



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**



Nevada Department of
**CONSERVATION &
NATURAL RESOURCES**

Nevada SRF BIL Emerging Contaminants Funding –Septic to Sewer

Presented by:

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Septic to Sewer Conversion Project

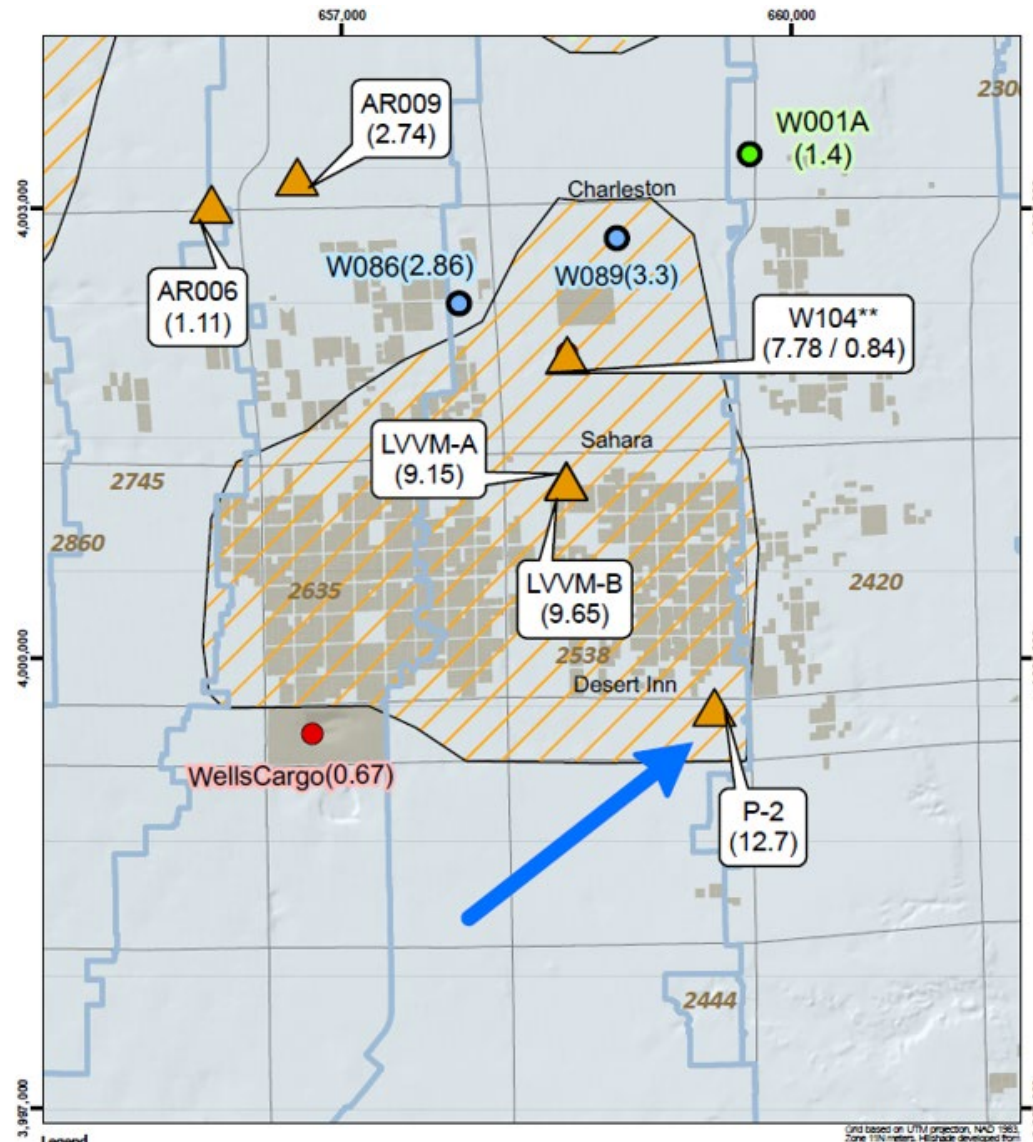
GROUND WATER CONTAMINATION

- Elevated nitrate levels cause the shutdown of a downgradient Las Vegas Valley Water District well
 - The well is impacted by a two square mile area of high-density septic systems
- Monitoring Program established to evaluate the source areas
- Sampling results reveal:
 - Elevated nitrate levels
 - Low concentrations of pharmaceuticals
 - Low concentrations of personal care products

