

CANADIAN COUNTY

Redlands Community College

2012 Multi-Hazard Mitigation Plan Update



Flanagan & Associates, LLC
Planning Consultants

Acknowledgements

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The Plan was prepared under the direction of the Canadian County Commissioner's Office, with the participation and assistance of numerous agencies, organizations, and individuals, including:

Redlands Community College Board of Regents

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Redlands Community College Staff Technical Advisory Committee (STAC)

Coordinator of Physical Plant James Endicott
Assistant Chief of Security Barry Patterson
Redlands Community College Gary Stout

G.11 Redlands Community College

Redlands Community College Main Campus is located at 1300 South Country Club Road in El Reno. In addition to the Main Campus, there are three satellite facilities: Darlington Agriculture Education and Research Center, Royse Ranch Bovine Unit, and the Royse Ranch Equine Center. The four sites are shown in Locator Map Figure G.11-1.

Section 1 Introduction

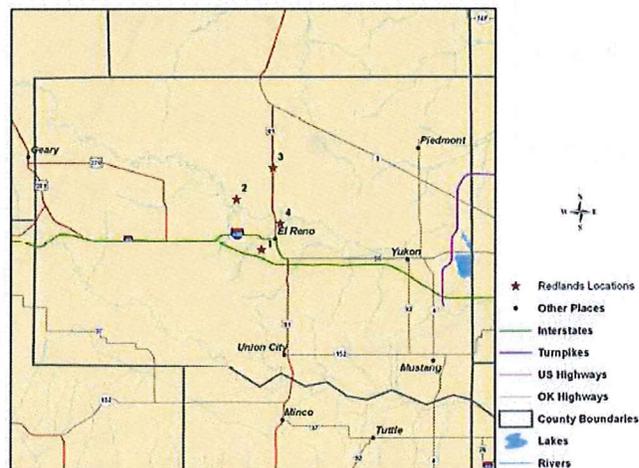
Figure G.11-1 Redlands Community College Locator Map

1.1 Services Summary

Redlands Community College is a two-year college offering Associate Degrees and Career Certificates. In addition to General Studies, areas of focus include Agricultural and Equine Sciences, Pre-Professional Sciences, such as Forensic Science, and Environmental Specialist, Criminal Justice, Emergency Medical Technician, and Child Development.

1.2 Facilities

The Main Campus has nine buildings on 55 acres in the City of El Reno. The Campus' buildings are constructed of cement block and brick. The Main building has



Redlands Community College Main Campus

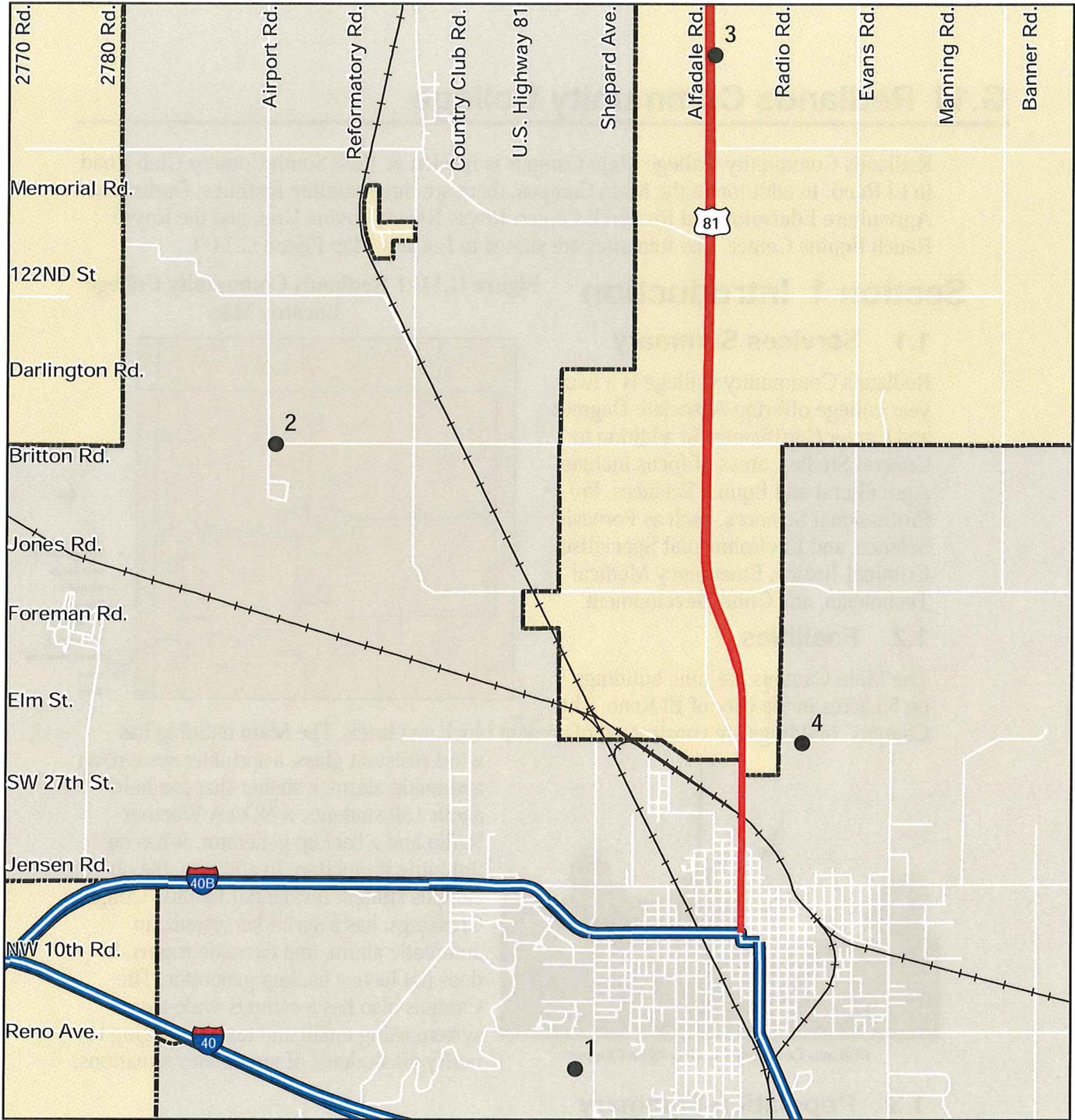
wind-resistant glass, a sprinkler system, an automatic alarm, a shelter that can hold about 150 students, a NOAA Weather Radio and a backup generator. It has no lightning protection. In addition, the on-campus student residential facility, Cougar Crossings, has a sprinkler system, an automatic alarm, and two safe rooms. It does not have a backup generator. The Campus also has a campus-wide alert system using email and text-messaging to notify all students of emergency situations.

