

# Stormwater Management in Southern Nevada



# 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



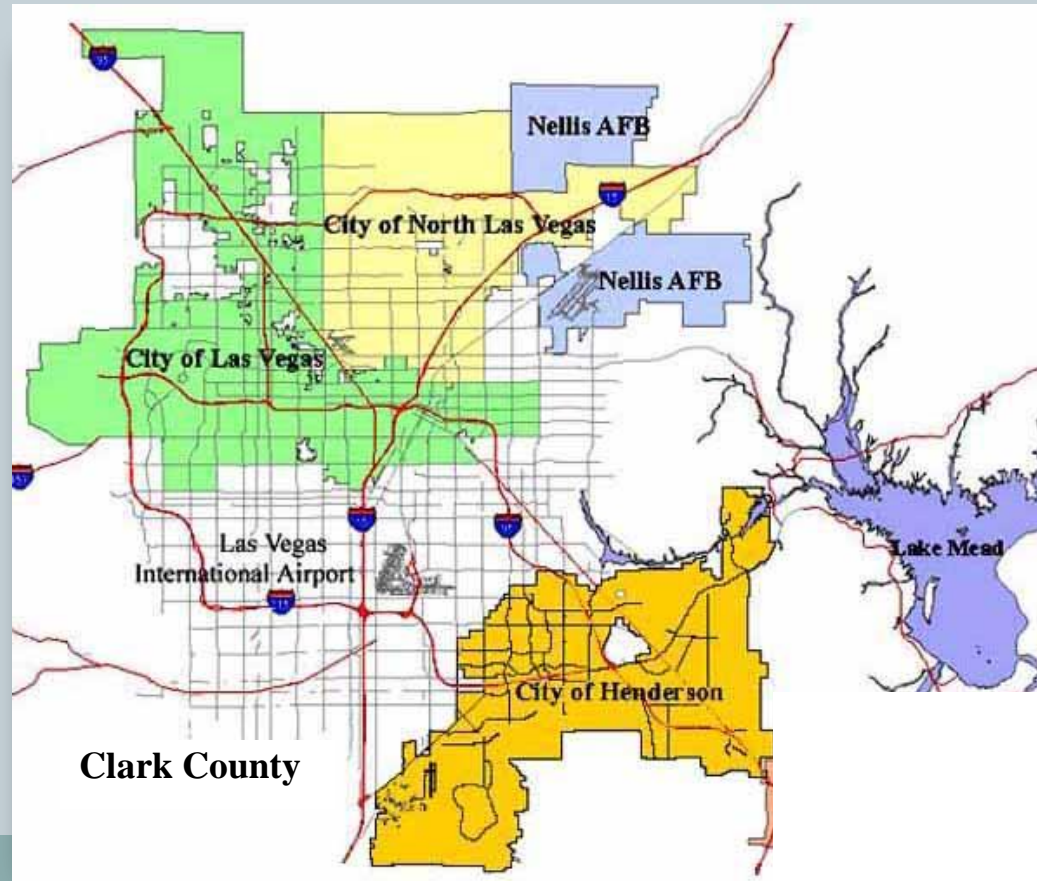
- Runoff flows untreated to the Las Vegas Wash and Lake Mead.



# 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



# 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



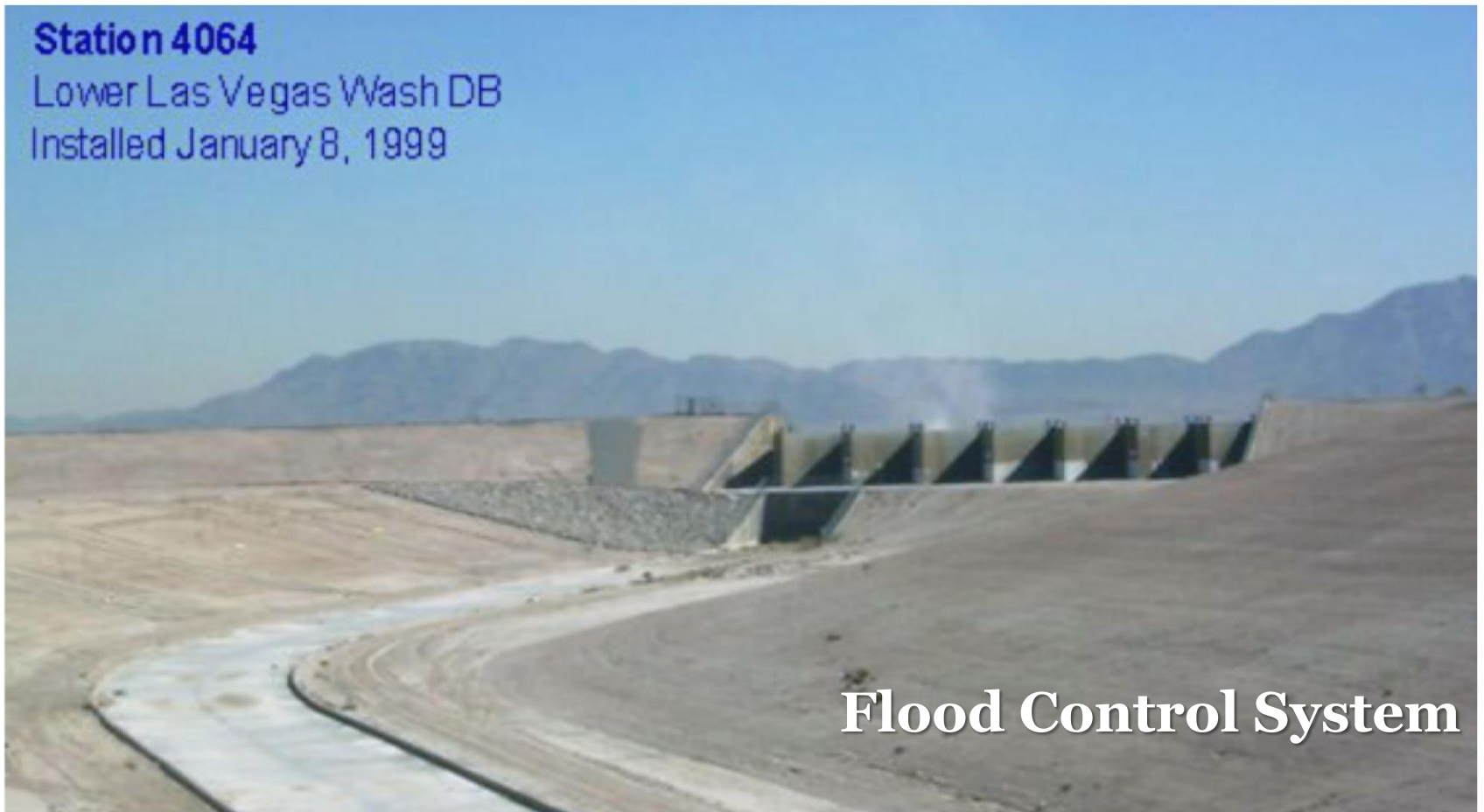
# Moving from Onsite to Regional Controls



## 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
    - ✦ Inspection Program
    - ✦ 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 = 133.26" (2010)*

*Las Vegas, Nevada = 5.90" (2010)*



*Las Vegas, Nevada = 1.59" (2009)*

# Questions?



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