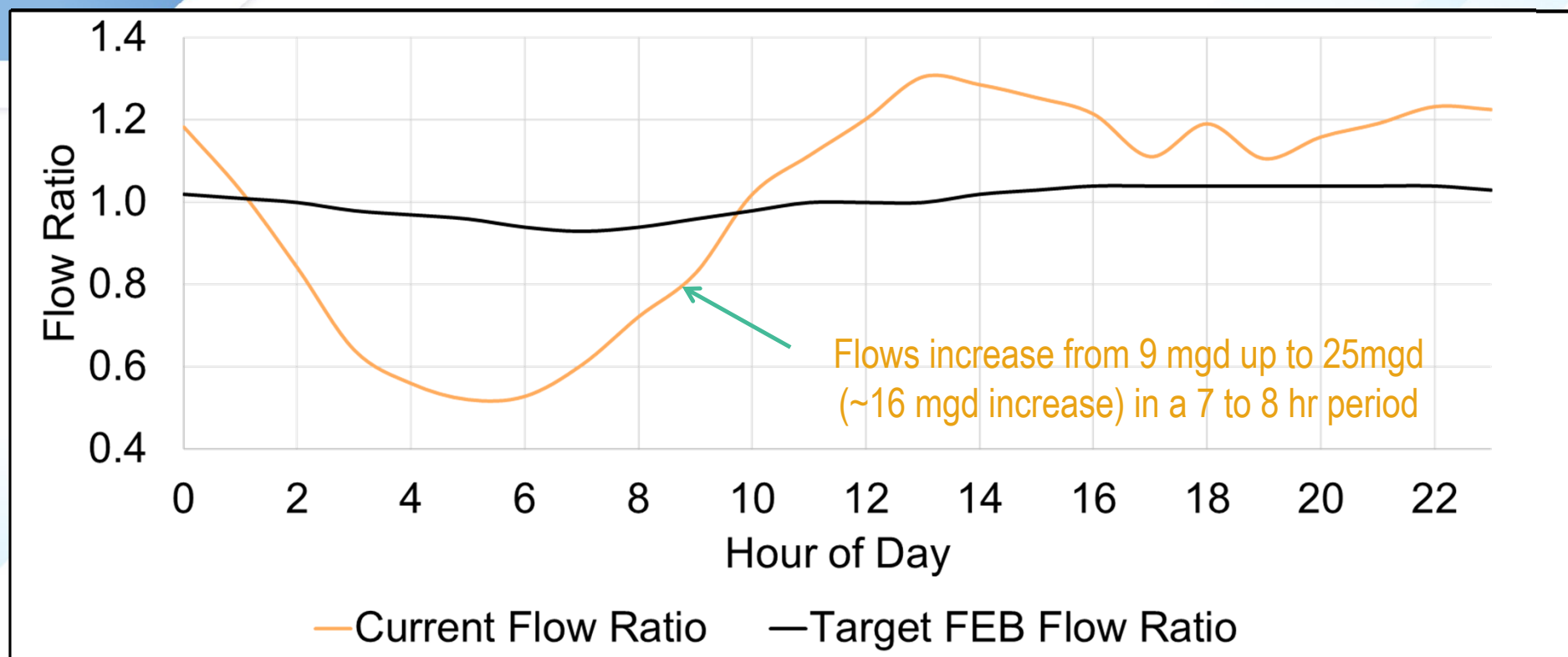
- **2.2 MG FLOW EQUALIZATION BASIN**
- **DAMPEN DIURNAL FLOWS AND FINE TUNE RECIRCULATION RATES**
- **PROVIDE CONSISTENT HRT FOR BETTER BNR**
- **REDUCE WEAR AND TEAR ON MOTORS AND OTHER EQUIPMENT**