1.3 Population Summary

Table G.11-1 summarizes the enrollment, staff and location for Redlands Community College for the school year 2010-2011.

Table G.11-1 Redlands Community College Enrollment, 2010-2011

School	Address	Students		Staff	
		Full time	Part time	Full time	Part time
Redlands Community College	1300 S. Country Club Rd.	792	1,784	35	70
TOTALS		2,576		105	



LEGEND

-  Interstate
-  US Highway
-  State Highway
-  Turnpike
-  City Limits
-  Redlands Locations



0 0.5 1 Miles



Figure G.11-2

Redlands Community
College & Satellite Locations

Basemap

1.4 Economic Summary

Chapter 2.2.1 expresses the general governing, financing and policy-making authority of public boards of education in Oklahoma.

Redlands Community College is a part of the Oklahoma State System of Higher Education. As a post-secondary State educational institution, the College receives direct financing through annual appropriations to the State Regents for Higher Education which in turn allocates funds to the various colleges and universities in the System.

Students at Redlands pay tuition per credit hour. Tuition rates vary whether the student is a State resident, an out-of-state student, or an international student. Additional fees are assessed to students based upon their respective choice of courses. On-campus housing and meals are also offered at specific rates to students.

The College has the authority to adjust fees as necessary to meet budgetary needs and can request special funding through the State Regents.

Section 2 Existing Mitigation Strategies

National Flood Insurance Program/Community Rating System. Redlands Community College is covered by El Reno's participation in the NFIP program but they are not participants in the CRS Program.

Floodplain Management. Redlands Community College participates in and benefits from El Reno regulations for the floodplains.

StormReady Program. Redlands Community College is not a StormReady community.

FireWise Program. Redlands Community College does not participate in the FireWise Program.

Building Codes. Redlands Community College abides by the codes governing El Reno and the states required codes for the schools.

Emergency Services

Security. Redlands Community College has authorized security personnel, employed by the school to enforce security.

Fire Protection. The fire department of El Reno would be responsible for responding to a fire at Banner Public Schools.

Hospitals. The closest hospital is Parkview Hospital in El Reno.

Ambulance Service. Parkview Hospital provides ambulance service for Redlands Community College.

Section 3 Hazards

Section 3 presents general hazards that can affect all facilities at Redlands Community College Main Campus. A summary of these general hazards appears in Table G.11-2 and they are addressed more fully in Chapter 4. Also presented in Section 3 are analyses of the vulnerability of the Main Campus to six site-specific hazards: Flood, Expansive Soils, Wildfire, Hazardous Materials, Dam Failure and Transportation. The narratives are accompanied by maps showing the site of the Main Campus and its relationships to six site-specific hazards.

Section 4 analyzes the vulnerability of each of the College's Satellite Facilities to six site-specific hazards. These narratives are also accompanied by maps showing the sites of the facilities and their relationships to six site-specific hazards.

Table G.11-2 Redlands Community College Hazards Summary

Name	Floods	Tornadoes	High Winds	Lightning	Hail	Winter Storms	Extreme Heat	Drought	Expansive Soils	Urban Fires	Wildfires	Earthquakes	Hazardous Material Sites	Dam Failures	Transportation Hazards
Main Campus		X	X	X	X	X	X	X	X	X	X	X			
Darlington Agriculture Center	X	X	X	X	X	X	X	X	X	X	X	X		X	
Royse Ranch Bovine Unit		X	X	X	X	X	X	X	X	X	X	X			X
Royse Ranch Equine Center		X	X	X	X	X	X	X	X	X	X	X		X	

3.1 Flood

Redlands Community College Main Campus is at elevation 1,390 in the Fourmile Creek drainage basin. Fourmile Creek and El Reno Lake are approximately a half mile west of the Main Campus at elevation 1,340. Redlands College Main Campus is well above the floodplain of both the Creek and Lake. Redlands Community College considers a flood event with a depth of less than three feet of water on a one story building to be a minor severity event and a flood event with a depth greater than three feet on a one story building to be a major severity event for both urban and flash flooding. None of the sites that make up Redlands Community College have been impacted by flash or riverine flooding in the past, however Darlington Agriculture Center is in the floodplain. Redlands Community College has a Low vulnerability to and Low probability of the Flood hazard.

3.2 Tornado

Tornadoes are a random hazard that can strike anywhere in Canadian County, including Redlands Community College. Canadian County experienced 34 tornadoes between 1995 and 2010 including a devastating EF5 tornado in May 2011. Given these frequencies, the County can expect 2.3 tornadoes each year, any one of which could impact the Main Campus. In the past, Redlands Community College has not been directly impacted by a tornado event; however, the school is just as likely as any other facility in Canadian County to be impacted. An EF5 such as the one that struck the El Reno in May 2011 would completely destroy much of the College if it moved directly through the Main

Campus. The main campus has a shelter on sight that can hold approximately 150 students. The impact of this hazard is addressed more fully in Chapter 4. Redlands Community College consider a minor severity tornado to be less than an EF2 on the Enhanced Fujita Scale and a major severity to be an EF2 or higher. Redlands Community College has a High vulnerability to and High probability of the Tornado hazard.

3.3 High Wind

Like Tornadoes, High Wind is a general hazard that occurs commonly and randomly throughout Canadian County. The County reported 76 high wind events from 1995 through 2010. Winds as high as 95 mph have been reported at El Reno and Piedmont. Canadian County. Redlands Community College can expect about five potentially damaging high wind events each year. As indicated in Chapter 4, a high wind event could cause significant damage to the structural components of the facilities. The main campus has wind resistant glass which lessens, but does not eliminate, its risk of impact as a result of a high wind event. All sites that make up Redlands Community College have received some wind damage to the roof, roof vent caps, HVAC roof equipment, and fencing on site. Similar damages are likely in the future. Redlands Community College considers a minor severity wind event to be a 9 or lower on the Beaufort Scale (Strong Gale, below 54 mph), and a major severity storm to be above 9 on the Beaufort Scale (Whole Gale/Storm) with winds 55-mph and higher. The College has a High vulnerability to and High probability of the High Wind hazard.

