

# **Rainfall & Flood Event Report**

## **October 11, 2012**

prepared by  
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For the third time in as many months, monsoonal moisture pushed into Clark County, particularly the Las Vegas Valley. Rainfall totals measured by the Regional Flood Control District's Flood Threat Recognition System (FTRS) rain gages exceeded the forecast rainfall amounts in many instances, with the most rainfall occurring across the western half of the Valley. No fewer than eighteen FTRS rain gages measured more than two inches of rainfall during this event; an additional sixty-seven gages recorded rainfall totals in excess of one inch. While the rainfall intensities were generally less than the local drainage design standard, the large volume of rainfall over a large area resulted in wide-spread street flooding and significant flow in some of the area's washes. Flood control infra-structure functioned as designed and there was limited damage to private and public properties.

On October 9<sup>th</sup>, the local office of the National Weather Service (NWS) began its outreach effort to advise of an early Fall storm with the possibility of locally heavy rain. A strong low pressure system off the coast of southern California tapping tropical monsoonal moisture and moving inland and across southern Nevada was the cause of concern. Rainfall began moving into the Clark County area late in the evening of October 10, and periodic showers persisted throughout the area for roughly the next twenty-four hours. The most intense rainfall occurred between 8:00 p.m. and 9:00 p.m. on October 11 as strong thunderstorms moved across the western half of the Las Vegas Valley. Rainfall totals throughout Clark County as reported by the FTRS gages for this event are presented in Figures 1 – 8.

While many of the area's washes and drainage channels saw at least one foot of flow in them, the most significant flow was in the Las Vegas Wash and the Flamingo Wash. The discharge in the Las Vegas Wash through the Desert Rose Golf Course was similar to that experienced during the September 11, 2012 event; however the extent of damages to private properties was appreciably less during this event. It is believed that this may have been due to the peak flows in the Flamingo and Las Vegas Washes not being coincident at the Desert Rose GC during the October event. Table 1 presents peak discharge estimates at various locations for the October 11 event.

Flood control facilities are believed to have generally functioned as designed, greatly reducing the level of damages and inconvenience that might otherwise have been experienced. There were reports of two residences near the Desert Rose Golf Course having some flood waters enter them. Detention basins, particularly those in the western portion of the Las Vegas Valley, captured large volumes of storm runoff. Table 2 presents the peak depths and associated volumes of runoff impounded at several detention basins.

The October 11 rainfall was the most recent event during a very active summer monsoon in Clark County. In addition to several isolated locally intense thunderstorms in July, the area also experienced major storms in August and September 2012. Figures 9 – 13 present the rainfall totals throughout the Las Vegas Valley as measured by FTRS rain gages for the period extending from July 1 through October 15, 2012. The normal rainfall for Las Vegas for this period is 1.15 inches. The official rainfall amount measured by the NWS was 4.57 inches, making 2012 the wettest summer on record.

**Table 1. Maximum Depth and associated Peak Discharge**

<u>Location</u>	<u>Max Depth</u>	<u>Discharge (est)</u>
Flamingo Wash at Nellis	2.1 feet	3420 cfs
Las Vegas Wash at Sahara	5.3 feet	9040 cfs
at Vegas Valley Drive	4.3 feet	9620 cfs
at Rainbow Garden Weir	6 feet	11600 cfs

The discharge values presented are *estimates* and subject to change.

**Table 2. Detention Basin Maximum Depth and associated Volume**

<u>Detention Basin</u>	<u>Max Depth</u>	<u>Volume (est)</u>
Upper Flamingo	8 feet	330 acre feet
Red Rock	4.5 feet	185 acre feet
Tropicana North bay	29 feet	140 acre feet
South bay	10.5 feet	35 acre feet
Gowan North	6.25 feet	150 acre feet
Gowan South	5 feet	60 acre feet
Vandenberg	11.5 feet	75 acre feet
Lower Las Vegas Wash	10.5 feet	50 acre feet
Carey-Lake Mead	8.6 feet	35 acre feet
Lower Flamingo	7.6 feet	25 acre feet
Lakes (Desert Breeze Park)	8 feet	20 acre feet

The storage volumes presented are *estimates* and subject to change.



