City of Carroll

112 E. 5th Street Carroll, Iowa 51401-2799 (712) 792-1000 FAX: (712) 792-0139

MEMO TO: Honorable Mayor and City Council Members

FROM: Mike Pogge-Weaver, City Manager MSP-W

DATE: April 9, 2020

SUBJECT: City of Carroll adoption of the Carroll, Crawford, Greene, & Sac Counties Multi-Jurisdictional Hazard Mitigation Plan 2020

Region XII Council of Governments has recently completed an update to the Carroll, Crawford, Greene, & Sac Counties Multi-Jurisdictional Hazard Mitigation Plan. This plan was and continues to be a requirement for federal grant eligibility with a purpose of reducing or eliminating long-term risk to people and property from both natural and technological hazards. City staff have met with staff from Region XII COG to review and make comments on the plan.

The Federal Disaster Mitigation Act of 2000 establishes requirements for state and local entities to prepare and keep updated a comprehensive Hazard Mitigation Plan. The regulation requires that HMP's be updated and resubmitted to FEMA for approval every five years. The importance of completing this required update is two-fold. First, this requisite update is needed in order to maintain updated documentation about local hazards and mitigation efforts to reduce those hazards. And secondly, in order for the City to continue to be eligible for FEMA mitigation funding and federal grant funding, the update must be completed.

Attached is a copy of the section of the plan relating to the City of Carroll. A full copy of the 1,041 page plan can be viewed on-line on Region XII's website by going to http://www.region12cog.org/plans/ then select the link title "*Carroll, Crawford, Greene, and Sac Counties Multi-Jurisdictional Hazard Mitigation Plan 2020 DRAFT*" located under the draft plan section toward the bottom of the page.

STAFF RECOMMENDATIONS: Consider a resolution adopting the Carroll, Crawford, Greene, & Sac Counties Multi-Jurisdictional Hazard Mitigation Plan 2020

Resolution No. _____

Resolution Adopting Multi-Jurisdictional Hazard Mitigation Plan

A RESOLUTION OF THE CITY OF CARROLL ADOPTING THE CARROLL, CRAWFORD, GREENE, & SAC COUNTIES MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN 2020

Whereas, The Board of Supervisors of Carroll County, IA has authorized the development of a multi-jurisdictional hazard mitigation plan; and,

Whereas, the City of Carroll participated in the multi-jurisdictional hazard mitigation planning process; and

Whereas, the Carroll, Crawford, Greene, & Sac Counties Multi-Jurisdictional Hazard Mitigation Plan was prepared in compliance with the Hazard Mitigation Planning Requirement of the Disaster Mitigation Act of 2000 provided by the Iowa Homeland Security and Emergency Management Division.

NOW THEREFORE BE IT RESOLVED, that the City of Carroll adopts the Carroll, Crawford, Greene, & Sac Counties Multi-Jurisdictional Hazard Mitigation Plan, incorporating citizen comments and recommendations.

PASSED AND ADOPTED THIS_____ DAY OF _____, 2020.

_____
Mayor

ATTEST:

_____
City Clerk

Appendix D: City of Carroll

Community Profile

History

The area that is now Carroll County, Iowa, was known simply as "the swamp land" by early settlers. It was first used by local Native Americans for hunting and was seen as a watering stop for people heading to California in pursuit of gold. Carroll County was created on January 15, 1851, as part of 49 new counties in the western part of Iowa. However, it wasn't until 1852 when the area received its first permanent settlers who were intrigued by the fertile soil that was present. The county, and eventually the city, was named after Charles Carroll of Carrollton, Maryland.

Carroll was originally started and laid out by the Chicago and North Western Railroad in the late 1860's. Carroll's first building was a warehouse for the railroad. This new hamlet was declared the county seat on April 28, 1868, after the county records were moved there from the small town of Carrollton, located in southeast Carroll County. At this time, the town was home to 11 residents. The City of Carroll City was officially incorporated in 1869. The name would later be changed to just "Carroll" in 1875.

Carroll's first courthouse was built in 1869 at a cost of $4,000 in the town square and the first permanent school was built the same year. In 1877, a new railroad branch was built just west of Carroll that ran to the northwest. The city was now connected to Sioux City, Chicago, and Council Bluffs. Like most Iowa railroad towns, Carroll really began to thrive in the late nineteenth century.

Unfortunately, on September 25, 1879, a majority of the business district in the city were burned down. Immediately after, the downtown area was being rebuilt. In 1880, the North Side School was built between 10th and 11th Streets on Adams. This was considered the edge of town at the time. Shortly after, the South Side School was built in 1883. This site is now Southside Park. In 1887, a new courthouse was built to replace the one that had burned down in 1886.

The Chicago Great Western Railway was built in 1902 and ran from the northeastern part of the county, through Carroll, and then southwest to Manning. St. Anthony Hospital opened in 1905 with thirty beds and seven doctors.

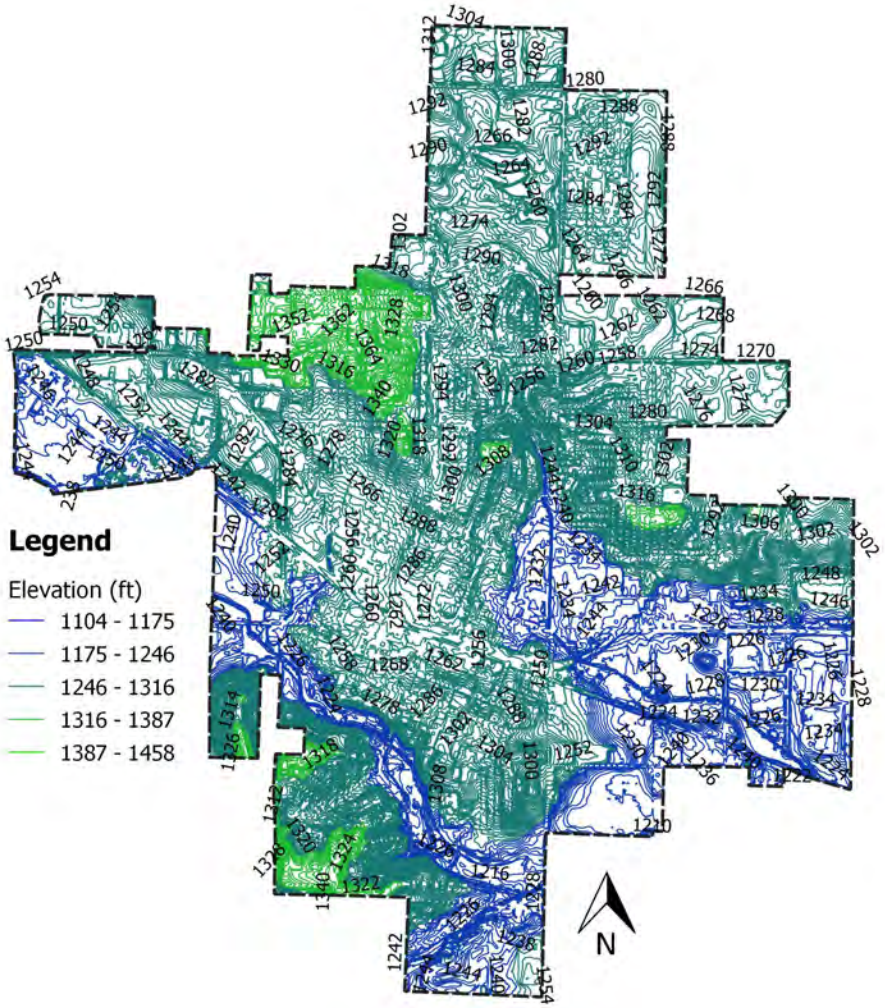
The proclamation for the Lincoln Highway was signed on September 10, 1913. This route, starting at Time Square in New York City and ending in San Francisco, would be the first transcontinental highway in the United States.

