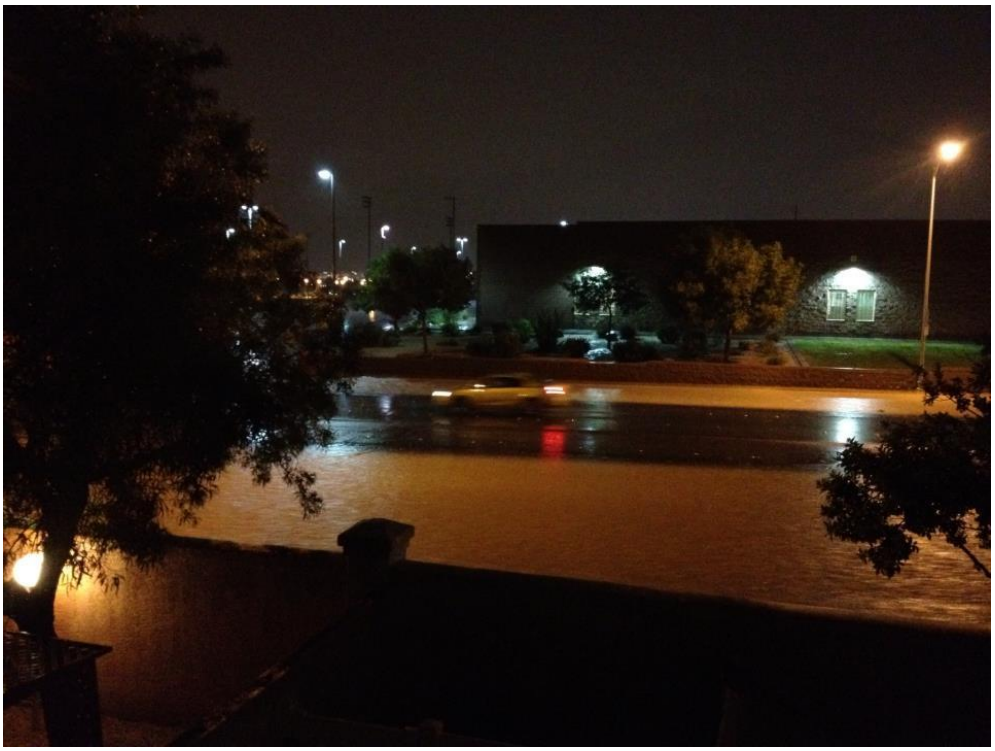
A Double Dose: The Northwest Las Vegas Thunderstorms of July 14 and July 15

The influx of monsoon moisture that moved into southern Nevada on July 12th produced several showers and thunderstorms over the span of a four day period over the Las Vegas Valley. However, two thunderstorms that impacted the northwest quadrant of the Las Vegas Valley were particularly noteworthy. One storm was noted for the very intense rainfall it produced and associated flash flooding while the other storm generated large hail and strong winds.

