Table 4-133: Parcels Exposed to NFIP Flood Zones

Flood Hazard Zone	Improved Parcel Count	Improvement Value Exposure ($000)	Land Value Exposure ($000)	Total Exposure ($000)
100-Year Flood	323	$55,890	$14,092	$69,982
500-Year Flood	22	$5,356	$1,537	$6,892
500-Year, Protected by Levee	- -		-	-
Grand Total	**345**	**$61,246**	**$15,629**	**$76,875**

Notes:
1-The table above does not display loss estimation results; the table exhibits total value at risk based upon the hazard overlay and San Bernardino County Assessor data.
2- Parcel information is for all county parcels with greater than $20,000 in assessed parcel improvement value only. The San Bernardino County Assessor's roles only provide spatial information on assessed improvement and land values.

While there are several limitations to this methodology, it does allow for potential loss estimation. It should be noted that the analysis may include structures in the floodplain that are elevated at or above the level of the base flood elevation, which will likely decrease potential flood damage to these structures. Also, it is important to remember that the County Assessor's values are well below actual market values; thus, the actual value of assets at risk may be significantly higher than those included herein.

4.9.3 Critical Facilities Exposure

Critical facilities data were overlain with flood hazard data to determine the type and number of facilities within the 100- and 500-year floodplain. Flooding poses numerous risks to critical facilities and infrastructure:

- Roads or railroads that are blocked or damaged can prevent access throughout the area and can isolate residents and emergency service providers needing to reach vulnerable populations or to make repairs.
- Bridges washed out or blocked by floods or debris from floods also can cause isolation.
- Creek or river floodwaters can back up drainage systems causing localized flooding.
- Floodwaters can get into drinking water supplies causing contamination.
- Sewer systems can be backed up causing waste to spill into homes, neighborhoods, rivers, and streams.
- Underground utilities can also be damaged.

Table 4-14 and Table 4-15 provides an inventory of critical facilities in the floodplain for Apple Valley and provides the locations of lifelines relative to the floodplain in the areas of the Apple Valley. With a total of nine essential facilities, high potential losses, and transportation and lifeline structures located in either the 100- or 500-year flood zone, the impact to the community could be devastating if these critical facilities were damaged or destroyed during a flood event.

Table 4-144: Critical Facility Exposed to NFIP Flood Zones

Infrastructure Type	100 Year Flood Zone	500 Year Flood Zone	500 Year Flood Zone, Protected by Levee	Total Feature Count
Essential Facility	1	0	0	1
EOC	0	0	0	0
Fire Station	1	0	0	1
Government Facility	0	0	0	0
Hospital	0	0	0	0
Police Station	0	0	0	0
School	0	0	0	0
High Potential Loss	6	0	0	6
Dam	0	0	0	0
Economic Element-Major Employer	0	0	0	0
Hazmat	3	0	0	3
Historic/Cultural Resource-Historic	0	0	0	0
Utility-Communication Facility	0	0	0	0
Utility-Electric Power Facility	0	0	0	0
Utility-Natural Gas Facility	0	0	0	0
Utility-Potable Water Facility	0	0	0	0
Utility-Waste Water Facility	3	0	0	3
Vulnerable Population-Adult Residential Care	0	0	0	0
Vulnerable Population-Child Care	0	0	0	0
Vulnerable Population-Flood Zone	0	0	0	0
Vulnerable Population-Foster/Home Care	0	0	0	0
Vulnerable Population-Mobile Home Park	0	0	0	0
Vulnerable Population-RV Park	0	0	0	0
Vulnerable Population-Senior Care	0	0	0	0
Transportation and Lifeline	2	0	0	2
Highway/Road Bridge	2	0	0	2
Railway Bridge	0	0	0	0
Bus Facility	0	0	0	0
Rail Facility	0	0	0	0
Airport Facility	0	0	0	0
Grand Total	**9**	**-**	**-**	**9**

Table 4-155: Lifelines Exposure to NFIP Flood Zones

Facility Type	100 Year	500 Year Flood Zone	500 Year Flood Zone, Protected by Levee	Total Mileage
Transportation and Lifeline	22	1	0	23
Railway	0	0	0	0
Roads	22	1	0	23
Interstate Highway	0	0	0	0
State / County Highway	3	0	0	3
Primary Highway	0	0	0	0
Local Road, Major	2	0	0	2
Local Road	14	0	0	14
Other Minor Road	3	0	0	3
Vehicular Trail	0	0	0	0
Cul-de-Sac / Traffic Circle	0	0	0	0
Ramp	0	0	0	0
Service Road	0	0	0	0
Total	**22**	**1**	**0**	**23**

4.9.4 Loss Estimation Results

The Hazus analysis was used to assess the risk from and vulnerability to flooding within the Town Apple Valley. Hazus buildings data is aggregated to the census block level, known as the general building stock (GBS), which has a level of accuracy acceptable for hazard mitigation planning purposes. The following sections describe risk to and vulnerability of the GBS within Apple Valley's mapped regulatory floodplain. The total value of exposed buildings and content within Apple Valley's planning area was generated using Hazus and is previously summarized in Table 4-11

Hazus calculates losses to structures from flooding by considering the depth of flooding and type of structure. Using historical flood insurance claim data, the software estimates the percentage of damage to structures and their contents by applying established depth-damage curves. Damage estimates are then translated to estimated dollar losses. The results are summarized in Figure 4-19 and Figure 4-20.

An estimated $3.9 million of damage could occur in the Town Apple Valley's regulatory floodplain if all flooding sources experienced a 100-year flood event. If all flooding sources experienced a 500-year flood event in Apple Valley there could be an additional $254,000 in damage, for a total of near $4.15 million in lo, Table 4-16.

Table 4-17 & 4-18 show loses for each building type for both the 100-year and 500-year flood event. The Total Town Value shown at the end of each of these tables represents an estimate of the total value of these building types throughout the entire Town of Apple Valley.

While there are several limitations to the FEMA Hazus model, it does allow for potential loss estimation. It should be noted that the analysis may include structures in the floodplain that are elevated at or above the level of the base flood elevation, which will likely mitigate flood damage. Also, it is important to remember that the replacement costs are well below actual market values, thus, the actual value of assets at risk may be significantly higher than those included herein.

Table 4-166: Flood Loss Estimation (Based on Depth) in NFIP Flood Zones

Flood Hazard Zone	Building Loss ($000)	Building Loss (% of Total Value)	Content Loss ($000)	Content Loss (% of Total Value)	Total Estimated Loss ($000)	Total Estimated Loss (% of Total Value)
100-Year	2,039	0.0%	1,874	0.0%	3,914	0.1%
500-Year	138	0.0%	115	0.0%	254	0.0%

*Note: *from section 4.10.3 'Hazus Floods Census Block Input Values' totals*
1- Building Replacement Costs($000) = $3,603,272
2- Content Replacement Cost($000) = $1,969,305
3- Total Value($000) = $5,572,577

Table 4-177: 100-Year Flood Loss Estimation (Based on Depth) in NFIP Flood Zones by Occupancy Type

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (% of Total Value)	Content Replacement Cost ($000)	Content Replacement Cost (% of Total Value)	Total Estimated Loss ($000)	Total Loss Estimation (% of Total Value)	Total Town Value ($000)
Agricultural	-	0.00%	-	0.00%	-	0.00%	6,514
Commercial	181	0.05%	723	0.18%	904	0.23%	396,282
Educational	14	0.02%	91	0.15%	105	0.17%	60,126
Government	-	0.00%	-	0.00%	-	0.00%	2,684
Industrial	12	0.01%	16	0.02%	28	0.03%	84,506
Religious	5	0.01%	54	0.10%	59	0.11%	52,524
Residential	1,827	0.04%	990	0.02%	2,818	0.06%	4,969,941
Grand Total	**$2,039**	**0.04%**	**$1,874**	**0.03%**	**$3,914**	**0.07%**	**$5,572,577**

Note: *from section 4.10.3 'Hazus Floods Census Block Input Values' totals
1- Building Replacement Costs($000) = $3,603,272
2- Content Replacement Cost($000) = $1,969,305
3- Total Value($000) = $5,572,577

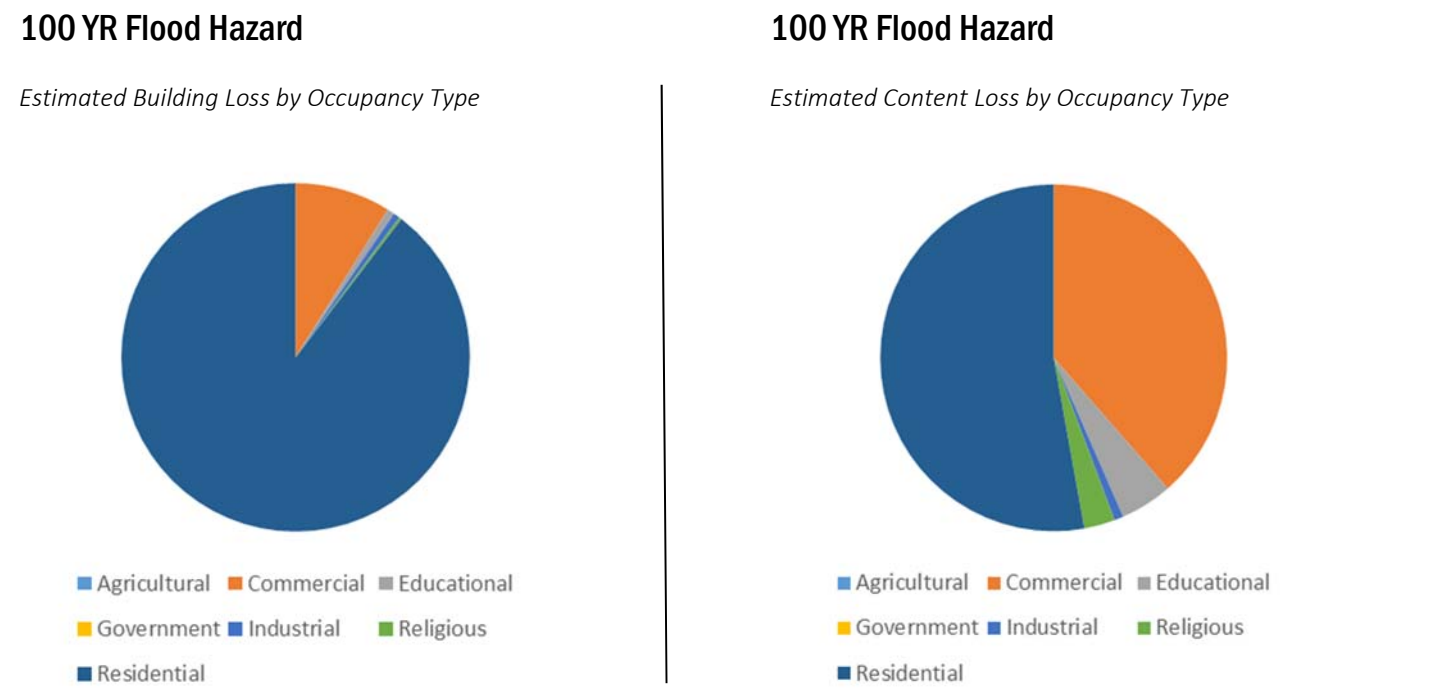


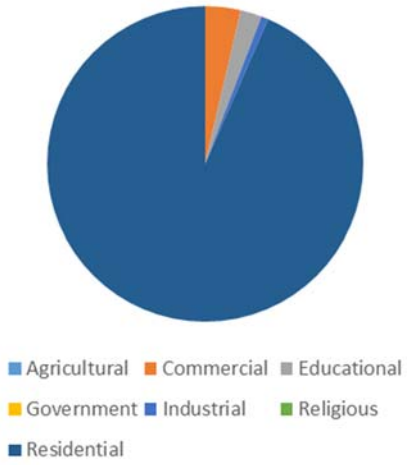
Figure 4-19: Total Building and Content Loss by Occupancy Type

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (% of Total Value)	Content Replacement Cost ($000)	Content Replacement Cost (% of Total Value)	Total Estimated Loss ($000)	Total Loss Estimation (% of Total Value)	Total Town Value ($000)
Agricultural	-	0.00%	-	0.00%	-	0.00%	6,514
Commercial	5	0.00%	17	0.00%	22	0.01%	396,282
Educational	3	0.00%	23	0.04%	27	0.04%	60,126
Government	-	0.00%	-	0.00%	-	0.00%	2,684
Industrial	1	0.00%	1	0.00%	2	0.00%	84,506
Religious	-	0.00%	8	0.02%	8	0.02%	52,524
Residential	129	0.00%	66	0.00%	195	0.00%	4,969,941
Grand Total	**$138**	**0.00%**	**$115**	**0.00%**	**$254**	**0.00%**	**$5,572,577**

Note: *from section 4.10.3 'Hazus Floods Census Block Input Values' totals
1- Building Replacement Costs($000) = $3,603,272
2- Content Replacement Cost($000) = $1,969,305
3- Total Value($000) = $5,572,577

500 YR Flood Hazard

Estimated Building Loss by Occupancy Type



500 YR Flood Hazard

Estimated Content Loss by Occupancy Type

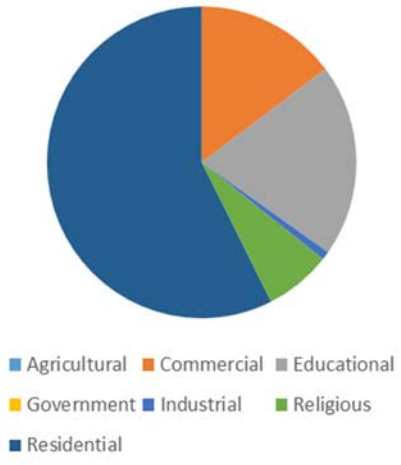
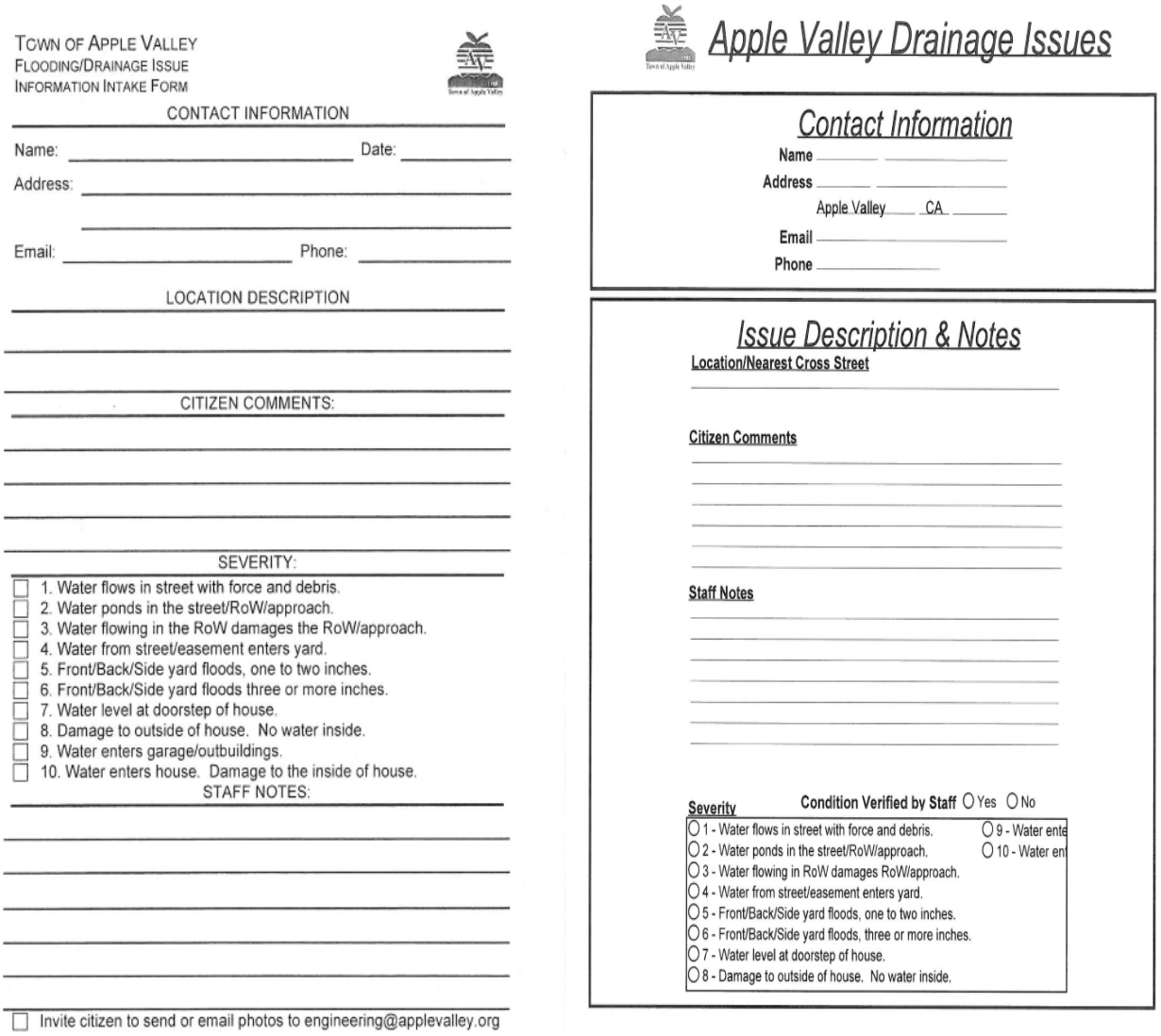


Figure 4-20: Total Building and Content Loss by Occupancy Type

4.9.5 The Local Data Collection

The Town of Apple Valley Engineering Department collects data regarding flooding and drainage issues from the public on a regular basis. Data is collected by the Engineering Department staff and used to identify areas of concerns throughout the Town. Majority of the data is received after heavy rains but data can also be obtained due to broken water mains or private property issues regarding water. Figure 4-20 below is a copy of the two forms that are used to collect data. The first form is used to gather data from the resident and the second form is used by engineering staff to evaluate the reported concern.



TOWN OF APPLE VALLEY
FLOODING/DRAINAGE ISSUE
INFORMATION INTAKE FORM

CONTACT INFORMATION

Name: _____ Date: _____

Address: _____

_____

Email: _____ Phone: _____

LOCATION DESCRIPTION

_____

_____

CITIZEN COMMENTS:

_____

_____

_____

_____

SEVERITY:

- ☐ 1. Water flows in street with force and debris.
- ☐ 2. Water ponds in the street/RoW/approach.
- ☐ 3. Water flowing in the RoW damages the RoW/approach.
- ☐ 4. Water from street/easement enters yard.
- ☐ 5. Front/Back/Side yard floods, one to two inches.
- ☐ 6. Front/Back/Side yard floods three or more inches.
- ☐ 7. Water level at doorstep of house.
- ☐ 8. Damage to outside of house. No water inside.
- ☐ 9. Water enters garage/outbuildings.
- ☐ 10. Water enters house. Damage to the inside of house.

STAFF NOTES:

_____

_____

_____

_____

_____

_____

☐ Invite citizen to send or email photos to engineering@applevalley.org

Apple Valley Drainage Issues

Contact Information

Name _____ _____

Address _____ _____

Apple Valley ____ CA ____

Email _____

Phone _____

Issue Description & Notes

Location/Nearest Cross Street

_____

Citizen Comments

_____

_____

_____

_____

_____

_____

Staff Notes

_____

_____

_____

_____

_____

_____

_____

Severity — Condition Verified by Staff ○ Yes ○ No

- ○ 1 - Water flows in street with force and debris.
- ○ 2 - Water ponds in the street/RoW/approach.
- ○ 3 - Water flowing in RoW damages RoW/approach.
- ○ 4 - Water from street/easement enters yard.
- ○ 5 - Front/Back/Side yard floods, one to two inches.
- ○ 6 - Front/Back/Side yard floods, three or more inches.
- ○ 7 - Water level at doorstep of house.
- ○ 8 - Damage to outside of house. No water inside.
- ○ 9 - Water ente
- ○ 10 - Water en

Figure 4-21: Flooding/Drainage Resident Forms

4.10 Vulnerability Assessment-Wildfire

Risk to the Town of Apple Valley from wildfire is of significant concern. High fuel loads in the hills, along with geographical and topographical features, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and sometimes catastrophic fires. During the May to October fire season the dry vegetation, hot and sometimes windy weather, combined with continued growth in the WUI areas, results in an increase in the number of ignitions. Any fire, once ignited, has the potential to quickly become large and out-of-control.

Potential losses from wildfire include human life, structures and other improvements, natural and cultural resources, quality and quantity of water supplies, cropland, timber, and recreational opportunities. Short and long-term economic losses could also result due to loss of business and other economic drivers associated with the Town of Apple Valley summer season activities. Smoke and air pollution from wildfires can be a severe health hazard. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

Generally, there are three major factors that sustain wildfires and predict a given area's potential vulnerability to burn. These factors are fuel, topography, and weather.

- Fuel – Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and volume. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches, to dead standing trees, live trees, brush, and cured grasses. Manmade structures are also considered a fuel source, such as homes and other associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Fuel is the only factor that is under human control. Development in the area along the Mojave River currently possess the highest vulnerability to wildfire.
- Topography – An area's terrain and slope affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.
- Weather – Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will ignite more readily and burn more intensely. Thus, during periods of drought the threat of wildfire increases. Wind is the most treacherous weather factor. The greater the wind, the faster a fire can spread and the more intense it can be. Wind shifts, in addition to wind speed, can occur suddenly due to temperature changes or the interaction of wind with topographical features such as slopes or steep hillsides. As part of a weather system, lightning also ignites wildfires, often in difficult to reach terrain for firefighters.

