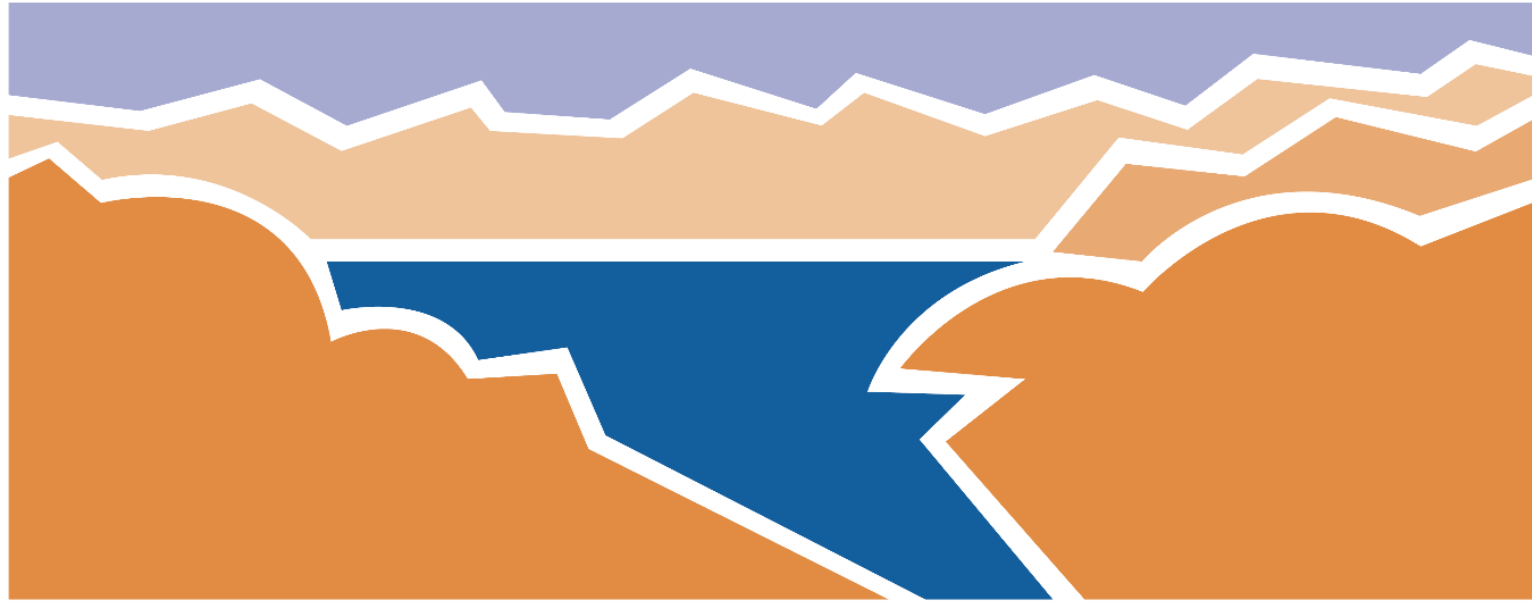


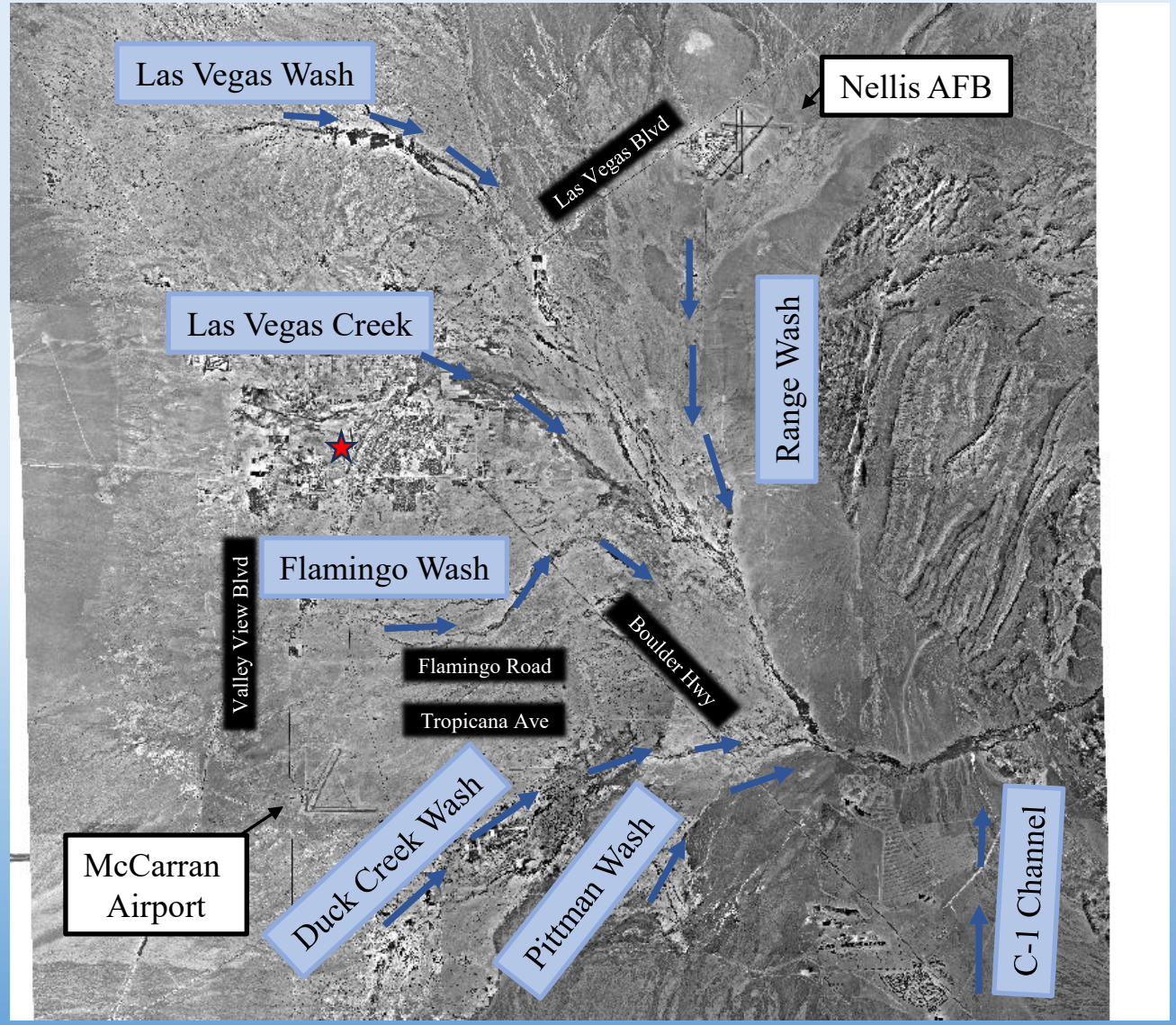
REGIONAL FLOOD CONTROL DISTRICT



RFCD: Past Present & Future

Andrew Trelease, P.E., CFM
General Manager/Chief Engineer

Aerial Photo LV Valley - 1950





Past

Flamingo Wash at LVBD - 1950



Vegas Flooded

Pair Reported Washed Away In Raging Torrent

Weather
Northern thundershowers, local heavy showers with possibility of flash floods through Saturday. Heavy afternoon and evening winds gusting to near 50 mph near shore activity otherwise southerly 15 to 25 mph. Thursday's High 94, Low 76, Friday's High mid 90's, Low mid 80's. Humidity: High 71 per cent, Low 6 per cent. A Year ago today: High 107, Low - 75. Sunrise 5:28, Sunset 8:11.

SOUTHERN NEVADA'S ONLY HOME OWNED DAILY NEWSPAPER

Las Vegas SUN

CIRCULATION 287-5075 NEWS 283-3111

In the interest of a better environment and conservation of our natural resources, the SUN is totally printed on recycled newspaper.

VOL. 26 NO. 4 LAS VEGAS, NEVADA, FRIDAY, JULY 4, 1953 76 PAGES FIFTEEN CENTS

Where I Stand
MANK GREENSPUN

"... But spare my country's flag she said."

A piece of red, white and blue cloth still hung amid an era of peace which, to some, patriotism is a barren and huckster's word.

When the annual display of rainbow-colored rockets fill the sky tonight, accompanied by thousands salutes to America's 191st Birthday, it will be a symbol of peace and unity in the hearts of North and South. They have

Take Time To Help A Kid Today

On this holiday many of you are enjoying camping and hiking with your children, and that's the way it should be.

