NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET
(pursuant to NAC 445A.236)

I. **Permittee Name**: City of North Las Vegas
2580 Betty Lane
Las Vegas, NV 89156

II. **Permit Number**: NV0023647 – New

III. **Location:** 2580 Betty Lane
Las Vegas, NV 89156

IV. **General**: The Permittee has applied for a National Pollutant Discharge Elimination System (NPDES) permit to authorize a discharge to the Las Vegas Wash.

The raw wastewater to be treated by the new facility is now treated by the City of Las Vegas Water Pollution Control Facility, which is regulated under permit number NV0020133. The North Las Vegas Water Reclamation Facility (WRF) will discharge into the Las Vegas Wash at the City of Las Vegas plant, or to Las Vegas Wash just upstream of the City of Las Vegas plant by way of Sloan Channel, a concreted channel.

The WRF will have an initial capacity of 25 MGD. The WRF will include preliminary treatment, consisting of bar screens and grit removal, followed by a membrane bioreactor secondary treatment process and solids processing. The facility has been designed as a "good neighbor" facility, incorporating landscaping features, odor control, and noise control parameters. The WRF uses biological nutrient removal to meet TMDL-derived limits for ammonia and total phosphorus and is designed to meet permit requirements for discharge to public waters and for reuse. The major components of the project consist of:

- Influent Pump Station including Coarse Screens
- Preliminary Treatment including Fine Screening and Grit Removal
- Secondary Treatment utilizing Membrane Bioreactors (MBRs)
- Disinfection (Chlorine Contact Tanks)
- Solids Handling Facilities (Gravity Belt Thickeners, Dewatering Centrifuges and Dewatered Cake Storage and Load-out Equipment)
- Plant-wide Odor Control
- Chemical Storage and Handling Facilities
- Reclaimed Water Pumping
- Operations Building

The On-Site Reclaimed Water Pumping consists of a pump station that draws reclaimed water from the Chlorine Contact Tanks for distribution to a nearby golf course (Nellis AFB). The remainder of the plant effluent is discharged to the Las Vegas Wash.

The majority of the flow into the plants is from domestic wastewater. There is a small percentage of flow from industry in the service area. The Permittee has had a pretreatment program in effect for decades

which regularly samples effluent from the industrial dischargers. The pretreatment program is authorized through the United States Environmental Protection Agency (USEPA).

V. **Discharge Characteristics:** Because the WRF is not in operation, no discharge data are available. Discharges from the WRF are expected to meet or exceed all permit requirements.

VI. **Receiving Water:** The receiving water is the Las Vegas Wash. The standards applicable to the Las Vegas Wash are attached to this fact sheet as Attachment A. Pursuant to NAC 445A.198, the designated beneficial uses for the appropriate reach of Las Vegas Wash are:

Irrigation
Watering of livestock
Recreation not involving contact with the water
Maintenance of a freshwater marsh
Propagation of wildlife
Propagation of aquatic life, excluding fish. This does not preclude the establishment of a fishery.

This reach of the Las Vegas Wash also has an established goal of the propagation of aquatic life, including, without limitation, fish by the next triennial review. This goal may be reevaluated in the near future considering the construction of the grade control structures in the Las Vegas Wash.

Las Vegas Wash has been included on the 303(d) list because of suspended solids and iron. The exceedances identified were not attributed to the Permittee or other publicly owned treatment works in Southern Nevada, but instead were attributable to erosion resulting from high velocity stream flows produced by steep gradients and from loose unconsolidated soils. Several erosion-control structures have been installed in the affected area, and additional structures are planned, along with stream bank protection, revegetation, and other control measures. The suspended solids has been de-listed and the iron is being reviewed for de-listing.