Factors contributing to the high, widespread wildfire risk in the Town of Apple Valley include:

- Narrow and often one-lane and/or dead-end roads complicating evacuation and emergency response.
- Nature and frequency of ignitions; and increasing population density leading to more ignitions.
- Slope of the foothills;
- Residential development along the Mojave River

4.10.1 Population at Risk

Wildfire risk is of greatest concern to populations residing in the moderate, high, and very high wildfire hazard zones. According to the LRA Fire Hazard Severity Zone Apple Valley has a moderate risk of wildfire within Town boundaries. Apple Valley census block data was used to estimate populations within the hazard zones. There are a significant number of people living within the WUI described in the wildfire profiles. More than 30,000 residents in the Town limits live within areas considered moderate fire hazard, see Figure 4-21.

Population Exposure

Population Count by Wildfire Hazard Zone

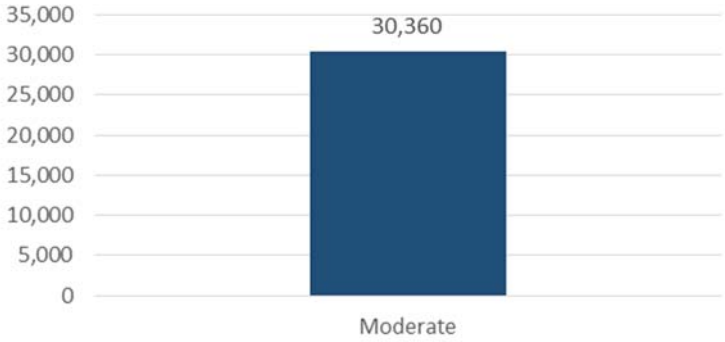


Figure 4-22: Population at risk from Wildfire Hazards

4.10.2 Residential Parcel Value at Risk

The County's parcel layer was used as the basis for the inventory of improved residential parcels. In some cases, a parcel will be within multiple fire threat zones. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the fire threat layer to determine the risk for each structure. The fire threat zone in which the centroid was located was assigned to the entire parcel. This methodology assumed that every parcel with a square footage value greater than zero was developed in some way. Only improved parcels were analyzed. Figure 4-19 exhibits portions of the Town of Apple Valley that have significant assets at risk to wildfire in the Moderate fire severity zones.

Table 4-188: Residential Buildings and Content at Risk from Wildfire

Fire Hazard Severity Hazard Zone	Improved Parcel Count	Improvement Value Exposure ($000)	Land Value Exposure ($000)	Total Exposure ($000)
Very High	-	-	-	-
High	-	-	-	-
Moderate	9,664	3,419,489	750,783	4,170,272
Non-Wildland/Non-Urban	39	7,932	1,264	9,196
Urban Unzoned	12,633	3,326,800	1,157,957	4,484,757
Total	**22,336**	**$6,754,220**	**$1,910,004**	**$8,664,225**

Note:
1-The table above does not display loss estimation results; the table exhibits total value at risk based upon the hazard overlay and San Bernardino County Assessor data.
2- Parcel information is for all county parcels with greater than $20,000 in assessed parcel improvement value only. The San Bernardino County Assessor's roles only provide spatial information on assessed improvement and land values

4.10.3 Critical Facilities at Risk

Critical facilities data were overlain with fire hazard severity zone data to determine the type and number of facilities within each risk classification. Lists only included the critical facilities in the High and Very High wildfire hazard zones for Town of Apple Valley. Since Apple Valley only has Medium risk classification within Town boundaries there are no critical facilities at risk.

INTENTIONAL BLANK PAGE

4.11 Vulnerability Assessment-Earthquake

Major impacts from earthquakes are primarily the probable number of casualties and damage to infrastructure occurring from ground movement along a particular fault (USGS, 2016). The degree of infrastructure damage depends on the magnitude, focal depth, distance from fault, duration of shaking, type of surface deposits, presence of high groundwater, topography, and the design, type, and quality of infrastructure construction.

To analyze the risk to the Town of Apple Valley residents, the Great Shakeout scenario was chosen modeled by the California Integrated Seismic Network (CISN). The 2008 Great Southern California ShakeOut was based on a potential magnitude 7.8 earthquake on the southern San Andreas Fault— approximately 5,000 times larger than the magnitude 5.4 earthquake that shook southern California on July 29, 2008. Such an earthquake will cause unprecedented damage to Southern California—greatly dwarfing the massive damage that occurred in Northridge's 6.7-magnitude earthquake in 1994. The hazard foot print for this scenario was used to develop exposure results for population, critical facilities, and single family residential parcel values. FEMA Hazus analyses was used to conducted loss estimation for both scenarios and include building and content loss estimation results based on peak ground acceleration, peak ground velocity, and peak spectral acceleration modeled for the 7.8 earthquake on the San Andreas Fault.

Apple Valley follows all existing building codes as required by Section 17992 of the Health and Safety Code of the State of California and Chapter 8 of the Apple Valley Municipal Code.

4.11.1 Population at Risk

According to the 2010 US Census, the population of the Town of Apple Valley is 69,130. Though rural residential construction is not particularly vulnerable to earthquakes, the chosen earthquake scenarios will directly or indirectly expose the entire population of the Town of Apple Valley to ground shaking. Depending on the time of day and exact location of the modeled epicenter, the earthquake scenarios could be experienced differently. Figure 4-23 exhibit the population totals in each modeled earthquake severity zone. Population location is based upon information taken during the 2010 U.S. Census.

Population Exposure

Population Count for Great Shakeout Scenario

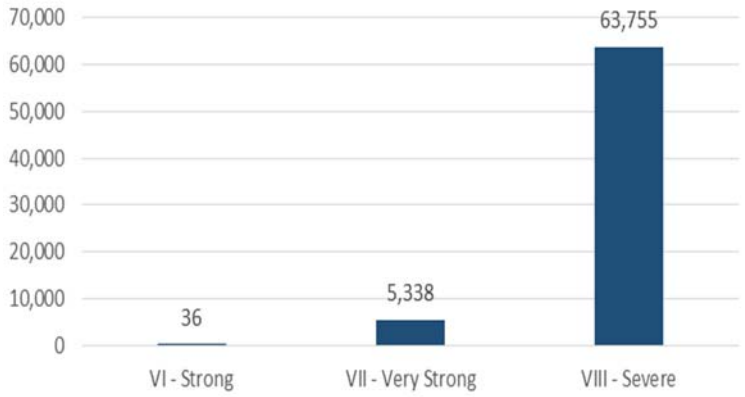


Figure 4-23: Population Exposure to The Great Shakeout EQ Shake Severity Zone

4.11.2 Residential Parcel Value at Risk

The County's parcel layer was used as the basis for the inventory of improved residential parcels. GIS was used to create centroids, or points, to represent the center of each parcel polygon – this is assumed to be the location of the structure for analysis purposes. The centroids were then overlaid with the shake severity zones to determine the at-risk structures. Only improved parcels greater than $20,000 were analyzed. The analysis indicates residential parcels the chosen scenario will experience similar, but different shaking patterns. The type and year of construction will greatly influence damage for structures subject to similar shaking. Table 4-21 shows the count of at-risk structures and their associated improvement and land exposure values.

Table 4-19: Residential Parcel Value Exposure from Southern California Great Shakeout

Shake Severity Zone	Improved Parcel Count	Improvement Value Exposure ($000)	Land Value Exposure ($000)	Total Exposure ($000)
IV - Light	-	-	-	-
V - Moderate	-	-	-	-
VI - Strong	16	4,773	1,289	6,062
VII - Very Strong	1,798	428,924	93,924	522,848
VIII - Severe	20,522	6,320,523	1,814,791	8,135,314
IX - Violent	-	-	-	-
Total	**22,336**	**$6,754,220**	**$1,910,004**	**$8,664,225**

Notes:
1-The table above does not display loss estimation results; the table exhibits total value at risk based upon the hazard overlay and San Bernardino County Assessor data.
2- Parcel information is for all county parcels with greater than $20,000 in assessed parcel improvement value only. The San Bernardino County Assessor's roles only provide spatial information on assessed improvement and land values.

4.11.3 Critical Facilities with Damage Potential

Earthquakes pose numerous risks to critical facilities and infrastructure. Seismic risks, or losses, that are likely to result from exposure to seismic hazards include:

- Casualties (fatalities and injuries).
- Utility outages.
- Economic losses for repair and replacement of critical facilities, roads, buildings, etc.
- Indirect economic losses such as income lost during downtime resulting from damage to private property or public infrastructure.

Roads or railroads that are blocked or damaged can prevent access throughout the area and can isolate residents and emergency service providers needing to reach vulnerable populations or to make repairs.

Linear utilities and transportation routes are vulnerable to rupture and damage during and after a significant earthquake event. The cascading impact of a single failure can have affects across multiple systems and utility sectors. Degrading infrastructure systems and future large earthquakes with epicenters near critical regional infrastructure could result in system outages that last weeks for the most reliable systems, and multiple months for others.

Table 4-22 provides an inventory of critical facility locations (points only) with earthquake exposure to the Great Shakeout Scenario. The building codes have been amended to include provisions for seismic safety at various bench marks years. Depending on "year built", each critical facility presented in the tables may have varying damage potential.

Table 4-190: Critical Facilities with EQ Risk Southern California Great Shakeout

Infrastructure Type	Violent Shake Zone (IX)	Severe Shake Zone (VIII)	Very Strong (VII)	Strong Shake Zone (VI)	Total Feature Count
Essential Facility	-	2	37	-	39
EOC	-	-	1	-	1
Fire Station	-	-	6	-	6
Government Facility	-	1	3	-	4
Hospital	-	-	1	-	1
Police Station	-	-	1	-	1
School	-	1	25	-	26
High Potential Loss	-	8	115	-	123
Dam	-	-	-	-	-
Economic Element-Major Employer	-	-	-	-	-
Hazmat	-	4	39	-	43
Historic/Cultural Resource-Historic	-	-	-	-	-
Utility-Communication Facility	-	-	8	-	8
Utility-Electric Power Facility	-	-	-	-	-
Utility-Natural Gas Facility	-	-	-	-	-
Utility-Potable Water Facility	-	-	2	-	2
Utility-Waste Water Facility	-	-	8	-	8
Vulnerable Population-Adult Residential Care	-	-	21	-	21
Vulnerable Population-Child Care	-	1	20	-	21
Vulnerable Population-Flood Zone	-	-	-	-	-
Vulnerable Population-Foster/Home Care	-	-	3	-	3
Vulnerable Population-Mobile Home Park	-	-	-	-	-
Vulnerable Population-RV Park	-	-	-	-	-
Vulnerable Population-Senior Care	-	3	14	-	17
Transportation and Lifeline		2	2	-	4
Highway Bridge		2	1	-	3
Railway Bridge	-	-	-	-	-
Bus Facility	-	-	-	-	-
Rail Facility	-	-	-	-	-
Airport Facility	-	-	1	-	1
Grand Total	**-**	**12**	**168**	**-**	**180**

4.11.3.1 HazMat Fixed Facilities

Although earthquakes are low probability events, they produce hazardous materials (HazMat) threats at very high levels when they do occur. Depending on the year built and construction of each facility containing HazMat, earthquake initiated hazardous material releases (EIHR) potential will vary. HazMat contained within masonry or concrete structures built before certain benchmark years reflecting code improvements may be of particular vulnerability.

4.11.3.2 Transportation

Earthquake events can significantly impact bridges which often provide the only access to some neighborhoods. Since soft soil regions generally follow floodplain boundaries, bridges that cross water courses are considered vulnerable. Since Town bridges provide access across water courses, they are vulnerable to earthquakes. Key factors in the degree of vulnerability are the bridge's age and type of construction which indicate the standards to which the bridge was built. Special attention will be paid to the multiple bridges that cross interstates. Interstates would serve as major emergency response and evacuation routes.

4.11.3.3 Utilities

Linear utilities and transportation infrastructure would likely suffer considerable damage in the event of an earthquake. Due to the amount of infrastructure and sensitivity of utility data, linear utilities are difficult to analyze without further investigation of individual system components. Table 4-23 provide best available transportation infrastructure data and it should be assumed that these systems are exposed to breakage and failure.

Table 4-201: Lifelines with EQ Risk; Southern California Great Shakeout Scenario

Facility Type	Strong (VI)	Very Strong (VII)	Severe (VIII)	Violent (IX)	Total Mileage
Transportation and Lifeline	11	104	528	0	642
Railway	0	2	3	0	5
Roads	11	101	525	0	637
Interstate Highway	2	2	0	0	4
State / County Highway	0	9	74	0	84
Primary Highway	0	0	0	0	0
Local Road, Major	0	2	54	0	56
Local Road	7	79	377	0	463
Other Minor Road	0	7	18	0	26
Vehicular Trail	1	2	1	0	3
Ramp	0	1	0	0	1
Service Road	0	0	0	0	0
Total	**11**	**104**	**528**	**0**	**642**

4.11.3.4 Loss Estimation Results

The Hazus Level 2 analysis was used to assess the risk from and vulnerability to earthquake shaking within the Town of Apple Valley. Hazus buildings data is aggregated to the census tract level for earthquake models, known as the general building stock (GBS), which has a level of accuracy acceptable for planning purposes. Where possible the GBS was

enhanced using GIS data from the county as described previously. The following sections describe risk to and vulnerability of the GBS within the Town of Apple Valley. Hazus calculates losses to structures from earthquake shaking by considering the amount of ground displacement and type of structure. The software estimates the percentage of damage to structures and their contents by applying established building fragility curves. Damage estimates are then translated to estimated dollar losses.

For each Great Shake Out Scenario ground shaking data (shakemaps) were acquired from CISN and imported into Hazus. The shakemap data consist of peak ground velocity, peak ground acceleration, peak spectral acceleration at 0.3 seconds, and peak spectral acceleration at 1.0 seconds. The earthquake module operates on census tracts that often include population and structures in the incorporated cities and the unincorporated area within a single tract. Due to this fact the results include census tracts that have a substantial portion of land within the incorporated area (loss estimates for some tracts will include structures in incorporated cities).

The results are summarized in Table 4-24 and Figure 4-22 for the Great Shake Out Scenario. It is important to understand that the Hazus earthquake module uses the census tract as its enumeration unit rather than the more detailed census block. The loss estimation values for earthquakes are much higher than those of the flooding and dam failure due to this fact. The portions of incorporated areas included within boundary census tracts elevate the values due to the inclusion of additional GBS. Though the difference between census tracts and census blocks are extremely disparate, the most important summary information is the percent of loss estimation against the total value.

In the Great Shake Out Scenario, residential damage will be the greatest. While there are several limitations to the FEMA Hazus model, it does allow for potential loss estimation. It is important to remember that the replacement costs are well below actual market values, thus, the actual value of assets at risk may be significantly higher than those included herein.

Table 4-212: Estimated Building and Content Loss Great Shake Out Scenario EQ

Building Type	Building Replacement Costs ($000)	Building Replacement Cost (% of Total Value)	Content Replacement Cost ($000)	Content Replacement Cost (% of Total Value)	Total Estimated Loss ($000)	Total Loss Estimation (% of Total Value)	Total Value ($000)
Agricultural	1,071	3.2%	328	1.0%	1,399	4.1%	33,890.00
Commercial	67,058	3.7%	18,665	1.0%	85,724	4.8%	1,801,439.00
Educational	8,089	2.9%	2,725	1.0%	10,814	3.9%	277,421.00
Government	1,532	3.8%	443	1.1%	1,975	4.9%	40,660.00
Industrial	15,727	3.3%	6,510	1.4%	22,238	4.7%	478,085.00
Religious	8,811	3.8%	2,462	1.1%	11,274	4.8%	232,956.00
Residential	244,144	2.0%	58,577	0.5%	302,721	2.5%	11,966,756.00
Grand Total	**$346,433**	**2.3%**	**$89,711**	**0.6%**	**$436,144**	**2.9%**	**$14,831,207**

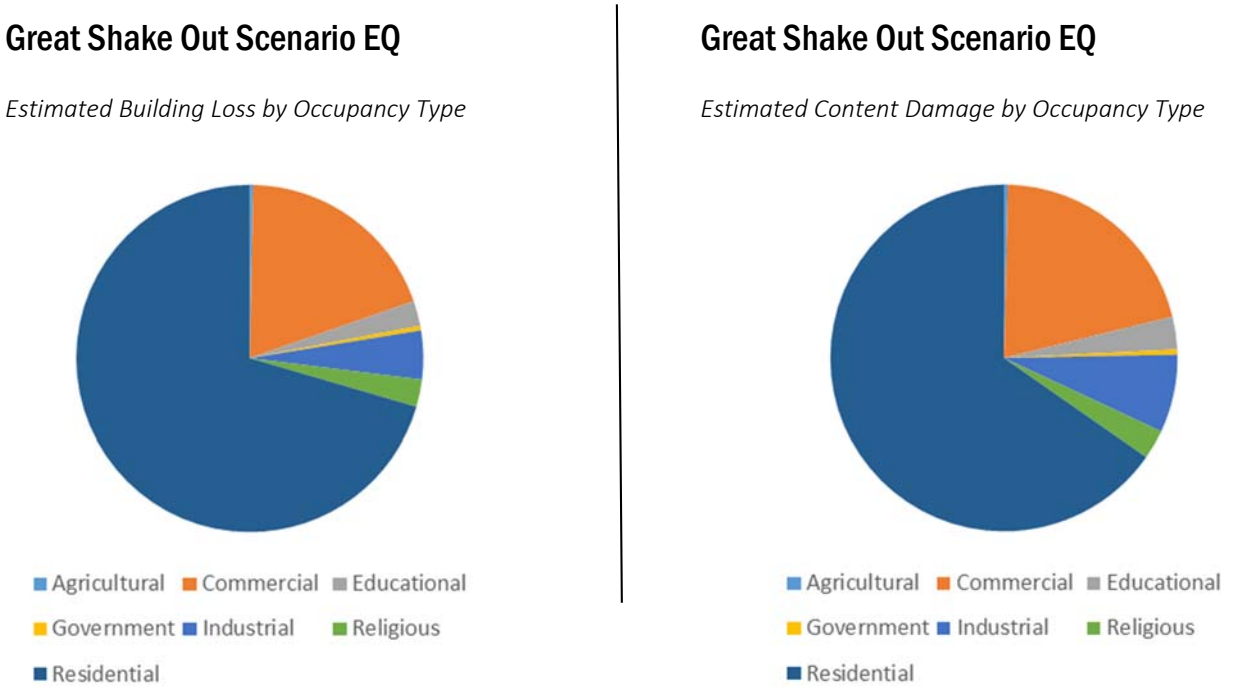


Figure 4-24: Estimated Building and Content by Occupancy Type Shake Out Scenario EQ

4.12 Climate Change

4.12.1 The Impact of Climate Change

Climate change can increase hazards associated with wildfires, rising sea levels, and groundwater supply. Public health can suffer due to greater temperature extremes and more frequent extreme weather events, increases in transmission of infectious disease, and increases in air pollution. Agricultural production can be altered by changes in temperature and rainfall patterns.

Rises in temperature have the potential, for example, to cause a shift in the hydrological cycle. While predicted patterns vary with latitude and global location, roughly 75% of analyzed climate change models agree that within the western United States there will be a 10% to 40% decrease in stream flows by 2050. This may be due to a decrease in precipitation levels, which has been evident in the drought conditions suffered by the southwest in recent years, as well as an increase in evaporation, which is temperature dependent and increases as temperatures climb. It has been predicted that a change in the global average surface temperature of 2°C would be at the low end of the possible range. According to the Institute for the Study of Planet Earth at the University of Arizona, it is estimated that a 2°C increase in temperature corresponds to a 9% to 21% decrease in stream flow on the Colorado River.

The coast of California is likely to see a rise in sea level that could threaten shorelines, cause increased erosion, and loss of life and property. Sea level rise and storm surges could lead to flooding of low-lying property, loss of coastal wetlands, erosion of cliffs and beaches, saltwater contamination of drinking water, and damage to roads, causeways, and bridges.

Between the beginning of the industrialized era and 2005, the atmospheric concentration of CO2 in the atmosphere had increased by 35%, methane by 151%, and nitrous oxide by 18%.

It is estimated that in 2004, total GHG emissions were 20,135 teragrams (Tg) of carbon dioxide equivalents (Tg CO2e), excluding emissions/removals from land use, land use change, and forestry. The U. S. Environmental Protection Agency in 2004 estimated that the U.S. contributed 35% of global GHG emissions, with a total of 7074.4 Tg CO2e, an increase of 15.8% over 1990 emissions.

California is the second largest greenhouse gas contributor in the U.S. and the sixteenth largest in the world. From 1990 to 2003, California's GHG emissions increased 12%. In 2004, California produced 492 Tg CO2e, which is approximately 7% of all U.S. emissions. Transportation is responsible for 41 percent of the state's total GHG emissions; while electricity generation represents 22% of the state's GHG emissions. Conversely, emissions from residential and commercial fuel use in California decreased 9.7% from 1990 to 2004. This decrease may be due to increases in the effectiveness of energy conservation in buildings (Title 24 requirements) and more efficient appliances.

4.12.2 Population at Risk

Vulnerable populations should receive special attention when assessing the community's vulnerability to climate change. For example, care and sheltering during extreme heat conditions must be provided for vulnerable populations such as the elderly. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Heat kills by taxing the human body beyond its abilities. In a normal year, about 175 Americans succumb to the demands of summer heat. According to the

National Weather Service (NWS), among natural hazards, only the cold of winter—not lightning, hurricanes, tornados, floods, or earthquakes—takes a greater toll. In the 40-year period from 1936 through 1975, nearly 20,000 people were killed in the United States by the effects of heat and solar radiation. In the heat wave of 1980, more than 1,250 people died.

