



CANADIAN COUNTY

# Piedmont Public Schools

## 2012 Multi-Hazard Mitigation Plan Update



**Flanagan & Associates, LLC**  
Planning Consultants

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# ***Acknowledgements***

Piedmont Public Schools Multi-Hazards Mitigation Plan 2012 Update was made possible by a Hazard Mitigation Grant from the Oklahoma Department of Emergency Management and the Federal Emergency Management Agency, with local share funding from Piedmont Public Schools.

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

## **Piedmont School Board**

President ..... Terry McBride  
Vice President ..... Karen Green  
Clerk ..... Jerrod Moser  
Member ..... Alan Blankenship  
Member ..... Stanley Nance

## **Piedmont School Administration**

School Superintendent ..... James White  
Assistant Superintendent..... Jacky Parish

## **Piedmont School Staff Technical Advisory Committee (STAC)**

Assistant Superintendent..... Jacky Parish

## G.9 Piedmont Public Schools

The Piedmont Public School District is in the northeastern most portion of Canadian County, with some of its territory extending in to Kingfisher County to the north and Oklahoma County to the south as shown in Locator Map G.7-1. The District is comprised of 11 schools. These are summarized in Table G.9-1 and in the paragraphs and sections that follow, providing an overview of the district, a survey of the general hazards that impact the entire district and a more detailed look as site-specific hazards for each of the schools.

### Section 1 Introduction

#### 1.1 Services Summary

The District provides public school education services for students in Pre-K through Grade 12, and includes a high school, a middle school and four elementary schools. Piedmont Intermediate School for Grades 5 and 6 is currently under construction, and is scheduled for completion in 2012.

#### 1.2 Boundaries

At its widest extent, the portion of the District within Canadian County extends from the Kingfisher County Line south to Britton Rd. W, and from Banner Rd. in the west to the Oklahoma County Line in the east. Figure G.9-2 is a base map showing the District.

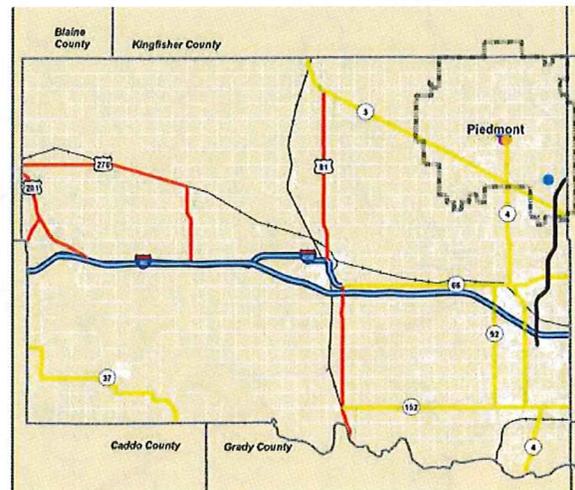
#### 1.3 Population Summary

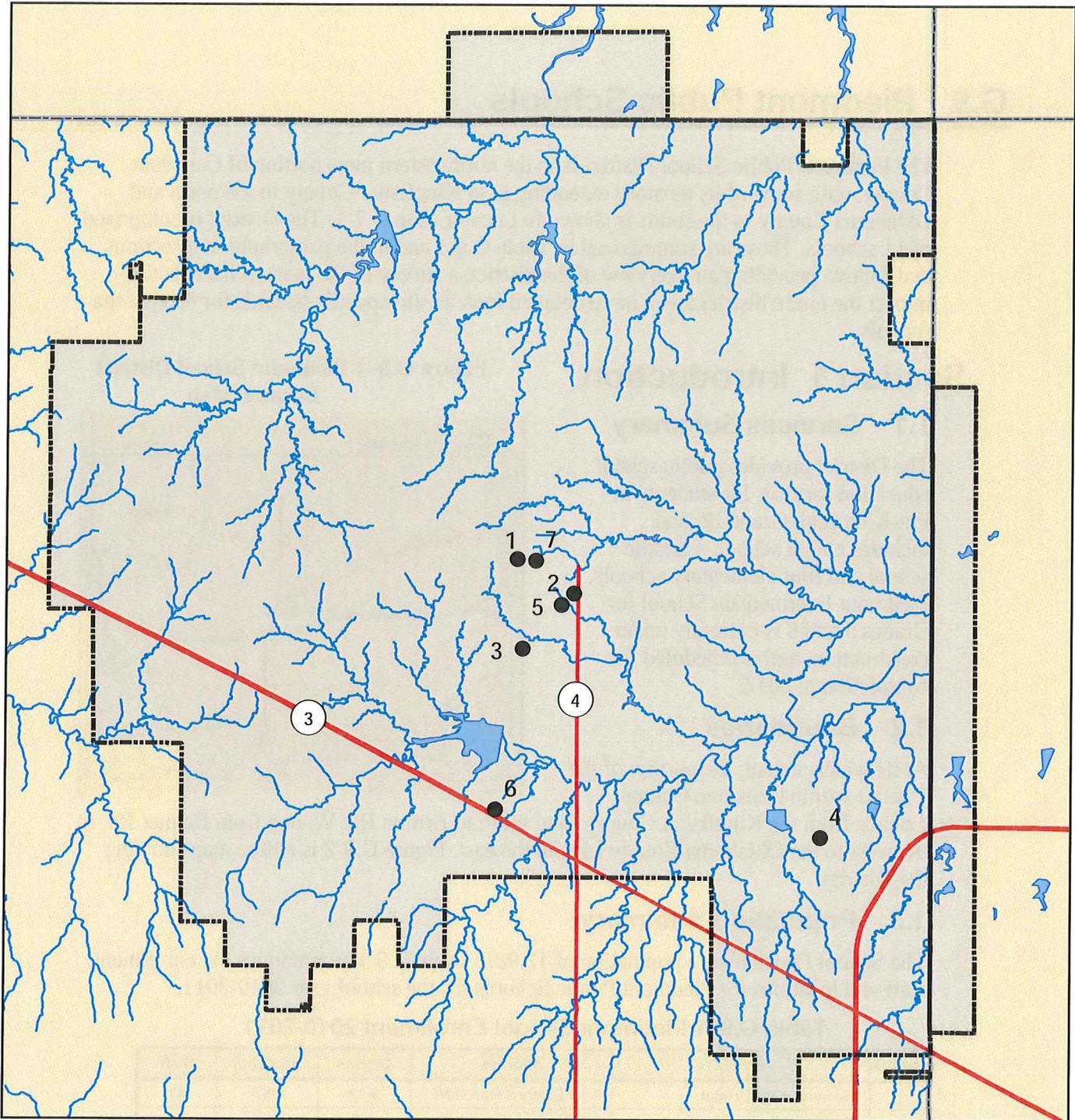
The School District has a population of 12,921. Table G.9-1 summarizes the enrollment, staff and locations for Piedmont Public Schools for the school year 2010-2011.

**Table G.9-1 Piedmont School Enrollment 2010-2011**

Map ID	School	Address	Grades	Students	Staff
1	Piedmont High School	1-55 Edmond Road NW	9-12	657	41
2	Piedmont Middle School	823 Second Street NW	6-8	587	35
3	Piedmont Intermediate (new)	977 Washington Ave. W	5-6		
4	Stone Ridge Elementary School	10000 W. Memorial Rd.	1-5	414	28
5	Piedmont Elementary School	1011 Piedmont Road N.	1-5	490	39
6	Northwood Elementary School	14100 Northwood Dr	KG-5	414	22
7	Piedmont Primary School	615 Edmond Rd NW	PK-KG	184	9
	TOTALS			2,746	152

**Figure G.9-1 Piedmont School District Locator Map**





**LEGEND**

- School Facility
- Highways
- Rivers/ Streams
- Water
- ⎓ School District



Figure G.9-2

Piedmont Public  
Schools

Basemap



## School District Demographics

### Ethnicity

- Caucasian – 73%
- Native American – 13%
- Hispanic – 6%
- African American – 5%
- Asian – 4%

### Other Census Data

- Poverty Rate – 4%
- Unemployment Rate – 2%
- Single Parent Families – 16%



Wildcat Stadium

## 1.4 Economic Summary

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

The Piedmont School District is one of the top five fastest growing school districts in the US. The District's net assessed valuation is increasing annually and its bonding capacity is in excellent condition. The District has passed three bond issues in the last eight years and has built two new schools in the last five years – each of which has a safe room.

At the writing of this plan, the District is preparing for its next bond issue which will be submitted to voters in 2015.

## Section 2 Existing Mitigation Strategies

**National Flood Insurance Program/Community Rating System.** Piedmont Public Schools are covered by the City of Piedmont's participation in the NFIP program but they are not participants in the CRS Program.

**Floodplain Management.** Piedmont Public Schools participates in and benefits from Piedmont regulations for the floodplains.

**StormReady Program.** Piedmont Public Schools is not a StormReady community.

**FireWise Program.** Piedmont Public Schools does not participate in the FireWise Program.

**Building Codes.** Piedmont Public Schools abides by the codes governing the City of Piedmont and the states required codes for the schools.

### Emergency Services

**Security.** Piedmont Public Schools has authorized the Superintendent or Principal of the school to enforce security.

**Fire Protection.** The fire department of Piedmont would be responsible for responding to a fire at Piedmont Public Schools.

**Hospitals.** The closest hospital is Integris Canadian Valley Hospital in Yukon.

**Ambulance Service.** Eagle Med would provide ambulance service for Piedmont Public Schools.

## Section 3 Hazards

The following subsections discuss general hazard information for the Piedmont Public School District as a whole. A summary appears in Table G.9-2. These general hazards are addressed more fully in Chapter 4.

