

## WELD COUNTY PLANNING ELEMENT



## Weld County Planning Subcommittee

The following entities participated in the DMA planning process through the Weld County Planning Subcommittee (CPS) both in 2004 and in 2009. More details on the planning process followed and how the County, municipalities and stakeholders participated can be referenced in Chapter 3 of the base plan. Additional details on what local government departments participated and who represented them are listed in Appendix C.

Participating Jurisdictions		Stakeholders
Weld County	Town of Kersey	Centennial Critical Incident Stress Management **
City of Dacono	Town of LaSalle	AIMS Community College**
City of Evans	Town of Mead	UCFRA – Greeley**
City of Fort Lupton	Town of Milliken	Colorado Division of Emergency Management**
City of Greeley*(***)	Town of New Raymer	Loup Reservoir Company
Town of Ault	Town of Nunn***	BBWI-Fort Saint Vrain
Town of Firestone	Town of Pierce(***)	South Weld Victim Services
Town of Frederick	Town of Platteville	
Town of Garden City	Town of Severance	
Town of Gilcrest	Town of Windsor	
Town of Grover***	Weld County RE-4, RE-6 and RE-8	
Town of Hudson	School Districts	
Town of Johnstown	Platte Valley Schools	
Town of Keenesburg	Platte Valley Fire District	

\*Changes to participation on the planning subcommittee occurred during the 2009 update. In 2004 the City of Greeley participated with the Larimer County – Loveland – Fort Collins - Greeley hazard mitigation plan. Greeley participated with Weld County in 2009 and is now incorporated into this plan. The Town of Erie straddles both Weld and Boulder Counties and participated in the 2008 development of the Boulder County Hazard Mitigation plan. That planning effort includes the portions of the town in Weld County.

\*\* Stakeholders that attended planning meetings

\*\*\* New participants in 2009

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## County Profile

Weld County is in the northeast region of the State, adjacent to the Wyoming border. The land area of Weld County is 3,992 square miles, which makes it the largest in the Planning Area and the third largest in the State. According to the 2000 U.S. Census, the population for Weld County was 155,582. The population change since 2000 is +18.9%. The 2008 estimate for the population of the County is 236,857, which is also the largest in the planning area, and the ninth most populous in the State. The average population density is 59.3 people per square mile. Weld County grew at a rate of 23.8% between 1990 and 2000. Between 2000 and 2008, the population nearly doubled in size, increasing 52.3%, indicating the most rapid population growth in the planning area. There are 90,292 housing units in the County and the housing density is 22.6 units per square mile. According to the 2005-2007 American Community Survey 3-Year Estimate, the average age in the County is 31.0 years. 8.3% of the population is under 5 years of age and 8.0% of the population is 65 or older. The average household size is 2.85 and the average family size is 3.32. 82.3% of the population (over the age of 25) is a high school graduate or higher and 24.3% of the population holds at least a bachelor's degree. 11.0% of the population (over the age of 5) claims some disability status and 18.4% of the population speaks a language other than English at home. 9.1% of families live below poverty level, as do 13.9% of individuals. A base map of the County can be referenced in Figure 1.

Weld County terrain is relatively flat; the northeastern portions of the county contain the extensive Pawnee National Grassland and the Pawnee Buttes, which jut 250 feet above the surrounding terrain. The county is served by two interstate highways: I-25 (US 87) runs through the southwestern corner and I-76 from the south central edge northeastward to the Morgan county border. Other major roads include US 85 and US 34, which intersect near Greeley, and State Highway 14, which runs through Ault. Many of Weld County's 32 incorporated cities (8) and towns (24) are along these highway corridors.

### *The City of Greeley*

Greeley is the largest city both in Weld County and in the entire planning region. As such, in many ways Greeley represents a unique element in the disaster identification and vulnerability assessment process. In order to best address the variables presented by the unique considerations of this city, as well as solidify the sense of a regional planning effort for the rest of the planning document, certain elements of this planning element will illustrate both a county-wide picture and a Greeley-specific picture. This allows for planners to evaluate both the overall impacts and vulnerabilities and to identify areas of potential aberration due to differences in population or development trends.

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As of 2008, the City of Greeley has an estimated population of 91,492. This number is slightly lower than the official population reconciliation provided by City of Greeley (94,632), however it is the population from which HAZUS and other estimation methodologies were drawn and will be referenced throughout this document. According to the 2005-2007 American Community Survey 3-Year Estimate, the average age in Greeley is 28.1 years, with 6.8% of the population under the age of 5, 23.9% under the age of 18, and 9.4% over the age of 65. The average household size in the City is 2.78 with an average family size of 3.38. Recent estimates of spoken language is unavailable, but the 2000 Census records 10.3% of the population at that time reported their ability to speak English as less than “very well”. 20.9% of individuals in the City under the age of 18 live at or below the poverty line, and 12.9% of individuals over the age of 65 do as well. 11.7% of all families in the City also live at or below poverty. While these numbers reflect a slight aberration in the individual status due to the presence of the University of Northern Colorado (where below-poverty status may be assigned to students not living at home, but who are not actually living in poverty conditions), this is still a staggering rate and represents the highest ratios in the planning area. 77.9% of the population over the age of 25 is a high school graduate and 26.0% of the population holds at least a bachelor’s degree. 11.7% of the population over the age of five claims some disability status.

Greeley serves as the County Seat and also houses many of the major municipal buildings, such as the County Courthouse, County Jail, and a combined City of Greeley/Weld County Emergency Operations Center. Greeley is located near the confluence of the South Platte and Cache la Poudre rivers. The Great Western Railway of Colorado and the Union Pacific Railway serve the Greeley community, and other major transportation routes include State Highways 34 and 85. Interstate Highway 25 is located a short distance away. The Greeley-Weld Airport provides a hub for airport travel, and the City also provides local transportation.<sup>1</sup> The city is also a major route on the Greyhound bus routes. Greeley is home to both AIMS Community College and the University of Northern Colorado (UNC). AIMS Community College reported nearly 5,000 degree seeking students during the 04-05 school year.<sup>2</sup> UNC reported nearly 12,000 enrolled students for the fall semester of 2008, including students from 48 states, three territories, and 42 countries.<sup>3</sup>

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<sup>1</sup> Fort Collins Office of Emergency Management, “Northern Colorado Regional Hazard Mitigation Plan” July 200. p 25.

<sup>2</sup> AIMS Community College Institutional Research and Effectiveness Division Website. Available online at <http://www.aims.edu/about/ire/datadirectory/index.php> last accessed October 1, 2009.

<sup>3</sup> University of Northern Colorado “About the University” Website. Available online at [http://www.unco.edu/about\\_unc/](http://www.unco.edu/about_unc/) last accessed October 1, 2009.

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## Hazard Identification and Summary

Weld County's planning team identified the hazards that affect the County and summarized their frequency of occurrence, spatial extent, potential magnitude, and significance specific to Weld County. This information is presented in Table 1. A detailed description of each hazard can be found in Section 4.2 Hazard Profiles.

**Table 1. Weld County Hazard Summary**

Hazard	Geographic Extent	Probability of Future Occurrences	Magnitude/Severity	Significance
Biological Hazards				
Pestilence	Extensive	Occasional	Limited	Medium
Plague*	Limited	Likely	Limited	Medium
Blizzards & Severe Winter Storms	Extensive	Likely	Critical	High
Dam Failures & Levee Failures	Limited	Likely	Limited	High
Drought	Extensive	Likely	Critical	High
Earthquake	Limited	Occasional	Limited	Low
Flooding	Significant	Likely	Critical	High
Fog	Significant	Likely	Negligible	Low
Hailstorms	Extensive	Highly Likely	Limited	Medium
Land Subsidence	Limited	Likely	Negligible	Low
Landslides	Limited	Occasional	Negligible	Low
Lightning	Extensive	Highly Likely	Limited	Medium
Noxious Weeds	Extensive	Highly Likely	Negligible	Low
Straight-Line Winds	Extensive	Highly Likely	Limited	High
Temperature Extremes	Extensive	Highly Likely	Limited	Low
Tornados	Extensive	Likely	Critical	High
Wildland & Grassland Fires	Extensive	Highly Likely	Limited	High

\* Some zoonotic hazards have higher or lower ratings than those reflected here, based on individual datasets.

#### Geographic Extent

Limited: Less than 10% of planning area

Significant: 10-50% of planning area

Extensive: 50-100% of planning area

#### Probability of Future Occurrences

Highly Likely: Near 100% chance of occurrence in next year, or happens every year.

Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.

Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.

Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

#### Magnitude/Severity

Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths

Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability

Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability

Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

#### Significance

Low: minimal potential impact

Medium: moderate potential impact

High: widespread potential impact

## Weld County History of Recorded Natural Hazard Losses

In the 2008 State Hazard Mitigation Plan, the County identifies winter storms, flooding, tornado, and drought as the highest hazard risks to the County. August 6, 2008 brought major flooding to the cities of Greeley and Evens, damaging homes, business (including Greeley City Hall), caused power shortages to 2,700 people, hampered emergency access, caused enormous sinkholes in streets, and washed out several roads. In May of 2008, a tornado that touched down just west of Greeley and damaged the town of Windsor resulted in a Presidential Disaster Declaration, one fatality, over \$147 million in property damage, and became the new tornado event of record for the region. In early April 1999, approximately \$21 million in damages occurred along the Front Range in Weld County, following winds of up to 116 miles per hour. A summary of the past hazard events are captured in Table 2 and in the text that follows.

**Table 2. Historic Hazard Events**

Date	Event	Location	Damages	Other Info	Data Source
1899, 1901, '03, '21	Floods	Windsor			Windsor Police/Sr. Center
July 31, 1905	Tornado			Tore walls off the IOOF & Masonic Halls, 3 homes, 1 new brick building	Windsor Police/Sr. Center
1907	Dam Failure	Chambers Lake, Windsor			Windsor Police/Sr. Center
1905, '13 & '20	Blizzards				Windsor Police/Sr. Center
1923	Flood	Poudre River (At Windsor)		Bridges out, phone lines down, no mail	<i>Highlights in the History of Windsor, CO (Roy Ray)</i>
1930's	Drought Dust Bowl				
January 2-4, 1949	Blizzard	Weld County		People isolated, cattle died, roads/schools closed, food/supply shortages	Greeley Tribune/Greeley Journal/ Windsor Beacon Police Dept., Sr. Center
1950's	Flood	Platteville/Gilcrest/Evans		Trailer Parks	
May 15, 1952	Tornado		\$25K	F3, 5 injuries	NCDC
1960	Tornado				
May 8, 1965	Tornado		\$25K	F2	NCDC
May 22, 1965	Tornado		\$25K	F1	NCDC
May 23, 1968	Tornado		\$25K	F1, 1 injury	NCDC

Date	Event	Location	Damages	Other Info	Data Source
1973	Dam Failure Fed. Dec.	Kersey Latham Dam	>\$1M	Latham Dam	Town FEMA
May 5-6, 1973	South Platte River Basin Flood	Along entire South Platte River Basin	\$388 M		Weld County Public Works
June 4, 1976	Tornado		\$25K	F2	NCDC
July 4, 1976	Tornado		\$25K	F1	NCDC
Late 1970's	Sheet Flow Flooding	Milliken			
1979	Blizzard				
May 29, 1980	Tornado		\$250K	F1, 1 mile wide	NCDC
1980	Grasshoppers			State Dec	CO-OEM
1980	Dam Failure	Prospect Dam	Unknown		CO-OEM
June, 1981	Tornado	Fort Lupton	\$500K	Buildings	Ft. Lupton Police Dept.
1982	Winter Storm			State Dec	CO-OEM
July 10, 1983	Tornado		\$25K	F1	NCDC
April 19, 1984	Tornado		\$25k	F1	NCDC
May 18, 1984	Tornado		\$25K	F2	NCDC
July 26, 1985	Tornado		\$25K	F1, 3 injuries	NCDC
1986	Snow			State Dec	O-OEM
July 7, 1987	Tornado		\$25K	F2	NCDC
April 19, 1988	Tornado		\$25K	F1	NCDC
June 5, 1988	Tornado		\$250K	F2, 50 yards wide	NCDC
June 9, 1990	Tornado		\$25K	F2	NCDC
August 17, 1993	T-Storm/Wind	Fort Lupton	\$5K		NCDC
March 23, 1994	High Winds	Front Range	\$5K	77 MPH	NCDC
June 4, 1994	T-Storm/Wind	Fort Lupton	\$5K		NCDC
July 16, 1994	Hail	Eaton	\$500K to property \$50K to crops	2.5" hail, Buildings, Crops, Vehicles	NCDC
July 24, 1994	Flash Flood	Nunn	\$5K	Basements	NCDC



Date	Event	Location	Damages	Other Info	Data Source
August 16, 1994	Microburst	Hudson-Keenesburg	\$450K	Mobile Homes, 20 power poles, 2 Public Service 115K volt Towers	NCDC
February 2, 1995	High Winds	Larimer/Weld line	\$20K	100MPH, 2 injuries	NCDC
June, 1995	Flood	LaSalle Gilcrest Evans County	\$15,300 \$8,000 \$16,000 \$360,046  \$50,000	Town Hall  pumping Roads/culverts 85 roads PW Hail dam.	CWCB/CO-OEM
June 6, 1997	Flood (Fed. # 1186)	Weld Co (PA only)	\$7,600,862 Ag Damage FEMA PA paid \$382,709	24,250 acres (corn, onions, sugar beets)	FEMA/CO-OEM
June 15, 1997	Tornado	Dacono	\$50K	F1, Hit Colo. Nat'l Speedway; Damaged grandstands/concessions	NCDC
July 8, 1997	Lightning	Roggen	\$100K	Fire burned truck & shed	NCDC
9/20/1998	Lightning	Windsor	\$500K	Fire burned ranch/ home	NCDC
1998	Flooding	Poudre River			
February 2, 1999	High Winds	Front Range	\$3M	127 MPH	NCDC
April 8, 1999	High Winds	Front Range	\$7.2M	115 MPH	NCDC
April 9, 1999	High Winds	Front Range	\$13.8M	98 MPH, 76 @ Raymer	NCDC
1999	Floods Fed #1276		\$471,866 public \$ \$95,110 PA \$36,825 TH \$18,479 IFG \$64,200 SBA \$33,868 FhwA \$101,751 NRCS	55 homes  FEMA says \$165,310 w/o Greeley  EWP	CO-OEM CWCB FEMA
July 27, 1999	Lightning	Hudson	\$100K	Farm equipment burned	NCDC
April 20, 2000	Lightning	Windsor	\$200K		NCDC
2000	Drought				(USDA Dec)
April 2001	Winter Storms Fed #1374		\$3.1M	PA only REA Damage	FEMA & NCDC

Date	Event	Location	Damages	Other Info	Data Source
May 20, 2001	High Winds		\$3.4M	82 MPH, 6 injuries	NCDC
July 13-14, 2001	Severe Weather	Greeley, Evans, Berthoud	16 homes, 3 Businesses, \$1M Ag Damage	Flood/hail	
4/23-8/6/02	Wildfires	Weld Co FEMA/IA	\$5,896	TH	
2002	Drought	Statewide	\$1 Billion		
2003	West Nile Virus	County-wide		328 human cases reported	CDPHE
3/17/2003	Winter Storm	South Weld County	\$62 Million	Over 30" of snow.	CDEM NCDC
8/10/2004	Hail	Eaton	\$2 Million	2"	NCDC
7/5/2005	Hail	New Raymer		4.25"	NCDC
2006	Drought	County Wide			USDA
Dec 2006	Blizzard	County Wide	800,000 County and Municipalities	Weld did not receive Federal Assistance due to not meeting record snowfall	Weld OEM, CDEM
5/22/2008	Tornado	County Wide	\$147 million	Federal Declaration Responder Costs / Gov Costs 2.2 mil. 1 death, 78 injuries.	State DEM, FEMA, Weld OEM NCDC
8/6/2008	Flooding	Greeley and Evans	\$75K		State of Colorado 2008 Flood Documentation Report

(NCDC Filters Applied: Tornadoes  $\geq$  F1; Hail  $\geq$  2"; Wind  $\geq$  75 MPH)

### Hazard History in Weld County from 1950-2008 (58 years):

#### Dams:

- 8 Class I (High Hazard) Dams
- 17 Class II (Significant Hazard) Dams
  - Known Failures:(There have been 3 dam failures in Weld County and one failure in Larimer County that impacted the City of Greeley.)
  - All Class I Dams in Colorado have emergency action plans in place.
- Levees: 6, 2 in the unincorporated County; one in City of Evans; one in Nunn; one in Erie and one in Town of Frederick, one in Nunn; no known failures. Levees in Unincorporated Weld County include the Weld County 58 levee (shown on FBFM Panel #

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80266-0007), US Highway 34 levee (shown on FBFM Panel # 080266-0010). The levees in Nunn are shown on FBFM Panel # 08088-0001B. The levee in Evans is shown on FBFM Panel # 080182-0001. The levee in Erie is shown on FIRM Panel # 080181-0016E. The levee in Fredrick is shown on FIRM Panel # 080244-0001B. Additionally, there are also numerous railroad and roadway embankments that act as levees in Weld County. If one of those embankments were to fail, there would likely be a high risk for property damage.

**Drought Incidents:** 6 (regional occurrence)

**Dust Storm:** 0

**Earthquake:** No damaging events; One recorded epicenter about 10 miles east of Kersey, occurred May 26, 1969, Richter Magnitude 3.5.

**Extreme Temperatures:**

- Highest Recorded Temperature in County: 104°
- Lowest Recorded Temperature in County: -25°
- Severe Cold Incidents: 2

**Flood and Flash Flooding:** 25

**Hailstorms:** 52

**Landslide:** There are sporadic, minimal areas of suspected significant risk in the County. The western border parallels areas of suspected significant risk in Larimer County.

**Lightning:** Averages 15,500 strikes per year, 0 reported injuries and 8 reported deaths from 1980-2005.

**Severe Windstorms:** 244

**Severe Winter Weather:** 37

**Subsidence:** Isolated but significant areas of risk in the central portion of the County and in the southwestern corner. Subsidence incidents have occasionally impacted the I-25 Corridor in southwest Weld County, and the City of Erie (see hazard profile in Base Mitigation Plan).