4.12.3 Critical Facilities

The Town's Climate Action Plan updated in 2013 addresses concerns that affect the Town in regards to Climate Change. Currently, the focus is on reducing Greenhouse Gas Emissions (GHG) at existing facilities, homes, businesses and institutions. Reducing GHG for new developments in the same categories are discussed in detail as priority measures. This hazard mitigation plan will defer to the CAP for measures and mitigation strategies related to Climate Change in an effort to provide consistent practices. The CAP can be accessed:

http://www.applevalley.org/services/planning-division/climate-action-plan

4.12.3.1 Apple Valley Choice Energy

Apple Valley is addressing issues relating to Climate Change through the implementation of Apple Valley Choice Energy (AVCE). This program, started April of 2017, allows residents within Apple Valley to receive energy with a higher "renewable" content than what is currently provided by the franchised utility (SCE). The minimum renewable energy content for AVCE customers is 35%. In addition, the program provides an alternate selection of 50% renewable energy content for those who choose to "opt-up" to that plan. AVCE's minimum 35% renewable energy content already exceeds the California state mandate of 33% renewable energy content that will be required in the year 2020.

The renewable energy content is derived from solar, wind, hydro and geothermal sources primarily within California. Apple Valley Choice Energy plans to offer customers of AVCE a 100% renewable energy option in future years that will further reduce the overall impacts of Greenhouse Gases affecting Climate Change as a result of burning fossil fuels.

In addition to supplying renewable energy, AVCE actively promotes Net Energy Metering (NEM) for customers with rooftop solar by offering a premium by-back rate that is nearly double the rate that they would receive from SCE. AVCE will also offer future incentives to Town residents and businesses for improvements that contribute to energy efficiency as well as develop programs to encourage implementation of energy conservation measures. The Town also participates in the High Desert Regional Partnership with the other cities in the High Desert to promote energy efficiency on a regional basis.

Section 5. Community Capability Assessment

The Town of Apple Valley strives to protect and maintain the health, safety and welfare of the community on a day-to-day basis, and takes extra measures to reduce the impacts of natural or technological hazards. The Town can use a variety of different tools, assets, and authorities to effectively prepare for, mitigate toward, respond to and recover from emergencies and disasters. These include voluntary and mandatory measures; individual and community efforts; private and public actions; and preventive as well as responsive approaches. Mitigation activities include educating citizens, enforcing building and development codes, constructing capital improvement projects, adopting plans, establishing incentive programs, and improving emergency preparedness and response.

The capabilities available to the Town of Apple Valley fall into the following broad categories: Agencies and People; Existing Plans; Regulations, Codes, Policies, and Ordinances; Mitigation Programs and Fiscal Resources. Identifying and documenting these capabilities provides the basis for developing future mitigation opportunities and how they can be implemented within existing Town programs.

5.1 Active Mitigation Programs

Town of Apple Valley Capability Assessment

- Storm Water Management: Yes
- Zoning Management: Yes
- Subdivision Management: Yes
- Erosion Management: Yes
- Floodplain Management: Yes
- Floodplain Management Plan Published Date: 10/2008
- Floodplain Management Last Delineation Date: 10/2008
- Elevation Certificates Maintained: Yes
- National Flood Insurance Program Community: Yes
- National Flood Insurance Join Date: 03/03/96
- NFIP Number: TAV 060752
- NFIP Rating: None
- NFIP Rating Date: 10/2008
- Land Use Plan: Yes
- Land Use Plan Last Update: 2009
- Community Zoned: Yes
- Zoned Date: 4/27/10
- Established Building Codes: Yes
- Building Codes Last Updated: 09/27/2016
- Type of Building Codes: California Building Code
- Local Electric Utilities: Southern California Edison
- Local Water Utilities:
- Liberty Utilities

- Apple Valley Foothill County Water District
- Rancheritos Mutual Water Company
- Golden State Water Company
- County Service Area 64
- Navajo Mutual Water Company
- Local Sewage Treatment Utilities: Victor Valley Wastewater Reclamation Authority
- Local Natural Gas Utilities: Southwest Gas Corporation
- Local Telephone Utilities: Frontier
- Fire Insurance Rating: Apple Valley Fire Protection District, a self-governing special district, provides fire-related services to the Town of Apple Valley and its sphere of influence. The District's fire insurance rating within Town limits is 4.
- Fire Insurance Rating Date: 06/01/10
- Previous Mitigation Plans: 2011

5.2 Local Planning and Regulatory Capabilities (Supporting Possible Mitigation Activities)

The State of California recommends that the General Plan is updated every 10-20 years; depending mostly on whether or not the plan is meeting the community's needs. The Apple Valley General Plan was last updated and adopted in 2009. The Land Use Element of the General Plan establishes 17 land use designations that apply only to lands within the Town's incorporated boundaries (see Section 1.3, for a listing of the 17 Land Use districts in the Land Use Element). The Land Use Element also describes land use compatibility for the primary three (3) hazards: Geologic; Flood; and, Wildfire.

On an annual basis staff revisits all of these planning and regulatory capabilities to ensure that local hazards and their mitigation strategies are being brought to the discussion table when it is time to update department policy and procedures as well as annual departmental budgets. Funding opportunities through such measures as grants, general funds and taxing authorities are consistently being researched and discussed based on feasibility and accessibility based on current Town staffing and fiscal resources.

In addition to the general plan, the information in Table 5-1 *is used to construct mitigation actions aligned with existing planning and regulatory capabilities of the* Town of Apple Valley. *Planning and regulatory tools typically used by local jurisdictions to implement hazard mitigation activities are building codes, zoning regulations, floodplain management policies, and other County programs or planning documents.*

Table 5-1: Planning and Regulatory Capabilities

Hazard	Plan/Program/ Regulation	Responsible Agency	Comments
Multi-Hazard	California Building Codes	Building & Safety Dept.	California Residential Code California Code of Regulations, Title 24, Part 2.5.

Hazard	Plan/Program/ Regulation	Responsible Agency	Comments
			California Building Code California Code of Regulations, Title 24, Part 2, Volumes 1 and 2.
Multi-Hazard	Municipal Codes	Building & Safety Dept.	Section 17992 of the Health & Safety Code of the State of CA and Chapter 8 of the Apple Valley Municipal Code.
Drought	Urban Water Management Plan (UWMP)	Each water agency is responsible for own plan.	Visit each water agency for plan or visit www.mojavewater.org for their plan.
Drought	Town of Apple Valley Landscape Ordinance	Planning Division	In accordance with Governor Brown's Drought Executive Order, on July 15, 2015 the California Water Commission approved revisions to its MWELO. The Governor's Order mandates that all local agencies have until December 1, 2015 to adopt the Ordinance or adopt their own ordinance which must be at least as effective in conserving water as the State's Ordinance
Drought	2010 California Drought Contingency Plan	California Dept. of Water Resources	Section VI provides an overview of drought preparedness strategies from the California Water Plan Update. Section VII provides a brief description of local, utility, and State agency drought response roles. Situation and assessment reports will be distributed to appropriate agencies and will be posted on the DWR Drought website (www.water.ca.gov/drought).
Flood	Flood Resistant Construction	Building & Safety	Appendix G of the 2013 California Building Codes stipulates existing Flood Resistant Construction standards.
Flood	NFIP Administration	Engineering Dept.	NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities. As a participating member of the NFIP, the City is dedicated to protecting homes of more than 60 policies currently in force.
Climate Change	Town of Apple Valley Climate Action Plan	Planning	Outline a course of action for the community of Apple Valley to reduce per capita greenhouse gas emissions 15% below business as usual by 2020. In 2020 the Climate Action will be reevaluated and updated based on current population and California emissions standards. This new plan will be included in the HMP updates.

5.3 Administrative and Technical Mitigation Capabilities

This section contains a summary of administrative and technical capabilities organized by the Town of Apple Valley staff. The department(s) responsible for the capability is also listed. Each department can provide greater detail of the resources available under each capability.

Table 5-2: Administrative and Technical Capabilities

Staff/Personnel Resources	Dept. / Agency	Comments
Planners (with land use / land development knowledge)	Planning Division	
Planners or engineers (with natural and/or human caused hazards knowledge)	Public Works, Local Utilities, Planning, & Engineering Dept.	Fire Prevention can assist as well.
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)	Engineering, Planning & Public Works Dept.	
Floodplain Management	Engineering Dept.	NFIP is managed by Town Engineer.
Land/Building surveyors	Engineering Dept.	Services are available through contract with CAA.
Personnel skilled in Geographic Information Systems (GIS)	Planning Division	Not a full time position.
Grant writers or fiscal staff to handle large/complex grants	Special Projects Manager & each Dept. manages own smaller grants	Numerous types of federal, state, local, and private grants have been administered for mitigation at the local level in California. .
Construction Equipment	Public Works Dept.	Public Works departments owns and maintains large pieces of equipment available for construction and moving and removal of earthen material.
Emergency Management Personnel	Police Department, Fire Departments and Office of Emergency Preparedness (OEP)	OEP is housed within the Town of Apple Valley and reports directly to the Town Manager.

Staff/Personnel Resources	Dept. / Agency	Comments
Care and Sheltering	Regional Red Cross Personal 17199 Yuma St. Suite #2, Victorville, CA, 92395	Care and sheltering during extreme disaster related events when evacuations orders are mandatory.

5.4 Local Fiscal Capabilities

This section provides a summary of local fiscal capabilities. The department(s) responsible for the revenue raising activity is also listed. The local Fiscal Resources are updated every fiscal year. Each year allocation of funds for hazard mitigation will be adjusted based on the current years' population growth, location, and future hazard risks.

Table 5-3: Local Fiscal Capabilities

Financial Resources	Dept. / Agency	Comments
Permitting Fees	Building & Safety, Engineering, Planning & Finance Dept.	Development fees
General Fund Revenue	Town Council or Finance Dept.	There is no dedicated budget line items for hazard mitigation.
Sewer and Trash Funds	Finance Dept.	
Capital Improvements Program	Engineering Dept.	
State and Federal Community Development Dept. Block Grants (CDBG)	CA Dept. of Housing and Community Development Dept., Dept. of Housing & Urban Dev. (HUD) Town of Apple Valley Housing Division	Programs Include: Community Development Neighborhood Stabilization Program Residential Rehabilitation Program
Home Investments Partnership Program	CA Dept. of Housing and Community Development Dept. of Housing & Urban Dev. (HUD)	Must apply competitively for grant funds.

5.5 Local & San Bernardino County Capabilities

This section contains a summary of Town of Apple Valley and San Bernardino County programs and capabilities organized by hazard type. The example tables below provide details on possible Town and County Capabilities that the Apple Valley community can coordinate with or use as an implementation mechanism for local mitigation activities. While the following programs can be used by the Apple Valley to develop and perform mitigation actions, they are the County of San

Bernardino's programs and the Fire Districts, so the Town is unable to determine how that entity will expand and improve it at this time.

5.5.1 Apple Valley Fire Protection District & County Wildfire Mitigation Programs

Table 5-4: Wildfire Mitigation Programs

Hazard	Program	Responsible Agency	Comments
Wildfire	*Community Based Fuels Reduction program*	*Fire District*	*This program is designed to create community based fuel modification programs across the Town communities. For more information visit www.applevalleyfd.com.*
Wildfire	*Fire Hazard Abatement*	*Fire District*	*Fire Hazard Abatement works to reduce the potential for an individual's property to be the source of fire and structural ignitability. For more information visit www.applevalleyfd.com.*
Wildfire	*Southern California Edison (SCE)*	*Southern California Edison (SCE)*	*SCE removes dead trees near power lines to reduce fire hazards. For more information see County OES website or hazard mitigation plan.*
Wildfire	*Inland Empire Fire Safe Alliance*	*Inland Empire Fire Safe Alliance*	*The Alliance was created to act as a forum for all Fire Safe Councils in San Bernardino County. For more information see County OES website or hazard mitigation plan.*
Wildfire	*Community Wildfire Protection Plans (CWPP)*	*Fire District*	*CWPPs are designed to provide a means for a community to have input into and actively participate in the planning, strategy, goals, and objectives of creating a fire safe community. For more information see County OES website.*
Wildfire	*Organized Group Volunteer Activities*	*Fire District*	*There are several volunteer citizen groups throughout the Town that are capable of providing significant resources that are not provided by traditional governmental agency services. For more information visit ww.readyapplevalley.org.*

5.5.2 County Flood Mitigation Programs

Table 5-5: Count Flood Mitigation Programs

Hazard	Program	Responsible Agency	Comments

Flood	Flood Area Safety Taskforce (FAST)	Flood Control District	The FAST Organization stresses liaison with the communities, provides for community education and information, and places emphases on Community and city partnerships. For more information see County OES website or hazard mitigation plan.
Flood	Alluvial Fan Task Force	Alluvial Fan Task Force	The Task Force reviews the state of knowledge regarding alluvial fan floodplains, determine future research needs, and, if appropriate, develop recommendations relating to alluvial fan floodplain management, with an emphasis on alluvial fan floodplains that are being considered for development. For more information see County OES website or hazard mitigation plan.

5.5.3 Town of Apple Valley & SB County Public Education and Alert Programs

Table 5-6: Public Education and Alert Programs

Hazard	Program	Responsible Agency	Comments
Multi-Hazard	CERT	Town of Apple Valley	The Community Emergency Response Team (CERT) Program educates people about disaster preparedness and trains them in basic response skills. For more information on the CERT program visit www.readyapplevalley.org
Multi-Hazard	California Disaster Corps	SB County Fire District	The Disaster Corps is a first-in-the-nation effort to professionalize, standardize and coordinate highly trained disaster volunteers statewide. This program initiative was built collaboratively in partnership with California Volunteers from the ground up through public-private partnerships and with a wide range of subject matter experts. Visit www.sbcfire.org.
Multi-Hazard	TENS	SB County Fire District	Telephone Emergency Notification Systems (TENS) During an emergency, public safety can be a direct function of the speed and accuracy of the dissemination of information. This is particularly important during emergencies that require evacuations. The program is an automated phone dialing system that calls telephones in specific geographic areas of concern. All areas of San Bernardino County have all been preprogrammed so that during an emergency, the specific target group can be notified as quickly as possible. For more information visit www.sbcfire.org.
Multi-Hazard	ECS	Town of Apple Valley	The Emergency Communications Service (ECS) is a volunteer group providing front-line communications, technical and logistical support to the Apple Valley Fire Protection District and Office of Emergency Preparedness. For more information visit www.readyapplevalley.org.
Multi-Hazard	IPAWS	SB County Fire District	During an emergency, alert and warning officials need to provide the public with life-saving information quickly. The Integrated Public Alert and Warning System (IPAWS) is a modernization and integration of the

Hazard	Program	Responsible Agency	Comments
			nation's alert and warning infrastructure and will save time when time matters most, protecting life and property. Federal, State, Territorial, Tribal, and local alerting authorities can use IPAWS and integrate local systems that use Common Alerting Protocol (CAP) standards with the IPAWS infrastructure. IPAWS provides public safety officials with an effective way to alert and warn the public about serious emergencies using the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), the National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other public alerting systems from a single interface.

5.6 State and Federal Fiscal Resources

To augment local resources, the table in this section provides a list of potential funding programs and resources provided by state and federal agencies and programs which can be used for local hazard mitigation activities. While the following programs can be used by the Town of Apple Valley to develop and perform mitigation actions, they are the State of California/federal programs, so the Town is unable to determine how that entity will expand and improve it at this time.

Table 5-7: Potential Funding Programs/Grants from State & Federal Agencies

Agency / Grant Name	Potential Programs/Grants
California DWR Proposition 50/84: **Integrated Regional Water Management (IRWM) Program.**	***DWR has a number of IRWM grant program funding opportunities. Current IRWM grant programs include planning, implementation, and stormwater flood management.*** http://www.water.ca.gov/irwm/grants/index.cfm Proposition 84, the Safe Drinking Water, Water Quality, and Supply, Flood Control, River and Coastal Protection Bond Act, which provides $1,000,000,000 (P.R.C. §75001-75130) for IRWM Planning and Implementation. CA Dept. of Water Resources' Flood Emergency Response Projects are posted on the webpage at: http://www.water.ca.gov/floodmgmt/hafoo/fob/floodER/
California Housing and Community Development (HCD) Emergency Solutions Grant (ESG) Program	***To fund projects that serve homeless individuals and families with supportive services, emergency shelter/transitional housing, assisting persons at risk of becoming homeless with homelessness prevention assistance, and providing permanent housing to the homeless population. The Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act of 2009 places new emphasis on assisting people to quickly regain stability in permanent housing after experiencing a housing crisis and/or homelessness.*** http://www.hcd.ca.gov/fa/esg/index.html

Agency / Grant Name	Potential Programs/Grants
CalTrans Division of Local Assistance / Safe Routes to School Program	California Dept. of Transportation. Federal funding administered via Caltrans. Local 10% match is the minimum requirement. http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm
CA State Office of Historic Preservation (OHP) / Statewide Historic Preservation Plan	Local Government**;** OHP's Local Government Unit (LGU) offers guidance and assistance to city and county governments to preserve historic properties including damage from natural hazards.
U.S. Dept. of Energy / Energy Efficiency and Conservation Block Grant Program	***Provides funding for weatherization of structures and development of building codes/ordinances to ensure energy efficiency and restoration of older homes.*** http://www1.eere.energy.gov/wip/eecbg.html
Dept. of Homeland Security (DHS) / FEMA Grants	For more information on current grants visit: http://www.fema.gov/grants
Office for Victims of Crime: **Antiterrorism and Emergency Assistance Program (AEAP)**	***The Office for Victims of Crime supports communities responding to terrorist attacks and cases of mass violence. The AEAP Assistance Programs include crisis response, consequence management, criminal justice support, crime victim compensation and training and technical assistance.*** ***More information can be obtained at:*** https://www.ovc.gov/AEAP/
U.S. Department of State Office of Antiterrorism Assistance (ATA): **Antiterrorism Assistance Program**	Antiterrorism Assistance Program The ATA program trains civilian security and law enforcement personnel from friendly governments in police procedures that deal with terrorism. Since its inception in 1983, the program has trained and assisted over 84,000 foreign security and law enforcement officials from 154 countries. Learn more by visiting: http://www.state.gov/m/ds/terrorism/c8583.htm
California Emergency Management Agency (Cal EMA) / Proposition 1B Grants Programs	The Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, approved by the voters as Proposition 1B at the November 7, 2006 general election, authorizes the issuance of nineteen billion nine hundred twenty-five million dollars ($19,925,000,000) in general obligation bonds for specified purposes, including grants for transit system safety, security, and disaster response projects. http://www.calema.ca.gov/EMS-HS-HazMat/Pages/Emergency-Management-Homeland-Security-and-Hazard-Mitigation-Grant-Programs.aspx
California Proposition 1: **The Water Bond (AB 1471)**	Authorize $7.545 billion in general obligation bonds for state water supply infrastructure projects, such as public water system improvements, surface and groundwater storage, drinking water protection, water recycling and advanced water treatment technology,

Agency / Grant Name	Potential Programs/Grants
	water supply management and conveyance, wastewater treatment, drought relief, emergency water supplies, and ecosystem and watershed protection and restoration. The State Water Resources Control Board (State Water Board) will administer Proposition 1 funds for five programs. The estimated implementation schedule for each is outlined in Five Categories: ▪ Small Community Wastewater ▪ Water Recycling ▪ Drinking Water ▪ Stormwater ▪ Groundwater Sustainability http://www.waterboards.ca.gov/water_issues/programs/grants_loans/proposition1.shtml
Assistance to Firefighters Grant Program (AFG); Fire Prevention and Safety (FP&S)	The primary goal of the FP&S Grants is to enhance the safety of the public and firefighters with respect to fire and fire-related hazards. The Grant Programs Directorate administers the FP&S Grants as part of the AFG Program. FP&S Grants are offered to support projects in two activity areas: 1). Fire Prevention and Safety (FP&S) Activities designed to reach high-risk target groups and mitigate the incidence of death and injuries caused by fire and fire-related hazards. 2). Research and Development (R&D) Activity To learn more about how to prepare to apply for a project under this activity, please see the FP&S Research and Development Grant Application Get Ready Guide. https://www.fema.gov/fire-prevention-safety-grants

5.7 The Budget in Brief

The Town of Apple Valley has a total adopted general fund budget for all funds in the amount of $80.6 million for Fiscal Year 2016-17. Adopted Budget reflects the operating and capital spending plans for the General Fund, Special Revenue Funds, Capital Project Funds, Debt Service and Enterprise Funds.

In comparison to the total adopted FY16-17 budget, on an all funds basis the operating budget comprises 67.48% of the total budget. The following discussion will focus primarily on the operating budget. The adopted operating budget is $54.2 million, an increase of $381,388 or .71% compared to the amended budget in FY 15-16.

5.7.1 Salaries & Benefits

Personnel costs decreased by $120,212 or 1.09% in total. This decrease is mainly due to three long-term employees retiring during the 2015-16 fiscal year. In addition, there is no Cost of Living Allowance (COLA) included in the adopted budget.