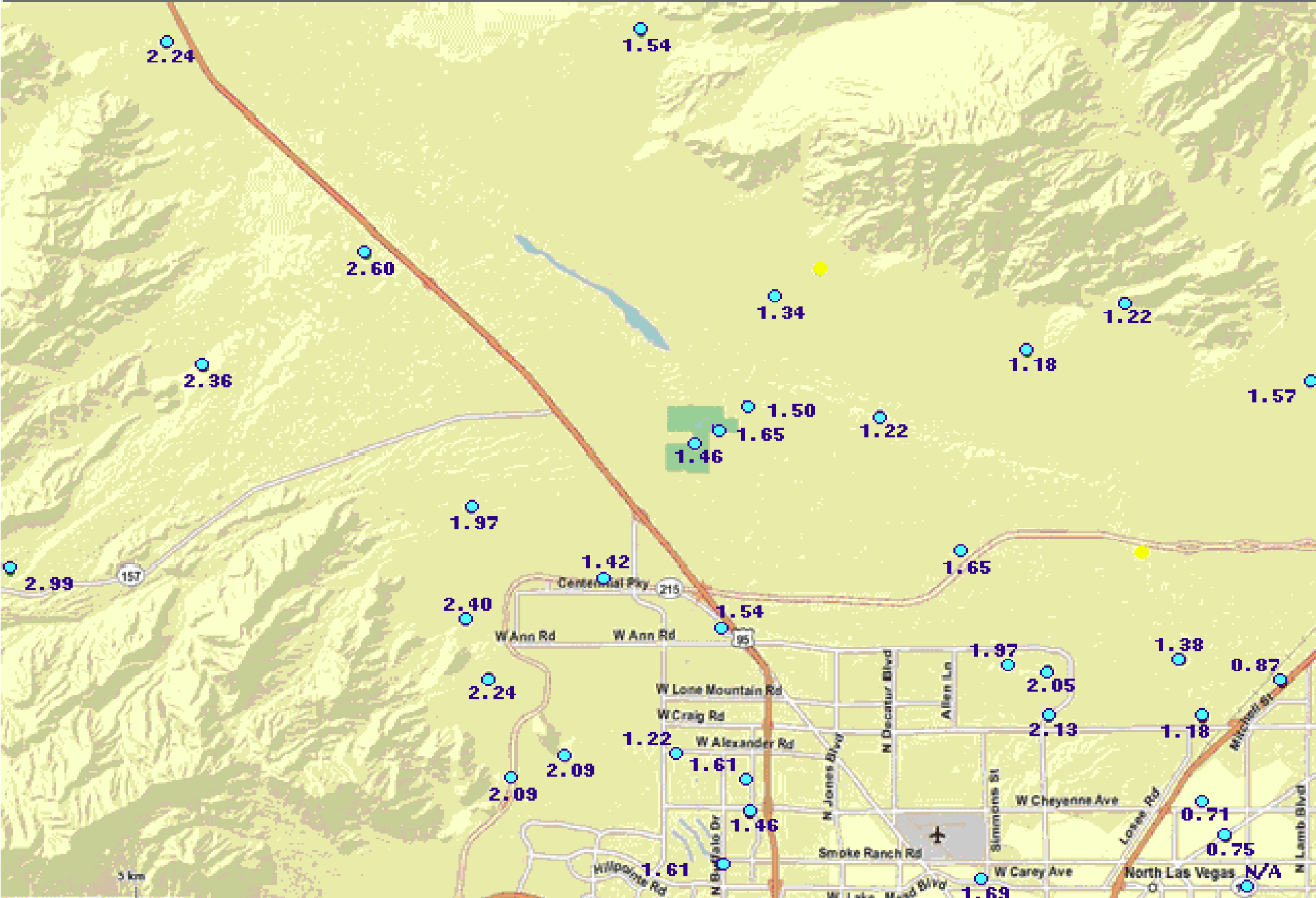


Figure 2. October 11, 2012 - 36 hour rainfall totals northwest Las Vegas Valley (source: RFCD FTRS)