3.4 Lightning

Lightning is another general hazard that accompanies severe thunderstorms, particularly in the spring and autumn months. Canadian County reported nine damaging lightning events between 1995 and 2010 from approximately 76 severe thunderstorms that passed through the area. Given this frequency, the College can expect about five lightning events per year. The impact of this hazard on school structures and populations is discussed in Chapter 4. The Main Campus and Darlington have experienced power failures, damaged circuits, and equipment due to lightning. The School has no lightning protection or warning systems leaving all students, faculty, staff, and critical infrastructure vulnerable. Based on the information provided by the National Weather Service, Chapter 4, Redlands Community College considers a negative cloud-to-ground flash with multiple return strokes, that causes no loss of life or injury and less than \$1,000 in property damage, to be a minor severity lightning event; and a positive cloud-to-ground flash with a continuous or high peak current, that causes loss of life and/or injury and more than \$1,000 property damage, to be a major severity lightning event. The College has a High vulnerability to and High probability of the Lightning hazard.

3.5 Hail

Hail is a general hazard that strikes randomly and more or less equally throughout the County. From 1995 through 2010, Canadian County reported 105 separate hail events. Given this frequency, the College Main Campus can expect about seven hail events each year. As indicated in Chapter 4, hail events can cause significant damages to schools. Particularly vulnerable are glass windows, doors, skylights, and the roofing system. Hail can cause damage to school roofs beyond repair. All campus sites that make up Redlands

Community College have been impacted by hail events in the past. All have received some damage to roofs, vents, turbans, and HVAC roof equipment. More information regarding the impact of hail on school campuses is included in Chapter 4. Redlands Community College considers a minor severity to be an H2 or lower on the Combined NOAA/TORRO Hailstorm Intensity Scales, and a major severity to be an H3 or higher. The College has a High vulnerability to and High probability of the Hail hazard.

3.6 Severe Winter Storm

From 1995 through 2010 Canadian County experienced 35 ice and snow events, or an average of 2.3 winter storms each year. Because of the general and widespread nature of winter storms, it is assumed that the Campus has also experienced 35 ice and snow events in this period. As indicated in Chapter 4 of this plan, schools, including higher education facilities, are in any case not in session during severe winter storms due to an allotted number of snow days so the populations are not immediately at risk. Redlands Community College has been forced to close all campuses due to inaccessibility, drifting snow, layered ice, and power outages. Redlands Community College considers a minor severity winter storm to be a Level 2 event or below (ice accumulation of less than ¼ inch—see Table 4-21), and a major severity event to be Level 3 and above (ice accumulation above ¼ inch) resulting in power outages and hazardous travel conditions. The College has a High vulnerability to and High probability of the Severe Winter Storm hazard.

3.7 Extreme Heat

From 1996 through 2011, Canadian County experienced four extreme heat events; an average of one every 3.7 years. Due to the general and widespread nature of heat waves, it is assumed that the College will experience the same number of extreme heat events as the rest of the County. In the past, the Extreme Heat hazard has caused A/C equipment to fail at the Main Campus, Darlington, and Royse Ranch. Similar damages can be anticipated in future events. Redlands Community College considers a minor severity heat event to be a heat index of 95 or less and a major severity to be a heat index greater than 95 for a period of two or more weeks. The Main Campus has minimal activity at the peak of the extreme heat season therefore has a Low vulnerability to and High probability of the Extreme Heat hazard.

3.8 Drought

Canadian County experienced four droughts from 1996 to 2011. Given the widespread nature of the hazard, it can be assumed the College has experienced the same droughts. The drought of 2010-2011 resulted in modest water rationing in El Reno, which provides water to the Campus. Redlands Community College campuses have experienced loss of trees, shrubs, and sod during periods of drought. Redlands Community College considers a minor severity drought to be mild or moderate on the Palmer Index, and a major severity event to be a Severe or Extreme drought on the Index, which results in crop loss or restrictions on water use. Redlands Community College has a Moderate vulnerability to and Moderate probability of the Drought hazard.

3.9 Expansive Soils

Redland's Main Campus is situated on Moderate expansive soils. All sites that make up Redlands Community College have experienced damage from cracks due to ground shifting and shrinkage as a result of the soils they are laid upon. Redlands Community College considers a shrink-swell level of moderate and below to be of minor severity and a shrink-swell level of high and above to be of major severity. The Main Campus is considered to have a Low vulnerability to Expansive Soils hazard.

3.10 Urban Fire

The Campus is served by the City of El Reno Fire Department. The Department has 19 fire fighters, four pump engines, one ladder truck, one tanker truck, two brush pumpers, two command vehicles, and an emergency trailer. The Department has aggressive inspection, code enforcement and public education programs. The Department's ISO rating is 4. Information regarding the impact of urban fires on school structures can be found in Chapter 4. According to representatives from the college, Redlands has not been impacted by the Urban Fire hazard in the past. Because Urban Fires can occur based on a number of factors, discussed in Chapter 4, the probability of the School being impacted in the future remains high. Redlands Community College considers an event of minor severity to be \$5,000 or less in damages and no loss of life or injury and a major severity event to be more than \$5,000 in damages and/or loss of life or injury. Redlands Community College has a Low vulnerability to and High probability of the Urban Fire hazard.

3.11 Wildfire

Although Redlands Community College Main Campus is located in the classic rural/urban interface, surrounded on all sides by open land, the Campus and its buildings are buffered by highways, access roads, parking lots, playing fields, an old airport with a turf runway, and landscaped grounds. Redlands Community College and its campuses have not been impacted by wildfires in the past. Redlands Community College considers a reading of moderate and below on the Fire Danger Rating system (Table 4-36) to be a minor severity level and a rating of high and above to be of major severity. The College's Main Campus is considered to have a Low vulnerability to and Low probability of the Wildfire hazard.

3.12 Earthquake

Earthquake is a general hazard that is relatively unpredictable and not site-specific, since it usually impacts a wide area. Canadian County recorded 28 earthquakes between 1995 and 2009, followed by cluster of 11 quakes on March 11-12, 2010. Thirteen of these events were in or very close to El Reno. Until recently (November 2011) the greatest recorded quake in Oklahoma, a 5.6 event, occurred at El Reno in 1952. Only a few Canadian County earthquakes have been "felt" events. As indicated in the HAZUS analysis in Chapter 4, an earthquake would cause no to minimal damages to any Canadian County school facilities. Redlands Community College considers a reading of 4.8 and below on the Richter Scale a minor severity quake and a reading above 4.8 to be one of major severity. The College is considered to have a Low vulnerability to and Low probability of the Earthquake hazard.

3.13 Hazardous Materials

There are 28 Tier II facilities within the El Reno City Limits, 10 of which are considered extremely hazardous. There are no Tier II sites within a quarter mile of the College's Main Campus. The Community College has not been impacted by any hazardous material events in the past. The Main Campus is considered to have no vulnerability to and no probability of the Fixed-Site Hazardous Materials hazard.