Section 3 analyzes the vulnerability of each school and support facility to six hazards that are site-specific: Flood, Expansive Soils, Wildfire, Hazardous Materials, Dam Failure and Transportation. The narratives are accompanied by maps showing the sites of the schools and facilities and their relationships to the six site-specific hazards.

**Table G.9-2 Piedmont Public Schools General 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
Piedmont High School		X	X	X	X	X	X	X	X	X	X	X			
Piedmont Middle School	X	X	X	X	X	X	X	X	X	X	X	X			X
Piedmont Intermediate		X	X	X	X	X	X	X	X	X	X	X			
Stone Ridge Elementary School		X	X	X	X	X	X	X	X	X	X	X			
Piedmont Elementary School	X	X	X	X	X	X	X	X	X	X	X	X			X
Northwood Elementary School		X	X	X	X	X	X	X	X	X	X	X			X
Piedmont Primary School		X	X	X	X	X	X	X	X	X	X	X			X

### 3.1 Flood

All schools in the Piedmont Public School District are within the Deer Creek drainage basin, including Northwood and Stone Ridge Elementary Schools, which are in the City Limits of Oklahoma City. Deer Creek is a tributary to Cottonwood Creek. Northwood Lake, on Deer Creek, contains a high hazard dam located directly south of the City of Piedmont. There is also Soldier Creek another tributary to Deer Creek. All Schools in the District could be impacted by flash flooding due to heavy rainfall in the future. The potential impact of this hazard on structures, including schools, in Canadian County is addressed in Chapter 4.

Although a tributary of Deer Creek runs through the center of the City and passes between Piedmont Middle School and the District Administration Office. The 100 year floodplain also passes through the elementary campus. Piedmont Public School District consider 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. The Piedmont School District has a Low vulnerability to and Low probability of the Flood hazard.

### 3.2 Tornado

Tornadoes are random events that can strike anywhere in Canadian County, including any of the Piedmont Public Schools. Canadian County experienced 34 tornadoes between 1995 and 2010, including a devastating EF5 tornado in May 2011. Given these

frequencies, the county and the school district can expect 2.3 tornadoes each year. In the past, tornadoes have caused damage to Piedmont Schools. Types of damages incurred as a result of tornado events have included roof and HVAC damage at Piedmont Elementary, roof damage at the Administration building, and the scoreboard and fence at the athletic complex. A tornado like the EF5 of May 2011 will completely destroy any of the District's schools in its path of direct impact. Of the schools that make up Piedmont Public School District, two have on-site tornado safe rooms or shelters which lessen, but do not eliminate, the vulnerability of students, faculty and staff to tornado events. The Middle School of Piedmont, Stone Ridge Elementary School, Piedmont Elementary School, Northwood Elementary School and Piedmont Primary School lack adequate tornado sheltering areas for their students, faculty, and staff. Because of this the populations of the previously listed facilities remain vulnerable to the onset of tornadoes of any extent. Piedmont Public School District considers a minor severity tornado to be a tornado of EF1 or lower on the Fujita Scale and a major severity tornado to be a tornado greater than EF1. The School District 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 73 high wind events from 1995 through 2010. Winds as high as 95 mph have been reported. Canadian County – and Piedmont Schools – can expect about five potentially damaging high wind events each year. Piedmont's school buildings are of recent construction and most are equipped with wind-resistant glass and roofing. The District's Administration Office, on the other hand, is in a converted single-family home with a peaked, composition roof and remains vulnerable to high wind events. Detailed information about the vulnerability of structures to high wind events is included in Chapter 4. Piedmont Public School District considers a wind force on the Beaufort Scale of 9 (55 mph) or below to be a minor severity wind force and a wind force of greater than 9 on the Scale to be major severity wind force. The Piedmont School District 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 generated by the approximately 76 severe thunderstorms that passed through the area. Given this frequency, Piedmont Public Schools can expect about five lightning events per year. Piedmont Schools have not been impacted by lightning in the past. The Schools are all equipped with lightning protection for electronics, but none have lightning warning systems leaving those persons participating in outdoor activities such as physical education class or school sporting events, vulnerable to loss of life or injury. Based on the information provided by the National Weather Service, Chapter 4, Piedmont Public School 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. Piedmont Schools and the Administration Office have 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, along with lightning, high winds and tornadoes. From 1995 through 2010, the county reported 105 separate hail events. Given this frequency, Piedmont Schools can expect about seven hail events each year. As indicated in Chapter 4, hail can cause significant damage to structural components of schools. Particularly vulnerable are glass windows, doors, skylights, and roofing systems. Piedmont Public Schools has installed hail-resistant windows in all but the Primary School. Only the Primary School has hail-resistant roofing. Hail damage has in the past caused roofs to be replaced on Piedmont Elementary, Middle School of Piedmont, Piedmont High School, and the Administration building. Piedmont Public School District considers a minor severity hail storm to be a hail storm of H2 or lower on the Combined NOAA/ TORRO Hailstorm Intensity Scale, and a major severity hail storm to be a hail storm greater than H2 on the Scale. The District has a High vulnerability to and High probability of the Hail hazard.

### **3.6 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, Piedmont Public Schools have also experienced 35 ice and snow events in this period. As indicated in Chapter 4 of this plan, public schools 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. Piedmont Public Schools are not equipped with a back-up generator. Loss of power could result to extended closure of school facilities. Piedmont Schools have been impacted by winter storm damages in the past. Freezing temperatures have caused pipes to freeze and burst at Piedmont Elementary and Piedmont High School, flooding both schools as a result. Piedmont Public School District considers a minor severity winter storm to be a winter storm that results in no loss of life, no loss of electricity or water service and no transportation interruptions, and a major severity event winter storm to be a winter storm that causes personal injury or death, water or power outages, travel disruptions, and damage to private property and public infrastructure. Piedmont Public Schools are considered to have a High vulnerability to and High probability of the Winter Storm hazard.

### **3.7 Extreme Heat**

During the period 1996 through 2011, Canadian County experienced four extreme heat events or an average of one every 3.7 years. Because of the general and widespread nature of heat waves, it is assumed that Piedmont Public Schools will experience the same number of extreme heat events as the rest of the County. The most vulnerable populations of Piedmont Schools would be students participating in summer sports practice, as discussed in Chapter 4. All school sites have experienced A/C equipment failure and water rationing during periods of extreme heat. Piedmont Public School District considers minor severity extreme heat to be extreme heat of 95°F or less on the

NOAA Heat Index (see Chapter 4.7.1), and major severity extreme heat to be extreme heat of greater than 95°F on the NOAA Heat Index that lasts for more than two weeks. Overall, the District has a Moderate vulnerability to and High probability of the Extreme Heat hazard.

### **3.8 Drought**

Canadian County experienced 4 droughts from 1996 to 2011. Given the widespread nature of the hazard, it is assumed that Piedmont Schools have experienced the same number of droughts. Piedmont's water is drawn from municipal groundwater wells and the Oklahoma City water system. The drought of 2010-2011 caused water shortages in Oklahoma City and forced several cities, including Piedmont, to some form of rationing. Drought has caused loss of vegetation at all Piedmont School sites in the past and could cause similar damage in future events. Piedmont Public School District considers a minor severity drought to be a drought greater than a -2 on the Palmer Drought Index, and a major severity drought to be a drought -2 or lower on the Scale. The Scale goes from -4 to +4, with lower numbers indicating greater drought. The School District, which is normally out of session during the peak summer drought period, has a Moderate vulnerability to and High probability of the Drought hazard.

### **3.9 Expansive Soils**

Piedmont Public Schools are sited in different areas on varied soil types. As a generalization, the Schools are situated on Low and Moderate expansive soils. There has been no reported damage to the Schools due expansive soils. Piedmont Schools are well engineered and less likely to be impacted expansive soil damages. Damages could occur over an extended period of time and may include cracks in the foundation, sidewalks, parking lots, and roadways. Piedmont Public school District considers a shrink-swell level of Moderate and below on the USDA soil data base to be of minor severity and a shrink-swell level of High or Very High on the USDA data base to be of major severity. Piedmont Public Schools and the District's Administration Office are considered to have a Low vulnerability to and Low probability of the Expansive Soils hazard.

### **3.10 Urban Fire**

Piedmont Public Schools have not been impacted by urban fires in the past. The Piedmont School District buildings are constructed of cement block and brick, most of them with flat or low-sloped metal roofs, and of recent construction. All but two of the schools are in the Piedmont Fire District. Northwood and Stone Ridge Elementary Schools are in the Oklahoma City Fire District. Piedmont's Fire District has four salaried fire fighters and 16 volunteers operating out of 2 fire stations with a fleet of three engines, two tankers, two brush pumpers, and two command vehicles. The District has 13 fire fighters who are registered EMTs, one Paramedic, and six who have completed Structural FF 1 School. The District's ISO rating is 5. Information regarding the potential impact of this hazard on school facilities is included in Chapter 4. An urban fire could result in total loss of building contents at any Piedmont Public School facility. Students are less likely to be impacted because evacuation routes are posted and practiced regularly.

Piedmont Public School District considers a minor severity structure fire to be a structure fire that results in no injury or loss of life and and/or that results in \$5,000 or less in damages, and a major severity structure fire to be a structure fire that causes or loss of life or personal injury and/more than \$5,000 in damages. Piedmont School District buildings have a Low vulnerability to and Moderate probability of the Urban Fire hazard.