## PROCESS CHANGES TO INCREASE EBPR CONSISTENCY





# PROCESS CHANGES TO INCREASE EBPR CONSISTENCY

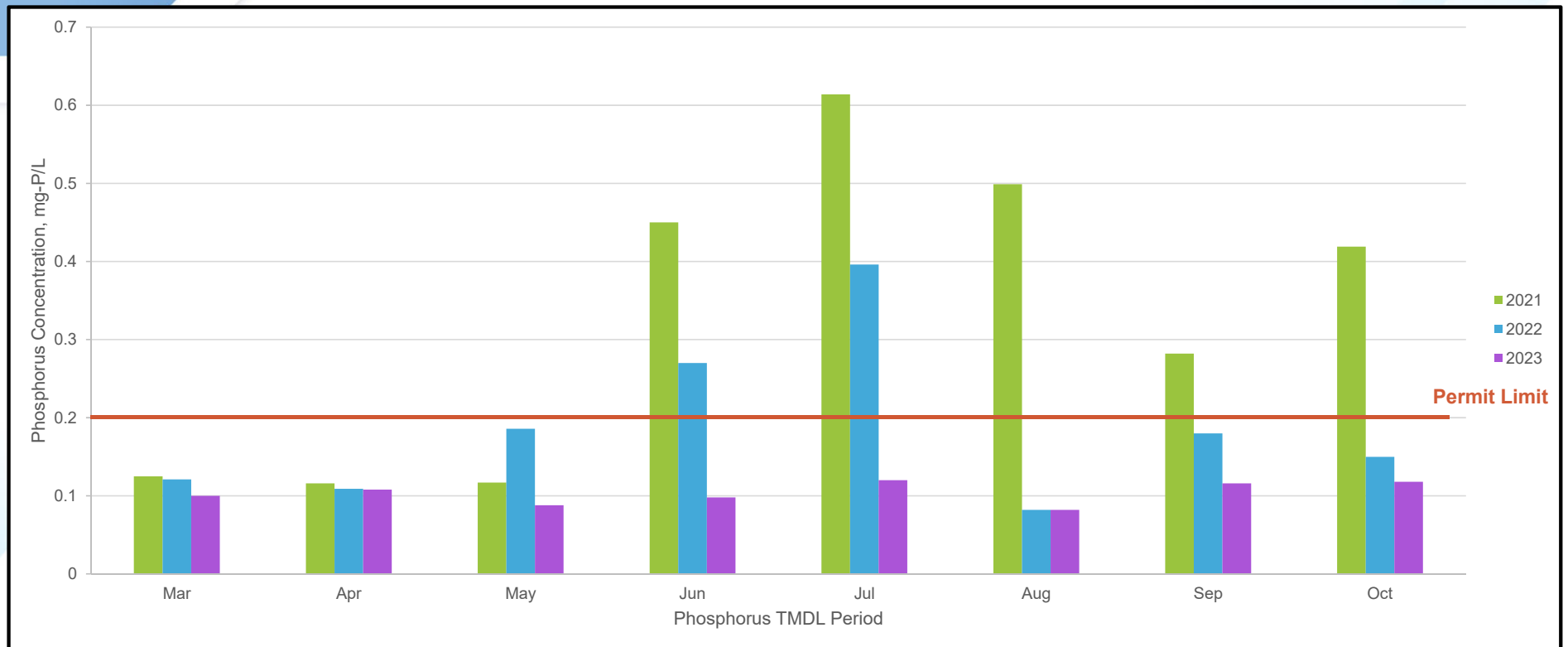
- REDUCE RAPID CHANGE IN ANAEROIC HRT, STABILIZE ANAEROBIC ORP, IMPROVE PRE-ANOXIC DO QUENCH
- RAS FLOW MULTIPLIER (% of INF Q) WAS REDUCED FROM 3Q to 2.1Q
- INCLUDED A MINIMUM FLOW SETPOINT OF 30 – 42.5 MGD
- ALLOWED FOR A MINIMUM OF APPROXIMATELY 2 SRTS BEFORE MODIFYING RAS MULTIPLIER
- PEAK PROCESS 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?