5.7.2 Revenues

As a result of the slow but steady rebound in the economy, most revenue sources are projected to increase slightly. The Town has been experiencing slight increases in Sales Tax, Property Tax, and Franchise Taxes and the expectation is that those increases will continue into FY 16-17. A portion of the increased property tax revenues is resulting from an increase in property tax collections due to the elimination of the Redevelopment Agency and subsequent redistribution of previously captured tax increments. In the near term, the local economy is not generally expected to grow at a comparable rate when compared to the economic growth rates realized prior to FY 07-08. However, most economic indicators appear optimistic and most economic projections are generally calling for a long period of sustained 'slow growth'.

5.7.3 Property Tax

Property tax is the single largest source of revenue for the Town. The FY 16-17 estimated revenue from property tax is $9,418,358 or 32.33% of the total General Fund revenues. This amount is $423,200 more than the amended FY 15-16 estimated property tax revenues. This increase of approximately 4.71% in revenue is attributed to the continued slow growth in property values which are anticipated to continue for the foreseeable future. In previous years, the declining market values of property in the Town depressed property tax revenues by as much as 40% in some areas. However, over the last year, property values have begun to rise steadily on a month-over-month basis.

While market values of property in the Town are still at reduced levels when compared to assessed values prior to the beginning of the recession in 2007, a large portion of the property tax base is still assessed at market values less than the maximum taxable value per Proposition 13 limits. These properties may experience Prop. 8 recoveries or increases in assessed values at a rate above 2% up to the Prop. 13 limit over the next year. As such, there is an expectation that the assessed values of those properties will increase at a rate greater than 2% over the next year thereby increasing property tax revenue collections by the Town.

5.7.4 Sales & Use Tax

Sales tax represents the Town's second largest revenue source estimated at $6,015,500 or 20.65% of the total General Fund estimated revenues for FY 16-17. This amount represents an increase of $475,600 compared to the amended revenue estimate for FY 15-16. The majority of the increase is due to the expiration of the sales tax backfill payment ("triple flip") that was received from the State in the form of property taxes (accounted for as Sales Tax In-Lieu). The backfill payment from the State was the result of the "triple flip" that was approved by the voters in November 2004 under Proposition 57 to finance the State's Economic Recovery Bonds. Under this Proposition, the State took one fourth of the local agencies' sales tax and backfilled it with a like amount in property taxes from the Educational Revenue Augmentation Fund (ERAF).

Apple Valley's sales tax base has consistently trended upward over the last several years. This predictability of the sales tax revenue source is due to the diversity of the types of businesses and retailers located within the Town. While the sales tax revenue category had been most directly affected by the recession, sales tax revenues have begun to move upward at a slow gradual pace. Staff is estimating that sales tax revenues will increase (8.19%) when compared to the FY 15-16 revised revenue estimates.

5.7.5 The VLF (Vehicle License Fee)

The VLF swap is the result of the State's action in 2003 to permanently reduce the Vehicle License Fee from 2% to 0.65%. In the past, local government received its full share of the revenues from the 2% rate. When the State reduced the rate,

the State also promised to make local governments whole by backfilling the lost revenue with a like amount in property tax revenues. This backfill payment is linked directly to the growth in property tax revenues. Apple Valley has experienced some revenue losses from the swap as most property values have fallen since the recession began in May, 2007. Although the recession ended in June, 2009, property values in the Town have yet to fully recover to property values existent in 2007.

5.7.6 Franchise Fees

Franchise fees represent the Town's third largest source of revenue. Currently, the Town collects electric franchise fees from Southern California Edison, gas franchise fees from Southwest Gas Company, cable franchise fees from Cable providers and Solid Waste Hauler's franchise fees from the Town's waste hauler. For FY 16-17, estimated revenue from all sources of Franchise Fees is $2,118,500, which represents 7.30% of the total General Fund revenue. The estimated revenue reflects a net increase of $45,500 or 2.19% over the FY 15-16 amended revenue estimate.

5.7.7 Animal Service Contract

Contract payments for animal sheltering services with the County of San Bernardino represent the Town's fourth largest source of revenue. The FY 16-17 revenue estimate from this source is $483,500, which represents 1.66% of the total General Fund revenues. This revenue is a new revenue source to the Town since the County began contracting with the Town for animal sheltering services beginning in January, 2013.

5.7.8 Capital Improvement Program

The Town's Seven-Year Capital Improvement Program (CIP) is listed within the "Capital Improvement Program" section of the adopted budget. This section provides comprehensive, detailed information on each of the capital projects that the Town plans to undertake in the coming fiscal year and beyond. Twenty-four capital improvement projects totaling $10.9 million are adopted for funding in FY 16-17, a decrease of $18.7 million or 63.15% over the adopted CIP in FY 15-16.

5.7.9 Use of Fund Balances

During times of emergency or due to other needs, the Town may utilize its general operating reserve, which is part of the "committed" and "unassigned" portions of General Fund fund balance, if circumstances warrant. The General Fund fund balance should be distinguished from other fund balances. Special Revenue Funds and Capital Projects Funds fund balances are earmarked for specific uses based upon the criteria for which these funds were established. These types of funds may accumulate monies for future appropriations. For example, when the Town is ready and able to embark upon a capital improvement project or special program that meets the specific requirements for the use of the funds, appropriations from fund balances may be used.

5.7.10 Property and Business Improvement District (PBID)

Information on the Apple Valley Village PBID may be found within the "PBID" section of the general budget document. The Town acts as trustee and custodian of PBID funds although the Town does not exercise direct control over PBID activities or expenditures.

Information on all of these programs can be found within the Town's current FY16-17 approved general budget.

Section 6. Mitigation Strategy

6.1 Mitigation Overview

The Town of Apple Valley's mitigation strategy is derived from the in-depth review of the existing vulnerabilities and capabilities outlined in previous sections of this plan, combined with a vision for creating a disaster resistant and sustainable community for the future. This vision is based on informed assumptions, recognizes both mitigation challenges and opportunities, and is demonstrated by the goals and objectives outlined below. The mitigation measures identified under each objective include an implementation plan for each measure. The measures were individually evaluated during discussions of mitigation alternatives and the conclusions used as input when priorities were decided. All priorities are based on consensus of the Planning Team.

Mitigation measures are categorized generally for all hazards and specifically for the four risk hazards facing the Town that were extensively examined in the risk assessment section: climate change, earthquakes, floods, and wildfires.

The intent of the mitigation strategy is to provide the Town of Apple Valley with a guidebook to future hazard mitigation administration. This will help the staff to achieve compatibility with existing planning mechanisms, and ensure that mitigation activities provide specific roles and resources for implementation success.

6.1.1 Mitigation 5 Year Progress Report

The following, Table 6-1, identifies the completed, deleted, or ongoing actions or activities from the previously approved 2011 plan. Due to changes in funding availability and management's change of priorities, some 2011 mitigations actions have been removed from the 2017 mitigation actions. Mitigation efforts are being focused on the community as a whole as opposed to the actions that may only benefit a small percentage of the community.

Table 6-1: Mitigation 5 Year Progress Report

Mitigation Action	Completed	No longer priority	Ongoing	Comments
Develop projects and programs to install automatic gas shut-off valves in residential, commercial, and public buildings		X		No longer an action the Town wants to pursue.
Develop and construct seismic retrofit of critical facilities	X			Adoption of Ord. No. 453 & No. 489
Develop residential and commercial seismic retrofit programs	X			Adoption of Ord. No. 453 & No. 489
Develop earthquake mitigation public outreach education programs			X	
Develop and construct seismic retrofit of city-owned transportation and utilities infrastructure	X			Completion of Yucca Loma Bridge May 2017

Mitigation Action	Completed	No longer priority	Ongoing	Comments
Develop and sponsor projects and programs to brace new or relocated mobile homes to resist earthquakes		X		No longer a priority.
Install detention basin: **Navajo and Ottawa**			X	In process of acquiring property to connect pipe to ret. Basin. **FI Action 1.1**
Install detention basin: **Huasna Road and Chippewa Rd**		X		Vacant property. Will be completed when property developed by landowner.
Install detention basin: Bear Valley and Mohawk Road	X			Installed Dry well – Completed in 2015
Install Dry Well: Quapaw Rd / Eyota Rd	X			Completed in 2011
Install Dry Well: Seneca Rd / Rancherias Road	X			Completed in 2015
Install Dry Well: Pocomoke Rd / Minnetonka Rd	X			Completed in 2011 Minnetonka Rd/Tamiani Rd
Install Dry Well: Algonquin Rd / Lone Eagle Rd		X		No longer priority
Install Dry Well: Mohawk Rd / Laguna Rd.		X		2015 installed dry well on Bear Valley/Mohawk instead
Install Dry Well: Little Beaver / Mesquite Rd		X		No longer priority
Install Dry Well: **Dale Evans/Otoe/Thunderbird/ Rancherias neighborhood area**	X			Completed in 2015 Rancherias Rd & Thunderbird Rd

6.2 Identifying the Problem

As part of the mitigation actions identification process, the HMP Planning Committee identified issues and/or weaknesses as a result of the risk assessment and vulnerability analysis. By combining common issues and weaknesses developed by the Planning Committee, the realm of resources needed for mitigating each can be understood. Community issues and weaknesses are presented by individual hazard in Table 6-2 to Table 6-6.

Table 6-2: All Hazard Problem Statements Table

Problem Description	Problem Type	Action No.
1. Lack of public notification system in the Town	Public Notification	AH 1.1
2. No backup power for EOC	Infrastructure	AH 2.1

Table 6-3: Earthquake Problem Statements Table

Problem Description	Problem Type	Action No.
1. Potential damage to essential facilities and major bridges.	Infrastructure	EQ 1.1, 1.2, 1.3
2. Public awareness and preparedness of earthquake risks at businesses and homes	Public Education and Notification	EQ 2.1
3. Majority of residents live in the severe shaking zone in the Great Shakeout Scenario	Vulnerable Populations	EQ 2.1

Table 6-4: Wildfire Problem Statements Table

Problem Description	Problem Type	Action No.
1. Vegetative fuels in open spaces and backing up to resident's property/homes.	Maintenance Policy	WF 1.1
2. Inadequate water supply for firefighting	Infrastructure	WF 2.1
3. Public education on brush clearance and defensible space.	Public Education and Notification	WF 3.1

Table 6-5: Flood Problem Statements Table

Problem Description	Problem Type	Action No.
1. Drainage issues along major transportation roads throughout Town.	Lifeline/Infrastructure	FL 1.1, 1.2, 1.3
2. Debris/sediment buildup in storm culverts and basins after major storms	Maintenance	FL 2.1

Table 6-6: Climate Change Problem Statements Table

Problem Description	Problem Type	Action No.
1. Greenhouse gas emissions with residential and commercial properties.	Utilities	1.1
2. Greenhouse gas emissions with residential and commercial vehicles	Transportation	1.1

6.3 Mitigation Goals, Objectives, and Projects

The Mitigation Goals included overall goals established by the Town (contained within the Town's General Plan) to guide the establishment and priorities of specific goals, objectives and mitigation measures for each high risk hazard. In reviewing and updating the mitigation goals and actions, it was the Planning Team's consensus that the following goals remain in this HMP update. Our mitigation projects for each hazard are stated within the mitigation actions for each respective hazard. The Town's 2009 General Plan is on file at Town Hall, 14955 Dale Evans Parkway, Apple Valley, CA 92307 and is available for review during normal business hours. The General Plan is also available online at www.applevalley.org.

6.3.1 All Hazard (AH)

Goal: Improve emergency services management capability

Objective 1: Develop warning and evacuation notification system for residents and businesses.

> ***AH Action 1.1:*** Implement a public notification system to increase ability to alert the public to potential emergency situations and hazards.

Objective 2: Identify the need for, and acquire, any special emergency services and equipment to enhance response capabilities for hazards.

> ***AH Action 2.1:*** To ensure continual power supply, purchase and install backup generator at EOC.

6.3.2 Earthquake/Geologic Hazards (EQ)

Goal: The protection and safety of human life, land, and property from the effects of seismic and geotechnical hazards shall be increased. (General Plan, Geotechnical Element)

Earthquake Objective 1: The Town shall coordinate and cooperate with public and quasi-public agencies to ensure that major infrastructure, utility systems and roadways have continued functionality in the event of a major earthquake.

> ***EQ Action 1.1*:** Seismic retrofit of the Bear Valley Bridge over Mojave River.
> ***EQ Action 1.2:*** Seismic analysis of the James Woody Community Center.
> ***EQ Action 1.3:*** Seismic analysis of the Town Hall Development Services Building.
> ***Responsible Agency:*** Planning Division, Public Works Division, Town Engineer, Public and Quasi-Public Utilities.
> ***Schedule:*** Ongoing.

Earthquake Objective 2: The Town shall actively support and participate in local and regional efforts to educate the public on reducing earthquake risks.

***EQ Action 2.1*:** Increase number of residents who complete public education programs such as CERT for earthquake risks and response.
Responsible Agency: Emergency Preparedness
Schedule: Ongoing.

6.3.3 Wildfire (WF)

Goal: Continue to reduce fire hazards in the Town of Apple Valley.

Wildfire Objective 1*:* Reduce fire risk in open spaces through vegetation management policies.

***WF Action 1.1*:** Continue and enhance the hazard abatement program to reduce wildfire hazards.
Responsible Agency: Fire District
Schedule: ongoing.

Wildfire Objective 2*:* Improve understanding of locations, potential impacts, and linkage between hazards, vulnerability, and measures needed to protect life and property.

WF Action 2.1: Continue to identify areas vulnerable to wildfire due to inadequate water supply for firefighting and implement improvements such as expansion of water supply and storage hydrants.
Responsible Agency: Fire District
Schedule: ongoing.

Wildfire Objective 3*:* Increase Public education on brush clearance and defensible space.

WF Action 3.1: Continue and enhance community risk reduction programs such as Ready Set Go!, burn permits, and educational programs through the schools.
Responsible Agency: Fire District
Schedule: ongoing.

6.3.4 Flood (FL)

Goal: Protect lives and property from flooding hazards through a comprehensive system of flood control facilities throughout the Town. (General Plan, Flooding and Hydrology Element)

Flood Objective 1: Upgrade the Town's local and regional drainage system through proactive planning and coordination with other responsible agencies.

FL Action 1.1: Drainage system upgrade on Navajo Road near James Woody Community Center.
FL Action 1.2: Install drywell Seneca/Cronese Road
FL Action 1.3: Install drywell Gayhead/Seminole Road
Responsible Agencies: Engineering Division, Public Works Division
Schedule: 5-10 years

Flood Objective 2: Assure that adequate access to roadways is maintained during major storm events, and that safe all-weather crossings over drainage facilities and flood control channels are provided where necessary.

FL Action 2.1: Purchase resources such as a skid steer loader and automatic sandbag machine needed to perform routine and annual maintenance for roadways and drainage facilities.
Responsible Agency: Public Works Division, Engineering Division
Schedule: Ongoing

6.3.5 Climate Change (CC)

Goal: Reduce the impacts of climate change on the Town and limit human activities that change the atmosphere's makeup.

Climate Change Objective 1: Meet greenhouse gas (GHG) reduction targets set forth by the Town of Apple Valley's Climate Action Plan (CAP).

CC Action 1.1: Continue implementing measures to reduce GHG and energy usage as identified in the Town of Apple Valley's Climate Action Plan.
Responsible Agency: Planning Division
Schedule: 5-10 years

6.4 Considering Mitigation Alternatives

The HMP Planning Team participated in the development and review of mitigation actions with a wide range of alternatives. To narrow mitigation alternatives for inclusion, FEMA's six broad categories of mitigation alternatives were used. Each FEMA category is described below. The HMP Planning Team developed several mitigation alternatives for implementation under each mitigation category.

Prevention (PRV):

Preventative activities are intended to keep hazard problems from getting worse, and are typically administered through government programs or regulatory actions that influence the way land is developed and buildings are built. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred or capital improvements have not been substantial. Examples of preventative activities include:

- Planning and zoning ordinances
- Building codes
- Open space preservation
- Floodplain regulations
- Stormwater management regulations
- Drainage system maintenance
- Capital improvements programming
- Riverine/fault zone setbacks

PRV Alternatives:

Evaluate the City's regulations that manage flood risk and consider additional standards to help prevent flood problems from increasing. These include:

- Changes in zoning ordinance to designate special land uses for flood-prone areas
- Enhanced subdivision regulations
- Enhanced stormwater regulations to reduce stormwater runoff, especially for new development Other additional higher standards in the flood management code

Consider additional policies and regulations to enhance the preservation of open space in flood-prone and wild land fire high risk areas.

Property Protection (PPRO):

Property protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or removal of the structures from hazardous locations. Examples include:

- Building elevation
- Critical facilities protection
- Retrofitting (e.g., wind proofing, flood proofing, seismic design techniques, etc.)
- Insurance

PPRO Alternatives:

Establish a program to evaluate RL and flood-prone properties for implementation of property protection measures.

Consider promoting and supporting voluntary property protection measures through several activities, ranging from financial incentives to full funding.

Promote flood insurance for flood-prone properties with a focus on the SFHA and properties with historical flooding areas.

Evaluate publically owned facilities and critical facilities for property protection measures, including flood insurance.

Public Education and Awareness (PE&A):

Public education and awareness activities are used to advise residents, elected officials, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:

- Outreach projects including neighborhood and community outreach
- Speaker series / demonstration events
- Hazard mapping
- Real estate disclosures
- Materials library
- School children educational programs
- Hazard expositions

PE&A Alternatives:

Enhance the Town's Public Information Program to include both the public and private sectors. An education and outreach measure to ensure the community understands their role in protecting themselves in a disaster event.

- Safety precautions for all types of hazards, but especially floods, earthquakes, wildfires, and drought
- Knowing where emergency evacuation routes and shelters are located
- Family and emergency preparedness measures
- Mitigation measures for residents at the home

Enhance public outreach program to include all hazards. Appropriate ways to spread information are:

- Websites and social media
- Mailings to residents, in water bill
- Newsletter (Our Town)
- Displays, particularly at special events
- Handouts, flyers and other materials, which can be distributed at special events and at presentations

Natural Resource Protection (NRP):

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their protective functions. Such areas include floodplains, steep slopes, and open land. Parks, recreation, or conservation agencies and organizations often implement these protective measures. Examples include:

- Floodplain protection
- Watershed management
- Vegetation Management (e.g., fire resistant landscaping, fuel brakes, etc.)
- Erosion and sediment control
- Habitat preservation and restoration

NRP Alternatives:

Enhance public education and outreach efforts to inform the public about our community recycling programs, community clean-up day, and energy saving tips and upgrades.

Inform the public and local businesses how important it is to use drought tolerant landscaping.

Keep promoting water conservation policy's in effect to keep water usage low.

Emergency Services (ES):

Although not typically considered a "mitigation" technique, emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a hazard event. Examples include:

- Warning Systems
- Construction of evacuation routes
- Sandbag staging for flood protection
- Obtain StormReady certification
- Provide alert and notification to residents through social media for flood risk
- Evacuate and shelter populations displaced due to flooding
- Training

Staff Structural Projects (SP):

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event through construction. They are usually designed by engineers and managed or maintained by public works staff. Examples include:

- Stormwater diversions / detention / retention infrastructure/drywells
- Utility upgrades
- Seismic Retrofits
- New construction standards

SP Alternatives:

The Town has previously constructed flood control and drainage facilities that move storm and flood waters more efficiently and reduced potential for flooding. The Town should identify and prioritize additional projects in Apple Valley.

The Town should continue to implement regional drainage improvement projects to reduce stormwater runoff and the potential for flooding along local drainages.

6.5 Mitigation Priorities

During the development of the risk assessment for the Town of Apple Valley, the Planning Team proposed and discussed alternative mitigation goals, objectives, and specific mitigation measures that the Town should undertake to reduce the risk from the three high risk hazards facing the Town.

6.5.1 Prioritization Process

Multiple factors were considered to establish the mitigation priorities included in this plan. The Planning Team utilized the 2011 rankings and the last five-year disaster related occurrences to develop the Hazard Summary Worksheet and Risk Factor Final Worksheet identified in Section 4.1 and in Appendix D.1-D.4) to help assess mitigation priorities and determined that the highest priority rankings would be assigned to those mitigation measures that met three primary criteria:

1. Greatest potential for protecting life and property.
2. Greatest potential for maintaining critical City functions and operability following a disaster.
3. Achievability in terms of community support and cost effectiveness.

All rankings were determined by the consensus of the Planning Team. As described in the previous section on hazard and risk assessment, clearly earthquakes have the potential to affect the largest number of people, critical facilities and buildings and to cause the greatest economic losses. This fact, combined with the relatively high probability of an earthquake occurrence in the next several decades, makes increasing disaster resistance and readiness to earthquakes a high priority.

Given the extreme importance of maintaining critical government functions in times of disaster and the large number of the population who depend and rely on government services and infrastructure, those mitigation measures that improve government disaster resistance, readiness, or recovery capacity are generally given higher priority than mitigation of privately owned buildings in which the loss or damage affects relatively few.

Earthquake, flooding, wildfire, and climate change mitigation actions are identified and assigned a priority according to their importance, cost, funding availability, to what degree project planning has been completed and the anticipated time to implement the measures.

The Planning Team discussed alternative mitigation strategies and mitigation measures during workshops, provided their preferences and also suggested additional mitigation measures that the Town should consider. The Planning Team reviewed the list of possible objectives and mitigation measures, made a final selection and then prioritized the individual mitigation measures considered most appropriate for Apple Valley.