### **3.11 Wildfire**

Piedmont Public School Administration Office is located on the west side of OK Highway 4 (Piedmont Rd.) in the urban core of the City of Piedmont. The building is buffered by a four-lane highway to the east, tennis courts to the north, a parking lot to the south, and by open, landscaped space to the west. The Administrative Office has a Low vulnerability to the Wildfire hazard. Of the Piedmont School facilities, all except the Middle School are located in areas with at least a Low wildfire concern. The impact of this hazard on school structures is addressed in Chapter 4. The district has not been impacted by wildfires in the past. Wildfires could result in interruption of the Districts ability to operate. This is especially true if access to the school is limited due to smoke in the area or fires blocking roadways. Information regarding the vulnerability of each school campus to the wildfire hazard is included in the subsections, below.

Piedmont Public School District considers minor severity wildfire condition to be a reading of Moderate and below on the USDA Fire Danger Rating System, and a major severity wildfire condition to be a rating of above Moderate on the USDA Fire Danger Rating System. A minor severity wildfire would be a wildfire that resulted in no injury or death and little or no damage to structures. A major severity wildfire would be a wildfire results in injury or death of at least one person, either civilian or firefighter and/or destroys four structures. Overall, Piedmont Public Schools have a Moderate vulnerability to and Moderate probability of the Wildfire hazard.

### **3.12 Earthquake**

Earthquake is considered 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. None of these events were in Piedmont. The greatest recorded quake in Oklahoma, a 5.6 event, occurred in November 2011 in Lincoln County. Prior to this quake, the highest magnitude tremor (5.5) was at El Reno in 1952. The most recent activity appears to be related to the Wilzetta fault northwest of Prague. Only a few of 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 facility. Piedmont Public School District considers a minor severity earthquake to be a reading of 4.8 magnitude and below on the Richter Scale, and major earthquake to be a reading of above 4.8 magnitude on the Richter Scale. Piedmont School District is considered to have a Low vulnerability to and Low probability of the Earthquake hazard.

### **3.13 Hazardous Materials**

There are five Tier II sites within the Piedmont School District, one of them, AT&T Communications, is an EHS facility. No Tier II site is within a half mile of a Piedmont School building. Piedmont Schools have not been impacted by a Hazardous Materials

event in the past. Piedmont Public Schools are 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 Piedmont Schools. Piedmont Schools are considered to have no vulnerability to and no probability of the Dam Failure hazard.

### **3.15 Transportation**

Two Piedmont schools and the District Administration Office are located along OK Highway 4 (Piedmont Rd.) in the urban core of the City of Piedmont. Traffic along Piedmont Rd. is 5,900 vehicles per day. Along Washington Ave., at the site of Piedmont Intermediary, the count is 1,876 vehicles per day. Northwood Elementary is on OK Highway 3, with a vehicle count of 6,400 per day. There is no data for Edmond Rd. west of Piedmont Rd. the sites of Piedmont High and Primary Schools, but to the east it is 3,004 vehicles per day. There is no data for Memorial Rd. at Stone Ridge School. There are no pipelines or railroads near any of the schools. Stone Ridge School is about a half mile east of Sundance Air Park, but it is not within the flight paths, which run north and south. A transportation incident could call for implementation of evacuation or shelter-in-place procedures in the district.

Piedmont Public School District considers a minor severity transportation incident to be an incident resulting and no loss of life or major injuries, detours of less than half a mile, traffic disruption of less than half an hour, and/or hazardous materials contained within a quarter mile. A major severity transportation incident would involve loss of life and/or major injuries, detours exceeding half an hour, traffic disruption of more than half an hour, and/or hazardous materials impacts exceeding a quarter mile.

Piedmont Public Schools have not been impacted by the Transportation hazard in the past; however, at any time the major transportation routes running through the district could be used for the transport of hazardous materials. A transportation incident involving hazardous materials could result in the need for shelter in place or evacuation procedures to be implemented. The vulnerability of the District's buildings in these transportation corridors range from High (Northwood) to Low (Piedmont High and Primary), however, the District as a whole is considered to have a Moderate vulnerability to and High probability of the Transportation hazard.

### **3.16 Hazards Summary**

To provide a visual perspective of all potential hazards within the boundaries of the entire Piedmont School District, a District-wide Hazards Composite Map is presented in Figure G.9-3.

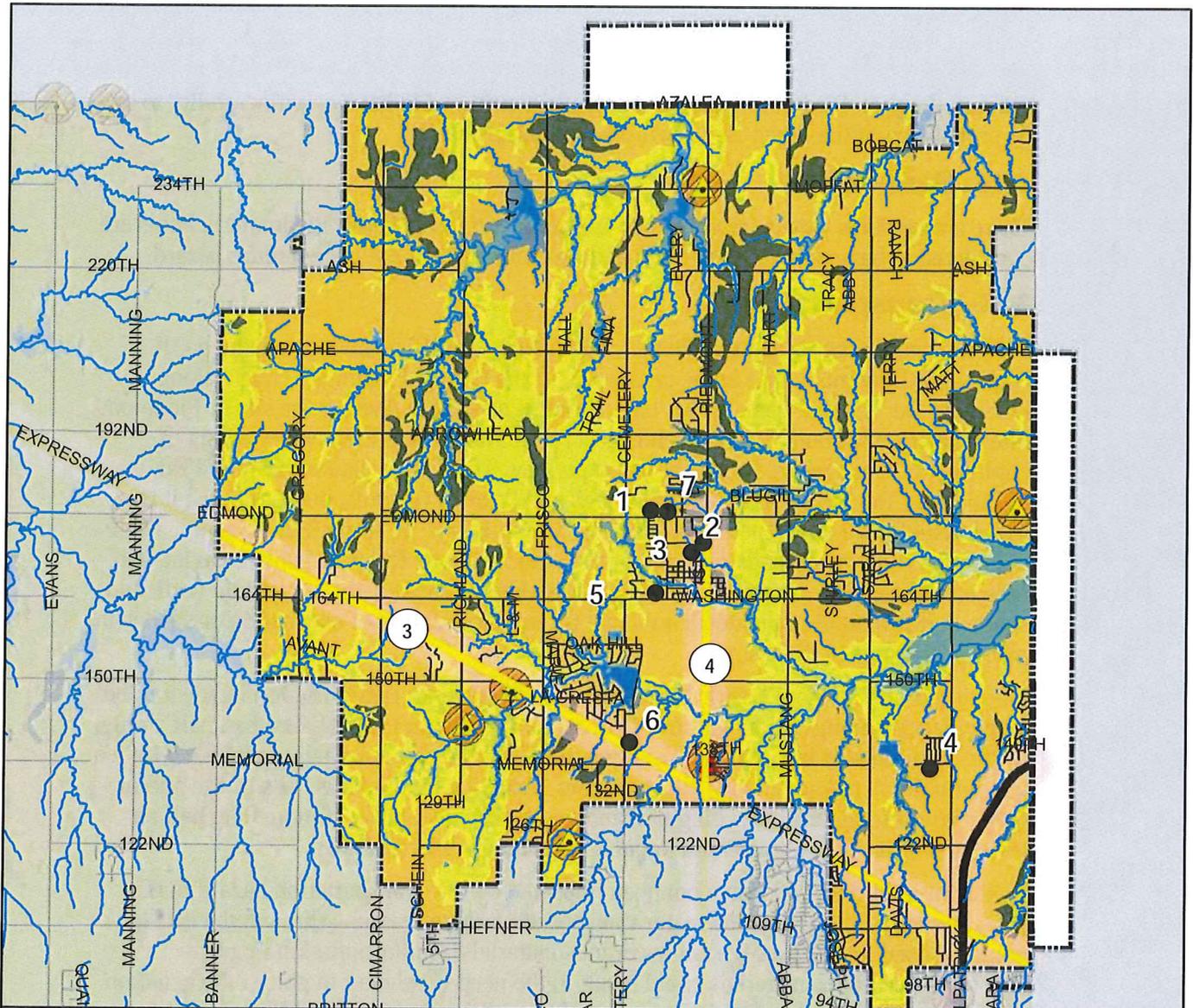


Figure G.9-3:

**Piedmont School District  
Hazard Analysis**

● Piedmont\_Schools

**Hazard Overlays**

- ▲ 2009 EHS Tier 2
- ▲ 2009 non EHS Tier 2
- ▨ Tier2 1/4mi Buffer
- 100yr Floodplain
- 500yr Floodplain
- Quarter Mile Transportation Buffer

**Expansive Soils**

- Low
- Moderate
- High
- Very High
- Water

**Transportation**

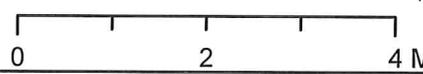
- ▬ Interstate
- ▬ US Highway
- ▬ State Highway
- ▬ Turnpike
- ▬ Local or Rural Road
- ▬ Railroads

**Boundaries**

- ▭ Piedmont SD



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## Section 4 Piedmont Schools Details

### 4.1 Piedmont High School

Piedmont High School serves Grades 9-12 and has 657 students and 41 staff. The School is located at 1055 Edmond Rd. NW, constructed of brick, with hail-resistant windows, lightning protection, a sprinkler system, automatic fire alarm, and NOAA Weather Radio. The School does not have a shelter or safe room, hail-resistant roofing, or a backup generator.



Piedmont High School

#### Flood

Piedmont High School is situated on high ground at elevation 1,260. It is not in a 100-year flood zone. The School has not been impacted by riverine or flash flooding in the past. The School has no vulnerability to and no probability of the Flood hazard.