**Tornadoes:** (F1 or greater) 100 (Any size) 231.

**Wildfires:** There have been numerous wildfires in the planning area sparked by human causes (campfires, discarded cigarette butts, arson, etc.) and from lightning, as well as fires caused by sparks from rail cars. Events are generally limited in size but cause property damage to fields. The potential for interface between wild lands and urban areas (the WUI) is growing as the county increases in population.

**West Nile:** 612 human illnesses, 7 human fatalities through 2008

**Total reported injuries:** 115 + 612 West Nile cases

**Total reported fatalities:** 13 + 7 West Nile cases

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## Weld County Vulnerability Assessment

The intent of this section is to assess Weld County's vulnerability separate from that of the planning area as a whole, which has already been assessed in Section 4.3 Vulnerability Assessment in the main plan. This vulnerability assessment analyzes the population, property, and other assets at risk to hazards ranked of medium or high significance that may vary from other parts of the planning area. For more information about how hazards affect the Region as a whole, see Chapter 4 Risk Assessment in the main plan.

### Assets at Risk

This section identifies Weld County's assets at risk, including values at risk, critical facilities and infrastructure, historic assets, economic assets, and growth and development trends. Two data sources are used: assessed valuations, as available, and HAZUS-MR3 databases. The Total Values at Risk list below includes data from the August 2009 Abstracts by Entity from the Weld County Assessor's Office. Only actual Town/City values from were used, while fire and other special districts were excluded. The HAZUS building exposure (includes building counts, value of building structure and contents) is shown in Table 4. The City of Greeley notes that these numbers are probably too low, as the 2008 housing counts alone are nearly 36,000 structures. However, as with population, the HAZUS data is utilized in the analysis for consistency with the rest of the planning effort and pending final availability of updated data from the participants in the next planning effort.

### Total Values at Risk from Hazards: (2009 Assessor Data):

- **County:** \$1,147.492M in Residential Property
  - \$711.373M in Commercial Property
  - \$282.321M in Industrial Property
  - \$101.029M in Agricultural Property
- **City of Greeley:** \$990.619M in Total Assessed Value
- **Town of Ault:** \$10.931M in Total Assessed Value
- **City of Dacono:** \$36.559M in Total Assessed Value
- **City of Evans:** \$133.725M in Total Assessed Value
- **Town of Firestone:** \$135.183M in Total Assessed Value
- **City of Fort Lupton:** \$92.365M in Total Assessed Value
- **Town of Frederick:** \$178.515M in Total Assessed Value
- **Town of Garden City:** \$6.184M in Total Assessed Value

- *Town of Gilcrest:* \$5.810M in Total Assessed Value
- *Town of Hudson:* \$15.230M in Total Assessed Value
- *Town of Johnstown:* \$83.798M in Total Assessed Value
- *Town of Keenesburg:* \$8.028M in Total Assessed Value
- *Town of Kersey:* \$13.674M in Total Assessed Value
- *Town of LaSalle:* \$14.865M in Total Assessed Value
- *Town of Mead:* \$67.816M in Total Assessed Value
- *Town of Milliken:* \$81.324M in Total Assessed Value
- *Town of New Raymer:* \$4.488M in Total Assessed Value
- *Town of Platteville:* \$20.768M in Total Assessed Value
- *Town of Severance:* \$30.319M in Total Assessed Value
- *Town of Windsor:* \$281.706M in Total Assessed Value

**Table 3. Weld County Parcel Exposure**

Type:	Parcel Count:	Value:
Residential	165,620	1,147,492,000
Commercial	10,995	711,373,000
Industrial	483	282,321,000
Agricultural	2,009,526 (acres)	101,029,000
Government/Non-Profit	4,529	303,768,710
<b>Total</b>	<b>2,191,153</b>	<b>2,545,683,710</b>

Source: Colorado Department of Local Affairs – 2009 Weld County Abstract of Assessment (CRS 39-5-123)

**Table 4. Building Exposure**

City	Population	Building Count	Building Exposure (\$)	Building Content (\$)	Total Exposure (\$)
Unincorporated	38,796	19,832	2,365,367,000	1,559,051,000	3,924,418,000
City of Greeley	91,492	26,790	4,667,212,000	3,181,382,000	7,848,594,000
Ault	1,432	693	67,226,000	44,797,000	112,023,000
Berthoud	78	57	12,988,000	12,581,000	25,569,000

City	Population	Building Count	Building Exposure (\$)	Building Content (\$)	Total Exposure (\$)
Brighton	158	87	23,621,000	20,738,000	44,359,000
Dacono	3,047	1,314	100,718,000	64,029,000	164,747,000
Eaton	2,694	1,322	175,761,000	112,942,000	288,703,000
Erie	2,114	1,040	136,549,000	93,369,000	229,918,000
Evans	10,445	3,741	495,037,000	306,986,000	802,023,000
Firestone	2,199	973	148,761,000	104,839,000	253,600,000
Fort Lupton	6,863	2,558	297,501,000	208,402,000	505,903,000
Frederick	2,592	1,250	240,277,000	209,490,000	449,767,000
Garden City	357	154	33,004,000	28,916,000	61,920,000
Gilcrest	1,166	438	53,066,000	30,173,000	83,239,000
Grover	153	233	8,805,000	5,170,000	13,975,000
Hudson	1,607	722	77,229,000	45,184,000	122,413,000
Johnstown	4,098	1,967	241,639,000	146,771,000	388,410,000
Keenesburg	856	591	55,246,000	34,354,000	89,600,000
Kersey	1,395	603	96,529,000	64,891,000	161,420,000
La Salle	1,861	842	111,712,000	68,376,000	180,088,000
Lochbuie	2,082	713	46,644,000	26,026,000	72,670,000
Longmont	74	49	14,588,000	11,402,000	25,990,000
Mead	1,936	820	139,812,000	95,221,000	235,033,000
Milliken	2,993	1,373	157,057,000	95,467,000	252,524,000
New Raymer	91	126	4,823,000	2,779,000	7,602,000
Northglenn	12	6	610,000	306,000	916,000
Nunn	473	257	17,945,000	11,025,000	28,970,000
Pierce	884	385	37,645,000	22,119,000	59,764,000
Platteville	2,370	983	124,061,000	80,394,000	204,455,000
Severance	684	280	37,453,000	21,890,000	59,343,000
Windsor	9,722	4,149	681,792,000	447,555,000	1,129,347,000
<b>Total</b>	<b>180,936</b>	<b>74,418</b>	<b>10,680,583,000</b>	<b>7,162,664,000</b>	<b>17,843,247,000</b>

Source: HAZUS MH MR3

## Critical Facilities and Infrastructure

An inventory of critical facilities in Weld County is provided below in Table 5. The table includes data from available statewide GIS resources (locations are illustrated in Figure 1) supplemented with information from the Weld County CPS.

**Table 5. Critical Facilities Inventory**

Facility Type	Number of Sites	Est. Replacement Value	Capacity or Enrollment	Additional Information
<b>Essential Infrastructure</b>				
Airports (paved)	3			
Communications Towers	2			2- Hudson
Correctional Facilities	16		1,250	Hudson, under construction
Electrical Generation/Distribution	3			
Media Outlets	4			
National Guard	1			
Public Safety Communications Centers	1			
Public Safety Facilities	20			
Police Stations	23			
EMS/Ambulance Stations	5			1-Hudson
Fire Stations	38			2-Hudson
EOCs	4			1-Hudson
Town/City Halls/Courthouse	25			1-Hudson
Wastewater Treatment	11			2-Hudson
Water Utilities/Treatment	1			1-Hudson
Childcare Centers				
Schools	102			1-Hudson
Shelters (inc. during disasters)	19			2-Hudson
Hospitals	2			

Facility Type	Number of Sites	Est. Replacement Value	Capacity or Enrollment	Additional Information
Clinics	62			
Nursing Homes/Assisted Living Centers	24			1-Hudson
<b>Natural, Cultural and Historic Resources</b>				
Community Centers	2			
Historic Properties	34			According to the State Register
<b>Hazardous Materials</b>				
Extremely Hazardous Substances	35			1-Hudson
Hazardous Chemicals storage	35			1-Hudson

## Natural and Historic Assets

- **Unincorporated Weld County:**
  - Dearfield Townsite (CO 34, 11 miles west of Wiggins)
  - Keota Stone Circles Archaeological District
  - (West) Stoneham Archaeological Site
- **City of Greeley:**
  - First Baptist Church, Glazier House, Greeley High School, Old Greeley High School, School District 6 Administration Building, Greeley Masonic Temple, Greeley Union Pacific Railroad Depot, Meeker Memorial Museum, Missile Silo Museum, Nettleton-Mead House, SLW Ranch, Weld County Courthouse, White-Plumb Farm, Joseph A. Woodbury House,
- **Ault:** Ault High School
- **Berthoud:** Little Thompson River Bridge
- **Briggsdale:** Ball, Elmer and Etta Ranch
- **Eaton:** Eaton High School
  - Amanda K. Alger Memorial Methodist Episcopal Church/Wilt Memorial Church/First Methodist Episcopal Church
  - Aaron James Eaton House
- **Fort Lupton:** Ottesen Grain Company Fed Mill
- **Grover:** Depot/Museum, Grover Grain Elevator, Hotel Grover



- 
- ***Johnstown:*** Anderson Barn (Carlson Barn), Brush Barn, Parish House
  - ***Keenesburg:*** Prospect Valley School
  - ***Kersey:*** Jurgens Site
  - ***Longmont:*** Sandstone Ranch
  - ***Lucerne:*** Milne Farm
  - ***Mead:*** United Church of Christ of Highlandlake
  - ***Milliken:*** Daniels School
  - ***Nunn:*** Municipal Hall Northern Drylanders Museum
  - ***Platteville:*** Fort St. Vrain Monument, Fort Vasquez Site
  - ***Windsor:*** Windsor Mill & Elevator Company Building, Windsor Town Hall, First United Methodist Church

### **Development Trends in Weld County**

The county is growing rapidly along the I-25 corridor and in the regions closest to the Denver Metro area, though the eastern and northern portions of the County are still predominantly rural. The 2007 Census of Agriculture indicates there are 3,921 farms in the County, with 2,088,715 total acres of farmland. This equals 81.7% of the County's total land area. Though this is the smallest percent of land area dedicated to farmland in the planning area, it is still the majority of the County, indicating that the rapid population growth is concentrated in towns and cities.

- Additional growth along the Hwy 85 and Hwy 34 corridors.
- The Weld County Planning Department has approved an average of 30 new subdivisions each year for the past 3 years in the unincorporated areas of the county.
- According to the planning team, there is development in areas of the County that could be flood prone, but the lack of available FEMA flood maps makes it difficult to regulate that development.

### ***The City of Greeley***

The 2060 Greeley Comprehensive Plan projects about a 1% of annual population growth through 2010 and continues this low rate until the job and housing markets rebound, then increases to an average of 2.2% in subsequent years. Greeley anticipates significant residential and industrial development along the Poudre River over the next 20 years. The Poudre River Flood Study from the eastern edge of the City of Windsor to the Poudre/Platte River confluence has been completed by the Army Corps and is waiting adoption by FEMA in 2010. In addition, over the next 20 years significant additional development is anticipated in a two mile stretch of the Sheep

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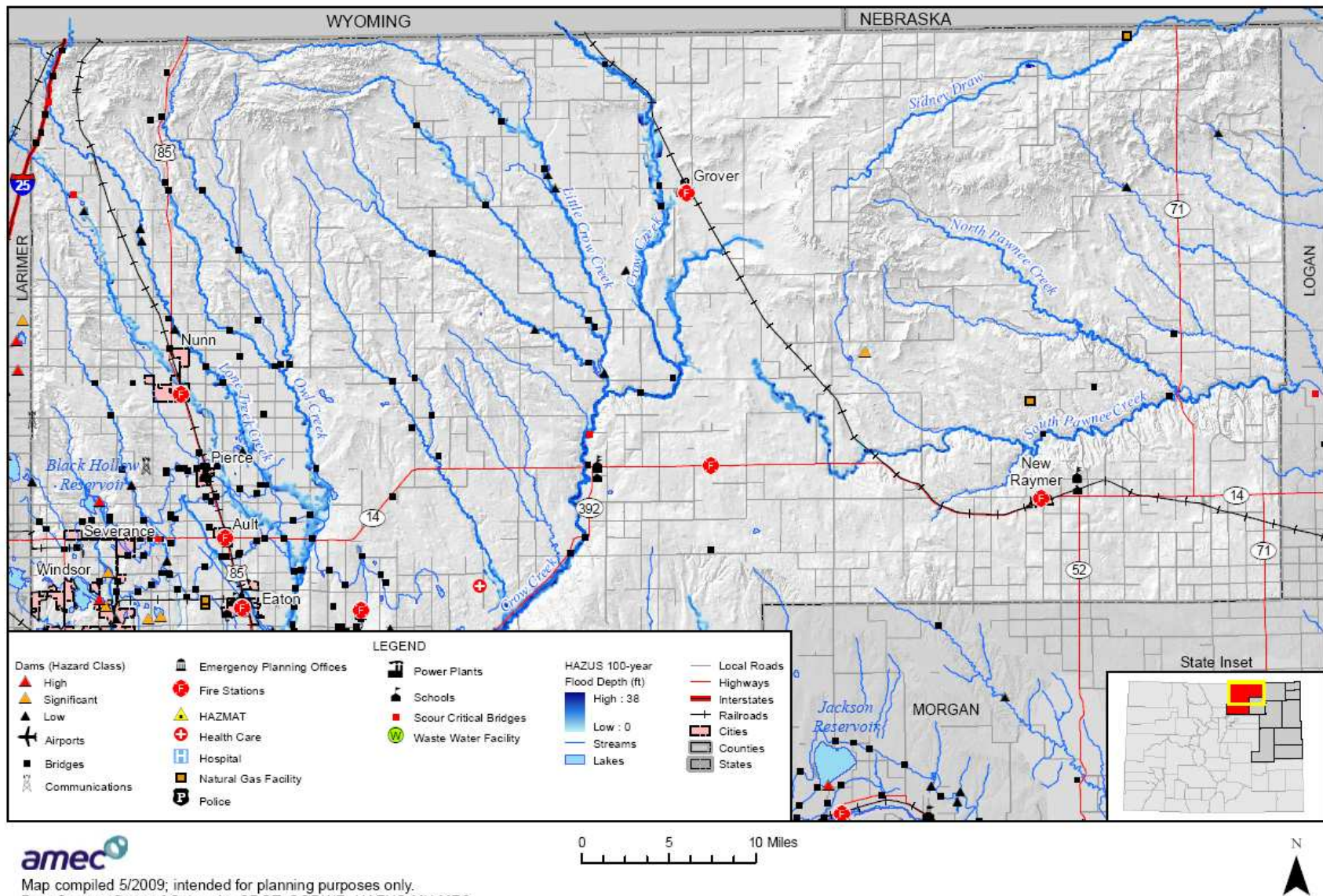
Draw floodplain and over 1,700 dwelling units, plus commercial and industrial development has been conceptually approved in the Poudre Ridge Development which is split by the Coal Bank Creek floodplain.

## **Floodplain Vulnerability Assessment**

The 2008 State Hazard Mitigation Plan estimates that there are 4,485 people, 144 1-4 family structures and 28 other structures in the County floodplains. Weld County was identified in the State flood risk assessment as High Risk, based upon the floodplain population, the number of structures at risk, and the number of dams. This is the only county within the planning area assessed as High Risk.

The best available flood data for Weld County was generated by HAZUS-MH MR3, FEMA's software program for estimating potential losses from disasters. The 100-year floodplain was generated for major rivers and creeks in the county (those with a 10 square mile minimum drainage area). A USGS 30 meter resolution digital elevation model (DEM) was used as the terrain base in the model. HAZUS-MH produces a flood polygon and flood-depth grid that represents the base flood. While not as accurate as official flood maps, such as digital flood insurance rate maps, these floodplain boundaries are suitable for use in GIS-based loss estimation. Potential losses to the county were analyzed with HAZUS-MH, based on Census Block-based buildings and population inventory and the flood hazard data. The following discussion, maps and tables presents the results of the loss estimation in more detail.

