

RESOLUTION NUMBER R-15-0048

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law on October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

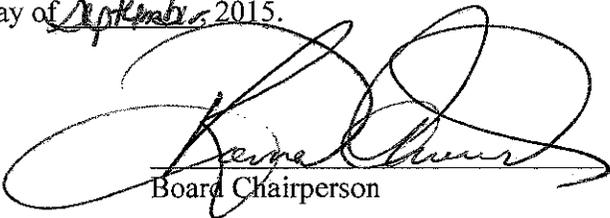
**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by the Lower Platte South Natural Resources District with assistance from JEO Consulting Group, Inc. of Lincoln, NE, which includes the jurisdiction of Lancaster County.

**WHEREAS**, the purpose of the mitigation plan was to lessen the effects of disasters by increasing the disaster resistance of the Natural Resources District and participating jurisdictions located within the planning boundary by identifying the hazards that affect Lancaster County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

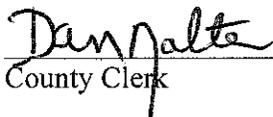
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of Lancaster County in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of Lancaster County does herewith adopt the Lower Platte South Multi-Jurisdictional Hazard Mitigation Plan Update in its entirety; and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 1 day of September, 2015.

  
Board Chairperson

ATTEST:

  
County Clerk

# **Participant Section for Lancaster County**

***LPSNRD***  
Multi-Jurisdictional Hazard Mitigation Plan

***March 2015***

## ***Community Profile***

### **HISTORY**

The area of Lancaster County was first used by the Native Americans. It was not until 1856 that the county was inhabited by settlers along the Salt Creek. The settlers were attracted to the saline deposits and attempted to create a small salt trading business. The business ceased when it was realized that the salt extraction process was more complicated than originally thought and there was a short supply.

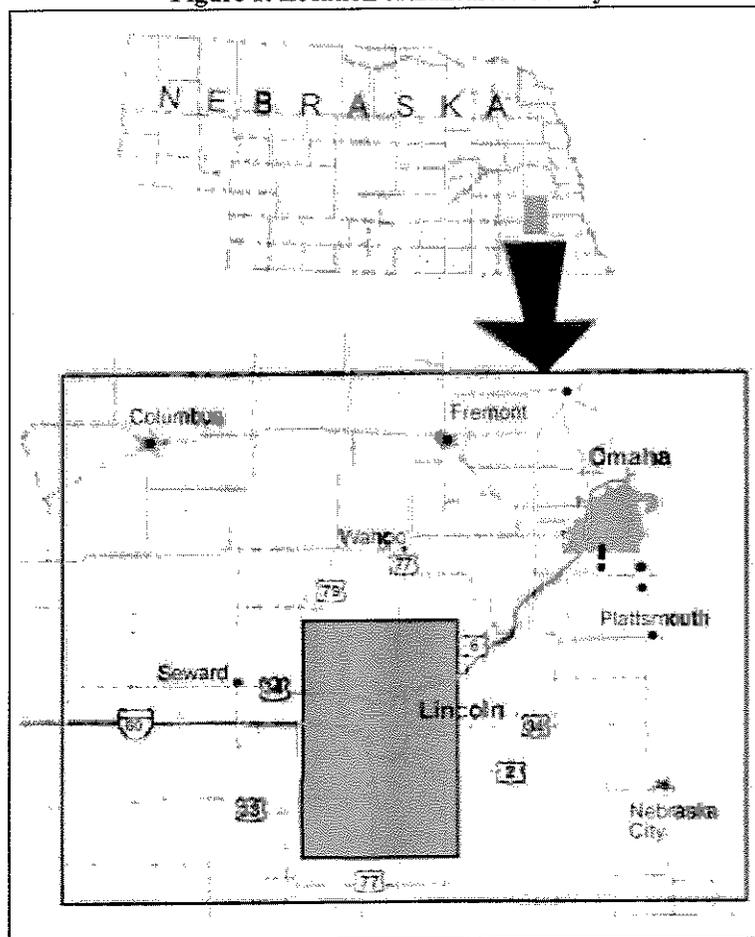
In 1859 Lancaster County was formed in relation to the establishment of the overland trail to the west. It was at this time that the population began to steadily increase.

### **LOCATION/GEOGRAPHY**

#### ***Lancaster County***

Lancaster County is located in the southeast portion of Nebraska. It is at the eastern edge of the Great Plains area. Within the county there are three physiographic areas: uplands, stream terraces, and bottom lands. The uplands are the largest portion of the area, covering approximately 80 percent of the land. The uplands are comprised of glacial fill that is covered with loess. The stream terraces are located predominately along the Salt Creek. The bottom lands are along the major drainage ways.

**Figure 1: Location of Lancaster County**



*Source: Lincoln/Lancaster County Comprehensive Plan*

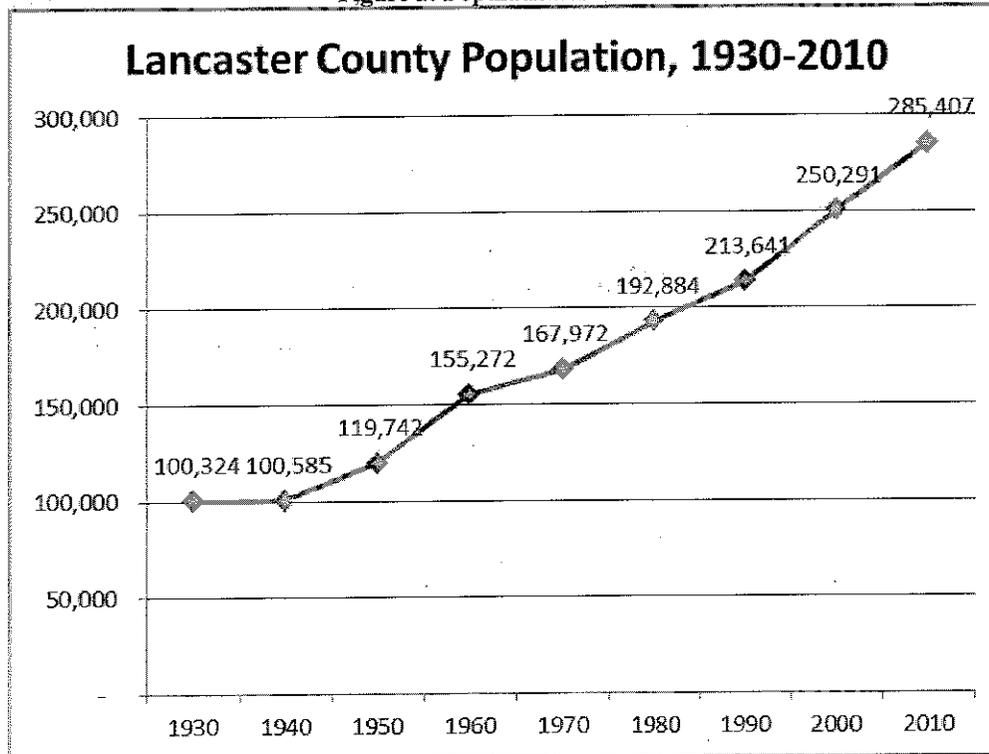
**DEMOGRAPHICS**

According to the Lincoln/Lancaster County Comprehensive Plan 2040, written in 2011, the county's population is expected to reach over 412,000 persons by the year 2040. By the year 2060, The county's population is projected to reach 512,000 people, or almost 226,000 more people than residence in the county today. In the most recent decade, the county's population gained over 35,000 new residents. This annualized growth rate of 1.3 percent during the 2000's was a slower pace than the average decade over the past 100 years.