3.14 Dam Failure

There are no dams whose failure would impact Redlands Community College Main Campus, except indirectly through transportation interruptions. The main campus, nor any other sites that make up Redlands Community College, has not been impacted by the Dam failure hazard in the past. The Main Campus is not vulnerable to the Dam Failure hazard and therefore has no probability to its occurrence. Redlands Community College considers a minor severity dam event to be an extraordinary release that results in less than three feet of flooding on a one story building, and a major severity dam event to be a breach or failure that exceeds the capacity of the Dam's downstream riverbed immediately downstream from the dam and/or equates to (or exceeds) a 100- or 500-year flood and results in a depth of three feet of flooding or more on a one story building. Overall, Redlands Community College has a Low vulnerability to and Low probability of the Dam Failure hazard.

3.15 Transportation

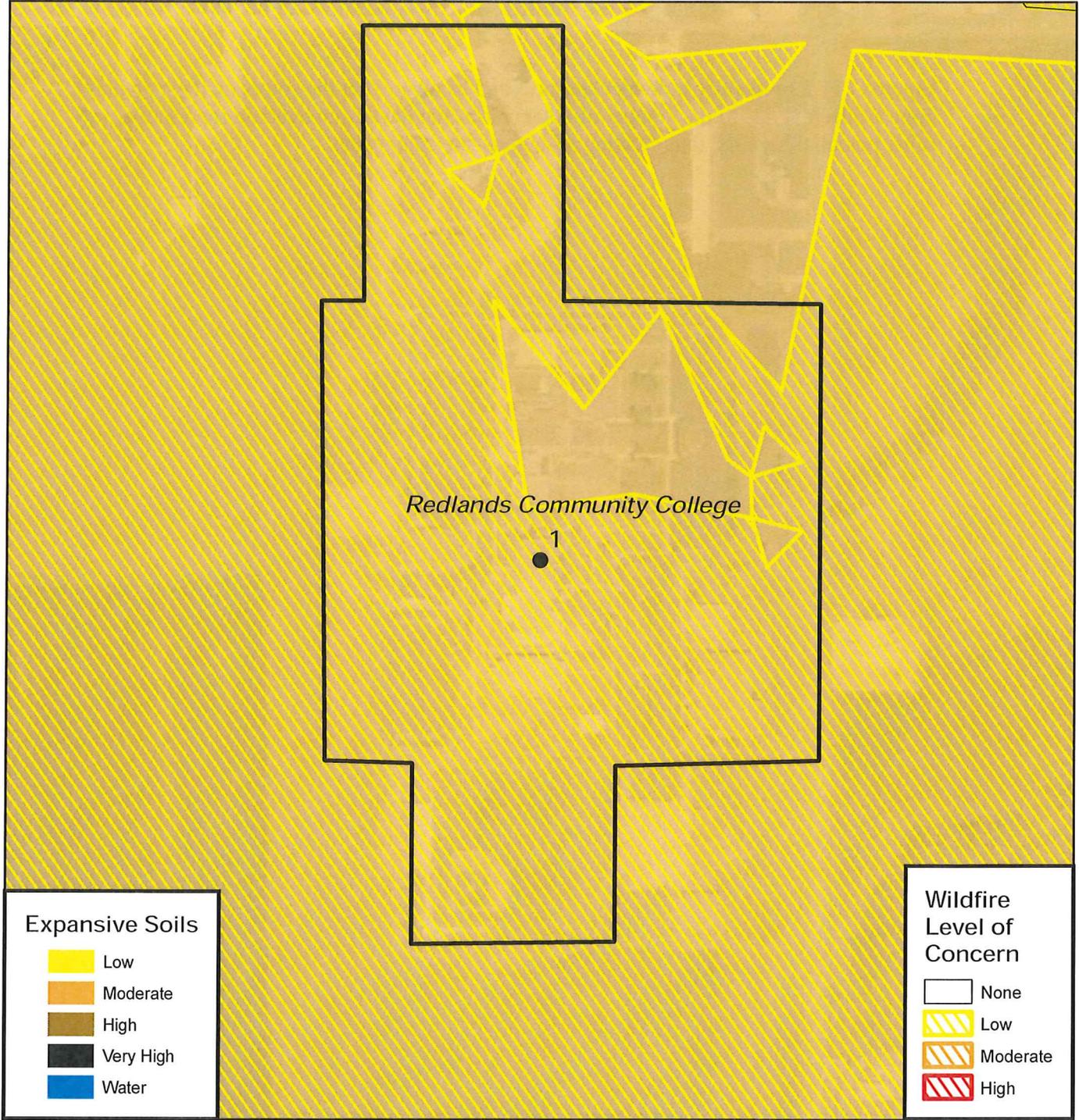
The College Main Campus is located on S. Country Club Rd., about a half mile from its intersection with I-40. This interchange is one of the busiest on/off ramps for El Reno traffic. The traffic count at I-40 at Country Club Rd. is 26,400 vehicles per day. There is a small, privately-owned airport on the west side of the Main Campus. The runway is turf, 2,600 feet in length and 100 feet wide, with a north-south orientation. There are no aircraft services available at the field, which has about 200 aircraft operations a year. The Union Pacific railroad runs north-south about one mile east of the Main Campus. There are no major volatile or hazardous materials pipelines within a quarter mile of the Campus. A transportation incident, depending on its severity, could call for implementation of evacuation or shelter-in-place procedures. Redlands Community College has not been impacted by this hazard in the past.

Redlands Community College considers a minor severity Transportation incident to be one that results in inconvenience (such as traffic delays), minor injury, and some financial loss (less than \$50,000), and a major severity event to be one that requires immediate intervention to save lives and property, and/or results in serious injury or death, or significant financial loss (greater than \$50,000). Redlands Community College Main Campus has a Moderate vulnerability to and High probability of the Transportation hazard due to its close proximity to the major transportation routes.

3.16 Hazards Summary

Figure G.11-3 focuses on the Redlands Community College Main Campus itself and illustrates the specific hazards and their individual level of potential impact on the Campus and its immediately surrounding area. Please note the legend accompanying

Figure G.11-3 to identify individual hazards and be aware that the colors on the map may appear different due to the number of other colors that have been overlaid representing other potential hazards, thus creating a Campus-site composite.



