JERSEY COUNTY, IL

HAZARD MITIGATION PLAN 2021

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Two Rivers Emergency Management, LLC is pleased to submit this Hazard Mitigation Plan (the "Deliverable") to the Jersey County Code Administration Office (the "Client"). The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of other organizations. This Deliverable was developed with input from, and in collaboration with, the Client. It is subject to the terms of the contract dated October 28, 2018 between Two Rivers Emergency Management, LLC and the Client, and constitutes the entire agreement between them. The Contract includes any and all representations, warranties, indemnifications, and remedies on which the Client may rely. Because of the specialized knowledge of the Client about how this Deliverable is to be used, it should be used only by the Client and its affiliates, in a manner that relies on the Client's discretion and expertise, and only for the purposes contemplated by the Contract. This Deliverable is not to be used in any other manner or relied upon by any other person.

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Glossary

CDBG – Community Development Block Grant Program
CUSD – Community Unit School District
CRS – Community Rating System
CSD – Community School District
EAP – Emergency Action Plan
EMA – Emergency Management Agency
EOC – Emergency Operations Center
FEMA – Federal Emergency Management Agency
FMA – Flood Mitigation Assistance Grant Program
HMA – Hazard Mitigation Assistance
HMGP – Hazard Mitigation Grant Program
HMP – Hazard Mitigation Plan
IEMA – Illinois Emergency Management Agency
MFRI – Mean Fire Return Interval
NADM – North American Drought Monitor
NFHL – National Flood Hazard Layer
NFIP – National Floodplain Insurance Program
NID – National Inventory of Dams
NOAA – National Oceanic and Atmospheric Administration
NWS – National Weather Service
PDM – Pre-Disaster Mitigation Grant Program
SFHA – Special Flood Hazard Area
TREM – Two Rivers Emergency Management
USACE – United States Army Corps of Engineers
USCB – United State Census Bureau
USDA – United States Department of Agriculture
USGS – United States Geological Survey
WUI – Wildland Urban Interface

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Section 1 – Plan Development

Plan Purpose

The 2021 Jersey County Hazard Mitigation Plan (HMP) revision is threefold in its purpose. Strictly speaking, the Jersey County Hazard Mitigation Plan provides guidance to substantially and permanently reduce Jersey County and its communities' vulnerability to natural hazards.

This plan revision encompasses the continuation and updating of this original mission by incorporating new GIS technologies, improving its risk assessment methodologies, and recalibrating its mitigation strategies based on an assessment of the previous plan, approved in December of 2016, and the previous plan's usefulness over the past five years.

Secondly, participation in and the adoption of this plan grants the adopting entity the ability to apply for multiple grant funding programs through the Federal Emergency Management Agency (FEMA).

Additionally, a tertiary purpose of the plan is to promote sound public policy and support other local, regional, and state planning efforts which have the effects of protecting citizens, critical facilities, infrastructure, private property, and the natural environment. The development of this plan revision does so by increasing public awareness and education, collaborating with other planning organizations and governments engaged in planning efforts, serving as a reference and resource for the public, various governments, and other entities.

Plan Organization

The Jersey County Hazard Mitigation Plan was developed and organized within the rules and regulations established under the 44 Code of Federal Regulation 201.6. This plan contains sections detailing the planning process, Jersey County's communities, other participating entities and the planning area, a hazard vulnerability and risk assessment, capabilities assessment, and a mitigation strategy designed for the purpose of guiding Jersey County and the plan's participants to become more disaster-resilient communities.

Plan Financing

The Jersey County Hazard Mitigation Plan has been financed by Jersey County and a State of Illinois Intergovernmental Grant, #679750. The state grant provided 75% of the total plan's cost while Jersey County contributes the other 25% through in-kind match and local funding.

Plan Participation

The Jersey County Hazard Mitigation Plan was developed as the result of an ongoing collaborative effort between the full range of stakeholders in the planning area, local authorities, public school district, municipal jurisdictions, and the State of Illinois. This effort was led by the Jersey County Code Administration Office.

Concerns, capabilities, interests and historical data were gathered through interviews with stakeholders from within the communities, along with a number of electronic datasets, and ongoing planning committee work sessions. The public were granted opportunities to provide their input, influence, share knowledge, and be active participants in the plan's development. This was accomplished through a number of public outreach campaigns in the form of an on-site meeting and internet accessible surveys. Any comments, questions, and discussions resulting from these activities were given consideration in the development of this plan.