VII. Highlights of Permit:

The main highlights of the permit are:

Item	Change
Nature of Permit	The Permittee has applied for this permit so that it can treat municipal wastewater that has previously been treated by the City of Las Vegas Water Pollution Control Facility. The proposed permit includes all applicable requirements and conditions of the permit issued to the City of Las Vegas.
Location of Discharge	Initially the facility will discharge to the Sloan Channel (a concreted channel) which empties into the Las Vegas Wash. The facility will also have alternative discharge locations to the Las Vegas Wash near the City of Las Vegas Water Pollution Control

	Facility discharge.
Quality of Discharge	There will be no decrease in the quality of the discharge, compared with the existing discharge from the City of Las Vegas plant.
Effect on Receiving Water	Negative impacts are not expected to the receiving water. Las Vegas Wash upstream of the City of Las Vegas Water Pollution Control Facility receives inflows from surfacing groundwater and residential uses. Surfacing groundwater is high in minerals, especially selenium, and is improved by the addition of treated wastewater from the municipal treatment plants in Las Vegas Valley. Discharges from the new plant that enter Las Vegas Wash by way of Sloan Channel will improve water quality in Las Vegas Wash for the short distance between Sloan Channel and the City of Las Vegas discharge.

VIII. Proposed Effluent Limitations: The Permittee is required to meet the following permit limits. Note: The load limits are calculated using the 30 day average flow and the permit limit expressed as a concentration. If higher flows are allowed in future permits, the load limits will increase accordingly.

TABLE I.1 (Outfall 001, WATER RECLAMATION FACILITY)
(Outfall 002, LAS VEGAS WASH)

PARAMETERS	**EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS**			**MONITORING REQUIREMENTS**		
	30 Day Average[2]	**7 Day Average[2]**	**30-Day Average (lb/day)**	**Sample Location**	**Measurement Frequency**	**Sample Type**
Flow-001	25 MGD	Monitor and Report: MGD	NA	INF, 001, 002	Continuous	Flow meter
BOD_5 (uninhibited)	30 mg/l	45 mg/l	6,255	001,002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		

PARAMETERS	EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS			MONITORING REQUIREMENTS		
	30 Day Average[2]	**7 Day Average[2]**	**30-Day Average (lb/day)**	**Sample Location**	**Measurement Frequency**	**Sample Type**
Total Suspended Solids	30 mg/l	45 mg/l	6,255	001, 002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
BOD_5 (uninhibited) &TSS	The Permittee shall demonstrate that the 30-day average percentage removal rate is at least 85%.			NA	Monthly	Calculate
pH	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19.		NA	001, 002	Daily	Discrete
Fecal Coliform[1]	Log mean 200 cfu or mpn/100ml	See footnote 1	NA	001, 002	Daily	Discrete
Total Residual Chlorine	NA	0.1 mg/l-except as allowed in Part I.A.19.	NA	001, 002	Daily	Discrete
Total Phosphorus as P: mg/l	See Part I.A.2			001, 002	Daily	Composite
Total Ammonia as N: mg/l	See Part I.A.2			001, 002	Daily	Composite
Total Inorganic Nitrogen as N: mg/l	See Part I.A.3			001, 002	Weekly	Composite
Total Dissolved Solids: mg/l	See Part I.A.4			001, 002	Weekly	Composite
Priority Pollutants	Monitor and Report, See Attachment A			001, 002	See Part I.A.18.d.	Discrete or Composite
WET testing	See Part I.A.17.			001, 002	See Part I.A.17	Composite
Receiving Water Monitoring	Monitor and Report			See Part I.A.21	See Part I.A.21	Discrete
Temperature: ºC	Monitor and Report		NA	001, 002	Weekly	Discrete

PARAMETERS	EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS			MONITORING REQUIREMENTS		
	30 Day Average[2]	7 Day Average[2]	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Dissolved Oxygen: mg/L	Monitor and Report		NA	001, 002	Weekly	Discrete
Orthophosphorus as P: mg/l	Monitor and Report			001, 002	Daily	Composite
Nitrate + Nitrite as N: mg/l	Monitor and Report			001, 002	Weekly	Composite
Total Kjeldahl Nitrogen as N: mg/l	Monitor and Report			001, 002	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30 day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For those parameters sampled weekly or less frequently, the Permittee shall report the single value instead of the 7-day or 30 day average.
3. The 25 MGD limit applies to the sum of the Permittee's discharges through Outfalls 001 and 002.
4. If one sampling point would characterize discharges from two or more outfalls, then only one sample need be taken. For example, samples taken for Outfall 001 may also be used for Outfall 002.
5. The Permittee is not required to conduct monitoring at an outfall when it is not discharging through that outfall.