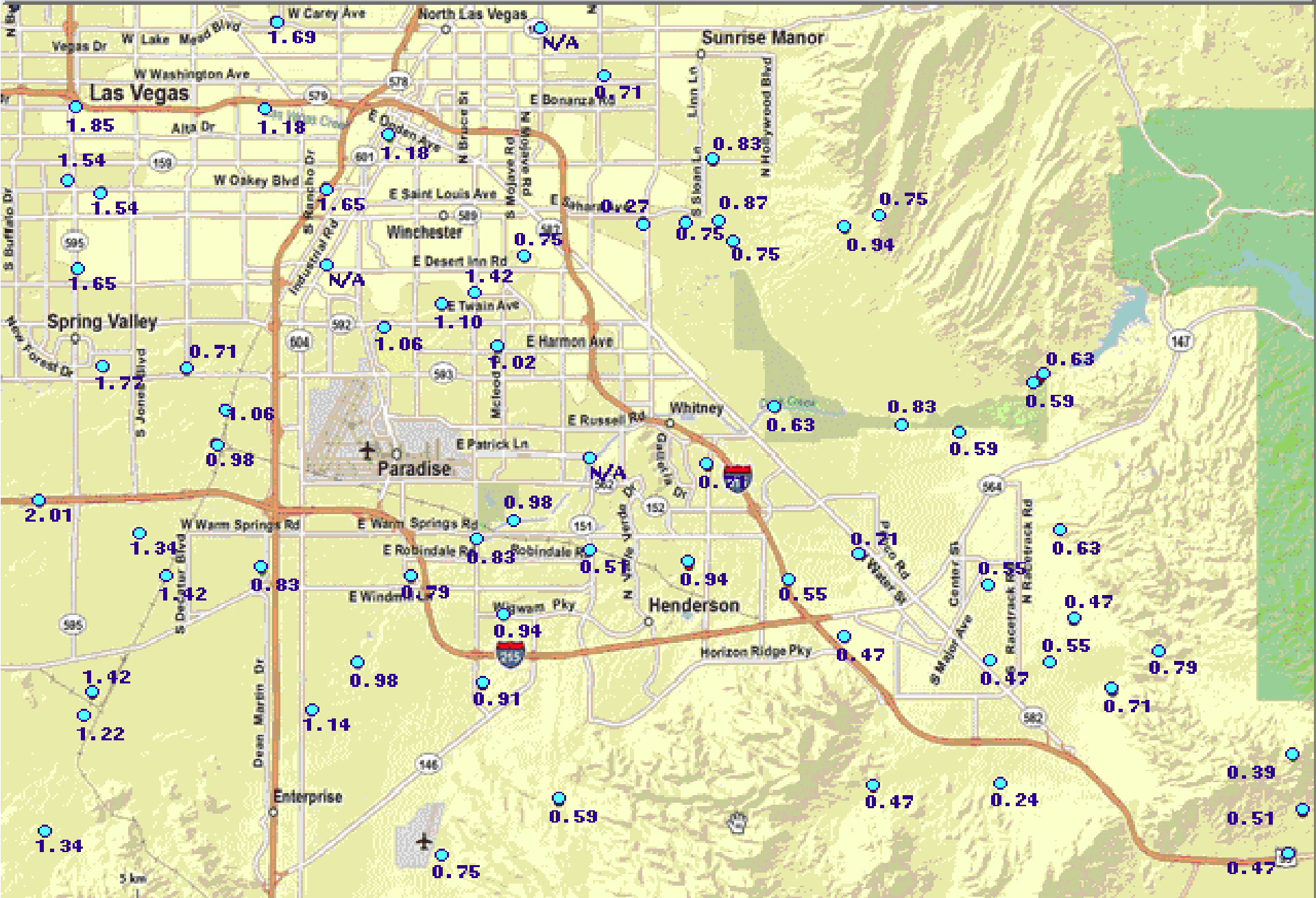


Figure 4. October 11, 2012 - 36 hour rainfall totals southeast Las Vegas Valley (source: RFCDFTRS)

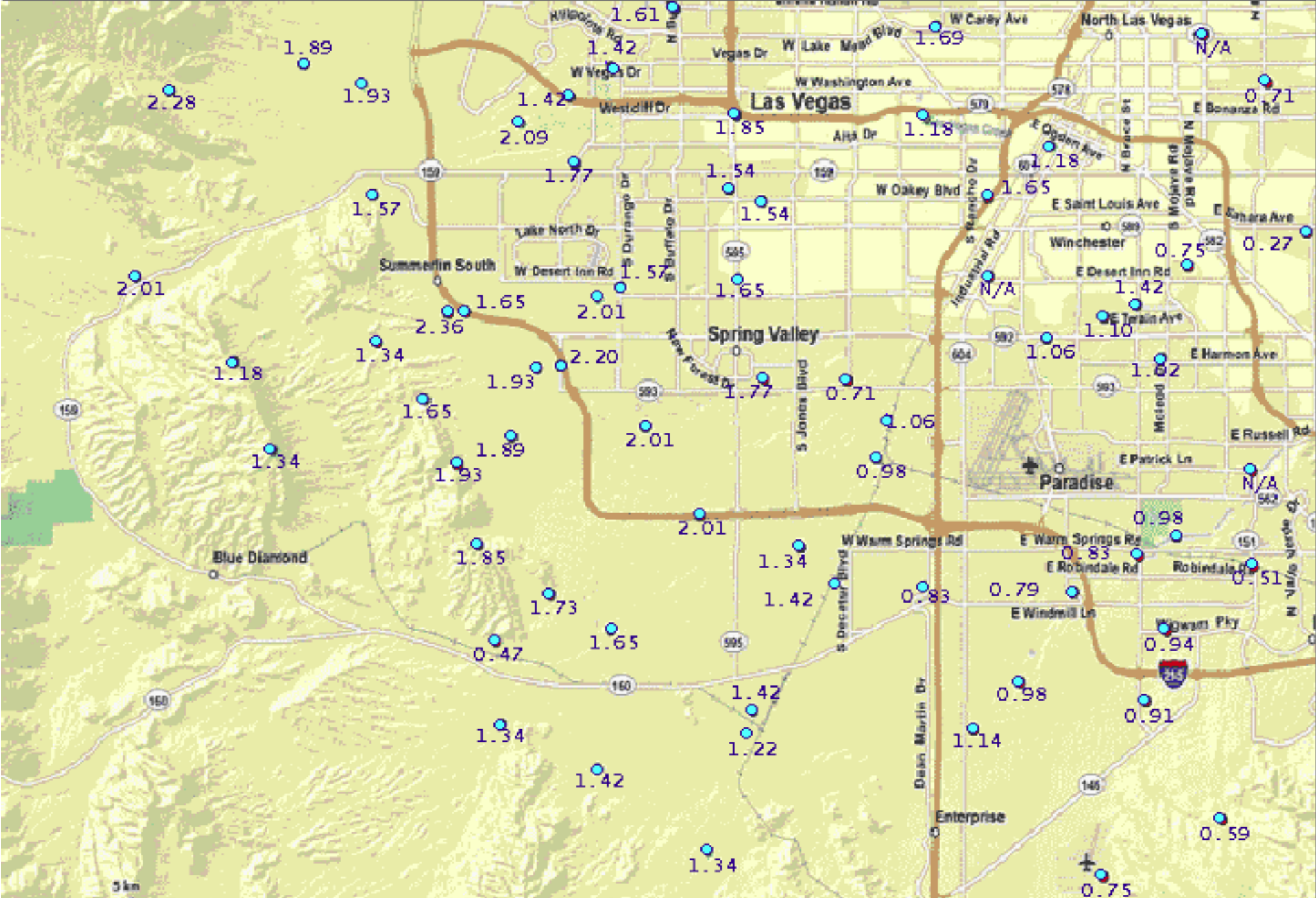


Figure 5. October 11, 2012 - 36 hour rainfall totals southwest Las Vegas Valley (source: RFCDFTRS)

