

This presentation premiered at WaterSmart Innovations

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Las Vegas Valley Stormwater Management: *Complexity of a Unique Environment*



Objectives



- **Stormwater Management in the Las Vegas Valley**
 - Kathryn Hoffmann
- **Program Design for a Unique Environment**
 - Joseph Leedy

What is Stormwater Pollution?



- **Everyday pollution including:**
 - Oil and sediment from roadways
 - Nutrients and toxic materials from urban and suburban areas
 - Industrial Facility materials
 - Construction site sediment and debris

Stormwater Management In the Las Vegas Valley



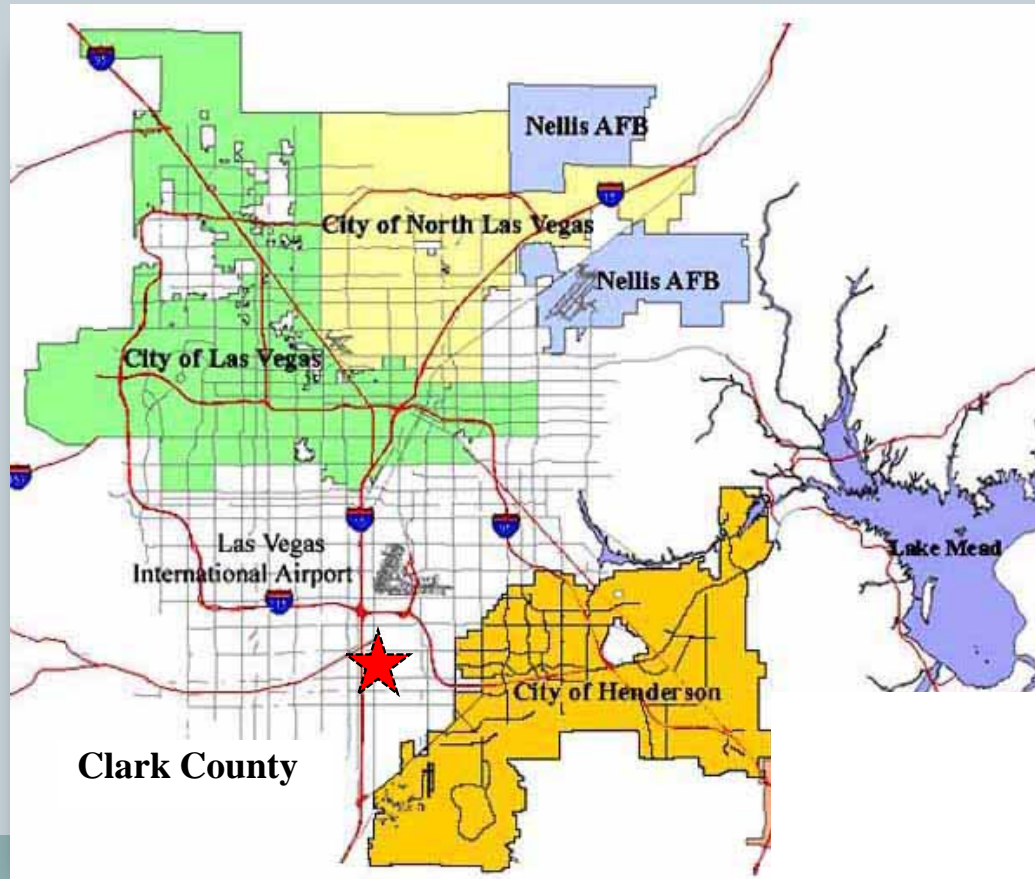
- Runoff flows untreated to the Las Vegas Wash and Lake Mead.



Stormwater Management In the Las Vegas Valley



- Managed regionally by Stormwater Quality Management Committee (SQMC)



Stormwater Management In the Las Vegas Valley



- National Pollutant Discharge Elimination System (NPDES) Permit
 - Joint Permit
 - Allows discharge from Municipal Separate Storm Sewer System (MS4) to receiving waters of the United States (the Las Vegas Wash/Lake Mead and its tributaries)
 - 5 year permit cycle
 - Requires a customized plan for compliance – Stormwater Management Plan (SWMP) - describes **how** entities will meet permit requirements

Recent Permit Update



- Develop Adequate Legal Authority
- Describe MS4 Maintenance Activities
- Expand Industrial Facility Monitoring and Control
- Implement Construction Site Best Management Practice (BMP) Program
- ***New Development and Significant Redevelopment Controls***

New Development and Significant Redevelopment Controls



- Includes:
 - All new development (residential, commercial, industrial)
 - All redevelopment over 1 acre
- Develop program suited to Las Vegas Valley
- Develop BMP requirements and design standards

Recent Permit Update



- **Development Guidelines Working Group**
 - Tasked with identifying current and future practices
 - Environmental Protection Agency (EPA) focus on Site Control
 - ✦ Low Impact Development (LID) including Infiltration

LID: Green Roofs



LID: Water Harvesting



LID: Infiltration



LID: Vegetated Swale



Unique Environment



- Long periods with no measurable rainfall
 - Average of 4" per year
- Soil conditions
 - Low natural infiltration rates
 - Expansive
 - Hydrocolapsable
- Groundwater
- Naturally occurring Selenium
- Water Rights

Moving from Onsite to Regional Controls



Station 4064

Lower Las Vegas Wash DB

Installed January 8, 1999

Flood Control System

Moving from Onsite to Regional Controls



Erosion Control Structures

Proposed Approach for Stormwater Management in the Las Vegas Valley



- **Additional Controls**
 - Existing
 - ✦ Street sweeping
 - ✦ Conservation
 - Proposed
 - ✦ Detention Basin Retrofit Program
 - ✦ Structural Controls in Parking Lot Design/Retrofits
 - Inlet Marking
 - Public Education



One Size Fits All.... Or Not?



Ketchikan, Alaska = 92.45" (2010)



Las Vegas, Nevada = 3.3" (2010)

Questions?



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