Geography and Environment

Carroll is located in the heart of Carroll County, and is the county seat. Its central location along with easy access makes it the economic hub within the region. Highway 30 intersects the community east/west, while Highway 71 runs north/south along the west side of town. Carroll is 27.3 miles from Denison, 27.4 miles from Jefferson, 45.8 miles from Guthrie Center, 65.4 miles from Ames, and 93.8 miles from Des Moines.

The highest elevation in Carroll County can be found along the eastern side of the county. Here, the elevation can reach as much as 1,550 feet above sea-level. The elevation of Carroll ranges from 1,224 feet in the southeast corner to 1,362 feet in the northwest corner. The following map displays Carroll's elevation in relation to the rest of Carroll County.

Map D.1: City of Carroll Elevation

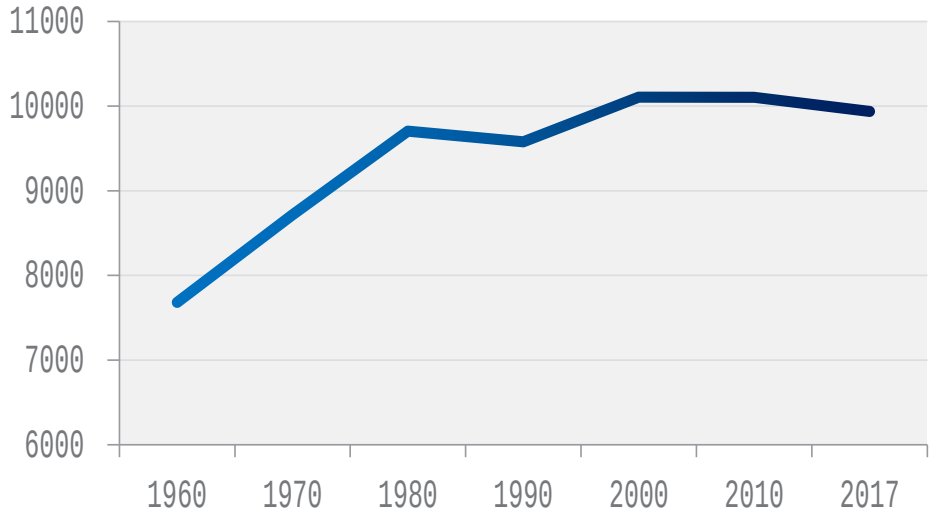


Demographics

Population in Carroll has remained steady since 2000. Current population of Carroll is 9,937. Carroll saw the largest increase of population from 1970-1980 when the population grew by 989 people. Carroll should continue to grow as it is the regional leader in retail and employment as many job opportunities have been created in Carroll over the years. Figure D.1 shows the City of Carroll's population trend since 1960.

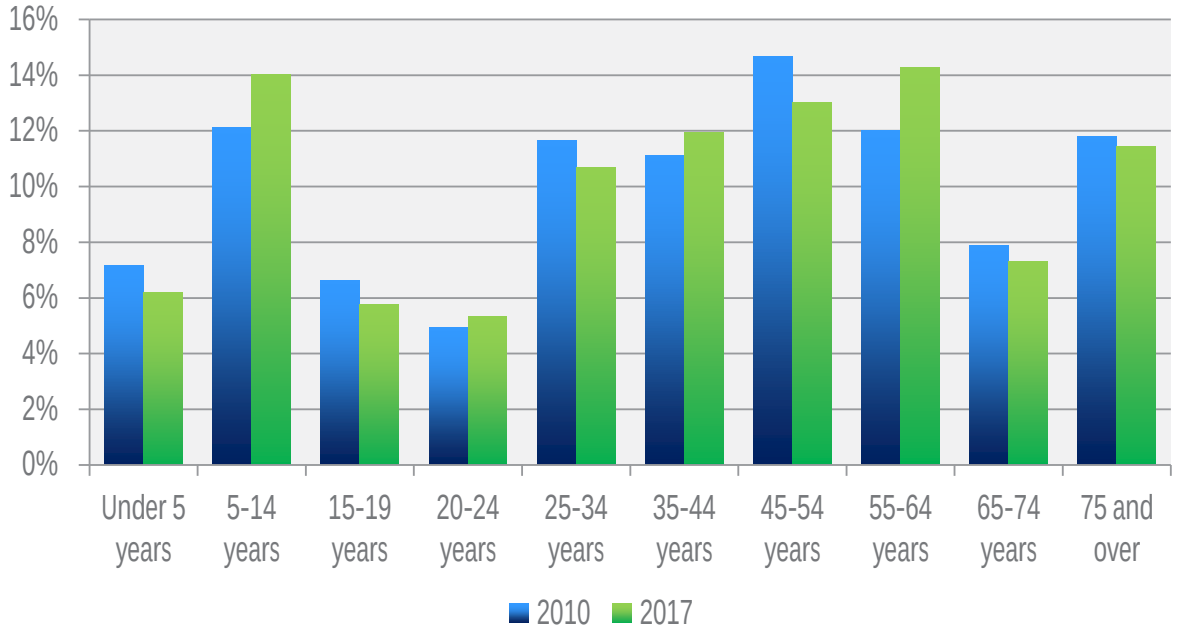
The City's population is not very different from other parts of Carroll County, and even most of the State of Iowa. Population cohorts at age 50 and above have generally higher numbers than other younger cohorts. This information can be found in figure D.2.

Figure D.1: City of Carroll Population, 1960-2017



Source: US Census Bureau, American Community Survey

Figure D.2: City of Carroll Age Distribution



Source: US Census Bureau, American Community Survey

Housing

A community's ability to attract new residents is important. One of the most important aspects to attracting residents is housing. A community's housing stock, type of households, and housing availability and affordability are determining factors.

Since 2010, the city's housing stock has increased by 112 units. Of these units, 60 were owner-occupied. During this same time, the City saw a 1.07% increase in vacant properties. Table D.1 shows a breakdown of the city's occupied and vacant housing units.

Table D.1: City of Carroll Housing Units, 2010 & 2017

	2010		2017	
	Number	Percent	Number	Percent
Occupied Housing Units	4,357	92.7%	4,418	91.9%
Owner Occupied	2,999	68.8%	3,059	69.2%
Renter Occupied	1,358	31.2%	1,359	30.8%
Vacant Housing Units	341	7.3%	392	8.1%
Total Housing Units	4,698	100.0%	4,810	100.0%

Source: US Census Bureau, American Community Survey

In 2017 the City of Carroll was home to the largest median value of housing units in Carroll County. The median value of homes within the city of Carroll is $139,300. This is higher than the State of Iowa median housing value of $137,200. As the table shows, over 44.0% of the housing units in the city were valued over $150,000. Having a lack of economical housing could be a problem with getting new people to move to the city. According to the 2017 American Community Survey Estimates, only 4.09% of the city's homes are valued less than $50,000. A complete breakdown of the value of homes in Carroll can be found in table D.2.

Table D.2: City of Carroll Owner-Occupied Housing Units, 2018

Value of Housing Unit	Percent of Homes
Less than $50,000	4.09%
$50,000 to $99,999	23.77%
$100,000 to $149,999	28.11%
$150,000 to $199,999	23.47%
$200,000 to $299,999	9.97%
$300,000 to $499,999	8.79%
$500,000 to $999,999	1.37%
$1,000,000 or more	0.42%

Source: American Community Survey

Figure D.3 showcases the year housing units within the City of Carroll were constructed. The city has a smaller portion (17.0%) of the homes constructed prior 1939 compared to the rest of the state. The city experienced spikes in construction from 1990-1999 as well as 1960-1969. Building standards of today utilize the most recent construction materials and safety features, ensuring that the new residential structures are as safe as possible. This does not mean that older homes are more unsafe, just that they may be more susceptible to hazard damage.