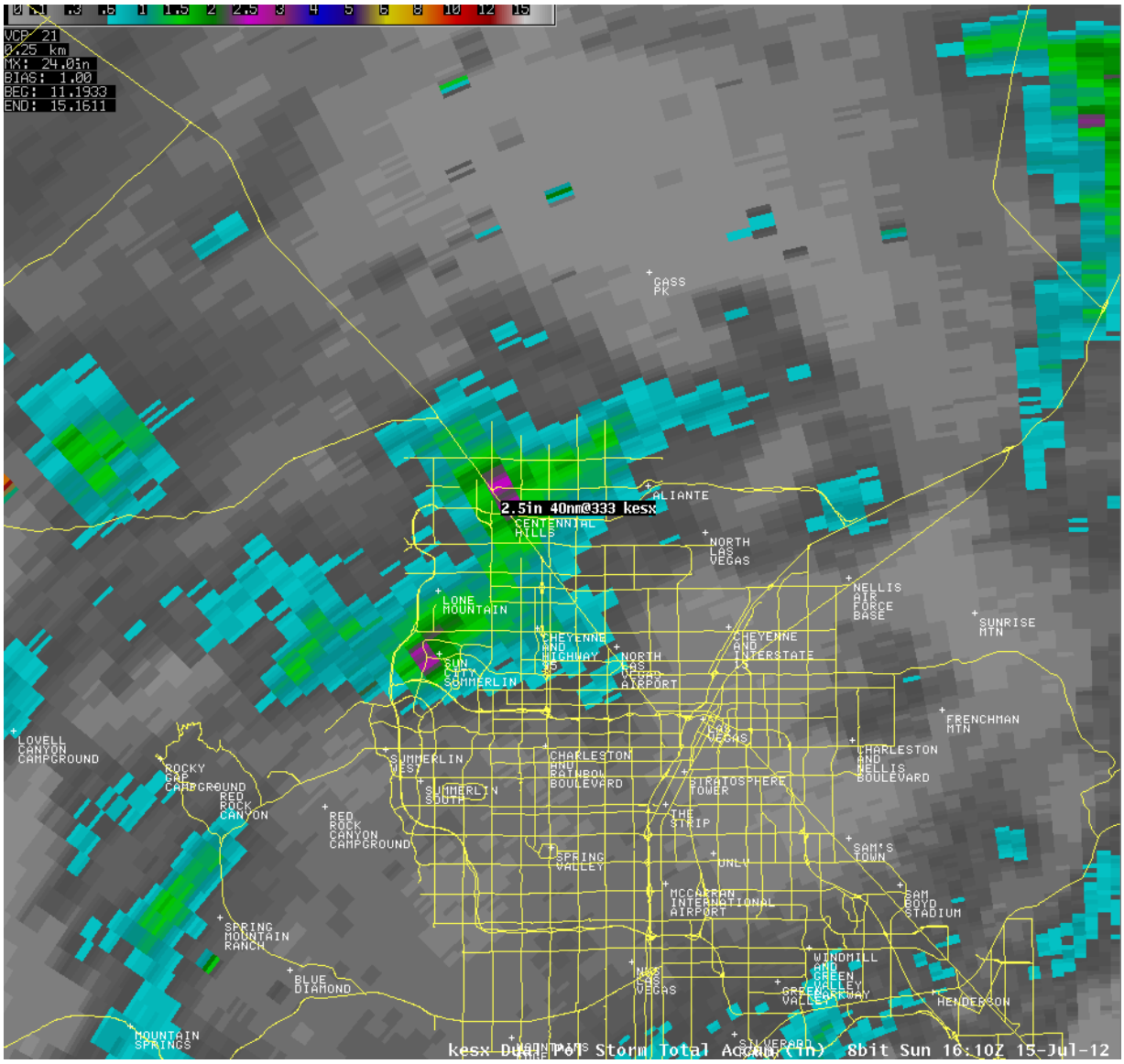
July 14th Thunderstorm



Street flooding at Elkhorn and Buffalo. Photo Credit: Spotter.

A strong thunderstorm developed late in the evening of July 14th over the northwest part of the Las Vegas Valley and shortly after 8:30 PM began to produce extremely heavy rain. Rainfall rates of at least a half an inch in 30 minutes were reported by automated gauges in the area. The highest total came

from an automated gauge located near the north end of Decatur Boulevard operated by the Clark County Regional Flood Control District that measured a storm total of 0.94 inch in about 90 minutes. Totals in most of the area though were between three quarters of an inch and nine-tenths of an inch. Amounts decreased sharply though in just a few miles. For example, a National Weather Service Employee measured only a quarter of an inch of rain about 3 miles south of the automated gauge that recorded the maximum rainfall.



WSR 88D Dual-Pol estimated storm total precipitation from the Las Vegas radar which more accurately estimated precipitation in the area (only a small amount of precipitation fell in this area prior to this storm). Ground measured totals near the north end of Decatur Boulevard were just under an inch and were about 60 percent of the Dual Pol radar estimate.

A large number of streets received flooding and were covered with debris mainly from Buffalo Drive east to Decatur Boulevard with the worst conditions from Farm Road North. This was the most extensive flooding in this part of Las Vegas since

the heavy rain that fell in the days just before Christmas 2010. A number of streets still had a large amount of rocks and mud on them even the next day and several inches of standing water was still observed in low lying areas along the north end of Decatur Boulevard. Most of the flooding in this area appears to have been from sheet flow off undeveloped dirt parcels with rocks likely also being washed in from landscaping in developed areas.