Attachment A This attachment to the permit is the list of Priority Pollutants which are required to be sampled under the pretreatment permit requirements.

IX. Proposed Technology Based Effluent Limitations: Federal regulations at 40 CFR section 133 require publicly owned treatment works to achieve specified limits in discharged BOD, suspended solids, and pH. The permit includes these limits.

X. Proposed Water Quality-Based Effluent Limitations: The Nevada water quality standards require that point source discharges not cause a violation of any applicable water quality standards in the receiving water nor interfere with the attainment or maintenance of beneficial uses. The following requirements are included in the permit to ensure that the discharge does not cause water quality standards violations. In addition, the permit requires monitoring and reporting of constituents which are present in the discharge and the subject of ambient water quality standards.

Total Dissolved Solids. The permit includes the goal of not more than a 400 mg/l increase in Total Dissolved

Solids (TDS) over the drinking water supply, a goal established by the Colorado River Salinity Forum. The Permittee has implemented the salinity public education program required by the permit. This activity is a continuing requirement of the proposed permit.

Phosphorus and Ammonia. Total Maximum Daily Loads (TMDLs) were developed for Total Ammonia as N and Phosphorus as P in 1989. The Permittee has been allocated a Waste Load for Total Ammonia as N and Total Phosphorus as P. This permit includes language which allows waste load allocation trading between the City of Las Vegas, Clark County Water Reclamation District, City of Henderson, and City of North Las Vegas (hereafter Dischargers). The WLA applies to the combined loading from all outfalls. This permit condition constitutes a cooperative agreement between the Dischargers to allow discharge flexibility. Each facility has an **Individual Waste Load Allocation (IWLA)** and there is a **Sum of Waste Load Allocations (∑WLA)** defined below for the three facilities. The Permittee shall be considered in compliance if **either**:

i. The Permittee does not exceed the **IWLA** listed below or the **IWLA** in effect due to transfers, **or**

ii. The **Sum of the Waste Load Allocations (∑WLA)** listed below is not exceeded.

Waste Load Allocation Table
(Outfall 001, WATER RECLAMATION FACILITY)
(Outfall 002, LAS VEGAS WASH)

Constituent	City of Las Vegas IWLA*	Clark County Water Reclamation District IWLA	City of Henderson IWLA	City of North Las Vegas IWLA*	∑IWLA
Total Phosphorus as P	90 lb/day	175 lb/day	38 lb/day	31 lb/day	334 lb/day, Note: This WLA only applies March 1 - October 31; no limit applies the rest of the year.
Total Ammonia as N	261 lb/day	508 lb/day	110 lb/day	91 lb/day	970 lb/day, Note: This WLA only applies April 1 - September 30; no limit applies the rest of the year.

*City of Las Vegas shall be allocated the sum of its own IWLA plus the IWLA of City of North Las Vegas until City of North Las Vegas begins discharging. Startup plan for initiation of discharge shall be submitted in accordance with special allocation procedure identified in section I.A.2.b or section I.A.2.c.

Fecal Coliform. Water quality standards for Las Vegas Wash specify fecal coliform requirements to be imposed on discharges into the wash. Water quality standards for Lake Mead include fecal coliform

standards. These standards have been imposed as effluent limits on discharges into the Wash and Lake Mead.

