

# **Rainfall Event Report**

## **June 30, 2016**

Prepared by  
Craig C. McDougall  
Senior Hydrologist  
Clark County Regional Flood Control District

On the afternoon of June 30, developing thunderstorms over the Spring Mountains west of the Las Vegas Valley moved eastward into the southern half of the valley. Areas impacted the hardest were between the town of Blue Diamond through the city of Henderson, plus the far eastern section of the valley. Two flood related deaths, and a possible third, are known to have occurred in the Flamingo / Tropicana watershed. Historically, June is the driest month in Las Vegas with an average of monthly rainfall total of 0.07 inches. The 24-hour total rainfall reported by the National Weather Service (NWS) for June 30, 2016 was 0.47 inches. However, several Flood Threat Recognition System (FTRS) rain gauges in central and southern Clark County reported much higher rainfall amounts.

Monsoonal moisture advected into Clark County from Northern Mexico beginning on June 29th, which elevated surface dewpoints above 50°F throughout the Las Vegas valley, and dewpoints exceeding 60°F were measured in southern Clark County. Daytime heating initially triggered thunderstorms in the northern Spring Mountains beginning around 11am. By 1pm, NWS radar indicated that heavy rainfall was occurring between Lee Canyon and Kyle Canyon, with new storms developing in the central Spring Mountains. The NWS issued the first of several Flash Flood Warnings this day at 1pm for the southern Spring Mountains towards the town of Blue Diamond as storms began to drift eastward.

By 2pm, the FTRS rain gauge on northern Blue Diamond Ridge reported 0.51 inches of rainfall, the southern Blue Diamond Ridge gauge reported 1.14 inches (at one point, this gauge reported a rainfall rate approximating a 10-year recurrence interval), and NWS radar indicated higher amounts immediately west of these sites. A report by Clark County Public Works at 1:39pm stated flood waters were overtopping Hwy 159 at Blue Diamond Town. Storm water began to flow into the Tropicana Detention Basin at 2:45pm, and reached a depth of 20 feet in 33 minutes.

By 3pm, the initial band of storms moved just inside of the CC-215 beltway in the southwestern section of the valley. Heavy rainfall continued west of I-15 with strong wind and damaging hail. Additional storms began to build near the McCullough Hills areas, with three FTRS gauges reporting rainfall amounts over 0.50 inches east of I-15. An FTRS rain gauge at Eastern Avenue and Duck Creek reported a rainfall total of 1.54 inches in 30 minutes, approximating the 50-year recurrence interval for that duration, and it eventually measured 1.89 inches for the