The population is primarily located in the City of Lincoln and other incorporated areas, with only around 6 percent of the population located in the unincorporated areas.

As the comprehensive plan indicates, another demographic trend of significance is the continuing growth in the senior population. The number of people in Lancaster County aged 65 and older is projected to increase by about 44,000 to reach about 75,000 in 2040. It represents a projected annual growth rate of 2.96 percent, the highest among all age sectors. The following figure shows the population in the county from 1930 to 2010.

**Figure 2: Population 1930-2010**



Source: U.S. Census Bureau, 2010

### COUNTY GOVERNANCE

Lancaster County includes the following agencies (\* indicates an agency which is shared with the City of Lincoln):

- Aging Partners\*
- Board of Commissioners
- Budget & Fiscal
- Building & Safety\*
- Clerk of the District Court
- County Engineer
- County Sheriff
- County Treasurer
- District Court
- Election Commissioner
- Jury Commissioner
- Juvenile Court
- Lincoln City Libraries\*
- Planning\*
- Prop. Mgmt. / Public Bld. Comm.
- Purchasing\*
- Weed Control Authority
- Youth Services Center
- Community Corrections
- Community Mental Health
- Cooperative Extension
- County Assessor / Reg. of Deeds
- County Attorney
- County Corrections, Jail
- Emergency Management
- General Assistance
- Health\*
- Human Resources\*
- Human Rights Commission\*
- Human Services
- Information Services\*
- Public Defender
- Records and Info Management
- Risk Management
- Veterans Service Center

### FUTURE DEVELOPMENT TRENDS

Lancaster County, by nature, cannot and will not change its borders and will not experience any future development outside of its borders. Any future development will take place within the County as communities grow.

The vast majority of the county's population is located within the city of Lincoln, with 91.3 percent of Lancaster County's dwelling units in Lincoln in 2000. From the 2011 Lincoln/Lancaster County Comprehensive Plan, it is assumed by 2040 an additional 52,100 dwelling units will be added within the County, with around 16 percent of these built within the existing City.

According to the county comprehensive plan, the growth areas within the county are divided into tiers for their prioritization of future growth. The following map illustrates the 2040 Priority Growth Areas for the county and the map following shows the 2040 Lancaster County Future Land Use Plan. The growth areas are broken up into four general regions: Redevelopment and infill in the existing city, and the Tier I, II, and III growth areas. Such a planned future growth pattern in a timely manner will reduce the possibility of exposing the population to unnecessary risks by developing in unincorporated areas or areas lacking of proper infrastructures and facilities. Please refer to the comprehensive plan for more detailed information regarding future growth within the county. Although all three tiers include some land in the 1% annual floodplain, the plan does state that: "The natural topography and features of the land should be preserved by new development to maintain the natural drainage ways and minimize land disturbance."