Economics

Household income is an important indicator of the economic base in Carroll County. In Carroll, the median household income is $44,561 which would classify a large number of the households in Carroll as "working" or middle" class. Table D.3 breaks down the city's households by income. The City of Carroll's household income breakdown is similar to the other rural communities in the area. Educational services, and health care, and social assistance is the largest industry within the City, which is consistent with the county as a whole. Carroll is the county seat and home to many employers, so few Carroll residents travel to neighboring cities to work.

Table D.3: City of Carroll Household Income, 2017

Income (In 2016 Inflation-Adjusted Dollars)	Number of Households	Percent of Households
Less than $10,000	312	7.10%
$10,000-$14,999	330	7.50%
$15,000-$24,999	609	13.80%
$25,000-$34,999	590	13.40%
$35,000-$49,999	506	11.50%
$50,000-$74,999	559	12.70%
$75,000-$99,999	803	18.20%
$100,000-$149,999	462	10.50%
$150,000-$199,999	178	4.00%
$200,000 or more	69	1.60%
Median Household Income	$44,561	-
Mean Household Income	$61,088	-

Source: US Census Bureau, American Community Survey

Carroll is by far the leading employment provider in Carroll County and has a strong economic base. The employment by industry statistics are shown in Table D.4. The leading industries in employment were Educational services, and health care and social assistance (25.59%), Retail trade (13.21%), Manufacturing (13.03%), and Finance and insurance, and real estate and rental and leasing (7.97%). Taking advantage of regional strengths and industries will increase revenue generated in the community, resulting in increased income levels and housing values. These percentages are based on the total number of individuals 16 years and older that are from Carroll and are employed.

Table D.4: City of Carroll Employment by Industry, 2017

Industry	Estimate	Percent
Civilian employed population 16 years and over	5072	100.0%
Agriculture, forestry, fishing and hunting, and mining	69	1.36%
Construction	205	4.04%
Manufacturing	661	13.03%
Wholesale trade	391	7.71%
Retail trade	670	13.21%
Transportation and warehousing, and utilities	261	5.15%
Information	178	3.51%
Finance and insurance, and real estate and rental and leasing	404	7.97%
Professional, scientific, and management, and administrative and waste management services	253	4.99%
Educational services, and health care and social assistance	1298	25.59%
Arts, entertainment, and recreation, and accommodation and food services	310	6.11%
Other services, except public administration	203	4.00%
Public administration	169	3.33%

Existing Documents

The current planning and regulatory documents along with the year they were last updated for the City of Carroll can be found in Table D.5.

Table D.5: City of Carroll Existing Documents

Document	Yes/No	Year
Previous HMP	Yes	2014
Comprehensive Plan	Yes	2013
Building Code	Yes	2015
Zoning Ordinance	Yes	2013
Strategic Plan	Yes	2019
Housing Needs Assessment	Yes	2016
NFIP Participant	Yes	1979
Floodplain Regulations	Yes	2018

NFIP Participation

There have been instances of significant flooding within Carroll city limits in the past. The city began participating in the NFIP in 1979, and the city's flood maps were updated in 2017. The City of Carroll's FIRMs can be found later in this appendix.

Outlook and Future Development

The City of Carroll has seen development throughout the city since the last plan update. The city has experienced residential growth in the northeast and southern portions of town. The city anticipates that the residential developments will continue throughout the life of this plan. Commercial development has been steady within the city since the last plan update. Some of the development has been infill, and other development has been new construction. The city anticipates that all development types within the city will continue throughout the life of this plan.

Critical Facilities

Critical Facilities are facilities that are critical to the health and welfare of the population and are especially important following hazard events. Every jurisdiction is unique in such way that the list of critical facilities can vary widely from community to community. Breda's critical facilities can be found on Map D.2.

Essential Infrastructure and Services

Knowing what services and infrastructure serve the city can be beneficial in a time of disaster so the appropriate companies can be contacted in need of utility shutoff or transportation routes. The city's essential infrastructure and services can be found in Table D.6.

Carroll Community School District

All of the district's buildings are located within the City of Carroll. The School District has two elementary buildings, Adams Elementary at 1026 N Adams Street and Fairview Elementary at 525 E 18th Street. The Carroll Middle School is located at 3203 N Grant Road and the Carroll High School is located at 2809 N Grant Road. The District's Mission Statement, as found on the District's website it "opening the doors of learning for success."

Table D.6: Carroll Community School District Enrollment

School Year	Facility	Enrollment	Facility	Enrollment	Facility	Enrollment	Total Enrollment
2013-14	Elementary Schools	722	Carroll Middle School	471	Carroll High	480	1,673
2014-15	Elementary Schools	719	Carroll Middle School	462	Carroll High	503	1,684
2015-16	Elementary Schools	697	Carroll Middle School	493	Carroll High	487	1,677
2016-17	Elementary Schools	664	Carroll Middle School	524	Carroll High	478	1,666
2017-18	Elementary Schools	665	Carroll Middle School	546	Carroll High	481	1,692

Students and staff participate in drills and educational programs related to hazards and the mitigation of them. The District maintains its own equipment and supplies to maintain roads and walkways on campus.

Kuemper Catholic School System

The Kuemper Catholic School System's buildings are all located within the City of Carroll. There are four buildings which make up the system. Holy Spirit Elementary is located at 201 S Clark Street, St. Angela Center is located at 116 S East Street, St. Lawrence Center is located at 1519 N West Street, and the Kuemper High School is located at 109 S Clark Street. The School's Mission, as found on their website, is "to provide excellent Catholic education of mind, body, and soul to empower all students to achieve to the best of their abilities in fulfillment of God's Call."

Table D.7: Kuemper Community School District Enrollment

School Year	Facility	Enrollment	Facility	Enrollment	Total Enrollment
2013-14	Kuemper Grade School	712	Kuemper High School	298	1,010
2014-15	Kuemper Grade School	737	Kuemper High School	294	1,031
2015-16	Kuemper Grade School	727	Kuemper High School	313	1,040
2016-17	Kuemper Grade School	725	Kuemper High School	315	1,040
2017-18	Kuemper Grade School	750	Kuemper High School	311	1,061

Students and staff participate in drills and educational programs related to hazards and the mitigation of them. The District maintains its own equipment and supplies to maintain roads and walkways on campus.

Table D.8: City of Carroll Essential Infrastructure

Major Arterials	U.S. Highways 30 & 71	**Air Service**	Arthur N. Neu Municipal Airport
Water Service	City of Carroll	**Sewer Service**	City of Carroll
Electric Service	MidAmerican Energy	**Gas Service**	Alliant Energy
Sanitation/Solid Waste	Local Haulers	**Landfill**	Carroll County Landfill
Phone and Internet	CenturyLink, Mediacom, Western Iowa Networks, Wireless	**Law Enforcement**	Carroll Police Department
Fire Service	Carroll Fire Department	**Ambulance Service**	Carroll County Ambulance Service