Approval & Adoption

The Jersey County Hazard Mitigation Plan was submitted for review to IEMA on May 31st, 2020. Following the state's review, the plan was submitted to the FEMA Region V office for federal review. FEMA Region V granted "Approval Pending Adoption" on December 8th, 2020.

This plan has officially been adopted by all participating municipalities and school districts.

1.1 – Planning Process

Jersey County's revision process began when it issued a request for proposals to write a planning grant application along with their hazard mitigation plan update. Two Rivers Emergency Management (TREM) was selected to facilitate the plan's development under a performance contract. Jersey County was awarded a grant by the State of Illinois.

Two planning events were held throughout the planning process. Plan development kicked-off on 15 October 2019. Stakeholders from every municipality, and the public-school district and members of the public were invited to attend and participate. Additionally, neighboring EMAs were invited. The meetings were advertised for period of two weeks in advance.

This meeting delivered an understanding of the planning processes and steps required to update, including the organizing of resources, assessment of hazards, development of a mitigation strategy, and steps to implementing the plan and monitoring its progress. Most jurisdictions in the county actively participated in the process through solicitation, providing input, or participation in meetings. The Village of Fidelity and the Town of Otterville were profiled as fully as possible in this plan with the intent of encouraging them to participate during the plan's development. However, they did not participate in the plan and it is understood they will not be approved as participants. Details and documentation of stakeholder participation can be found in Section 1.2 and Appendix A – Plan Participation.

Throughout the process the public was given opportunities to review plan drafts, ask questions, and provide input on hazards. They were also invited to provide feedback on mitigation project prioritization, hazard identification, and hazard ranking. This was accomplished through their inclusion in the on-site meetings as well as an extensive online outreach campaign that yielded 13 responses. Details and documentation of the public's participation can be found in Section 1.3 and Appendix A – Plan Participation.

The 2021 Jersey County Hazard Mitigation Plan encompasses the following 9 jurisdictions:

Jersey County
City of Grafton
City of Jerseyville

Community Unit School District 100

Village of Brighton
Village of Elsah
Village of Fidelity
Village of Fieldon

Town of Otterville

1.2 – Stakeholder Engagement

The Jersey County Hazard Mitigation Plan includes the governmental and education entities within Jersey County working together for the development and ongoing maintenance of this plan. The participants are grouped into four categories.

Municipalities
This group consists of representatives from municipal governments within the planning area.

Education Entities
This group consists of representatives from the public-school district serving Jersey County.

Other Stakeholders
This group consists of representatives from the local community, regulatory authorities, emergency services, commercial interests, neighboring EMAs, and other relevant organizations.

The Public
FEMA requires this planning effort to be open to constant input from interested citizens in compliance with the Sunshine Laws. In Illinois, public meetings must comply with Illinois Open Meetings Law, unless established by statutory exemption. Therefore, any individual citizens who wish to be involved in this effort to mitigate future disasters were encourage to attend the on-site meetings and complete the online mitigation survey to solicit relevant comments and concerns to be incorporated into the content of this plan.

Representatives from each group took part in periodic planning meetings, public meetings and events and individual meetings with TREM and Jersey County Code Administration Office staff. Their specific involvement included activities such as collection and development of planning information, providing input into the planning process, reviewing draft editions of the plan and providing written documentation demonstrating their commitment to mitigation and intent to adopt the final approved plan. Although neighboring county EMAs were invited, none participated.

Each participating entity was expected to attend at least one of the on-site meetings, submit required data as requested, participate in the development of general information for the plan as well as their own individual planning information, mitigation strategies and initiatives, participate in a public review process, and submit the plan for formal adoption through their respective governing body. Information was kept on attendance, input and providing requested documentation. In the event an entity did not provide representation to a meeting, individual outreach was conducted to garner their inclusion.

The following table details the plan participants who participated in the hazard mitigation planning process. This list contains all relevant local and state agencies involved in hazard mitigation activities, agencies that have the authority to regulate development, and any appropriate neighboring communities.