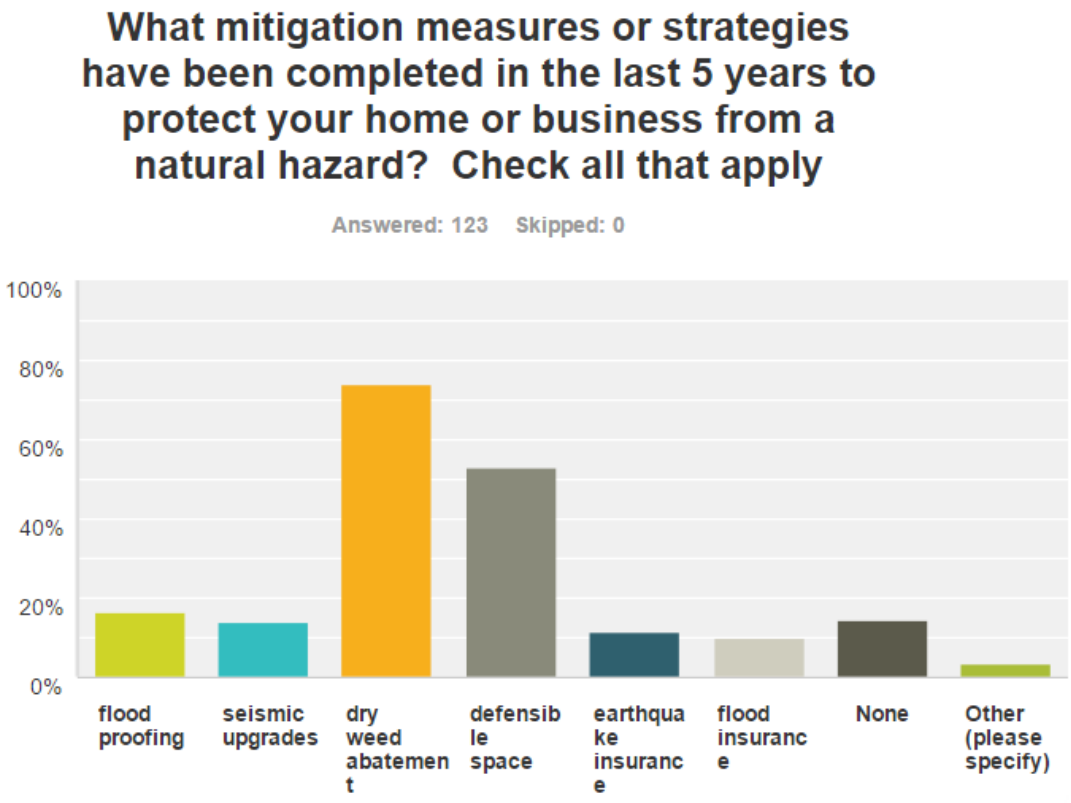
6.5.1.1 Public Input for Mitigation Prioritization:

Public input is an essential step in validating the prioritization of mitigation actions. Valuable information was gathered regarding the perception of hazard threats to residents through a community survey. The summary of results can be found in Appendix C.2.

The community survey found that 75.5% of respondents had experienced an earthquake within the past 15 years within the Town of Apple Valley, 46.8% experienced wildfire, and 46.8% had experienced flooding. When asked which hazards

would be very likely to cause damage to buildings or harm residents in the Town, respondents believed drought, wildfire and earthquake were the most likely to cause damage.

As seen in figure 6-1 below the top incentives that would encourage the survey participants to protect their home against natural hazards were insurance premium discounts, property tax breaks or financial assistance programs. This community feedback was taken into consideration when prioritizing mitigation actions.



Answer Choices		Responses	
flood proofing		16.26%	20
seismic upgrades		13.82%	17
dry weed abatement		73.98%	91
defensible space		52.85%	65
earthquake insurance		11.38%	14
flood insurance		9.76%	12
None		14.63%	18
Other (please specify)	Responses	3.25%	4

Figure 6-1: Example survey question

6.5.2 Cost Benefit:

The action plan was prioritized according to a benefit/cost analysis of the proposed projects and their associated costs (44 CFR, Section 201.6(c)(3)(iii)). The benefits of proposed projects were weighed against estimated costs as part of the project prioritization process. The benefit/cost analysis was not of the detailed variety required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program.

A less formal approach was used because some projects may not be implemented for up to 10 years, and associated costs and benefits could change dramatically in that time. Therefore, a review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to the costs and benefits of these projects and the planning team arrived at such ratings notated in Table 6-7.

Cost ratings were defined as:

High—Existing funding will not cover the cost of the project; implementation would require new revenue through an alternative source (for example, bonds, grants, and fee increases).
Medium—The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
Low—The project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.

Benefit ratings were defined as follows:

High—Project will provide an immediate reduction of risk exposure for life and property.
Medium—Project will have a long-term impact on the reduction of risk exposure for life and property, or project will provide an immediate reduction in the risk exposure for property.
Low—Long-term benefits of the project are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

6.5.3 Goal, Objective, and Mitigation Action Matrix

Based upon the risk assessment, the City's capabilities and public input, Table 6-7 shows primary objectives and corresponding mitigation actions selected for further implementation and development during the next planning cycle. Table 6-x provides details for each mitigation action with mitigation action descriptions, FEMA mitigation category, responsible party, and timeframe. Implementation Action Plans for each action number highlighted in Table 6-x are shown in further detail in Section 7 (Implementation).

Table 6-7: Goal, Objective, and Mitigation Action Prioritization Matrix

RF Factor	Action No.	Priority Rating	Action Description
EARTHQUAKE			
3.6	EQ 1.1	1	Seismic retrofit of the Bear Valley Bridge over Mojave River.

RF Factor	Action No.	Priority Rating	Action Description
EARTHQUAKE			
3.6	EQ 1.1	3	Seismic analysis of the James Woody Community Center.
3.6	EQ 2.1	2	Seismic analysis of the Town Hall Development Services Building.
3.6	EQ 3.1	4	Increase number of residents who complete public education programs such as CERT for earthquake risks and response.
FIRE			
2.3	WF 1.1	2	Continue and enhance the hazard abatement program to reduce wildfire hazards.
2.3	WF 2.1	1	Continue to identify areas vulnerable to wildfire due to inadequate water supply for firefighting and implement improvements such as expansion of water supply and storage hydrants.
2.3	WF 3.1	3	Continue and enhance community risk reduction programs such as Ready Set Go, burn permits, and educational programs through the schools.
FLOOD			
2.25	FL 1.1	2	Drainage system upgrade on Navajo Road near James Woody Community Center.
2.25	FL 1.2	3	Install drywell Seneca/Cronese Road
2.25	FL 1.3	4	Install drywell Gayhead/Seminole Road
2.25	FL 2.1	1	Purchase resources such as skid steer loader, dump truck and automatic sandbag machine needed to perform routine and annual maintenance for roadways and drainage facilities.
CLIMATE CHANGE			
1.7	CC 1.1	1	Implement measures to reduce GHG and energy usage as identified in the Town's CAP.

INTENTIONAL BLANK PAGE

Action No.	Mitigation Action	Description / Background	Mitigation Category	Funding	Cost/Benefit	Lead Dept.	Timeline
AH 1.1	Implement a public notification system to increase ability to alert the public to potential emergency situations and	The Town currently does not have a Town wide notification system for residents, business owners and visitors.	Emergency Services	General Fund Grants	High/High	Emergency Preparedness/PIO	5-10 years
AH 2.1	To ensure continual power supply, purchase and install backup generator at EOC.	The Town would like to move the current location of the EOC to a Town owned facility, however, we do not have a backup generator at any facility.	Public Education & Awareness	General Fund Grants	High/High	Emergency Preparedness & Facilities	3-5 years
EQ 1.1	Seismic retrofit of Bear Valley Bridge over Mojave River.	Town Engineering Department is in the planning stages for seismic retrofit of Bear Valley bridge.	Structural Projects	General Fund Grants	High/High	Engineering	5-10 years
EQ 1.2	Seismic analysis of the James Woody Community Center.	Seismic analysis of the James Woody Community Center would provide information on needed improvements to the building to respond to seismic activity.	Property Protection Alternatives	Grants	High/High	Building & Safety	3-5 years
EQ 1.3	Seismic analysis of the Town Hall Development Services Building.	Seismic analysis of the Town Hall Development Services Building would provide information on needed improvements to the building to respond to seismic activity.	Property Protection Alternatives	Grants	High/High	Building & Safety	3-5 years
EQ 2.1	Increase number of residents who complete public education programs such as CERT for earthquake risks and response.	Apple Valley has one of the most successful CERT programs in the High Desert. To increase public education and preparedness, expansion of CERT and the DSW program is necessary.	Public Education & Awareness	General Fund Grants	Low/High	Emergency Preparedness	On going
WF 1.1	Continue and enhance fire hazard abatement program.	The Fire Hazard/Weed Abatement Program goal is to have combustible vegetation and debris removed to reduce available fuel for fires. Continuation and enhancement of the program is necessary to decrease wildfires throughout Town.	Natural Resource Protection	AVFPD General Fund, Grants	Medium/High	AVFPD	On going
WF 1.2	Continue to identify areas vulnerable to wildfire due to inadequate water supply for firefighting and implement improvements such as expansion of water supply and storage hydrants.	There are some areas of Apple Valley that have sparse development and limited water supply for firefighting capabilities. The Fire District will continue to identify these areas and develop improvements to increase water supply.	Structural Projects	AVFPD General Fund, Grants	Medium/High	AVFPD	On going
WF 2.1	Continue and enhance community risk reduction programs such as Ready Set Go, burn permits, and educational programs through the schools.	The Community Risk Reduction program is dedicated to maintaining a proactive approach to reducing the risk to lives and property within the Apple Valley. The programs aim at preventing an emergency before it happens through education, preparedness, permits, and fire codes.	Public Education & Awareness	AVFPD General Fund, Grants	Medium/High	AVFPD	On going
FL 1.1	Drainage system upgrade on Navajo Road near James Woody Community Center.	During and after a major storm, flooding occurs on Navajo Road near the James Woody Community Center. Town Engineering department has identified the private property adjacent and to the south of the Community Center as a vital acquisition in order to build a basin for flowing water on Navajo Road.	Structural Projects	General Fund Grants	Low/Medium	Engineering	5-10 years
FL 1.2	Install drywell Seneca/Cronese Road	This intersection has been identified by our Engineering Department as an area in need of a drywell to combat flooding after a storm.	Structural Projects	General Fund Grants	Low/Medium	Engineering	3-5 years

Action No.	Mitigation Action	Description / Background	Mitigation Category	Funding	Cost/Benefit	Lead Dept.	Timeline
FL 1.3	Install drywell Gayhead/Seminole Road	This intersection has been identified by our Engineering Department as an area in need of a drywell to combat flooding after a storm.	Structural Projects	General Fund Grants	Low/Medium	Engineering	3-5 years
FL 2.1	Purchase resources such as a skid steer loader and automatic sandbag machine needed to perform routine and annual maintenance for roadways and drainage facilities.	The Town's Public Works department has limited resources to clear drainage facilities and roadways before and after major storms. Purchase of these two resources will aid in increasing staff's efficiency when conducting routine maintenance.	Prevention	General Fund Grants	High/High	Public Works	3-5 years
CC 1.1	Implement measures to reduce GHG and energy usage as identified in the Town's CAP.	The Town of Apple Valley's Climate Action Plan addresses the environmental effects of climate change and GHG reduction for the Town.	Prevention	General Fund Grants	Low/Low	Planning	On Going

Section 7. Plan Maintenance

7.1 Monitoring, Evaluating and Updating the HMP

As a living document it is important that this plan becomes a tool in the Town of Apple Valley's resources to ensure reductions in possible damage from a natural hazard event. This section discusses plan adoption, implementation, monitoring, evaluating, and updating the HMP. Plan implementation and maintenance procedures will ensure that the HMP remains relevant and continues to address the changing environment in the Town of Apple Valley's. This section describes the incorporation of the HMP into existing Apple Valley's planning mechanisms, and how the Apple Valley's staff will continue to engage the public.

7.2 Plan Adoption

To comply with DMA 2000, the Town Council has officially adopted the 2017 Town of Apple Valley HMP. The adoption of the 2017 HMP recognizes Apple Valley's commitment to reducing the impacts of natural hazards within Town limits. A copy of the 2017 HMP adoption resolution is included in the front of the approved HMP document.

7.3 Implementation

Over time, Implementation Strategies will become more detailed and the Town's mitigation planners will work to provide greater detail for priority mitigation actions. In conjunction with the Mitigation Implementation Plan Worksheet and Mitigation Action Reporting Form outlined at the end of Section 7 these will be extremely useful as a plan of record tool for updates. Each implementation strategy worksheet provides individual steps and resources needed to complete each mitigation action. The following provides several options to consider when developing implementation strategies in the future:

- **Use processes that already exist-** initial strategy is to take advantage of tools and procedures identified in the capability assessment in Section 6. By using planning mechanisms already in use and familiar to Town departments and organizations, it will give the planning implementation phase a strong initial boost, especially if a mitigation strategy calls for expanding existing programs, or creating new programs or processes at a later date. Section 6 provides more information on existing planning mechanisms.
- **Updated work plans**- policies, or procedures; hazard mitigation concepts and activities can help integrate the 2017 HMP into daily operations. These changes can include how major development projects and subdivision reviews are addressed in hazard prone areas or ensure that hazard mitigation concerns are considered in the approval of major capital improvement projects.
- **Job descriptions-** working with department or agency heads to revise job descriptions of government staff to include mitigation-related duties could further institutionalize hazard mitigation. This change would not necessarily result in great financial expenditures or programmatic changes.

7.4 Future Participation

The Town of Apple Valley's HMP Planning Committee, established for this update, will become a permanent advisory body to administer and coordinate the implementation and maintenance of the 2017 HMP. The Office of Emergency Preparedness will lead the 2017 HMP plan development and updates and all associated HMP

maintenance requirements. Other duties include reviewing and promoting mitigation opportunities, informing and soliciting input from the public and developing grant applications for hazard mitigation assistance.

7.5 Schedule

The HMP will be updated every five years, as required by DMA 2000. The formal update process will begin at least one year prior to the expiration of the Town Council adoption date of the HMP notated at the beginning of this plan. However, should a significant disaster occur within Apple Valley, the HMP Planning Committee will reconvene within 30 days of the disaster to review and update the HMP as needed. The Town Council will adopt written updates to the HMP as a DMA 2000 requirement.

7.6 Process

The HMP Planning Committee will coordinate with responsible agencies/departments identified for each mitigation action. These responsible agencies/departments will monitor and evaluate the progress made on the implementation of mitigation actions and report to the HMP Planning Committee on an annual basis. Working with the HMP Planning Committee, these responsible agencies/organizations will be asked to assess the effectiveness of the mitigation actions and modify the mitigation actions as appropriate. A HMP Mitigation Action Progress Report worksheet, provided at the end of this section was developed as part of this HMP to assist mitigation project managers in reporting on the status and assessing the effectiveness of the mitigation actions.

Information culled from the mitigation leads or “champions” will be used to monitor mitigation actions and annual evaluation of the HMP. The following questions will be considered as criteria for evaluating the effectiveness of the HMP:

- Has the nature or magnitude of hazards affecting the Town changed?
- Are there new hazards that have the potential to impact the Town?
- Do the identified goals and actions address current and expected conditions?
- Have mitigation actions been implemented or completed?
- Has the implementation of identified mitigation actions resulted in expected outcomes?
- Are current resources adequate to implement the HMP?
- Should additional local resources be committed to address identified hazards?

An Annual HMP Review Questionnaire worksheet, provided in the Appendix D.7, has been developed as part of this HMP to provide guidance to the HMP Planning Committee on what should be included in the evaluation. Future updates to the HMP will account for any new hazard vulnerabilities, special circumstances, or new information that becomes available. Issues that arise during monitoring and evaluating the HMP, which require changes to the risk assessment, mitigation strategy and other components of the HMP, will be incorporated into the next update of the 2017 HMP in 2022. The questions identified above would remain valid during the preparation of the 2022 update.

7.7 Incorporation into Existing Planning Mechanisms

An important implementation mechanism is to incorporate the recommendation and underlying principles of the HMP into community planning and development such as capital improvement budgeting, building and zoning codes, general plans and regional plans.

The 2017 Hazard Mitigation Plan update process was followed by inclusion of mitigation measures in the Town of Apple Valley's General Plan. The Town of Apple Valley addresses statewide planning goals and legislative requirements through its General Plan, Capital Improvement Projects, Climate Action Plan and City Building and Safety Codes. The Hazard Mitigation Plan will implement a series of recommendations, many of which are closely related to the goals and objectives of existing planning programs just mentioned. The Town of Apple Valley will have the opportunity to implement recommended mitigation action items through existing programs and procedures.

The Hazard Mitigation Plan goals and actions will be incorporated into various general operations of government. For example, much of the information from the Hazard Mitigation Plan will be included in the Town of Apple Valley's Emergency Operations Plan (EOP). As any future Town plans are developed, the Hazard Mitigation Plan will be a great asset in any plan development efforts. As noted earlier, much of the information contained in this Hazard Mitigation Plan is from the Town's General Plan and is already part of the planning process.

7.8 Continued Public Involvement

A critical part of maintaining an effective and relevant Hazards Mitigation Plan is ongoing public review and comment. Consequently, the Town is dedicated to the direct involvement of its citizens in providing feedback and comments on the plan on a continued basis. The public will continue to be apprised of Local Hazard Mitigation Plan actions through the Town's website and through the local media.

The Town of Apple Valley will continue to promote and secure hazard mitigation, preparedness, response, and recovery actions via:

- Regular quarterly meetings of the Apple Valley Disaster Council
- Continued participation in the Operational Area Coordinating Council meeting.
- Regular revision of the Emergency Operations Plan and the Hazard Mitigation Plan as outlined respectively
- Annual drills and training with Emergency Operations Center staff
- Support of the full-time Emergency Preparedness Program
- Promotion at community events whenever possible

All proposed changes to the plan will be subject to citizen review prior to Town Council action. The Town will follow its standard public input process, consistent with the process used in the initial plan development, which is described in Section 3 of this Plan.

7.9 2017 HMP Mitigation Action Implementation Plans

Mitigation Action Implementation Plan	
Action:	
Implementing Agencies	
Lead Agency (ies):	Town of Apple Valley
Roles and Responsibilities:	
Support Agency (ies):	
Roles and Responsibilities:	
Preliminary Identified Tasks:	
1.	
2.	
3.	
Implementation Costs	
Estimated Capital Costs:	
Estimated Maintenance Costs:	
Implementation Resources	
Financial Resources (Funding):	
Technical Assistance Resources:	
Required Equipment, Vehicles, and Supplies	
Office Supplies	
Vehicles	
Implementation Timeframe	
Estimated Mitigation Action Start Date:	
Estimated Mitigation Action Completion Date:	

7.10 Blank Mitigation Action Reporting Forms

Your jurisdictional may wish to use these mitigation actions reporting forms on an annual, semiannual, or quarterly basis.

Progress Report Period:_____ to _____

(date) (date)

Project Title:_____

Project ID#_____

Responsible Agency:_____

Address:_____

Town: _____

Contact Person:_____

Phone#: _____ Email _____

List Supporting Agencies and Contacts:_____

Total Project Cost:_____

Funding Source:_____

Anticipated Cost Overrun/Underrun:_____

Date of Project Approval:_____ Start date of the project:_____

Anticipated completion date: _____

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase):_____

Milestones	Completed (✓)	Projected Date of Completion

HMP Goal Addressed: _____

Indicator of Success:_____

Project Status:

□ Project on schedule □ Cost unchanged □ Project completed

□ Cost overrun* □ Project delayed*

*explain_____

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

B. What successes have you encountered, if any?

C. What obstacles, problems, or delays have you encountered, if any?

D. How was each problem resolved?

E. Based on the past experiences (successes and obstacles), what changes, if any, need to be made to ensure completion?

Next Steps: What are the next step(s) to be accomplished over the next reporting period?

Other Comments:

INTENTIONAL BLANK PAGE

Section 8. Work Cited

CA Fire Alliance. (n.d.). *The California Fire Alliance.* CA Fire Alliance.

Cal EMA. (2010). *State of California Multi-Hazard Mitigation Plan.*

(n.d.). *California Adaptation Planning Guide.* California Emergency Management Agency.

California Energy Commission. (2016). *2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings.*

(2013). *California Multi-Hazard Mitigation Plan.*

California, P. P. (2016, July). *California's Latest Drought*. Retrieved from http://www.ppic.org/main/publication_show.asp?i=1087

(2011). *City of Grand Terrace 2011 Hazard Mitigation Plan Update.*

(2011). *City of Grand Terrace 2011 Hazard Mitigation Plan Update.*

City of Grand Terrace. (2016, January 16). Retrieved from http://www.grandterrace-ca.gov/uploads/8/1/1/9/8119166/01-20-16_press_release_-_nfip__2_.pdf

City of Grand Terrace Code of Ordinances . (n.d.). Retrieved from https://www.municode.com/library/ca/grand_terrace/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.72ABOR

(2010). *City of Grand Terrace General Plan.*

(2010). *City of Grand Terrace General Plan.*

City-Data.com. (n.d.). Retrieved from http://www.city-data.com/city/Grand-Terrace-California.html

(2010). *Grand Terrace General Plan.*

Grand Terrace, California- Code of Ordinances. (n.d.). Retrieved from https://www.municode.com/library/ca/grand_terrace/codes/code_of_ordinances?nodeId=TIT15BUCO_CH15.18CAFICO_15.18.010FIADCAFICO

Los Angeles Times. (2013, April 23rd). Retrieved from http://articles.latimes.com/2013/apr/23/local/la-me-ln-landslide-san-bernardino20130423

(2010). *Riverside Highland Water Company Urban Water Management Plan.*

SoCalGas Gas Transmission and High Pressure Distribution Pipeline Interactive Map. (n.d.). Retrieved from https://www.socalgas.com/stay-safe/pipeline-and-storage-safety/natural-gas-pipeline-map/san-bernardino

Sperling's Best Places. (n.d.). Retrieved from http://www.bestplaces.net/climate/zip-code/california/grand_terrace/92313

The National Flood Insurance Program. (n.d.). Retrieved from https://www.fema.gov/national-flood-insurance-program

United States Census Bureau. (n.d.). Retrieved from https://www.census.gov/quickfacts/table/PST045215/0630658,00

(2015). *Upper Santa Ana Integrated Resources Water Management Plan.*

US Census Bureau Factfinder. (n.d.). Retrieved from http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

USGS. (2004). *Landslide Types and Processes.* http://pubs.usgs.gov/fs/2004/3072/pdf/fs2004-3072.pdf.