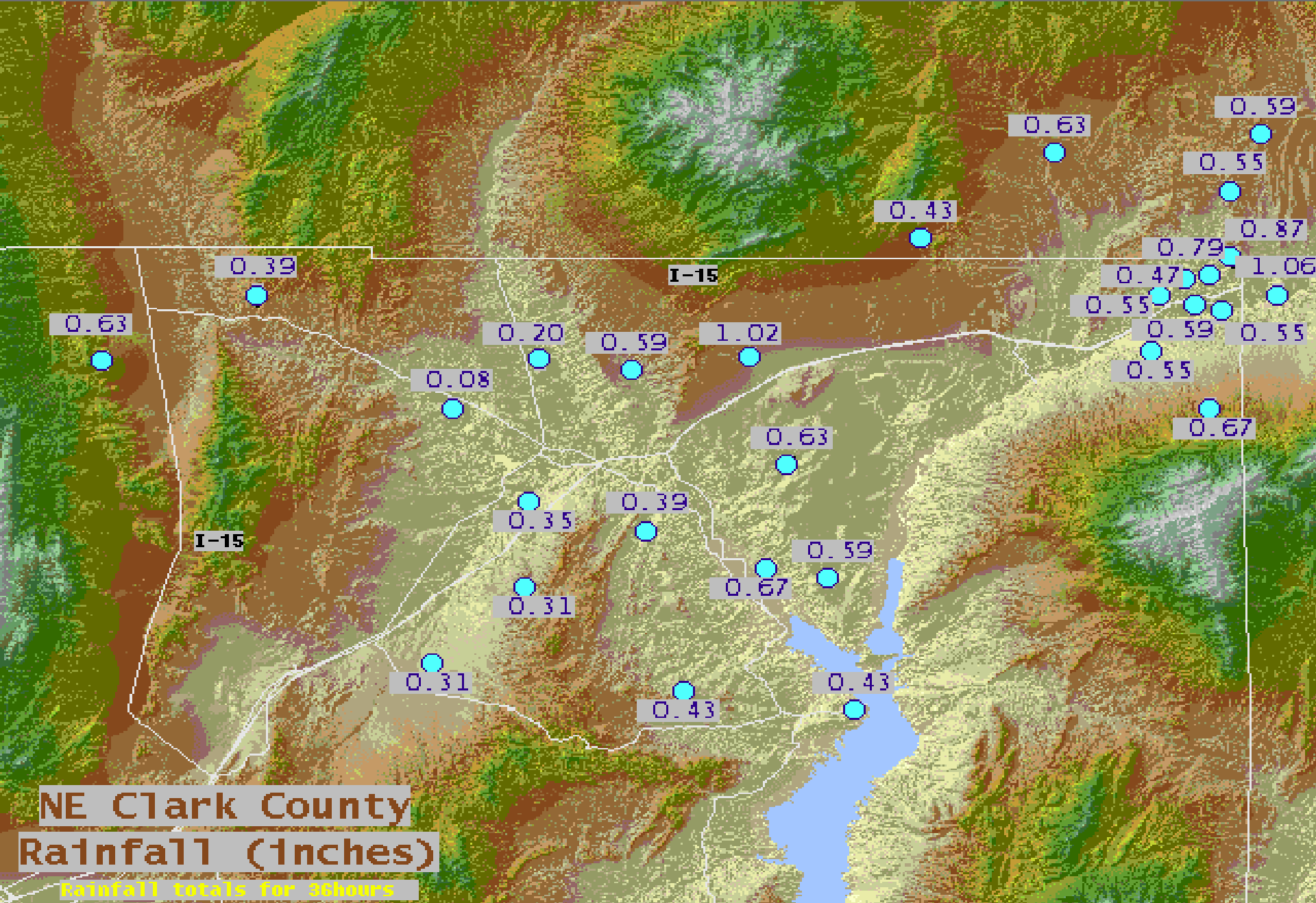


Figure 6. October 11, 2012 - 36 hour rainfall totals, northeast Clark County (source: RFCDFTRS)