Expansive Soils

- Low
- Moderate
- High
- Very High
- Water

Wildfire Level of Concern

- None
- Low
- Moderate
- High

LEGEND

2009 EHS Tier II	Redlands Locations
2009 non EHS Tier II	Interstate
Tier II 1/4mi Buffer	US Highway
1/4mi Transport Buffer	State Highway
100yr Floodplain	Turnpike
500yr Floodplain	Railroads



Figure G.11-3
 Redlands Community College
 Main Campus
 Hazard Composite

Section 4 Redlands Community College Satellite Facilities

4.1 Darlington Agriculture Education and Research Center

Redlands Community College's Darlington Agriculture Education and Research Center is located at 5005 Darlington Rd. The Center is comprised of a dozen buildings on 110 acres, about 115 students and 12 instructors. The Center's buildings are constructed of brick, mortar and metal, and include vineyards and an associated Enology lab and, a goat dairy and lab, a computer lab, classrooms, and student housing. The facilities have a NOAA Weather Radio, but are not equipped with sprinkler systems, safe rooms, lightning protection or backup generators.

Flood

The Darlington Center is at elevation 1,335 feet elevation, in the 100-year floodplain of the North Canadian River. A flood event, depending on its severity, could cause significant damages to the facility. The impact of flooding on school facilities is addressed in Chapter 4. The School has not been impacted by this hazard in the past, however due to its location in the 100-year floodplain its exposure to the hazard remains high. The Center has a High vulnerability to and High probability of the Flood hazard.



Darlington Center Vineyards and the Historic Darlington Cheyenne-Arapaho Agency on the old Chisholm Trail

Expansive Soils

The Darlington Center is built upon Very High shrink/swell soils. The School has been impacted by the hazard in the past. Damage includes cracks due to ground shifting and shrinkage. Similar damages can be expected in the future, especially during periods of extreme heat and drought. The Center has a High vulnerability to and High probability of the Expansive Soils hazard.

Wildfire

The Center is bounded by the North Canadian River and woodlands to the south, and agricultural land to the west, north and east. The impact of wildfires on school facilities can be found in Chapter 4. The Center has a Moderate vulnerability to and Low probability of the Wildfire hazard.

Hazardous Materials

There are no Tier II sites within three miles of the Darlington Center. The Center has no vulnerability to and no probability of the Fixed-Site Hazardous Materials hazard.

Dam Failure

As stated above, the Darlington Agriculture Education and Research Center is within the 100-year floodplain of the North Canadian River. A failure of Canton Dam, or emergency release during peak flows on the river, would inundate the entire research facility. The Darlington Center has a High vulnerability to and Low probability of the Dam Failure hazard.

Transportation

Redlands College's Darlington Center is on the north side of El Reno's urbanized area, more or less at the end of Darlington Rd. The facility has no vulnerability to highway traffic. The Darlington Center has no vulnerability to and no probability of the Transportation hazard.

Extreme Heat

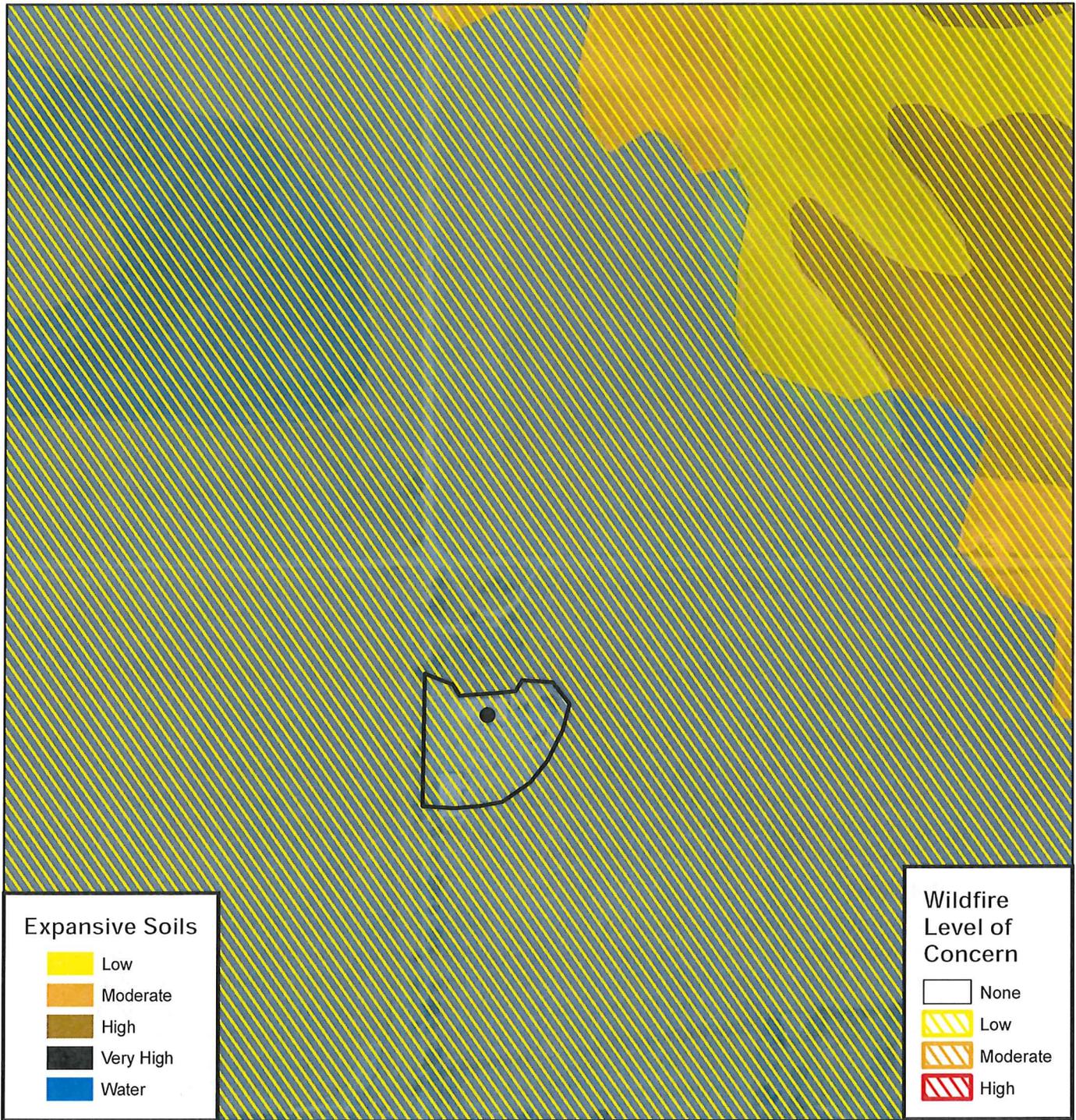
As was mentioned in Section 2.7 above, Canadian County is periodically subject to extreme heat, on an average one extreme heat experience every 3.7 years. Due to the vineyard and livestock operations at the Agricultural Center, the Center has a Moderate vulnerability to and High probability of the Extreme Heat hazard.