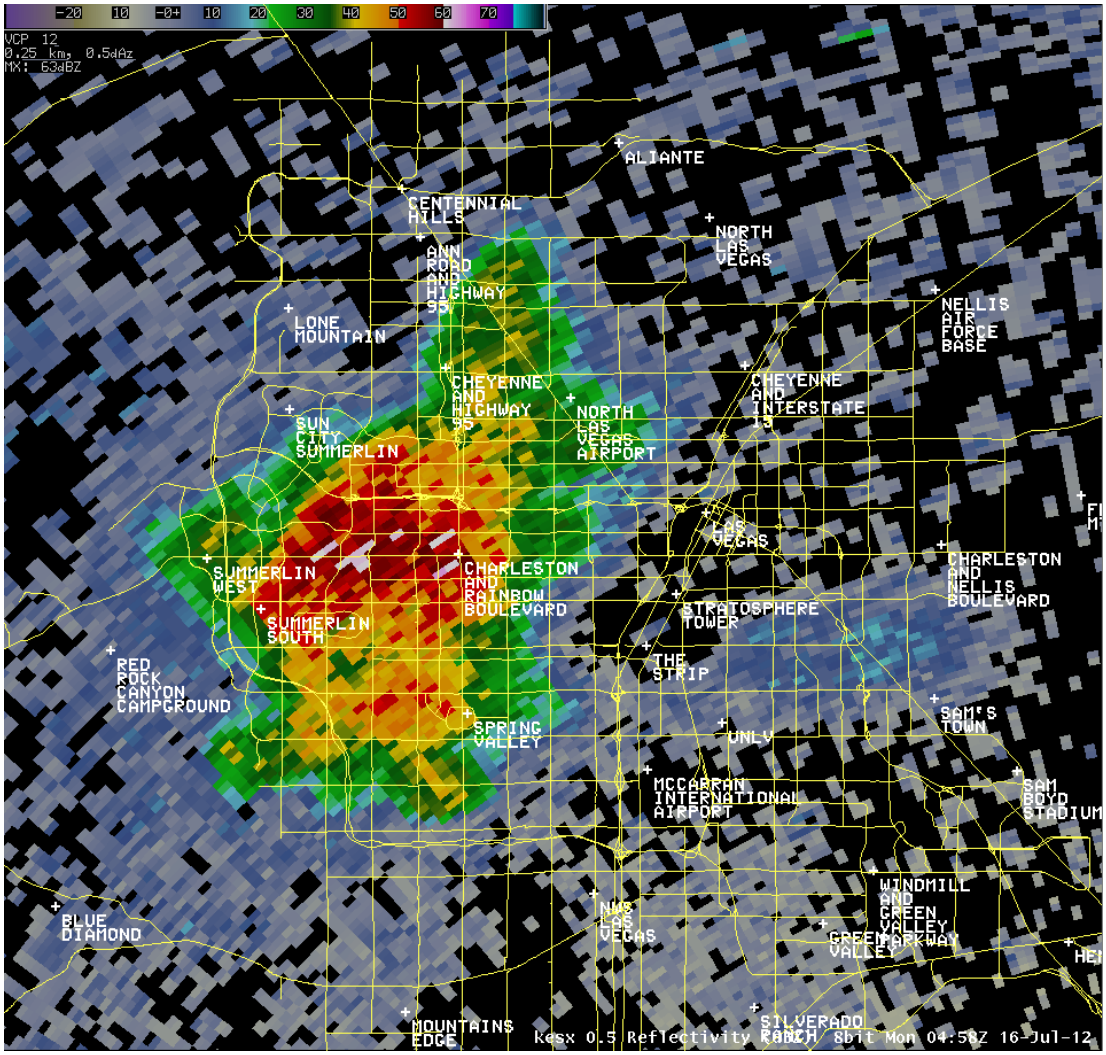
Rocks and mud on Horse Drive near the intersection of Decatur Boulevard.
Photo Credit: NWS Las Vegas staff.