USGS. (2009).

USGS. (2016, April 7). *USGS Earthquake Hazards Program*. Retrieved from https://earthquake.usgs.gov/learn/glossary/?term=earthquake

Appendix A

A.1 Copy of Town Resolution adopting HMP

INTENTIONAL BLANK PAGE

Appendix B

B.1 Planning Committee Team

B.2 Planning Committee Invite Letters

B.3 Committee Meeting Documents (PPT's, sign in sheets and agendas)

B.4 Other Meeting Agendas (CERT, Disaster Council, Town Council)

INTENTIONAL BLANK PAGE

B.1 Planning Committee Team

Apple Valley HMP Team

Suggested Planning Team Members

Emergency Management
Building Code Enforcement
Fire District
GIS
Parks & Recreation
Planning/Com. Development
PIO
Public Works
Stormwater Management
Transportation

Proposed 2016 HMP Core Planning Team

Title	Person
Emer. Management	Joseph Ramos
Building Official	Patrick Carroll
AVFPD	Sid Hultquist
GIS	Pam Cupp
Parks & Rec	Ralph Wright
Planning/Comm Dev.	Lori Lamson
PIO	Kathie Martin
Public Works	Greg Synder
Engineer	Brad Miller

Key Stakeholders

DSW	Dawn Harrison
City of Hesperia	Rachel Molina
City of Victorville	Dana Welborn
AVUSD	Janet Gould
American Red Cross	Don Gordon
County of SB	Cindy Serrano
SW Gas	Bill Hensley
Edison	Bob Stiens
Liberty Utilities	Kevin Phillips
Nat. Weather Service	Alex Tardy
St. Josephs- St. Mary's	Shannon Welsh
Cal OES	HMP division
FEMA	HMP division

2010

Title	Person
DSW	Shelley Alfieri
Fire Chief	Art Bishop
United Way	Chris Briggs
AV Ranchos Water	Mike Cook
ATM- TOAV	Dennis Cron
CERT Commander	Dawn Harrison
DSW	Pat Hayes
TOAV- Engineer	Brad Miller
PW manager- TOAV	Lance Miller
Risk Manager- AVUSD	David Pinnecker
Building Official- TOAV	Claude Stewart
St. Mary's	Robert Suchomel
ESO- TOAV & AVFPD	Laura Whitehead
P & R Manager	Ralph Wright

INTENTIONAL BLANK PAGE

B.2 Planning Committee Invite Letters

Town of Apple Valley
Office of Emergency Preparedness

A Better Way of Life

July 20, 2016

You are invited to make a difference!

Town of Apple Valley is required to maintain a current Local Hazard Mitigation Plan (HMP) approved by CalOES and FEMA that identifies hazards and mitigation potential within the Town of Apple Valley. In addition to preparedness, this plan is necessary to insure that Apple Valley is eligible to receive federal grants and/or aid related to natural disaster. This is a 5-year plan. Apple Valley has begun the process to prepare the 2016 update to the Local Hazard Mitigation Plan (HMP) and we invite you to participate. The HMP will serve as a blueprint for reducing property damage and saving lives from the effects of future natural disasters in Apple Valley.

To guide this process, Apple Valley has established two groups: The Core Planning Committee who will work closely to shape the plan; and the Stakeholder Group to give a broad perspective during plan development. You are receiving this because our ***Town Manager*** has identified you as a key participant at the Core Planning level. We welcome your participation as part of the HMP Core Planning Team to update our natural hazard mitigation documents for Apple Valley.

To provide solidarity in the process, we would like to kick-off the planning efforts with a meeting for team members. The strategy of this meeting is to have members meet, organize and provide input on the hazards, mitigation strategies, and other components of the HMP planning process. Later in the planning process, we will start engaging a larger group of stakeholders, and develop a plan together with the help of a consultant team hired by the County.

The kick-off meeting will be on ***Tuesday, August 2, 2016 at 8:30 a.m.*** at the Town Hall Development Services Building meeting room 1 located at 14975 Dale Evans Parkway.

For more information about the HMP process and history behind the program visit:

www.readyapplevalley.org.

Cal OES Local Hazard Mitigation Planning Program (LHMP):
http://hazardmitigation.calema.ca.gov/plan/local_hazard_mitigation_plan_lhmp

FEMA's Website on Hazard Mitigation Planning Resources:
http://www.fema.gov/hazard-mitigation-planning-resources

www.AppleValley.org 14955 Dale Evans Parkway • Apple Valley, California 92307 • 760.240.7000

FEMA's Guide on Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards:
http://www.fema.gov/library/viewRecord.do?id=6938

FEMA's Guide on Integrating Hazard Mitigation Intro Local Planning: Case Studies and Tools for Community Officials:
http://www.fema.gov/library/viewRecord.do?id=7130

Please advise if you will or will not be able to attend this kick off meeting. If you are unable to attend this meeting, additional information regarding future meetings, draft documents for review, and other project milestones will be provided soon!

If you have any additional questions, please do not hesitate to contact me by phone or email. Thank you for your time and consideration,

Joseph Ramos
Town of Apple Valley
Emergency Services Officer
jramos@applevalley.org
760-240-7000 ext. 7890

Town of Apple Valley
Office of Emergency Preparedness

A Better Way of Life

July 28, 2016

You are invited to make a difference!

Town of Apple Valley has begun the process to prepare the 2016 update to the Hazard Mitigation Plan (HMP) and we invite you to participate. The HMP will serve as a blueprint for reducing property damage and saving lives from the effects of future natural disasters in the Town of Apple Valley. To guide this process, the Town has established two groups: The Planning Committee who will work most closely to shape the plan; and the Stakeholder Group to give a broad perspective during plan development. You are receiving this because you or your agency has been identified as a key participant at the "Stakeholder Group" level. The Town welcomes you (or other interested parties) to assist the HMP Project Management Team to update our natural hazard mitigation documents for the Town of Apple Valley. ***This will involve periodic review of documentation and feedback during certain points of the planning process.***

To provide solidarity in the planning process, we would like to inform you that our project will be starting soon with a kick-off meeting. You are more than welcome to join this meeting but attendance at this meeting is not a requirement to be involved in the entire process. The strategy of this meeting is to have members meet, organize and discuss next steps and other components of the HMP planning process. Later in the planning process, we will start engaging a larger group of stakeholders through various means of engagement. We anticipate the HMP development process to last about 8 to 12 months.

The kick-off meeting will be on ***Tuesday, August 2, 2016 at 8:30 a.m.*** at the Town Hall Development Services Building meeting room 1 located at 14975 Dale Evans Parkway.

For more information about the HMP process and history behind the program visit:

www.readyapplevalley.org.

Cal OES Local Hazard Mitigation Planning Program (LHMP):
http://hazardmitigation.calema.ca.gov/plan/local_hazard_mitigation_plan_lhmp

FEMA's Website on Hazard Mitigation Planning Resources:
http://www.fema.gov/hazard-mitigation-planning-resources

FEMA's Guide on Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards:
http://www.fema.gov/library/viewRecord.do?id=6938

www.AppleValley.org 14955 Dale Evans Parkway • Apple Valley, California 92307 • 760.240.7000

FEMA's Guide on Integrating Hazard Mitigation Intro Local Planning: Case Studies and Tools for Community Officials:
http://www.fema.gov/library/viewRecord.do?id=7130

Please respond to this e-mail and advise if you will be participating in this process, and who will be assigned to represent your agency. If you are unable to attend this meeting but still wish to participate in the planning process, additional information regarding future meetings, draft documents for review, and other project milestones will be provided through e-mails.

If you have any additional questions, please do not hesitate to contact me by phone or email. Thank you for your time and consideration,

Joseph Ramos
Town of Apple Valley
Emergency Services Officer
jramos@applevalley.org
760-240-7000 ext. 7890

Town of Apple Valley
Office of Emergency Preparedness

A Better Way of Life

Media Alert
July 28, 2016
For immediate release

You are invited to make a difference!

Town of Apple Valley has begun the process to prepare the 2016 update to the Hazard Mitigation Plan (HMP) and we invite you to participate. The HMP will serve as a blueprint for reducing property damage and saving lives from the effects of future natural disasters in the Town of Apple Valley. The Town welcomes you (or other interested parties) to assist the HMP Project Management Team to update our natural hazard mitigation documents for the Town of Apple Valley. This will involve periodic review of documentation and feedback during certain points of the planning process.

To provide solidarity in the planning process, we would like to inform you that our project will be starting soon with a kick-off meeting. You are more than welcome to join this meeting but attendance in this meeting is not a requirement to be involved in the entire process. We anticipate the HMP development process to last about 8 to 12 months.

The kick-off meeting will be on ***Tuesday, August 2, 2016 at 8:30 a.m.*** at the Town Hall Development Services Building meeting room 1 located at 14975 Dale Evans Parkway.

We will have additional discussions of the HMP during all upcoming Disaster Council Meetings and CERT meetings.

For more information about the HMP process and history behind the program visit: www.readyapplevalley.org.

If you have any additional questions, please do not hesitate to contact me by phone or email. Thank you for your time and consideration.

Joseph Ramos
Town of Apple Valley
Emergency Services Officer
jramos@applevalley.org
760-240-7000 ext. 7890

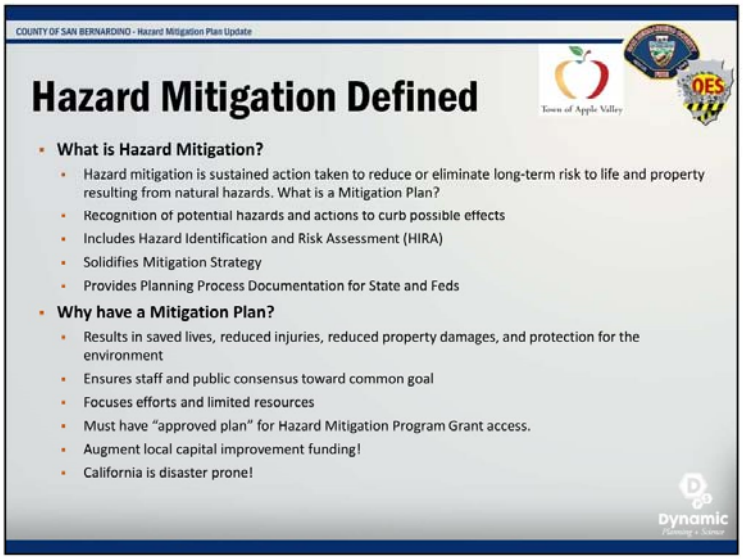
INTENTIONAL BLANK PAGE

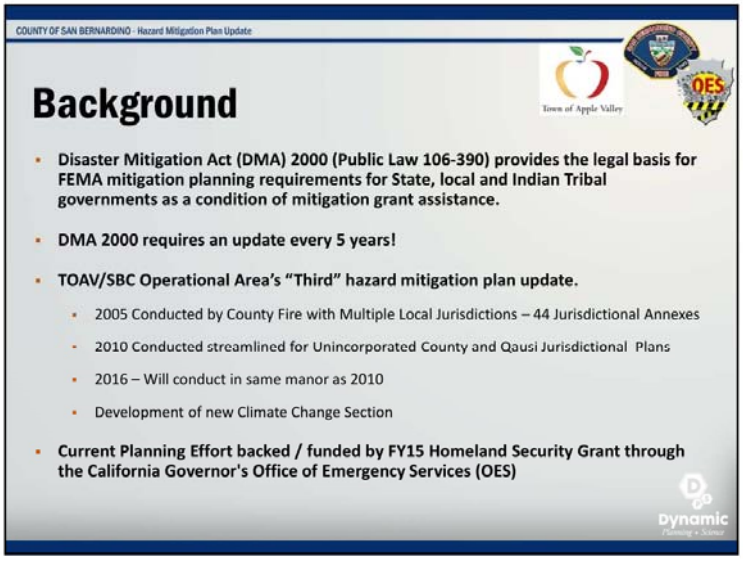
B.3 Committee Meeting Documents (PPT's, sign in sheets and agendas)

6/15/2017

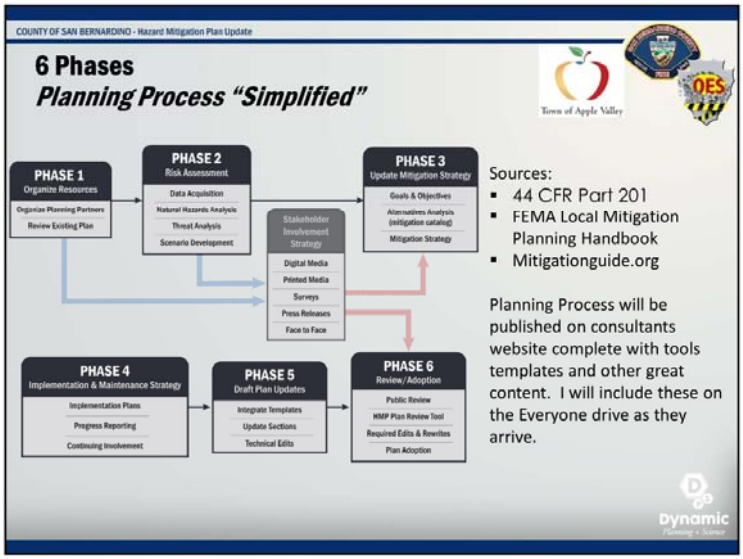
1

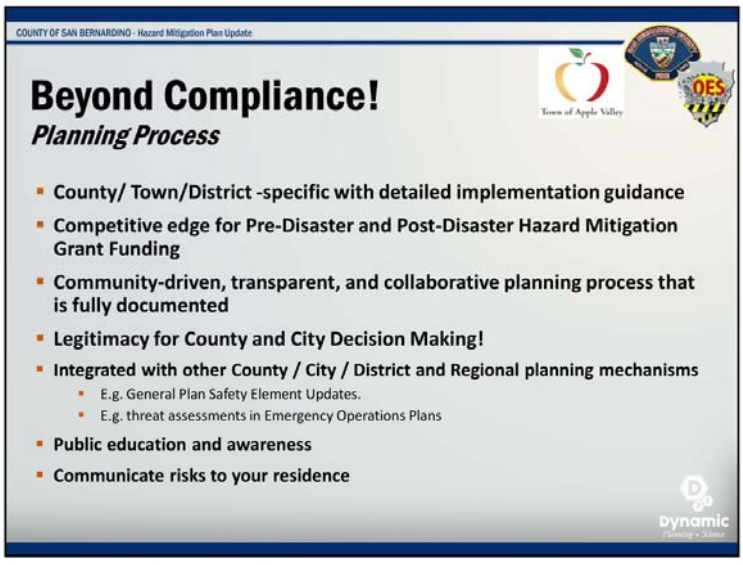
6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Hazard Mitigation Defined
Town of Apple Valley
OES
What is Hazard Mitigation?
Hazard mitigation is sustained action taken to reduce or eliminate long-term risk to life and property resulting from natural hazards. What is a Mitigation Plan?
Recognition of potential hazards and actions to curb possible effects
Includes Hazard Identification and Risk Assessment (HIRA)
Solidifies Mitigation Strategy
Provides Planning Process Documentation for State and Feds
Why have a Mitigation Plan?
Results in saved lives, reduced injuries, reduced property damages, and protection for the environment
Ensures staff and public consensus toward common goal
Focuses efforts and limited resources
Must have "approved plan" for Hazard Mitigation Program Grant access.
Augment local capital improvement funding!
California is disaster prone!
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Background
Town of Apple Valley
OES
Disaster Mitigation Act (DMA) 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance.
DMA 2000 requires an update every 5 years!
TOAV/SBC Operational Area's "Third" hazard mitigation plan update.
2005 Conducted by County Fire with Multiple Local Jurisdictions – 44 Jurisdictional Annexes
2010 Conducted streamlined for Unincorporated County and Qausi Jurisdictional Plans
2016 – Will conduct in same manor as 2010
Development of new Climate Change Section
Current Planning Effort backed / funded by FY15 Homeland Security Grant through the California Governor's Office of Emergency Services (OES)
Dynamic

6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
6 Phases
Planning Process "Simplified"
Town of Apple Valley
OES
PHASE 1
Organize Resources
Organize Planning Partners
Review Existing Plan
PHASE 2
Risk Assessment
Data Acquisition
Natural Hazards Analysis
Threat Analysis
Scenario Development
PHASE 3
Update Mitigation Strategy
Goals & Objectives
Alternatives Analysis (mitigation catalog)
Mitigation Strategy
Stakeholder Involvement Strategy
Digital Media
Printed Media
Surveys
Press Releases
Face to Face
PHASE 4
Implementation & Maintenance Strategy
Implementation Plans
Progress Reporting
Continuing Involvement
PHASE 5
Draft Plan Updates
Integrate Templates
Update Sections
Technical Edits
PHASE 6
Review/Adoption
Public Review
HMP Plan Review Tool
Required Edits & Rewrites
Plan Adoption
Sources:
44 CFR Part 201
FEMA Local Mitigation Planning Handbook
Mitigationguide.org
Planning Process will be published on consultants website complete with tools templates and other great content. I will include these on the Everyone drive as they arrive.
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Beyond Compliance!
Planning Process
Town of Apple Valley
OES
County/ Town/District -specific with detailed implementation guidance
Competitive edge for Pre-Disaster and Post-Disaster Hazard Mitigation Grant Funding
Community-driven, transparent, and collaborative planning process that is fully documented
Legitimacy for County and City Decision Making!
Integrated with other County / City / District and Regional planning mechanisms
E.g. General Plan Safety Element Updates.
E.g. threat assessments in Emergency Operations Plans
Public education and awareness
Communicate risks to your residence
Dynamic

6/15/2017

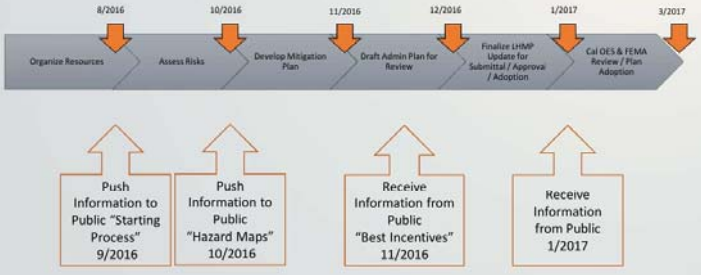
COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update

Primary Objectives

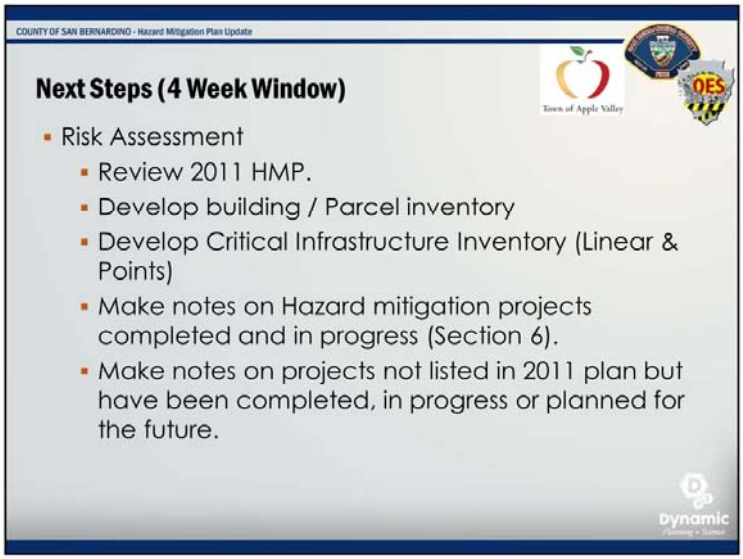
- Setting the expectations and define mitigation planning and actions.
- Mitigate the identified risk.
- This is not a emergency response document!
- Create umbrella planning process with a set prescribed phases and tasks to follow if needed.
- Remain Flexible; Implementation will change over time based upon resources, grants and other leveraging.
- Develop something useful!

