

# SEDGWICK COUNTY PLANNING ELEMENT



## Sedgwick County Planning Subcommittee and General Description

The following entities participated in the DMA 2009 Update process through the Sedgwick County Planning Subcommittee (CPS). The majority of local government entities participated through an “authorized representation” that enabled Sedgwick County Emergency Management to participate in meetings on their behalf. These entities are indicated with an ‘\*’ below. CPS membership details are provided in Appendix C. Julesburg Irrigation District participated in 2004 but chose not to participate in 2009.

Participating Jurisdictions	Stakeholders
Sedgwick County	FSA - USDA
Emergency Management (Lead)	Julesburg Irrigation District
Town of Julesburg*	Highline Electric Association
Town of Ovid*	Colorado State Forest Service
Town of Sedgwick*	Colorado Division of Emergency Management
Julesburg Public Schools*	Colorado State University - Golden Plains Area Extension
District RE1, Revere School District**(**)	Northeast Colorado Health Department

\* County Emergency Management Participated on their behalf; \*\* New participant in 2009

## County Profile

Sedgwick County is located in the northeast corner of the State and includes the incorporated towns of Julesburg, Ovid and Sedgwick. The land area of Sedgwick County is 548 square miles, which makes it the smallest County in the Planning Area. According to the 2000 U.S. Census, the population for Sedgwick County was 2,747. The 2008 population estimate from the Census is 2,467. The estimated average population density is 5 people per square mile. Sedgwick County grew at a rate of 2.1% between 1990 and 2000. Between 2000 and 2008, the County’s population shrank by 10%. There are 1,390 housing units in the County and the housing density is 2.5 units per square mile. As of the 2000 Census, the median age in the County is 43.2 years. 5.6% of the population is under the age of 5 and 22.1% of the population is over the age of 65. The average household size is 2.31 and the average family size is 2.83. 79.3% of the population (over the age of 25) is a high school graduate or higher, and 13.4% of the population holds at least a bachelor’s degree. 20.4% of the population (over the age of 5) claim a disability status and 9.3% speak a language other than English at home. 7.8% of families live below the poverty line as do 10.0% of individuals. The County is predominantly agricultural. The 2007 Census of Agriculture reports 193 farms and 296,695 acres in total farmland. This accounts for 84.5% of the County’s total land area. The average farm size is 1,537 acres. A base map of the County can be referenced in Figure 1.

The County was named after General John Sedgwick, killed in 1865 while staffing Army Posts established to protect the Pony Express, the Stagecoach line and the Emigrant train from Indians. Indians burned down Julesburg the same year. It is where

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Lodgepole Creek (from Wyoming and then Nebraska) meets the South Platte River. It was a popular place for Wagon Trains to cross the Platte River on their way to Oregon and California. Ovid was home to a Great Western Sugar Beet factory between 1925 and 1985.

## **Hazard Identification and Summary**

Sedgwick County’s planning team identified the hazards that affect the County and summarized their frequency of occurrence, special extent, potential magnitude, and significance specific to Sedgwick 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. Sedgwick 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	Medium
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

## Sedgwick County History of Recorded Natural Hazard Losses

In the 2008 State Hazard Mitigation Plan, the County identified wind storms, winter storms, flooding, drought and lightning as the highest hazard risks. 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
4&12/1903	Grassfires	Freiberg's bridge to Sedgwick: S. of river	Considerable winter feed	Between Venango & Holyoke	Ft. Sedgwick Historical Society (FSHS)
1908, 1910, 1916, 1917	Grassfires				FSHS
May 10, 1917	Dam Failure	Julesburg Reservoir	Took out RR, Flooded Sedgwick		FSHS
12/29/1924	Rabbits	125,000 killed in 6 county area	Governor Declared Hunt Day	4,000 shipped to Denver needy	FSHS
1931, 1937, late 1950's	Grasshoppers		All beets in Ovid	Spraying split 3 ways with Fed & State	FSHS
Jan/May, 1935	Rabbits		15,000 killed		FSHS
1935	Flood				USACE/FSHS
1930's	Drought	Dust Bowl	Farms abandoned		FSHS
June 6, 1947	Tornado	Julesburg			FSHS
Jan. 6, 1949	Blizzard	Julesburg, Ovid	6-ft drifts, rail service stopped	REA out Ovid Sugar factory provided power	FSHS NCDC
May 24, 1951	Flood	Julesburg	Bridge, RR washed out homes flooded crops washed/silted out		NCDC
June 22, 1960	Tornado & hail	Between Ovid & Julesburg	Trees, roofs, antennas, Drive-in, water tanks, Ag buildings, cars 2245 acres of beets in Ovid	9 mile swath HEA power lines, 2400 windows @ Ovid Sugar factory	NCDC
June 29, 1960	Tornado & hail	NW of Sedgwick to Amherst	2 dead, thrown from cars Bldgs, Power lines, roofs		NCDC

Date	Event	Location	Damages	Other Info	Data Source
May 31, 1965	Flood	Ovid/Lodgepole Creek/S. Platte		Came south from Sidney, NE	USDA/SCS
May 8, 1969	Flood	S. Platte		Fed. Dec. 15 cty	NCDC
March 25, 1975	Snow Storm				NCDC
March 1977	Blizzard	NE Colorado	Large power outages, loss of poles, some rural areas without power over 45 days.		HEA, USDA
1980	Grasshoppers			State Dec	CO-OEM
1980	Flood			State Dec	CO-OEM
1981	Grasshoppers			State Dec	CO-OEM
Dec 1981	Blizzard	NE Colorado	I-76 and most other major roads closed.		USDA, OEM
July, 1990	Drought	20 counties	\$1 billion (USDA)		USDA
June, 1995	Flood		\$68,331 road damage	CWCB-	CWCB
2000	Drought		(USDA Dec)	Contiguous County	USDA
April 2001	Winter Storms Fed #1374		Ice damage: HEA lost 563 poles. FEMA provided \$12,853	REA's damaged Poles cost \$829,960	FEMA, CO-OEM REA & CWCB
August 24, 2002	Hail-Winds	In County	80% of beet crop, 75% of beans & soybeans	FSA report: 20 bldgs., 40 vehicles	USDA/FSA SITREP
2002-2007	Drought	Eastern Colorado	Farm losses and agricultural losses		ADFSA
Dec. 2006 and Jan 2007	Blizzard	Eastern Colorado	Major Road closures	Multiple Car Accidents	OEM
6/11/2007	Flood	Julesburg	\$100K	Trained spotter in eastern Phillips County measured over 10.3 inches of rainfall.	NCDC
May 2008	Windstorm	Sedgwick County	Uprooted trees, awnings torn off buildings	One building downtown had roof blown off	OEM
June 2008	Non-supercell tornado	South of Julesburg	One irrigation sprinkler blown over		OEM