#### Expansive Soils

Piedmont High School is built upon Moderate shrink/swell soils. The School has not been impacted by expansive soils in the past. The School has a Low vulnerability to and Low probability of the Expansive Soils hazard.

#### Wildfire

Piedmont High School is bounded by Edmond Rd. to the south, is ringed by access roads, and buffered by parking lots and Piedmont Primary School to the east. To the north and northwest is open land. The School has not been impacted by the Wildfire hazard in the past. The prevailing southerly winds and the School's buffering and landscaping result in a Low to Moderate vulnerability to and Low probability of the Wildfire hazard.

#### Hazardous Materials

There are no Tier II sites within one mile of Piedmont High School. No hazardous material events in Piedmont or Canadian County have impacted the school. The School has no vulnerability to and no probability of the Fixed-Site Hazardous Material hazard.

#### Dam Failure

There are no dams whose failure would impact Piedmont High School. The School has no vulnerability to and no probability of the Dam Failure hazard.

#### Transportation

The School is located on the north side of Piedmont's urbanized area. The traffic count on Edmond Rd. is 3,004 vehicles per day. The School has not been impacted by any transportation events in the past. Piedmont High School has a Low vulnerability to and Moderate probability of the Transportation hazard.

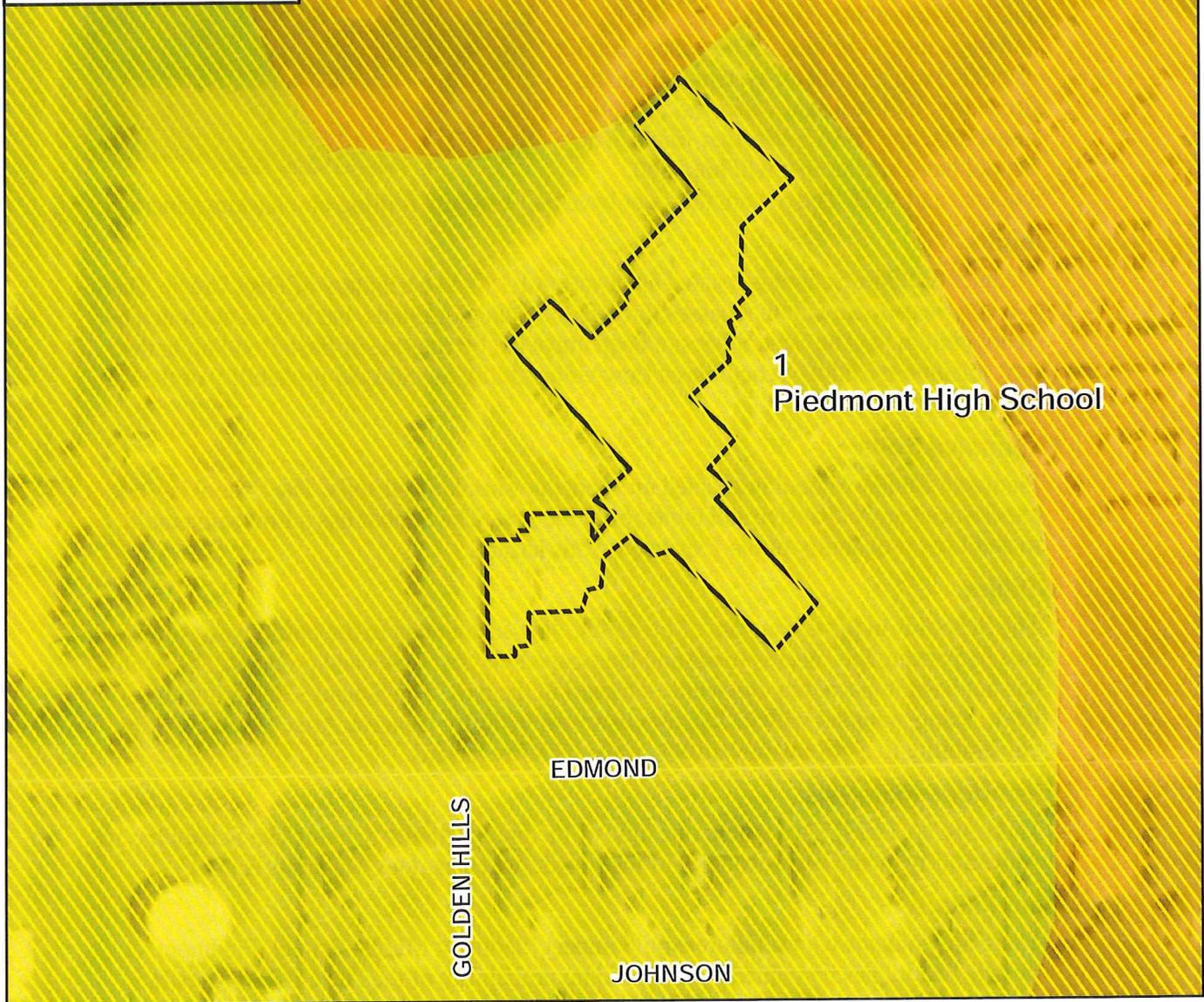
#### Hazards Summary

Figure G.9-4 focuses on the School site itself and illustrates the specific hazards and their individual level of potential impact on the building and its immediately surrounding area.

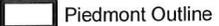
Please note the legend accompanying Figure G.9-4 to identify individual hazards and be aware that the colors in the map may appear different due to the number of other colors that have been overlaid representing other potential hazards, thus creating a School-site composite.

-  2009 EHS Tier 2
-  2009 non EHS Tier 2
-  Tier2 1/4mi Buffer
-  1/4mi Transport Buffer
-  100yr Floodplain
-  500yr Floodplain

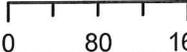
- Wildfire Level of Concern**
-  None
  -  Moderate
  -  Low
  -  High



**LEGEND**

-  Interstate
-  US Highway
-  State Highway
-  Turnpike
-  Local Road
-  Piedmont Outline
-  Low
-  Moderate
-  High
-  Very High

**Expansive Soils**

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**Figure G.9-4**  
**Piedmont High School**  
**Composite**

## 4.2 Piedmont Middle School

Piedmont Middle School is located at 823 2nd St. NW. in Piedmont. The School serves Grades 6-8 with 587 students and 35 staff. There are six buildings: the main building and field house, 6th Grade Center, bus barn, and three metal buildings. The School is built of brick, with a sprinkler system, automatic fire alarm, hail-resistant windows, lightning protection, and NOAA Weather Radio. The School has a shelter that will hold 200 students and staff. The School does not have hail-resistant roofing or a backup generator.



Piedmont Middle School

### Flood

Piedmont Middle School is located at elevation 1,190 on a tributary of Deer Creek. There is a 100-year floodplain that passes through the School grounds, but it does not touch any School building. The School has not been impacted by riverine or flash flooding in the past. Piedmont Middle School has a Low vulnerability to and Low probability of the Flood hazard.

### Expansive Soils

Piedmont Middle School is situated on Moderate shrink/swell soils. The School has not experienced any expansive soil damages in the past. The School has a Low vulnerability to and Low probability of the Expansive Soils hazard.

### Wildfire

The School is in the urban core of Piedmont. It is surrounded to the north, west, south and east by parking lots, access roads and landscaped playing fields and grounds. The School has not been impacted by the wildfire hazard in the past. The School's buffering and landscaping, coupled with its location in a Low Wildfire Concern Area, result in a Low vulnerability to and Low probability of the Wildfire hazard.

### Hazardous Materials

There are no Tier II sites within one mile of Piedmont Middle School. The School has no vulnerability to and no probability of the Fixed Site Hazardous Materials hazard.

### Dam Failure

There are no dams whose failure would impact Piedmont Middle School. Piedmont Middle School has no vulnerability to and no probability of the Dam Failure hazard.