Drought

As was mentioned in Section 2.8 above, Canadian County experienced four droughts between 1996 and 2011, one of which resulted in modest water rationing from the City of El Reno water supply. Severe drought could have a devastating impact on the schools ability to maintain the vineyard and continue to support stock breeding activities. More information on the impact of drought is included in Chapter 4. Due to the vineyard irrigation requirements, feeding lots, and stock breeding activities at the Agricultural Center, the Center has a High vulnerability to and Moderate probability of the Drought hazard.

Hazards Summary

Figure G.11-4 focuses on the Redlands Community College Darlington Agriculture Education and Research Center alone and illustrates the specific hazards and their individual level of potential impact on the Research Center and its immediately surrounding area. Please note the legend accompanying Figure G.11-4 to identify individual hazards and be aware that the colors in the map may appear different due to the number of other colors that have been overlaid representing other potential hazards, thus creating a Research Center-site composite.



Expansive Soils

- Low
- Moderate
- High
- Very High
- Water

Wildfire Level of Concern

- None
- Low
- Moderate
- High

LEGEND

2009 EHS Tier II	Redlands Locations
2009 non EHS Tier II	Interstate
Tier II 1/4mi Buffer	US Highway
1/4mi Transport Buffer	State Highway
100yr Floodplain	Turnpike
500yr Floodplain	Railroads



Figure G.11-4
 Redlands Community College
 Agriculture Education
 Hazard Composite

4.2 Royse Ranch Bovine Unit



A few head of cattle in the Royse Ranch Bovine Unit

Redlands Community College's Royse Ranch Bovine Unit is located on the east side of US Highway 81, between Memorial Rd. and 150th St. NE. The Bovine Unit a 314 acre working facility and includes about 20 buildings, including classrooms, barns, sheds, pens stables and feeding lots. The buildings are largely constructed of metal with low-slope roofs. The classrooms are not equipped with storm shelters or safe rooms, and do not have lightning protection or a backup generator. It does have a NOAA Weather Radio. The Bovine Unit houses Angus and crossbred cattle.

Flood

Royse Ranch Bovine Unit is at elevation 1,300 in the Uncle Johns Creek drainage basin, on the north side of the ridge line that divides the Cimarron River and the North Canadian River drainage basins. The facility is not in a flood zone. The school has not been impacted by this hazard in the past and has no vulnerability to and no probability of the Flood hazard.

Expansive Soils

The College's Bovine Unit is situated on Low and Moderate shrink/swell soils. The School has been impacted by the hazard in the past. Damage includes cracks due to ground shifting and shrinkage. The site has a Moderate vulnerability to and High probability of the Expansive Soils hazard.

Wildfire

The Bovine Unit is bounded by the four-lane, divided US Highway 81 to the west, and surrounded on the north, east and south by open land that slopes away to the north. The greatest impact to the facility would not only be loss of the structures themselves, but also the inability to evacuate the livestock prior to the event. Loss of livestock would result in not only economic hardship for the facility, but also psychological impacts of their handlers. Due to the schools location, its exposure to wildfires remains high. The Bovine Unit has a High vulnerability to and Moderate probability of the Wildfire Hazard.

Hazardous Materials

There are no Tier II sites within one mile of the Royse Ranch Bovine Unit. The Unit has no vulnerability to and no probability of the Fixed-Site Hazardous Materials hazard.

Dam Failure

There are no dams whose failure would impact Bovine Unit. The Bovine Unit has no vulnerability to the Dam Failure hazard.

Transportation

The Bovine Unit is located on the east side of US Highway 81, a four-lane divided highway that carries volatile and hazardous materials. The traffic count on US 81 is 5,900 vehicles per day. There are no major pipelines within one mile of the facility. The most likely worst-case transportation event would be a tanker truck accident and hazardous materials release or explosion on US Highway 81 adjacent to the Unit. A transportation incident could require evacuation or shelter-in-place procedures to be implemented. All handlers of the livestock on site should be well versed in these procedures for the animals. The Royse Ranch Bovine Unit has a Moderate vulnerability to the Transportation hazard.

Extreme Heat

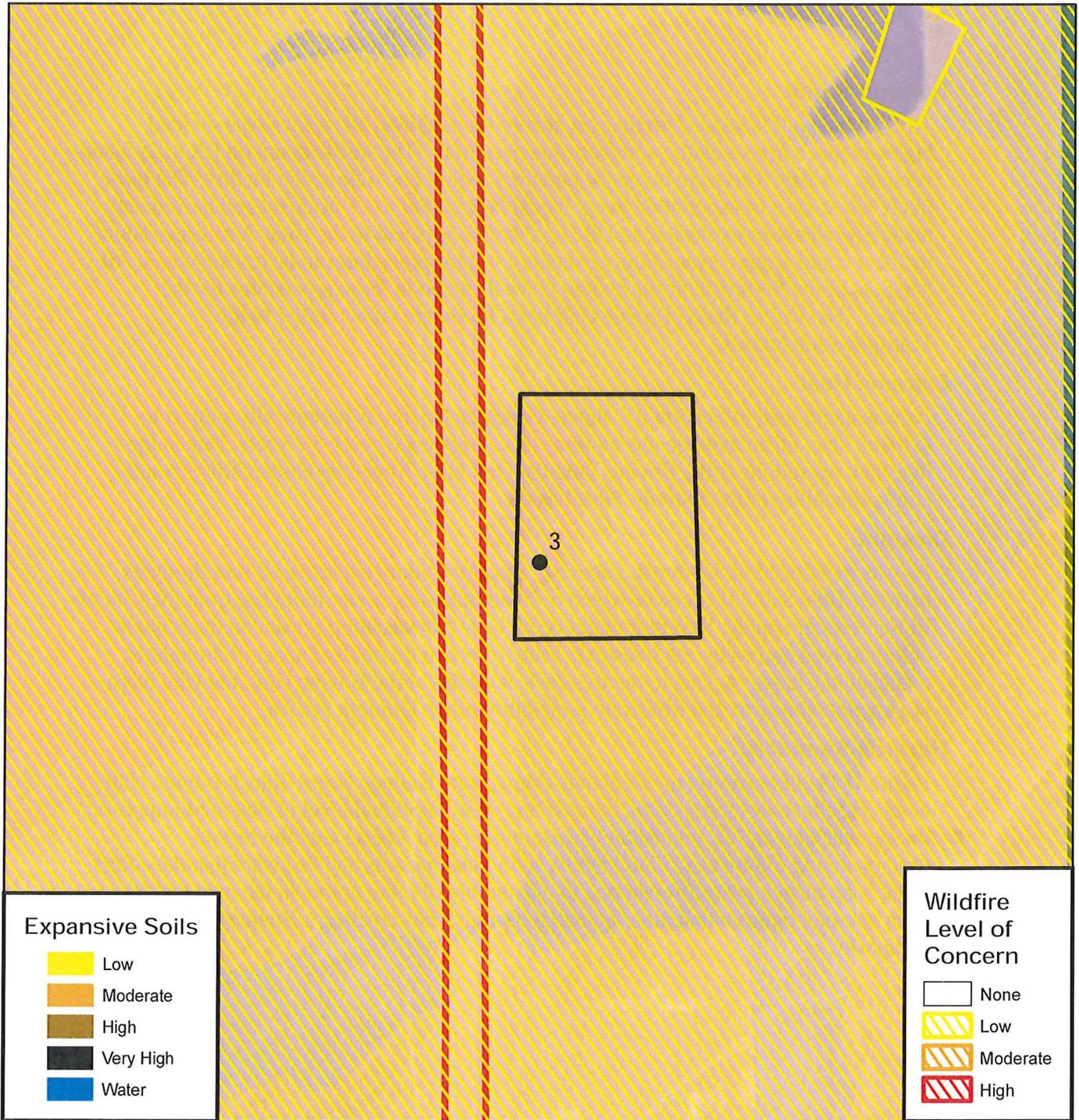
As was mentioned in Section 2.7 above, Canadian County is periodically subject to extreme heat, on an average one extreme heat experience every 3.7 years. Due to the livestock operations at the Bovine Unit, the Unit has a Moderate vulnerability to and High probability of the Extreme Heat hazard.