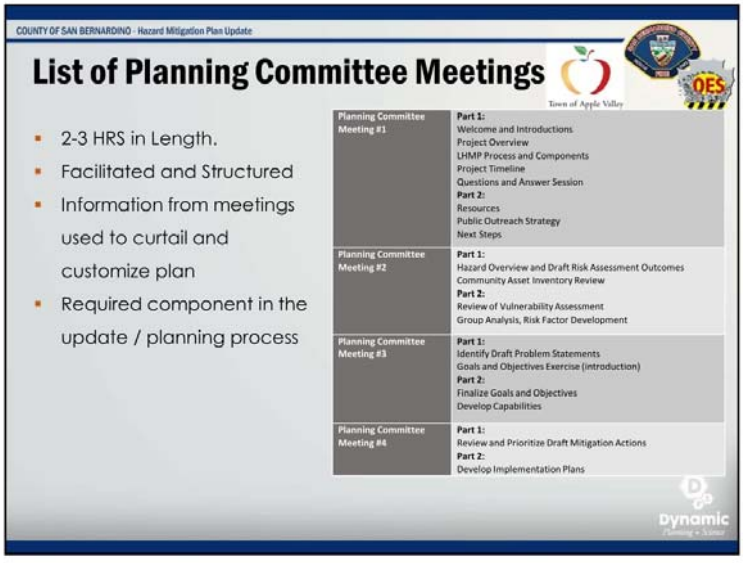
COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update

"Ideal" Schedule



6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Next Steps (4 Week Window)
Risk Assessment
Review 2011 HMP.
Develop building / Parcel inventory
Develop Critical Infrastructure Inventory (Linear & Points)
Make notes on Hazard mitigation projects completed and in progress (Section 6).
Make notes on projects not listed in 2011 plan but have been completed, in progress or planned for the future.
Town of Apple Valley
OES
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
List of Planning Committee Meetings
2-3 HRS in Length.
Facilitated and Structured
Information from meetings used to curtail and customize plan
Required component in the update / planning process
Planning Committee Meeting #1
Part 1:
Welcome and Introductions
Project Overview
LHMP Process and Components
Project Timeline
Questions and Answer Session
Part 2:
Resources
Public Outreach Strategy
Next Steps
Planning Committee Meeting #2
Part 1:
Hazard Overview and Draft Risk Assessment Outcomes
Community Asset Inventory Review
Part 2:
Review of Vulnerability Assessment
Group Analysis, Risk Factor Development
Planning Committee Meeting #3
Part 1:
Identify Draft Problem Statements
Goals and Objectives Exercise (introduction)
Part 2:
Finalize Goals and Objectives
Develop Capabilities
Planning Committee Meeting #4
Part 1:
Review and Prioritize Draft Mitigation Actions
Part 2:
Develop Implementation Plans
Town of Apple Valley
OES
Dynamic

6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
QUESTIONS
Joseph Ramos
Emergency Services Officer
760-240-7000 ext. 7890
Dawn Harrison
Emergency Services Assistant
760-240-7000 ext. 7791
Dynamic

Kick Off Meeting-Monday August 2, 2016

Planning Committee Dept. / Members	E-Mail	Initial
Town Engineering/Building & Safety Department		
Brad Miller	bmiller@applevalley.org	
Patrick Carroll	pcarroll@applevalley.org	
Brett Morgan	bmorgan@applevalley.org	
Town Community Development		
Lori Lamson	llamson@applevalley.org	
Pam Cupp	pcupp@applevalley.org	
Ralph Wright	rwright@applevalley.org	
AV Fire Protection District		
Sid Hultquist	shultquist@applevalleyfd.com	
Rich Unferdorfer	runferdorfer@applevalleyfd.com	
Town Public Works		
Greg Snyder	gsnyder@applevalley.org	
Mike Cady	mcady@applevalley.org	
Town PIO		
Kathy ~~Martin~~ ie	kmartin@applevalley.org	
Office of Emergency Preparedness		
Joseph Ramos	jramos@applevalley.org	
Dawn Harrison	dharrison@applevalley.org	
Carol Miller	cmiller@applevalley.org	CM

6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
OES
Town of Apple Valley
2016-17
Hazard Mitigation Plan
Update Process
Town of Apple Valley, SBC OES
HMP Meeting
October 18, 2016
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
OES
Town of Apple Valley
Agenda
Hazard Mitigation Planning
Hazard Mitigation Defined
Town HMP webpage/survey
Schedule
Project Review
Section 1-3
Schedule
Prep for next sections
Hazard Prioritization
Mitigation Strategies
Exercise Problem Statements
Next Step- section 4-5
Dynamic

6/15/2017

COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update

Hazard Mitigation Defined

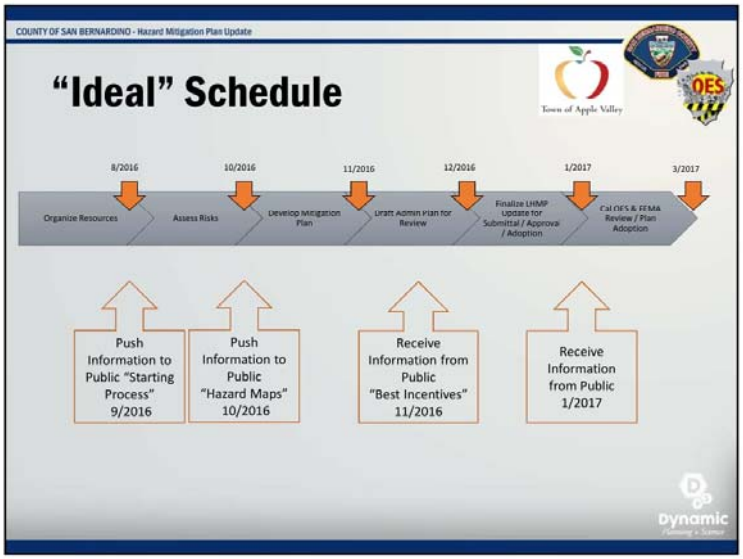
- **What is Hazard Mitigation?**
  - Hazard mitigation is sustained action taken to reduce or eliminate long-term risk to life and property resulting from natural hazards. What is a Mitigation Plan?
  - Recognition of potential hazards and actions to curb possible effects
  - Includes Hazard Identification and Risk Assessment (HIRA)
  - Solidifies Mitigation Strategy
  - Provides Planning Process Documentation for State and Feds
- **Why have a Mitigation Plan?**
  - Results in saved lives, reduced injuries, reduced property damages, and protection for the environment
  - Ensures staff and public consensus toward common goal
  - Focuses efforts and limited resources
  - Must have "approved plan" for Hazard Mitigation Program Grant access.
  - Augment local capital improvement funding!
  - California is disaster prone!

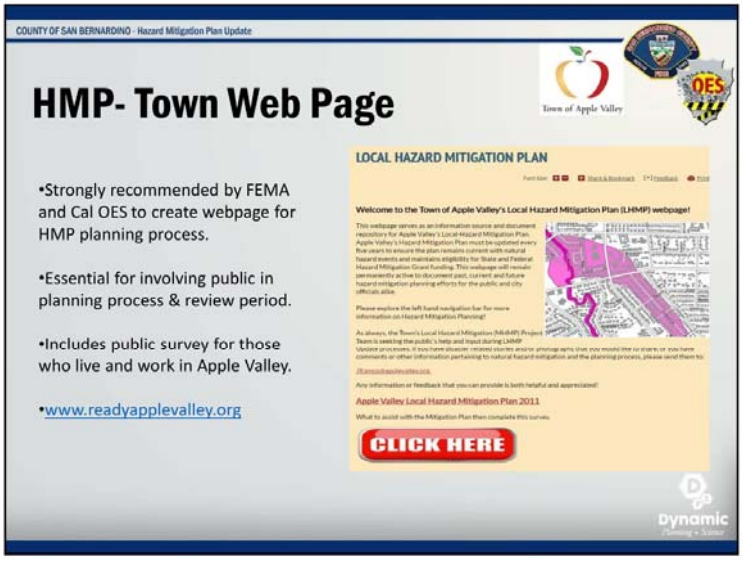
COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update

Background

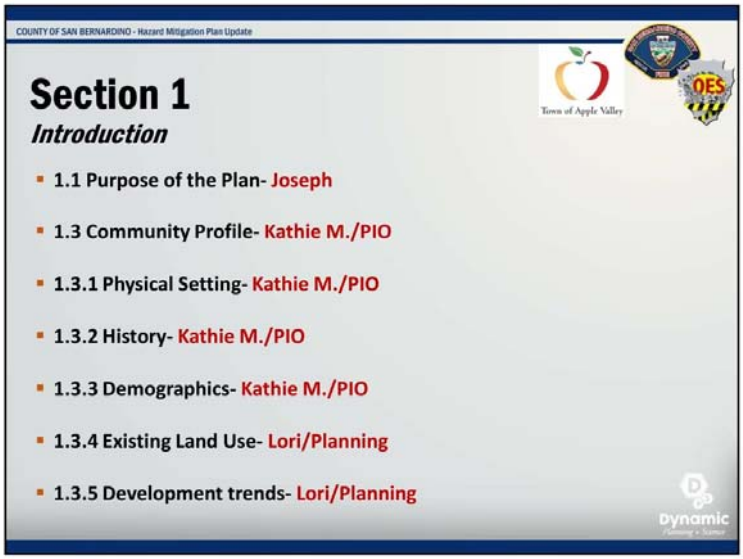
- **Disaster Mitigation Act (DMA) 2000 (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance.**
- **DMA 2000 requires an update every 5 years!**
- **TOAV/SBC Operational Area's "Third" hazard mitigation plan update.**
  - 2005 Conducted by County Fire with Multiple Local Jurisdictions – 44 Jurisdictional Annexes
  - 2010 Conducted streamlined for Unincorporated County and Qausi Jurisdictional Plans
  - 2016 – Will conduct in same manor as 2010
  - Development of new Climate Change Section
- **Current Planning Effort backed / funded by FY15 Homeland Security Grant through the California Governor's Office of Emergency Services (OES)**

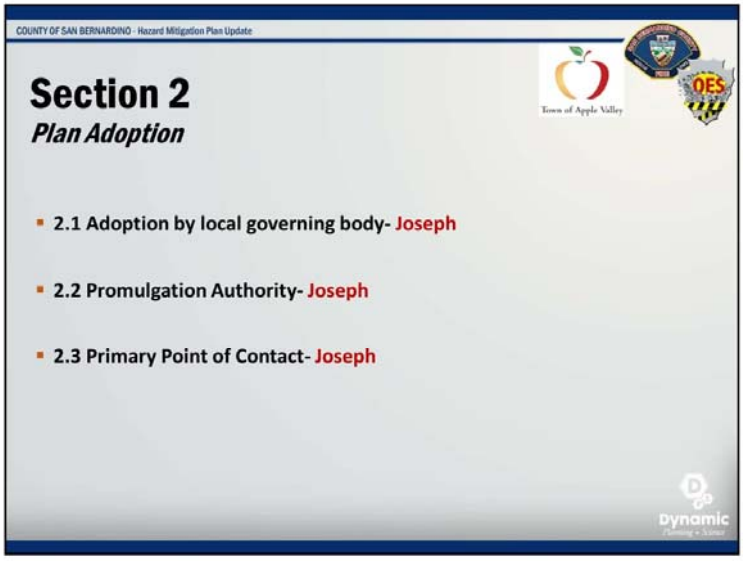
6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
"Ideal" Schedule
Town of Apple Valley
OES
8/2016
10/2016
11/2016
12/2016
1/2017
3/2017
Organize Resources
Assess Risks
Develop Mitigation Plan
Draft Admin Plan for Review
Finalize LHMP Update for Submittal / Approval / Adoption
Cal OES & FEMA Review / Plan Adoption
Push Information to Public "Starting Process" 9/2016
Push Information to Public "Hazard Maps" 10/2016
Receive Information from Public "Best Incentives" 11/2016
Receive Information from Public 1/2017
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
HMP- Town Web Page
Town of Apple Valley
OES
•Strongly recommended by FEMA and Cal OES to create webpage for HMP planning process.
•Essential for involving public in planning process & review period.
•Includes public survey for those who live and work in Apple Valley.
•www.readyapplevalley.org
LOCAL HAZARD MITIGATION PLAN
Welcome to the Town of Apple Valley's Local Hazard Mitigation Plan (LHMP) webpage!
Apple Valley Local Hazard Mitigation Plan 2011
CLICK HERE
Dynamic

6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Section 1
Introduction
1.1 Purpose of the Plan- Joseph
1.3 Community Profile- Kathie M./PIO
1.3.1 Physical Setting- Kathie M./PIO
1.3.2 History- Kathie M./PIO
1.3.3 Demographics- Kathie M./PIO
1.3.4 Existing Land Use- Lori/Planning
1.3.5 Development trends- Lori/Planning
OES
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Section 2
Plan Adoption
2.1 Adoption by local governing body- Joseph
2.2 Promulgation Authority- Joseph
2.3 Primary Point of Contact- Joseph
OES
Dynamic

6/15/2017

COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update

Section 3

Planning Process

- 3.1 Preparing for the Plan- Joseph
- 3.1.1 Planning Team- Dawn
- 3.2 Coordinating w/other jurisdictions, agencies & organizations- Dawn
- 3.3 Public involvement/Outreach- Dawn
- 3.4-3.8 Assess the Hazard, Set Goals, Review & Propose Mitigation Measures, Draft & Adopt Plan- Joseph

COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update

Preparing for next sections

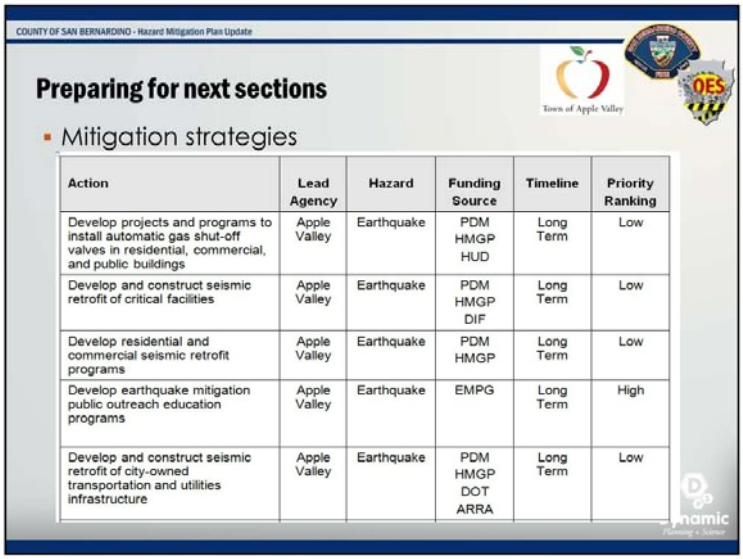
- Hazard Prioritization

Probability	Impact: High	Impact: Medium	Impact: Low
High	Earthquake Flooding Wildfires		
Medium	Drought and Water Shortage	Extreme Heat High Winds Straight Line Winds	
Low			Dam Failure

Red boxes represent the higher priority hazards; "Orange" and "Yellow" boxes represent additional levels of priority.

Figure 9 – Hazard Assessment Matrix

6/15/2017

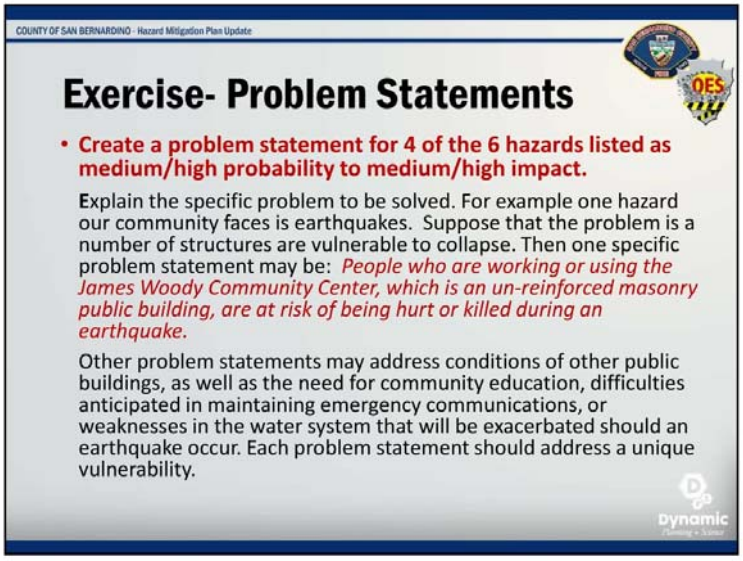

COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Preparing for next sections
Mitigation strategies
Action | Lead Agency | Hazard | Funding Source | Timeline | Priority Ranking
Develop projects and programs to install automatic gas shut-off valves in residential, commercial, and public buildings | Apple Valley | Earthquake | PDM HMGP HUD | Long Term | Low
Develop and construct seismic retrofit of critical facilities | Apple Valley | Earthquake | PDM HMGP DIF | Long Term | Low
Develop residential and commercial seismic retrofit programs | Apple Valley | Earthquake | PDM HMGP | Long Term | Low
Develop earthquake mitigation public outreach education programs | Apple Valley | Earthquake | EMPG | Long Term | High
Develop and construct seismic retrofit of city-owned transportation and utilities infrastructure | Apple Valley | Earthquake | PDM HMGP DOT ARRA | Long Term | Low


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Preparing for next sections
Mitigation strategies-Cont.
Develop and sponsor projects and programs to brace new or relocated mobile homes to resist earthquakes | Apple Valley | Earthquake | PDM HMGP | Long Term | Low
Install detention basins Navajo and Ottawa Roads | Apple Valley | Flood | PDM | Long Term | Low
Install detention basins Huasna Road and Chippewa Rd | Apple Valley | Flood | PDM | Long Term | Low
Install detention basins Bear Valley and Mohawk Roads | Apple Valley | Flood | PDM | Long Term | Low
Install Dry Wells Quapaw Rd / Eyota Rd | Apple Valley | Flood | PDM | Long Term | Low
Install Dry Wells Seneca Rd / Rancherias Road | Apple Valley | Flood | PDM | Long Term | Low
Install Dry wells Pocomoke Rd / Minnetonka Rd | Apple Valley | Flood | PDM | Long Term | Low
Install Dry Wells Algonquin Rd / Lone Eagle Rd | Apple Valley | Flood | PDM | Long Term | Low
Install Dry wells | Apple | Flood | PDM | Long | Low

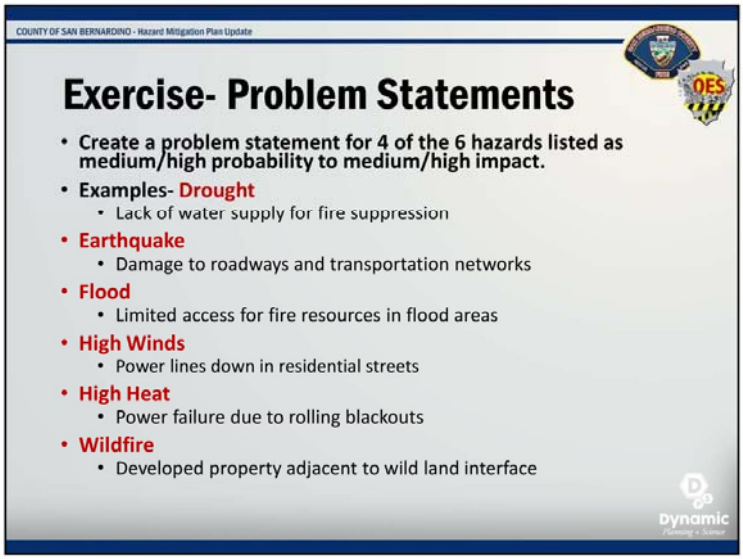
6

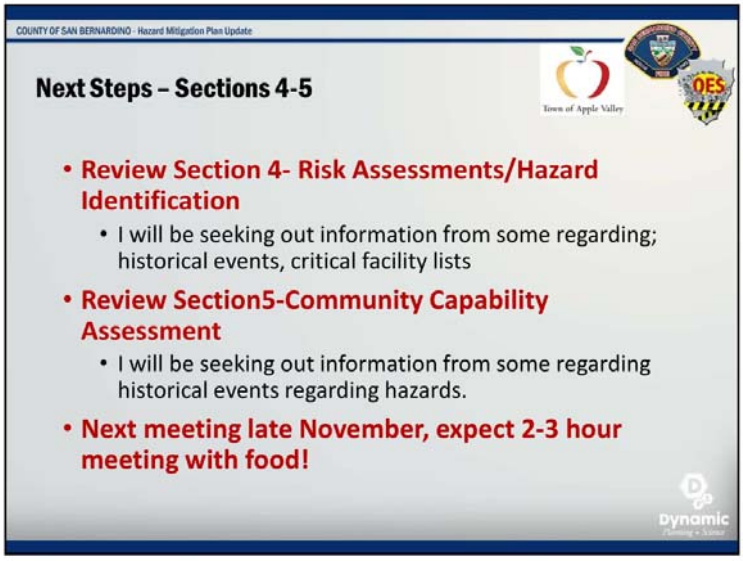
6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Preparing for next sections
Mitigation strategies-Cont.
Action | Lead Agency | Hazard | Funding Source | Timeline | Priority Ranking
Mohawk Rd / Laguna Rd. | Valley | | | Term |
Install Dry Wells Little Beaver / Mesquite Rd | Apple Valley | Flood | PDM | Long Term | Low
Install Dry wells Dale Evans/Otoe/Thunderbird/ Rancherias neighborhood area | Apple Valley | Flood | PDM | Long Term | Low
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
Exercise- Problem Statements
• Create a problem statement for 4 of the 6 hazards listed as medium/high probability to medium/high impact.
Explain the specific problem to be solved. For example one hazard our community faces is earthquakes. Suppose that the problem is a number of structures are vulnerable to collapse. Then one specific problem statement may be: People who are working or using the James Woody Community Center, which is an un-reinforced masonry public building, are at risk of being hurt or killed during an earthquake.
Other problem statements may address conditions of other public buildings, as well as the need for community education, difficulties anticipated in maintaining emergency communications, or weaknesses in the water system that will be exacerbated should an earthquake occur. Each problem statement should address a unique vulnerability.
Dynamic

6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
OES
Exercise- Problem Statements
• Create a problem statement for 4 of the 6 hazards listed as medium/high probability to medium/high impact.
• Examples- Drought
• Lack of water supply for fire suppression
• Earthquake
• Damage to roadways and transportation networks
• Flood
• Limited access for fire resources in flood areas
• High Winds
• Power lines down in residential streets
• High Heat
• Power failure due to rolling blackouts
• Wildfire
• Developed property adjacent to wild land interface
Dynamic


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
OES
Town of Apple Valley
Next Steps – Sections 4-5
• Review Section 4- Risk Assessments/Hazard Identification
• I will be seeking out information from some regarding; historical events, critical facility lists
• Review Section5-Community Capability Assessment
• I will be seeking out information from some regarding historical events regarding hazards.
• Next meeting late November, expect 2-3 hour meeting with food!
Dynamic

6/15/2017


COUNTY OF SAN BERNARDINO - Hazard Mitigation Plan Update
QUESTIONS
Joseph Ramos
Emergency Services Officer
760-240-7000 ext. 7890
Dawn Harrison
Emergency Services Assistant
760-240-7000 ext. 7791
Dynamic

Meeting-Tuesday October 18, 2016

Planning Committee Dept. / Members	E-Mail	Initial
Town Engineering/Building & Safety Department		
Brad Miller	bmiller@applevalley.org	
Patrick Carroll	pcarroll@applevalley.org	
Brett Morgan	bmorgan@applevalley.org	
Town Community Development		
Lori Lamson	llamson@applevalley.org	
Carol Miller	cmiller@applevalley.org	
Pam Cupp	pcupp@applevalley.org	
Ralph Wright	rwright@applevalley.org	
AV Fire Protection District		
Sid Hultquist	shultquist@applevalleyfd.com	
Rich Unferdorfer	runferdorfer@applevalleyfd.com	
Town Public Works		
Greg Snyder	gsnyder@applevalley.org	
Mike Cady	mcady@applevalley.org	
Town PIO		
Kathy Martin	kmartin@applevalley.org	
Office of Emergency Preparedness		
Joseph Ramos	jramos@applevalley.org	
Dawn Harrison	dharrison@applevalley.org	

6/15/2017

Town of Apple Valley
2016-17
Hazard Mitigation Plan Update Process

HMP Meeting #3
February 21, 2017

1

Town of Apple Valley Hazard MitigationAgenda:

1. Review- HMP Citizen Survey Results
2. Hazard Summary Worksheet
3. Risk Factor Worksheet
4. Agree on hazards to identify
5. Discuss next steps
6. Next meeting in March- this timeframe work?