Figure 3: Future Development

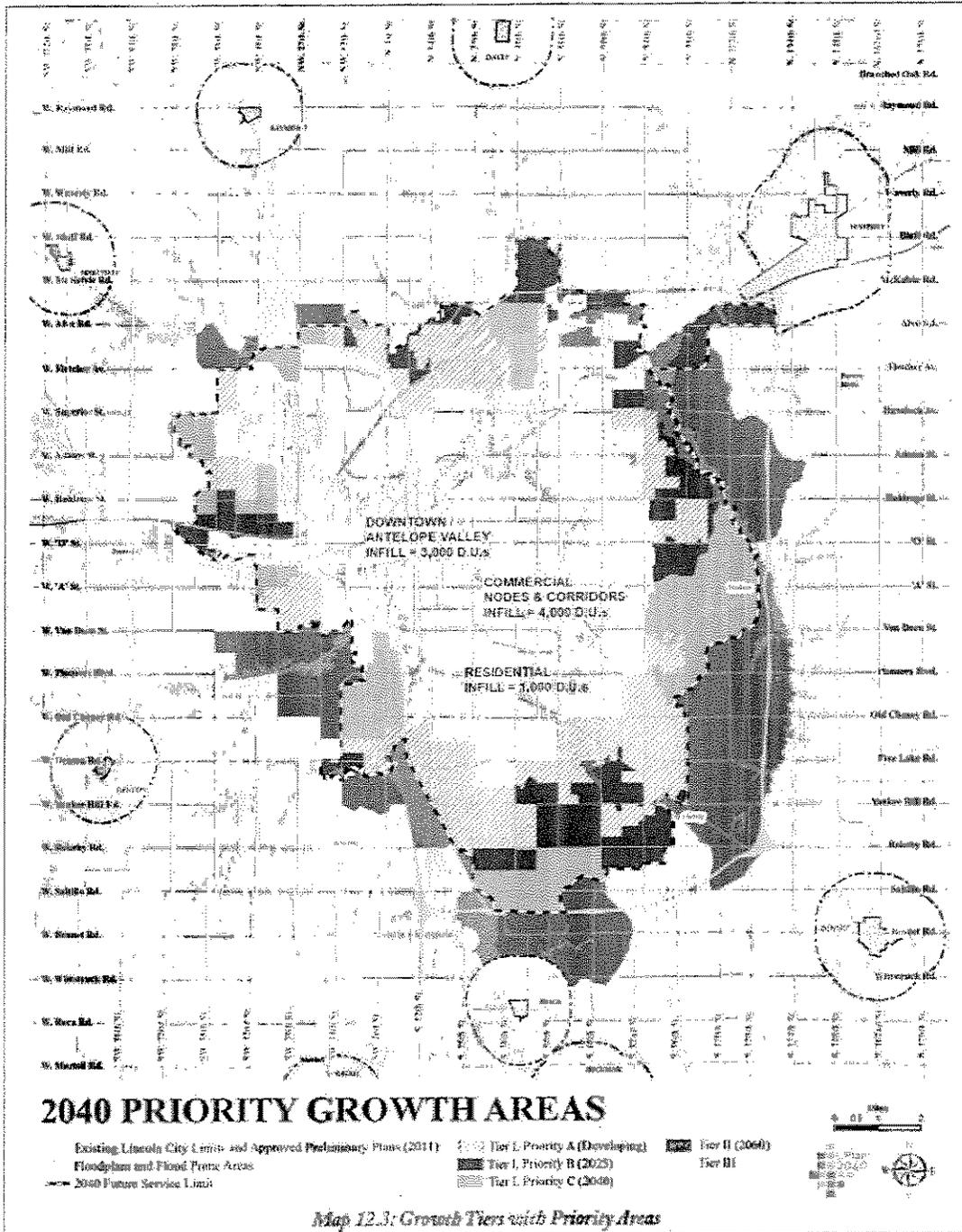
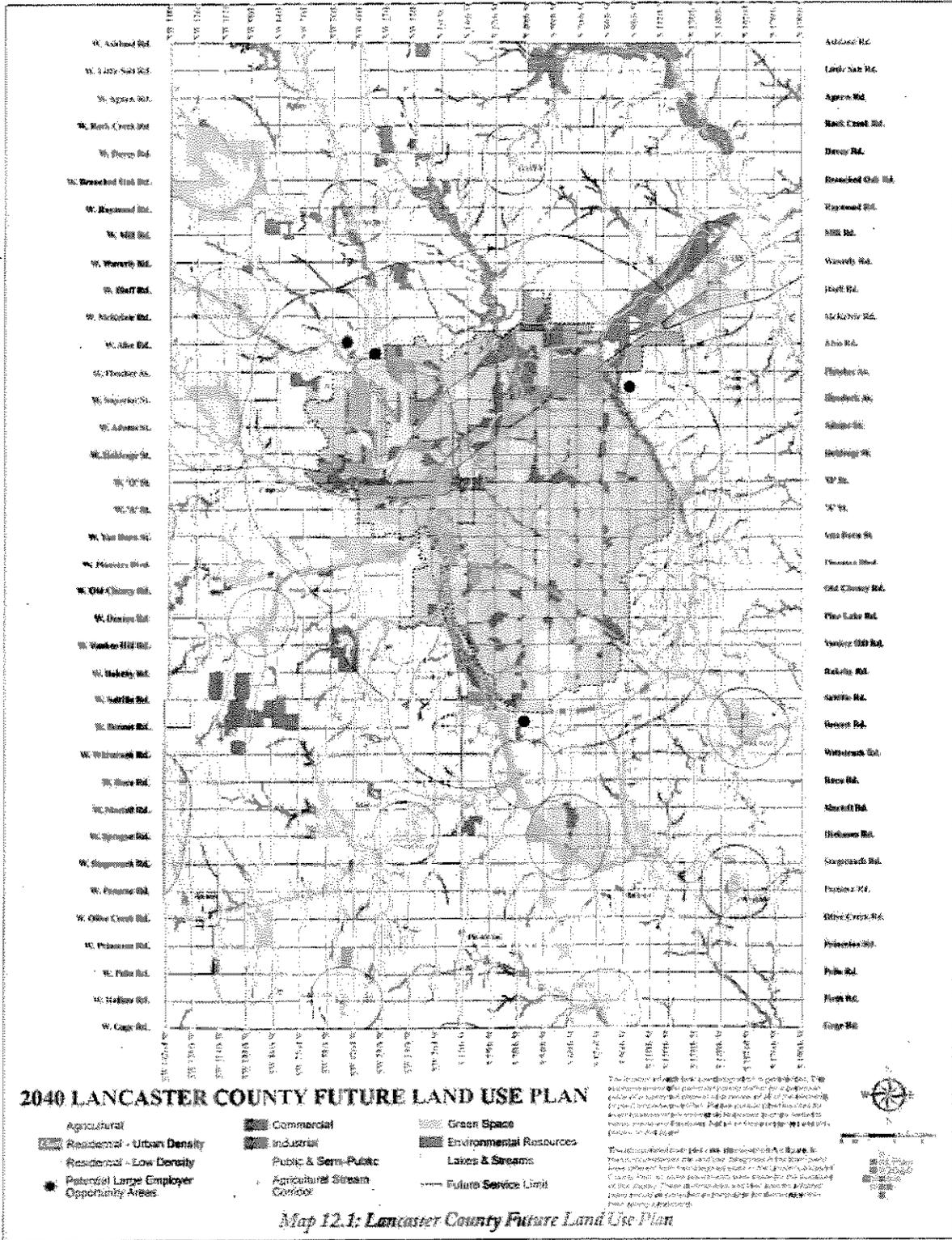


Figure 4: Future Land Use



**STRUCTURAL INVENTORY AND VALUATION**

The total structural inventory for Lancaster County is found in the table below. Information displayed in Table 159 includes the number of structures, value per structure, and total value of each structure type.

**Table 1: Structural Inventory**

Structure Type	Number of Structures	Total Value	Value per Structure
Commercial/Industrial	6,932	\$5,106,610,580	\$736,672
Agricultural	7,327	\$39,870,300	\$5,442
Residential	79,303	\$13,598,816,168	\$171,479
Other	43,260	\$20,434,113	\$472
<b>Total</b>	<b>136,822</b>	<b>\$18,765,731,161</b>	-

Source: Nebraska Department of Revenue, Property Assessment Division

Of these structures, the following are both located within the 1% annual floodplain and within the unincorporated areas.

**Table 2: Structural Inventory - Floodplain**

Structure Type	Number of Structures	Total Value
Commercial	171	\$125,970,912
Industrial	320	\$235,735,040
Agricultural	5,288	\$28,671,536
Residential	640	\$109,746,560
Other	724	\$341,728
<b>Total</b>	<b>7,135</b>	<b>\$500,465,776</b>

Lancaster County has properties listed as repetitive losses based on NFIP. Those properties include one single family property and one non-residential property.

**CRITICAL FACILITIES**

Critical infrastructure was organized by the relevant Emergency Support Functions (ESF). For each incorporated community, CFs were identified by each community. Refer to each participant section for the locations of critical facilities identified.

The structures are organized under the following categories with their coordinating numbers:

**Table 3: Emergency Support Functions**

ESF Category	# of Structures
ESF 1- Transportation	19
ESF 2- Communications	16
ESF 3- Public Works	22
ESF 4- Firefighting	61
ESF 5- Information and Planning	290

ESF Category	# of Structures
ESF 6- Mass Care	8
ESF 7- Resource Support	14
ESF 8- Health and Medical	51
ESF 9- Search and Rescue	1
ESF 10- Hazardous Materials	11

Among the Critical Infrastructure not included in the above table are County, Federal, State and Lincoln authority bridges. According to the County Engineer, there are 10 bridges under 20 feet and 296 bridges that are over 20 feet, for a total of 306 bridges.

The list of structures and addresses described by the ESF may be found in the LEOP, and is maintained by the Lincoln/Lancaster Emergency Operations Center (EOC).

Warning siren locations and ranges were also identified through discussions with the Lancaster County Emergency Manager. The Lincoln/Lancaster EOC maintains a listing of all sirens in the County and can trigger all of them from their office in Lincoln, NE. All the sirens are on a regular maintenance schedule.