Date	Event	Location	Damages	Other Info	Data Source
March 2009	Large grass fire	Started south of Lodgepole, burned NE into Logan and Sedgwick Counties	Approximately 19,000 acres burned	No injuries or livestock lost	OEM

(NCDC Filters Applied: Tornadoes ≥ F1; Hail ≥ 2"; Wind ≥ 75 MPH)

### Other Hazards in Sedgwick County:

#### Dams:

- 3 Class I (High Hazard) Dams
- 0 Class II (Significant Hazard) Dams
- Known Failures: 0
- All Class I Dams in Colorado have emergency action plans in place.
- Irrigation ditches breach during flood events
- Levees: 0

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

**Dust Storms:** 0

**Earthquake:** Minimal risk according to CGS survey.<sup>1</sup>

#### Extreme Temperatures:

- Highest Recorded Temperature in County, 109°F
- Lowest Recorded Temperature in County, -37°F
- Severe Cold Incidents: 4

**Floods and Flash Floods:** 6

**Hailstorms:** 14

**Landslide:** There are sporadic, isolated areas identified by the 2008 State Hazard Mitigation Plan as suspected moderate risk.

**Lightning:** Averages 2,100 strikes per year. 0 reported injuries and 0 reported deaths from 1980-2005

**Severe Windstorms:** 78

**Severe Winter Storms:** 11

**Tornadoes:** (F1 or greater) 12, (Any Size) 30

**Wildfires:** numerous occurrences, primarily caused by lightning and sparks from braking railroad cars

**West Nile Virus:** 19 human illnesses, 0 human fatalities through 2008. (Last confirmed case: 2005).

<sup>1</sup> CGS, Earthquake Evaluation Report. See Earthquake Section in Hazard Identification Chapter for further explanation of risk.

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## Sedgwick County Vulnerability Assessment

The intent of this section is to assess Sedgwick 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 Sedgwick 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 HAZUS building exposure (includes building counts, value of building structure and contents) is shown in Table 3.

### Total Values at Risk from Hazards:

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**Table 3. Building Exposure**

City	Population	Building Count	Building Exposure (\$)	Building Content (\$)	Total Exposure (\$)
Julesburg	1,467	1,256	128,195,000	96,698,000	224,893,000
Ovid	330	194	19,876,000	12,362,000	32,238,000
Sedgwick	191	132	11,262,000	6,293,000	17,555,000
Unincorporated	759	717	54,403,000	38,187,000	92,590,000
Total	2,747	2,299	213,736,000	153,540,000	367,276,000

Source: HAZUS MH MR3

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**Table 4. Building Exposure by Parcel Type**

Type	Parcel Count	Improved Parcel Count	Improved Value
Residential	960	843	46,318,749
Commercial	184	84	5,120,940
Agricultural	727	520	21,262,521
Government	4		
Education	16		

Source: Sedgwick County Assessor, 2008.

### **Critical Facilities and Infrastructure**

An inventory of critical facilities in Sedgwick 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 Sedgwick County CPS.

**Table 5. Critical Facilities Inventory**

Facility Type	Number of Sites	Est. Replacement Value	Capacity or Enrollment	Additional Information
Essential Infrastructure				
Airports (paved)	1	\$1.5 M		
Communications Towers	2	\$2 M		
Correctional Facilities	N/A			
Electrical Generation/Distribution	7	\$18 M		
Media Outlets	2	\$125K		
National Guard	N/A			
Public Safety Communications Centers	1			In Courthouse
Public Safety Facilities	7	In Courthouse	City hall	And Local Churches
Police Stations	1			In Courthouse
EMS/Ambulance Stations	2			In Fire Stations
Fire Stations	3	\$1.5M		
EOCs	1			In Courthouse
Town/City Halls/Courthouse	4	\$4M		
Wastewater Treatment	3	\$1.2M		
Water Utilities/Treatment	3	\$2.5M		
Childcare Centers	2	\$150K	50	
Schools	4	\$22.5M	800	2 Julesburg 1 Ovid 1 Sedgwick
Shelters and Community Centers	1	\$250K	200	Fairgrounds
Hospitals	1	\$10M		
Clinics	1			In Hospital
Nursing Homes/Assisted Living Centers	1	\$6.3M		
Natural, Cultural and Historic Resources				
Community Centers	See above			
Historic Properties	3	\$2.5M	600	
Hazardous Materials				
Extremely Hazardous Substances	N/A			
Hazardous Chemicals storage	3	\$1.5M		

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## **Natural and Historic Assets**

### **Historic Sites in Sedgwick County:**

- Gibello's Caves
- Union Pacific Railroad Julesburg Depot/Depot Museum
- Hippodrome Theatre, Julesburg
- Julesburg Library, Julesburg
- Ovid High School, Ovid
- Sedgwick Hotel/Bank are being added to list