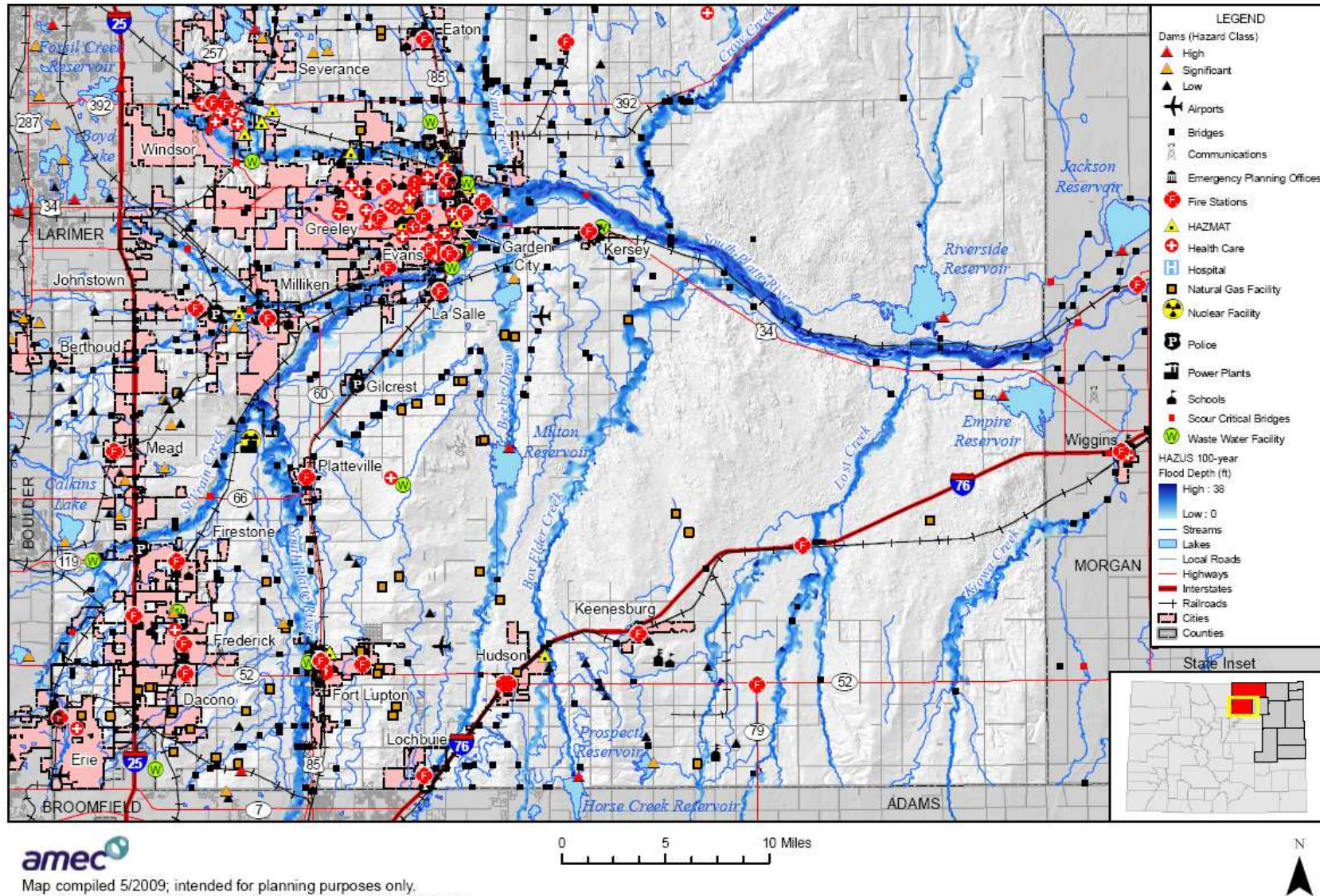
Figure 1 North Weld County HAZUS 100-year Floodplain and Critical Facilities Map



Map compiled 5/2009; intended for planning purposes only.  
Data Source: State of Colorado, CDOT, CODWR, HAZUS-MH MR3