Table D.9: City of Carroll Critical Facilities

Number on Map	Name	Address	Type
1	Adam's Elementary School	1026 North Adams Street	Vulnerable Population
2	Carroll Broadcasting Company	1119 Plaza Drive	Utility
3	Carroll City Hall	627 North Adams Street	Essential Facility
4	Carroll City Police Department	112 East 5th Street	Essential Facility
5	Carroll Country Store	1511 US-71	HAZMAT
6	Carroll County Courthouse	114 East 6th Street	Essential Facility
7	Carroll Fire Department	801 Bella Vista Drive	Essential Facility
8	Carroll High School	2809 North Grant Road	Vulnerable Population
9	Carroll Middle School	3203 North Grant Road	Vulnerable Population
10	Carroll Public Library	112 East 5th Street	Public
11	Carroll Recreation Center	716 North Grant Road	Vulnerable Population
12	Casey's	613 Lincoln Highway	HAZMAT
13	Casey's	510 East Lincoln Highway	HAZMAT
14	Country Store	422 West Lincoln Highway	HAZMAT
15	Fairview Elementary School	525 East 18th Street	Vulnerable Population
16	GehlPRO Welding	1610 Burgess Avenue	HAZMAT
17	Kuemper Catholic Middle School	1519 North West Street	Vulnerable Population
18	Kuemper Catholic School	116 South East Street	Vulnerable Population
19	Mediacom Communications Corporation	510 North Clark Street	Utility
20	Murray's Welding & Machine	322 US-71	HAZMAT
21	Shell	112 US-71	HAZMAT
22	Sparky's One Stop	402 East 6th Street	HAZMAT
23	St. Anthony Regional Hospital	311 South Clark Street	Essential Facility

Map D.2: City of Carroll Critical Facilities

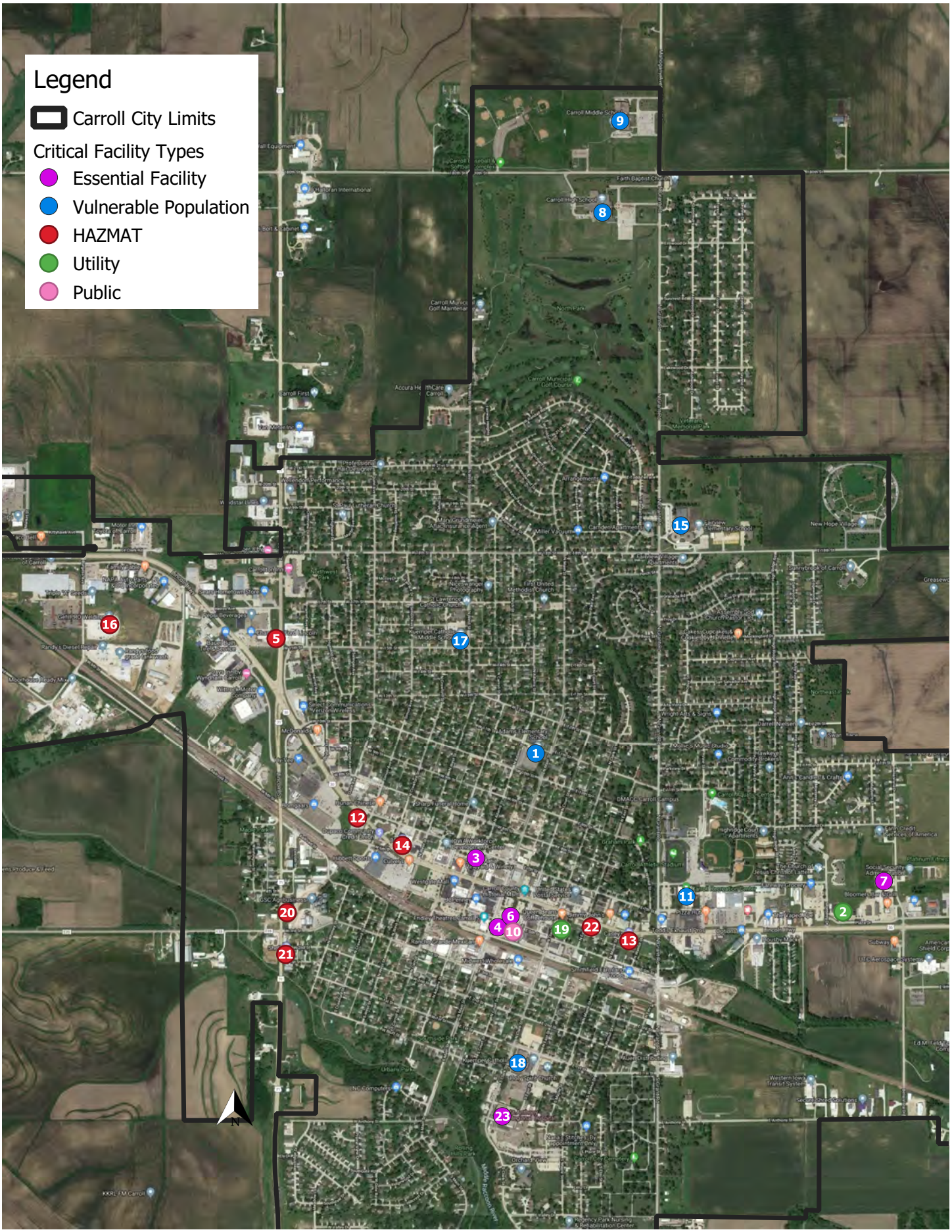


Table D.10: City of Carroll Risk Assessment Scoring

Hazard	Previous Occurrence?	Likely to Experience?	Probability?	Magnitude/ Severity	Warning Time	Duration	Hazard Score
Severe Winter Storm	Yes	Yes	4	2	2	3	3.00
Grass/Wild Land Fire	Yes	Yes	4	1	4	1	2.80
Transportation Incident	Yes	Yes	3	2	4	2	2.75
Thunderstorm/ Lightning/Hail	Yes	Yes	4	1	3	1	2.65
Tornado	Yes	Yes	3	2	4	1	2.65
River Flooding	Yes	Yes	3	1	2	3	2.55
Animal/Plant/Crop Disease	Yes	Yes	2	3	2	4	2.50
Drought	Yes	Yes	3	2	1	4	2.50
Levee/Dam Failure	Yes	Yes	2	2	4	3	2.40
Flash Flood	Yes	Yes	3	1	4	1	2.35
Windstorm	Yes	Yes	3	1	4	1	2.35
HAZMAT Incident	Yes	No	4	2	4	2	2.30
Infrastructure Failure	Yes	Yes	2	2	4	2	2.30
Terrorism	No	No	1	3	4	3	2.25
Human Disease	Yes	Yes	2	2	2	4	2.20
Extreme Heat	Yes	Yes	3	1	1	3	2.10
Radiological	No	No	1	2	4	3	1.95
Earthquake	No	No	1	1	4	1	1.45
Expansive Soils	No	No	1	1	1	4	1.30

Table D.11: City of Carroll Maximum Building and Population Exposure

Type of Structure	Number of Structures	Value of Structures	Number of People
Agricultural	2	$30,190	9,937
Commercial	417	$143,991,363	
Industrial	16	$11,368,670	
Residential	3,606	$478,128,230	

The following hazards were determined to have a negligible impact on the City of Carroll, were they to occur.

Animal/Plant/Crop Disease
Dam and Levee Failure
Drought
Extreme Heat
Flash Flood
Thunderstorm/Lightning/Hail
River Flooding
Severe Winter Storm
Transportation Incident

Any shutdown of facilities and services is expected to last less than 24 hours and any injuries/illnesses are treatable with first aid. It is estimated that 9% of the city would be impacted.

Table D.12: City of Carroll Negligible Hazard Impacts

Type of Structure	Number of Structures	Value of Structures	Number of People
Agricultural	0	$0	894
Commercial	38	$12,959,223	
Industrial	1	$1,023,180	
Residential	325	$43,031,541	

The following hazards were determined to have a limited impact on the City of Carroll, were they to occur.

HAZMAT Incident
Infrastructure Failure
Radiological Incident
Windstorm

A shutdown of some facilities and services could last more than a week and any injuries/illness would not result in permanent disability. It is estimated that 25% of the city would be impacted.