But there are many needy kids in our area that may never know the thrill of being introduced to such adult recreation and children like you can help them get help from the SUN Summer Camp Fund.

We will be able to help over 100 needy kids in our area if we meet our goal of \$30,000. Please take time today and send



Flamingo Wash



Past

1959 USACE Master Plan





1959 USACE Master Plan

2025 Aerial



About Regional Flood Control District (RFCD)



Created in
1986



Distinct local
government agency
with a Board of
Directors comprised of
8 elected officials



Main function is
planning and funding
major flood control
infrastructure in Clark
County, Nevada



Funded by $\frac{1}{4}$ of one
cent sales tax
(\$157 million FY 25)



28 staff
members
(7 Vacant)



Andrew Trelease, P.E., CFM
General Manager/Chief Engineer



Brian Rowley, P.E.
Deputy General Manager



Flood Safety

A large blue circle with a white border and a slight shadow, containing the text 'Public Information' in white, sans-serif font.

Public
Information



Michelle French
Public Information Manager



Jacob Sanders
Public Information Coordinator

What is Flood Control?

Regional Flood Control District Mission:

To improve the protection of life and property for existing residents, future residents, and visitors from the impacts of flooding while also protecting the environment.



Keep **FLOODS** away
from people

Drainage Infrastructure

- Planning
- Funding
- Design
- Construction
- Operations
- Maintenance
- Asset Management