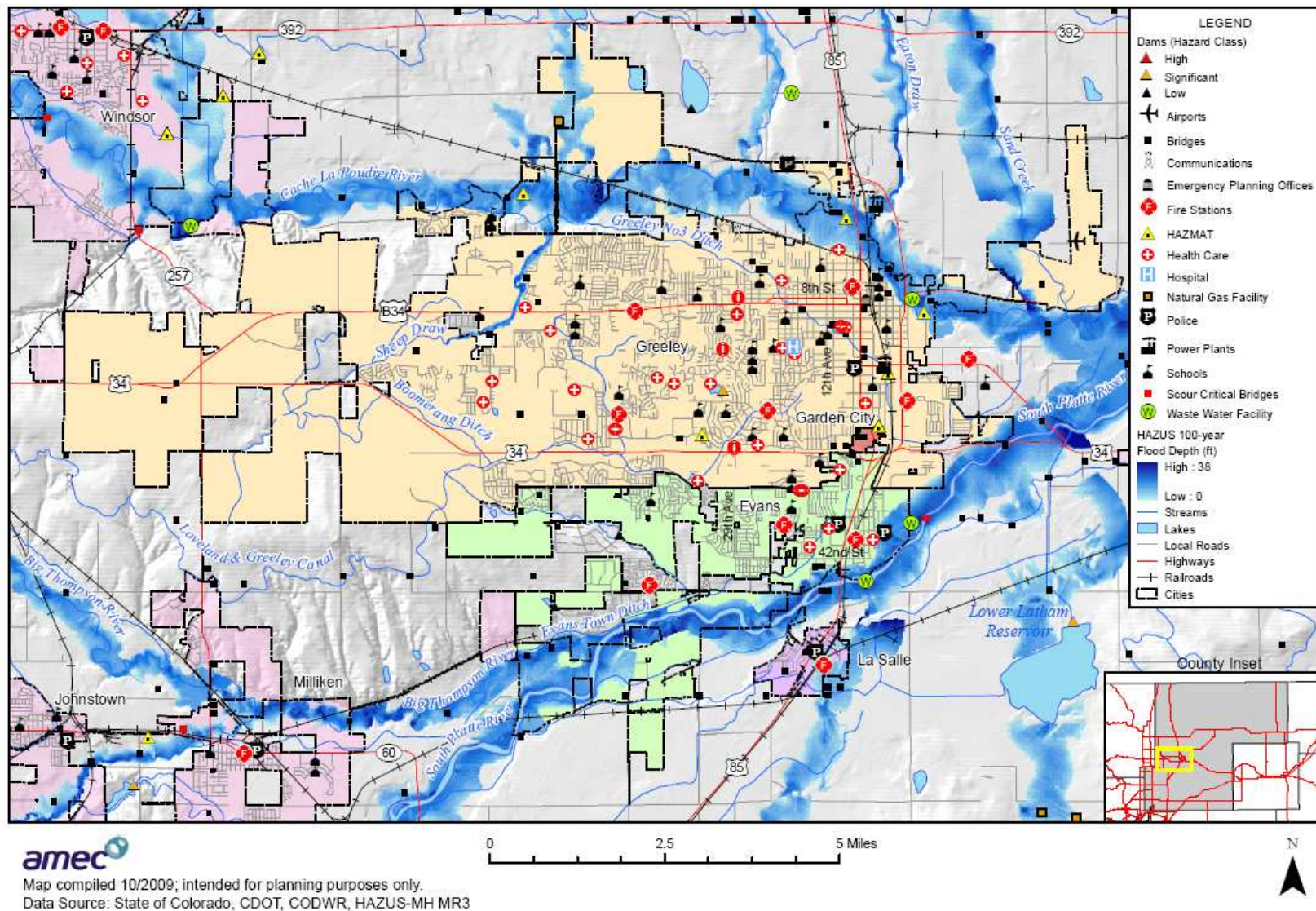


Figure 2 South Weld County HAZUS 100-year Floodplain and Critical Facilities Map



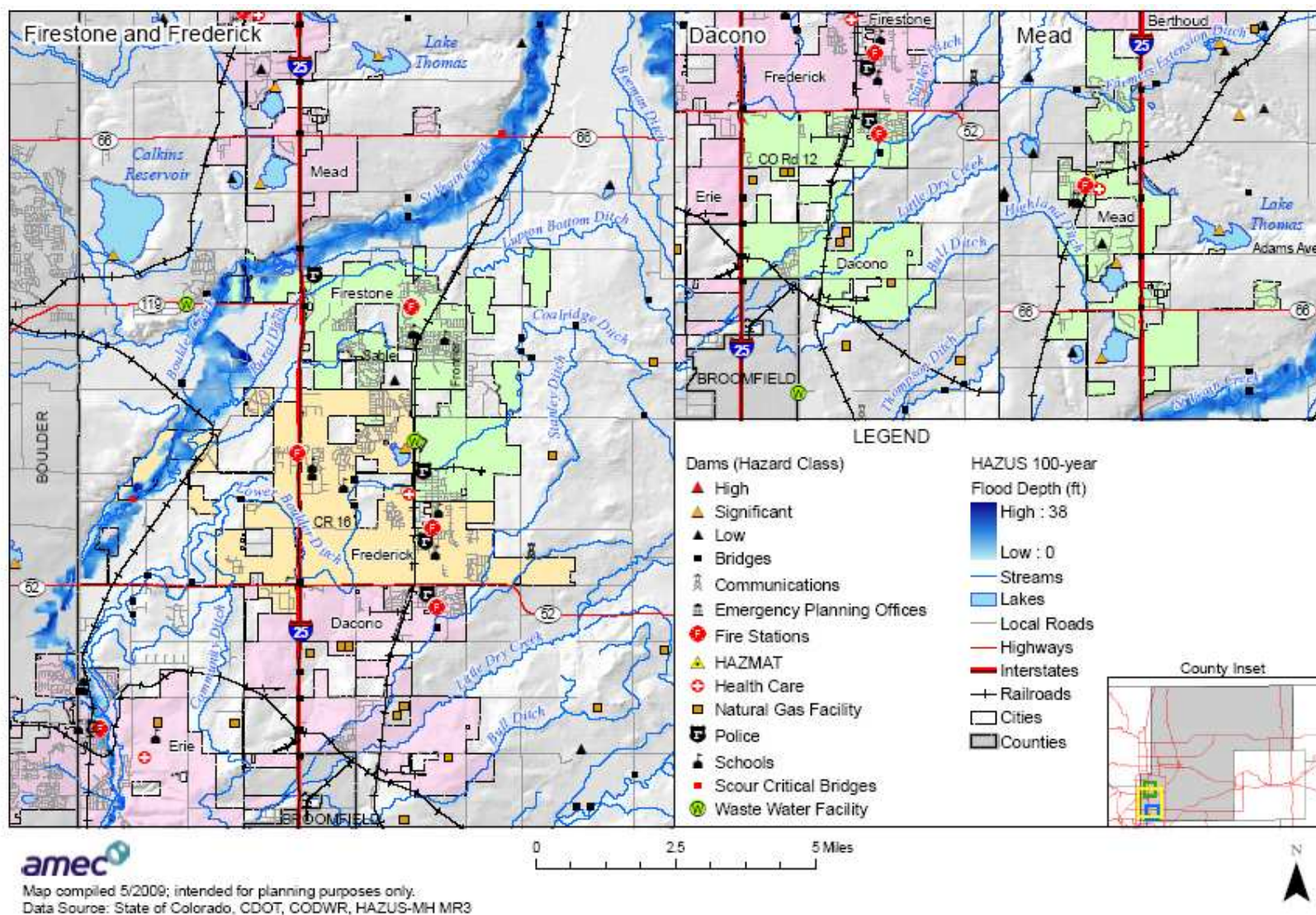


**Figure 3 Evans, Garden City, Greeley, and La Salle HAZUS 100-year Floodplain and Critical Facilities**



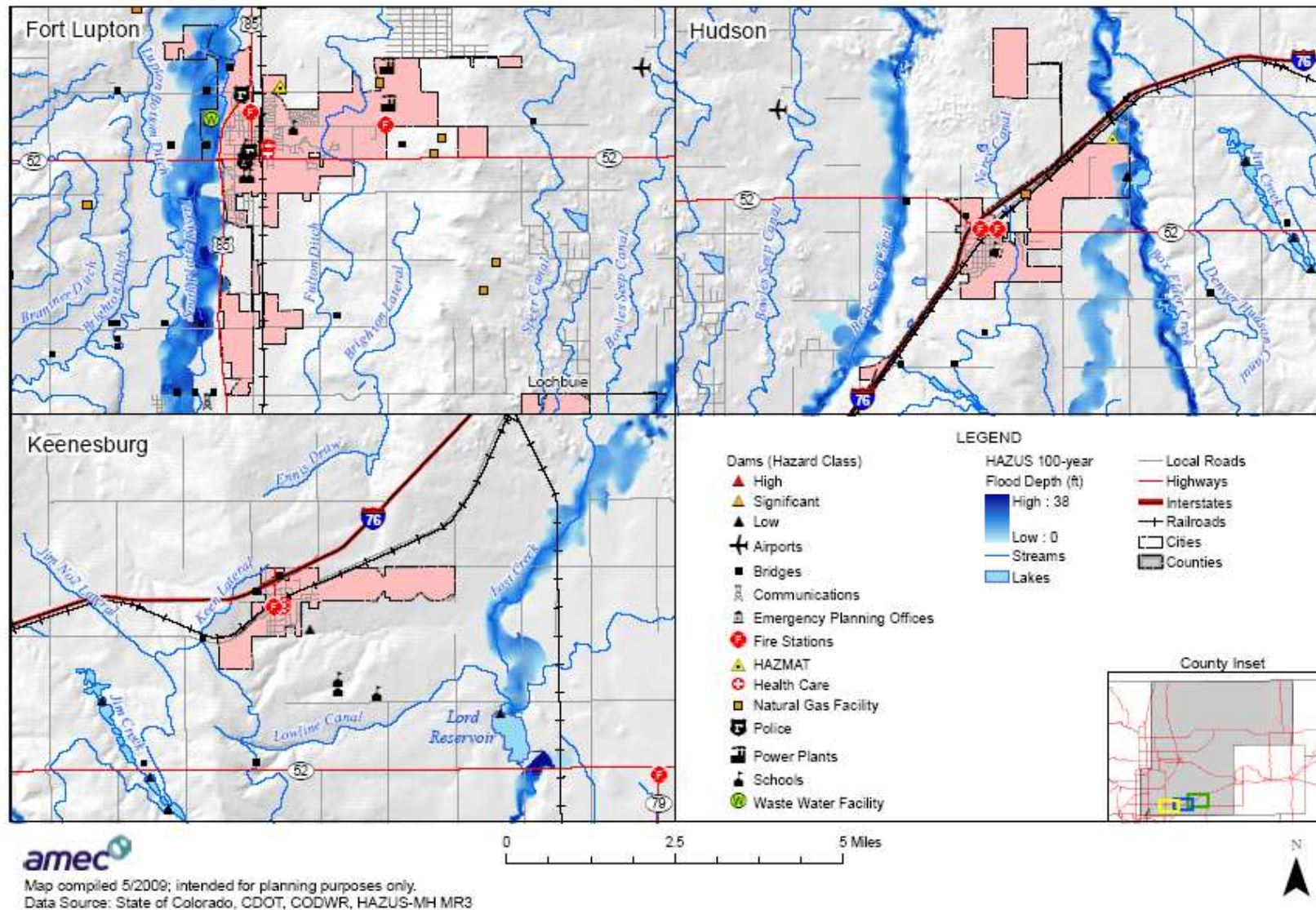


**Figure 4 Dacono, Firestone, Frederick, and Mead HAZUS 100-year Floodplain and Critical Facilities**

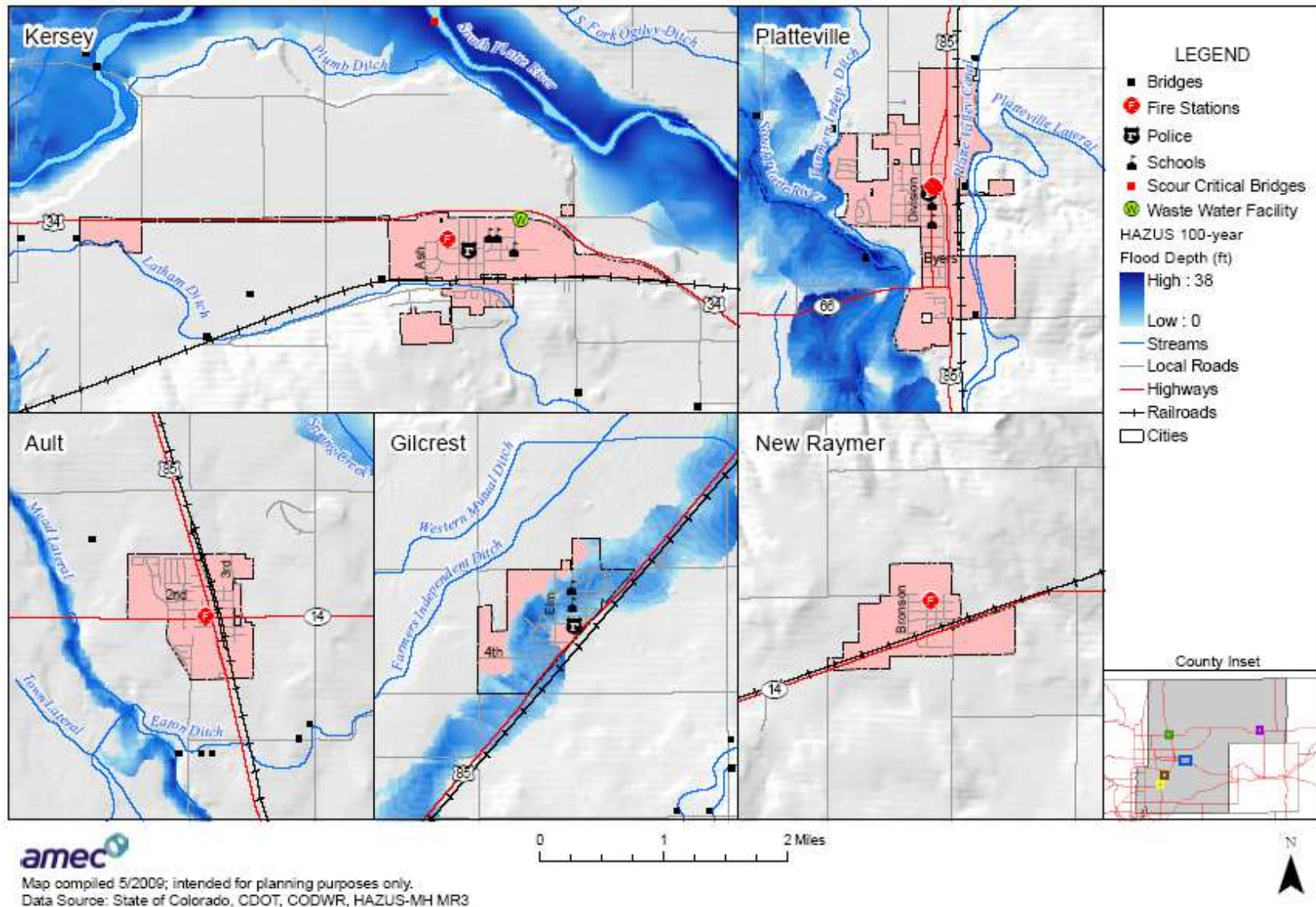




**Figure 5 Fort Lupton, Hudson, and Keenesburg HAZUS 100-year Floodplain and Critical Facilities**

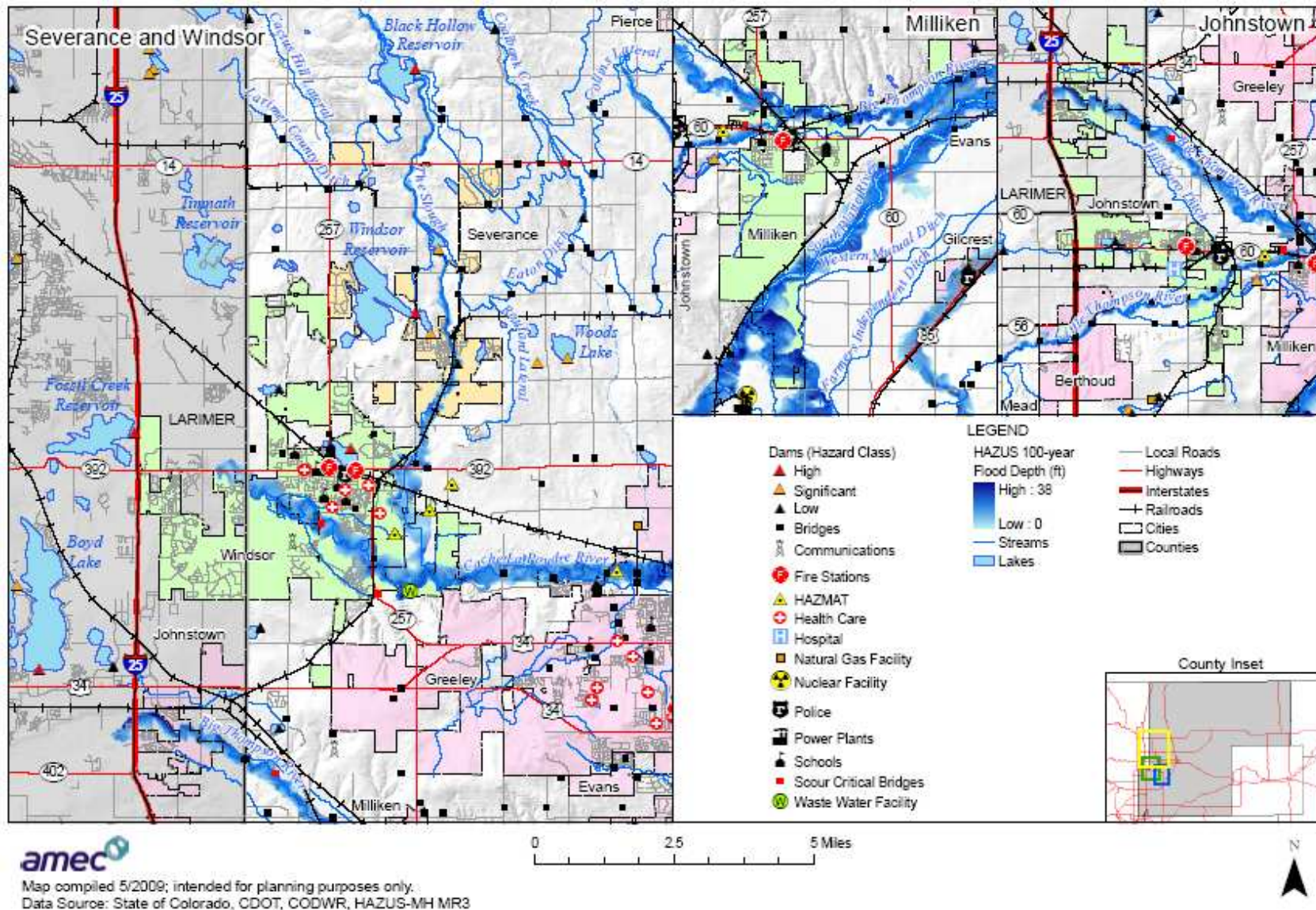


**Figure 6 Ault, Gilcrest, Kersey, New Raymer, and Platteville HAZUS 100-year Floodplain and Critical Facilities**





**Figure 7 Johnstown, Milliken, Severance, and Windsor HAZUS 100-year Floodplain and Critical Facilities**



HAZUS-MH estimates the potential for over \$199 million in flood losses from a 100-year flood in the County. To estimate the economic loss for each city, the flooded Census Blocks were extracted, and the damage costs were totaled using GIS. This was done for each city and unincorporated area to illustrate how the risk varies across the planning area, with the results summarized in Table 6. According to HAZUS-MH, the City of Greeley has the greatest flood risk and majority of the damage with \$33,906,000 followed by the City of Windsor with damage of \$21,192,000. According to a 2004 floodplain inventory Dacono has 79 buildings in the floodplain valued at \$5,972,215; Ft. Lupton has a ball field valued at \$250K; and Milliken has 1 building in the floodplain. There are approximately 4,200 floodprone buildings in unincorporated Weld County according to an estimate provided by Weld County in 2009.

The maps in Figures 8 and 9 display the distribution of the flood loss by Census Block across the County. According to the map in Figure 8 the majority of flood impacts in the unincorporated County are located on Cache La Poudre River which goes through the Cities of Greeley and Windsor, and South Platte River which effects Evans, Greeley, Fort Lupton, La Salle, Milliken and Platteville.

**Table 6. Estimated Economic Losses from Flooding**

Jurisdiction	Cost Building Damage (\$)	Cost Contents Damage (\$)	Inventory Loss (\$)	Relocation Loss (\$)	Capital Related Loss (\$)	Rental Income Loss (\$)	Wage Loss (\$)	Total Loss (\$)	Percent of Total Loss	Loss Ratio
Unincorporated	38,446,000	44,823,000	2,635,000	55,000	81,000	16,000	354,000	86,410,000	43%	1.9%
City of Greeley	9,454,000	21,689,000	2,111,000	34,000	59,000	15,000	544,000	33,906,000	17%	0.5%
Windsor	8,102,000	12,106,000	782,000	31,000	68,000	12,000	91,000	21,192,000	11%	1.8%
Ault	-	-	-	-	-	-	-	-	-	-
Berthoud	96,000	117,000	22,000	-	-	-	-	235,000	0.1%	0.9%
Brighton	-	-	-	-	-	-	-	-	-	-
Broomfield	-	-	-	-	-	-	-	-	-	-
Dacono	-	-	-	-	-	-	-	-	-	-
Eaton	239,000	740,000	89,000	-	2,000	-	2,000	1,072,000	1%	0.4%
Erie	5,497,000	7,480,000	274,000	21,000	34,000	3,000	190,000	13,499,000	7%	5.5%
Evans	8,163,000	5,736,000	123,000	27,000	4,000	7,000	7,000	14,067,000	7%	1%
Firestone	289,000	663,000	42,000	1,000	5,000	2,000	7,000	1,009,000	1%	0.4%
Fort Lupton	327,000	767,000	43,000	2,000	3,000	1,000	6,000	1,149,000	1%	0.3%

Jurisdiction	Cost Building Damage (\$)	Cost Contents Damage (\$)	Inventory Loss (\$)	Relocation Loss (\$)	Capital Related Loss (\$)	Rental Income Loss (\$)	Wage Loss (\$)	Total Loss (\$)	Percent of Total Loss	Loss Ratio
Frederick	25,000	19,000	2,000	-	-	-	-	46,000	0.02%	0.01%
Garden City	-	-	-	-	-	-	-	-	-	-
Gilcrest	7,092,000	7,083,000	94,000	29,000	21,000	5,000	144,000	14,468,000	7%	13%
Grover	-	-	-	-	-	-	-	-	-	-
Hudson	22,000	41,000	3,000	-	-	-	-	66,000	0.03%	0.1%
Johnstown	135,000	86,000	2,000	-	-	-	-	223,000	0.11%	0.04%
Keenesburg	-	-	-	-	-	-	-	-	-	-
Kersey	-	-	-	-	-	-	-	-	-	-
La Salle	3,364,000	3,345,000	57,000	21,000	10,000	5,000	41,000	6,843,000	3%	3%
Lochbuie	132,000	99,000	5,000	1,000	-	-	-	237,000	0.12%	0.2%
Longmont	-	-	-	-	-	-	-	-	-	-
Mead	-	-	-	-	-	-	-	-	-	-
Milliken	912,000	1,281,000	84,000	2,000	7,000	1,000	8,000	2,295,000	1%	0.8%
New Raymer	-	-	-	-	-	-	-	-	-	-
Northglenn	-	-	-	-	-	-	-	-	-	-
Nunn	315,000	212,000	6,000	2,000	-	-	-	535,000	0.3%	1%
Pierce	-	-	-	-	-	-	-	-	-	-
Platteville	271,000	207,000	3,000	1,000	-	-	-	482,000	0.2%	0.2%
Severance	878,000	788,000	30,000	3,000	-	1,000	4,000	1,704,000	1%	2%
<b>Total</b>	<b>83,759,000</b>	<b>107,282,000</b>	<b>6,407,000</b>	<b>230,000</b>	<b>294,000</b>	<b>68,000</b>	<b>1,398,000</b>	<b>199,438,000</b>	<b>100%</b>	

Source: HAZUS MH MR3

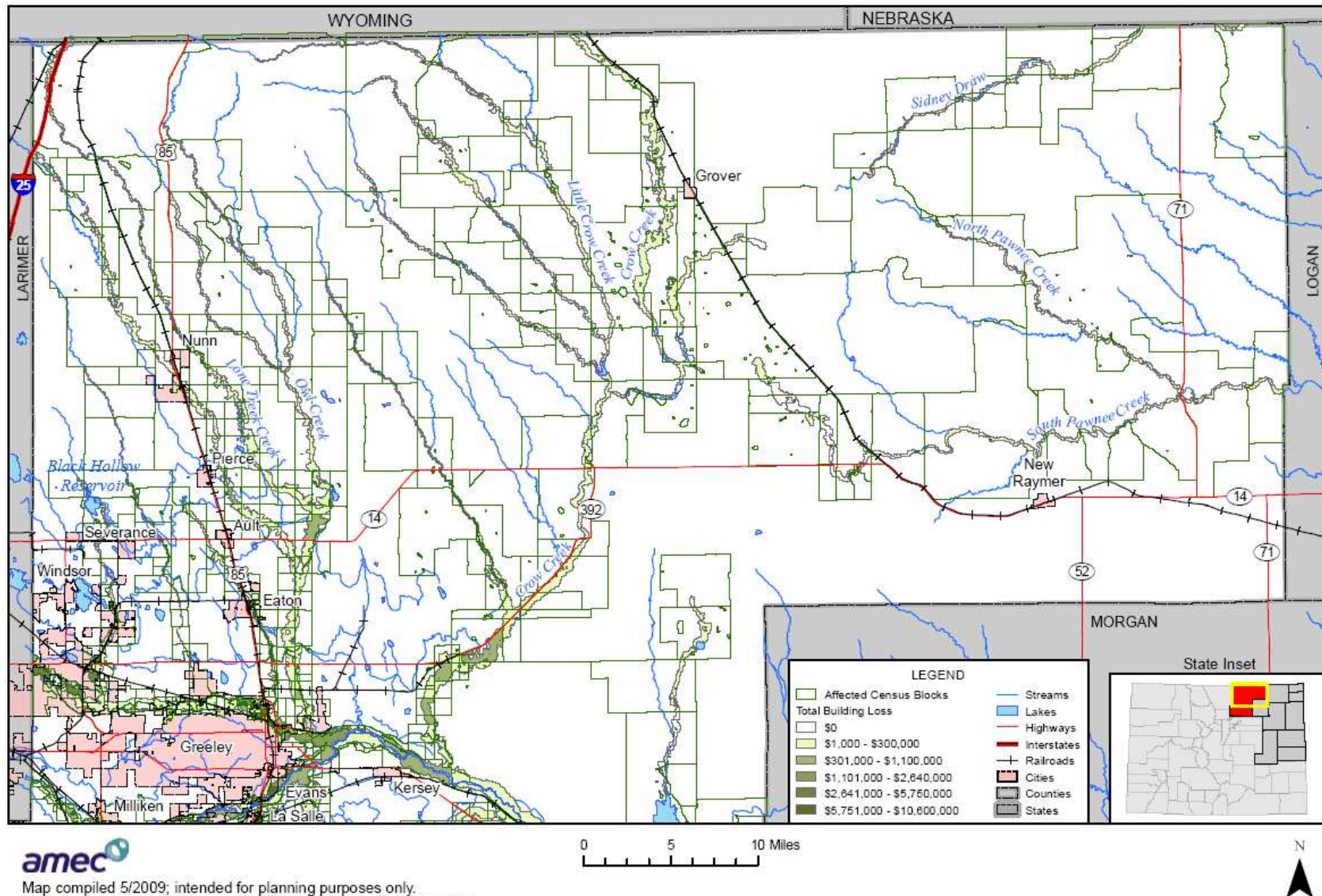
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The building damage loss ratio is an indication of the community's ability to recover after an event. Building Damage Loss Ratio percent is calculated by taking the Building Structural Damage divided by Building Structural Value and then multiplying by 100. Loss ratio exceeding 10% are considered significant by FEMA. The cities with the highest building damage loss ratio are Erie and Gilcrest. Gilcrest has the highest loss ratio of 13% with a potential building damage loss of \$7,083,000. Erie has the second highest loss ratio of 5.5% with a potential building damage loss of \$7,480,000. La Salle has a loss ratio of 3% with a potential building damage loss of \$3,345,000. The rest of the communities have a loss ratio below 2%.

When comparing the HAZUS model results with the current FEMA FIRMs, it was observed that HAZUS does not represent flooding in numerous towns: Tri-Area Drainageway in Dacono, St Vrain Creek in Firestone, and Spring Creek in Nunn and Pierce. The reason these streams were not analyzed within the model is due to the fact that these streams do not have 10 square mile drainage areas, which was a parameter used during the countywide HAZUS flood modeling. If the model did account for these streams there could be even more damage as FIRMs show flooding within these towns on these streams. The HAZUS model does match up closely to the FIRMs for the majority of the major streams in Weld County in the cities of Eaton, Fort Lupton, Milliken, Severance, and Windsor. However, due to the increasing annexation of all these towns in Weld County the FEMA flood maps don't represent the new city limits. The other communities can not be compared since there are not any effective flood maps for Ault, Berthoud, Brighton, Garden City, Grover, Hudson, Johnstown, Lochbuie, Mead, Northglenn and New Raymer. The communities of Gilcrest, Keenesburg, Kersey, La Salle, and Platteville are mapped but have no special flood hazard areas. HAZUS flood modeling concurs with this, except for La Salle and Platteville and Gilcrest, where flood loss potential is shown in Table 6. HAZUS modeling indicates that Gilcrest is one of the higher risk communities, thus an updated flood mapping study is recommended. Gilcrest has some draws and low areas running through it. It is likely that those areas will be flooded during a heavy rainfall event. The problem is compounded by drainage problems on Highway 85.

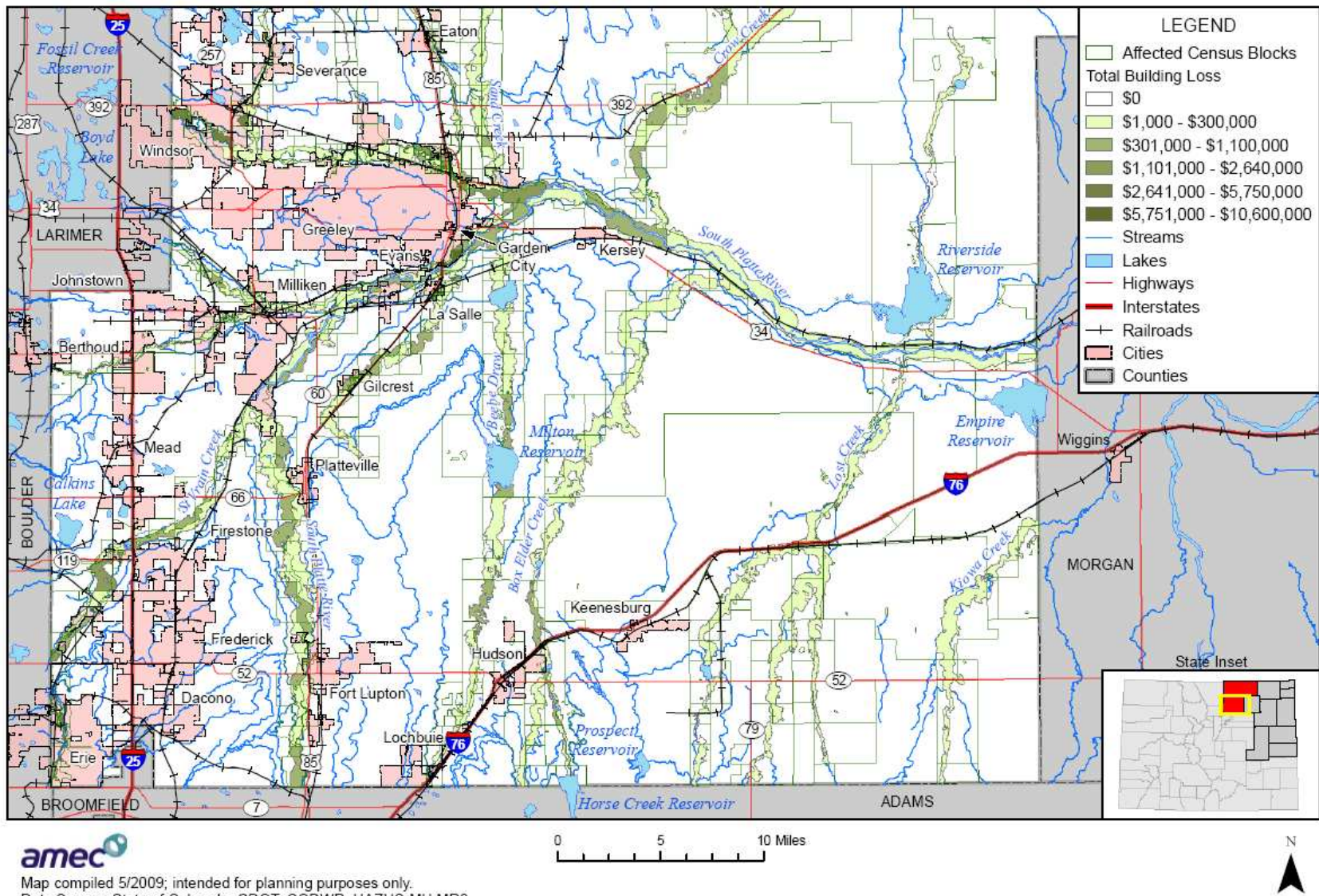


**Figure 8 North Weld County Building Loss in the 100-year Floodplain**





**Figure 9 South Weld County Building Loss in the 100-year Floodplain**



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HAZUS estimates of population are shown by jurisdiction in Table 7.