- Pink: Federal T22 90 decibels 2000 FT Effective Range
- Green: Federal Thunderbolt 104 decibels 4000 FT Effective Range
- Yellow: Federal Signal Sirens 128 decibels 5280 FT Effective Range

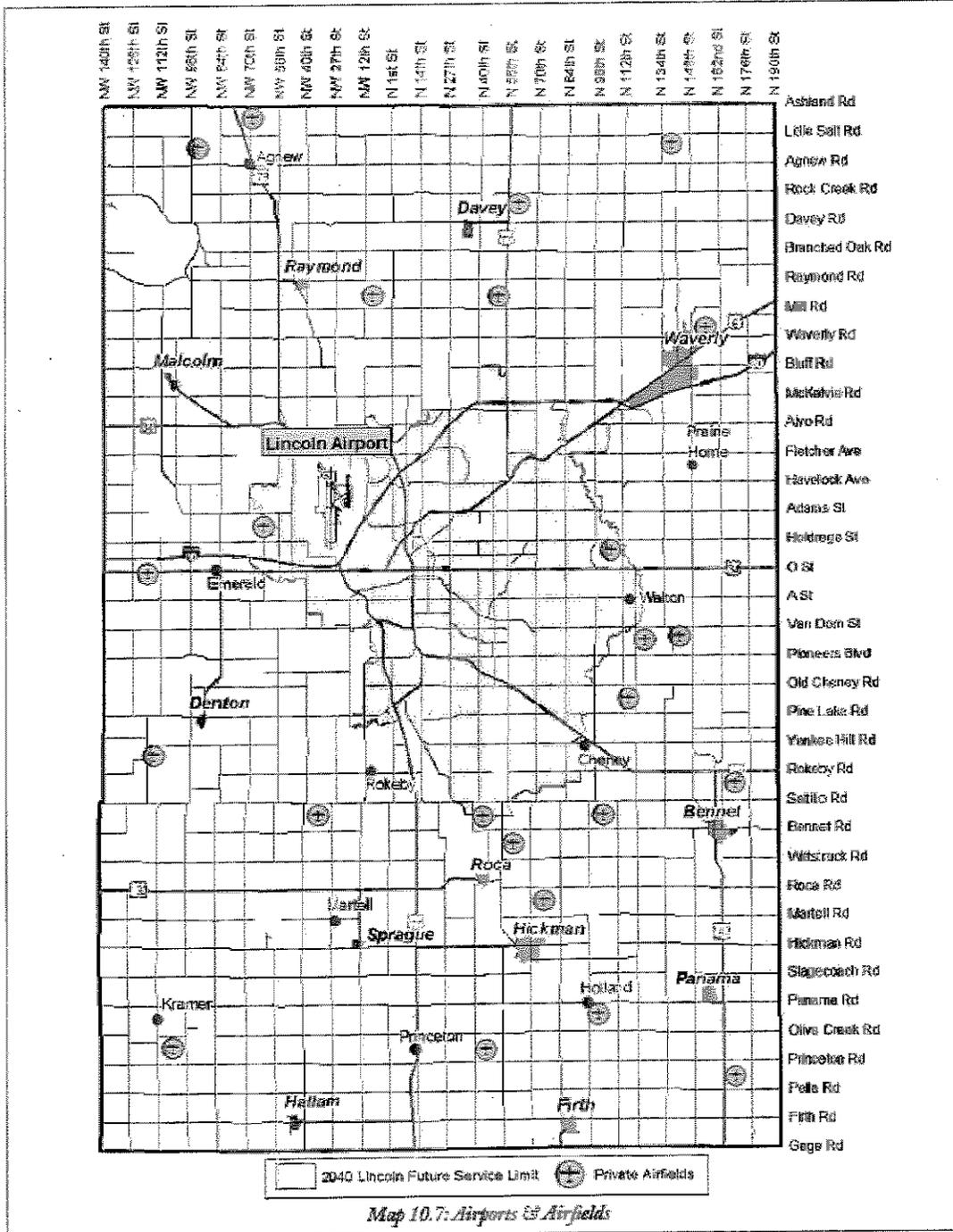
In Lincoln, the electric system is organized in a grid style which helps ensure there is power always reaching the sirens. Many communities within Lancaster County's sirens are powered by AC single source power. This is not desired, as they are inoperable when the power goes out.

Lancaster County is the only county in Nebraska to have sirens at recreational facilities and lakes that provide camping.

**RURAL WATER DISTRICT #1**

Rural Water District #1 serves Lancaster County's rural customers as well as the communities of Bennet, Panama, and Roca. The district has a total of 7 water towers and ground storage that is located south of Bennet that supplies all of the district's customers.

**Figure 5: Transportation System**



*Roadways*

The major highways that run across the counties are:

- Interstate 80
- Interstate 180
- U.S. Highway 6
- U.S. Highway 34
- U.S. Highway 77
- Nebraska Highway 2
- Nebraska Highway 33
- Nebraska Highway 43
- Nebraska Highway 79

**SCHOOLS**

The Lincoln Public School (LPS) district includes a total of 37 elementary schools, 11 middle schools, 6 high schools, and 7 other sites. There are also 9 public rural school districts and several private and parochial schools within the City of Lincoln. Schools are addressed in the Participant Sections.

***Risk Assessment***

**HISTORICAL OCCURRENCES**

The events recorded by NCDC are broken down to two types: county-based and zone-based events. The county-based records are events that affect the jurisdictions within the county while the zone-based records are those affecting the zone that include the county as part of the affected zone. Please refer to specific villages or cities within the county for the previous county-based severe weather events retrieved from NCDC. For zone-based events, there are 136 recorded events from 1996 to 2013 but due to the large number of events in the record only those that resulted in property or crop damages are listed in the following table.

**Table 4: NCDC Severe Weather Events**

<b>Hazard</b>	<b>Date</b>	<b>Extent</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Cold/Wind Chill	1/19/1996		100.00K	0.00K
Heavy Snow	10/25/1997		16.000M	200.00K
High Wind	4/19/1996	52 kts.	2.00K	0.00K
High Wind	10/26/1996	50 kts.	25.00K	0.00K
Strong Wind	10/27/2010	42 kts. MG	5.00K	0.00K
Winter Weather	12/3/2011		75.00K	0.00K

The five hazards of most concern to Lancaster County are: tornados, high winds, severe thunderstorms, severe winter storms, and flooding.

**TORNADOS**

The county planning team identified tornados as the top concern for the community. This is consistent with the entire planning area. According to the NCDC data there were 15 recorded tornados that resulted in total property damage of \$100,300,000.

Lancaster County reported that they have annual tornadic occurrences throughout the entire county, particularly during the months of April, May, and June. These three months account for 60 percent of these events. No other historical occurrences were reported by residents, county officials, or found in any

other document. For community specific events, refer to each jurisdiction within the County's participant section.

### **HIGH WINDS**

The county planning team identified high winds as a significant concern for the community. This is consistent with the entire planning area. According to the NCDC data there were 79 storm events which included strong winds (50+ kts) which can cause trees to uproot, considerable structure damage, and over turning of improperly anchored mobile homes. In addition, 23 recorded high wind and strong wind events also caused \$32,000 in property damage.

Lancaster County reported that they have annual high wind occurrences throughout the entire county, particularly during the months of April, May, and June. These three months account for 60 percent of these events. No other historical occurrences were reported by residents, county officials, or found in any other document. For community specific events, refer to each jurisdiction within the County's participant section.