# NW Clark County Rainfall (Inches)

Rainfall totals for 36hours

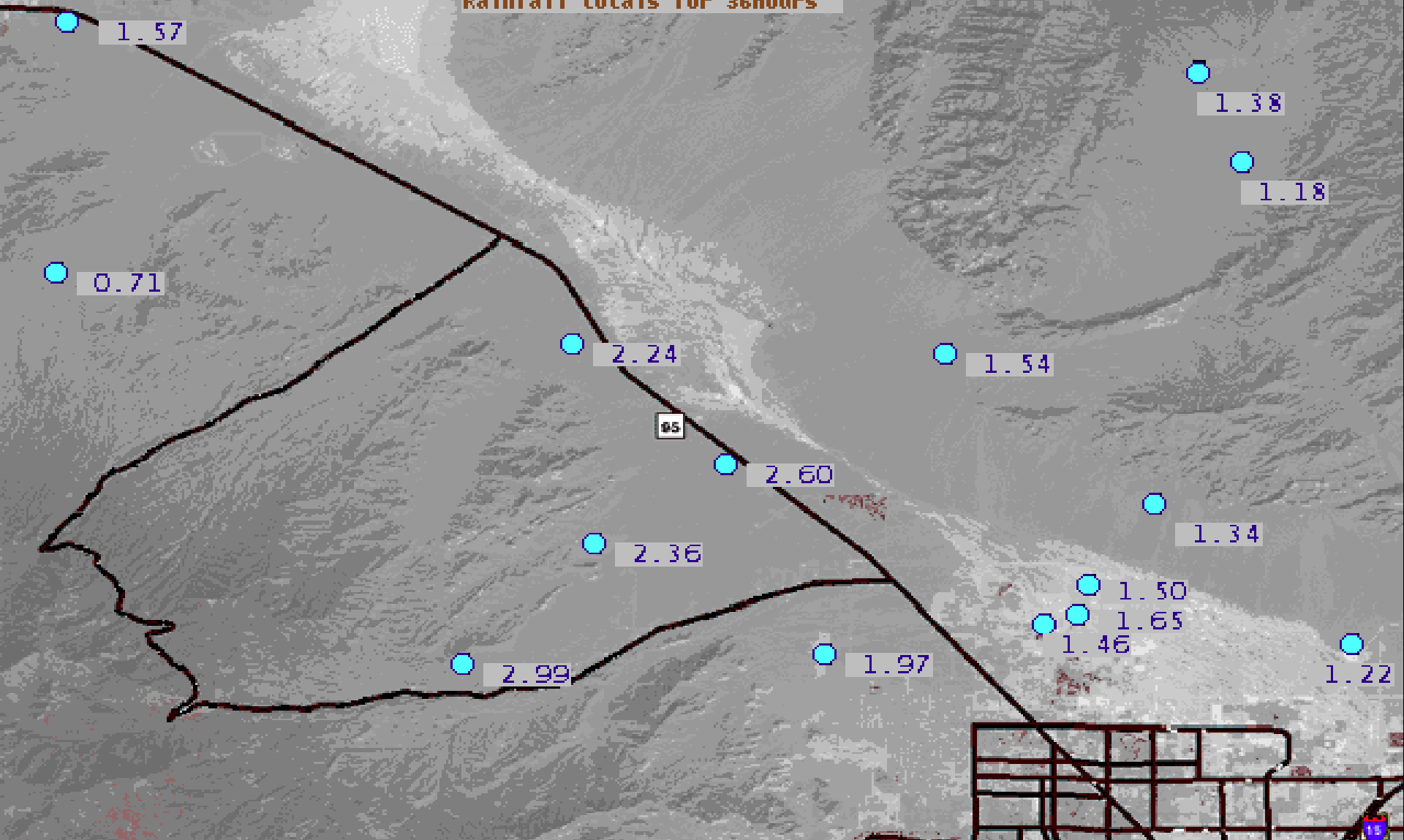


Figure 7. October 11, 2012 - 36 hour rainfall totals, northwest Clark County (source: RFCDFTRS)

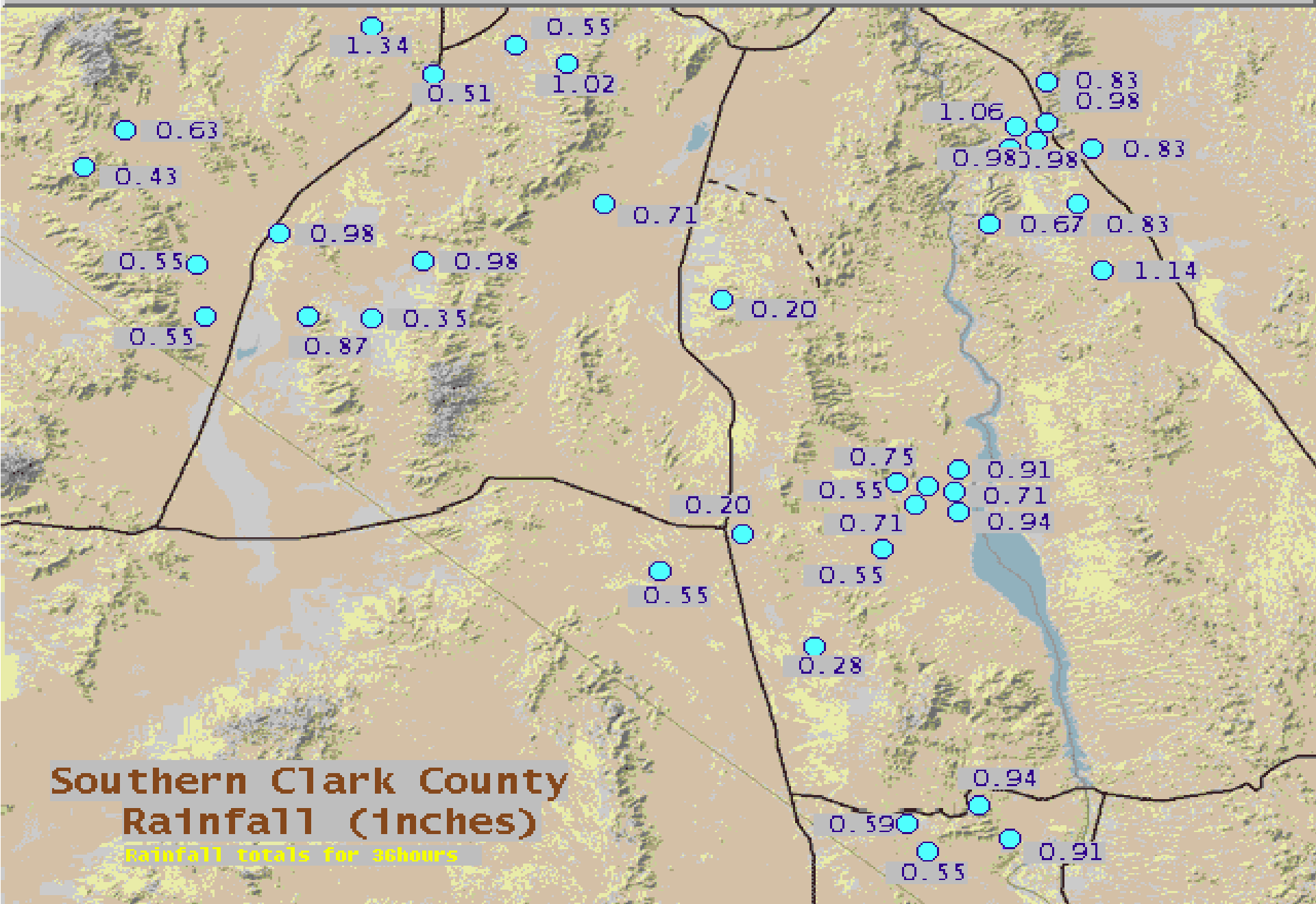


Figure 8. October 11, 2012 - 36 hour rainfall totals southern Clark County (source: RFCDFTRS)