### Transportation

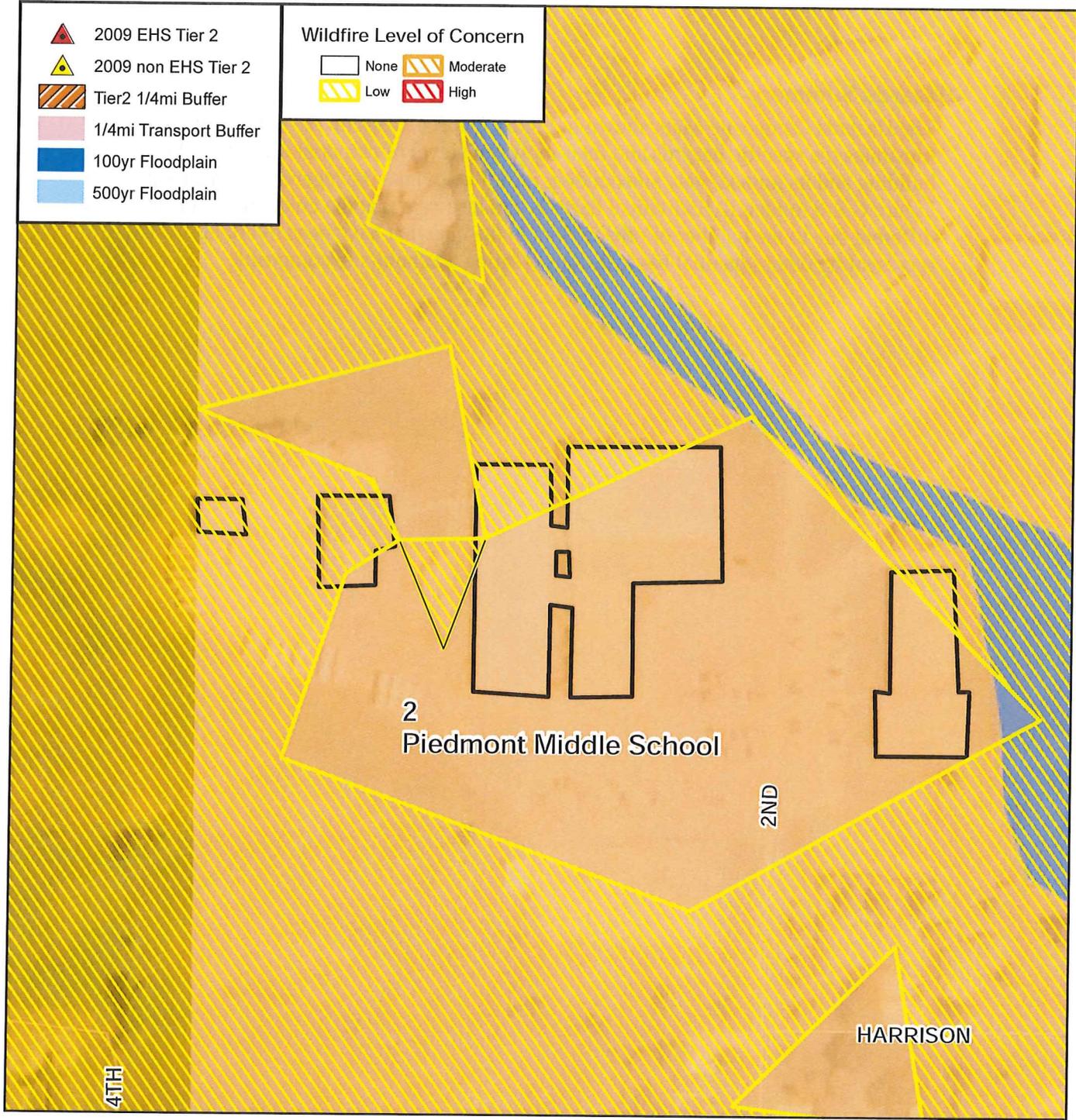
Piedmont Middle School is located on Piedmont Rd., with a traffic count one mile south of 5,900 vehicles per day. The School has not been impacted by a transportation incident in the past. At anytime, Piedmont road could be the route used for transportation of hazardous materials. An event could require shelter in place or evacuation procedures to be implemented. Piedmont Middle School has a Moderate vulnerability to and Moderate probability of the Transportation hazard.

## **Hazards Summary**

The Hazards Composite Map, shown in Figure G.9-5 focuses on the School site itself and illustrates the specific hazards and their individual level of potential impact on the building and its immediately surrounding area. Please note the legend accompanying Figure G.9-5 to identify individual hazards and be aware that the colors may appear different due to the number of other colors in the map that have been overlaid representing other potential hazards, thus creating a School-site composite.

-  2009 EHS Tier 2
-  2009 non EHS Tier 2
-  Tier2 1/4mi Buffer
-  1/4mi Transport Buffer
-  100yr Floodplain
-  500yr Floodplain

- Wildfire Level of Concern**
-  None
  -  Moderate
  -  Low
  -  High



**LEGEND**

-  Interstate
-  US Highway
-  State Highway
-  Turnpike
-  Local Road
-  Piedmont Outline
-  Expansive Soils Low
-  Moderate
-  High
-  Very High

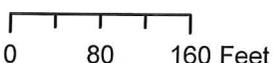
  



Figure G.9-5  
Piedmont Middle School  
Composite

### 4.3 Piedmont Intermediate School

Piedmont Intermediate School is located at 977 Washington Ave. NW. in Piedmont. At the writing of this plan, the School is under construction with a completion date of 2012. When in operation it will serve Grades 5-6. The School is constructed of brick with a flat asphalt roof with hail-resistant windows. It is equipped with lightning protection, a sprinkler system, automatic fire alarm and NOAA Weather Radio. The School has four safe rooms that will hold 400 students. The School does not have a backup generator.



Piedmont Intermediate School

#### **Flood**

Piedmont Intermediate School sits at elevation 1,211. There is no 100-year floodplain that passes through the School grounds. The School has not been impacted by riverine or flash flooding in the past. Piedmont Intermediate School no vulnerability to and no probability of the Flood hazard.

#### **Expansive Soils**

Piedmont Intermediate School is situated on Moderate shrink/swell soils. The School has not been impacted by expansive soil damages. The School has a Low vulnerability to and Low probability of the Expansive Soils hazard.

#### **Wildfire**

The School is surrounded to the north, east and west by residential areas, and across Washington Ave to the south by undeveloped land. Piedmont Intermediate School has not been impacted by the Wildfire hazard in the past. The School's buffering and completed landscaping, along with its location in a Low Wildfire Concern Area, will result in a Low vulnerability to and Low probability of the Wildfire hazard.

#### **Hazardous Materials**

There are no Tier II sites within one mile of Piedmont Intermediate School. The School has no vulnerability to and no probability of the Fixed Site Hazardous Materials hazard.

#### **Dam Failure**

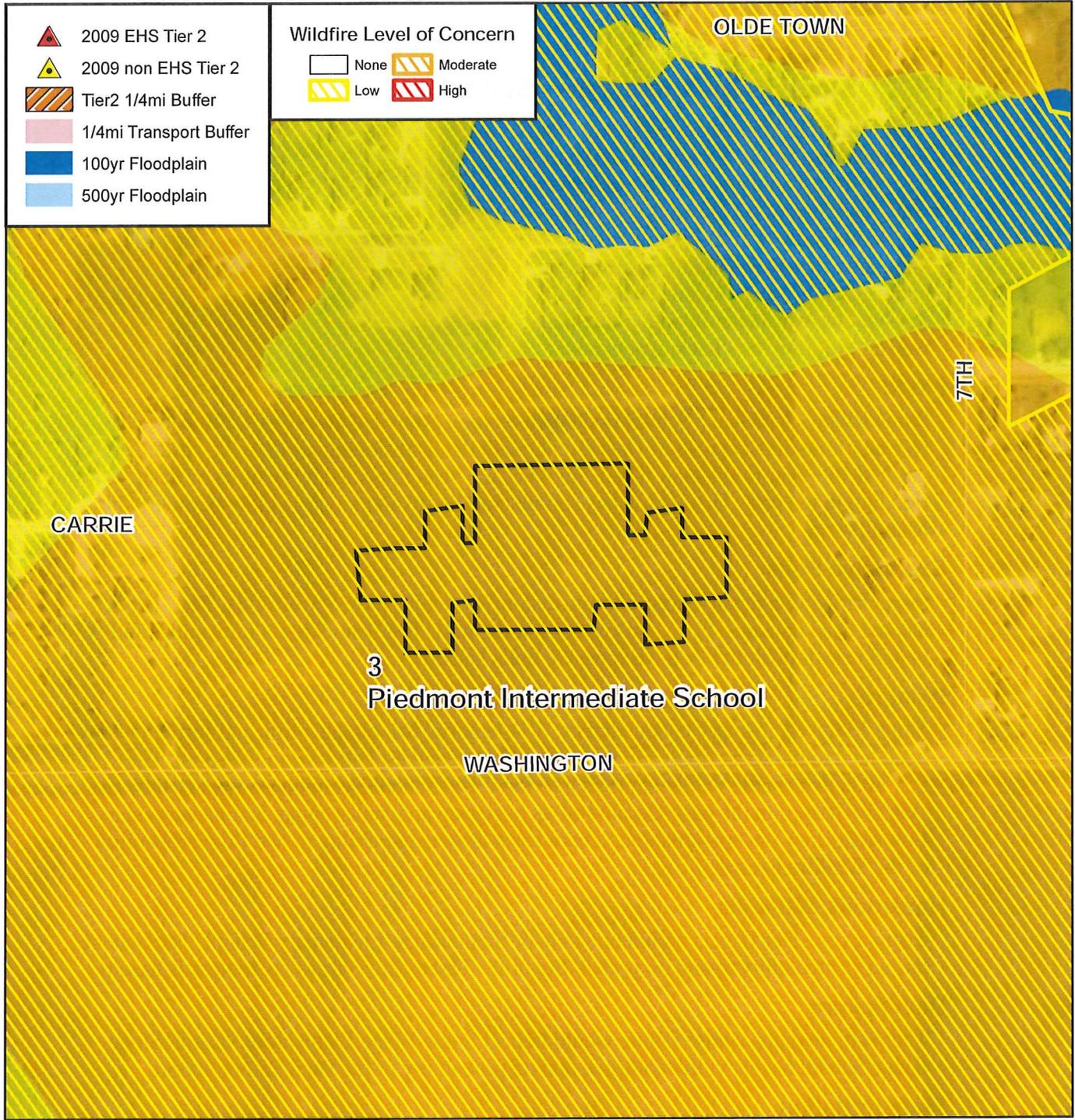
There are no dams whose failure would impact Piedmont Intermediate School. Piedmont Intermediate School has no vulnerability to and no probability of the Dam Failure hazard.

#### **Transportation**

Piedmont Intermediate School is located on Washington Ave. There are no major transportation corridors within a quarter mile of the School. The School has not been impacted by transportation incidents in the past. Piedmont Intermediate School has no vulnerability to and no probability of the Transportation hazard.