GROUND WATER CONTAMINATION

Selected Groundwater Quality Data Downgradient of High Density Septic System Area							
Well Name	Date	Nitrate-N (mg/L)	Carbamazepine (ng/L)	Meprobamate (ng/L)	Primidone (ng/L)	Sucralose (ng/L)	Sulfamethoxazole (ng/L)
P-2	9/9/2015	11	<0.5	<25	1.2	53	17
	9/9/2015	11	<0.5	<25	1.1	50	16
	11/17/2020	11.9	<0.5	<0.25	1.2	<25	20
	11/15/2022	11.6	0.61	1.6	1.7	NA	24
LVVM-A	8/18/2020	8.8	<0.5	<0.25	20	29	130
	11/14/2022	8.62	29	7	2.8	100	100
LVVM-B	8/18/2020	9.46	<0.5	<0.25	1.6	200	130
	Duplicate	9.63	<0.5	<0.25	1.6	200	120
	11/14/2022		1	<0.25	2	NA	82
W104 sampled at 530ft	8/19/2015	7.1	19	17	6	<25	180
W104 Composite	9/6/2017	7.5	7.4	14	7.8	<25	200
W089	6/15/2020	2.98	2	<0.25	7.4	<25	47
Wells Cargo	3/28/2016	0.49	NA	NA	NA	NA	NA
NA= Not Analyzed							

GROUND WATER CONTAMINATION



SEPTIC ABANDONMENT AND WASTEWATER CONNECTION TO THE WASTEWATER UTILITY

- Clark County Reclamation Facility-Flamingo Resource Center
 - Tertiary Wastewater Treatment
 - Up to 150 MGD Treatment Plant
 - Treatment includes preliminary treatment, primary sedimentation, advanced activated sludge, secondary clarification, filtration and ultraviolet disinfection
 - A portion of the treated effluent flow is disinfected with sodium hypochlorite

TREATMENT PLANT EFFICIENCIES

CLARK COUNTY RECLAMATION FACILITY-FLAMINGO RESOURCE CENTER

		sewage	effluent	removal
compound	source/use	influent	outfalls	efficiency
		ng/L	ng/L	%
triclosan	antibacterial soap	1,422	26	98%
DEET	insect repellent	208	156	25%
caffeine	beverages, stimulants	104,000	58	99.9%
dimethylxanthine	metabolite of caffeine	16,500	13	99.9%
sucralose	synthetic sweetener	42,500	40,000	6%
testosterone	steroid hormone	48	<2	100%
estrone	steroid hormone	63	<2	100%
androstenedione	steroid hormone	255	<5	100%
acetaminophen	pain and fever reducer	125,000	<10	100%
amoxicillin	antibiotic	3,400	2,300	32%
carbamazepine	antiseizure, epilepsy	154	130	16%
meprobamate	antianxiety tranquilizer	846	270	68%
naproxen	anti-inflammatory	14,300	12	99.9%
sulfamethoxazole	antibiotic	1,110	660	41%
theophylline	antiasthma, COPD	18,100	70	99.6%