Table 1.1 – Stakeholders

Name	Organization	Position
Tony Gertz	Two Rivers Emergency Management	Mitigation Planning Manager
Cindy Cregmiles	Jersey County Code Administration Office	Code Administrator & Floodplain Manager
Derek Russell	Jersey County Code Administration Office	Chief Deputy Code Administrator
Jay Wrubel	City of Grafton	Building & Zoning Administrator
Bob Manns	City of Jerseyville	Director of Public Works
Mark Fitzgerald	Village of Brighton	Police Chief
Larry Mead	Village of Elsah Police Department	Police Chief
Betty Duggan	Village of Fieldon	Mayor
Brad Tuttle	Community Unit School District 100	Superintendent
Alan Churchman	Community Unit School District 100	Assistant Superintendent
Carla Brady	-	Citizen
Christy Hayes	-	Citizen
Crystal Perry	-	Citizen
Denise Hunter	-	Citizen
Kimberly Dunham Skinner	-	Citizen
Shelly Kanallakan	-	Citizen
Susan Scott	-	Citizen

1.3 – Public Engagement

The Jersey County Code Administration Office provided the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process. The public was notified of open meetings via Jersey County's website, and a local newspaper, The Telegraph. Additionally, advertisements for the online public survey were put out on their website and Facebook page.

Relevant federal, state, and local governments, private, non-profit, regional organizations, and agencies with the authority to regulate development were invited to provide input and technical expertise through the public notices. They were contacted directly when their expertise was deemed necessary to the success of the plan.

At the public on-site meetings, TREM presented and outlined the mitigation plan update process to stakeholders and the public. TREM also discussed stakeholder participation and expectations. In this meeting, the public and other stakeholders were encouraged to ask questions and provide their input. The final draft of this plan was available for public review via a TREM hosted website for the project for a period of two weeks. Any and all questions asked were answered.

Continued Public Involvement

Jersey County is dedicated to involving the public in the continual shaping of its hazard mitigation plan and development of its mitigation projects and activities.

The Jersey County Code Administration Office will continue to keep the public informed about its hazard mitigation projects and activities through its website. Additionally, it will work to update its website and eventually provide a "comments/suggestions" option for the public to submit their input.

In the event that this hazard mitigation plan undergoes any major developmental changes over its 5-year life cycle, the Jersey County Code Administration Office will inform the public of these changes via a publicized and open forum meeting.

Copies of the Jersey County Hazard Mitigation Plan will be available on their website for public distribution.

1.4 – Planning Resources

This plan's content includes and was influenced by numerous documents and technical resources provided by the plan's stakeholders and other relevant entities. The following documents and technical resources were reviewed for applicable information to the development of this plan:

Documentation Resources

Municipal Planning Documents

Where available, municipal ordinances, zoning plans, and other regulations where reviewed for provisions relevant to hazard mitigation. This information has been incorporated throughout Section 4 of this plan.

- Jersey County Code of Ordinances (2016)
- Jersey County Mobile Home Ordinance (2017)
- Jersey County Floodplain Development Ordinance (2008)
- Jersey County Stormwater Drainage Ordinance (2009)
- Jersey County Subdivision Ordinance (2007)
- City of Jerseyville Building & Zoning Regulations (2011)
- Village of Elsah Strategic Plan (2018)
- Village of Elsah Zoning Ordinance (2014)

Illinois Natural Hazard Mitigation Plan (2018)

The State of Illinois's current hazard mitigation plan was reviewed for general guidance in the cases of their comparative statewide risk assessment, their initial selection of at-risk hazards, and local planning technical assistance and development strategy.

Jersey County Hazard Mitigation Plan (2015)

Jersey County was covered by a FEMA approved local hazard mitigation plan. The plan was thoroughly reviewed and components have been updated and incorporated throughout.

Technical Resources

FEMA National Flood Hazard Layer (NFHL)

FEMA's NFHL data was used in mapping floodplain locations and estimating potential flood impacts and loss estimates.

National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC)

Weather data and historical events and their narratives were primary provided by NOAA's NCDC.

North American Drought Monitor (NADM)

Since 1999, the USDA, NOAA, and the National Drought Mitigation Center at the University of Nebraska-Lincoln have partnered to centralize nationwide drought monitor maps, situation reports, drought status, and publish historical data on drought severity. The NADM was the primary source for historical drought data and drought severity assessment used in this plan.

USACE National Inventory of Dams (NID)

The USACE NID is a congressionally authorized database which documents dams in the U.S. and its territories. This database attempts to maintain centralized data for all private and public dams. The NID was consulted and showed no high hazard dams in the planning area.