### **SEVERE THUNDERSTORMS**

The county planning team identified severe thunderstorms as a significant concern for the planning area. This is consistent with the entire planning area.

The county has older housing stock and an aging population, both of which may lead to greater levels of vulnerability. Severe thunderstorms and hail can result in loss of electricity, blocked roadways, damages to trees, and flooding. Blocked roadways, as a result of downed trees, may also present life safety concerns to those needing immediate medical attention.

Damages to roofs and siding can result in significant losses for homeowners as well as business owners. CFs can also be damaged by hail events. 66 of the 241 hail events recorded by the NCDC for Lancaster County reported hail of one inch; using the TORRO Hailstone Scale expected impacts from this type of event include damages to trees and crops, broken glass, and damages to plastic outdoor structures. 30 of the hail events reported hail stones of one and three quarter inches; stones of this size can result in wholesale destruction of glass, damage to tiled roofs, and is cause for concern related to the safety of residents as stones of magnitude pose a significant risk to persons and can cause injuries. Among these recorded hail events, the one occurred in Firth on July 20, 2000 caused \$2 million in property damage and \$1 million in crop damage. There were also 11 lightning events recorded by NCDC that resulted in a total of \$936,400 of property damages. In addition, 81 thunderstorm events reported a total of \$1,505,000 in property damage.

No other historical occurrences were reported by residents, county officials, or found in any other document. For community specific events, refer to each jurisdiction within the County's participant section.

### **SEVERE WINTER STORMS**

The county planning team identified severe winter storms as a significant concern for the community. This is consistent with the entire planning area. NCDC data records severe winter storms as "zonal" events and there are 61 recorded events. Two of the recorded events resulted in a total of 16,075,000 dollars of property damage and 200,000 dollars of crop damage.

The elderly may be more likely to sustain an injury or have a medical emergency as a result of shoveling snow following a winter storm. Community members and families below the poverty line are also as

higher risk related to severe winter storms, as they may lack resources needed to sustain themselves through a major severe winter storm.

### **FLOODING**

The local planning team identified flooding as a significant concern for the community. The planning team estimated that flooding could impact up to 40 percent of residents and 40 percent of properties within the community. There is also the potential that CFs and services could be interrupted between one day and one week.

There were 23 floods recorded for Lancaster County by the NCDP. The most costly was a flash flood in Panama. On May 8, 1996, after two days of rain, southern Lancaster County received between six and nine inches of rain. The abundant amounts of rain resulted in a flash flood on the Salt Creek at Roca, Lincoln and Greenwood. The estimated damages from the flooding were \$1.5 million. Another flood that reported monetary damages was in Lincoln on August 14, 1996 where a flash flood from four inches of rain caused \$60,000 in property damage to local businesses and homes.

Lancaster County reported that annually there are various creeks, streams and urban flooding events. However, the LEOP states that flooding has been significantly reduced by recent flood control projects.

According to the Comprehensive Plan, "Approximately 13.8% of Lancaster County is covered by floodplains." Lancaster County and the City of Lincoln have both adopted a No Adverse Impact approach to floodplain management. This approach seeks to insure that the actions of any one property owner do not impact others in an adverse fashion.

No other historical occurrences were reported by residents, county officials, or found in any other document. For community specific events, refer to each jurisdiction within the County's participant section.

### **EARTHQUAKE**

No earthquakes have been reported by the local planning team and no recorded earthquake events are found within the planning area. However, the LEOP does discuss the potential impacts to dams in the event of an earthquake and the county is astride the Humbolt Fault Line.

Current building codes do not include seismic provisions, as a result of which damages in the event of an earthquake might be more pronounced than if such codes were in place. At this time, earthquake will not be fully examined in this section. For more information, please refer to *Section Four: Risk Assessment*.

### **URBAN FIRE**

Lancaster County identified urban fire as a significant concern. Currently, the Lincoln Fire Department operates 14 stations which are spread across the community and meet the National Fire Protection Association standards for response time. However, according to the current Comprehensive Plan: "Lincoln Fire and Rescue has repeatedly stated that maintaining desirable response times is becoming increasingly difficult in areas that have experienced urban growth further and further away from existing fire stations." The Fire Department is expecting to look at both relocation of stations as well as creation of new stations in anticipation of future growth.

Some rural fire districts are located outside of the incorporated areas, and rely on mutual aid requests as needed.

**Table 5: Calls Responded to by Fire Departments in Lancaster County**

<b>Fire Department</b>	<b>Fire</b>	<b>Over Pressure Rupture</b>	<b>Rescue/ EMS</b>	<b>Haz Mat</b>	<b>Service Calls</b>	<b>Good Intent Calls</b>	<b>False Alarms</b>	<b>Severe Weather</b>	<b>Special Incidents</b>
<b>Bennet Rural Fire District</b>	0	0	0	0	0	0	0	0	0
<b>Firth Rural Fire District</b>	64	1	244	7	16	50	21	2	1
<b>Hallam Vol. Fire and Rescue</b>	61	0	16	9	1	3	11	0	1
<b>Hickman Rural Fire and Rescue</b>	143	0	555	16	25	141	51	3	2
<b>Lincoln Fire and Rescue</b>	1,927	264	490	2,234	4,505	2,392	5,190	55	661
<b>Malcolm Fire and Rescue</b>	0	0	0	0	0	0	0	0	0
<b>Raymond Vol. Fire and Rescue</b>	202	0	571	23	16	28	15	1	0
<b>Southeast Rural Fire District</b>	0	0	0	0	0	0	0	0	0
<b>Southwest Rural Fire District</b>	0	0	38	0	0	0	0	2	0
<b>Waverly Fire and Rescue</b>	171	0	860	35	58	143	54	1	1
<b>Lancaster County</b>	<b>2,568</b>	<b>264</b>	<b>2,774</b>	<b>2,323</b>	<b>4,621</b>	<b>2,757</b>	<b>5342</b>	<b>64</b>	<b>666</b>

**TERRORISM**

Lancaster County identified terrorism as a significant concern. There have been five reported instances of terrorism in Lancaster County, but the LEOP does rank terrorism as a moderate concern. All of the terrorism events were reported at government buildings within Lincoln or on the campus of the University of Nebraska. Terrorism can include a wide range of activities, with a very wide range of impacts.