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**Table 7. Population Displaced by Flooding**

Jurisdiction	Displaced Population	Population Needing Shelter
Unincorporated County	3,445	1,429
Greeley	815	596
Ault	-	-
Berthoud	4	-
Brighton	-	-
Dacono	-	-
Eaton	2	-
Erie	574	376
Evans	862	784
Firestone	10	-
Fort Lupton	32	11
Frederick	4	-
Garden City	-	-
Gilcrest	966	861
Grover	-	-
Hudson	1	-
Johnstown	12	-
Keenesburg	-	-
Kersey	-	-
La Salle	684	569
Lochbuie	48	17
Longmont	-	-
Mead	-	-
Milliken	54	12

Jurisdiction	Displaced Population	Population Needing Shelter
New Raymer	-	-
Northglenn	-	-
Nunn	90	29
Pierce	-	-
Platteville	27	13
Severance	119	89
Windsor	558	496
<b>Total</b>	<b>8,307</b>	<b>5,282</b>

Source: HAZUS MH-MR3

## Critical Facilities

Critical facilities in the floodplain were determined using GIS, by selecting all critical facilities that fell within the HAZUS floodplain. It was a recommendation of this plan in 2004 that communities with mapped floodplains inventory their critical facilities that are at risk from flooding, regardless of whether the community participates in the NFIP. The results of this effort are listed in Table 8 and shown on the maps in Figures 2 and 3. According to information provided during the 2009 update of this plan several other Weld County facilities are in either the 100-yr or 500-yr floodplain including the Training Center, Public Works, Social Services, Food Bank, & Building & Grounds.

**Table 8. Critical Facilities in the Floodplain**

Flooded Critical Facility	Name	Near City
Communications	KJJD 1170	Windsor
Fire Station	La Salle Fire Protection Dist	La Salle
Fire Station	Mountain View Fire Protection District Station 6	Erie
Fire Station	Roggen Fire Dept	Keenesburg
HAZMAT	DPC Industry Inc	Hudson
Health Care	Empire Group Home	Evans
Natural Gas Facility	Associated Natural Gas Scotties	Kersey
Natural Gas Facility	Union Pacific Res Co Webbs Shop	La Salle



Flooded Critical Facility	Name	Near City
Police	Colorado State Patrol District 3	Evans
School	Erie Middle School	Erie
School	Gilcrest Elementary School	Gilcrest
School	Valley High School	Gilcrest
Waste Water Facility	Evans, City of	Evans
Waste Water Facility	Fort Lupton, City of	Fort Lupton
Waste Water Facility	La Salle, Town of	La Salle
Waste Water Facility	Windsor, Town of	Windsor

Source: HAZUS MH MR3

**Table 9. Critical Facilities in the Floodplain for the City of Greeley**

Flooded Critical Facility	Name	Near City
Emergency Operations Center	City of Greeley/Weld County Joint EOC	Greeley
HAZMAT	Con Agra Beef Co	Greeley
HAZMAT	Western Sugar Co	Greeley
HAZMAT	Loveland Industry Inc	Greeley
Health Care	Monfort Children's Clinic	Greeley
Power Plant	Thermo Greeley Inc	Greeley
Waste Water Facility	Water Pollution Control Facility	Greeley

Source: HAZUS MH MR3

**Table 10. Critical Facilities in the Floodplain Summary Table**

Facility Type	County Facility Count	City of Greeley Facility Count
Bridges	124	-
Communications	1	-
Dams	10	-
EOC	1	1

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Facility Type	County Facility Count	City of Greeley Facility Count
Fire Stations	3	-
HAZMAT	4	3
Health Care	2	1
Natural Gas Facility	2	-
Police	1	-
Power Plants	1	1
Schools	1	-
Child Care Facilities	2	-
Scour Critical Bridges	10	-
Waste Water Facility	5	1
<b>Total</b>	<b>167</b>	<b>7</b>

Source: HAZUS MH MR3

### Weld County Scour Critical Bridges

Included with HAZUS-MH is a database of bridges called the National Bridge Inventory developed by the Federal Highway Administration. One of the database items is a “scour index,” which is used to quantify the vulnerability of a bridge to scour during a flood. Bridges with scour index between 1 and 3 are considered “scour critical,” or a bridge with a foundation element determined to be unstable for the observed or evaluated scour condition.

There are 12 scour critical bridges in Weld County. They are all located on the major roads and highways that travel through Weld County. One scour critical bridge is located just west of the city limits of Frederick near County Road 3 at the intersection of County Road 16 1/2 and Boulder Creek. One is south of Grover on County Road 77 at Crow Creek. One is in Milliken on State Highway 60 at Little Thompson River. Another one is located between Ault and Severance on State Highway 14 on Coalbank Creek. One is east of Johnstown on County Road 54 at Big Thompson River. Two are in Windsor, one on State Highway 257 at the intersection of Eaton Ditch and the other on 7th Street at Cache La Poudre River. One is south of Grover on County Road 77 at Crow Creek. Two are northwest of Nunn, one on Interstate 25 at the intersection of Lone Tree Creek and the other on County Road 126 at Spring Creek. One is east of Evans on County Road 54 on the South Platte River. Another one is located between Mead and Platteville on State Highway 66 on Saint Vrain Creek. One is north of Kersey on State Highway 37 at the intersection of the South Platte River.

The location of these bridges is shown in Figures 1 and 2.

**Table 11. Scour Critical Bridges**

Name	Road Type	Stream	Near City
County Road 54	Rural Highway	Big Thompson River	Johnstown
County Road 3	Local Road	Boulder Creek	Frederick
7th Street	Rural Highway	Cache La Poudre River	Windsor
State Highway 14	Rural Regional Highway	Coalbank Creek	Between Ault and Severance
County Road 77	Rural Highway	Crow Creek	Grover
State Highway 257	Rural Regional Highway	Eaton Ditch	Windsor
State Highway 60	Urban Rural Regional Highway	Little Thompson River	Milliken
I 25 Southbound	Interstate	Lone Tree Creek	Nunn
State Highway 66	Rural Regional Highway	Saint Vrain Creek	Between Mead and Platteville
County Road 54	Rural Highway	South Platte River	Evans
State Highway 37	Rural Highway	South Platte River	Kersey
County Road 126	Local Road	Spring Creek	Nunn

Source: HAZUS MH MR3

## NFIP Claims Analysis

There are 288 policies in force in Weld County. The majorities of policy holders are in the 100-year floodplain (A-Zone) and reside in the unincorporated County, Greeley, Erie, Pierce and Windsor. Greater detail is provided in Table 12.

**Table 12. Policies and Claims Information**

CID	Community Name	Total Premium	A-Zone	No. Policies	Total Coverage	Total Claims since 1978	Total Paid since 1978
80266	Unincorporated Weld County	\$201,208	185	288	\$57,919,200	29	\$65,915
80184	Greeley, City of	\$76,544	60	74	\$16,985,800	6	\$63,895
80236	Dacono, Town of	\$14,891	11	17	\$2,934,500	1	\$0

CID	Community Name	Total Premium	A-Zone	No. Policies	Total Coverage	Total Claims since 1978	Total Paid since 1978
80180	Eaton, Town of	\$3,956	2	5	\$904,600	1	\$0
80181	Erie, Town of	\$24,866	23	31	\$6,351,200	2	\$986
80182	Evans, City of	\$905	0	4	\$560,000	0	\$0
80241	Firestone, Town of	\$5,679	9	11	\$1,612,200	0	\$0
80183	Fort Lupton, Town of	\$3,984	2	7	\$1,567,800	0	\$0
80244	Frederick, Town of	\$8,058	6	14	\$2,888,300	5	\$10,350
80249	Hudson, Town of	\$320	0	1	\$67,500	0	\$0
80250	Johnstown, Town of	\$144	0	1	\$28,000	0	\$0
80186	La Salle, Town of	\$956	0	2	\$370,000	1	\$6,028
80187	Milliken, Town of	\$579	0	1	\$130,900	0	\$0
80188	Nunn, Town of	\$1,450	3	3	\$568,700	0	\$0
80189	Pierce, Town of	\$21,315	17	23	\$3,634,500	1	\$312
80190	Platteville, Town of	\$331	0	1	\$280,000	0	\$0
80317	Severance, Town of	\$352	0	1	\$350,000	0	\$0
80264	Windsor, City of	\$9,101	2	23	\$6,309,000	1	\$0

### **Repetitive Loss Properties:**

There are two documented repetitive loss properties in the County as of the FEMA repetitive loss list dated March 2009. They are residential and outlying structures located in the unincorporated area of the County. Data indicates that of the two losses, one was a building in the AE, A1-30, AO, AH, or A flood zone with a payment of \$9,455.14 and the contents claim for \$6,902.06.

### **Dam Failure and Levee Failure Vulnerability Assessment**

According to HAZUS MR3, there are 8 high hazard and 17 significant hazard dams in Weld County. Table 13 indicates how dam failure risk varies among communities in Weld County, based on a visual interpretation of the dam location, the drainage or stream that would be affected, and the proximity of the downstream community to the floodplain of the impacted stream. The locations of these dams are shown in Figure 1. The Downstream Community listed in Table 13 is the first downstream community impacted. In some cases additional communities downstream would be impacted as well.

Dams outside of Weld County may also have a significant impact on the area if a catastrophic failure were to occur. Several major tributaries of the basin which have dams that may impact the area, though the location of the dams themselves are significantly outside the ten-county area, are the Cache La Poudre River, Big Thompson River, and St. Vrain Creek. Table 13 also includes the number of Class I and Class II dams along the major tributaries that flow into the planning region. Not all of these dams are located in the planning region, but the potential impact from a catastrophic dam failure along one of these tributaries is likely to impact the planning region. The downstream communities listed reflect the first anticipated downstream community to be impacted, and it may or may not fall within the planning area. This is not an indication that the only communities affected are those listed, however. Including these dams increases the total number of dams that could impact the county to greater than 80, and 36 of them being high hazard.

**Table 13. Hazardous Dams that Impact Weld County**

Dam Name	County	Max Storage (acre ft)	Dam Hazard	Downstream Community	Miles to Community	Relative Downstream Impacts
Angel Lake	Weld	721	Significant	Greeley	9	Negligible
Eaton - Law	Weld	768	Significant	Greeley	17	Negligible
Greeley Lake West	Weld	192	Significant	Greeley	0.1	Limited
Wood	Weld	3,106	Significant	Greeley	6	Negligible
Wildhorse	Weld	1,100	Significant	-	-	Negligible
Akers & Tarr	Weld	256	Significant	Gilcrest	9	Negligible
Barker	Boulder	12,400	High	Frederick	26	Critical
Baseline	Boulder	6,592	High	Frederick	12	Limited
Beaver Park	Boulder	2,731	High	Longmont	24	Limited
Berthoud	Larimer	854	Significant	Johnstown	7	Limited
Black Hollow	Weld	9,300	High	Severance	7	Critical
Boulder	Boulder	17,700	High	Longmont	8	Critical
Boyd Lake	Larimer	59,981	High	Milliken	11	Critical
Bull Canal	Weld	4,548	High	Dacono	5	Limited
Button Rock	Boulder	20,400	High	Longmont	15	Critical
Carter Lake Dam #1	Larimer	116,837	High	Berthoud	11	Critical
Carter Lake Dam #2	Larimer	116,837	High	Berthoud	11	Critical

Dam Name	County	Max Storage (acre ft)	Dam Hazard	Downstream Community	Miles to Community	Relative Downstream Impacts
Carter Lake Dam #3	Larimer	116,837	High	Berthoud	7	Critical
Claymore	Larimer	1,321	Significant	Windsor	16	Limited
Clennon	Weld	136	Significant	Platteville	5	Negligible
Clover Basin	Boulder	984	High	Longmont	-	Limited
Coal Ridge Waste	Weld	1,382	Significant	Platteville	6	Limited
College #3	Larimer	1,461	Significant	Windsor	16	Limited
Davis #1	Boulder	185	Significant	Longmont	8	Negligible
Dixon Canyon	Larimer	170,370	High	Windsor	14	Critical
Dixon Canyon	Larimer	700	Significant	Windsor	14	Limited
Empire	Weld	52,280	High	Orchard	3	Critical
Fairway	Larimer	49	Significant	Windsor	7	Limited
Flatiron	Larimer	1,136	High	Milliken	20	Limited
Foothills	Boulder	4,767	High	Longmont	9	Limited
Fossil Creek	Larimer	16,000	High	Windsor	0.1	Critical
Frederick	Weld	970	Significant	Firestone	1	Limited
Gaynor	Boulder	754	Significant	Longmont	4	Limited
George Rist	Larimer	444	Significant	Milliken	17	Limited
Gross	Boulder	47,500	High	Frederick	25	Critical
Handy	Larimer	9,336	High	Berthoud	2	Limited
Harper Lake	Boulder	843	High	Frederick	11	Limited
Hayden	Boulder	765	High	Frederick	12	Limited
Hertha	Larimer	2,447	Significant	Berthoud	3	Limited
Highland #1	Weld	1,186	Significant	Platteville	7	Limited
Highland #2	Boulder	4,613	Significant	Longmont	4	Limited
Highland #3	Weld	2,704	Significant	Platteville	7	Limited
Horse Creek	Weld	29,695	High	Hudson	5	Limited
Horseshoe #2	Larimer	11,951	Significant	Milliken	12	Limited

<b>Dam Name</b>	<b>County</b>	<b>Max Storage (acre ft)</b>	<b>Dam Hazard</b>	<b>Downstream Community</b>	<b>Miles to Community</b>	<b>Relative Downstream Impacts</b>
Horsetooth	Larimer	170,370	High	Windsor	18	Critical
Ish #3	Larimer	9,264	High	Berthoud	3	Limited
Lagerman	Boulder	1,832	High	Longmont	-	Limited
Lake Loveland	Larimer	15,620	High	Milliken	14	Critical
Lefthand Park	Boulder	2,075	High	Longmont	26	Limited
Lefthand Valley	Boulder	5,274	High	Longmont	12	Limited
Leggett & Hillcrest	Boulder	15,950	High	Frederick	12	Critical
Little Thompson	Weld	767	Significant	Milliken	1	Limited
Lon Hagler	Larimer	6,385	High	Milliken	18	Limited
Lone Tree	Larimer	11,100	Significant	Johstown	11	Limited
Loup Lake	Weld	877	Significant	Severance	2	Limited
Loveland Water Storage	Larimer	1,044	High	Milliken	20	Limited
Lower Latham	Weld	11,250	Significant	Kersey	4	Limited
Margaret Spurgeon #1	Boulder	450	Significant	Longmont	12	Limited
Mariano	Larimer	7,919	High	Berthoud	-	Limited
Marshall Lake	Boulder	12,878	High	Erie	9	Critical
McCall	Boulder	722	High	Longmont	9	Limited
McIntosh	Boulder	2,986	Significant	Longmont	5	Limited
Milton Lake	Weld	39,660	High	Kersey	11	Limited
New Thomas	Weld	3,759	Significant	Platteville	5	Limited
Oligarchy #1	Boulder	2,164	Significant	Longmont	9	Limited
Panama #1	Boulder	7,539	Significant	Evans	31	Limited
Pleasant Valley	Boulder	4,562	High	Longmont	2	Limited
Prospect	Weld	9,299	Significant	Roggen	11	Limited
Rattlesnake	Larimer	3,179	High	Milliken	22	Limited
Rist - Benson	Larimer	739	High	Milliken	16	Limited
Riverside	Weld	94,500	High	Orchard	7	Critical

Dam Name	County	Max Storage (acre ft)	Dam Hazard	Downstream Community	Miles to Community	Relative Downstream Impacts
Ryan Gulch	Larimer	1,290	Significant	Milliken	12	Limited
Satanka Dike	Larimer	170,370	High	Windsor	18	Critical
Six Mile	Boulder	2,186	High	Longmont	8	Limited
South Side	Larimer	1,019	Significant	Milliken	12	Limited
Spring Canyon	Larimer	170,370	High	Windsor	14	Critical
Superior	Boulder	500	High	Erie	8	Limited
Union	Weld	18,329	Significant	Platteville	11	Limited
Valmont "A"	Boulder	15,950	High	Frederick	12	Critical
Waneka	Boulder	838	High	Erie	2	Limited
Windsor	Weld	21,100	High	Windsor	3	Critical
Windsor Lake	Weld	1,870	High	Windsor	0.1	Limited

Source: Based on analysis of National Inventory of Dams provided with HAZUS MR3

## Levees

According to the current FEMA FIRMs there are some levees in Weld County. One is located in the Town of Erie on Coal Creek by the railroad track south of Perry Street. The levee protects residential and commercial areas from a 100 year event but not the 500-year event. There is another levee in south Frederick on the Tri-Area Drainageway that runs along 8th Street. Nunn has a levee as well, on the Spring Creek tributary in the south part of town along an abandoned irrigation canal. The City of Evans has a levee along portions of the South Platte River. There are also two levees in unincorporated Weld County. Furthermore there are numerous railroad and road embankments that act as levees throughout the County. The HAZUS model does not account for levee protection, thus the HAZUS flood modeling results displayed in Table 7 and on the associated maps is representative of a levee failure scenario or greater than 100 year flood event.

In addition to levees there are numerous canals and ditches that cross the county and municipalities such as Greeley (Boomerang Ditch, Loveland and Greeley Canal, Evans Town Ditch just to name a few). These ditches can overflow or fail and be a source of flooding that may not be represented in HAZUS or other flood maps.