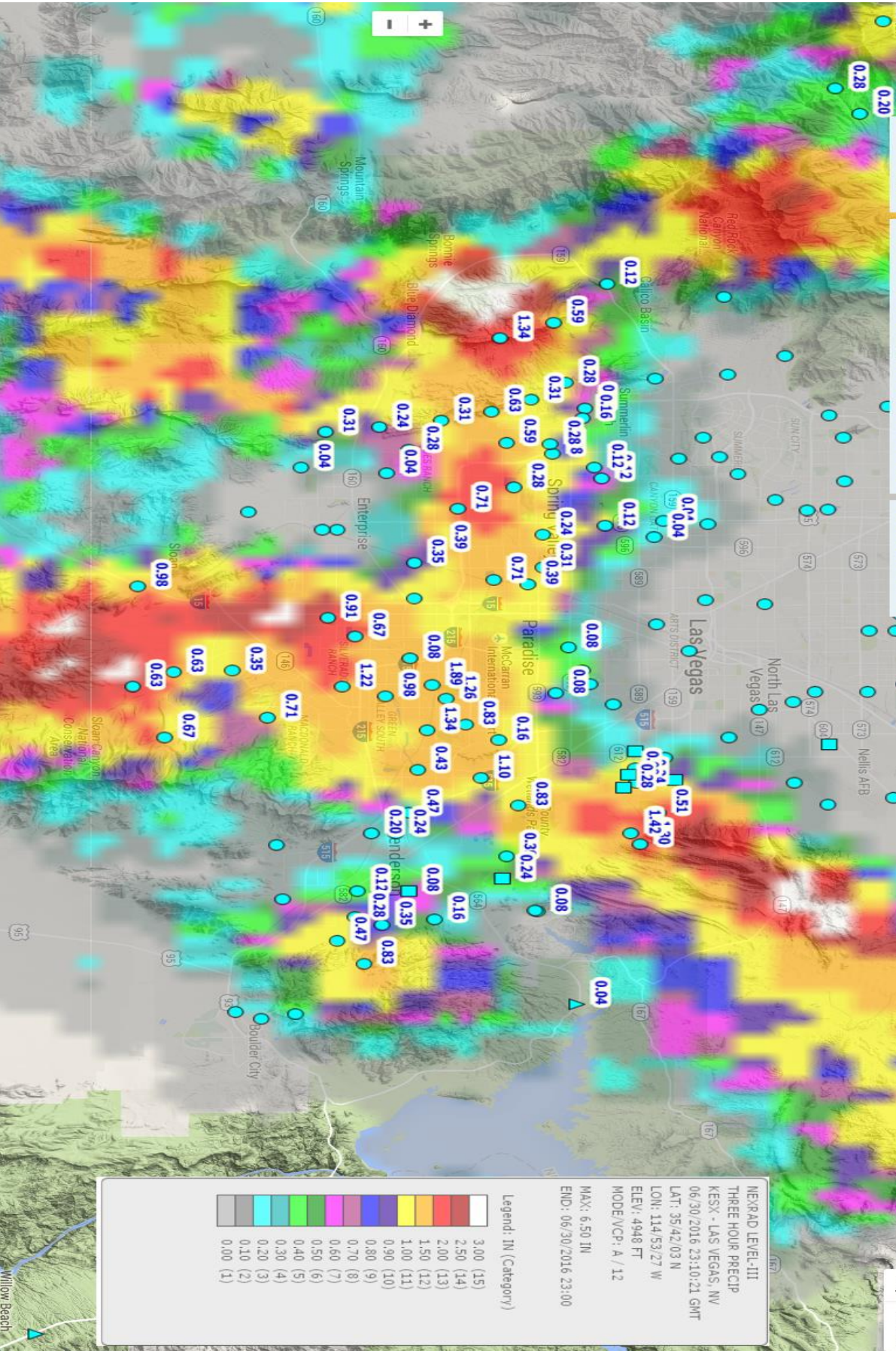
duration of the storm. Four FTRS rain gauges in Henderson and two gauges at Sunrise Landfill reported rainfall exceeding one inch by 4pm.

Runoff from this quickly moving storm filled the Tropicana Detention Basin to a maximum depth of 21 feet (65.5 acre feet) just before 4pm. A United States Geological Survey (USGS) gauge on the Flamingo Wash at Nellis Blvd. reported a peak flow of 4800 cubic feet per second (cfs). The USGS also estimates that the peak flow in Duck Creek at Broadbent Blvd. was 8600 cfs.

Rainfall at two CCRFCD gauges west of Laughlin totaled 1.00 inches and 1.70 inches. At 8:49pm Clark County Public Works reported that Needles Highway was closed south of Laughlin as flooding had washed out the road one mile north of the California state line.

As is typical of many storm events during the area's summer monsoon season, the June 30 rainfall was very intense, highly localized, and occurred with little warning. Eight FTRS gauges reported rainfall totals in excess of 1-inch, most of which occurred in less than 15-30 minutes. While there were several instances of debris and localized flooding of roadways in the Las Vegas area, there were no reports of flooding of residences or businesses. The drainage system functioned as designed and there were no reports of system failures. There were two flood-related deaths and several instances of swift-water rescues in the Las Vegas Valley as rapidly rising runoff swept away individuals who were apparently residing in or near the drainage system. The body of a third possible flood victim was discovered two days after this event; at the time this report was written the County Coroner's office had not made a determination if this death was flood-related.

As additional and updated information becomes available, the copy of this report posted on the District's web-site ([www.regionalflood.org](http://www.regionalflood.org)) will be updated.



NEPAD LEVEL-III  
 THREE HOUR PRECIP  
 KESX - LAS VEGAS, NV  
 06/30/2016 23:10:21 GMT  
 LAT: 35/42/03 N  
 LON: 114/53/27 W  
 ELEV: 4948 FT  
 MODE/VCP: A / 12  
 MAX: 6.50 IN  
 END: 06/30/2016 23:00

**Legend: IN (Category)**  
 3.00 (15)  
 2.50 (14)  
 2.00 (13)  
 1.50 (12)  
 1.00 (11)  
 0.90 (10)  
 0.80 (9)  
 0.70 (8)  
 0.60 (7)  
 0.50 (6)  
 0.40 (5)  
 0.30 (4)  
 0.20 (3)  
 0.10 (2)  
 0.00 (1)