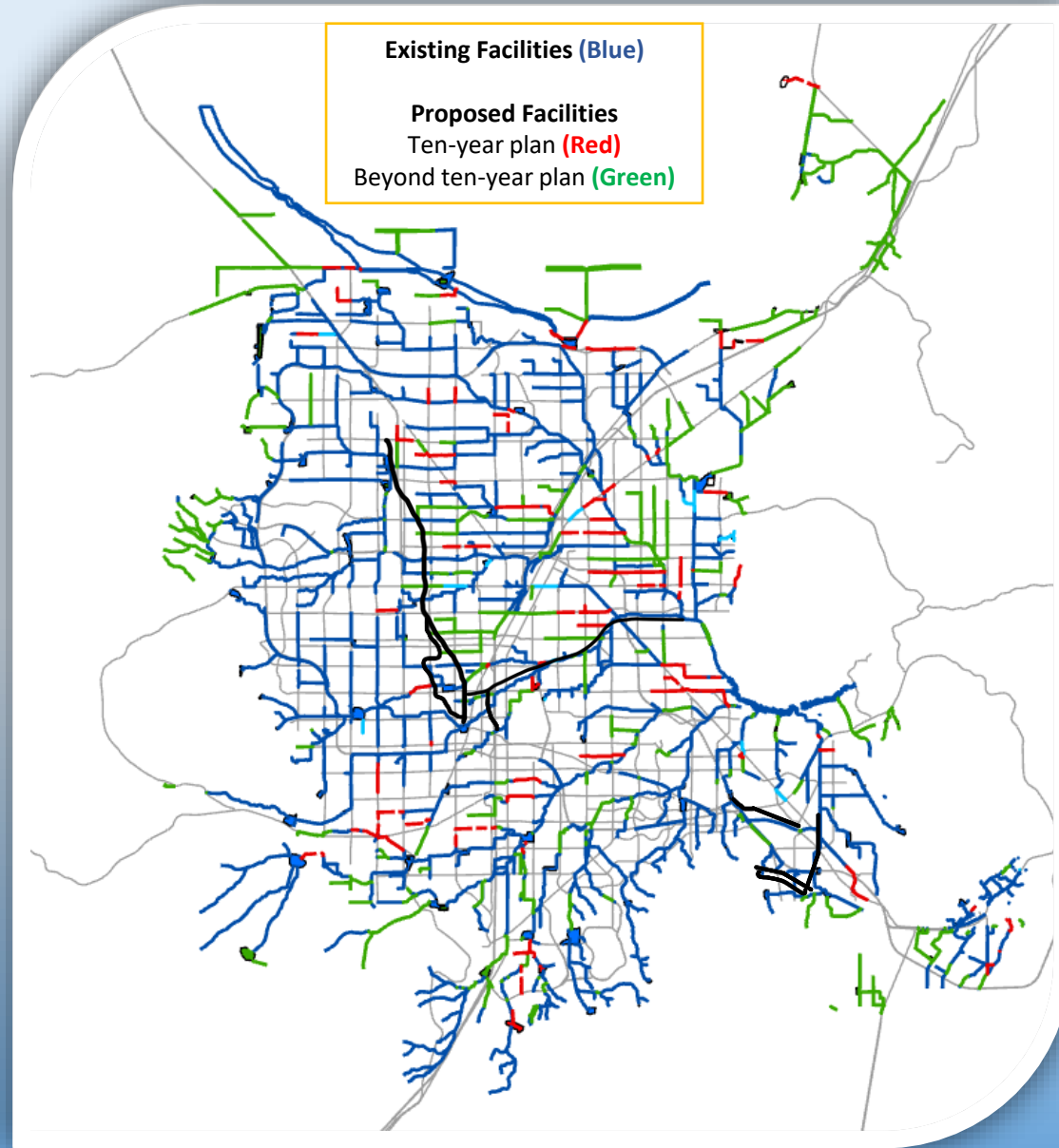
Keep **PEOPLE** away
from floods

Communication

- Education
- Outreach
- Warning
- Collaboration



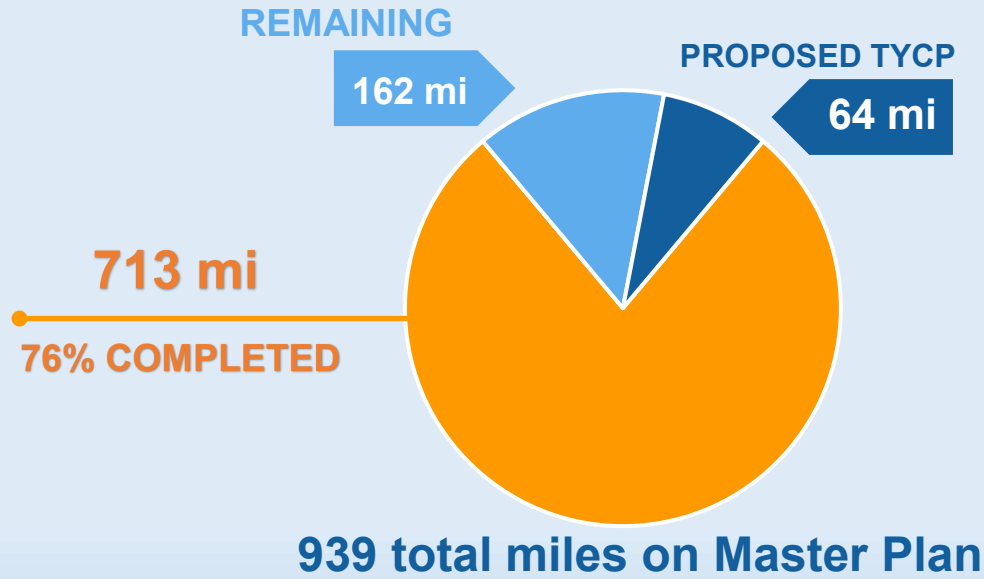
Las Vegas Valley Master Plan 1986



RFCD 2023 Flood Control Master Plan Update

Master Plan Progress

Completed Facilities



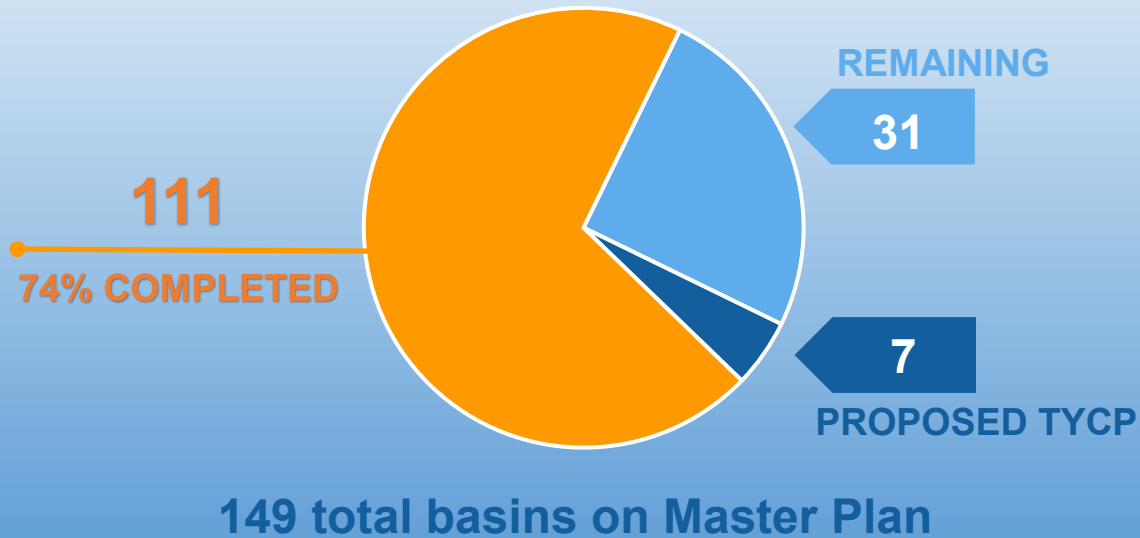
133 miles
Natural Washes



232 miles
Lined Channels



349 miles
Storm Drains

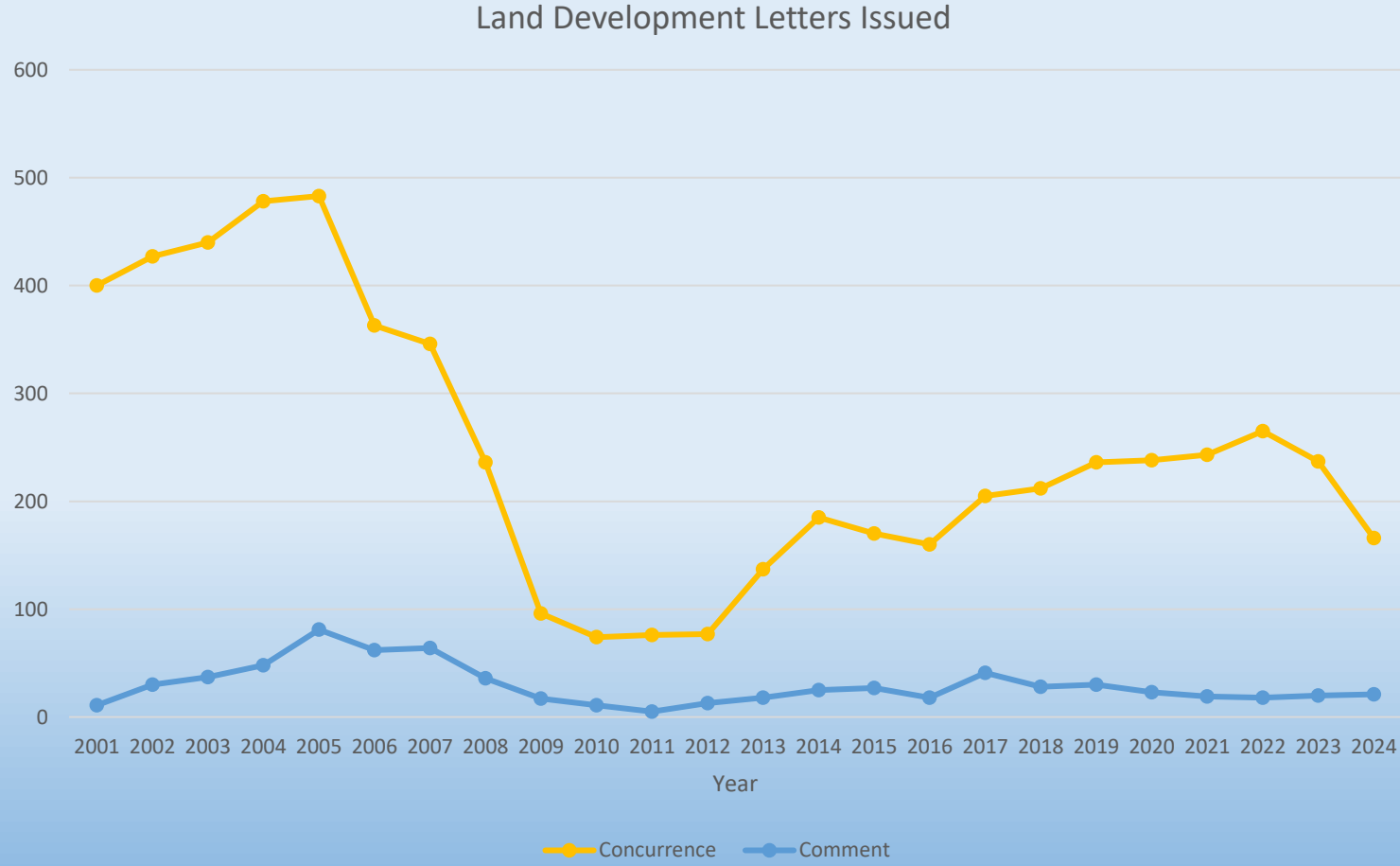


F-1 Debris Basin

Capital Improvement Program

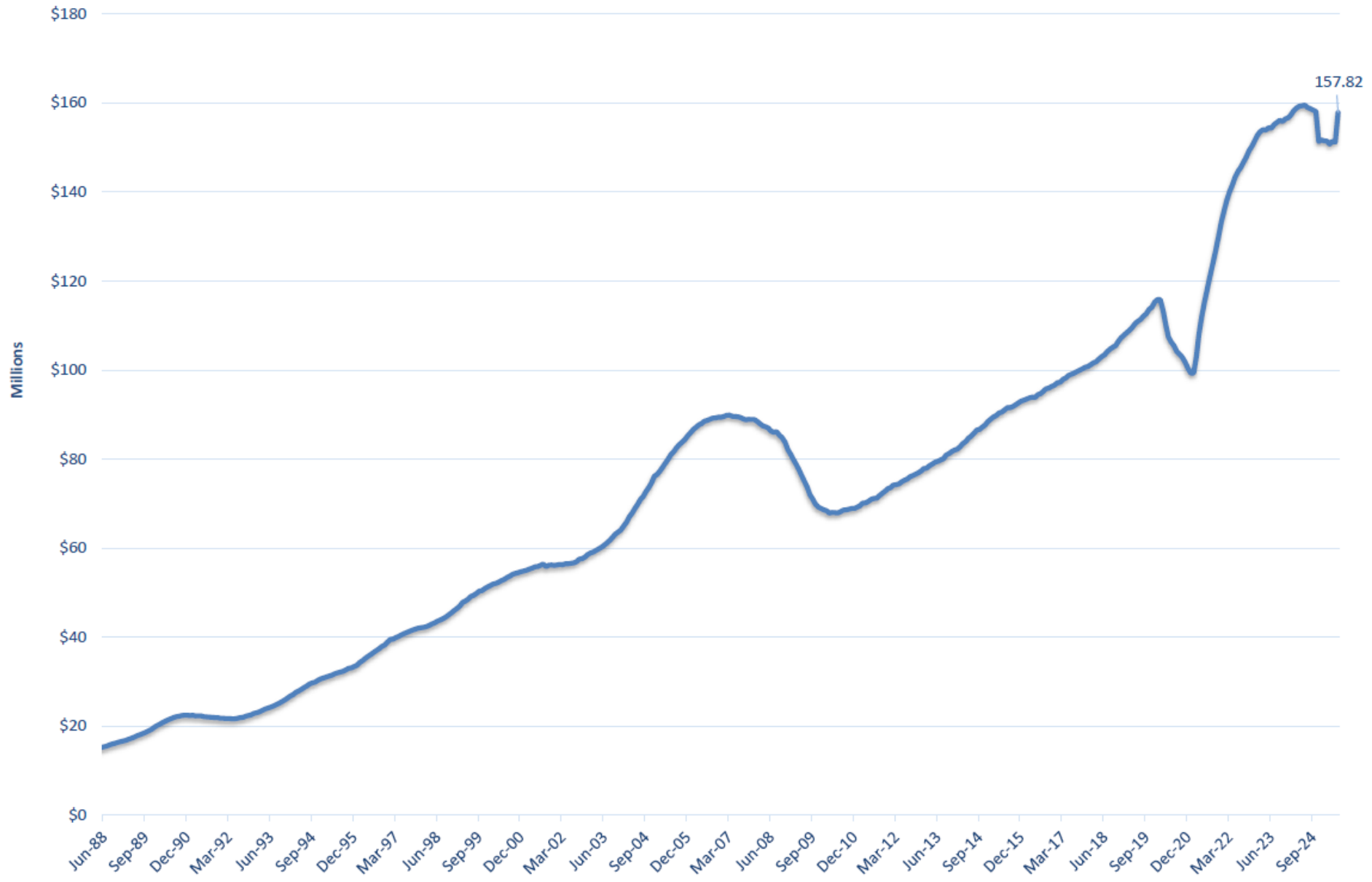
Totals	Total Projects	RFCD Cost
Construction	12	\$ 149,794,682
About to Start Construction	4	\$ 23,265,847
Out to Bid	-	-
Soon to Advertise	3	\$ 23,987,760
Construction Total (funded)	19	\$ 197,048,289
Design Total	30	\$ 678,797,003
Total All	49	\$ 875,845,292