July 15th Thunderstorm

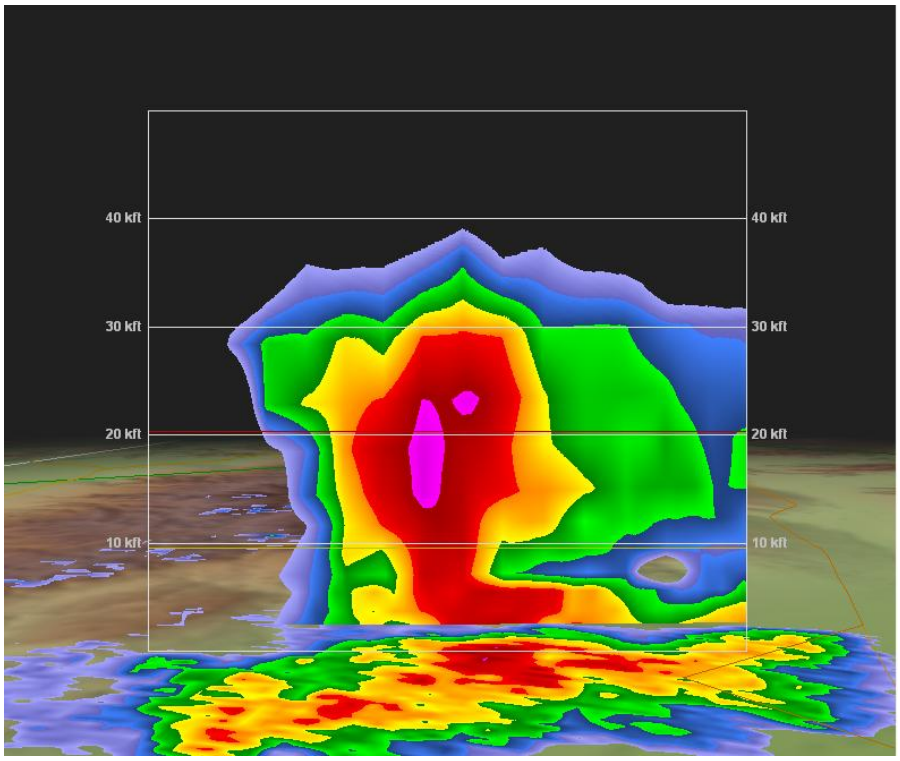
A lone thunderstorm moving northeast from southwest Clark County moved into the southwest part of the Las Vegas Valley in the late evening hours of July 15th and weakened. Several minutes later while over Summerlin the storm intensified with the Las Vegas radar showing a strong core of reflectivities of at least 55 dBZ around 23,000 feet This was very close to the freezing level in the atmosphere and the strong core at this level shows why this thunderstorm was able to produce such large hail. Radar cross sections showed the echo top on this thunderstorm was about 42,000 feet. VIL, or vertically integrated liquid, from the Las Vegas radar which is a tool used to look at the potential for hail showed values of 55 to 60. Values near 60 are frequently associated with large hail. As the storm moved northeast it weakened and split with the main core moving towards the northern part of North Las Vegas. The main core then strengthened and the storm once again produced a core of at least 55 dBZ around 25,000 feet. The storm then moved northeast and exited the Las Vegas Valley by 11 PM.

Several reports of hail reaching as large as a half dollar (1.25 inch in diameter) were received from Summerlin and North Las Vegas, some of which damaged

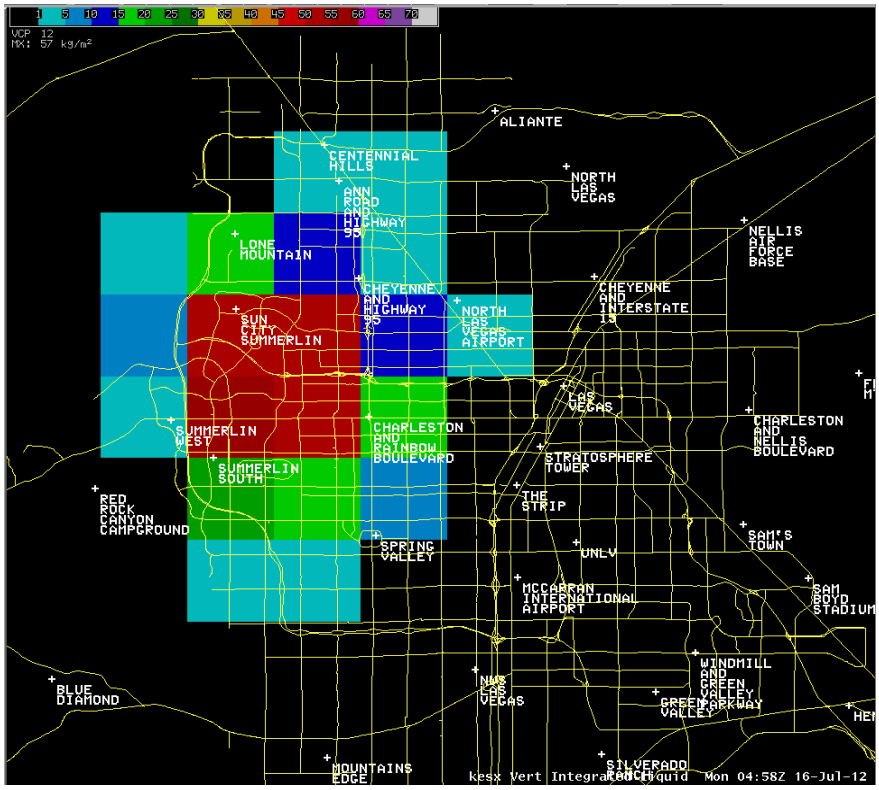
vehicles. Hail of smaller amounts fell over much of Northwest Las Vegas. A spotter in North Las Vegas estimated 60 mph wind gusts and several large trees were reported down. Heavy rain also fell with this storm with the highest total being 1.02 inches at an automated rain gauge operated by the Clark County Regional Flood Control District near Clayton Street and the Las Vegas Wash Detention Basin.



