

**TOWN OF  
APPLE VALLEY, CALIFORNIA**

**AGENDA MATTER**

**Subject Item:**

**DRAINAGE ISSUES THROUGHOUT THE TOWN OF APPLE VALLEY**

**Summary Statement:**

At the Town Council meeting of February 23, 2010, several concerned residents reported that the roadways and yards within their neighborhoods were flooded after recent rain events. Particularly affected was the Apple Valley Vineyards Subdivision, (Tract No. 16492-1), and the nearby neighborhood that includes Lone Eagle Road, Minnetonka Road and Geronimo Road. As a result, Town Council requested staff to investigate and provide a report of the flood situation. The staff presentation this evening includes photographs and videos of the Vineyards Tract, and other nearby roadways and homes that were inundated by the series of rain storms that passed through our area during January and February of this year. According to rainfall data provided by the San Bernardino County Department of Water Resources, the rainfall totals recorded in January and February of 2010, are more than twice the rainfall total recorded in the same period of 2005, our most recent heavy rainfall season. Including storm events that occurred on February 6, and on February 27, the total for the year is nearing 7 inches of rainfall in certain areas of Apple Valley.

Generally, the Town of Apple Valley experiences two types of storm damage. The first is erosion along naturally well defined, and relatively steep, flow paths that convey concentrated flows of storm water runoff. This erosion is often extensive and the debris from the storm ends up at down stream low areas and scattered across roadways. The areas tributary to the Desert Knolls Wash is a typical example.

(Continued)

**Recommended Action:**

That the Mayor and Town Council receive and file this staff report.

Proposed by: Engineering Division

Item Number \_\_\_\_\_

T. M. Approval: \_\_\_\_\_

Budgeted Item  Yes  No  N/A

The second type of storm damage occurs in low-lying areas at hundreds of locations throughout the Town, and is particularly common in areas tributary to the Apple Valley Dry Lake. In these areas, water may pond in the street right-of-way, adjacent yards and private property, impeding travel and even threatening homes. This type of storm damage can occur in virtually any area of Town that is relatively level.

Typically, desert rainfall events consist of a heavy cloudburst of rain activity, with relatively short storm duration, and impacts confined to a relatively small area. These events cause the occasional "Flash Flood" condition that has, over time, shaped the natural topography of the High Desert. The rain events of last January and February were very unusual in that we received a series of intense storms, passing through in quick succession. These storms distributed intense, long duration rainfall episodes uniformly over the entire region. The rainfall amounts equated to receiving more than the average annual rainfall in a matter of days. This continuous moderate-to-heavy rainfall, uniformly occurring over the entire area, resulted in saturated surface soils and set the stage for flooding in many low lying areas.

On Thursday, January 21, the heaviest of the series of storms arrived and the rainfall intensity peaked by late that afternoon. Town Municipal Services crews and Engineering Division staff were in the field throughout the day trying to ensure that the public roadways were properly signed to warn of possible flooding and, in extreme cases, actually closed to traffic due to flooding. The Engineering Division staff was able to observe the unusual flooding event and create a data base of locations that were severely impacted.

In the case of the roadway flooding that occurred in the Vineyards Tract, the following questions have been raised by residents:

1. Was the Vineyards Subdivision, (Tract No. 16492-1) constructed in compliance with the Town of Apple Valley Development Code with regard to drainage and flood protection?
2. Were the drainage and flood mitigation systems constructed within this subdivision fully functional and performing as intended during the recent rains?
3. Was the spreading of water (flooding) on the interior streets of this subdivision a failure of the system, or is this condition a design feature intended to address an extreme rainfall event?

4. If the spreading of water on interior streets is a design feature intended for extreme rainfall events, how is the potential flooding feature addressed on the subdivision map?
5. How do owners in the Vineyards Tract know if their lot will be affected during an extreme flood event?

Answer to question #1: Yes. The Town of Apple Valley Development Code includes elements requiring storm runoff capture, retention, and infiltration to ensure the homes in all new subdivisions are protected from flooding. The Vineyards Tract was developed in full compliance with those standards.

Answer to question #2: Yes. The engineered retention basins, dry wells, and appurtenant structures are being maintained by the Town of Apple Valley, in conjunction with the Maintenance Assessment District that is a part of the development. There was no element of the system that is not, or was not, fully functional during the recent rains.

Answer to question #3: The Hydrology Study conducted for Tract Map 16492, "The Vineyards- Phase I and II" explains that the basin structures within the subdivision were sized and constructed to comply with the Town's Development Code regarding the retention of on-site and off-site generated storm runoff. The system is designed and engineered with an adequate margin of safety that allows the interior streets to flood during an extreme storm event. The infiltration systems built into the basins are designed to de-water the roadways within hours of the storm event ending. The Tract is graded in such a way as to ensure that the homes within the subdivision are well above the flood level during these rare events.

Answer to question #4: Using the extreme flood event water elevation data contained in the Tract Hydrology Study, the limits of the potentially flooded areas within the Tract are defined. This anticipated potential flood area is identified on the Recorded Tract Map as a "Drainage Easement for the 100-year Storm Event", and it encompasses many of the interior roadways and portions of the low lying lots within the tract.

Answer to question #5: All of the lots within the Tract that are potentially affected by the anticipated flooding during an extreme rainfall event are identified on the Tract Map. To ensure that all future owners of these lots are aware of the potential flood possibility, the "Drainage Easement for the 100-year Storm Event" will appear on the official Title Report documents for each property. It will appear as an easement like any other, and it is intended to run with the land.

As a result of the recent rain events, staff has established a priority list of potential improvement locations and is considering strategies that could reduce

flooding in the future. Staff has also been working with the San Bernardino County Flood Control District for several years to develop a new "Watershed Management Plan" that will provide uniform and consistent guidelines for future land development. The Watershed Management Plan will also help identify locations where regional storm water retention facilities may be constructed in the future to help reduce the severity of flooding within our existing neighborhoods.

Seasonal flooding is a rare occurrence in the High Desert. Nevertheless, it is an occasional fact of life for those of us who live here. Helping our residents understand and prepare for this inevitable occurrence is a task of high importance to the Town. To help accomplish this task, the Town is participating in National Flood Safety Awareness Week this month. We have materials available in our Town Hall lobby that are intended to help residents prepare for those infrequent, but always possible, flood events here in the desert.

Based upon the foregoing, staff recommends adoption of the form motion.