## **Hazards Summary**

The Hazards Composite Map, shown in Figure G.9-6 focuses on the School site itself and illustrates the specific hazards and their individual level of potential impact on the building and its immediately surrounding area. Please note the legend accompanying Figure G.9-6 to identify individual hazards and be aware that the colors may appear different due to the number of other colors in the map that have been overlaid representing other potential hazards, thus creating a School-site composite.



**LEGEND**

Interstate	Expansive Soils
US Highway	Low
State Highway	Moderate
Turnpike	High
Local Road	Very High
Hagan & Associates, LLC Planning Consultants	Piedmont Outline

0 130 260 Feet



Figure G.9-6  
 Piedmont Intermediate School  
 Composite

#### 4.4 Stone Ridge Elementary School

Stone Ridge Elementary School is at 10000 W. Memorial Rd. in Yukon, serving Grades K-5, with 414 students and 28 teachers and staff. The School is built of brick, with hail-resistant windows, a sprinkler system, automatic fire alarm, lightning protection, and NOAA Weather Radio. The School does not have a shelter or safe room, hail-resistant roofing, or a backup generator.



Stone Ridge Elementary School

##### **Flood**

Stone Ridge Elementary School is situated on high ground at elevation 1,170 between two intermittent tributaries of Deer Creek, with the land sloping away to the north. It is not in a 100-year flood zone. The School has not been impacted by riverine or flash flooding in the past. The School has no vulnerability to and no probability of the Flood hazard.

##### **Expansive Soils**

Stone Ridge Elementary School is situated on Moderate shrink/swell soils. The School has not been damaged by expansive soils in the past. The School has a Low vulnerability to and Low probability of the Expansive Soils hazard.

##### **Wildfire**

Stone Ridge Elementary is bounded by W. Memorial Rd. on the north, and surrounded by open land to the west, south and the east, and a second asphalt road to the south. The School is in a classic wildland/urban interface. The School has not been impacted by the Wildfire hazard in the past. Because of its buffering and landscaping, and location in a Low Wildfire Concern Area, the School has a Low vulnerability to and Low probability of the Wildfire hazard.

##### **Hazardous Materials**

There are no Tier II sites within one mile of Stone Ridge Elementary School. The School has no vulnerability to and no probability of the Fixed-Site Hazardous Materials hazard.

##### **Dam Failure**

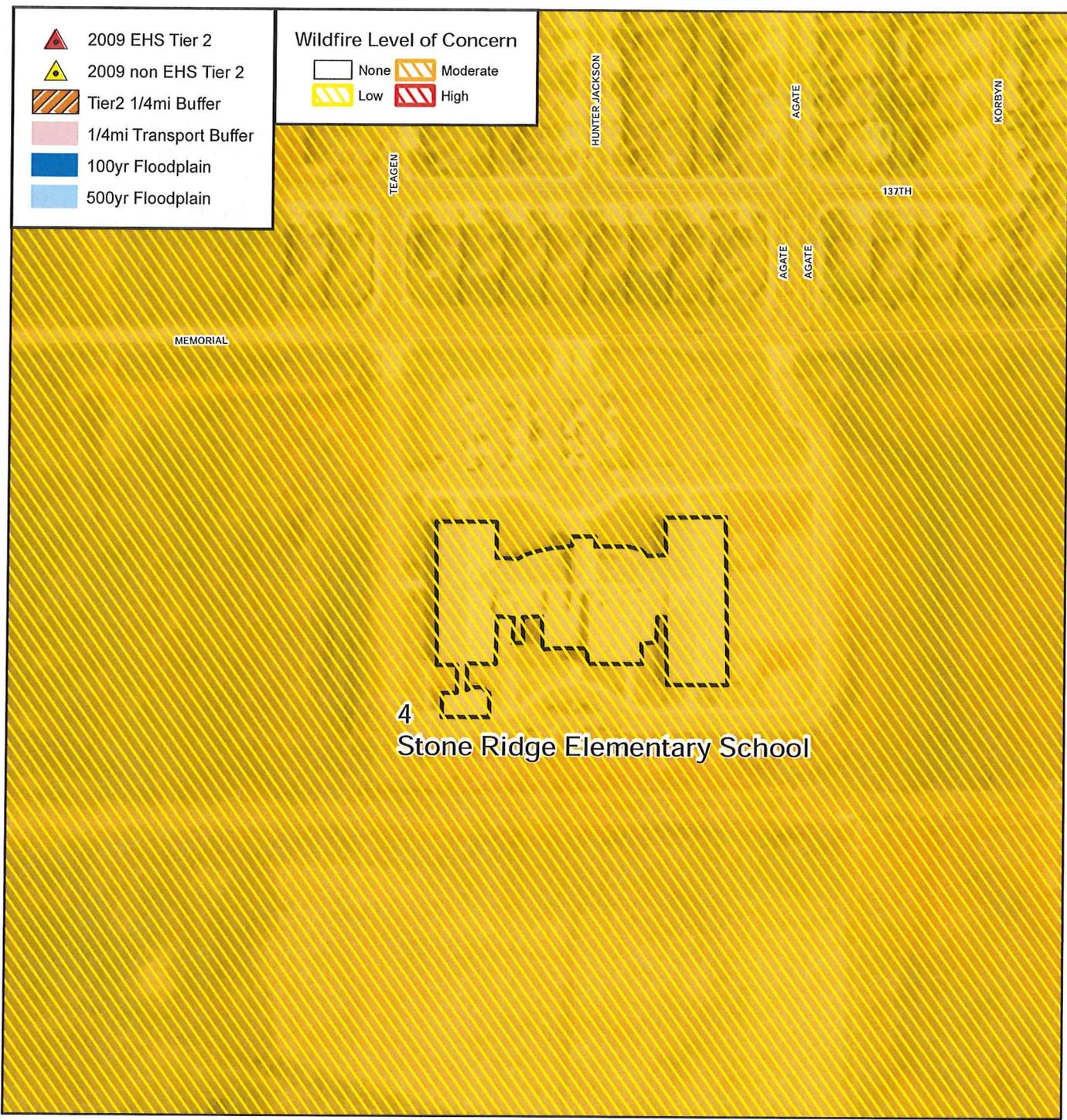
There are no dams whose failure would impact Stone Ridge Elementary School. Stone Ridge School has no vulnerability to and no probability of the Dam Failure hazard.

##### **Transportation**

Stone Ridge Elementary is located a half mile west of Sundance Air Park. The flight paths of its north-south runway do not impact the school. A major pipeline passes northeast-southwest beneath the Air Park and south of the School about a quarter mile south of Memorial Rd. It does not present a major hazard to the School. The School has not been impacted by the Transportation hazard in the past. Stone Ridge School has a Moderate vulnerability to and Low probability of the Transportation hazard.

## **Hazards Summary**

Figure G.9-7 focuses on the School site itself and illustrates the specific hazards and their individual level of potential impact on the building and its immediately surrounding area. Please note the legend accompanying Figure G.9-7 to identify individual hazards and be aware that the colors may appear different due to the number of other colors in the map that have been overlaid representing other potential hazards, thus creating a School-site composite.



**LEGEND**

Interstate	Expansive Soils Low
US Highway	Moderate
State Highway	High
Turnpike	Very High
Local Road	Piedmont Outline

0 100 200 Feet



**Figure G.9-7**

**Stone Ridge Elementary School**

**Composite**

## 4.5 Piedmont Elementary School

Piedmont Elementary School is located at 1011 Piedmont Rd N. The School serves Grades 1-5 with 490 students and 39 staff. The School building is constructed of brick with low-slope, peaked metal roofs and hail-resistant windows. It is equipped with lightning protection, a sprinkler system, automatic fire alarm, and NOAA Weather Radio. The School does not have a shelter or safe room, hail-resistant roofing, or a backup generator.



Piedmont Elementary School

### Flood

Piedmont Elementary School is located at elevation 1,200 on relatively high ground between two tributaries, one flowing into Soldier Creek and one into Deer Creek. There is a 100-year floodplain defined for the stream on the southwest side of the School. The floodplain passes through the School grounds, but does not touch the School building. The School has not been impacted by riverine or flash flooding in the past. Piedmont Elementary has a Low vulnerability to and Low probability of the Flood hazard.

### Expansive Soils

Piedmont Elementary School is situated on Moderate shrink/swell soils. The School has not been impacted by expansive soils in the past. The School has a Low vulnerability to and Low probability of the Expansive Soils hazard.

### Wildfire

Piedmont Elementary School is in the urban core of Piedmont. East is agricultural land, and north, west and south are playing fields, roadways and landscaped parcels belonging to the School District. The School has not been impacted by the Wildfire hazard in the past. Due to its location in a Low Wildfire Concern Area, and its close proximity to Highway 4, the School has a Low vulnerability to and Low probability of the Wildfire hazard.

### Hazardous Materials

There are no Tier II sites within one mile of Piedmont Elementary School. The School has no vulnerability to and no probability of the Fixed-Site Hazardous Material hazard.