Table D.13: City of Carroll Limited Hazard Impacts

Type of Structure	Number of Structures	Value of Structures	Number of People
Agricultural	0	$0	248
Commercial	10	$3,599,784	
Industrial	4	$2,842,168	
Residential	90	$11,953,206	

The following hazards were determined to have a critical impact on the City of Carroll, were they to occur.

Human Disease
Terrorism
Tornado

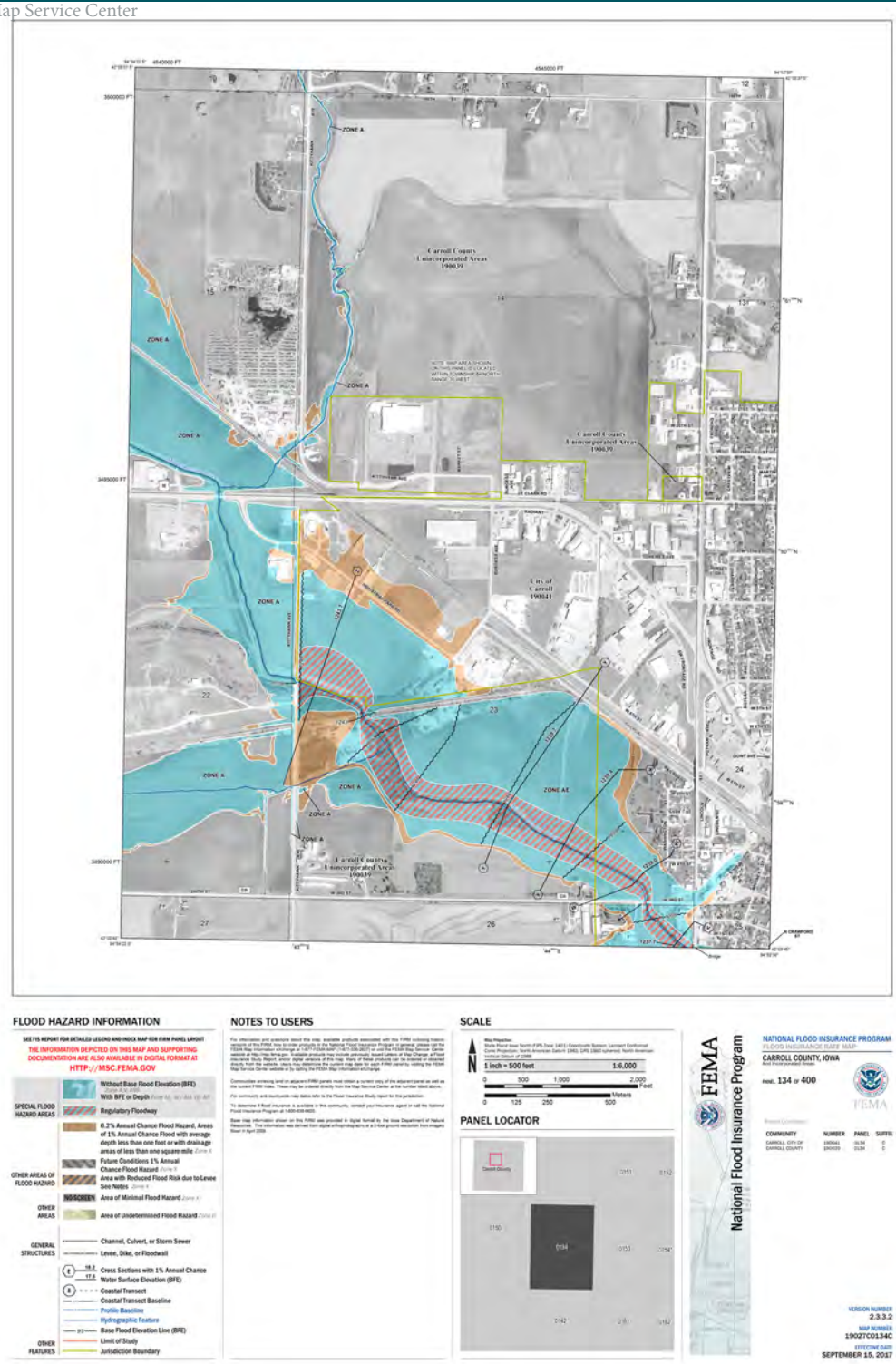
A shutdown of some facilities and services could last for at least two weeks and some injuries/illness will result in permanent disability. It is estimated that 50% of the city would be impacted.

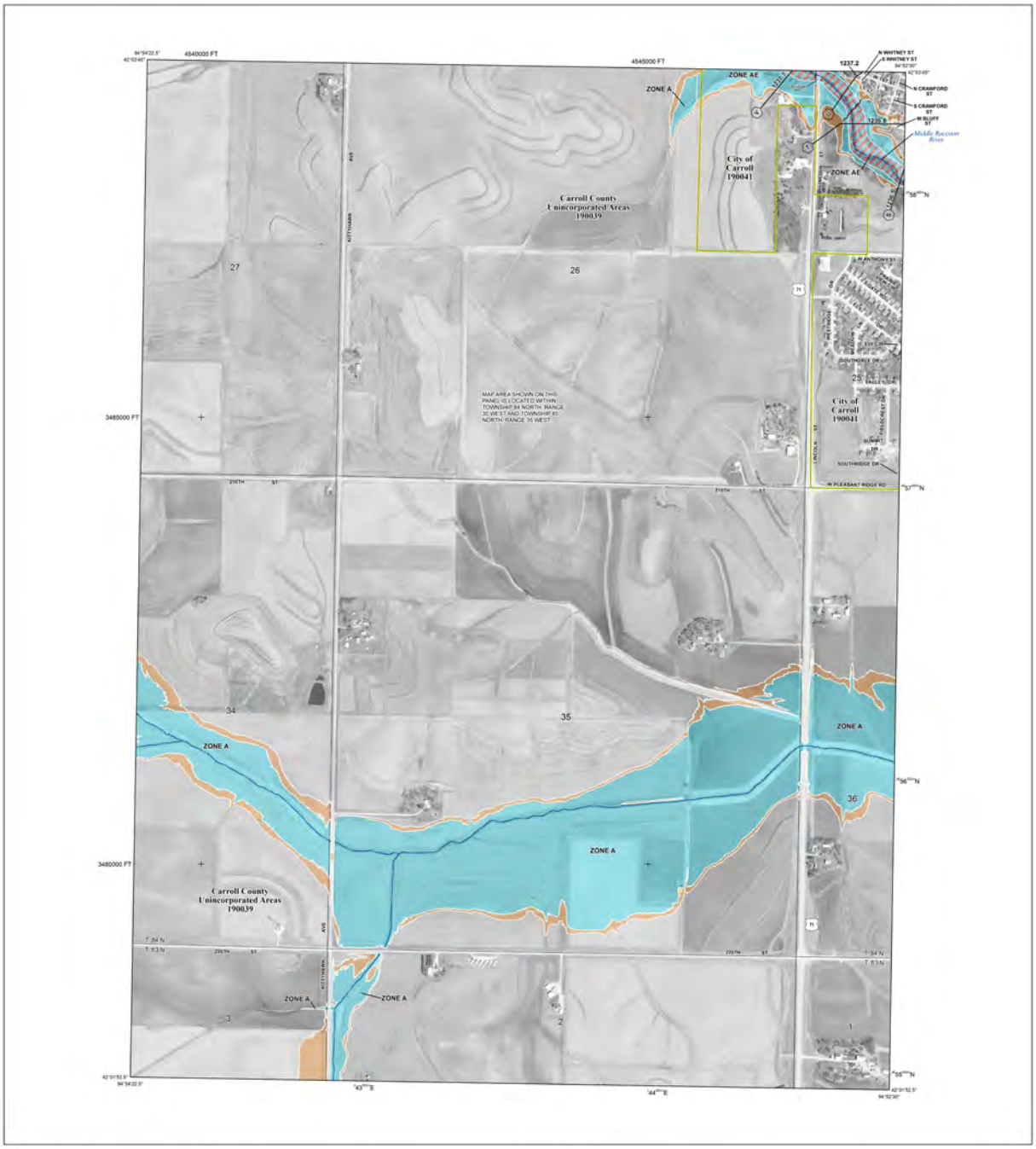
Table D.14: City of Carroll Critical Hazard Impact

Type of Structure	Number of Structures	Value of Structures	Number of People
Agricultural	1	$15,095	4,969
Commercial	209	$71,995,682	
Industrial	8	$5,684,335	
Residential	1,803	$239,064,115	

Flood Maps

Source: FEMA Flood Map Service Center





FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
OTHER AREAS OF FLOOD HAZARD	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
	NO SCREEN Area of Minimal Flood Hazard *Zone X*
OTHER AREAS	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by the Iowa Department of Natural Resources. This information was derived from digital orthophotography at a 2-foot ground resolution from imagery flown in April 2009.