2

6/15/2017

Town of Apple Valley
Local Hazard Mitigation Plan Survey

Thursday, February 16, 2017

Powered by SurveyMonkey

123

Total Responses

Date Created: Thursday, September 29, 2016

Complete Responses: 123

6/15/2017

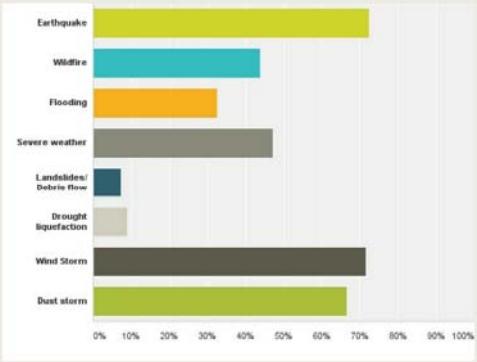
Q1: Do you.. (Check all that apply).

Answered: 123 Skipped: 0

Answer Choices	Responses	
Live in the Town of Apple Valley	84.55%	104
Work in the Town of Apple Valley	58.54%	72
Visit the Town of Apple Valley, but live and work elsewhere	1.63%	2
Total Respondents: 123		

***Q2: Which of the following types of natural disasters have you or someone in your household experienced in the past 15 years within the Town of Apple Valley? (Check all that apply)

Answered: 123 Skipped: 0



6/15/2017

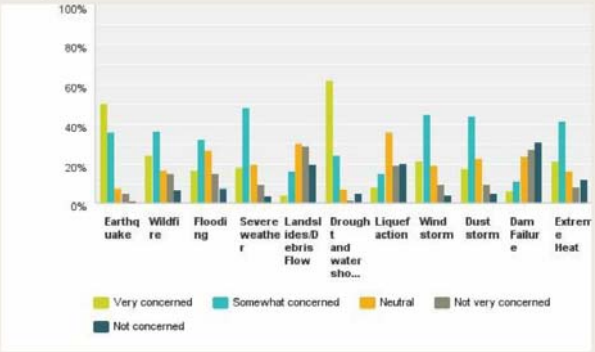
*****Q2: Which of the following types of natural disasters have you or someone in your household experienced in the past 15 years within the Town of Apple Valley? (Check all that apply)**

Answered: 123 Skipped: 0

Answer Choices	Responses	
Earthquake	72.36%	89
Wildfire	43.90%	54
Flooding	32.52%	40
Severe weather	47.15%	58
Landslides/ Debris flow	7.32%	9
Drought liquefaction	8.94%	11
Wind Storm	71.54%	88
Dust storm	66.67%	82
Total Respondents: 123		

*****Q3: How concerned are you about the following natural hazards affecting your home and/or business in Apple Valley? Please check ONE response for each hazard.**

Answered: 123 Skipped: 0



6/15/2017

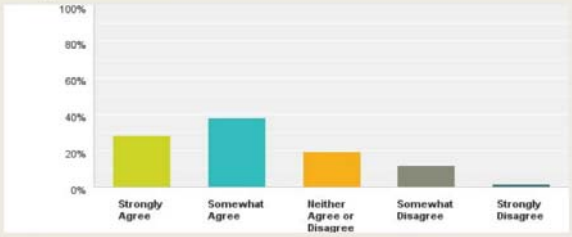
*****Q3: How concerned are you about the following natural hazards affecting your home and/or business in Apple Valley? Please check ONE response for each hazard.**

Answered: 123 Skipped: 0

	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned	Total	Weighted Average
Earthquake	50.41% 62	35.77% 44	8.13% 10	4.88% 6	0.81% 1	123	1.70
Wildfire	24.39% 30	36.59% 45	17.07% 21	15.45% 19	6.50% 8	123	2.43
Flooding	17.07% 21	32.52% 40	26.83% 33	15.45% 19	8.13% 10	123	2.65
Severe weather	18.33% 22	48.33% 58	20.00% 24	10.00% 12	3.33% 4	120	2.32
Landslides/Debris Flow	4.13% 5	16.53% 20	30.58% 37	28.93% 35	19.83% 24	121	3.44
Drought and water shortage	61.79% 76	24.39% 30	7.32% 9	1.63% 2	4.88% 6	123	1.63
Liquefaction	8.55% 10	15.38% 18	35.90% 42	19.66% 23	20.51% 24	117	3.28
Wind storm	21.31% 26	45.08% 55	19.67% 24	9.84% 12	4.10% 5	122	2.30
Dust storm	18.18% 22	43.80% 53	23.14% 28	9.92% 12	4.96% 6	121	2.40
Dam Failure	5.83% 7	11.67% 14	24.17% 29	27.50% 33	30.83% 37	120	3.66
Extreme Heat	21.49% 26	41.32% 50	16.53% 20	8.26% 10	12.40% 15	121	2.49

Q4: Information about the risks from natural hazards is readily available and easy to locate.

Answered: 123 Skipped: 0

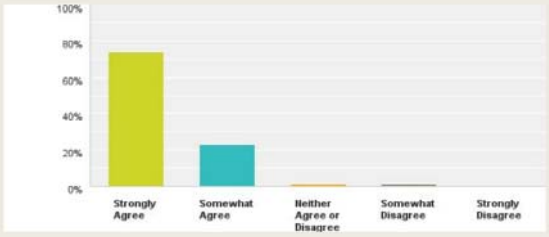


Answer Choices	Responses	
Strongly Agree	28.46%	35
Somewhat Agree	38.21%	47
Neither Agree or Disagree	19.51%	24
Somewhat Disagree	12.20%	15
Strongly Disagree	1.63%	2
Total		123

6/15/2017

Q5: It is my responsibility to educate myself and take actions that will reduce my exposure to the risks from natural hazards.

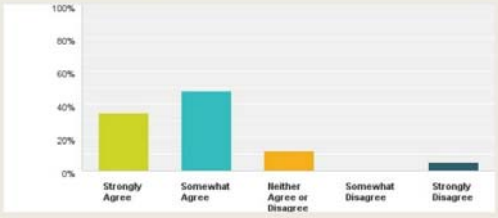
Answered: 123 Skipped: 0



Answer Choices	Responses	
Strongly Agree	73.98%	91
Somewhat Agree	22.76%	28
Neither Agree or Disagree	1.63%	2
Somewhat Disagree	1.63%	2
Strongly Disagree	0.00%	0
Total		123

Q6: It is the responsibility of government (local, state and federal) to provide education and programs that promote citizen actions that will reduce exposure to the risks from natural hazards.

Answered: 123 Skipped: 0

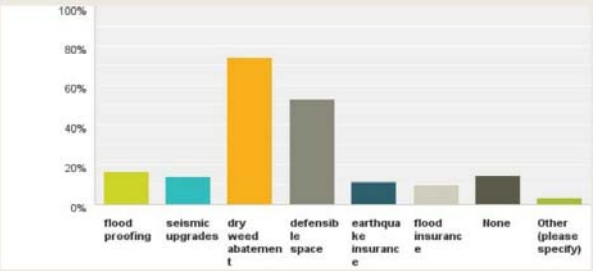


Answer Choices	Responses	
Strongly Agree	34.96%	43
Somewhat Agree	47.97%	59
Neither Agree or Disagree	12.20%	15
Somewhat Disagree	0.00%	0
Strongly Disagree	4.88%	6
Total		123

6/15/2017

Q7: What mitigation measures or strategies have been completed in the last 5 years to protect your home or business from a natural hazard? Check all that apply

Answered: 123 Skipped: 0



Q7: What mitigation measures or strategies have been completed in the last 5 years to protect your home or business from a natural hazard? Check all that apply

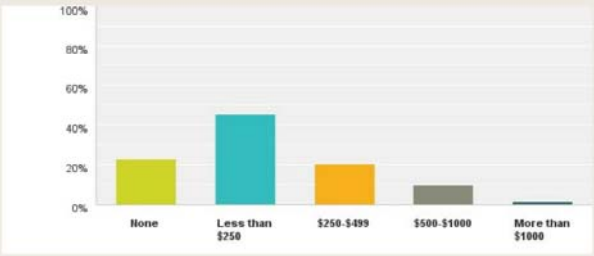
Answered: 123 Skipped: 0

Answer Choices	Responses	
flood proofing	16.26%	20
seismic upgrades	13.82%	17
dry weed abatement	73.98%	91
defensible space	52.85%	65
earthquake insurance	11.38%	14
flood insurance	9.76%	12
None	14.63%	18
Other (please specify)	3.25%	4
Total Respondents: 123		

6/15/2017

Q8: How much money do you spend annually on mitigation measures to protect your home or business from natural hazards?

Answered: 123 Skipped: 0



Q8: How much money do you spend annually on mitigation measures to protect your home or business from natural hazards?

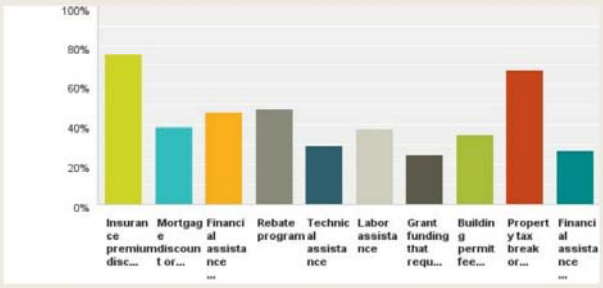
Answered: 123 Skipped: 0

Answer Choices	Responses	
None	22.76%	28
Less than $250	45.53%	56
$250-$499	20.33%	25
$500-$1000	9.76%	12
More than $1000	1.63%	2
Total		123

6/15/2017

Q9: Which of the following incentives would encourage you to protect your home against natural hazards? (Check all that apply)

Answered: 123 Skipped: 0



Q9: Which of the following incentives would encourage you to protect your home against natural hazards? (Check all that apply)

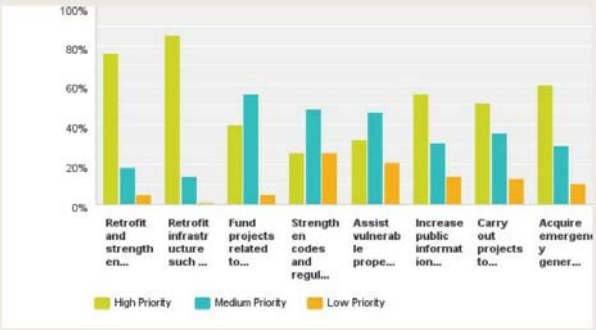
Answered: 123 Skipped: 0

Answer Choices	Responses	
Insurance premium discount	75.61%	93
Mortgage discount or low interest loan	39.02%	48
Financial assistance for property upgrades or equipment	46.34%	57
Rebate program	47.97%	59
Technical assistance	29.27%	36
Labor assistance	38.21%	47
Grant funding that requires cost share from property owner	25.20%	31
Building permit fee reduction or waiver	34.96%	43
Property tax break or incentive	67.48%	83
Financial assistance for equipment	26.83%	33
Total Respondents: 123		

6/15/2017

Q10: What protection methods do you believe the Town, County, State or Federal agencies should be using in order to reduce damage and disruption from hazard events within the Town of Apple Valley?

Answered: 123 Skipped: 0



Q10: What protection methods do you believe the Town, County, State or Federal agencies should be using in order to reduce damage and disruption from hazard events within the Town of Apple Valley?

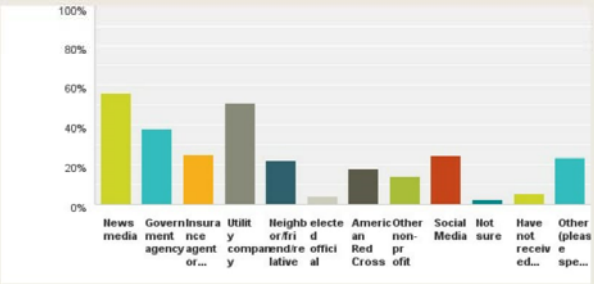
Answered: 123 Skipped: 0

	High Priority	Medium Priority	Low Priority	Total
Retrofit and strengthen essential facilities such as police, fire, schools and hospitals	76.42% 94	18.70% 23	4.88% 6	123
Retrofit infrastructure such as roads, bridges, drainage facilities, water supply, and waster water.	85.37% 105	13.82% 17	0.81% 1	123
Fund projects related to drainage control measures and improvements.	39.84% 49	55.28% 68	4.88% 6	123
Strengthen codes and regulations to include higher standards in hazard areas.	26.02% 32	47.97% 59	26.02% 32	123
Assist vulnerable property owners with securing funding for mitigation/property protection.	32.52% 40	46.34% 57	21.14% 26	123
Increase public information about risks and the exposure to hazards within the Town of Apple Valley.	55.28% 68	30.89% 38	13.82% 17	123
Carry out projects to restore the natural environment's capacity to absorb the impacts from natural hazards.	51.22% 63	35.77% 44	13.01% 16	123
Acquire emergency generators for essential government facilities and buildings identified as care and shelter.	60.16% 74	29.27% 36	10.57% 13	123

6/15/2017

Q11: Thinking back in the last three years, from whom have you received information about how to make members of your household and your home safer from natural disasters? Check all that apply.

Answered: 123 Skipped: 0



Q11: Thinking back in the last three years, from whom have you received information about how to make members of your household and your home safer from natural disasters? Check all that apply.

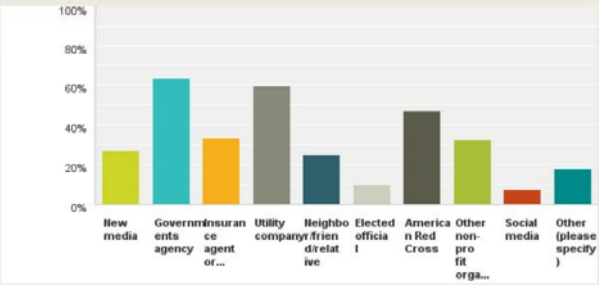
Answered: 123 Skipped: 0

Answer Choices	Responses	
News media	56.10%	69
Government agency	38.21%	47
Insurance agent or company	25.20%	31
Utility company	51.22%	63
Neighbor/friend/relative	21.95%	27
elected official	4.07%	5
American Red Cross	17.89%	22
Other non-profit	13.82%	17
Social Media	24.39%	30
Not sure	2.44%	3
Have not received information	5.69%	7
Other (please specify)	23.58%	29
Total Respondents: 123		

6/15/2017

*****Q12: Whom would you most trust to provide you with information about how to make your household and home safer from natural disasters? Choose at least 3 responses.**

Answered: 123 Skipped: 0



*****Q12: Whom would you most trust to provide you with information about how to make your household and home safer from natural disasters? Choose at least 3 responses.**

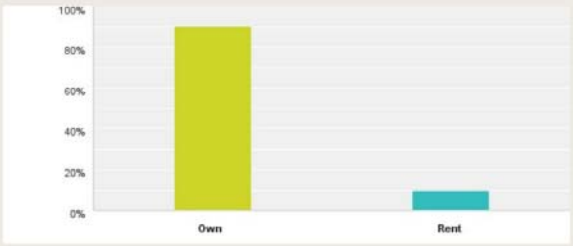
Answered: 123 Skipped: 0

Answer Choices	Responses	
New media	26.83%	33
Governments agency	63.41%	78
Insurance agent or company	33.33%	41
Utility company	59.35%	73
Neighbor/friend/relative	25.20%	31
Elected official	9.76%	12
American Red Cross	47.15%	58
Other non-profit organization	32.52%	40
Social media	7.32%	9
Other (please specify)	17.89%	22
Total Respondents: 123		

6/15/2017

Q13: Do you rent or own your home or business?

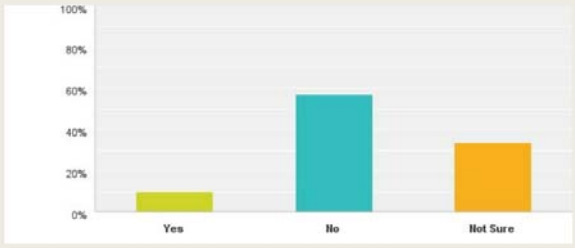
Answered: 123 Skipped: 0



Answer Choices	Responses	
Own	90.24%	111
Rent	9.76%	12
Total		123

Q14: Is your home or business in or near a FEMA designated floodplain?

Answered: 123 Skipped: 0

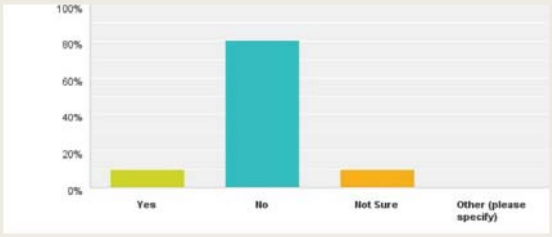


Answer Choices	Responses	
Yes	9.76%	12
No	56.91%	70
Not Sure	33.33%	41
Total		123

6/15/2017

Q15: Do you have flood insurance?

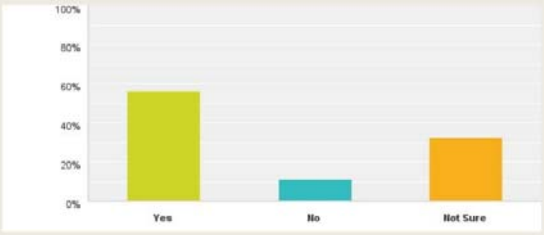
Answered: 123 Skipped: 0



Answer Choices	Responses	
Yes	9.76%	12
No	80.49%	99
Not Sure	9.76%	12
Other (please specify)	0.00%	0
Total		123

Q16: Is your home or business located near an earthquake fault?

Answered: 123 Skipped: 0

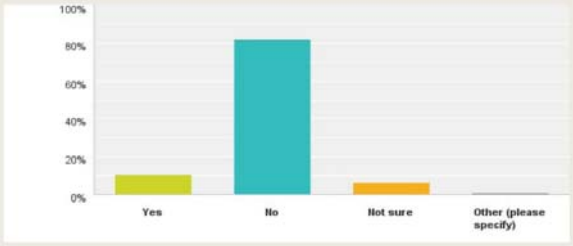


Answer Choices	Responses	
Yes	56.10%	69
No	11.38%	14
Not Sure	32.52%	40
Total		123

6/15/2017

Q17: Do you have earthquake insurance?

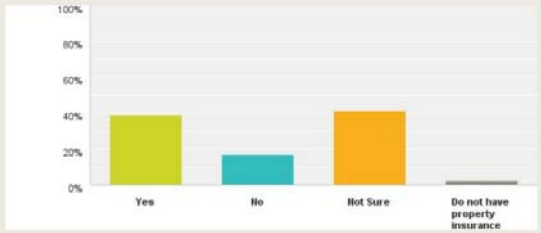
Answered: 123 Skipped: 0



Answer Choices	Responses	
Yes	10.57%	13
No	82.11%	101
Not sure	6.50%	8
Other (please specify)	0.81%	1
Total		123

Q18: To the best of your knowledge, does your homeowner's, renter's, or general insurance policy provide coverage for damage from natural hazards?

Answered: 123 Skipped: 0



Answer Choices	Responses	
Yes	39.02%	48
No	17.07%	21
Not Sure	41.46%	51
Do not have property insurance	2.44%	3
Total		123