Drought

As was mentioned in Section 2.8 above, Canadian County experienced four droughts between 1996 and 2011, one of which resulted in modest water rationing from the City of El Reno water supply. Severe drought could have a devastating impact on the schools ability to feed and water the livestock. More information on the impact of drought is included in Chapter 4. Due to the livestock activities at the Bovine Unit, the Unit has a High vulnerability to and Moderate probability of the Drought hazard.

Hazards Summary

Figure G.11-5 focuses on the Redlands Community College Royse Ranch Bovine Unit alone and illustrates the specific hazards and their individual level of potential impact on the Bovine Unit and its immediately surrounding area. Please note the legend accompanying Figure G.11-5 to identify individual hazards and be aware that the colors in the map may appear different due to the number of other colors in the map that have been overlaid representing other potential hazards, thus creating a Bovine Unit-site composite.



Expansive Soils

- Low
- Moderate
- High
- Very High
- Water

Wildfire Level of Concern

- None
- Low
- Moderate
- High

LEGEND

2009 EHS Tier II	Redlands Locations
2009 non EHS Tier II	Interstate
Tier II 1/4mi Buffer	US Highway
1/4mi Transport Buffer	State Highway
100yr Floodplain	Turnpike
500yr Floodplain	Railroads



Figure G.11-5
Redlands Community College
Bovine Unit
Hazard Composite

4.3 Royse Ranch Equine Center

Redlands Community College's Royse Ranch Equine Center is located north of El Reno on Jones Rd., a quarter mile east of US Highway 81. The facility is home to the College's Equestrian Team, which has a National Championship to its name. The Equine Center's buildings are constructed of metal with single-slope or low-slope peaked roofs, and include classrooms, laboratories, sheds, pens, corrals and barns. The classrooms are not equipped with sprinkler systems, safe rooms, lightning protection or a backup generator, but it does have a NOAA Weather Radio.

Flood

The North Canadian River, which passes about a quarter mile northeast of the Royse Ranch Equine Center, at elevation 1,295 feet; the Equine Center is situated at elevation 1,215. FEMA has defined the 100-year flood at this reach of the River as being at elevation 1,210. The Equine Center not in the flood zone and has not been impacted by the hazard in the past. Royse Ranch Equine Center has no vulnerability to and no probability of the Flood hazard.



The Royse Ranch Equine Center

Expansive Soils

Royse Ranch Equine Center is situated on Low shrink/swell soils. The Center has been impacted by the hazard in the past. Damage includes cracks due to ground shifting and shrinkage. The Center has a Moderate vulnerability to and High probability of the Expansive Soils hazard.

Wildfire

The Equine Center is surrounded on all sides by tilled farm land, except to the east, where it is bounded by the City of El Reno's wastewater treatment ponds. The Equine Center has a Low vulnerability to and Low probability of the Wildfire hazard.

Hazardous Materials

There are no Tier II sites within one mile of Royse Ranch Equine Center. The Equine Center has no vulnerability to and no probability of the Fixed-Site Hazardous Materials hazard.

Dam Failure

Although the Royse Ranch Equine Center is situated slightly above the 100-year floodplain of this reach of the North Canadian River, were Canton Dam to fail or be forced to make an emergency release during flood conditions, the Equine Center would

likely be inundated. The Equine Center has a High vulnerability to and Low probability of the Dam Failure hazard.

Transportation

Royse Ranch Equine Center is located north of El Reno on Jones Rd., a quarter mile east of US Highway 81. The traffic count on US Highway 81 north of Jones Rd. is 5,900 vehicles per day. There is no traffic data for Jones Rd. at the point of the Center. The Center is about one mile east of the Union Pacific railroad yards and track. There are hazardous materials pipelines in the vicinity although best available information does not provide location relative to the Equine Center. A transportation incident involving hazardous materials could require shelter in place or evacuation procedures to be implemented. This proves a particular challenge due to the live animals on site. There have been no incidents in the past that have impacted the school in the past. The Equine Center has a High vulnerability to and Low probability of the Transportation hazard.

Extreme Heat

As was mentioned in Section 2.7 above, Canadian County is periodically subject to extreme heat, on an average one extreme heat experience every 3.7 years. Due to the stabling of horses at the Equine Unit, the Unit has a Moderate vulnerability to the Extreme Heat hazard.

Drought

As was mentioned in Section 2.8 above, Canadian County experienced four droughts between 1996 and 2011, one of which resulted in modest water rationing from the City of El Reno water supply. Severe drought could have a devastating impact on the schools ability supply feed and water to the animals. More information on the impact of drought is included in Chapter 4. Due to the stabling of horses at the Equine Unit, the Unit has a High vulnerability to and Moderate probability of the Drought hazard.

Hazards Summary

Figure G.11-6 focuses on the Redlands Community College Royse Ranch Equine Unit alone and illustrates the specific hazards and their individual level of potential impact on the Equine Unit and its immediately surrounding area. Please note the legend accompanying Figure G.11-6 to identify individual hazards and be aware that the colors in the map may appear different due to the number of other colors that have been overlaid representing other potential hazards, thus creating an Equine Unit-site composite.