### Dam Failure

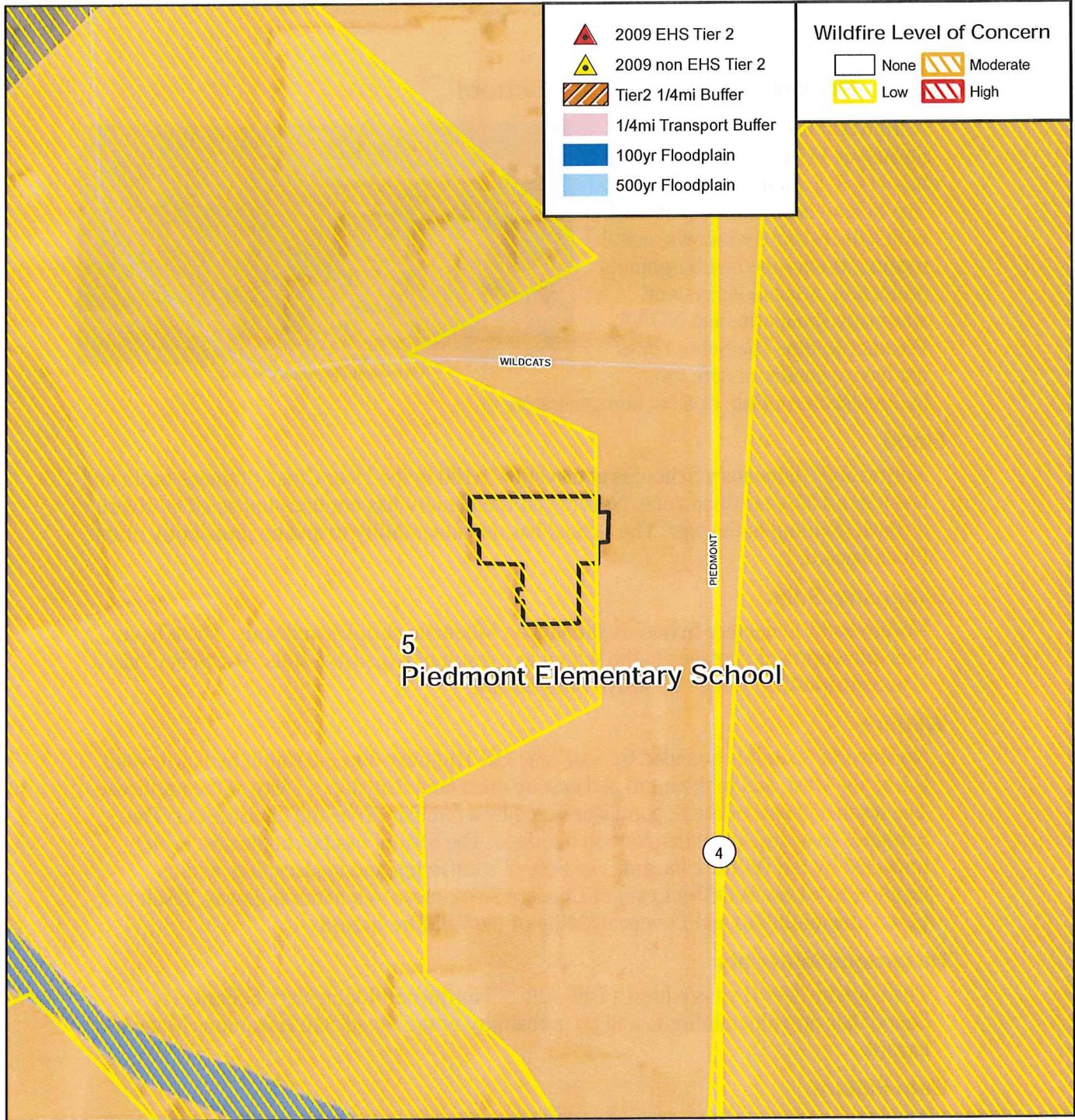
There are no dams whose failure would impact Piedmont Elementary School. The School has no vulnerability to and no probability of the Dam Failure hazard.

### Transportation

Piedmont Elementary is located on Piedmont Rd. North, near the termination point of OK Highway 4. The School has not been impacted by the transportation hazard in the past. The School has a Low vulnerability to and Low probability of the Transportation hazard.

## **Hazards Summary**

Figure G.9-8 focuses on the School site itself and illustrates the specific hazards and their individual level of potential impact on the building and its immediately surrounding area. Please note the legend accompanying Figure G.9-8 to identify individual hazards and be aware that the colors may appear different due to the number of other colors in the map that have been overlaid representing other potential hazards, thus creating a School-site composite.

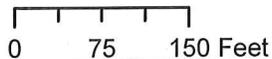


**LEGEND**

- Interstate
- US Highway
- State Highway
- Turnpike
- Local Road

**Expansive Soils**

- Low
- Moderate
- High
- Very High
- Piedmont Outline



**Figure G.9-8**  
**Piedmont Elementary School**  
**Composite**

## 4.6 Northwood Elementary School

Northwood Elementary School is located at 14100 Northwood Dr. It has 414 K-5 students and 22 staff. The School is constructed of brick with hail-resistant windows, metal roofing, is equipped with lightning protection, a sprinkler system, automatic fire alarm, and NOAA Weather Radio. The School does not have a shelter or safe room, hail-resistant roofing, or a backup generator.



Northwood Elementary School

### Flood

Northwood Elementary School is at elevation 1,180 in the Deer Creek drainage basin and is not in a 100-year flood zone. Northwood Elementary has not been impacted by riverine or flash flooding in the past. The School has no vulnerability to and no probability of the Flood hazard.

### Expansive Soils

Northwood Elementary School is situated on Moderate shrink/swell soils. There have been no reports of damages to the school as a result of expansive soils. The School has a Low vulnerability to the Expansive Soils hazard.

### Wildfire

Northwood School is bounded by four-lane OK Highway 3 to the south, by Northwood Rd. to the west, and to the north and east by open land that slopes away to the northeast. The north and east of the School is buffered by a circular drive and landscaping. The School is in a classic wildland/urban interface. The School has not in the past been impacted by the Wildfire hazard. The School's buffering and landscaping, and its location in a Low Wildfire Level of Concern Area, close to a major highway, result in a Low vulnerability to and Low probability of the Wildfire hazard.

### Hazardous Materials

There are no Tier II sites within a half mile of Northwood Elementary School. The School has no vulnerability to and no probability of the Fixed-Site Hazardous Materials hazard.

### Dam Failure

There are no dams whose failure would impact Northwood School. Northwood School has no vulnerability to and no probability of the Dam Failure hazard.

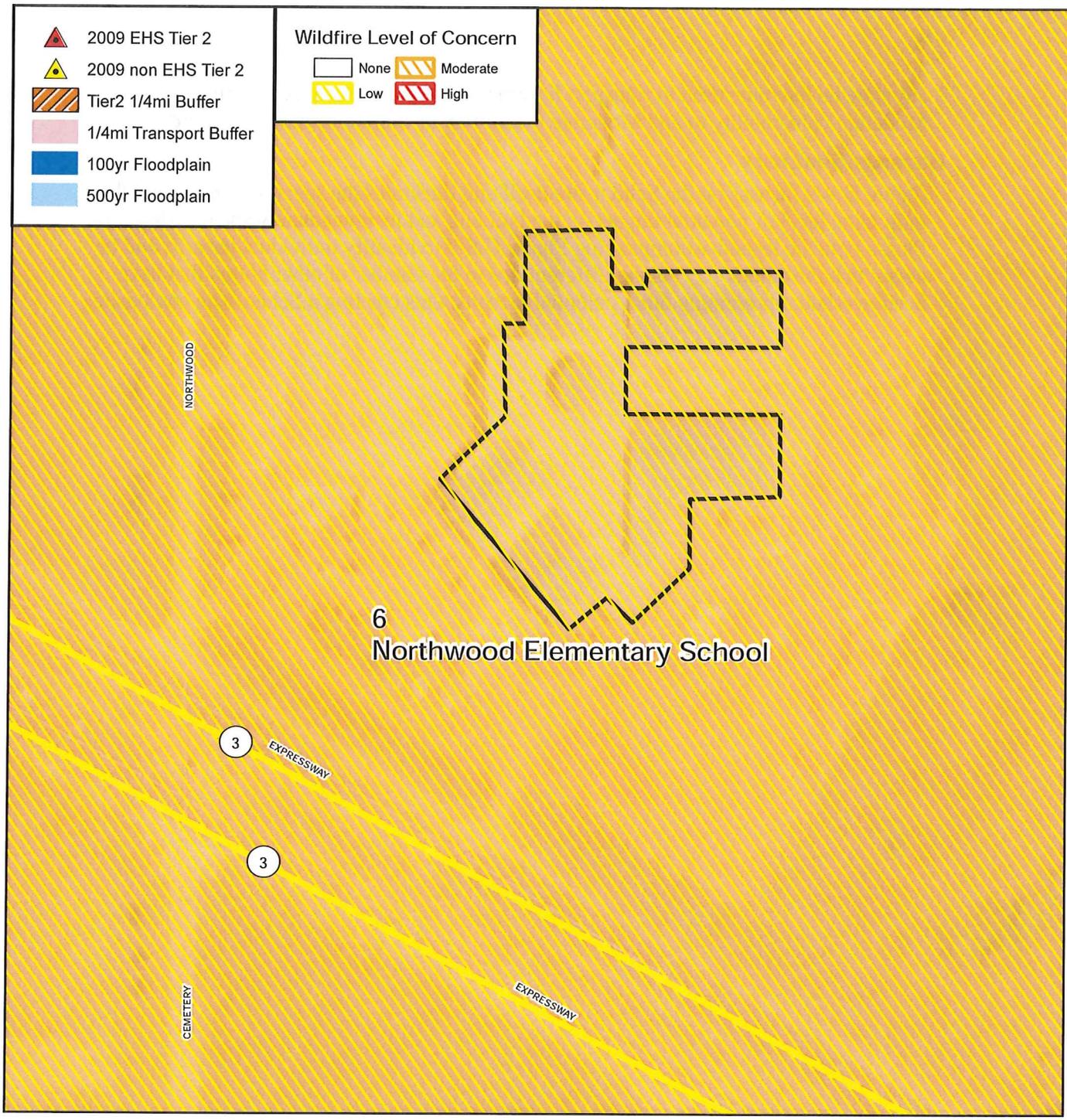
### Transportation

Northwood Elementary School is located on the north side of OK Highway 3. The most likely worst-case transportation event would be a tanker truck accident and hazardous materials release or explosion on OK Highway 3 adjacent to the School. Such event could call for implementation of evacuation or shelter in place procedures at the school. Though the School has not been impacted by this hazard in the past, OK Hwy 3 could at

any time be the route used to transport hazardous materials. Northwood School has a Moderate vulnerability to and Moderate probability of the Transportation hazard.