SCALE

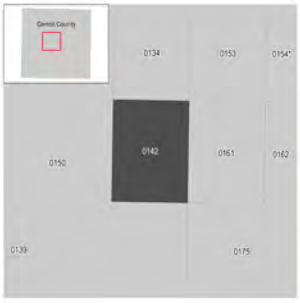
Map Projection:
State Plane Iowa North (FIPS Zone 1401) Coordinate System, Lambert Conformal Conic Projection; North American Datum 1983, GRS 1980 spheroid; North American Vertical Datum of 1988

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

CARROLL COUNTY, IOWA
And Incorporated Areas

PANEL 142 OF 400

FEMA

Panels Contained:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARROLL, CITY OF	190041	0142	C
CARROLL COUNTY	190039	0142	C

VERSION NUMBER
2.3.3.2

MAP NUMBER
19027C0142C

EFFECTIVE DATE
SEPTEMBER 15, 2017

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
	NO SCREEN Area of Minimal Flood Hazard *Zone X*
OTHER AREAS	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

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SCALE

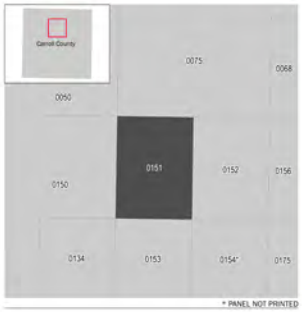
Map Projection:
State Plane Iowa North (FIPS Zone 1401) Coordinate System, Lambert Conformal Conic Projection; North American Datum 1983, GRS 1980 spheroid; North American Vertical Datum of 1988

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

CARROLL COUNTY, IOWA
And Incorporated Areas

PANEL 151 OF 400

FEMA

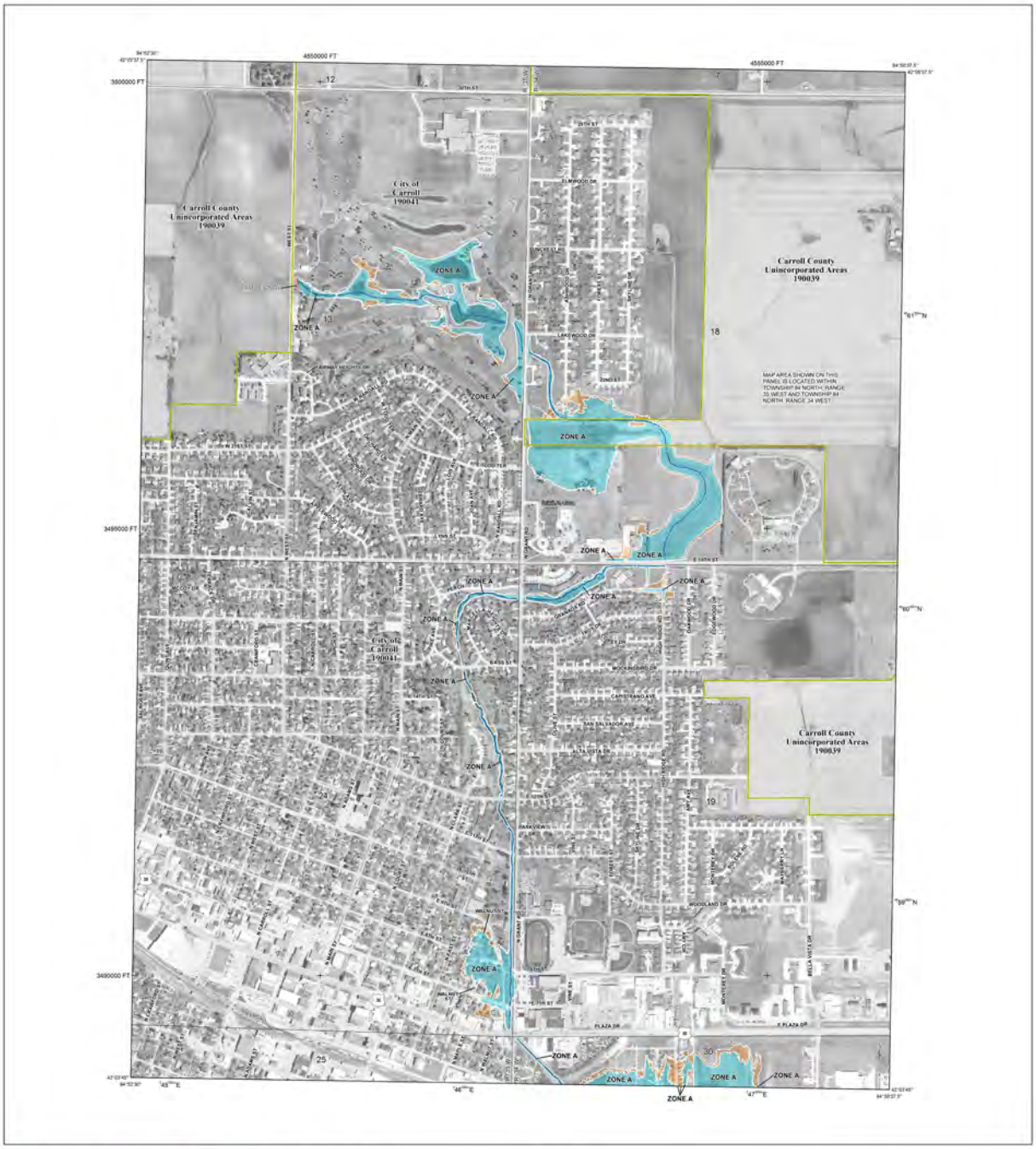
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARROLL, CITY OF	190041	0151	C
CARROLL COUNTY	190039	0151	C

VERSION NUMBER
2.3.3.2

MAP NUMBER
19027C0151C

EFFECTIVE DATE
SEPTEMBER 15, 2017



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes Zone X
	NO SCREEN Area of Minimal Flood Hazard Zone X
OTHER AREAS	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

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SCALE

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State Plane Iowa North (FIPS Zone 1401) Coordinate System, Lambert Conformal Conic Projection, North American Datum 1983, GRS 1980 spheroid, North American Vertical Datum of 1988