Land Development Trends

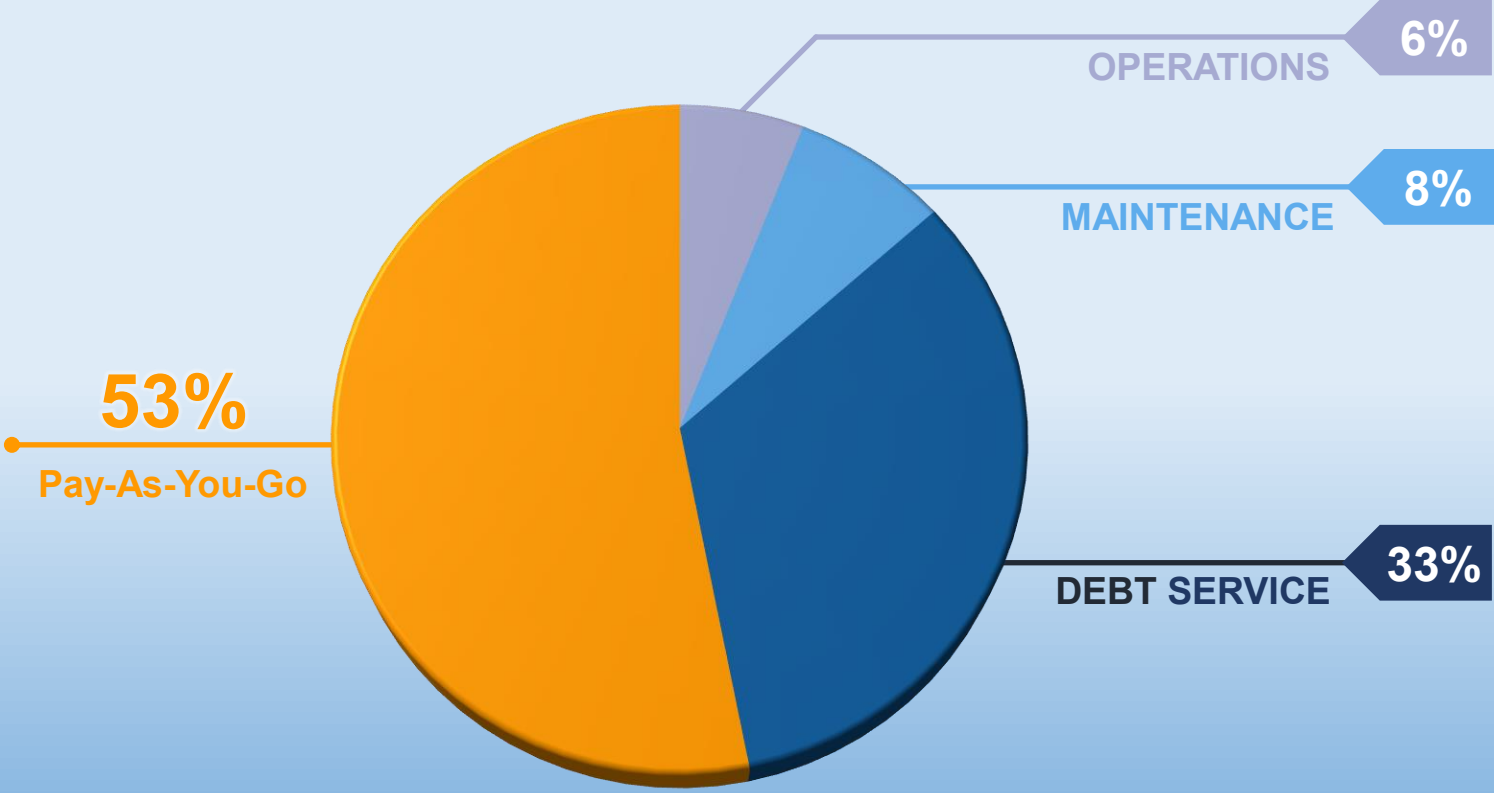




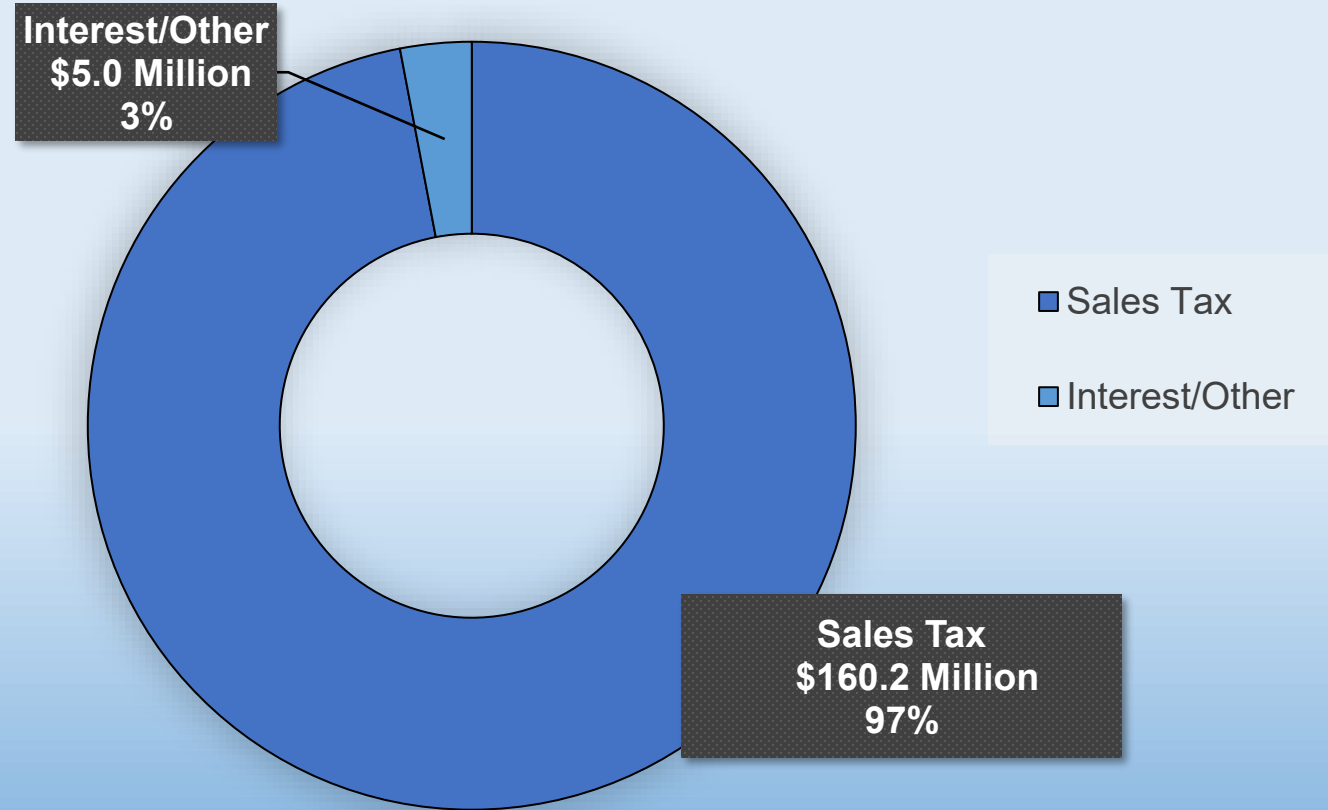
Rolling 12-Month Total Sales Tax Revenue Inception-to-Date