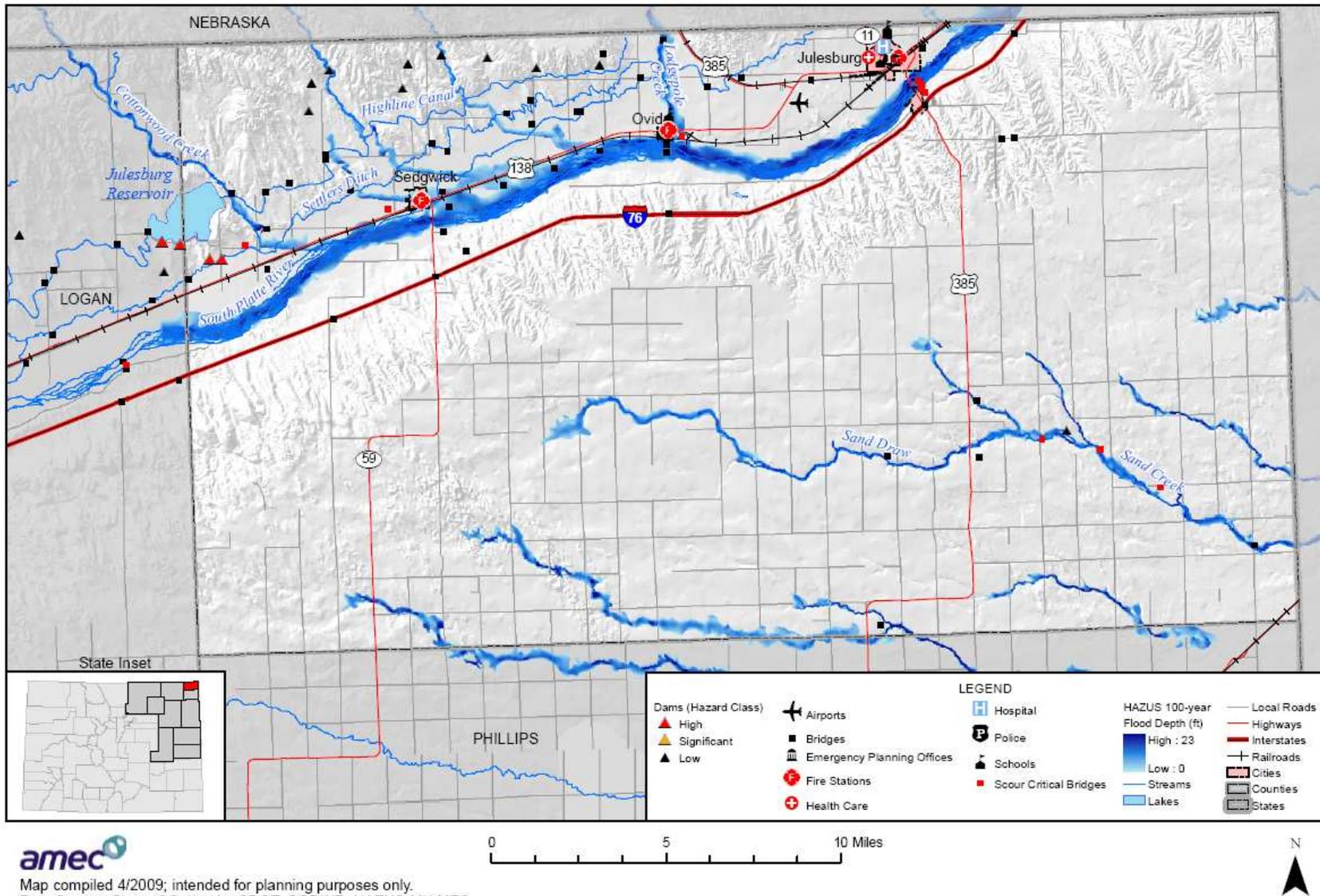
### **Development Trends**

None. While the County has experienced limited growth, there is no distinguishable pattern as to where it occurs. There is potential for future wind farm development.

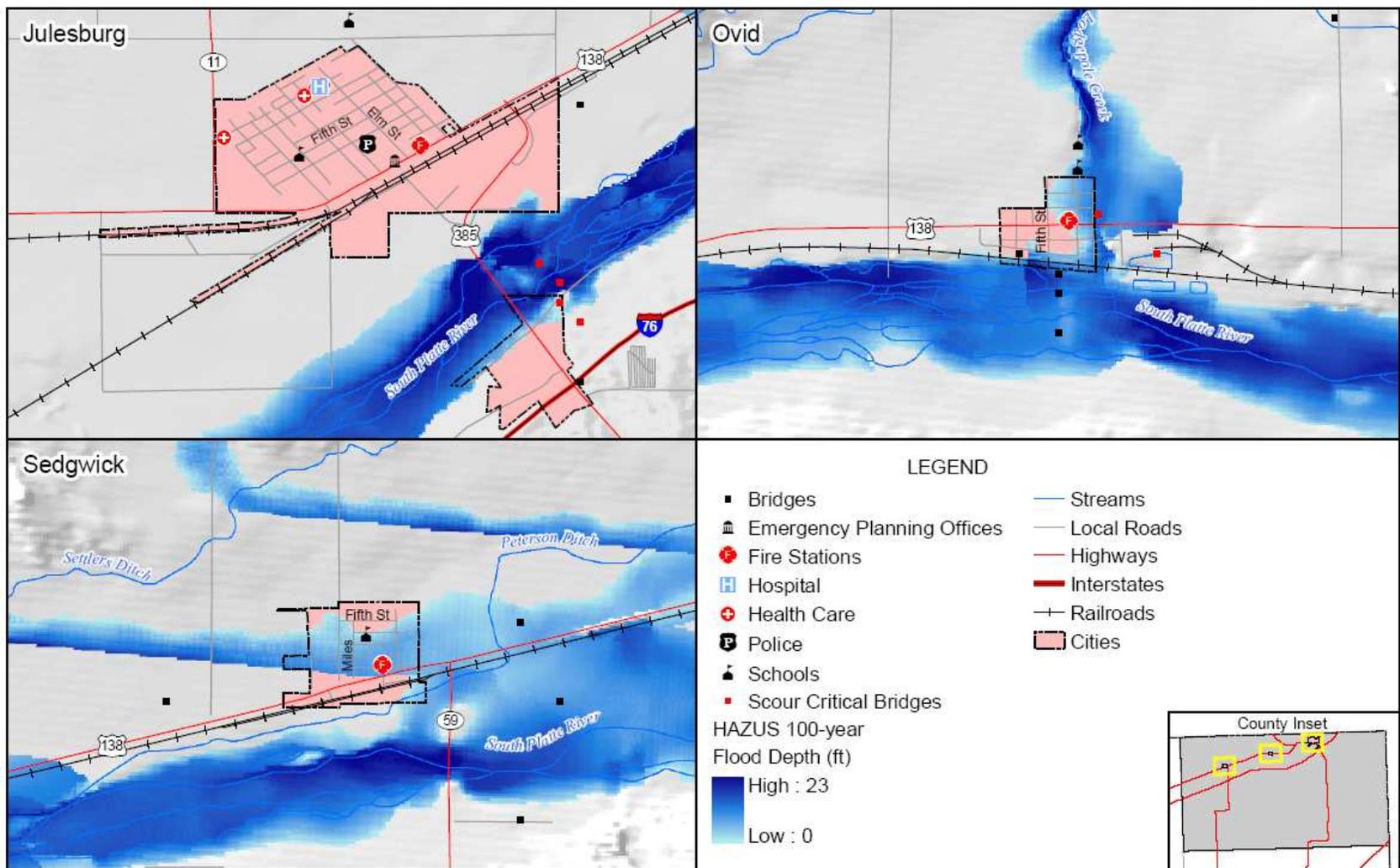
### **Floodplain Vulnerability Assessment**