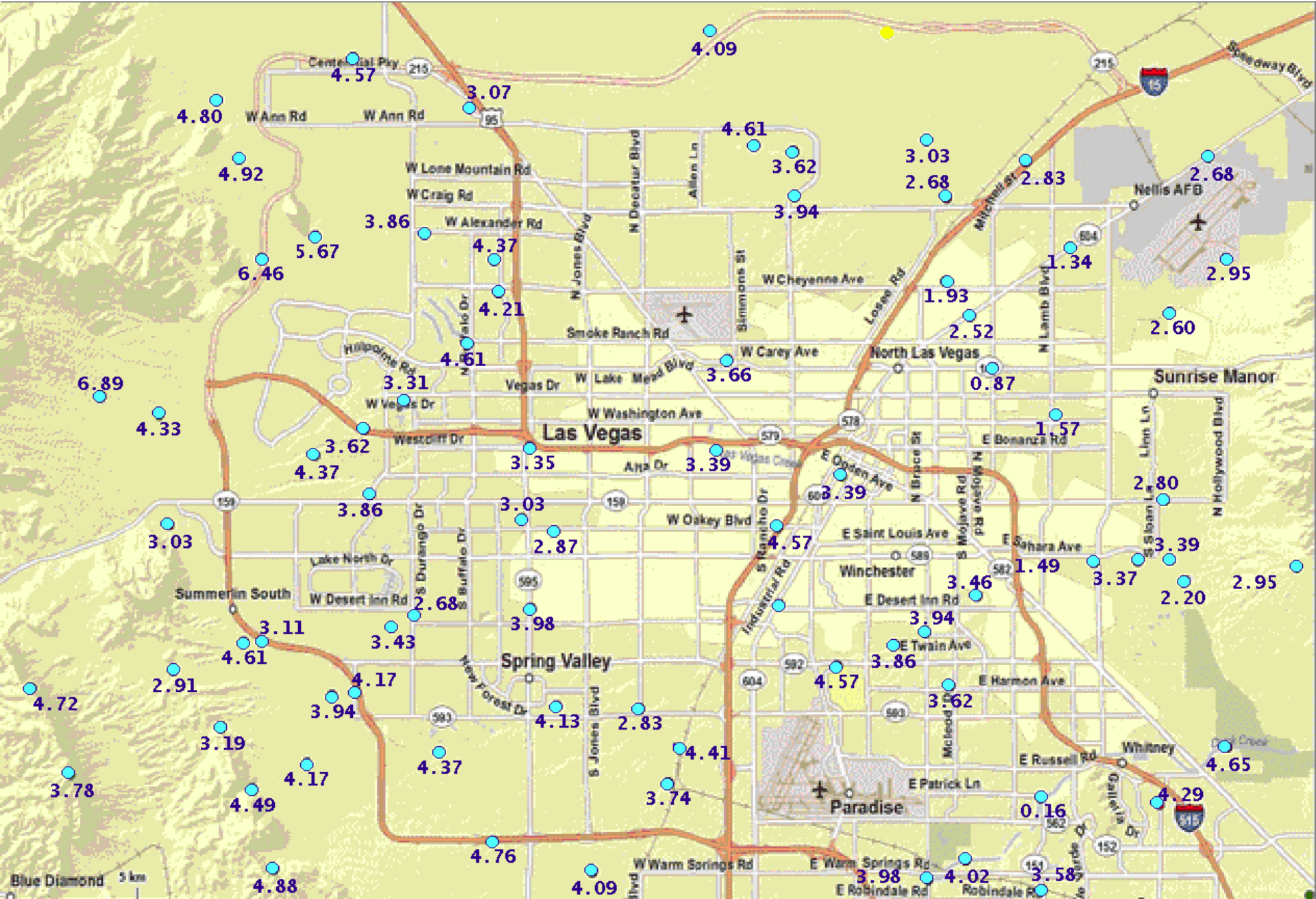


Figure 9. July 1 - October 15, 2012 rainfall totals, central Las Vegas Valley (source: RFCDFTRS)