HISTORICAL ANNUAL EXPENDITURES

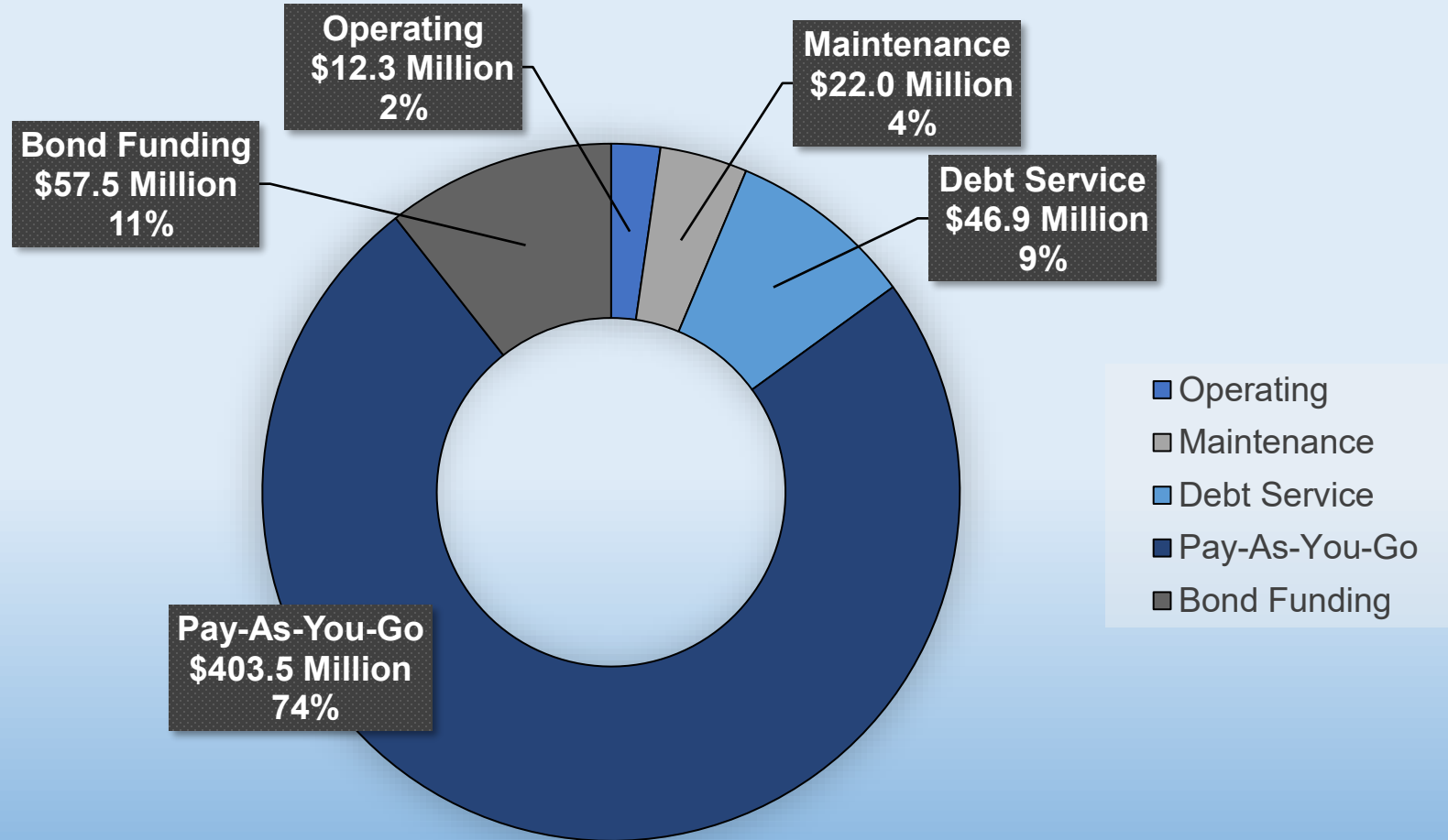


FY 2026 Estimated Resources



\$165.2 Million

FY 2026 Expenditures Budget



\$542.2 Million

Special Projects

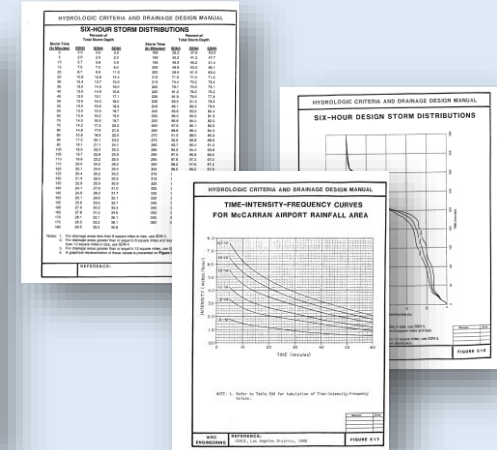
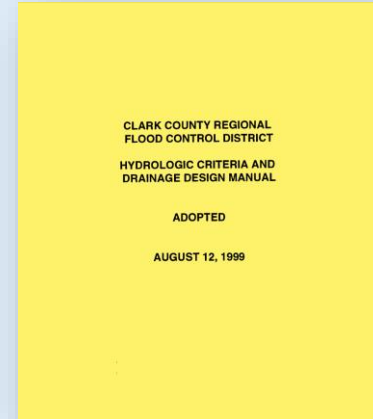
Update Drainage Design Manual

Last Adopted in 1999

Update:

- Text
- Figures
- Equations
- Criteria
- Guidance
- References/Links
- Everything

Major Stakeholder Coordination Effort



Section 1300 - Erosion and Sedimentation

1301.6 Debris Dams and Basins

On channels carrying heavy sediment and debris loads, it is often economically impracticable to provide culverts large enough to carry surges of debris. If the height of an embankment and storage area are not sufficient for a riser or crib, a debris dam and/or basin placed some distance upstream from the culvert may be feasible. These are sometimes used to trap heavy boulders or coarse gravel that would clog culverts.

A number of detention and/or debris basins have been identified in the CCRFCD Master Plan. The larger basins are generally located at or just below the mouths of mountain canyons at points just above the alluvial fans on the periphery of the valley areas. These canyon areas and the immediately down gradient fans are the source areas for large quantities of suspended sediment and bedload, which are carried in the washes during floods.

Detention basins located in the mountain canyon areas can accumulate large deposits of rocky debris, either over the course of several years or after each extremely large flood event. Design of detention ponds (Section 1200) in these areas must include provisions for debris (and suspended sediment) deposits and control of floating debris using debris racks and/or risers.

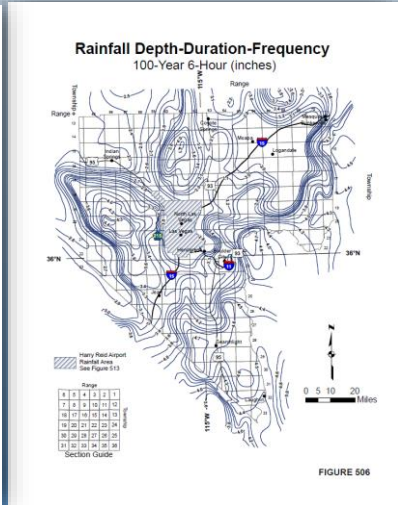
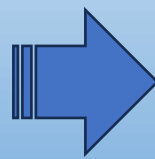
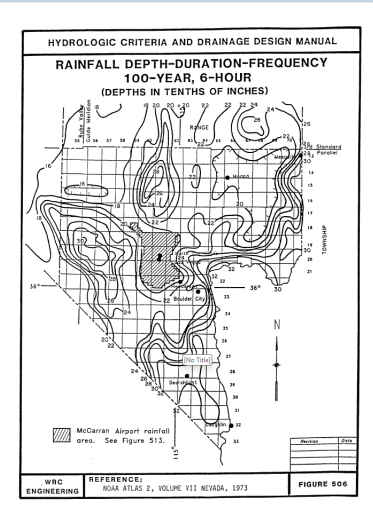
Much of the rock debris will deposit in the upper reaches of detention ponds where high-velocity flood waters first encounter slack, ponded water. If regularly maintained and cleaned of these deposits, detention ponds can effectively serve multiple purposes of attenuation of flood peaks and entrapment of sediment and debris (see Section 1200 for further discussion of detention pond design).

1301.7 Siting of Control Structures and Basins

The spacing of bars on trash racks, debris racks, debris deflectors, debris risers and debris cribs is based on the size of the structure to be protected and the anticipated size and gradation of the debris. To minimize the potential for clogging, in no case shall the barrier members be spaced more than two-thirds of the conduit diameter.