United States Census Bureau (USCB)

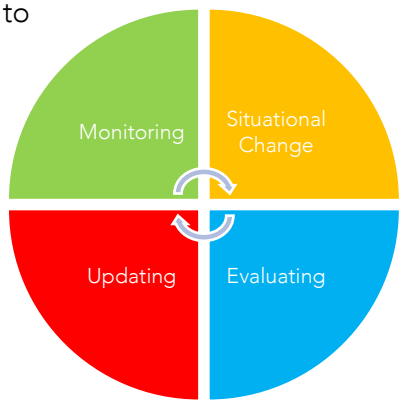
The USCB publicly publishes a number of GIS datasets that were used in developing the basemap layers used throughout this plan.

United States Department of Agricultural (USDA) Statistics Service

The USDA provided GIS data that was used in depicting land cover and the agricultural statistics used in developing the planning area's risk to droughts and grass and wildland fires.

1.5 – Plan Maintenance

The Jersey County Code Administration Office has developed a method to ensure monitoring, evaluation, and updating of its HMP. Upon adoption of the Jersey County HMP, the Jersey County Code Administration Office will form a subcommittee on mitigation projects comprised of volunteer members from the participating jurisdictions. The chair of the subcommittee will be held by the position of the Code Administrator. Additional members may be added based on necessity. The sub-committee will file an annual report with the Code Administration Office.



Please see the Jersey County HMP Quarterly Report form at the end of this section.

The Jersey County Code Administrator may request a non-scheduled report on the monitoring, evaluation, or updating of any portion of the HMP due to irregular progress on mitigation actions and or projects, in the aftermath of a hazard event, or for any reason deemed appropriate.

Plan Monitoring

Plan monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives. In the more limited approach, monitoring may focus on tracking projects and the use of the agency's resources. In the broader approach, monitoring also involves tracking strategies and actions being taken by partners and non-partners, and figuring out what new strategies and actions need to be taken to ensure progress towards the most important results.

A monitoring report will be written and filed with the Code Administration Office annually or when triggered by a situation change. The monitoring report will answer the following questions:

- Is the mitigation project under, over, or on budget?
- Is the mitigation project behind, ahead of, or on schedule?
- Are there any changes in Jersey County's capabilities which impact the HMP?
- Are there any changes in Jersey County's hazard risk?
- Has the mitigation action been initiated or its initiation planned?
- If applicable, has participation in a mitigation action's collaboration been regular?
- If any, what plan updates occurred, why they occurred, and what is their impact?

The plan maintenance process is cyclical and maintenance items can operate simultaneously within the process.

Plan Evaluating

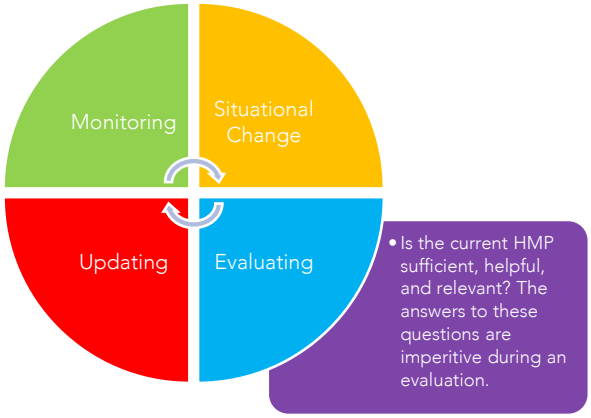
A plan evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making.

An evaluation report will be written and filed within the Jersey County Code Administration Office when the situation dictates. The following situations are typical examples of when an evaluation will be necessary:

- Post hazard event
- Post training exercise
- Post tabletop or drill exercise
- Significant change or completion of a mitigation project
- Significant change or completion of a mitigation action

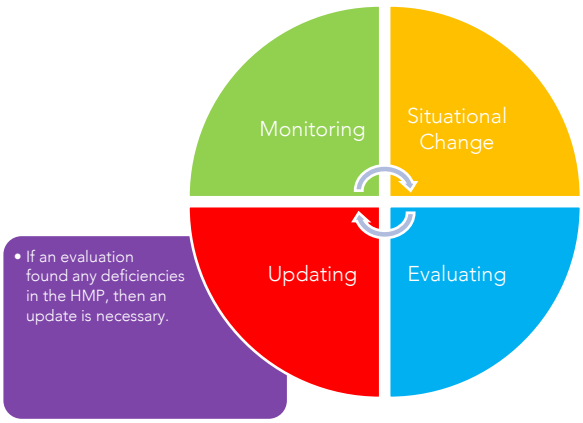
An evaluation report will ask the following questions in response to the previously listed events:

- Do the mitigation objectives and goals continue to address the current hazards?
- Are there new or previously unforeseen hazards?
- Are current resources appropriate for implementing a mitigation project?
- Was the outcome of a mitigation action/project expected?
- Are there implementation problems?
- Are there coordination problems?