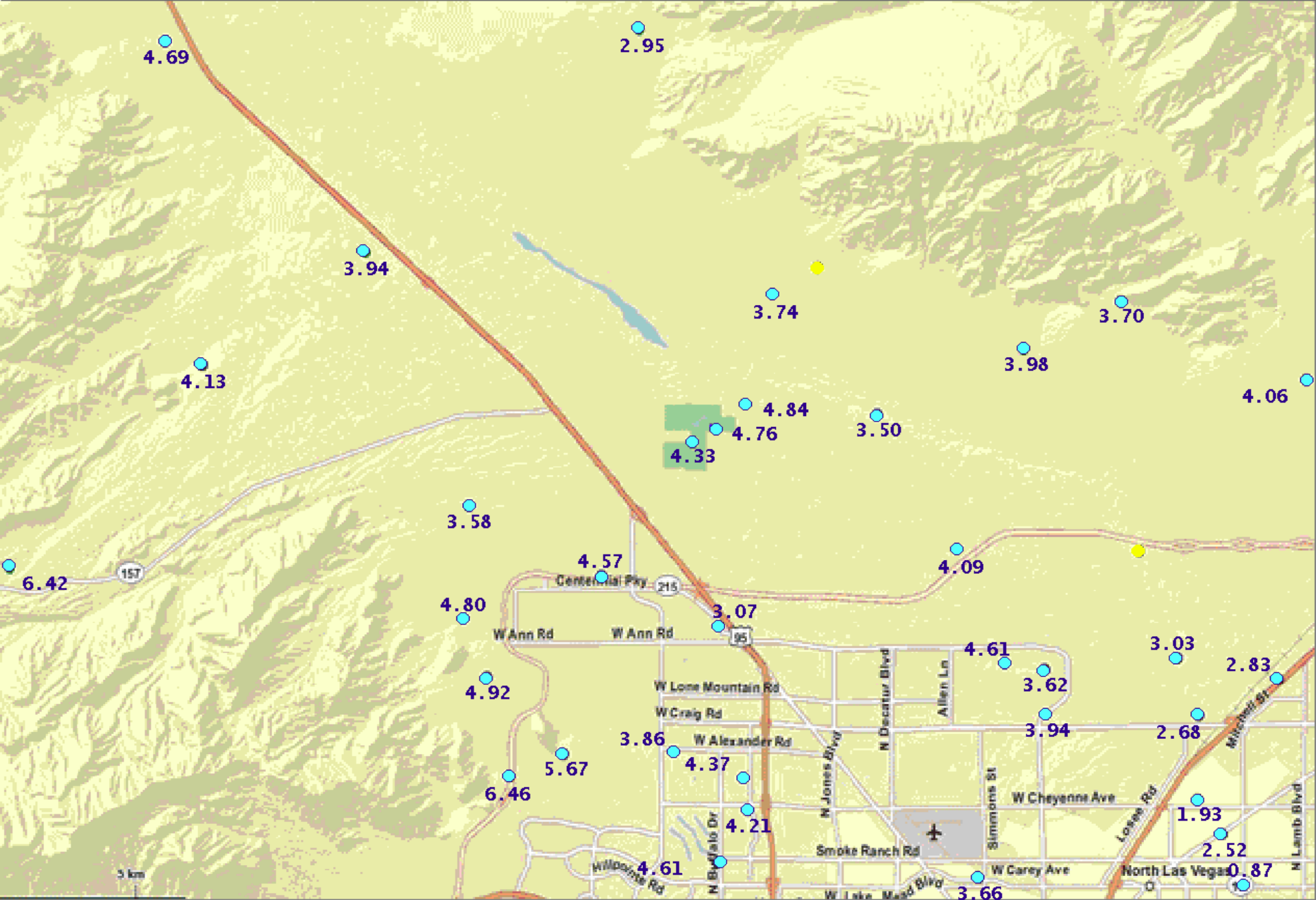


Figure 10. July 1 - October 15, 2012 rainfall totals, northwest Las Vegas Valley (source: RFCDFTRS)