The size of debris basins is most dependent on the physical properties of the watershed and the intensity of flood events. Specific sedimentation data have not been developed for the Clark County area, and designs must be based on site specific data from other areas. The U.S. Department of Agriculture reports sedimentation rates for reservoirs nation-wide in a report "Sedimentation Deposition in U. S. Reservoirs: Summary of Data Reported Through 1970" (USDA, 1976). The average annual sedimentation rates reported vary over five orders of magnitude. For this reason, the use of data from other areas is limited.

Adopted August 12, 1999 HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL 1300

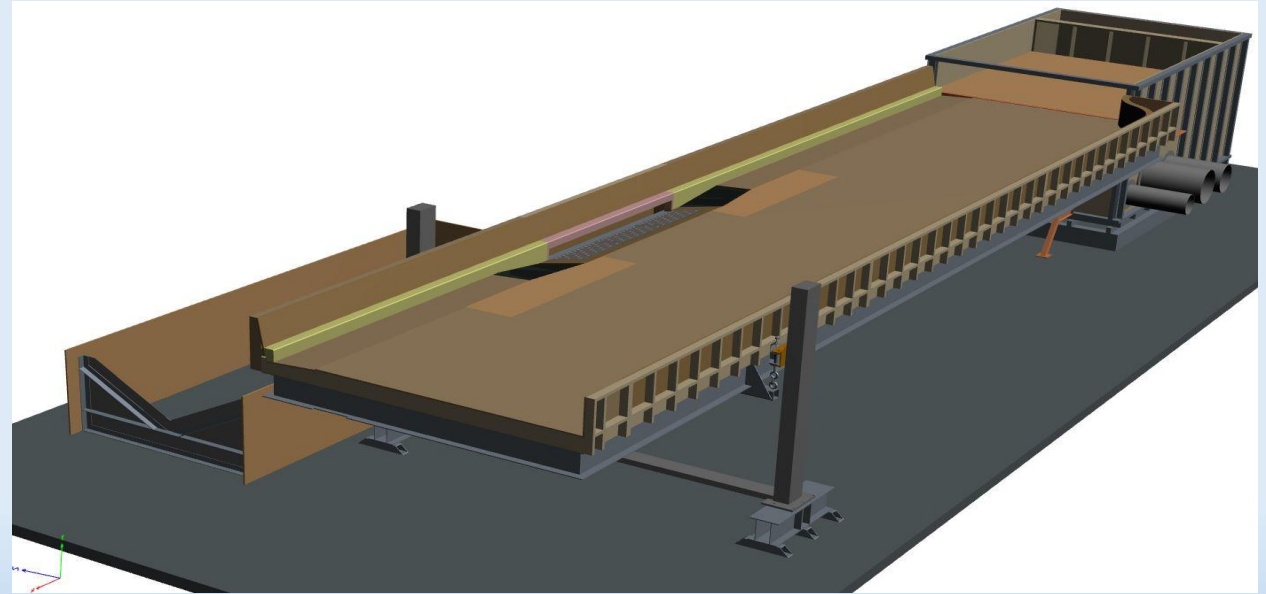




Future

Special Projects

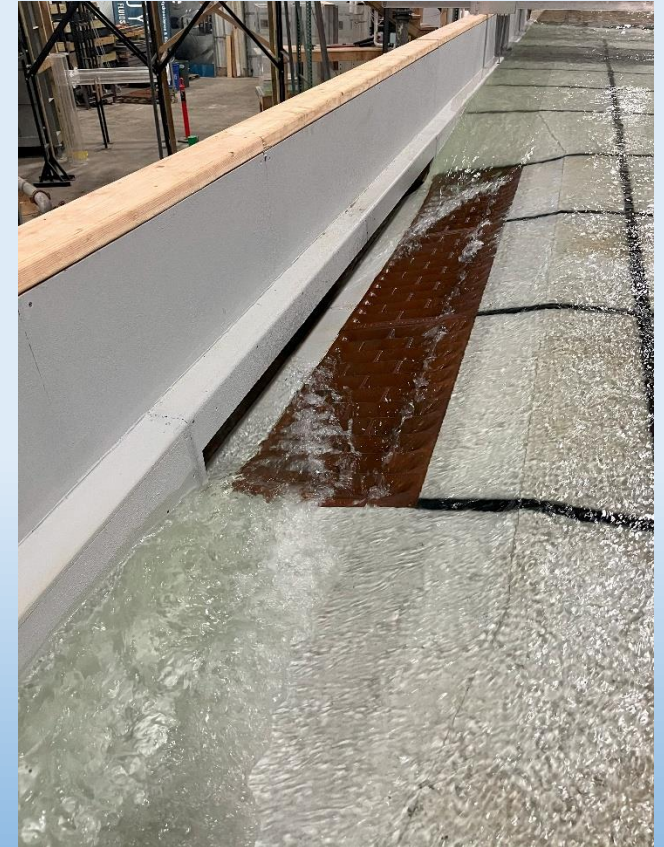
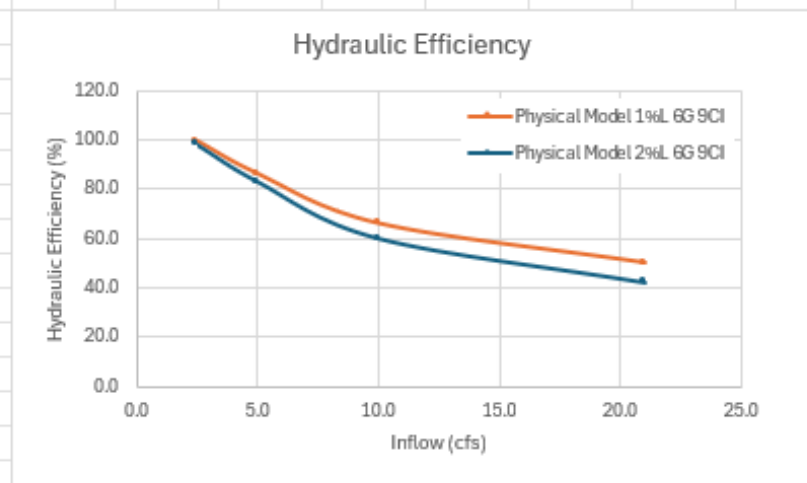
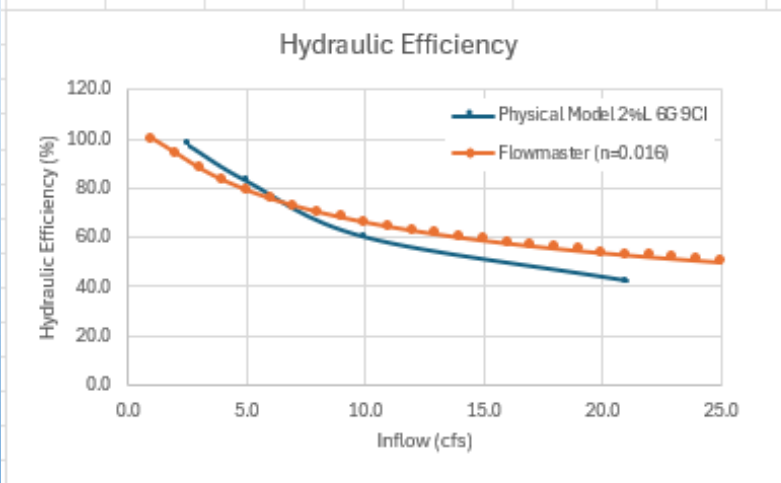
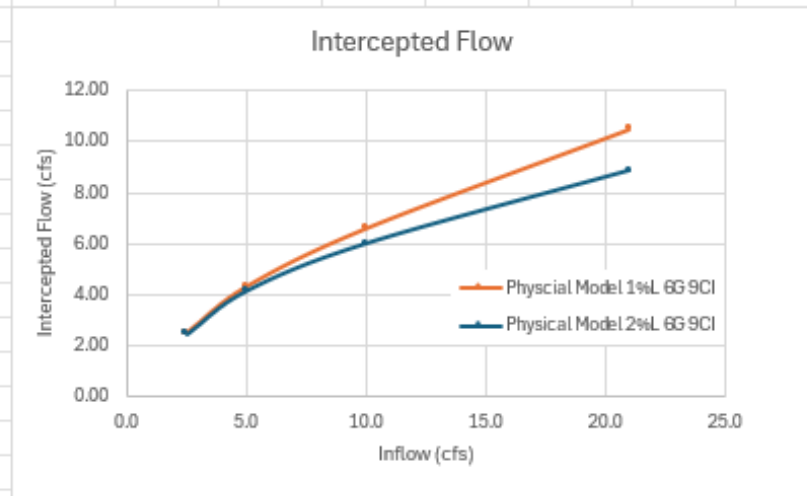
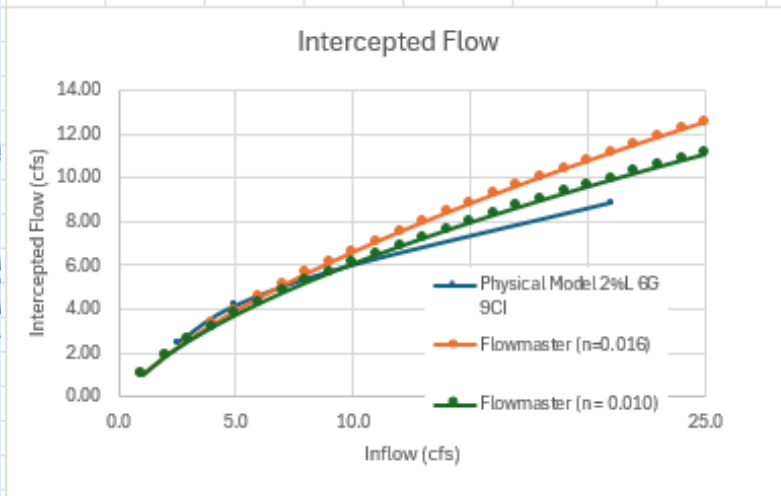
University of Iowa: IIHR Hydrosience & Engineering
Drop Inlet Capacity Physical Model