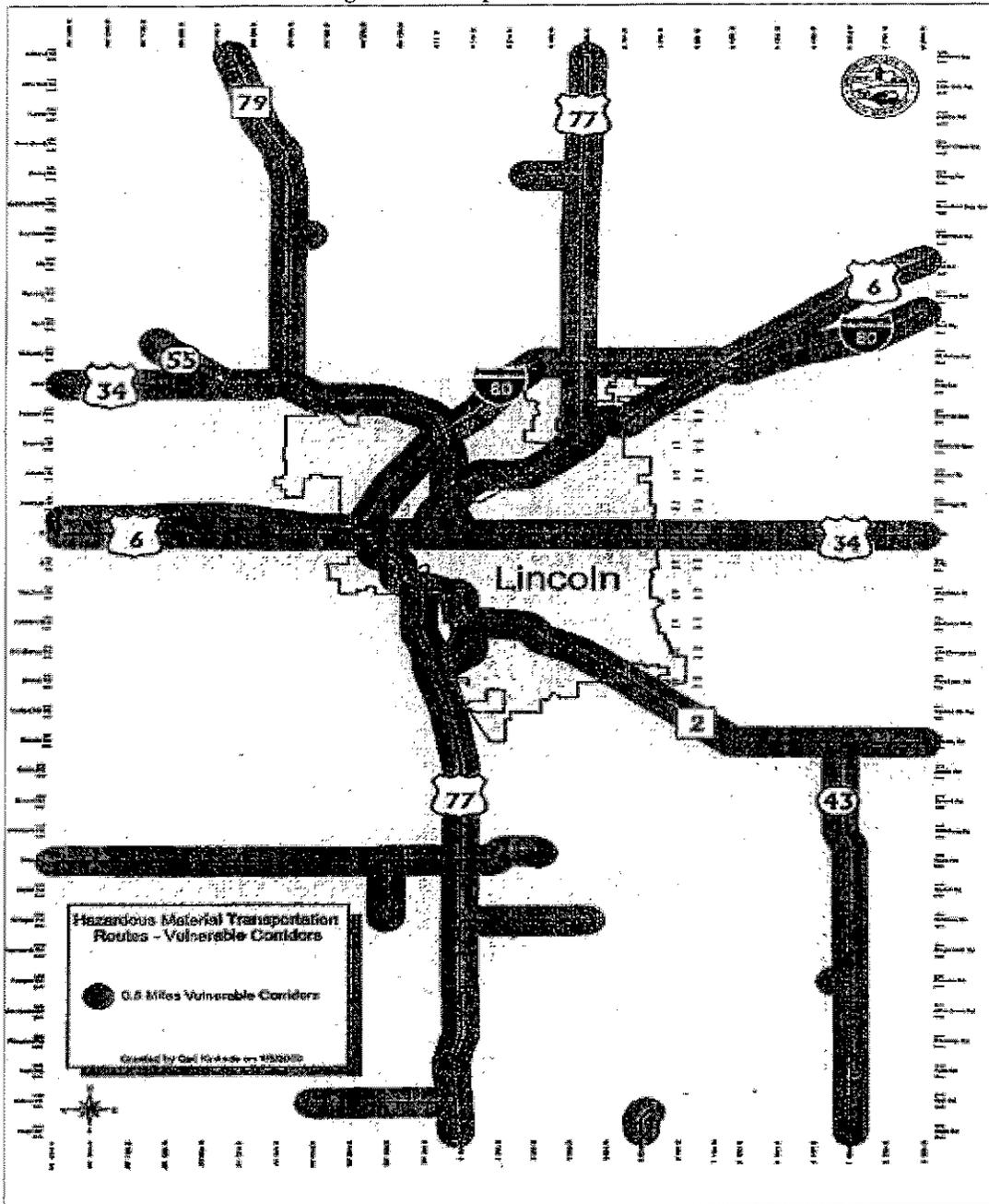
**Table 6: Terrorist Events Reported in Lancaster County**

<i>Date</i>	<i>Event</i>	<i>Area Impacts</i>	<i>Results</i>	<i>Injuries</i>
06/1 2/13	White Powder Discovered in an Envelope	Nebraska Department of Motor Vehicles	Evacuation of DMV	None
01/2 1/13	White powder in an envelope	Apothecary Building, Lawyer's office	None	None
02/2 4/11	Gunman on UNL's East Campus	University of Nebraska-Lincoln, East Campus and Wesleyan College Campus	Campus locked down for 90 minutes	None
12/0 4/07	White powder in an envelope	Immigration and Naturalization Service Building	None	None
06/0 9/05	Powder Discovered in the mailroom	Immigration and Naturalization Service Building	Evacuation of INS	None

**CHEMICAL TRANSPORTATION**

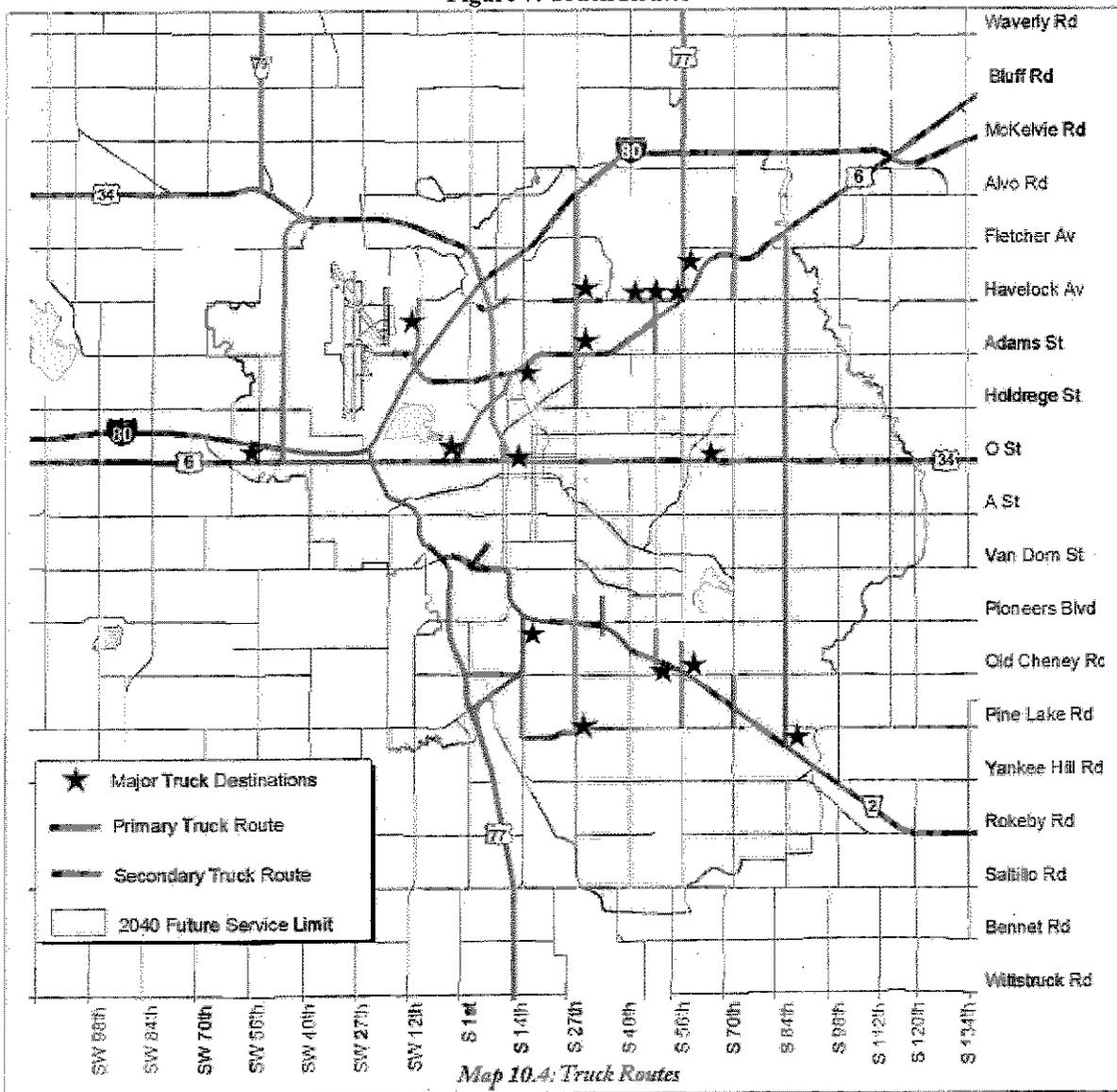
Lancaster County identified chemical transportation as a significant concern. According to the LEOP there have been several spills/leaks involving anhydrous ammonia and two propane leaks. Additionally, there have been chemical leaks and natural gas leaks and explosions. The LEOP ranks this hazard as one of the highest for the county. The following map, from the LEOP, illustrates transportation corridors.