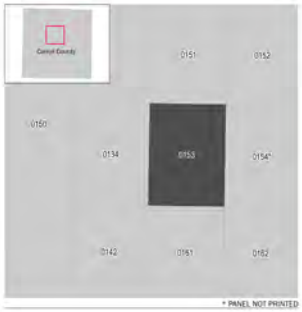
N

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

CARROLL COUNTY, IOWA
And Incorporated Areas

PANEL 153 OF 400

FEMA

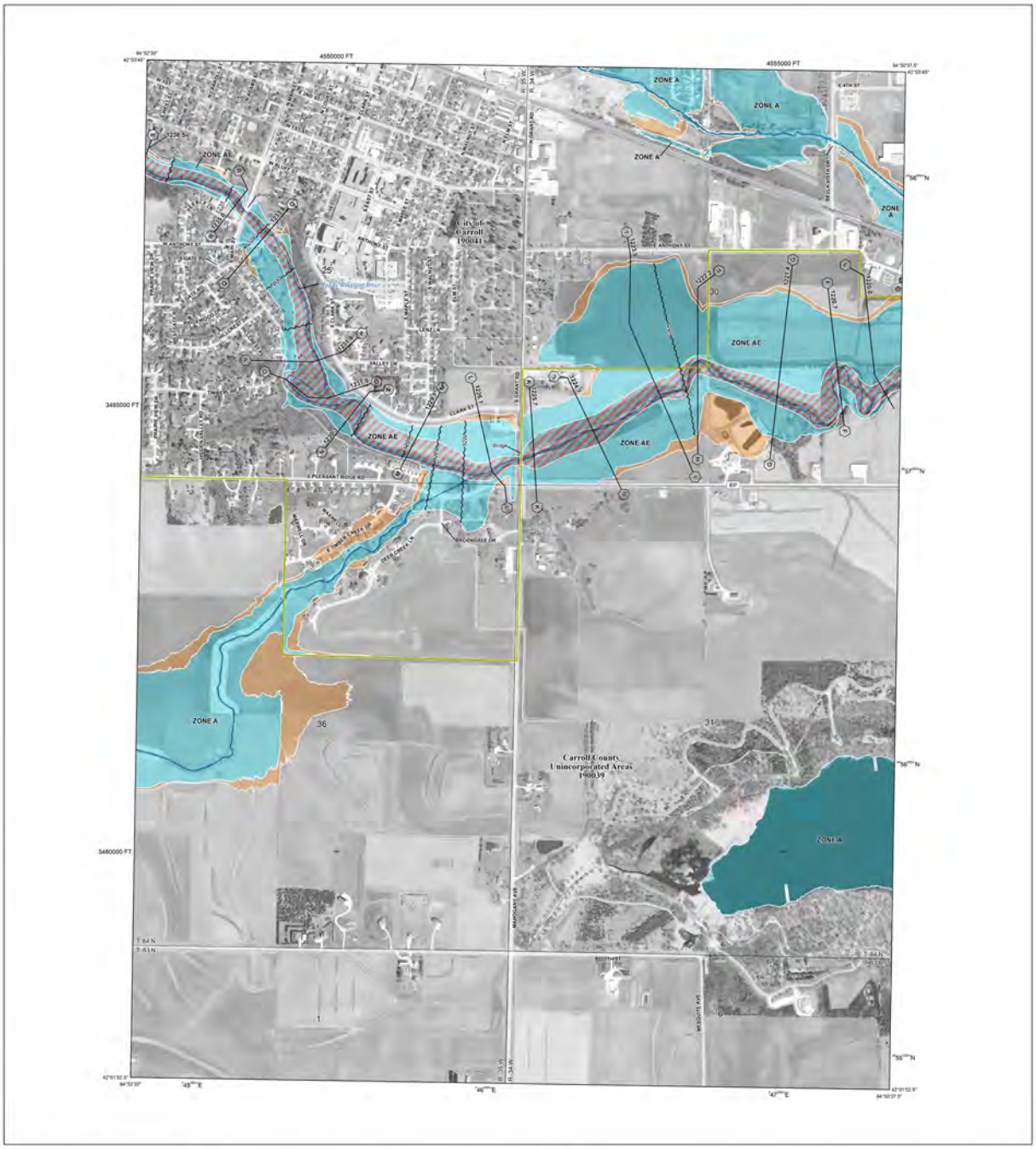
Panels Printed:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARROLL, CITY OF	190041	0153	C
CARROLL COUNTY	190039	0153	C

VERSION NUMBER
2.3.3.2

MAP NUMBER
19027C0153C

EFFECTIVE DATE
SEPTEMBER 15, 2017



FLOOD HAZARD INFORMATION

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HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
	NO SCREEN Area of Minimal Flood Hazard *Zone X*
OTHER AREAS	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
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	Jurisdiction Boundary

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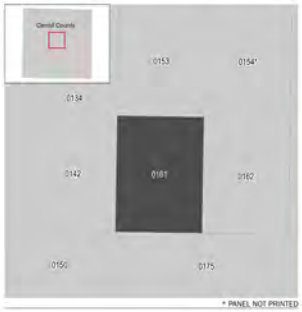
0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

CARROLL COUNTY, IOWA
And Incorporated Areas

PANEL 161 OF 400

FEMA

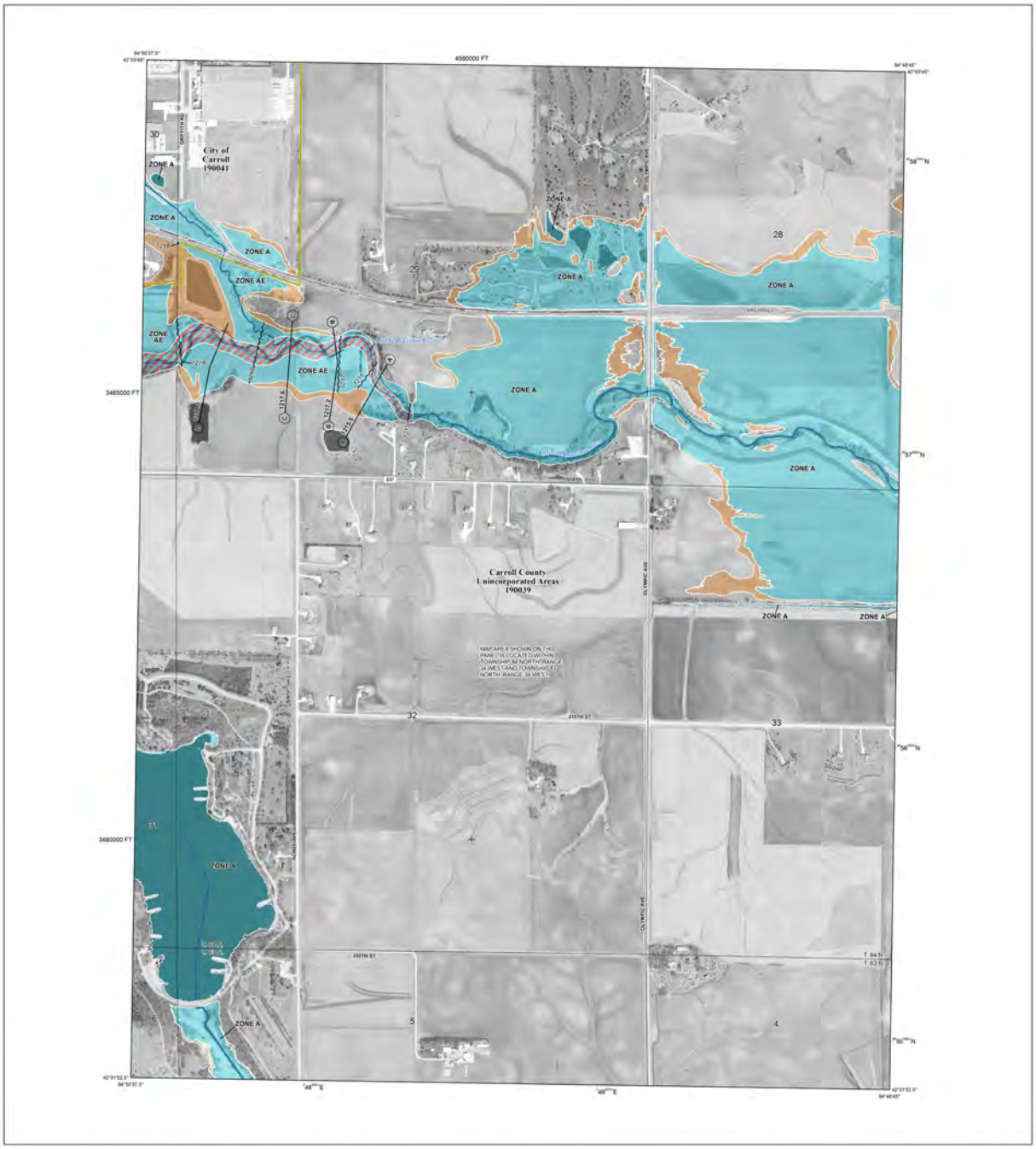
Panels Printed:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARROLL, CITY OF	190041	0161	C
CARROLL COUNTY	190039	0161	C