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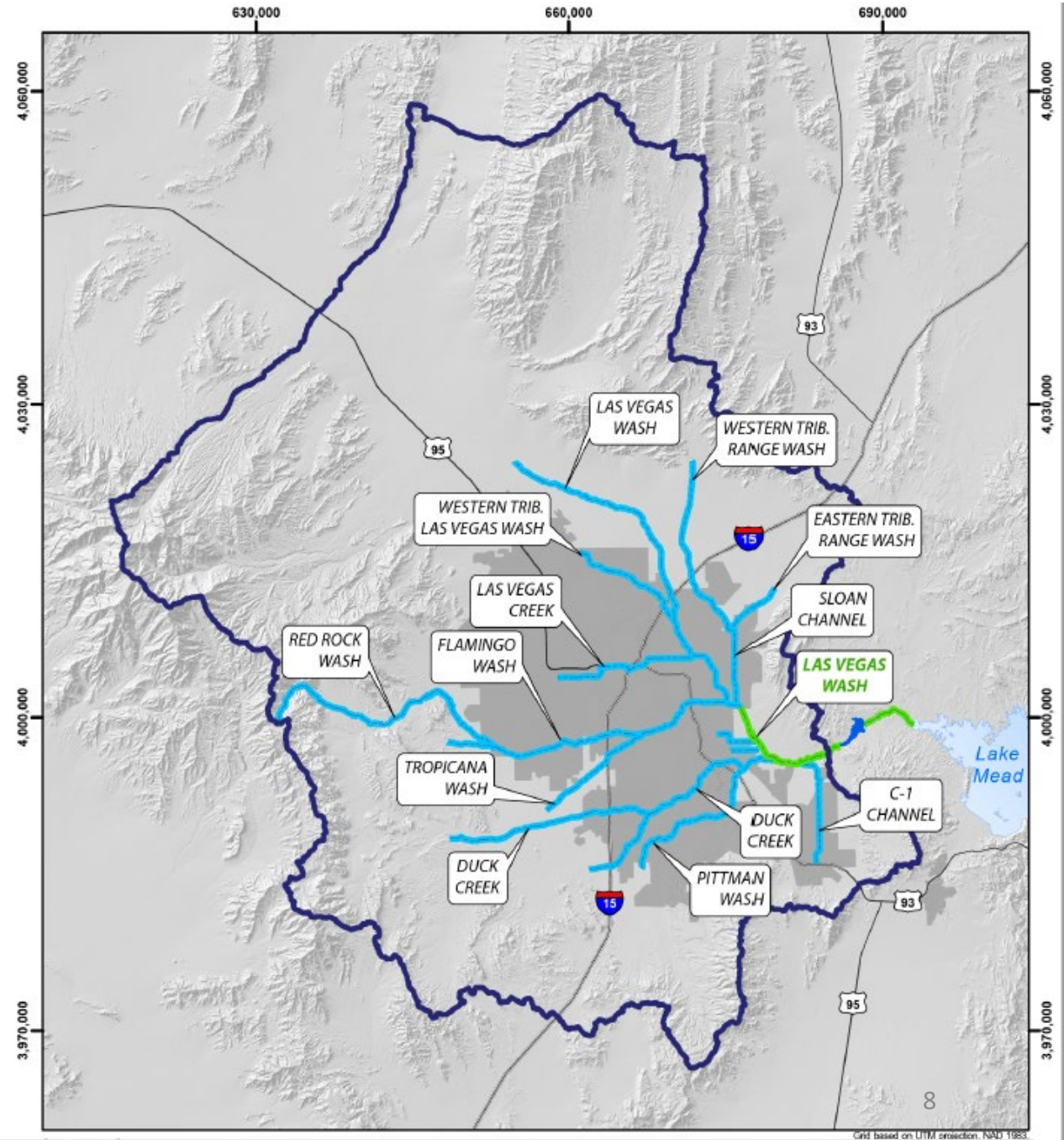
PROJECT FUNDING

Project Scope

- Anticipate being able to connect around 67 parcels to the sewer system with an average connection cost of \$50,000 per connection
- Prioritize connecting those parcels that are already connected to public water systems to stretch water supply
- Will also prioritize those parcels with wells with known water quality issues as well
- Leverage funding with other funding sources to achieve economies of scale