The best available flood data for Sedgwick County was generated by HAZUS-MH MR3, FEMA's software program for estimating potential losses from disasters. See the base plan vulnerability assessment for a description of the HAZUS methodology. The 100-year floodplain generated with HAZUS-MH is shown countywide in Figure 1 and at municipal scales in Figure 2. Both maps indicate the location of critical facilities as well.

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



**Figure 2 Sedgwick County Cities HAZUS 100-year Floodplain and Critical Facilities Map**



Map compiled 4/2009; intended for planning purposes only.  
Data Source: State of Colorado, CDOT, CODWR, HAZUS-MH MR3

HAZUS-MH estimates the potential for over \$5 million in flood losses from a 100-year flood in the County. To estimate the monetary 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 the unincorporated area to illustrate how the risk varies across the planning area, with the results summarized in Table 6. According to HAZUS-MH, the Town of Ovid has the greatest flood risk and majority of the damage with \$1,685,000 followed by the Town of Sedgwick with damage of \$1,457,000. Based on a 2004 floodplain inventory there are 7 Buildings in identified floodplain of Ovid with a total assessed value of \$580,980. Ovid does not participate in the NFIP and is therefore ineligible for FEMA PDM/FMA funding, and flood insurance is unavailable. There are 3 buildings in identified floodplain of Sedgwick with a total assessed value of \$30,268. There are no buildings in the floodplain within the Town of Julesburg. The map in Figure 3 displays the distribution of the flood loss by Census Block across the County. According to the map in Figure 1 the majority of flood impacts in the unincorporated County are located on Lodgepole Creek and the South Platte River which goes by the Town of Ovid and the Peterson Ditch and South Platte River which goes by Sedgwick. The HAZUS model does not take into account for levees thus the HAZUS model is representative of a levee failure scenario or greater than 100 year flood event. According to the current FEMA FIRMs there are not any levees in Sedgwick County.

**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
Julesburg	-	-	-	-	-	-	-	-	-	-%
Ovid	747,000	890,000	20,000	6,000	8,000	-	14,000	1,685,000	33%	4%
Sedgwick	749,000	667,000	5,000	2,000	3,000	-	31,000	1,457,000	29%	7%
Unincorporated	987,000	887,000	56,000	1,000	-	-	6,000	1,937,000	38%	2%
Total	2,483,000	2,444,000	81,000	9,000	11,000	-	51,000	5,079,000	100%	1%

The building damage loss ratio is an indication of the community's ability to recover after an event. Building Damage Loss Ratio 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 Sedgwick and Ovid. Sedgwick has the highest loss ratio of 7% with a potential building damage loss of \$749,000. Ovid has the second highest loss ratio of 4% with a potential building damage loss of \$747,000.

The HAZUS floodplain does match up closely to the FIRMs for the cities of Julesburg, Ovid and Sedgwick. The unincorporated County cannot be compared since there are not any effective flood maps for them. As far as the comparison of Sedgwick, HAZUS

shows additional flooding that goes through the middle of town that does not have a stream related to it, while the FIRM shows inundation for only the eastern portion of the city, up to East Street. As for Ovid, the flooding represented from the HAZUS model shows more flooding for Lodgepole Creek and South Platte River than represented on the FIRM.