Total Residual Chlorine. Water quality standards for Las Vegas Wash prohibit the discharge of toxic substances in toxic amounts. The Permittee will dechlorinate the effluent to remove free chlorine. An excess of the dechlorinating agent is used to ensure that no free chlorine remains. The effluent limit of 0.1 mg/l Total Residual Chlorine is included in the permit as an indicator that no free chlorine is present in the effluent.

Acute WET Testing. Acute whole effluent toxicity requirement have been imposed to prevent discharges of toxic substances in toxic amounts.

XI. Special Conditions: In addition to the technology based effluent limitations and the water quality based effluent limitations, the permit includes standard conditions required by 40 CFR section 122.41, including requirements on duty to comply, duty to reapply, need to halt or reduce activity not a defense, duty to mitigate, proper operation and maintenance, permit actions, property rights, duty to provide information, inspection and entry, monitoring and records, signatory requirement, reporting requirements (including planned change, anticipated noncompliance, transfers, monitoring reports, compliance schedules, 24 hour reporting, and other non-compliance), bypass requirements, and upset requirements. In addition, the permit includes the following special conditions.

Total inorganic nitrogen and pH. The Permittee is required to coordinate with the Clark County Water Reclamation District, the City of Henderson, and the City of Las Vegas to determine whether Las Vegas Wash complies with the RMHQ criterion for total inorganic nitrogen, and for the beneficial use standard for pH. If the Permittee and other dischargers determine that the wash has exceeded these criteria, they must consider whether reasonable changes would result in compliance, and report to the Division.

Chronic WET Testing. The other Southern Nevada Dischargers previously conducted a chronic whole effluent toxicity testing study and determined that there was no chronic whole effluent toxicity present in their effluents. The City of North Las Vegas permit requires additional chronic WET testing to ensure that chronic toxicity does not appear. The City of North Las Vegas Permit will require two years of quarterly chronic WET testing. If it is found that no chronic WET toxicity is present in the effluent, then, as in the case with the other dischargers, the next five year permit will require one year of chronic WET testing.

Cadmium, copper, hexavalent chromium, molybdenum, selenium, silver, sulfide. The Dischargers previously conducted studies to ascertain whether hardness levels above 400 mg/l provided additional protection against toxicity, and determined that Las Vegas Wash water, which contains 800 mg/l of hardness, had a protective effect. The permit requires annual data review to determine whether additional aquatic studies or other investigations are needed.

Biosolids. The permit includes requirements on the disposal or reuse of biosolids. No changes are proposed from existing requirements applicable to other Dischargers.

Pretreatment. The permit includes requirements for a pretreatment program, which the Permittee has established. No changes are proposed from existing requirements applicable to other Dischargers.

Miscellaneous. The permit includes miscellaneous requirements for odors, fencing, fees, operator

qualifications, etc. No changes are proposed from existing requirements applicable to other Dischargers.

Effluent Monitoring. The permit includes extensive effluent monitoring requirements for all substances subject to effluent limitations or included in ambient water quality standards.

Ambient Water Quality Monitoring. The proposed permit requires the Permittee to submit a proposed monitoring plan annually, consistent with minimum requirements imposed by the permit. In the plan, the Permittee would identify locations and sampling schedules. The minimum permit requirements provide for monitoring at least as intensive as in the existing permit. The revisions allow for greater flexibility, including the moving of existing stations to areas of current interest, and the addition and deletion of stations to provide monitoring for specific issues and for limited times.

XII. Reasonable Potential Analysis and Antidegradation Review. EPA regulations require that "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." (40 CFR § 122.44(d)(1)(i).) Before issuance of the permits to Dischargers in 2001, a detailed reasonable potential analysis was conducted on the potential for wastewater discharges from the City of Henderson, City of Las Vegas, and Clark County Water Reclamation District to cause or contribute to excursions above water quality standards. The conclusion from that analysis was that there was no reasonable potential, and no numeric effluent limits were imposed. Since that permit was issued, the Dischargers, have conducted aquatic life studies demonstrating that Las Vegas Wash, which has hardness concentrations of 800 mg/l, provides a protective effect beyond the protective effect associated with 400 mg/l of hardness, and that it is appropriate to use the concentrations of 800 mg/l in calculating hardness-based water quality criteria. The discharges are unlikely to exceed the ambient water quality metals criteria, and there is no reasonable potential for Las Vegas Wash. This permit requires that the City of North Las Vegas submit a plan describing the requirements to conduct Reasonable Potential Analysis after the new wastewater treatment plant has operated for sufficient time to generate appropriate data.