SEPTIC TO SEWER CONVERSION PROJECT

LAS VEGAS WASH SYSTEM



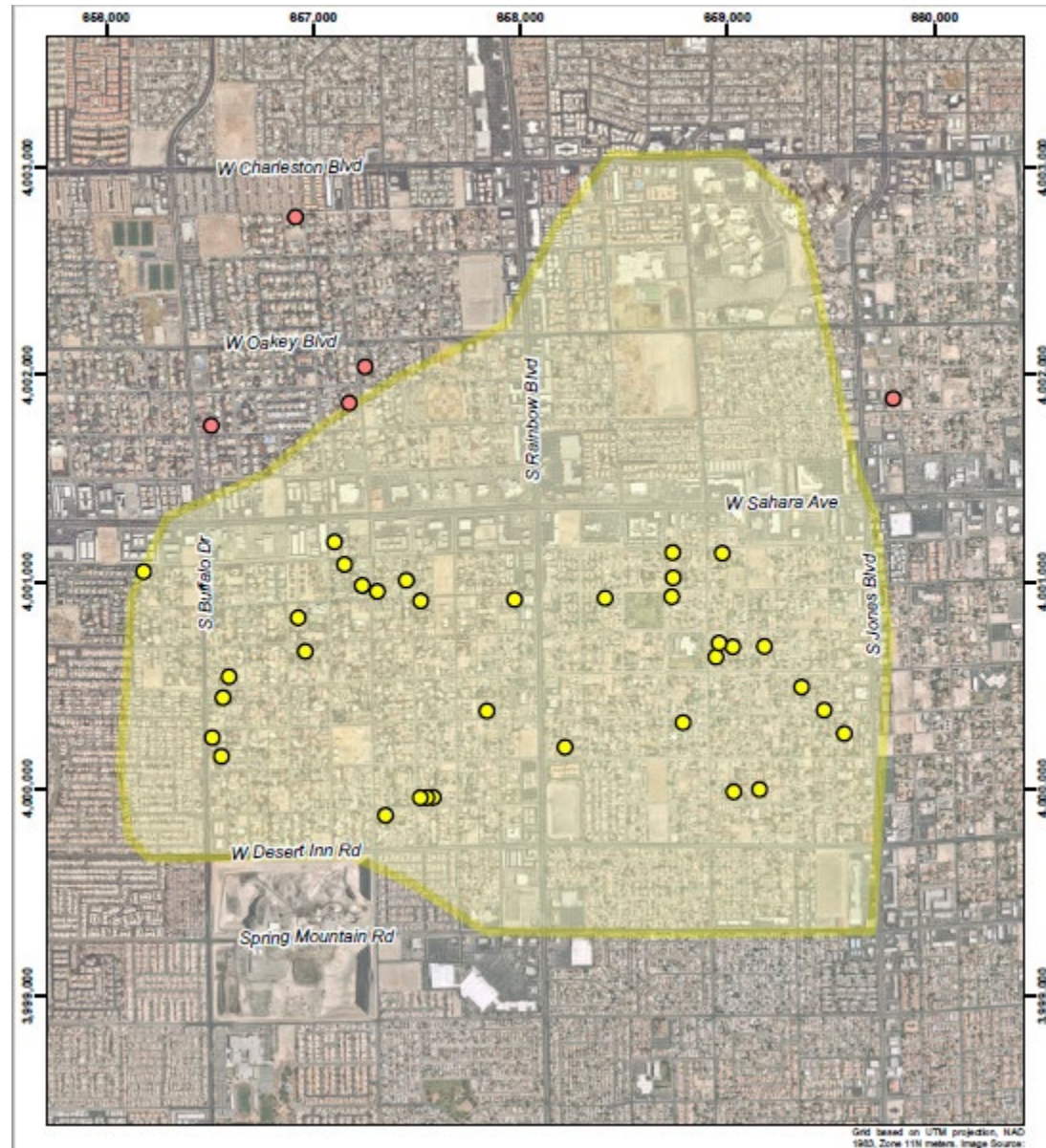
SEPTIC TO SEWER CONVERSION PROJECT

PROJECT FUNDING

Emerging Contaminant Funding

- Funding transferred from Nevada's DWSRF
 - \$2,890,000 (33% of the FY22 Allocation)
- Funding from Nevada's CWSRF program
 - \$459,000 (100% of the FY22 Allocation)

VOLUNTEERS IN THE STUDY AREA



Questions?



Contact

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