VERSION NUMBER
2.3.3.2

MAP NUMBER
19027C0161C

EFFECTIVE DATE
SEPTEMBER 15, 2017



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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HTTP://MSC.FEMA.GOV

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	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
	NO SCREEN Area of Minimal Flood Hazard *Zone X*
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GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
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	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

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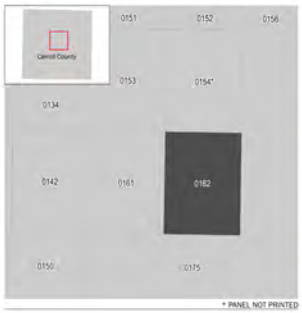
1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

CARROLL COUNTY, IOWA
And Incorporated Areas

PANEL 162 OF 400

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARROLL, CITY OF	190041	0162	C
CARROLL COUNTY	190039	0162	C

VERSION NUMBER
2.3.3.2

MAP NUMBER
19027C0162C

EFFECTIVE DATE
SEPTEMBER 15, 2017

Table D.15: City of Carroll Status of Previous Mitigation Actions

	Status				
Previous Actions	**Complete**	**Underway**	**Ongoing**	**Future**	**Not Implemented**
Continue to enforce the local floodplain ordinances/zoning			X		
Continue participation in the National Flood Insurance Program			X		
Establish/enforce landscaping ordinances (trees away from buildings, streets, power lines)				X	
Promote NOAA weather radios	X				
Construct or designate a storm shelter for mobile home park residents				X	
Continue to test indoor and outdoor warning sirens			X		
Continue contract with Carroll County and Region 5 HAZMAT			X		
Find an additional water source	X				
Determine the need for a new generator(s)			X		
Investigate options for back-up power at County fuel depot				X	

Action Plan

Section 201.6 (c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

Section 201.6 (c)(3)(iii): The mitigation strategy shall include an action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost-benefit review of the proposed projects and associated costs.

Section 201.6 (c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Table D.16: City of Carroll Action Plan

Goal 1	**Enhance Community Protection**
Objective 1	Improve Public Warning Capabilities
Objective 2	Maintain Current Hazard Mitigation Plan
Objective 3	Hazardous Materials-tier II sites
Objective 4	Provide Shelter Facilities in case of Disasters
Objective 5	Increase Protection of Public Infrastructure
Goal 2	**Protect Against Power Outage**
Objective 1	Provide Back-Up Systems for Critical Systems and Assets
Goal 3	**Maintain and Support Public Safety, Including Facilities, Equipment, and Training**
Objective 1	Improve First Responder Resources and Capabilities
Goal 4	**Maintain and Protect Public Infrastructure**
Objective 1	Maintain and Improve Roads, Bridges, and Other Transportation
Objective 2	Maintain and Improve Water Mains, Power Lines, Stormwater Systems, and Other Critical Assets

Table D.17: City of Carroll Mitigation Actions

Action	Hazard(s) Addressed	Priority	Responsible Department	Estimated Cost	Potential Funding Source(s)	Mitigation Measure Category	Target Completion Date
Continue to test indoor and outdoor warning sirens	Tornado	High	Emergency Services	Low	Local	Emergency Services	Ongoing
Educate public on Alert Iowa notification	Extreme Heat, Severe Winter Storms, Tornado, Thunderstorm and Lightning, Hazardous Material	Mod	Emergency Services	Low	Local	Public Education and Awareness	Mid
Complete current plan and make plans to update every five years	All	Mod	City, County, School District	Low	Local	Public Education and Awareness	Mid
Re-Evaluate and update disaster plan for Carroll CSD and Kuemper	Terrorism	High	School District	Low	Local	Prevention	Short
Inform public on hazardous materials locations and hazards	Hazardous Material	Mod	City Council	Minimal	Local	Public Education and Awareness	Mid
Designate shelters	Tornado, Windstorm	Low	City Council	Minimal	Local	Emergency Services	Mid
Build safe rooms in all schools	Tornado, Terrorism	Mod	School District	Moderate	Local, State, Federal	Structural Project	Long
Purchase back-up system for all water and wastewater systems	Infrastructure Failure	Mod	Public Works	Moderate	Local, State, Federal	Property Protection	Long
Upgrade generator at the Carroll Rec Center	Infrastructure Failure	Low	School District	Moderate	Local	Emergency Services	Long
Provide funding needed to train personnel (fire, EMS, and police)	All	Mod	Emergency Management	Low	State, Federal	Emergency Services	Ongoing

Action	Hazard(s) Addressed	Priority	Responsible Department	Estimated Cost	Potential Funding Source(s)	Mitigation Measure Category	Target Completion Date
Pursue second railroad overpass near fire department to allow EMS, fire, and police protection throughout community	All	Mod	City Council	High	Local, State, Federal	Emergency Services	Long
Fence area at water treatment plant and provide security at all facilities	Terrorism	Mod	City Council	Minimal	Local, State	Property Protection	Mid
Continue to repair and replace wastewater lines that are causing sewer back up problems	Infrastructure Failure	Mod	Public Works	High	Local, Federal	Property Protection	Long
Construct or designate a storm shelter for mobile home park residents	Tornado	Low	City Council	Minimal	Local, State, Federal	Emergency Services	Mid
Evaluate installing a safe room when making upgrades to the Rec Center	Tornado	High	City Council	High	Local, State, Federal	Structural Project	Short
Install generator hook-up in the renovated Rec Center	All	High	City Council	Moderate	Local, State, Federal	Structural Project	Short
Upgrade storm warning sirens and self testing	Tornado	High	City Council	Moderate	Local, State, Federal	Emergency Services	Short
Upgrade fire equipment	All	High	City Council, Fire Department	Moderate	Local, State, Federal	Emergency Services	Ongoing
Upgrade police equipment	All	High	City Council, Police Department	Moderate	Local, State, Federal	Emergency Services	Ongoing
Upgrade Emergency Response Team Equipment and Vehicles	All	High	City Council	High	Local, State, Federal	Emergency Services	Ongoing
Make upgrades to the city's storm sewer system	Flash Flood, River Flooding, Severe Winter Storm	High	City Council	High	Local, State, Federal	Property Protection	Short

Incorporation into Other Planning Mechanisms

Where possible, Carroll will consider the findings from this document when updating or creating new planning and operating documents. Examples of planning documents that would benefit from information provided in this plan include, but are not limited to:

- City Codes
- Carroll Comprehensive Plan
- Water Conservation Plans
- Storm Water Management Plans
- Parks and Recreation Plans

Incorporation into Other Planning Mechanisms- Carroll Community Schools

The update of the mitigation strategy will be provided to the School Superintendent for consideration in the next update cycle of the capital improvement plan.

Incorporation into Other Planning Mechanisms- Kuemper Catholic Schools

The update of the mitigation strategy will be provided to the School Superintendent for consideration in the next update cycle of the capital improvement plan.