Special Projects

University of Iowa: IIHR Hydrosience & Engineering Drop Inlet Capacity Physical Model

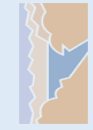




Special Projects

University of Iowa: IIHR Hydroscience & Engineering
Drop Inlet Capacity Physical Model

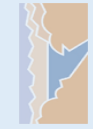




Special Projects

University of Iowa: IIHR Hydrosience & Engineering
Drop Inlet Capacity Physical Model





Future

Special Projects

USACE Hydrologic Engineering Center (HEC) Customize HEC-HMS Software and Reporting

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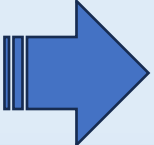
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hec1-ex2.dat
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hec1-ex2.out
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FLOOD HEC-HMS MODEL (HEC-1)	U.S. ARMY CORPS OF ENGINEERS
DATE 1/28/2015	HEC-HMS 4.7 ALPHA
VERSION 4.7	
FOR DSS: REVISION DATE 09/28/2014	

U.S. ARMY CORPS OF ENGINEERS
HEC-HMS 4.7 ALPHA
HEC-HMS 4.7 ALPHA
DATE 02/17/2015 08:54
TIME 10:00

OPERATION	STATION	AREA	PLAN	TIME	NOTES APPLIED TO REPRESENTATION										
					NOTE 1	NOTE 2	NOTE 3	NOTE 4	NOTE 5	NOTE 6	NOTE 7	NOTE 8			
HEC-HMS AT	CS-0	0.00	FLOOD	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718
HEC-HMS AT	CS-1	0.00	FLOOD	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718
HEC-HMS AT	CS-2	0.00	FLOOD	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718
HEC-HMS AT	CS-3	0.00	FLOOD	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718
HEC-HMS AT	CS-4	0.00	FLOOD	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718	0718
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HEC-HMS 4.7 Alpha [C:\Projects\Punx\Punx.hms]

File Edit View Components GIS Parameters Compute Results Tools Help

- Basin Models
 - punxsutawney
 - EB Mahoning Ck
 - Stump Ck
 - Mahoning Ck
 - Punx Local
 - Sink-1
- Meteorologic Models
- Control Specifications
- Time-Series Data
- Grid Data
- Terrain Data

Basin Model [punxsutawney]

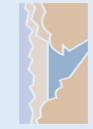
Components Compute Results [No Title]

Loss Transform Baseflow Options
 Subbasin Discretization Canopy

Basin Name: punxsutawney
 Element Name: Punx Local
 File: C:\Projects\Punx\punxsutawney.sqlite
 Projection: SHG
 Cell size: 1000

NOTE 1000B: Begin opening project "Punx" in directory "C:\Projects\Punx" at time 11Sep2020, 08:35:34.
 NOTE 10019: Finished opening project "Punx" in directory "C:\Projects\Punx" at time 11Sep2020, 08:35:34.