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## **Wildfire Vulnerability Assessment**

### **Weld County Wildland Urban Interface**

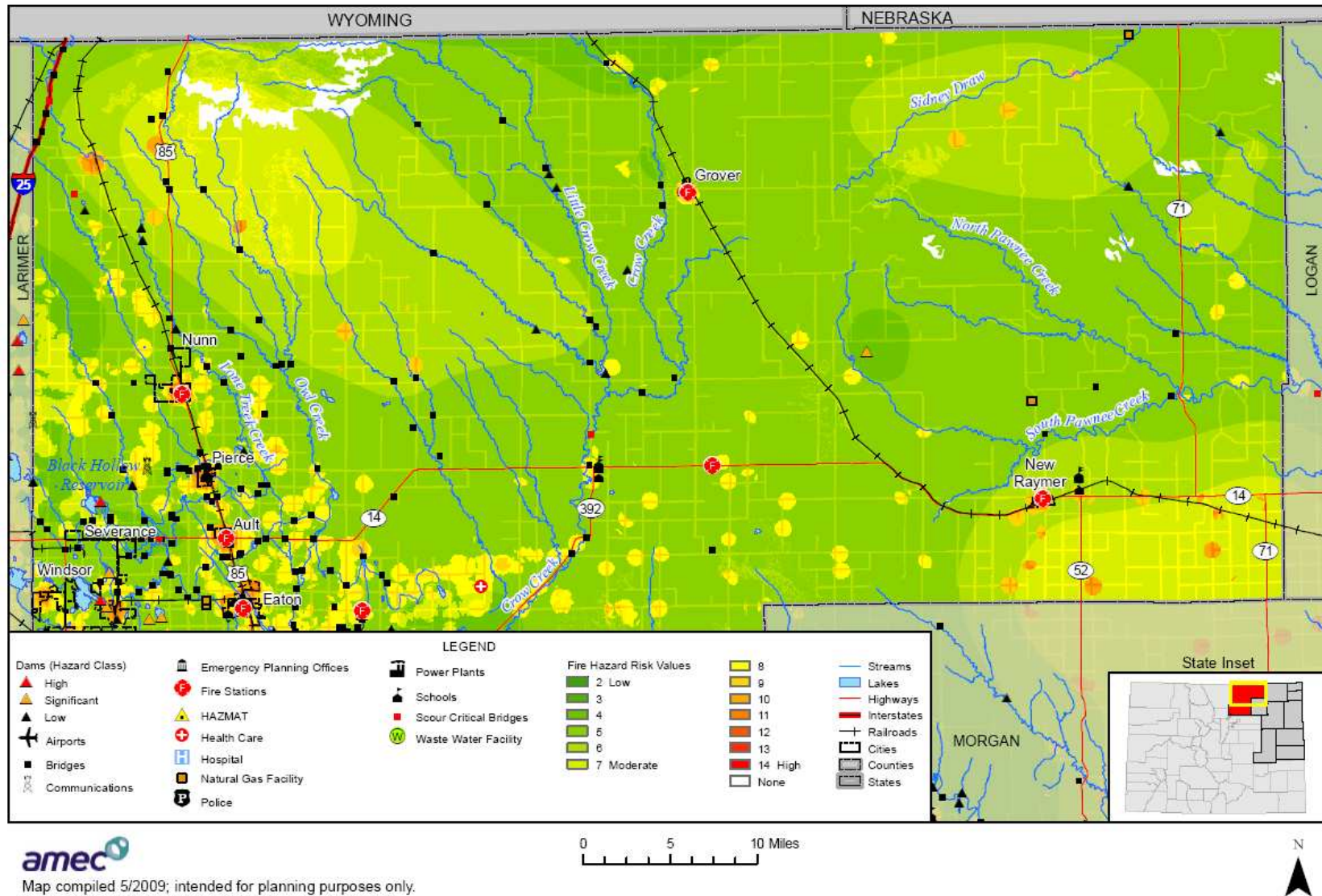
The Wildland Urban Interface map in Figures 10 and 11 for Weld County shows low to moderately high fire hazard risk values. The majority of the county has low values with the higher values around the communities of Ault, Berthoud, Dacono, Eaton, Erie, Evans, Firestone, Fort Lupton, Frederick, Garden City, Gilcrest, Grover, Hudson, Johnstown, Keenesburg, Kersey, La Salle, Lochbuie, Mead, Milliken, New Raymer, Nunn, Pierce, Platteville, Severance and Windsor. The highest hazard risk value in Weld County is 12 which is located within the city limits of Erie and Grover. The communities of Ault, Gilcrest, Grover, New Raymer, Pierce and Platteville have a moderate value through out their city limits. Berthoud, Dacono, Eaton, Erie, Evans, Firestone, Fort Lupton, Frederick, Hudson, Johnstown, Keenesburg, Kersey, La Salle, Lochbuie, Mead, Milliken, Nunn, Severance and Windsor have a mix of low and moderate hazard risk values. The communities of Evans, Garden City, and Windsor have some non-flammable values within their city limits due to either rock, urban areas or water. Garden City is completely in the non-flammable risk hazard value area.

Members of the Weld County Planning Subcommittee noted that in the past two years, there have been a minimum of three fires that have created property loss and damage. The Platte Valley and Seward Fire Districts responded to each of these wildfire incidents. These wildfires caused damages in Kersey and Prospect Valley, both of which are participants in the County Planning Element.

### **City of Greeley Wildland Urban Interface**

The WUI for Greeley varies, based on the distribution of value throughout the city and the presence of non-flammable values such as rock, water, or other develop urbanized areas.

Figure 10 North Weld County Wildland Urban Interface



Map compiled 5/2009; intended for planning purposes only.  
Data Source: State of Colorado; CDOT, CODWR, CSFS,  
Colorado Wildfire Risk Assessment 5/16/2002



Figure 11 South Weld County Wildland Urban Interface

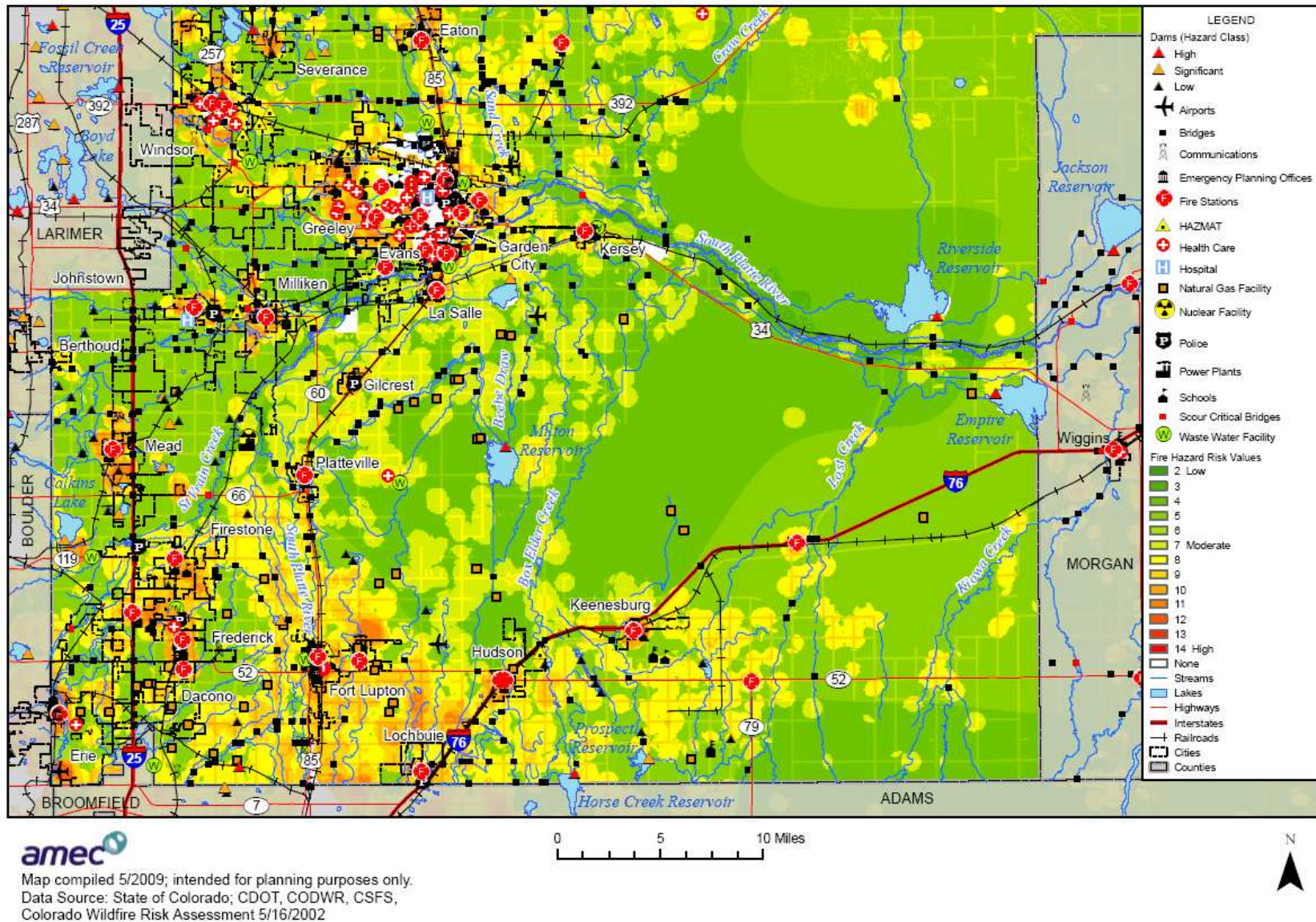
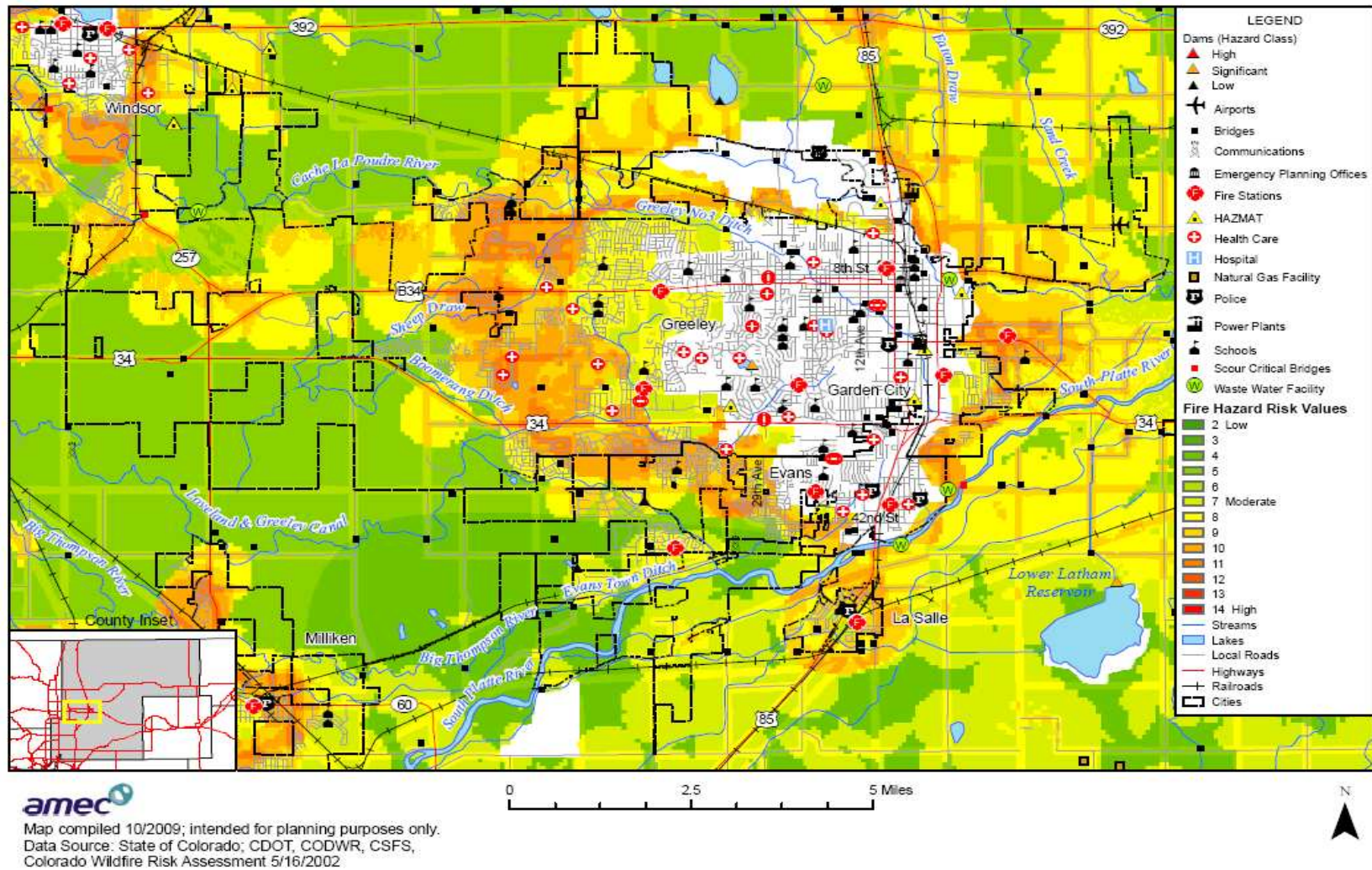




Figure 12 Greeley Wildland Urban Interface

## Evans, Garden City, Greeley and La Salle Wildland Urban Interface Hazard Assessment and Critical Facilities



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## Critical Facilities

A GIS overlay was used to identify certain facilities in the moderate to high fire risk areas. The facilities identified within a moderate to high wildfire risk area are summarized in Table 14. The following narrative describes each community and potentially at risk critical facilities.

Weld County has the highest number of facilities in a moderate to high fire hazard risk (510).

- The unincorporated county has 309 critical facilities in the fire hazard: one airport, 224 bridges, three scour critical bridges, eight communication towers, 21 dams, five fire stations, five HAZMAT facilities, three health care facilities, 20 natural gas facilities, one power plant, 11 schools and six waste water facilities.
- The City of Greeley has 36 facilities in a moderate to high fire hazard: one airport, 13 bridges, one dam, two fire stations, 12 health care facilities and seven schools.
- Ault has one fire station and one police station.
- Berthoud has one bridge in the fire hazard.
- Dacono has six facilities in a moderate to high fire hazard: two bridges, one fire station, two natural gas facilities and one police station.
- Eaton has six facilities in a fire hazard: one bridge, one fire station, one police station and two schools.
- Erie has eight facilities in a fire hazard: one airport, one bridge, one emergency planning office, one fire station, one police station and three schools.
- Evans has 5 facilities in a moderate to high fire hazard: three bridges, one dam and one school.
- Firestone has 5 facilities: one bridge, one fire station, one police station and two schools.
- Fort Lupton has 24 facilities in a hazard: three bridges, one emergency planning office, one fire station, one HAZMAT facility, three health care facilities, three police stations, one power plant, four schools and one waste water facility.
- Frederick has 12 facilities in a fire hazard: one bridge, one dam, two fire stations, one health care facility, one police station, five schools and one waste water facility.
- Gilcrest has one police station and two schools in a fire hazard.
- Grover has one fire station in a fire hazard.
- Hudson has 13 facilities in a fire hazard: nine bridges, one dam, two fire stations and one school.
- Johnstown has seven facilities in a moderate to high fire hazard: two bridges, one fire station, one hospital, one police station and two schools.
- Keenesburg has one fire station and two health care facilities in a fire hazard.

- 
- Kersey has five facilities in a fire hazard: one fire station, one police station and three schools.
  - La Salle has five facilities in a fire hazard: one bridge, one fire station, one police station and two schools.
  - Lochbuie has seven facilities in a fire hazard: four bridges, one fire station, one police station and one school.
  - Mead has 14 facilities in a moderate to high fire hazard: four bridges, one dam, one fire station, six HAZMAT facilities and two schools.
  - Milliken has ten facilities in a fire hazard: three bridges, one scour critical bridge, one fire station, one police station and four schools.
  - Nunn has one fire station in a fire hazard.
  - Pierce has two bridges and three schools in a fire hazard.
  - Platteville has seven facilities in a fire hazard: two bridges, two fire stations, one police station and two schools.
  - Raymer has one fire station in the fire hazard.
  - Windsor has 14 facilities in a moderate to high fire hazard: two bridges, one scour critical bridge, one communication tower, four HAZMAT facilities, five health care facilities and one school.
- 

**Table 14. Critical Facilities Subject to Fire Hazard (by type)**

Facility Type	County Facility Count	City of Greeley Count
Airports	1	1
Bridges	279	13
Communications	9	-
Dams	26	1
Emergency Planning Offices	2	-
Fire Stations	29	2
HAZMAT	21	-
Health Care	26	5
Hospital	1	1
Natural Gas Facility	23	-
Police	16	-
Power Plants	2	-
Schools	59	7
Scour Critical Bridges	5	3

Facility Type	County Facility Count	City of Greeley Count
Waste Water Facility	8	-
<b>Total</b>	<b>510</b>	<b>36</b>

## Agricultural Vulnerability Assessment

Agriculture is an important aspect of the County's economy. The following discussion analyzes the potential losses from floods using HAZUS and multiple hazards from federal crop insurance records.

### HAZUS Methodology for Agriculture Economic Losses

The agriculture component of the HAZUS Flood Model estimated a range of losses to barley, corn, corn silage, oats and wheat. These crops were the only crops identified by the HAZUS model to have loss within the region of study. The model assumes a short duration and slow rise flood when estimating losses and does not account for high velocity flash floods. Loss estimates are based on United States Army Corp of Engineers (USACE) damage modifiers. The HAZUS-MH impact analysis predicts a loss estimate value by crop for flow time intervals. The first is a loss estimate for the day of the fixed event, the remaining three are for 3, 7, and 14 days following the event.

The agricultural products in Weld County that show economic loss are barley, corn, corn silage and wheat. Barley's total loss is \$38,589,282, corn's total loss is \$56,321,205, corn silage's total loss is \$150,109,425 and wheat's total loss is \$31,688,939. Weld County has the second highest estimated economic total loss for agriculture products with \$276,708,851. Greater detail is given in Table 15.

**Table 15. Weld County Direct Economic Loss for Agriculture Products**

Agriculture Product	Crop Loss Day 0 (\$)	Crop Loss Day 3 (\$)	Crop Loss Day 7 (\$)	Crop Loss Day 14 (\$)	Total Loss (\$)
Barley	0	10,524,350	14,032,466	14,032,466	38,589,282
Corn	0	15,360,329	20,480,438	20,480,438	56,321,205
Corn Silage	0	40,938,934	54,585,245	54,585,245	150,109,425
Wheat	0	8,642,438	11,523,250	11,523,250	31,688,939
<b>Total</b>	<b>0</b>	<b>75,466,050</b>	<b>100,621,400</b>	<b>100,621,400</b>	<b>276,708,851</b>

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Source: HAZUS-MH MR3

### Crop Insurance Analysis

Federal Crop Insurance Data represents losses from multiple hazards that could include: biological hazards, flooding, drought, hailstorms, noxious weeds, temperature extremes, tornados, wildfires and straight-line winds. Average annual claims payout amount to \$2.5 million in the County. More details are provided in Table 16 and 17.