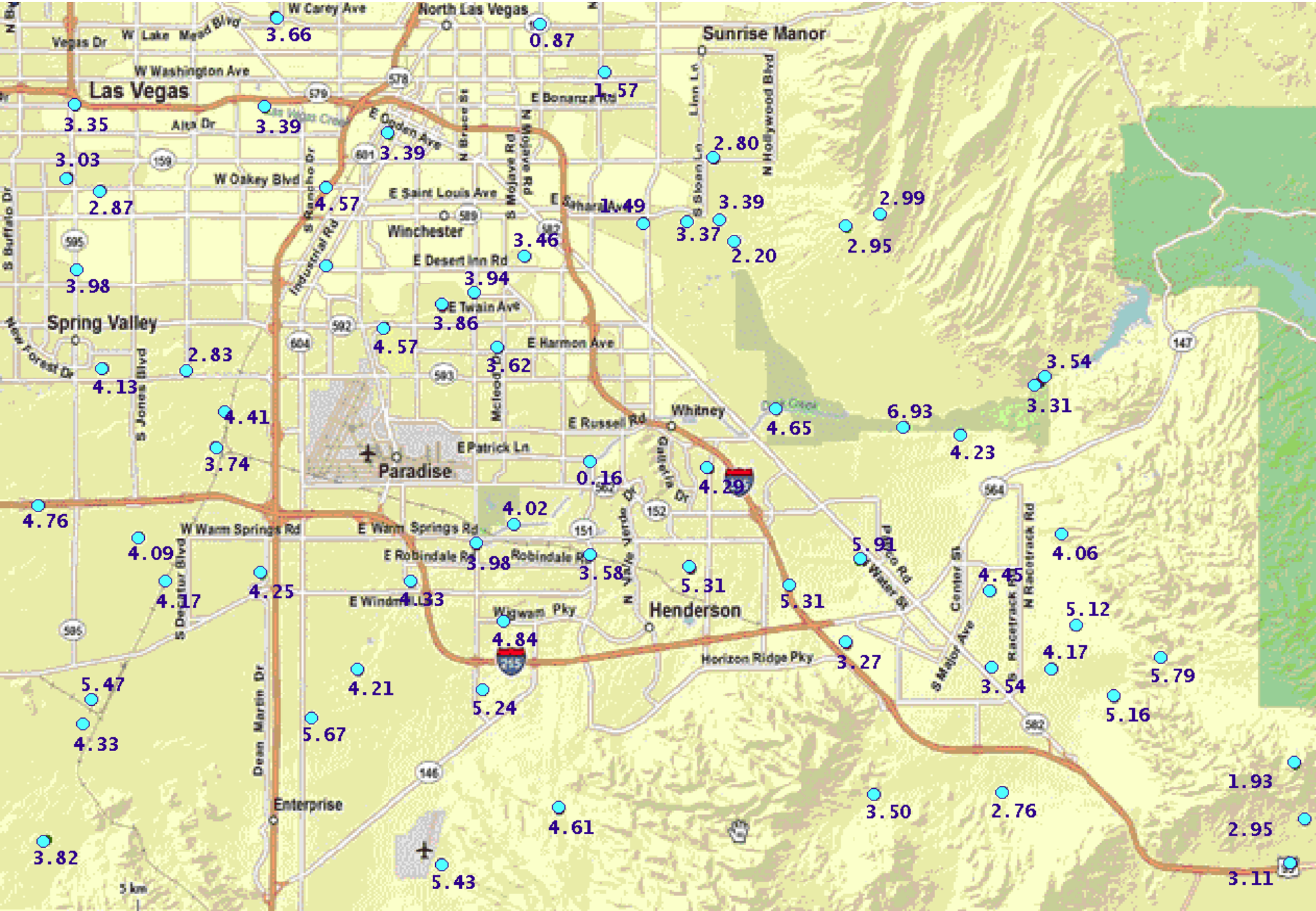


Figure 12. July 1 - October 15, 2012 rainfall totals, southeast Las Vegas Valley (source: RFCDFTRS)

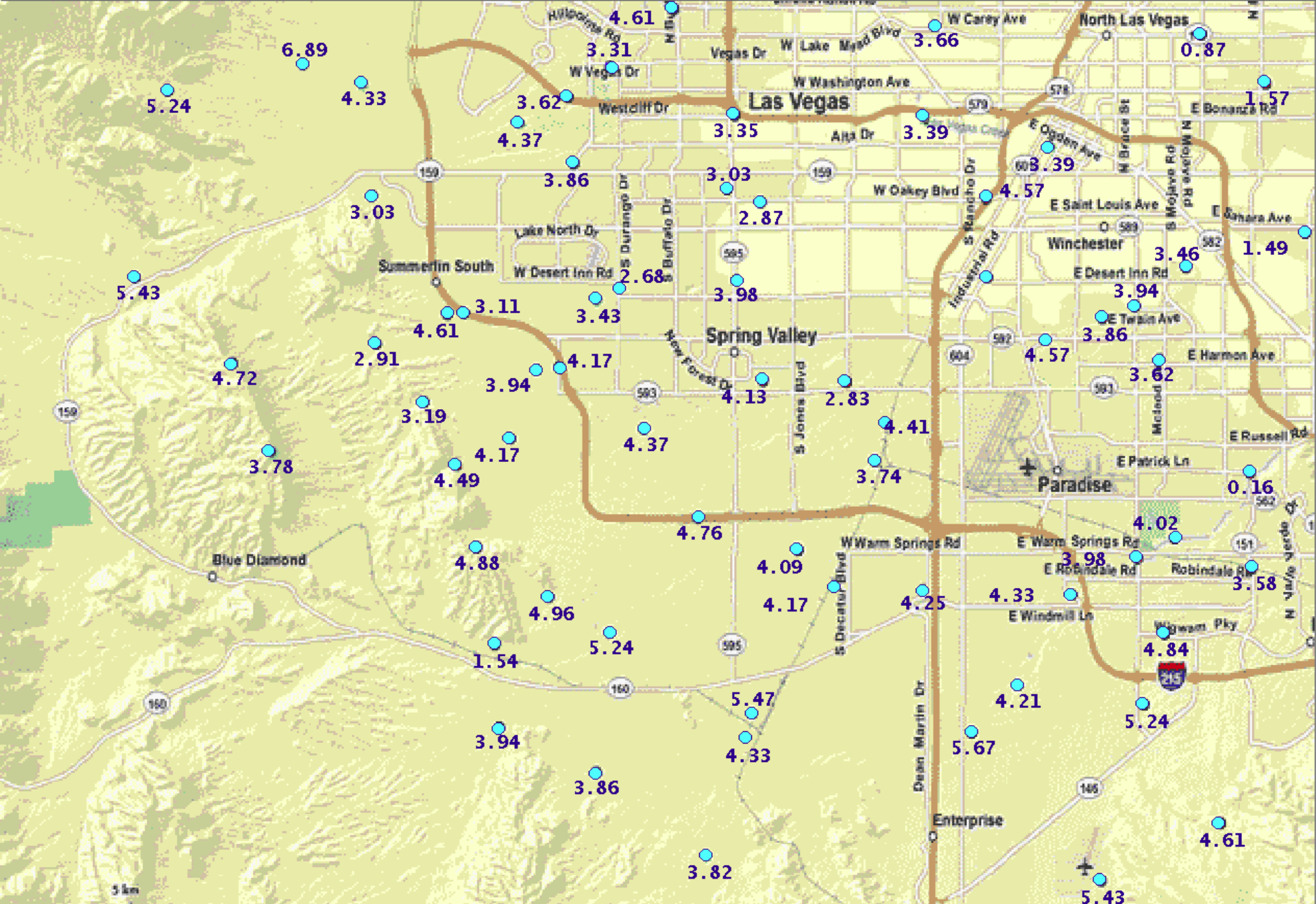


Figure 13. July 1 - October 15, 2012 rainfall totals, southwest Las Vegas Valley (source: RFCDFTRS)