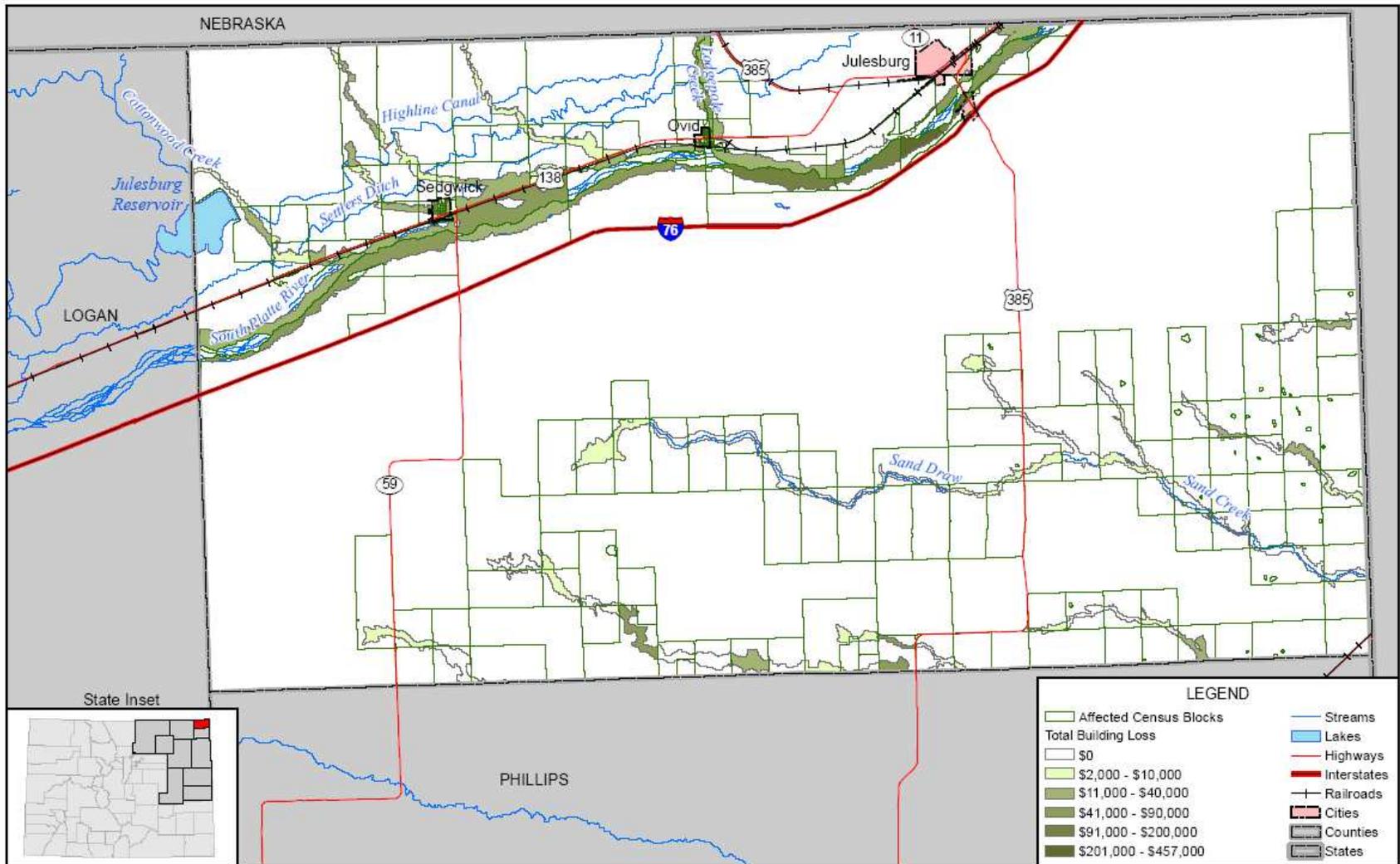
**Floodplain Population Information:**

The 2008 State Hazard Mitigation Plan estimates that there are 7 people, 4 1-4 family structures, and 11 other structures in the County floodplains. Sedgwick County was identified in the State flood risk assessment as **Low Risk**, based upon the floodplain population, the number of structures at risk, and the number of dams. The displaced population and shelter needs estimated by HAZUS are shown in Table 7.

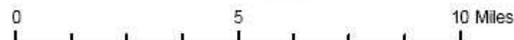
**Table 7. Population Displaced by Flooding**

Jurisdiction	Displaced Population	Population Needing Shelter
Julesburg	-	-
Ovid	160	78
Sedgwick	145	41
Sedgwick County	70	1
Total	375	120

**Figure 3 Sedgwick County Building Loss in the 100-year Floodplain**



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



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## Critical Facilities

Critical facilities in the floodplain were determined using GIS, by selecting all critical facilities that fell within the floodplain. These are listed in Table 8 and 9 and shown on the maps in Figures 2 and 3. The cities of Sedgwick and Julesburg both note that their jurisdictions contain sewer facilities that are in the floodplain, but not mapped. Each of these facilities is protected by a small earthen berm.

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

<b>Flooded Critical Facility</b>	<b>Name</b>	<b>Near City</b>
Fire Station	Ovid Fire Dept	Ovid
Fire Station	Sedgwick Fire Dept	Sedgwick
School	Platte Valley Elementary School	Sedgwick
School	Revere Junior-Senior High School	Ovid

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**Table 9. Critical Facilities in the Floodplain Summary**

<b>Facility Type</b>	<b>Facility Count</b>
Bridges	13
Fire Stations	2
Natural Gas Facility	1
Schools	2
Scour Critical Bridges	11
<b>Total</b>	<b>22</b>

### Sedgwick 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 11 scour critical bridges in Sedgwick County. They are all located on the local roads, major roads and highways that travel through Sedgwick County. Two scour critical bridges are west of Sedgwick with one just outside of its city limits on US 138 where it intersects an unnamed tributary to Peterson Ditch. The other bridge outside Sedgwick is on County Road 5 at Settlers Ditch. There are two east of Ovid, one on US 138 at Lodgepole Creek and the other on County Road 30.4 at Lodgepole Creek. Four scour critical bridges are in an annex of Julesburg along US 385 along South Platte River. Three are southeast of Julesburg; one is on County Road 12 at the Sand Creek intersection, another one is on County Road 55 at Sand Creek and one is located on County Road 49 at Sand Draw. The location of these bridges is shown in Figure 1, and described in detail in Table 10.

**Table 10. Scour Critical Bridges**

Name	Road Type	Stream	Near City
US 138	Rural Highway	Lodgepole Creek	Ovid
County Road 30.4	Local Road	Lodgepole Creek	Ovid
County Road 12	Rural Highway	Sand Creek	Julesburg
County Road 55	Rural Highway	Sand Creek	Julesburg
County Road 49	Local Road	Sand Draw	Julesburg
County Road 5	Local Road	Settlers Ditch	Sedgwick
US 385	Rural Regional Highway	South Platte River	Julesburg
US 385	Rural Regional Highway	South Platte River	Julesburg
US 385	Rural Regional Highway	South Platte River	Julesburg
US 385	Rural Regional Highway	South Platte River	Julesburg
US 138	Rural Highway	Unnamed Tributary to Peterson Ditch	Sedgwick

**Policies and Claims Information:**

There are zero policies within the participating communities. No claims have been filed or paid.

**NFIP Mapping Information:**

- **Julesburg:** Panel # 080169 (FIRM), 4/2/86.
- **Ovid:** Panel # 080170 (FHBM), 11/21/78

- *Sedgwick*: Panel # 080171, 8/3/89
- *County*: Never mapped.