In Nevada, antidegradation review is conducted through the criteria known as Requirements to Maintain Higher Quality (RMHQ). RMHQ criteria were reviewed and applied to this permit, and none of the discharges can reasonably be expected to exceed any RMHQ criterion.

XIII. Flow: 25 **MGD, Water Reclamation Facility**

XIV. Quantities: At the 30 day average flow allowed by this permit, the discharge from Outfalls 001 and 002 combined will consist of the following maximum loadings:

BOD_5	6,255lb/day
Total Suspended Solids	6,255lb/day

XV. Discharges From Future Outfalls

As part of its application, the Permittee has submitted a request for a mixing zone and information on proposed discharges from future outfall 003 to lower Las Vegas Wash and from future outfall 004 to Lake Mead. These discharges will require the construction of a pipeline from the Permittee's plant along Las Vegas Wash to Lake Mead. The Division is holding the request for a mixing zone and the application for additional outfalls in abeyance at this time, pending a written request from the Permittee to proceed. When it receives a written request to proceed, the Division will prepare a major modification of the permit, which will be subject to public review and comment. No additional application will be required from the Permittee.

XVI. Procedures for Public Comment

The Notice of the Division's intent to reissue a permit authorizing the facility to discharge to surface waters of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Las Vegas Review Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. January 19, 2010, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted to accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.650.

XVII. Actions Taken in Response to Public Comment

During the public comment period, NDEP received a comment letter form the Center for Biological Diversity (CBD). CBD objected to issuing the permit without establishing limitations for the endocrine disrupting chemicals in the discharge. Since water quality standards do not exist for these chemicals, NDEP determined that there is no statutory or regulatory authority to require the monitoring of these chemicals in the NPDES permit. Therefore, no limitations for these chemicals were included in the permit.

In its comment letter, CBD requested a public hearing. Pursuant to Nevada Administrative Code (NAC) 445A.238, a public hearing shall be held if there is a significant public interest for holding it. In this case, it is determined that there is not sufficient public interest for holding a hearing.

NDEP modified the draft permit to include recommendations submitted by EPA, Regions IX, as follows:

- The Permittee is required to perform a Reasonable Potential Analysis after sufficient water quality data has been obtained.
- The requirement for quarterly analysis for Chronic Whole Effluent Toxicity is extended from one year in duration to two years in this permit. If no chronic toxicity is found in the treated

effluent, then future permit renewals will require one year of quarterly monitoring. This is consistent with the NPDES permit issued o the three other major wastewater dischargers in Southern Nevada: Clark County Water Reclamation District; City of Las Vegas; and the City of Henderson.

Region IX recommended that the permit include a requirement to conduct a feasibility study for an expired drug take-back program so that the public would minimize disposal of expired drugs to the wastewater system. It is noted here that a drug take-back day was held in early 2010 and several governmental entities are working together in expanding the program that educates the public and creates awareness of this issue. A requirement to include the take-back of expired drugs is not included in the permit.

A comment letter was also received from the Clark County Reclamation District. The two comments were:

1. Proposed treatment plan discharges effect on erosion in the Las Vegas Wash; and
2. Is the discharge point an allowable use of the MS4 system?

This comment letter has been discussed with Clark County Water Reclamation District and the City of North Las Vegas. Both parties have agreed to work together to address these comments. This comment letter did not request a public hearing.

XVII. Proposed Determination

The Division has made the tentative determination to issue the proposed permit.

Prepared by: Alan Tinney
April 12, 2010