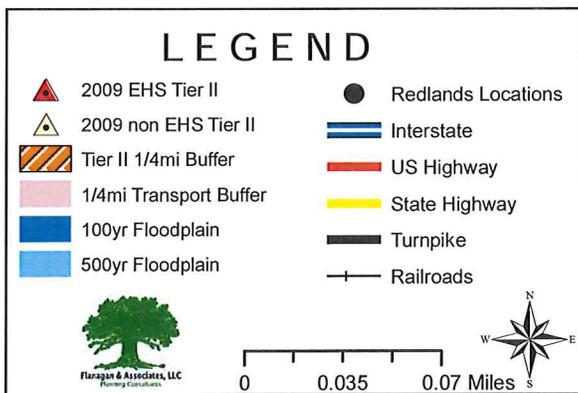
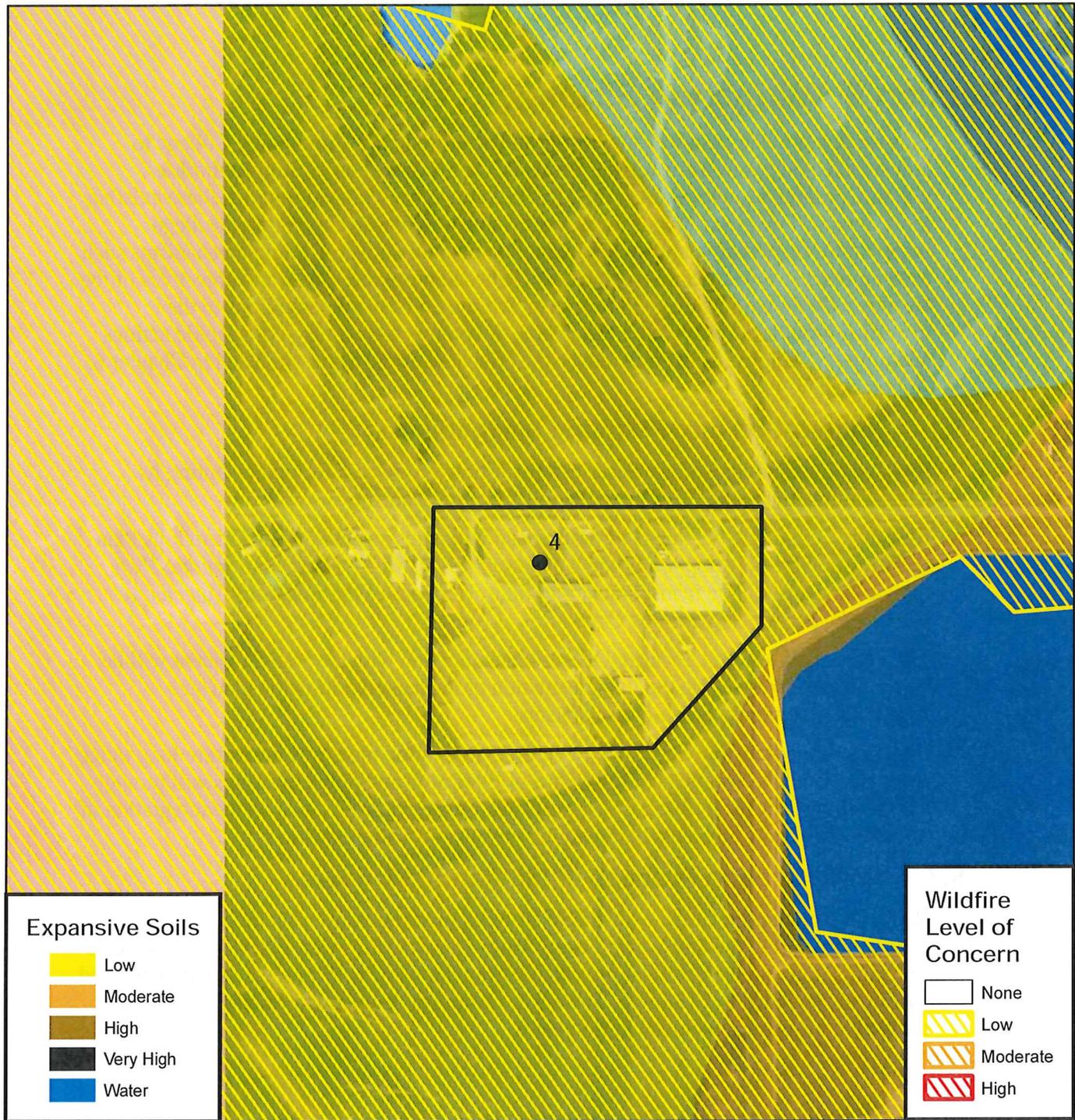


Figure G.11-6
 Redlands Community College
 Equine Unit
 Hazard Composite

Section 5 Mitigation Strategy

This section provides a description of the ability of Redlands Community College to reduce potential losses, identified in Sections 3 and 4, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools. Included in this section is a process by which Redlands Community College incorporates the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvements, when appropriate. Goals and objectives of the Redlands Community College to reduce or avoid long-term vulnerabilities to the identified hazards are included in Chapter 5. A comprehensive range of specific actions and projects being considered to reduce the effects of each hazard are listed in Chapter 6, Action Plan.

5.1 Integration into Planning Mechanisms

Redlands Community College described the following process for implementing its hazard mitigation plan through existing planning mechanisms:

Redlands Community College has drafted and maintains an Emergency Operations Plan (EOP). Upon formal adoption of the *Canadian County Multi-Hazard Mitigation Plan*, mitigation goals will be incorporated into future versions of the *Redlands Community College Emergency Operations Plan*.

The Physical Safety and Security Officer in conjunction with the Vice President will be responsible for overseeing the implementation of the hazard mitigation plan and integration into other planning mechanisms.

Redlands Community College will incorporate mitigation measures into future long range planning elements. Meetings of the Board of Education and public hearings will provide an opportunity for local officials to report back on the progress made on the integration of mitigation planning elements into planning documents and procedures.

5.2 Prioritization Process of Mitigation Measures

Redlands Community College identified 21 mitigation measures, specific to their jurisdiction, during the *Canadian County Multi-Hazard Mitigation Plan Update* process. The mitigation measures will be prioritized using the STAPLEE process as recommended by FEMA, included in Chapter 5, Table 5-1. Complete detailed information for each mitigation measure is included in Chapter 6.