Figure 6: Transportation Corridors



The following map, from the Comprehensive Map, illustrates existing truck routes.

Figure 7: Truck Routes



### Capability Assessment

The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction; and, a review of local existing policies, regulation, plans, and the programs. The survey serves to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and education and outreach capability.

- Lancaster County has many planning and regulatory mechanisms in place which can be utilized to promote safe and resilient development. The County/City Joint Comprehensive Plan 2040 pays special attention to regulating developments in floodplains as well as critical environmental resources such as watersheds, wetlands, and endangered species habitats. Please refer to Table 165 for the results of evaluating the local planning documents against the Safe Growth Audit. It

should be noted that not all of the planning documents in the county were examined for their linkage to the hazard mitigation plan and the county is encouraged to build strong connections between local traditional planning endeavors and this update of the hazard mitigation plan.

- Lancaster County has the staff resources to implement mitigation programs and projects on their own. Many of the staff are experienced and have been with the jurisdiction for several years.
- Lancaster County has many fiscal mechanisms in place, such as CIP funding and the ability to leverage special purposes taxes, which can be utilized in support of hazard mitigation efforts.
- Lancaster County plays an active role in establishing public outreach programs and raises the public awareness of hazard mitigation issues.
- The RWD undertakes monitoring during the week and has the ability to impose water restrictions when supply is insufficient. Restrictions are based upon the recovery period for the above ground water supply. However, there has not been a restriction needed in 12 years.

Table 165 provides detailed information regarding the survey completed by the local planning team.

**Table 7: Capability Assessment**

Survey Components/Subcomponents		Comments
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Yes
	Economic Development Plan	Yes
	Emergency Operational Plan	Yes
	National Resources Protection Plan	Yes
	Floodplain Management Plan	Yes
	Storm Water Management Plan	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Well Head Protection Area/District	Yes
Other (if any)	N/A	
Administrative & Technical Capability	Planning Commission	Staff: 5+; Tenure: 4+ years
	Hazard Mitigation Planning Commission	Staff: 5+; Tenure: 4+ years
	Floodplain Administration	Staff: 5; Tenure: 1-3 years
	Emergency Manager	Staff: 3; Tenure: 4+ years
	GIS Coordinator	Staff: 1; Tenure: 4+ years
	Chief Building Official	Staff: 1; Tenure: 4+ years
	Civil Engineering	Staff: 5+; Tenure: 4+ years
	Staff Who Can Assess Community's Vulnerability to Hazards	Staff: 5+; Tenure: 4+ years
	Grant Manager	Staff: 2; Tenure: 4+ years
	Other (if any)	N/A
Fiscal	Capital Improvement Project Funding	Yes

Survey Components/Subcomponents		Comments
Capability	Community Development Block Grant	Yes
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	Yes
	Storm Water Service Fees	Yes
	Water/Sewer Service Fees	Yes
	Development Impact Fees	Yes
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	Yes (Various grants applied for and received from DHS and/or FEMA)
Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	Yes
	StormReady Certification	Yes
	Firewise Communities Certification	No
	Tree City USA Program	No
	Public-private partnership initiatives addressing disaster-related issues	Yes
	Other (if any)	N/A

**PLAN EVALUATION**

The Lincoln/Lancaster Comprehensive Plan addresses the natural environment in many ways, under the umbrella of Environmental Stewardship and Sustainability. The plan addresses natural resource preservation through land use, as well as discussing the need to ensure community resilience in the face of natural disasters.

The results of applying the Safe Growth Audit (see *Section Six: Plan Implementation and Maintenance*) to evaluating the Lincoln/Lancaster County Comprehensive Plan 2040, the findings are demonstrated in the table below.

**Table 8: Safe Growth Audit**

Component		Items	I (Included)
Comprehensive Plan	Land Use	Identify hazard areas	I
		Land-use policy that discourages (re)development within hazard areas	I
		Provide adequate area for growth outside hazard areas	I
	Transportation	Limit access to hazard areas	
		Policy that guides growth outside hazard areas	
		Emergency functional designs	
	Environmental Management	Identify and map environmental systems that protect development from hazards	
		Policy that maintains and restore protective ecosystems	I
		Policy that provides incentives to developments outside protective ecosystems	
	Public Safety	Goals and policies are related to hazard plan	I
		Plan's growth and development policies that explicitly include safety	I
		Monitoring and implementation section cover safe growth objectives	
Zoning Ordinance	discouraging (re)development within hazard areas	I	
	Contain natural hazard overlay zones that set conditions for land use within such zones		
	Recognize hazard areas as limits in rezoning procedures		
	Prohibit development within, or filling of, wetlands, floodways, and floodplains	I	
Subdivision Regulation	Restrict the subdivision of land within or adjacent to hazard areas	I	
	Conservation subdivisions or cluster subdivisions to conserve environmental resources		
	Allow density transfers where hazard areas exist		

## ***Mitigation Actions***

### **COMPLETED MITIGATION ACTIONS**

The following mitigation actions have been completed since the 2008 HMP.

#### **Alert and Warning Systems for all Communities in Lancaster County**

**Description:** Ensure that all communities have access to sirens.

**Hazard(s) Addressed:** All

**Priority:** Medium

**Lead Agency:** Lancaster County Emergency Management

**Status:** Complete

#### **Purchase and issue weather radios for schools and CFs**

**Description:** Conduct an inventory of weather radios at schools and other CFs and provide new radios as needed.

**Hazard(s) Addressed:** All

**Priority:** High

**Lead Agency:** Lancaster County Emergency Management

Status: Complete

**Update Emergency Operations Center**

**Description:** Update Emergency Operations Center.

**Hazard(s) Addressed:** All

**Priority:** High

**Lead Agency:** Lancaster County Emergency Management

**Status:** Complete

**Complete a County Wide Master Plan to prioritize all flooding related projects**

**Description:** Stormwater master plans can be conducted to perform a community-wide stormwater evaluation, identifying multiple problem areas, and potentially multiple drainage improvements for each.