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**Table 16. Weld County Premium and Loss Data for Federal Crop Insurance from 1980 through 2007**

Liability(Amount of Coverage)	Total Premium	Federal Premium Subsidy	Farmer-paid Premium	Amount Paid in Claims	Average Amt. Paid Annually in Claims
691,542,643	62,541,083	32,975,625	29,565,458	70,429,743	2,515,349

Source: Federal Crop Insurance Services

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**Table 17. 2008 Weld County Provisional Data (claim data unavailable as 2008 claims are not fully reported)**

Liability(Amount of Coverage)	Total Premium	Federal Premium Subsidy	Farmer-paid Premium
100,395,786	11,670,810	6,856,835	4,813,975

Source: Federal Crop Insurance Services

### Other hazards vulnerability assessment:

**Earthquake:** See discussion in vulnerability analysis section in base plan.

**Subsidence:** Isolated but significant areas of risk in the central portion of the County and in the southwestern corner. Weld County is the only county in the planning area with mapped areas of suspected subsidence potential. There is not enough detailed mapping in a GIS format is available to do loss estimation. See discussion in base plan.



## Weld County Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. The capabilities assessment is divided two sections: regulatory mitigation capabilities and additional mitigation projects and capabilities. The regulatory mitigation capabilities for the County and its municipalities are summarized in Table 18. Refer to the Introduction to the County Elements for an explanation of the capability assessment matrix.

**Table 18. Regulatory Mitigation Capabilities**

	WELD	Greeley (via Union Colony Fire)	Ault	Dacono	Eaton	Erie	Evans	Firestone	Ft. Lupton
Comp Plan	Y ('08)	Y (updated 2009)		Y	Y		Y	Y	Y-07
Land Use Plan	Y	Y		Y	Y		Y	Y	Y-07
Subdivision Ord	Y	Y		Y	Y		Y	Y	Y-06
Zoning Ord	Y	Y		Y	Y		Y	Y	Y-06
NFIP/FPM Ord	Y sec 23 of County Code	Y	Y NSFHA	N	Y	Y/ Bldr	Y	Y	Y-1978
- Sub.Damage?	Y	Y		N			Y		N
- Administrator?	Y	Y		Y	Y		Y	Y	Y
- # of FP Bldgs?	4,200	30		84			0	60	0
- # of policies	288	72		16			1		6 +3 (5 as of 07?)
- # of Repetitive loss prp?	2	0		0			0		0
CRS Rating	N	N		N/A			N/A	N/A	N
Stormwater Prgm	Y	Y		Y	Y		N	Y	Y-07
Building Code	Y	Y (2006)		Y	Y		Y	Y	Y-06
Building Official.	Y	Y		Y	Y		Y	Y	Y-outsourced

	WELD	Greeley (via Union Colony Fire)	Ault	Dacono	Eaton	Erie	Evans	Firestone	Ft. Lupton
- Inspections?	Y	Y		Y	Y		Y	Y	Y
BCEGS Rating		Y		Unknown			5C		
LEOP	Y	Y (2008 update)	C	C	C	C	C	C	
HM Plan	Y	Y (2004)	IP	IP			N	IP	
Warning		Y		Y	Y		Y		Y
Storm Ready?	N	C			N			N	
Weather Radio?	Y	Y		Y	Y		Y	N – Only in St. Vrain School District	
Sirens?	Y	N		N	N		Y	Y	Y-08
Emer. Notification	Y	Y (R911)		Y-Cty. Advanced Notification System	N		C	IP	
Other?		Y (cable override)							
GIS System	Y	Y		N	Y		Y	Y	Y
Structural Projects		Y		N	N		Y	Y	Y
Property Protection		Y		N	N		N		Y-CERSA
Crit.Fac.Protection		Y		Y	N		Y	N	N
Natural Res. Inv.		Y		N	N		Y	Y	N
Cultural Res. Inv.		Y	Y	N	N		Y	Y	Y
Erosion Control	Y	Y		N	N		Y	Y	Y
Sediment Control	Y	Y		N	N		Y	Y	Y- urban drainage/flood control
Pub. Info Prgrm	Y-Web	Y		N	N		Y	Y	Y-cable/website
Env. Ed Prgrm	Y	Y		N	N		Y	N	N

## WELD COUNTY CAPABILITY ASSESSMENT (continued)

	Frederick	Garden City	Gilcrest	Grover	Hudson	Johnstown	Keenesburg	Kersey
Comp Plan	Y				Y, 07	Y	Y	Y
Land Use Plan	Y				Y,07	Y	Y	Y
Subdivision Ord	Y				Y	Y	Y	Y
Zoning Ord	Y				Y	Y	Y	Y
NFIP/FPM Ord	Y	Never Mapped	Y NSFHA	Never Mapped	Y, map?	Y 12/19/06	Y NSFHA	Y NSFHA
- Sub.Damage?					Y	Y		N/A
- Administrator?	Y				Y	Y	N	N/A
- # of FP Bldgs?					0	0	0	0
- # of policies					0	0	0	N/A
- # of RL's?					0	0	0	N/A
CRS Rating					N/A	N/A	N/A	N/A
Stormwater Prgm	Y				Y	Y	N	N
Building Code	Y				Y	Y	Y/C	Y/C
Building Official.	Y				Y	Y	N	N
- Inspections?	Y				Y	Y	N	N
BCEGS Rating					Y	IP	N	N
LEOP		C	C	C	Y,08	C	C	Y,09
HM Plan		IP	IP		Y	IP	IP	Y
Warning	Y				Y		Y	Y
Storm Ready?		C	C	C	IP	C	C	N
Weather Radio?					Y	Y	Y	Y
Sirens?	Y				Y		Y	Y
Emergency Warning Notification?					IP	C	N	N

	Frederick	Garden City	Gilcrest	Grover	Hudson	Johnstown	Keenesburg	Kersey
Other?					n/a	Cable Override		
GIS System	Y				Y	C	N	N
Structural Projects					Y	N	N	N
Property Protection					N	N	N	N
Crit.Fac.Protection	N				N	N/A	N	N
Natural Res. Inv.	N				N	N	N	N
Cultural Res. Inv.	N			Y	N	Y	N	?
Erosion Control	Y				Y	Y	N	N
Sediment Control	Y				Y	Y	N	N
Pub. Info Prgrm	Y				Y, IP	Y	N	N
Env. Ed Prgrm	N				Y, IP	N	N	N

## WELD COUNTY CAPABILITY ASSESSMENT (continued)

	LaSalle	Lochbuie	Mead	Milliken	New Raymer	Nunn	Pierce	Platteville	Severance	Windsor
Comp Plan	Y		Y	Y				Y		Y
Land Use Plan	Y		Y	Y				Y		Y
Subdivision Ord	Y		Y	Y				Y		Y
Zoning Ord	Y		Y	Y				Y		Y
NFIP/FPM Ord	Y NSFHA	Never Mapped	Never Mapped	Y	Never Mapped	Y	Y	Y/ NSFHA	Y	Y
- Sub.Damage?	Y		N	Y				Y		
- Administrator?	Y		UNK	Y				Y		Y
- # of FP Bldgs?	sewer		0	1				0		0
- # of policies	0		0	UNK				UNK		0
- # of RL's?	0		N/A	0				0		0
CRS Rating	N/A		N/A	N/A				N/A		N/A
Stormwater Prgm	Y		Y	Y				Y		Y
Building Code	Y		Y	Y				Y		Y
Building Official.	Y		Y	Y				Y		Y
- Inspections?	Y		Y	Y				Y		Y
BCEGS Rating										
LEOP	C	C	C	C	C	C	C	C	C	C
HM Plan	IP		IP	IP	IP			IP	IP	IP
Warning										
Storm Ready?	C	C	C	C	C	C	C	C	C	C
Weather Radio?	Y			Y						Y
Sirens?	N		N	N				Y-1		N
Emergency Warning	C			N				C		Y (R911)

	LaSalle	Lochbuie	Mead	Milliken	New Raymer	Nunn	Pierce	Platteville	Severance	Windsor
Notification?										
Other?				N				Cable Override		N
GIS System	N			C				N		C
Structural Projects	N		Y	Y				Y		Y
Property Protection	N		N	Y				Y		Y
Crit.Fac.Protection	sewer		N	Y				Y		Y
Natural Res. Inv.	Y		N	Y				Y		Y
Cultural Res. Inv.	Y	N	Y	Y	N	Y	N	Y	N	Y
Erosion Control	Y		Y	Y				Y		Y
Sediment Control	Y		Y	Y				Y		Y
Pub. Info Prgrm	Y		Y	Y				Y		Y
Env. Ed Prgrm	Y		Y	Y				Y		Y

### NFIP Mapping Information:

The following communities DO participate in the NFIP (Community ID#, Date of Current/Official Map):

- **Unincorporated Weld County**, (#080266, 9/22/99)
- **Greeley** (#080184#, 07/16/79)
- **Ault** (#080179, 6/10/80; NSFHA)
- **Dacono** (#08236, 7/16/79)
- **Eaton** (#080180, 9/1/80, NSFHA)
- **Evans** (#080182, 4/2/79)
- **Firestone** (#080241, 12/18/79)
- **Ft. Lupton** (#080183, 4/2/79)
- **Frederick** (#080244, 7/13/82)
- **Gilcrest** (# 080213, 6/10/80; NSFHA – but 2009 HAZUS modeling indicates extensive flood potential)

- 
- **Hudson** (#080249, joined 8/20/97, but never mapped)
  - **Johnstown** ( Mapped 6/17/08; joined in 12/19/06)
  - **Keenesburg** (#080251, 8/24/81; NSFHA)
  - **LaSalle** (#080186, 5/25/78; NSFHA)
  - **Milliken** (#080187, 8/1/79)
  - **Nunn** (#080188, 2/1/79)
  - **Pierce** (#080189, 11/15/79)
  - **Platteville** (#080190, 2/29/80; NSFHA)
  - **Severance** (#080317, 9/22/99)
  - **Windsor** (#080264, 9/27/91)

**The following Communities DO NOT participate in the NFIP:**

- **Garden City** (Never Mapped)
- **Grover** (Never Mapped)
- **Kersey** (NSFHA)
- **Lochbuie** (Never Mapped)
- **Mead** (Never Mapped, but annexed mapped land from County—Needs to Join NFIP)
- **New Raymer** (Never Mapped)

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## Weld County Mitigation Recommendations

**Action Item #1:** *Establish an ongoing or annual Public Education campaign regarding Hazards and Emergency Management.*

**Issue Statement:** There are many emergency management issues that need to be reinforced with public education so that citizens know what risks they face, what protective actions they can take, and what government programs are in place to assist them. Included in these information needs is information pertaining to:

- Dam Safety: Weld has had 3 failures! Teach owners about inspecting dams. Exercise EAPs
- Seismic Risk: USGS shows low risk to ground-shaking, but an earthquake was recorded near Kersey.
- Tornado Safety (There are 4 per year on average!)
- Flood Insurance Program and Insurance Coverage
  - Only 16 of 79 floodplain buildings in Dacono are insured against flooding
  - Ft. Lupton has 9 policies, 6 in A-Zone, but say they only have one building—the ball field???
  - Mead has annexed mapped county land and needs to join program
  - Weld County is the only county within planning area rated by the State as having a High Risk of flooding

**Implementation Manager and strategy:** County Emergency Manager in conjunction with appropriate County/Town Departments with municipalities (Ault, Dacono, Evans, Firestone, Fort Lupton, Frederick, Garden City, Gilcrest, Greeley, Grover, Hudson, Johnstown, Keenesburg, Kersey, LaSalle, Mead, Milliken, New Raymer, Pierce, Platteville, Severance, and Windsor participating in this plan, school districts (Weld County RE-4, RE-6 and RE-8, Platte Valley Schools), and State/Federal Agencies. Monitor grants, and seek private partners for cost-share opportunities.

**Priority:** High

**Cost Estimate:** \$2,500 for printing and distribution costs.

**Cost-Effectiveness Explanation:** The potential for saving just one life, and providing time for individuals and businesses to take effective protective actions, outweighs the potential cost of the public education program. Public Education may be the most effective and least-expensive way to reduce disaster losses by changing human behavior to promote appropriate actions.



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**2009 Update:** An All Hazards Emergency Operations Plan and Crisis Action Guide were completed in the Town of Hudson in November of 2008. Hudson was the pilot community for a grant designed to assist three rural jurisdictions with their emergency preparedness. Kersey and Keenesburg were the other two communities. The project was facilitated by Greg Moser of CISPR and some of his students from the University of Denver. Participation by Town Administration, Hudson's elected officials, Weld County Department heads responsible for responding to a disaster, utility company representatives, and social service agency providers made the exercise extremely valuable. Follow-up presentations with members from our business community, Weld County RE-3J School District, and local residents are ongoing. It was an added bonus to be a part of the strategic planning that took place in Kersey and Keenesburg. The City of Evans added new annexes to the EOP for major snow storm, blizzard, and tornado. The City website was updated with emergency management information, and the establishment of a public information function. The City of Dacono has a monthly newsletter in which messages, warnings and updates are included. The planning team agreed that this should remain a high priority, ongoing project. The Town of Firestone noted that public education is an on going effort. Information is being disseminated to the public via the Town website, semi-annual emergency preparedness courses, brochures on preparedness, articles in the bi-monthly Town newsletter, and articles in the local paper. Additionally there is a strong effort in sharing information with the local schools and businesses within Firestone.

**Action Item #2:** *Each incorporated community with a mapped floodplain should inventory critical facilities within the floodplain to determine if they should be protected. Facilities would include power substations, water sources such as wellheads, sewage treatment facilities, police and fire stations, hospitals, and nursing homes.*

**Issue Statement:** In floodplains there is a known risk. Not having critical facilities protected against such risks can severely handicap a community's ability to respond and recover from a flood. Potential losses should be estimated for the failure of each critical facility. Then a cost estimate should be calculated for the favored method of protection. Then a benefit-cost comparison will indicate whether or not the facility is worth protecting.

**Implementation Manager and strategy:** County Emergency Manager in conjunction with appropriate County/Town Departments. Technical Assistance is available from state agencies if help in making these determinations is needed.

**Priority:** High

**Cost Estimate:** Staff time only for initial inventory and discussion of protection methods, and cost-benefit analysis.

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**Cost-Effectiveness Explanation:** There is not cost for the initial inventory and decision-making. Protective measures should be taken where cost-effective.

**2009 Update:** This project was completed as part of the 2009 update to this plan. Critical facilities that are at risk from flooding are shown in Tables 8 and 9 and on the maps in Figures 2 and 3. The Town of Hudson has learned through the review of existing flood plain maps that the Town limits were not affected by an existing flood plain. However, recent land annexations may have one property within a flood plain, but there is no anticipated development of that area at this time. The Town's new Waste Water Treatment Plant being built in the vicinity on the annexed property is being built above the flood plain. The City of Evans has no critical facilities in the floodplain. The City of Dacono has a mapped floodplain. Frederick still wants to do a detailed inventory. The floodplain analysis should be updated with DFIRM mapping when that becomes available.

**Action Item #3:** *Communities with NSFHA or Never Mapped should consider joining NFIP for the availability of insurance, especially if growing/annexing rapidly.*

**Issue Statement:** The following communities within Weld County have never been mapped for flood hazards: Garden City, Gilcrest, Grover, Kersey (no SFHA), Lochbuie, Mead, and New Raymer. As such, they chose not to join the NFIP. Currently, because these communities do not participate in the NFIP, flood insurance is unavailable to building owners. However, as communities grow and annex land from the County, they may be acquiring land that is flood prone or subject to drainage problems. A community can join the NFIP by adopting an ordinance and agreeing to regulate development in flood prone areas, as indicated on a FEMA-provided map. Where there is no map, no enforcement is necessary ---- but ---- having adopted the ordinance will allow building owners to purchase flood insurance if they so choose. This is what the Town of Johnstown did. As a result of this planning process, Johnstown joined the NFIP on 08/22/2003.

In cases where there is a known watercourse within the existing or expanding community boundaries, the community should request CWCB and/or FEMA to develop a floodplain map that can be used for regulatory and insurance purposes.

**Implementation Manager and strategy:** Communities should contact the CWCB and ask to join the NFIP. CWCB will visit the community and explain all the requirements.

**Priority:** High

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**Cost Estimate:** Staff time only for initial inventory and discussion of protection methods, and cost-benefit analysis.

**Cost-Effectiveness Explanation:** There is no cost for the initial inventory and decision-making. Protective measures should be taken where cost-effective.

**2009 Update:** Johnstown was mapped 6/17/08 and joined the NFIP 12/19/06. The other communities are still not mapped and currently do not participate in the NFIP. Of these communities Mead and Lochbuie may need to consider this the most, as Mead has annexed land that is mapped as floodprone, and the HAZUS analysis indicates some potential for flooding in Lochbuie and Gilcrest.

**Action Item #4:** *Implement the high priority actions of the City of Evans' Comprehensive Master Drainage Plan.*

**Issue Statement:** The City of Evans has a Comprehensive Master Drainage Plan that identifies over \$22 Million in drainage improvements that necessary throughout the community. The City does have its own stormwater utility program which generates revenue to manage a stormwater master drainage plan. The plan is a multi-volume engineering document that delineates the problems, designs solutions, and calculates the cost-effectiveness of the recommended actions. The Public Works Department intends, over time, to implement the entire plan. For the purposes of this plan, however, Evans has prioritized the work to be accomplished first and submitted the following projects for inclusion in this plan.

- Storm sewer improvements in the vicinity of US85 and 31<sup>st</sup> St. \$950,000
- Improve existing detention facilities/Construct storm sewer improvements in the vicinity of US85 and 37<sup>th</sup> St. \$236,000
- Construct a large diameter storm sewer in 37<sup>th</sup> St., just east of US85 eastward to the Platte River. \$1,905,000
- Construct a storm sewer and drainage structures in W. Service Rd, from 42nd St. to the Platte River. \$335,000

**Implementation Manager and strategy:** Evans Public Works. Stormwater utility fees and in-kind labor serve as match for grants.