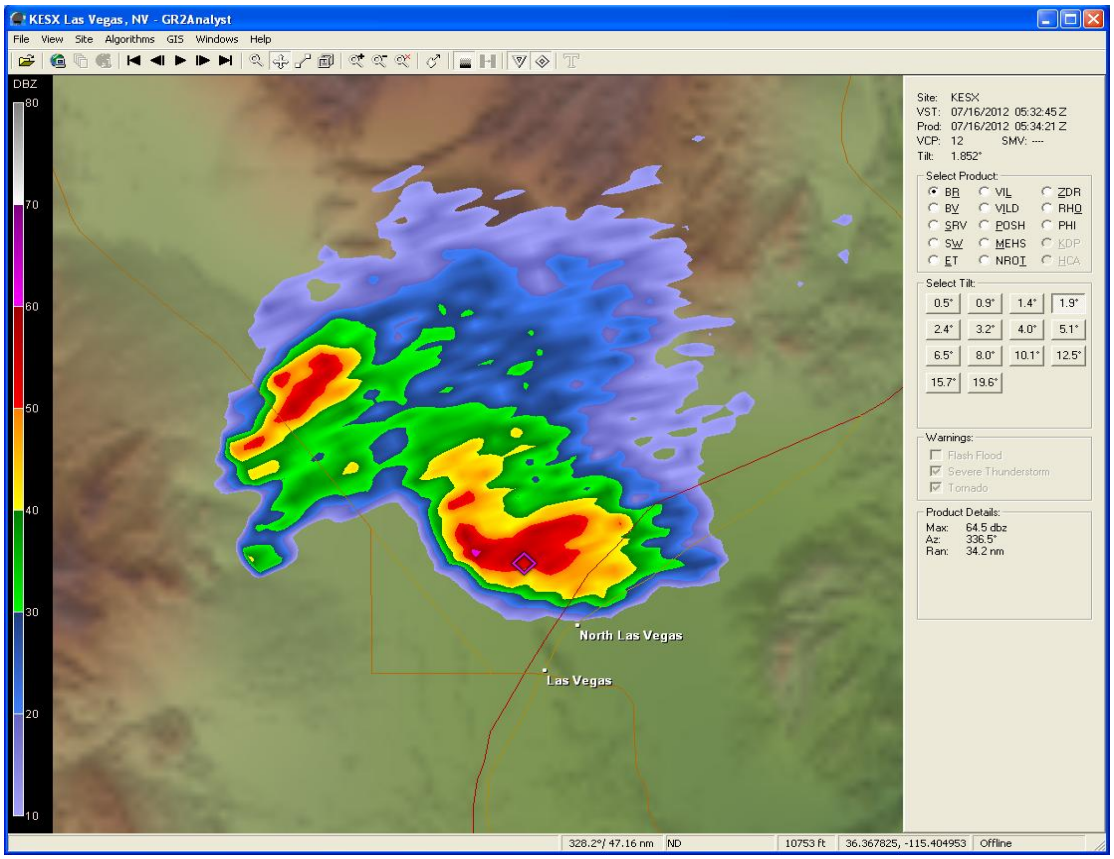
KESX 0.5 degree elevation showing the thunderstorm over Summerlin.



Cross section of reflectivity off the KESX radar when the thunderstorm was over Summerlin. Note the pink values in the middle of the image around 23,000 feet indicative of very high reflectivities (greater than 60 dBZ).



KESX VIL showing values of 55-60 (dark red) over Summerlin.



KESX 0.5 degree reflectivity showing the thunderstorm as it moved across North Las Vegas.


Picture sent to the NWS Las Vegas Facebook page of the hail in North Las Vegas.