## Dam Failure Vulnerability Assessment

There are 3 high hazard dams in Sedgwick County, listed below in Table 11. The Julesburg Reservoir dams are located in Sedgwick County, and one of these failed in 1917, flooding the Town of Sedgwick. Sterling Reservoir is in Logan County, but the waters would flow into Sedgwick County if it failed. There are 7 dry dams in the Sedgwick-Sand Draws Watershed, providing limited flood protection for the entire County from floodwaters originating in Nebraska, where the majority of the watershed exists.

**Table 11. Hazardous Dams in or Affecting Sedgwick County**

Dam Name	County	Max Storage (acre ft)	Dam Hazard	Downstream Community	Miles to Community	Relative Downstream Impacts
Julesburg #2	Logan	38,600	High	Town of Sedgwick	-	Limited
Julesburg #3	Logan	38,600	High	Town of Sedgwick	-	Limited
Julesburg #4	Logan	38,600	High	Town of Sedgwick	-	Limited

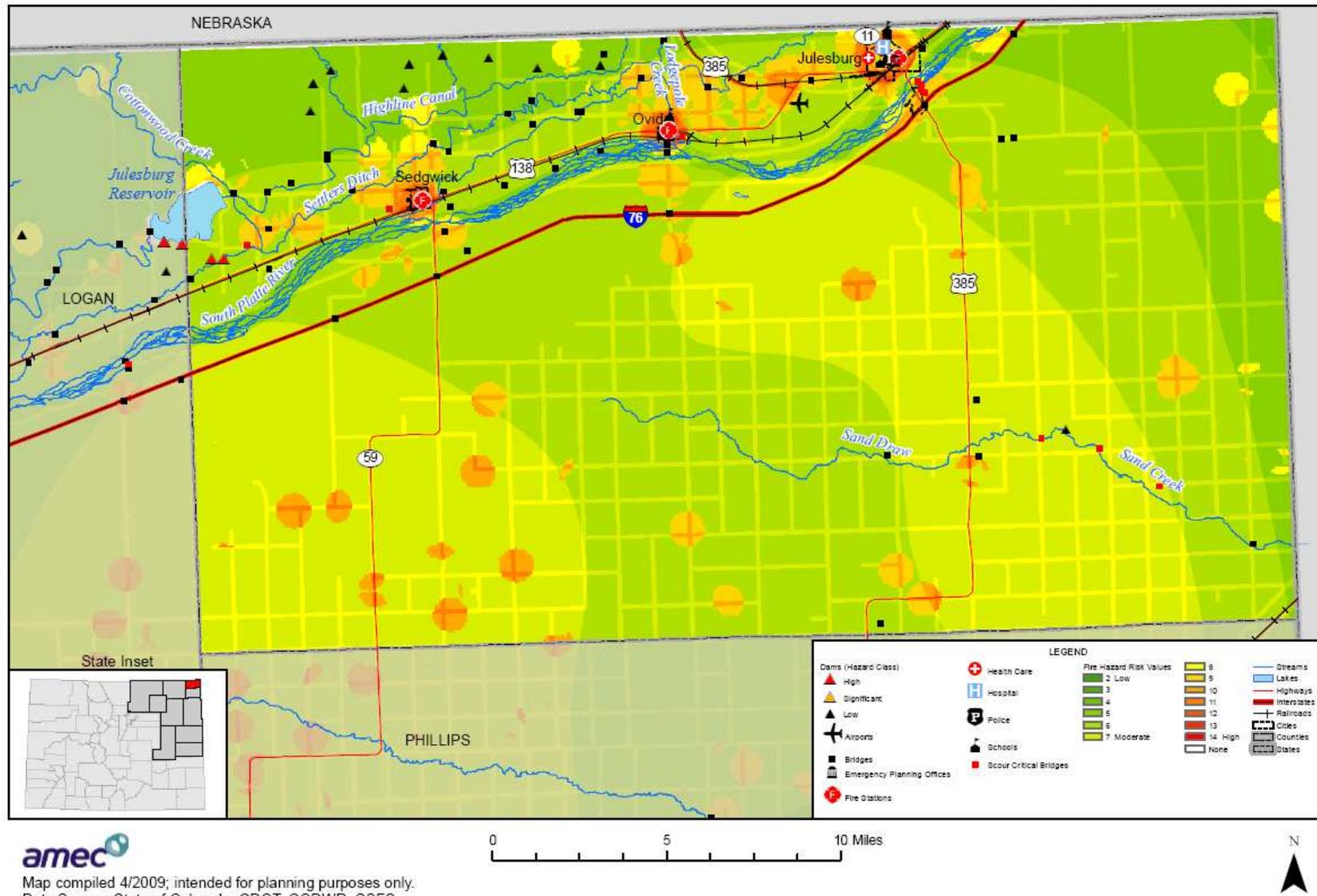
Source: NID with HAZUS MR3

## Wildfire Vulnerability Assessment

### Sedgwick County Wildland Urban Interface

The Wildland Urban Interface map in Figure 4 for Sedgwick County shows low to high fire hazard risk values. The majority of the County has low values with the higher values around the communities of Julesburg, Ovid, and Sedgwick. Ovid and Sedgwick have the highest fire risk in the County with values between moderate and high, with the higher values lying within the city limits. Julesburg has a mixture of low to high fire values. The higher values are out by the city limits and surrounding unincorporated County.

Figure 4 Sedgwick County Wildland Urban Interface



Map compiled 4/2009; intended for planning purposes only.  
 Data Source: State of Colorado, CDOT, CODWR, CSFS,  
 Colorado Wildfire Risk Assessment 5/16/2002

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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 122. The following narrative describes each community and potentially at risk critical facilities.

There are 63 critical facilities in a moderate to high fire hazard in Sedgwick County. Julesburg has 11 facilities in the fire hazard: one emergency planning office, one fire station, three health care facilities, one hospital, one police station, one school, and one scour critical bridge. Ovid has one bridge and one fire station in the fire hazard. Sedgwick has one fire station and one school in the fire hazard. The unincorporated County has 48 critical facilities in the fire hazard: 33 bridges, ten scour critical bridges, two dams, and three schools.