**Priority:** As funding becomes available.

**Cost Estimate:** Included above.

**Cost-Effectiveness Explanation:** Described in Comprehensive Master Drainage Plan.

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**2009 Update:** The City of Evans completed phase one of a large diameter storm sewer in 37<sup>th</sup> Street, east of US 85 to the Platte River. Evans also completed a storm sewer and drainage structures in W Service Road from 42<sup>nd</sup> St. to the Platte River. Storm sewer improvements in the vicinity of US 85 and 31<sup>st</sup> Street are scheduled to start in 2009, as are ongoing improvement to existing detention facilities in the vicinity of US 85 and 37<sup>th</sup> Street. Dacono uses the “Anderson Plan” that was completed in 1999. The plan needs to be updated.

## **New 2009 Mitigation Objectives**

### **Action Item #1: *Commercial Weather Notification System – City of Greeley.***

**Issue/Background:** This project was initiated in 2008. DTN provides definitive situational awareness through an internet platform for weather tracking, forecasting, and notification. Selected facilities and users would have access to this system.

**Other Alternatives:** NWS alert radios throughout the community.

**Responsible Office:** Weld/Greeley OEM.

**Priority:** Medium

**Cost Estimate:** \$10-20,000

**Benefits (Avoided Losses):** The cost of implementation is low, and the lead time given for significant weather events results in increased life safety.

**Potential Funding:** Yearly budget.

**Schedule:** 2010-2011.

### **Action Item #2: *Cache la Poudre Floodplain Mapping – City of Greeley***

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**Issue/Background:** The U.S. Army Corps of Engineers is currently studying the Cache La Poudre River in Weld County and through the City of Greeley. The study updates the hydrology, hydraulics, floodplain, and floodway boundaries. New FIRMs (Flood Insurance Rate Maps) will be created using this updated information.

**Other Alternatives:**

**Responsible Office:** U.S. Army Corps of Engineers

**Priority (High, Medium, Low):** Medium

**Cost Estimate:** \$5,000

**Benefits (Avoided Losses):** More accurate flood information for the Cache La Poudre River will allow for better administration of flood fringe development.

**Potential Funding:** In-House

**Schedule:** Project Completion in 2010.

**Action Item #3: *City-Initiated Floodway Rezone – City of Greeley***

**Issue/Background:** Following adoption of the U.S. Army Corps of Engineers updated flood study, the City of Greeley will initiate a floodway rezone of all properties impacted by the revised floodway boundary. Properties within the revised floodway will be rezoned Conservation District (C-D) to restrict development within this area and preserve natural open space.

**Other Alternatives:** None

**Responsible Office:** City of Greeley Community Development Department

**Priority (High, Medium, Low):** Medium

**Cost Estimate:** Under development

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**Benefits (Avoided Losses):** Restricted development within the regulated floodway and preservation of natural open space.

**Potential Funding:** Under development, likely largely in house.

**Schedule:** 2010-2011 – Following adoption of the U.S. Army Corps of Engineers updated flood study.

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**Action Item #4: *Bestway Regional Detention Facility – City of Greeley***

**Issue/Background:** Flood mitigation by retaining the 100 year storm event and releasing the flow slowly to the Poudre River. Any storm greater than a 25 year event currently can cause flooding in the area. 830 homes and 1 fire station are currently at risk of flooding which this project will protect. The project includes stormdrain inlets and piping to collect stormwater and divert it into a 100 year detention storage facility. Outlet structures and piping would then control the outflow to avoid flooding of downstream properties.

**Other Alternatives:** Much, much larger storm pipes to the river.

**Responsible Office:** City of Greeley, Public Works, Stormwater Management Division 970-336-4031

**Priority (High, Medium, Low):** High

**Cost Estimate:** \$2,200,000

**Benefits (Avoided Losses):** \$8,000,000. Total property values downstream of the project are greater than \$ 42,000,000. If only 20% of the value of these properties is lost in a flood we would see over \$ 8,000,000 in damages.

**Potential Funding:** FEMA Grant & Stormwater Utility Fund

**Schedule:** 2010 – 2011

**Action Item #5: *Citywide Emergency Sirens – City of Greeley***

**Issue/Background:** This project was investigated in 2008 as a result of the Windsor Tornado and alternative notification technologies were sought at that time. However, if future Greeley City Councils desire to refocus on this program, the City of Greeley would seek state and federal funding to assist in the project implementation.

**Other Alternative:** Action Item 1, telephony notification system, national weather service alert weather radios for public use, emergency alert system (EAS) usage.

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**Responsible Office:** City Office of Emergency Management

**Priority:** Low

**Cost Estimate:** \$600,000

**Benefits (Avoided Losses):** While the probability of a severe tornado hazard occurrence impacting Greeley is low, the potential impacts are very high, therefore it is important that the City have an adequate warning system in place. The avoided losses would include population casualties, though the property mitigation from this action would be minimal. For these reasons, the current City Council is utilizing their limited resources for a more all-hazards approach to overall disaster mitigation and preparedness.

**Potential Funding:** State and Federal

**Schedule:** Ongoing pending further funding availability and future city governments.



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**Action Item #6: *Pawnee Buttes sub-area land use plan – Weld County.***

**Issue/Background:** Weld County anticipates a planning process for the northeast part of the County that would establish goals and policies unique to the area. This could be tied into the community wildfire protection plan.

**Other Alternatives:** No plan/No action.

**Responsible Office:** Weld County Planning Services.

**Priority:** Medium

**Cost Estimate:** \$20,000 (time and materials).

**Cost Effectiveness Explanation:** Wildfires, extreme temperatures, and wind/dust storms can be mitigated, avoiding loss of livestock and productive land/soil.

**Potential Funding:** In house funding; possible DOLA.

**Schedule:** 2 years (2009-2010)

**Action Item #7: *Detailed Floodplain Mapping – Weld County.***

**Issue/Background:** Many of the floodplains located in Weld County are mapped as Zone A. To better protect residents, it would be beneficial to have the mapping update to include BFEs and floodways. There are also many floodplains that are not accurately mapped or that have known issues with their accuracy. The FIRMs don't always show what the floodplains are when compared with HAZUS.

Weld County Public Works has some of the unfinished floodplain mapping for flashflood prone small drainages. Most floodplains in Weld County are in the A zone with no BFEs determined and several floodplains are only partially mapped. The partially mapped floodplains include Crow Creek, Lone Tree Creek, Owl Creek, Coalbank Creek, and various tributaries of Crow Creek. Many of the floodplains are mapped at the lower end and the upper end with no mapping in between. As a result flood risk is unknown; there is no floodplain mapping to provide guidance for developers and others that build close to flashflood creeks. The floodplain mapping

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should be completed to connect the upper and lower stream reaches so that the appropriate building/development requirements can be enforced.

Additionally, many of the Zone A floodplains could be mapped in more detail to provide a floodway and Base Flood Elevations. Those floodplains include the lower portion of Lone Tree Creek, Box Elder Creek, St. Vrain Creek, Big Thompson River, and the South Platte River. All of these floodplains are in areas that have experienced significant growth over the past several years. Because of the approximate nature of the floodplain mapping, the mapped floodplain is known to be at least partially incorrectly delineated. The floodplains should be mapped in more detail so that the appropriate building/development requirements can be enforced. While the risk to residents is not changed by more detailed floodplain mapping, future risk can be mitigated by providing information on safe places and methods to build.

**Other Alternatives:**

**Responsible Office:** Weld County Public Works.

**Cost Estimate:** Unknown. The cost is likely to be high.

**Benefits (Losses Avoided):** The County will be able to use floodplain regulations and building codes to ensure that people and property are relatively safe from flooding.

**Potential Funding:** CWCB grants, FEMA grants. Will likely need cooperation/funding with other municipalities.

**Schedule:** Ongoing.

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**Action Item #8: *ALERT Floodwarning System – Weld County.***

**Issue/Background:** ALERT systems provide up to the minute weather data, including precipitation and stream flow/water level data. An ALERT system can provide data much more timely than the NWS. Known flood prone areas can be targeted so that real-time notification can happen. There is the potential to piggyback on existing systems that are already located along the Front Range. The implementation of a County wide real-time early warning system would reduce the potential for loss of life due to flooding. The warning system should consist of real-time ALERT stream gages, rain gages, and weather stations. The data from a real-time warning system would assist emergency managers in many other disasters as well. For example, the data can be used to help determine likely plume directions in the case of a chemical spill or attack. The data can also be used by the NWS to help provide more accurate and timely weather forecasts and warnings. Many other cities, counties, and jurisdictions along the Front Range have implemented the ALERT warning system and have successfully used the real-time data to provide warnings to affected residents in a timely manner.

**Other Alternatives:** Rely on NWS for warnings that may not be site specific.

**Responsible Office:** Weld County Public Works/OEM.

**Priority:** Medium

**Cost Estimate:** \$100,000-200,000 for 30-40 gages.

**Cost Effectiveness Explanation:** The County can provide more accurate information and give citizens greater warning that an event may be happening. Greater warning ensures greater life safety.

**Potential Funding:** CWCB and FEMA grants, affected municipalities that partner with Weld County.

**Schedule:** Unknown.

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**Action Item #9: *Public Warning System – Weld County.***

**Issue Statement:** Weld County needs a system for providing warnings to all or parts of the county on impending or current disasters. Intrado Corporation is the current contractor (reverse 911).

**Implementation Manager and strategy:** Weld County Commissioners.

**Priority:** High

**Cost Estimate:** \$30,000 annually.

**Cost Effectiveness Explanation:** The County can give citizens greater warning that an event may be happening. Greater warning ensures greater life safety. Because of the nature of this proposed mass communication, potential life savings are great in number and in area.

**Action Item #10: *Storm Ready – Weld County***

**Issue/Background:** Apply and maintain ‘Storm Ready’ status with NOAA. One of the goals for the Northeast region is to have all 11 counties’ participate in Storm Ready. Weld County has been a participant in the past, and the intent is to maintain Storm Ready status. As part of being Storm Ready all communities will participate in Weather Spotter Training provided by the National Weather Services. Communities will support the Weld County Office of Emergency Management in a campaign to get weather alert radios in Government buildings and Businesses in their towns.

**Other Alternatives:** As a Storm Ready County, we hold several Weather Spotter Classes. These classes are taught by NOAA and participants can become a spotter and report information to NOAA or the WCRCC.

**Responsible Office:** Weld County OEM in conjunction with appropriate County/Town Departments with municipalities participating in this plan (Ault, Dacono, Evans, Firestone, Fort Lupton, Frederick, Garden City, Gilcrest, Greeley, Grover, Hudson, Johnstown, Keenesburg, Kersey, LaSalle, Mead, Milliken, New Raymer, Pierce, Platteville, Severance, and Windsor), and school districts (Weld County RE-4, RE-6 and RE-8, Platte Valley Schools).

**Priority (High, Medium, Low):** High

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**Cost Estimate:** Staff Time and funds for meeting for drinks and goodies. This will come from the OEM budget

**Benefits (Avoided Losses):** Reduce injuries to citizens. As more spotters are trained information will be pushed to the NWS for warnings. Information flow and awareness of severe weather

**Potential Funding:** OEM Budget and local business sponsor's and grants through the Colorado Division of Emergency Management.

**Schedule:** Four classes in the spring March-May

**Action Item #11: *Dam Safety – Weld County***

**Issue/Background:** Weld County has 28 dams, 6 are class 1 Hazard. Several other dams in Boulder and Larimer counties are class 1 and have a direct effect on planning for Weld County. Continue to maintain emergency response plans for the dams in Weld County, Work with the Division of Water Resource to update all documentation and coordinate with Dam owners for planning and preparedness.

**Other Alternatives:** Coordinated with Boulder, Larimer and Broomfield counties for Dam Safety that has a direct effect on Weld County. Participate in Exercises and Drills.

**Responsible Office:** Weld County OEM, Coordinated with the Division of Water Resource

**Priority (High, Medium, Low):** Medium

**Cost Estimate :** Staff Time

**Benefits (Avoided Losses):** Avoid loss due to dam failure, participation in planning will help Weld County Citizens to be aware of Dam Safety.

**Potential Funding:** OEM Budget

**Schedule:** Annual updates

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**Action Item #12: *Weld County Wildland Fire Protection Plan – Weld County***

**Issue/Background:** Over the last three years Weld County has had several Wildland fires in the South and Eastern part of the county. In July 2009 Gov. Ritter signed into law SB09-001 The establishment of Community Wildfire Protection Plans (CWPP). This law requires each county to develop a CWPP.

**Other Alternatives:** This plan will be a coordinated effort with the Weld County Fire Chief Association, Weld County Planning Department and Weld County OEM.

**Responsible Office:** Weld County OEM

**Priority (High, Medium, Low):** High

**Cost Estimate:** Staff Time, Printing -2,000.00

**Benefits (Avoided Losses):** Identification of Wildfire prone areas, Development of Mitigation programs

**Potential Funding:** Grants and County Budget

**Schedule:** Completion by December 2010

**Action Item #13: *Backup Generators for Town Hall and Critical Facilities – Town of Firestone.***

**Issue/Background:** Currently the Town of Firestone has no contingency plan for maintaining services during a power outage.

**Other Alternatives:** Share resources with Frederick.

**Responsible Office:** Office of Emergency Management.

**Priority:** Medium

**Cost Estimate:** \$60,000.



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**Benefits (Losses Avoided):** Implementing this plan will result in a reduction in losses based on the levels of services the Town of Firestone is able to maintain. It should increase the Town's ability to communicate and coordinate with stakeholders.

**Potential Funding:** HLS grant, military surplus.

**Schedule:** Implemented by January 2011.

**Action Item #14: *Storm Water Drainage Improvements - Cottonwood Park and Collins Streets – Town of Eaton***

**Issue/Background:** Storm Water collects in and causes flooding in the area of Cottonwood Park and Collins Streets. Storm sewer is inadequate to carry large amounts of runoff which come from the surface drainage above. Intent is to divert surface runoff, through storm drain system to a detention pond south of Collins Street.

**Other Alternatives:** None

**Responsible Office:** Town of Eaton

**Priority (High, Medium, Low):** High

**Cost Estimate:** \$56,000.00

**Benefits (Avoided Losses):** Prevent street and private property flooding in the area

**Potential Funding:** General Fund

**Schedule:** Park/Collins intersection – 2009; Cottonwood/Collins intersection – 2010

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**Action Item #15: *Storm Water Drainage Improvements – Collins Street - Town of Eaton***

**Issue/Background:** Storm water was diverted into irrigation tile which, at one time, drained into surface ditch south of Collins street and east of Hwy 85. Changes were made and the tile was abandoned causing water to surface in the parking lot north of Collins. Runoff was diverted to surface drainage system avoiding the irrigation tile and storm drain was abandoned

**Other Alternatives:** None

**Responsible Office:** Town of Eaton

**Priority (High, Medium, Low):** High

**Cost Estimate:** \$28,000.00

**Benefits (Avoided Losses):** Damage to parking lot and other areas near Collins Street avoided

**Potential Funding:** General Fund

**Schedule:** Completed 2009

**Action Item #16: *Continued compliance with the NFIP for participating communities***

As participants in the NFIP the County and the following communities will continue to promote wise use of floodplains through ordinance administration and periodic update, promotion of flood insurance and staff training, including encouragement of Certified Floodplain Manager status. This applies to the following communities (Community ID#, Date of Current/Official Map):

- Unincorporated Weld County, (#080266, 9/22/99)
- Greeley (#080184#, 07/16/79)
- Ault (#080179, 6/10/80; NSFHA)
- Dacono (#08236, 7/16/79)
- Eaton (#080180, 9/1/80, NSFHA)
- Evans (#080182, 4/2/79)

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- Firestone (#080241, 12/18/79)
  - Ft. Lupton (#080183, 4/2/79)
  - Frederick (#080244, 7/13/82)
  - Gilcrest (# 080213, 6/10/80; NSFHA – but 2009 HAZUS modeling indicates extensive flood potential)
  - Hudson (#080249, joined 8/20/97, but never mapped)
  - Johnstown ( Mapped 6/17/08; joined in 12/19/06)
  - Keenesburg (#080251, 8/24/81; NSFHA)
  - LaSalle (#080186, 5/25/78; NSFHA)
  - Milliken (#080187, 8/1/79)
  - Nunn (#080188, 2/1/79)
  - Pierce (#080189, 11/15/79)
  - Platteville (#080190, 2/29/80; NSFHA)
  - Severance (#080317, 9/22/99)
  - Windsor (#080264, 9/27/91)

**Implementation Manager and strategy:** Town Floodplain Management officials

**Priority:** Medium

**Cost Estimate:** can be accomplished within existing budgets

**Cost-Effectiveness Explanation:** There is little or no increased cost to the County and Towns. The benefits are to floodprone building owners who choose to insure against flood losses, and to taxpayers who no longer would be faced with subsidizing those potential losses.

**Timeframe:** Ongoing.

## **2009 Wildfire Mitigation actions**

The following actions are wildfire mitigation actions written for the 10 county region that the County and the Platte Valley Fire District will undertake or participate in (See Appendix C for details).

Update wildfire risk assessment

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Develop Wildfire pre-attack plans  
Develop County Annual Operating Plans for wildfire  
Host Firewise presentations

## **Additional Recommendations for Consideration/Potential New Projects – 2009**

*Note: these were provided as feedback during the 2009 update.*

### **Hudson:**

- It would be very beneficial to develop a regional “sand box” emergency planning exercise for the growing number of Weld County communities that have Emergency Operations Plans and Crisis Action Guides, including the Weld County Sheriff’s Office of Emergency Management, and the Northeast Regional Field Office Manager from the Colorado Division of Emergency Management. The exercise could be developed around an air disaster over Weld County. Jefferson County and many of its communities worked a mock exercise along this line.
- Preliminary discussions underway to determine feasibility for potential funding and new shelter capabilities for building projects currently in various stages of planning. Buildings include: a new administration building / master station for the Hudson Fire Protection District; a new Hudson Public Works Facility; and possible renovations and structural strengthening to the Hudson Elementary gymnasium. Originally funding efforts for Hudson Elementary were voted down last fall. The Town does not currently have any “safe buildings” within the Town limits for residents to take cover in the event of a natural or man-made disaster. Should a new Town Hall be considered in the next 3 to 5 years (or more), considerations would be given to its design criteria as a safe building.
- Regionally based partnerships (IGA based) are being discussed in an effort to enhance the possibility of securing grant funding for equipment, materials and supplies for our Emergency Operations Center.
- The groundwork is being laid to create an American Red Cross “pre-staged” facility here in Hudson

### **Countywide:**

- Safe Room Projects for Tornado Safety