**Hazard(s) Addressed:** Flooding

**Priority:** High

**Lead Agency:** Lancaster County Public Works

**Status:** Complete

**Work with stakeholders to develop a database of vulnerable populations and organizations which support them**

**Description:** Develop a database of vulnerable populations and supporting organizations.

**Hazard(s) Addressed:** All

**Priority:** High

**Lead Agency:** Aging Partners & Lancaster County Emergency Management

**Status:** Complete

**NEW OR PREVIOUSLY IDENTIFIED MITIGATION ACTIONS**

The following hazard mitigation actions were ranked high by Lancaster County, or were noted as being underway since the previous hazard mitigation plan.

**Implement Water Conservation Awareness Programs, such as pamphlets**

**Description:** Improve and/or develop a program to conserve water use by the citizens during elongated periods of drought. Potential restrictions on water could include limitations on lawn watering, car washing, or water sold to outside sources. Work with DNR on farm irrigation restrictions.

**Hazard(s) Addressed:** Drought

**Estimated Cost:** \$1,000 +

**Potential Funding:** PDM, HMGP, LPSNRD, Lancaster County

**Timeline:** Ongoing

**Priority:** Medium

**Lead Agency:** LPSNRD & Lancaster County Emergency Management

**Status:** In Progress: education materials available through Lancaster County Emergency Management and Department of Public Works

**Reverse 911 System for Notification of residents and businesses**

**Description:** Reverse 911 systems can allow for notification of residents in the event of an emergency.

**Hazard(s) Addressed:** All

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

**Potential Funding:** PDM, HMGP, LPSNRD, Lancaster County

**Timeline:** 1-2 Years

**Priority:** High  
**Lead Agency:** LPSNRD, Lancaster County Emergency Management  
**Status:** In Progress

#### **Public Education**

**Description:** Increase public awareness of vulnerability and risk reduction measures through hazard education.  
**Hazard(s) Addressed:** All  
**Estimated Cost:** \$0 - \$1,000  
**Potential Funding:** PDM, HMGP, LPSNRD, Lancaster County  
**Timeline:** Ongoing  
**Priority:** Medium  
**Lead Agency:** NEMA, LPSNRD, Lancaster County Emergency Management  
**Status:** In Progress

#### **Storm Shelters**

**Description:** Identify, design, and develop storm shelters to protect community and critical facilities.  
**Hazard(s) Addressed:** Tornadoes and High Winds, Severe Thunderstorms  
**Estimated Cost:** \$200-\$300/sf stand alone; \$150-200/sf addition/retrofit  
**Potential Funding:** PDM, HMGP, LPSNRD, Lancaster County  
**Timeline:** 5 Years  
**Priority:** Medium  
**Lead Agency:** LPSNRD, NEMA, & Lancaster County Emergency Management  
**Status:** Not Yet Started

#### **Assist Jurisdictions with Tree City Designation**

**Description:** Assist jurisdictions working to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a tree maintenance program in order to maintain trees in a community to limited potential damages when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.  
**Hazard(s) Addressed:** Severe thunderstorms, tornadoes and high winds, severe winter storms  
**Estimated Cost:** \$0  
**Potential Funding:** Lancaster County  
**Timeline:** 3-5 years  
**Priority:** Low  
**Lead Agency:** Lancaster County Emergency Management  
**Status:** In Progress

#### **Educate local businesses about the value of continuity planning**

**Description:** Continuity planning helps to ensure that services can be maintained during and after a disaster.  
**Hazard(s) Addressed:** All  
**Estimated Cost:** \$0  
**Potential Funding:** N/A  
**Timeline:** Ongoing  
**Priority:** Low  
**Lead Agency:** Lancaster County Emergency Management  
**Status:** In Progress

#### **Improve storm sewers and drainage patterns in and around the County**

**Description:** Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. These improvements can serve to more effectively convey runoff, preventing interior localized flooding. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.

**Hazard(s) Addressed:** Flooding  
**Estimated Cost:** \$100,000 +  
**Potential Funding:** PDM, HMGP, CDBG, LPSNRD, Lancaster County  
**Timeline:** 3-5 years  
**Priority:** High  
**Lead Agency:** Lancaster County Public Works and Emergency Management  
**Status:** In Progress: A part of regular maintenance program

**Maintain Good Standing with the NFIP**

**Description:** Maintain good standing with National Flood Insurance Program (NFIP).  
**Hazard(s) Addressed:** Flooding  
**Estimated Cost:** \$0  
**Potential Funding:** N/A  
**Timeline:** Ongoing  
**Priority:** High  
**Lead Agency:** Lancaster County Public Works & Emergency Management, Floodplain Administrator  
**Status:** Ongoing

**Develop continuity plans for critical community services**

**Description:** Continuity planning helps to ensure that services can be maintained during and after a disaster.  
**Hazard(s) Addressed:** All  
**Estimated Cost:** \$0  
**Potential Funding:** N/A  
**Timeline:** 5 Years  
**Priority:** Low  
**Lead Agency:** Lancaster County Emergency Management  
**Status:** In Progress

**Encourage the use of hail resistant roofing**

**Description:** Educate the public and business owners regarding hail resistant roofing.  
**Hazard(s) Addressed:** Severe Thunderstorms  
**Estimated Cost:** \$0  
**Potential Funding:** Lancaster County  
**Timeline:** 1 Year  
**Priority:** High  
**Lead Agency:** Lancaster County Building Code Officials  
**Status:** Developing educational materials

**Utilize low impact development practices and green infrastructure to reduce flood risk**

**Description:** Low impact development practices and green infrastructure can reduce runoff and result in a reduction in stormwater related flooding  
**Hazard(s) Addressed:** Flooding  
**Estimated Cost:** Varies  
**Potential Funding:** Lancaster County  
**Timeline:** Ongoing: Community will implement projects as they are identified  
**Priority:** High  
**Lead Agency:** LPSNRD & Lancaster County Public Works, Floodplain Administrator  
**Status:** Not Yet Started

**Green Mitigation**

**Description:** Educate the public and business owners regarding rain gardens, green roofs, and other minor mitigation measures.  
**Hazard(s) Addressed:** All Hazards  
**Estimated Cost:** Varies

**Potential Funding:** Lancaster County

**Timeline:** Ongoing

**Priority:** High

**Lead Agency:** LPSNRD & Lancaster County Emergency Management, Flood Administrator

**Status:** In Progress

**Shelter-In-Place Training**

**Description:** Ensure that all CFs, businesses, and residents located near major transportation corridors are aware of how to safely shelter in place in the event of a chemical incident.

**Hazard(s) Addressed:** Chemical Transportation and Transportation

**Estimated Cost:** \$1,000 +

**Potential Funding:** Lancaster County

**Timeline:** 3-5 years

**Priority:** Medium

**Lead Agency:** Lancaster County Emergency Management

**Status:** In Progress