### **Hazards Summary**

Figure G.9-9 focuses on the School site itself and illustrates the specific hazards and their individual level of potential impact on the building and its immediately surrounding area. Please note the legend accompanying Figure G.9-9 to identify individual hazards and be aware that the colors may appear different due to the number of other colors that have been overlaid representing other potential hazards, thus creating a School-site composite



**LEGEND**

Interstate	<b>Expansive Soils</b>
US Highway	Low
State Highway	Moderate
Turnpike	High
Local Road	Very High
Flanagan & Associates, LLC Planning Consultants	Piedmont Outline



**Figure G.9-9**  
**Northwood Elementary School**  
**Composite**

## 4.7 Piedmont Primary School

Piedmont Primary School is for Pre-K children, and is located at 615 Edmond Rd. NW. The School is comprised of 184 children and 9 staff. The School is constructed of brick with hail-resistant roofs, and is equipped with lightning protection, a sprinkler system, automatic fire alarm, and NOAA Weather Radio. The School does not have a safe room or shelter, or a backup generator.



Piedmont Primary School

### Flood

Piedmont Primary School is situated on high ground at elevation 1,260 with the land sloping away in all directions and is not in a 100-year flood zone. The School has not been impacted by flooding in the past. The School has no vulnerability to and no probability of the Flood hazard.

### Expansive Soils

Piedmont Primary School is situated on Moderate shrink/swell soils. The school has not been impacted by expansive soil damages in the past. The School has a Low vulnerability to and Low probability of the Expansive Soils hazard.

### Wildfire

Piedmont Primary School is bounded by Edmond Rd. and a parking lot to the south, Piedmont High School to the west, and landscaped fields and playgrounds to the north. The School is in a wildland/urban interface. Piedmont Primary School has not been impacted by the Wildfire hazard in the past. The School's buffering and landscaping result in a Low vulnerability to and Low probability of the Wildfire hazard.

### Hazardous Materials

There are no Tier II sites within one mile of Piedmont Primary School. The School has no vulnerability to and no probability of the Fixed-Site Hazardous Materials hazard.

### Dam Failure

There are no dams whose failure would impact Piedmont Primary School. Piedmont Primary has no vulnerability to and no probability of the Dam Failure hazard.

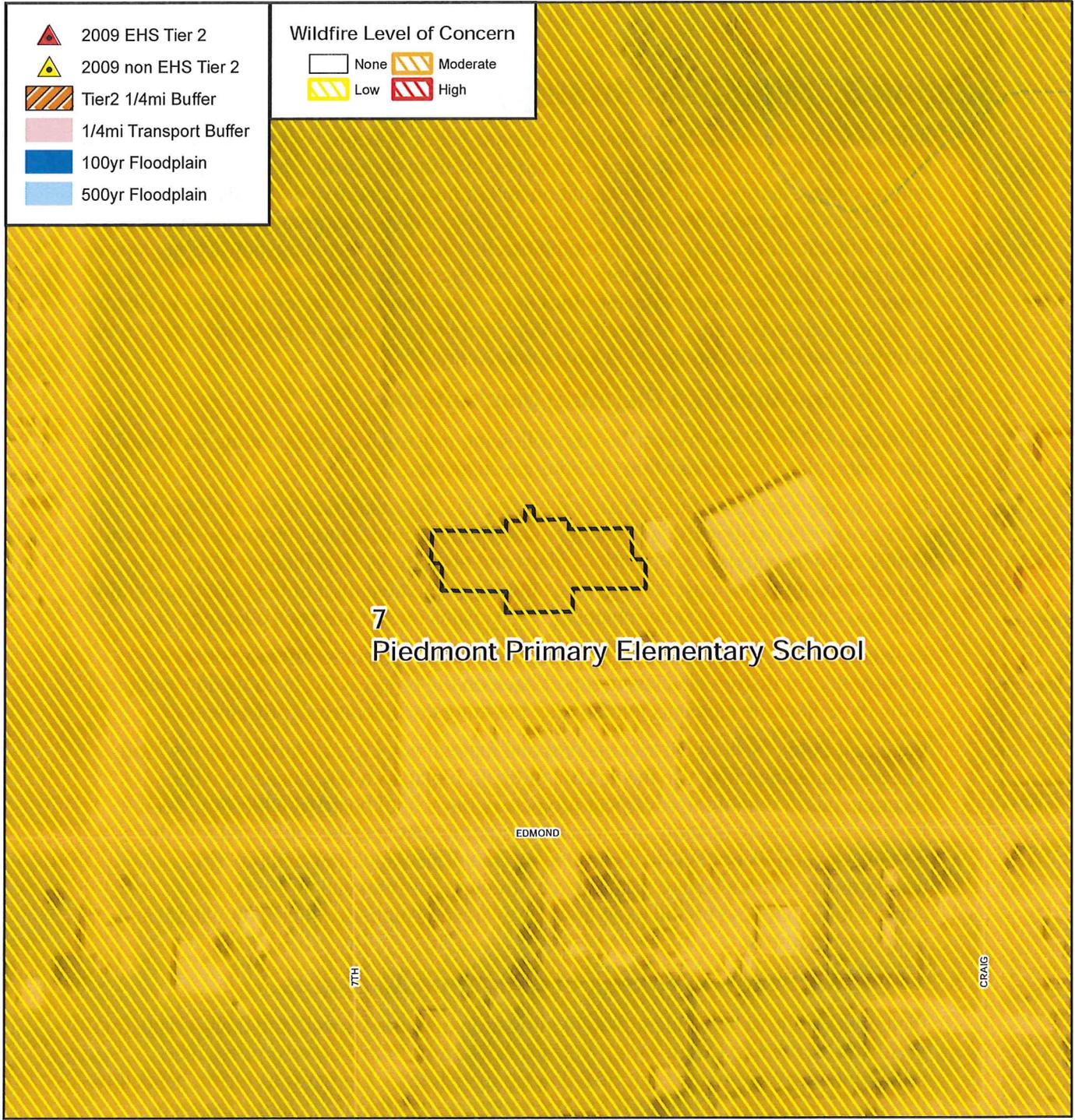
### Transportation

Piedmont Primary School is on Piedmont Rd./OK Highway 9, but in an urbanized area with little industrial traffic. The School has not been impacted by a transportation incident involving hazardous materials in the past. The School has a Low vulnerability to and Low probability of the Transportation hazard.

### Hazards Summary

Figure G.9-10 focuses on the School site itself and illustrates the specific hazards and their individual level of potential impact on the building and its immediately surrounding area. Please note the legend accompanying Figure G.9-10 to identify individual hazards

and be aware that the colors may appear different due to the number of other colors in the map that have been overlaid representing other potential hazards, thus creating a School-site composite.



- 2009 EHS Tier 2
- 2009 non EHS Tier 2
- Tier2 1/4mi Buffer
- 1/4mi Transport Buffer
- 100yr Floodplain
- 500yr Floodplain

- Wildfire Level of Concern**
- None
  - Low
  - Moderate
  - High

**LEGEND**

- Interstate
- US Highway
- State Highway
- Turnpike
- Local Road
- Flanagan & Associates, LLC  
Planning Consultants
- N, S, E, W
- 0 75 150 Feet

**Expansive Soils**

- Low
- Moderate
- High
- Very High
- Water
- Piedmont Outline



**Figure G.9-10**  
**Piedmont Public Schools**  
**Composite**

## Section 5 Mitigation Strategy

This section provides a description of Piedmont Public Schools ability 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 Piedmont Public School incorporates the requirements of the mitigation plan into other planning mechanisms such as emergency action plans or long range plans, when appropriate. Goals and objectives of Piedmont Public Schools 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

Piedmont Public Schools described the following process for implementing its hazard mitigation plan through existing planning mechanisms:

Upon formal adoption of the *Canadian County Multi-Jurisdictional Multi-Hazard Mitigation Plan*, mitigation goals will be incorporated into future versions of Piedmont Public Schools emergency operations plans and procedures. The Piedmont School Superintendant is responsible for overseeing the implementation of the hazard mitigation plan and integration into other planning mechanisms once it has been adopted.

Meetings of the School Board of Education and public hearings will provide an opportunity for district officials to report back on the progress made on the integration of mitigation planning elements into District planning documents and procedures.

Piedmont Public School District updates and maintains a *Capital Improvements Plan*. The superintendent may use this hazard mitigation plan as a reference tool when recommending school improvement projects to the school board of education. As the District continues to develop, the hazard mitigation plan may be integrated into the districts development plans to determine the site of new facilities and prevent development in more hazard prone areas. Structural recommendations in new construction may also be followed in order to create a higher resiliency to natural and man-made hazards.

### 5.2 Prioritization Process of Mitigation Measures

Piedmont Public Schools identified 20 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.