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**Table 12. Critical Facilities Subject to Fire Hazard (by type)**

Facility Type	Facility Count
Bridges	34
Dams	2
Emergency Planning Offices	1
Fire Stations	3
Health Care	5
Hospital	1
Police	1
Schools	5
Scour Critical Bridges	11
<b>Total</b>	<b>63</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 Sedgwick County that show economic loss are corn, corn silage and wheat. Corn's total loss is \$3,068,462, corn silage's total loss is \$28,662,876, and wheat's total loss is \$5,315,011. The total loss of all of these products is \$37,046,350. Greater detail is given in Table 133.

**Table 13. Sedgwick 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 (\$)
Corn	0	2,422,490	322,986	322,986	3,068,462
Corn Silage	0	7,817,148	10,422,864	10,422,864	28,662,876
Wheat	0	1,449,549	1,932,731	1,932,731	5,315,011
<b>Total</b>	<b>0</b>	<b>11,689,186</b>	<b>12,678,582</b>	<b>12,678,582</b>	<b>37,046,350</b>

## 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 \$0.7 million in the County. More details are provided in Table 14 and 15.

**Table 14. Sedgwick 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
259,483,787	24,945,557	12,187,879	12,757,678	19,934,142	711,934

Source: Federal Crop Insurance Services

**Table 15. 2008 Sedgwick 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
32,436,293	4,764,612	2,693,575	2,071,037

Source: Federal Crop Insurance Services

## Sedgwick 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 166. Refer to the Introduction to the County Elements for an explanation of the capability assessment matrix.

**Table 16. Regulatory Mitigation Capabilities**

	County	Julesburg	Ovid	Sedgwick
Comp Plan	N	Y	N	Y
Land Use Plan	Y	Y	N	Y
Subdivision Ord	Y	Y	N	Y
Zoning Ord	Y	Y	Y	Y
NFIP/FPM Ord	N	Y	Y	Y
- Map Date	Never Mapped	4/86(M) -FIRM	11/78 FHBM	8/89-FIRM
- Sub.Damage?	N	N	N	Y
- Administrator?	N	Y	N	Y
- # of FP Bldgs?	N/A	0	7	3
- # of policies	0	0	0	0
- # of RL's?	0	0	0	0
CRS Rating	N/A	N/A	N/A	N/A
Stormwater Prgm	N	N	N	N
Building Code	N-Disclaimer re: State minimum codes	Y	N	N
Building Official.	N	Y	N	N

	County	Julesburg	Ovid	Sedgwick
- Inspections?	N	Y	N	N
BCEGS Rating	N	N	N	N
LEOP	Y	County	County	County
HM Plan	Y-This Plan	County	County	County
Warning	Y	Y	Y	Y
Storm Ready?	N	N/A	N/A	N/A
Weather Radio?	Y	Y	Y	Y
Sirens?	N	Y	Y	Y
Emergency Warning Notification?	N	N	N	N
Other?	EAS	N	N	N
GIS System	Y	N	N	N
Structural Projects	Y	N	N	N
Property Protection	N	N	N	N
Crit.Fac.Protection	N	N	N	N
Natural Res. Inv.	N	N	N	N
Cultural Res. Inv.	Y	N	N	N
Erosion Control	N	N	N	N
Sediment Control	N	N	N	N
Pub. Info Prgrm	Y	Newsletter	Newsletter	Y
Env. Ed Prgrm	N	N	N	Y

### Other Mitigation Capabilities (Programs/Projects in Place)

There are 7 dry dams in the Sedgwick-Sand Draws Watershed, providing limited flood protection for the entire County from floodwaters originating in Nebraska, where the majority of the watershed exists. More detail is provided in Figure 5.



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- There are several public tornado shelters in the County: basements of the County Courthouse, Julesburg Town Hall, and area churches.
  - Farmers utilize no till farming and crop rotation to combat erosion.
  - Warnings are disseminated by television, radio, and sirens. The County provides public information to explain them.

## Sedgwick County Recommendations

The largest gap in Sedgwick County's capability to address future hazard losses is the lack of participation in the NFIP by Ovid, the lack of a warning siren in Sedgwick, and the lack of building codes (except for Julesburg).

**Action Item #1:** *Ovid needs to consider joining the NFIP.*

**Issue Statement:** Due to their lack of participation in the NFIP, the owners of the 7 Buildings in the Ovid floodplain, valued at \$580,980, cannot obtain flood insurance. Not participating in the NFIP also makes Ovid ineligible for PDM, FMA and some HMGP \$ from FEMA.

**Implementation Manager and Strategy:** The Town of Ovid, through their Town Council/Manager, should invite the CWCB to explain the "pros and cons" of joining the NFIP to the City Council. Council will then make a decision regarding joining the NFIP.

**Priority:** Medium

**Cost Estimate:** No new expenses. Someone will need to verify that new construction in floodplain is properly constructed. The easiest method of implementation would be to not allow new buildings, or substantial improvements to existing buildings, within the mapped floodplain of Ovid.

**Cost-Effectiveness Explanation:** There is no increased cost to the Town. The benefits are to building owners who choose to insure against flood losses, and to taxpayers who no longer would have to subsidize those losses.

**2009 Update:** This project is complete, as the City joined in June 2009.

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**Action Item #2:** *County should work to become certified as “Storm Ready” by National Weather Service.*

**Issue Statement:** A primary goal of the Northeast Colorado Emergency Managers Association multi-jurisdictional DMA Hazard Mitigation Plan is for each county to become “Storm Ready” certified within the next three years. “Storm Ready” certification is an indication that the community has prepared for adverse weather conditions, trained officials and citizens to recognize and report adverse weather conditions, and has established and regularly tested a system for receiving and disseminating severe weather information and warnings to the public.

**Implementation Manager and strategy:** Sedgwick County Emergency Manager will contact the National Weather Service to determine what Sedgwick County needs to accomplish, and then seek funding through grants to make the necessary improvements.

**Priority:** High

**Cost Estimate:** Up to \$25,000 for a siren in Sedgwick, NOAA “Weather Radios” for all government buildings, NOAA “Weather Radio” “repeaters” where necessary, training, and public education.