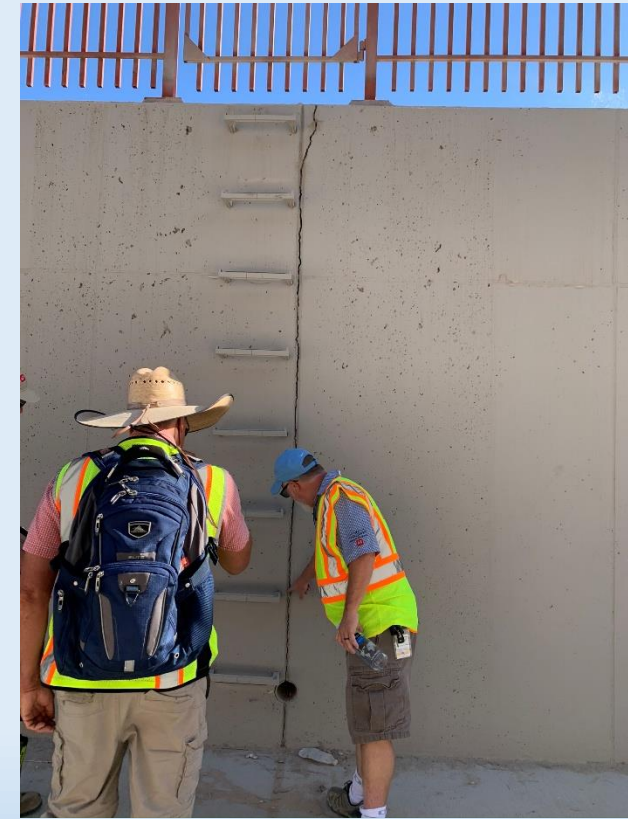




Future

Special Projects

Flood Control Facility Condition Assessment

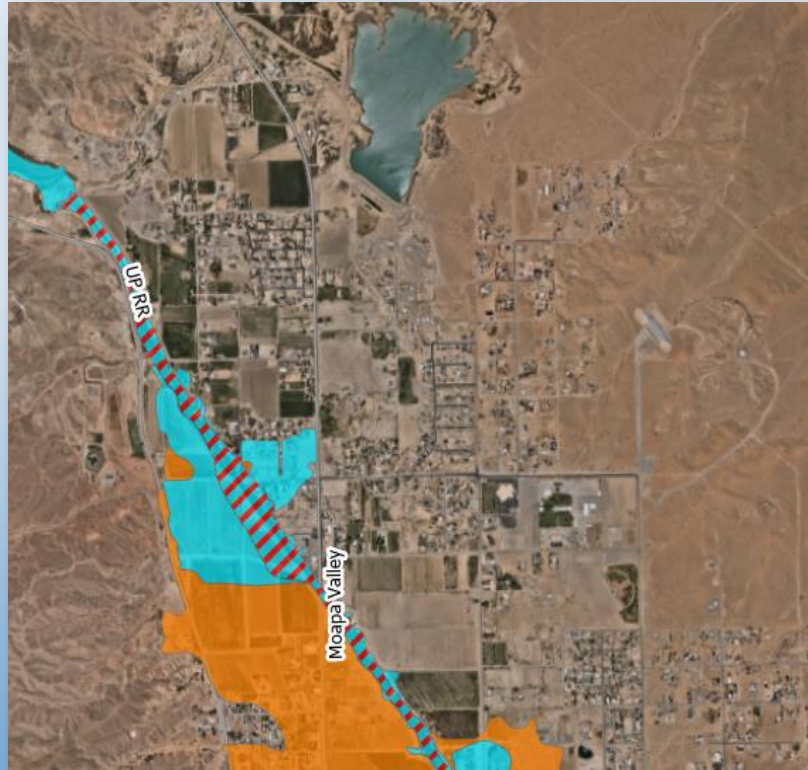




Special Projects

Ongoing Flood Insurance Studies

Muddy River – Logandale:
Western Washes
FIS



Lower Flamingo Detention Basin and Outfall
LOMR

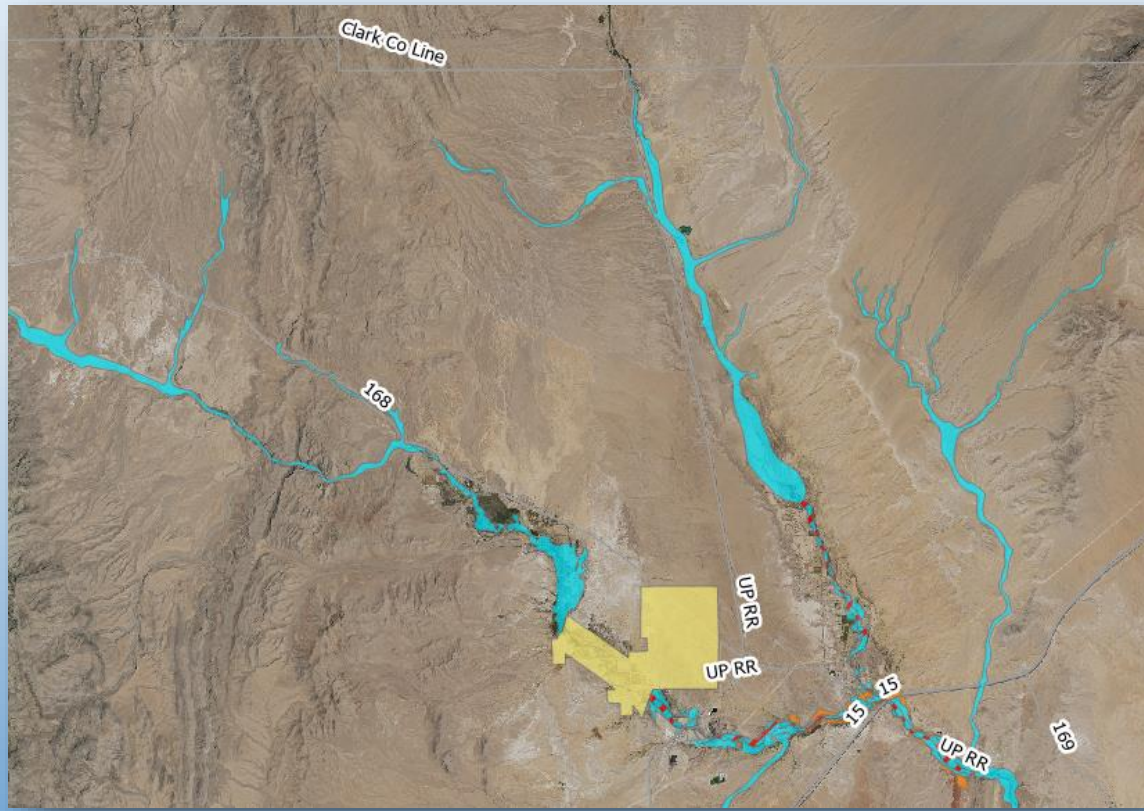




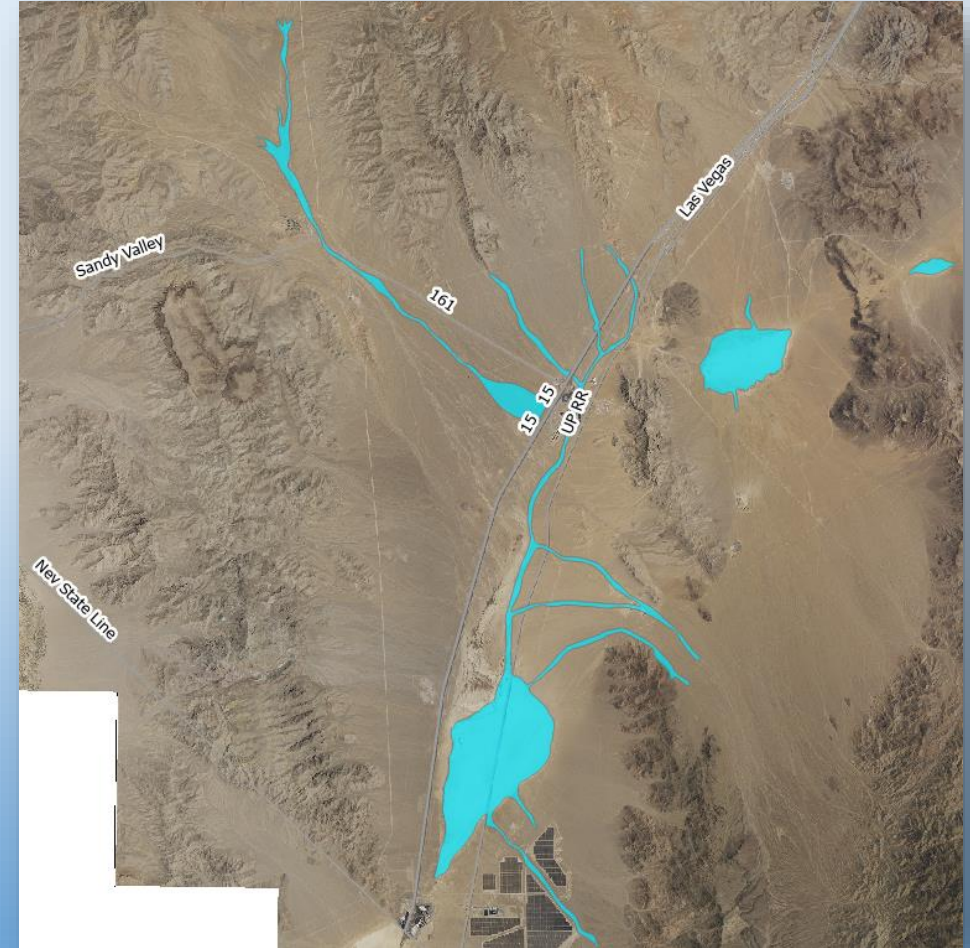
Special Projects

Potential Flood Insurance Studies

Moapa Valley



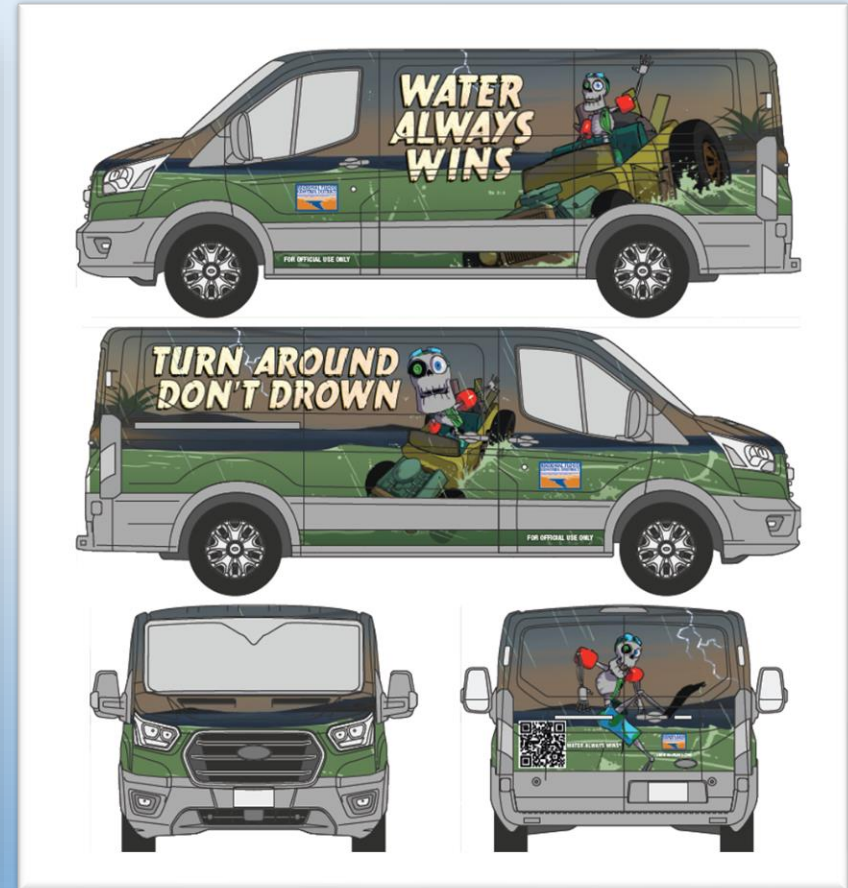
Southern Nevada Supplemental Airport Ivanpah Valley





Public Information

Drainger Danger



Questions?



REGIONAL FLOOD CONTROL DISTRICT