**Cost-Effectiveness Explanation:** The potential for saving just one life, and providing time for individuals and businesses to take effective actions to protect property, far outweighs the potential cost. This goal and recommended action was selected by the MCPC due to its return on investment and relative ease in achieving. It may be the single most effective action the County and the entire Planning Area can undertake to reduce future disaster losses.

**2009 Update:** This project is incomplete, but still relevant. Timeframe is estimated at 24 months.

**Action Item #3:** *Improve drainage west of Julesburg by installing larger culverts beneath UP Railroad tracks.*

**Issue Statement:** Currently, water backs up at this location in minor storms and rainfall events. Larger storms can cut road, and possibly even rail, traffic. A larger culvert would allow the water to reach the Platte River, and reduce disruptions

**Implementation Manager and strategy:** Sedgwick County Public Works will document expenses and disruptions incurred to date, determine the appropriate size culvert needed to alleviate the conditions, develop a cost estimate for replacing the culvert, and contact the UPRR representative to discuss cost-sharing options.

**Priority:** Medium

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**Cost Estimate:** Unknown at this time. Estimate will be developed as part of implementing this recommendation.

**Cost-Effectiveness Explanation:** Unknown at this time. Implementation strategy will provide data necessary to determine if this is a cost-effective project.

**2009 Update:** Project complete, but there is still an issue of maintenance.

**Action Item #4: *Obtain the Emergency Action Plans for Julesburg and Sterling Reservoirs.***

**Issue Statement:** Class 1 dams in Colorado are required to have Emergency Action Plans (EAPs). EAPs provide data on what will be inundated downstream from the dam, should it fail, including emergency contact information for dam owners and downstream property owners. The plans exist, but copies are not readily available within the County. Jumbo/Julesburg Reservoir is located in Sedgwick County, and failed in 1917, flooding the Town of Sedgwick. Sterling Reservoir is in Logan County, but the waters would flow into Sedgwick County if it failed.

**Implementation Manager and strategy:** Sedgwick County Emergency Manager will contact the Office of the State Engineer

**Priority:** High

**Cost Estimate:** No cost.

**Cost-Effectiveness Explanation:** The potential for saving life and property at no cost is cost-effective.

**2009 Update:** This project is partially complete, but still relevant. The County has the Jumbo/Julesburg Reservoir EOP, but still needs the Sterling Reservoir EOP. Timeframe is 24 months, based on the two-year lifespan of Dam EAPs.

**Action Item #5: *Plant future Living Snow Fences further from farm buildings than is the current practice to reduce the fire danger.***

**Issue Statement:** Currently, Living Snow Fences are planted so close to the buildings they are protecting that if they caught fire they would threaten the buildings.

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**Implementation Manager and strategy:** Sedgwick County Emergency Manager will contact the USDA/NRCS to identify any Living Snow Fences planned for the future, and work to determine a “maximum benefit” distance where the fences maintain their effectiveness in blocking blowing snow, while alleviating, as best possible, the threat of fire to buildings, should the fence catch fire.

**Priority:** Medium

**Cost Estimate:** No cost.

**Cost-Effectiveness Explanation:** The potential for protecting against future property losses at no cost is cost-effective.

**2009 Update:** This project is incomplete, but still relevant. It will be discussed during development of the CWPP.

**Action Item #6: *Promote the benefits of the crop insurance to the County agricultural community***

**Issue Statement:** Agricultural losses are the #1 annual dollar loss in Sedgwick County. Over the past 20-years, policyholders have, on average, received a 4-to-1 return on their investment in this loss protection mechanism.

**Implementation Manager and strategy:** County Emergency Manager, in conjunction with USDA and NRCS.

**Priority:** Medium

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

**Cost-Effectiveness Explanation:** There is little cost associated with this project. The benefits are in receiving compensation for otherwise lost agricultural revenue, which in turn, contributes significantly to the County economy.

**2009 Update:** This project is ongoing through crop loan lenders.

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## New 2009 Objectives

### **Action Item #1: *Sedgwick County Reverse 911***

**Issue Statement:** Sedgwick County is in need of an indoor hazard warning system. Currently, citizens rely on radios, television, or an outside warning system. A system is needed that can alert people by phone, whether landline or cellular. Special consideration must be given to the hearing impaired and the elderly.

**Implementation Manager and strategy:** Sedgwick County Office of Emergency Management.

**Priority:** High.

**Cost Estimate:** N/A

**Cost Effectiveness Explanation:** With the implementation of this system, the early warning and mass coverage will result in increased life safety for citizens in Sedgwick County. This system can be used for multiple hazards, with descriptions able to be given for each individual hazard.

**Timeframe:** Ongoing.

### **Action Item #2: *Upgrade Siren Warning System – Towns of Julesburg, Ovid, Sedgwick***

**Issue Statement:** Current sirens are aging. Julesburg has an old revolving siren on the top of the courthouse and a small one located next to the grad school. There are no sirens in the commercial district or I-76 interchange area. Ovid has two small sirens, but neither is located close to the school. Sedgwick has one siren, but it is quite old.

**Implementation Manager and strategy:** Sedgwick County Office of Emergency Management

**Priority:** High

**Cost Estimate:** \$60,000. USDA grant and SHMP grants being looked at for funding.

**Cost Effectiveness Explanation:** Early warning systems save lives. The current systems are old, outdated, and prone to failure.

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**Timeframe:** The extended timeframe deals mostly with procurement of funding and may take as long as 3 years. Installation would be accelerated, and anticipated to be less than 12 months.

**Action Item #3: *Continued compliance with the NFIP for Ovid, Julesburg, and Sedgwick***

As participants in the NFIP the Ovid, Julesburg and Sedgwick 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.

**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 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 9 county region that the County will undertake or participate in (See appendix C for details).

- Develop CWPP for County
- Update wildfire risk assessment
- Develop Wildfire pre-attack plans
- Develop County Annual Operating Plans for wildfire
- Host Firewise presentations

**Other Mitigation actions being considered by Sedgwick County**

- Adopt building code in County

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- Additional training of building inspector (currently also the Assessor)
  - H1N1 virus planning