Plan Updating

Typically, a HMP update is initiated upon the completion of a plan evaluation and even then, only when the evaluation determines an update is appropriate. Additionally, when new hazard data becomes available it will be added to the HMP. New data will be confirmed or denied along with the annual HMP report. For whatever reason, a HMP update can be written anytime it is deemed necessary by the Jersey County Code Administration Office.



Jersey County will begin their update process three years from this plan's adoption according to FEMA DMA2000 guidelines on local mitigation plan updates under the direction of the Code Administration Office.

Jersey County Mitigation Planning Committee
Jersey County Hazard Mitigation Plan
Annual Report

Hazard Mitigation Plan Sub Committee Chair:
Meeting Date:
Plan Approval Date:
Plan Expiration Date:

Have there been any disasters or training events since the last report? If so, list them below:

Disaster Number/Training Event	Hazard Type(s)	Was the hazard expected or unforeseen?	Is a plan update required?
Example: DR-1000	Volcanic Eruption	Unforeseen	Yes
Example: Annual Training	Flash Flooding	Expected	No

Mitigation Projects:

Project Name	Participating Jurisdictions	Proposed/Schedules/In Progress/Completed	Behind/Ahead/ On-Schedule	Estimated Completion Date
Example: Floodproofing	Grafton	In Progress	On-Schedule	1/1/2020

Miscellaneous Notes:

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Section 2 – Community Profiles

This section provides a broad perspective, brief history, socio economic, geographical, and development information on Jersey County, Brighton, Elsah, Fidelity, Fieldon, Grafton, Jerseyville, Otterville, and the Jersey Community Unit School District 100. Jersey County, Illinois was founded in 1839 out of portions of Green County. Many of the earlier settlers of the area came from New Jersey, thus its namesake. The county in full occupies a total land area of 377 square miles.

The U.S. Census Bureau estimates the July, 2019 population of the planning area totals 21,773 people occupying 10,269 residential housing units. The building stock of the planning area is heavily dominated by older constructed buildings. Roughly 77% of the planning area's building stock was constructed prior to 1999.

Table 2.1 – Construction Age

Jurisdiction	Pre 1999	Pre 1999	Post 1999	Post 1999
Unincorporated Jersey County	4,669	89.55%	545	10.45%
Brighton	114	90.48%	12	9.52%
Elsah	123	95.35%	6	4.65%
Fidelity	46	85.19%	8	14.81%
Fieldon	107	94.69%	6	5.31%
Grafton	329	84.79%	59	15.21%
Jerseyville	3383	89.69%	389	10.31%
Otterville	40	76.92%	12	23.08%

**The data are derived from data provided from the U.S. Census Bureau.*

The countywide population has experienced consistent negative growth over the last decade. Some of the planning area's municipalities have experienced a significant decrease in population with no single municipality experiencing any measured population growth. Whether nor not these demographics characteristics have an impact on hazard vulnerability and risk is discussed in Section 3.

Table 2.2 – Population Change

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	22,995	-	-
2015	22,260	- 3.20%	-
2019	21,773	- 5.31%	- 2.19%

**The data are from the U.S. Census Bureau.*

Every single municipality within the planning area has experienced a decline in population since the development of Jersey County's last plan all be it at a negligible amount. Due to the slight population decrease in each municipality, one can conclude that their vulnerability and risk to the profiled natural hazards has not been significantly altered by population growth since the development of Jersey County's last mitigation plan in 2015.

Map 2.1 – Community Profile, Illinois

The planning area contains an estimated $1,539,991,000 worth of municipal structural inventory broken down into six different structural type classes. The following table shows this breakdown.

Table 2.3 – Structural Inventory, Countywide

Structure Class	Structures	Total Class Value
Agricultural	65	$20,729,000
Commercial	383	$268,662,000
Government	17	$11,283,000
Industrial	107	$71,900,000
Residential	9,106	$1,072,248,000
Multi-Unit Residential*	86	$95,169,000
Total =	9,764	$1,539,991,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the Federal Emergency Management Agency.*

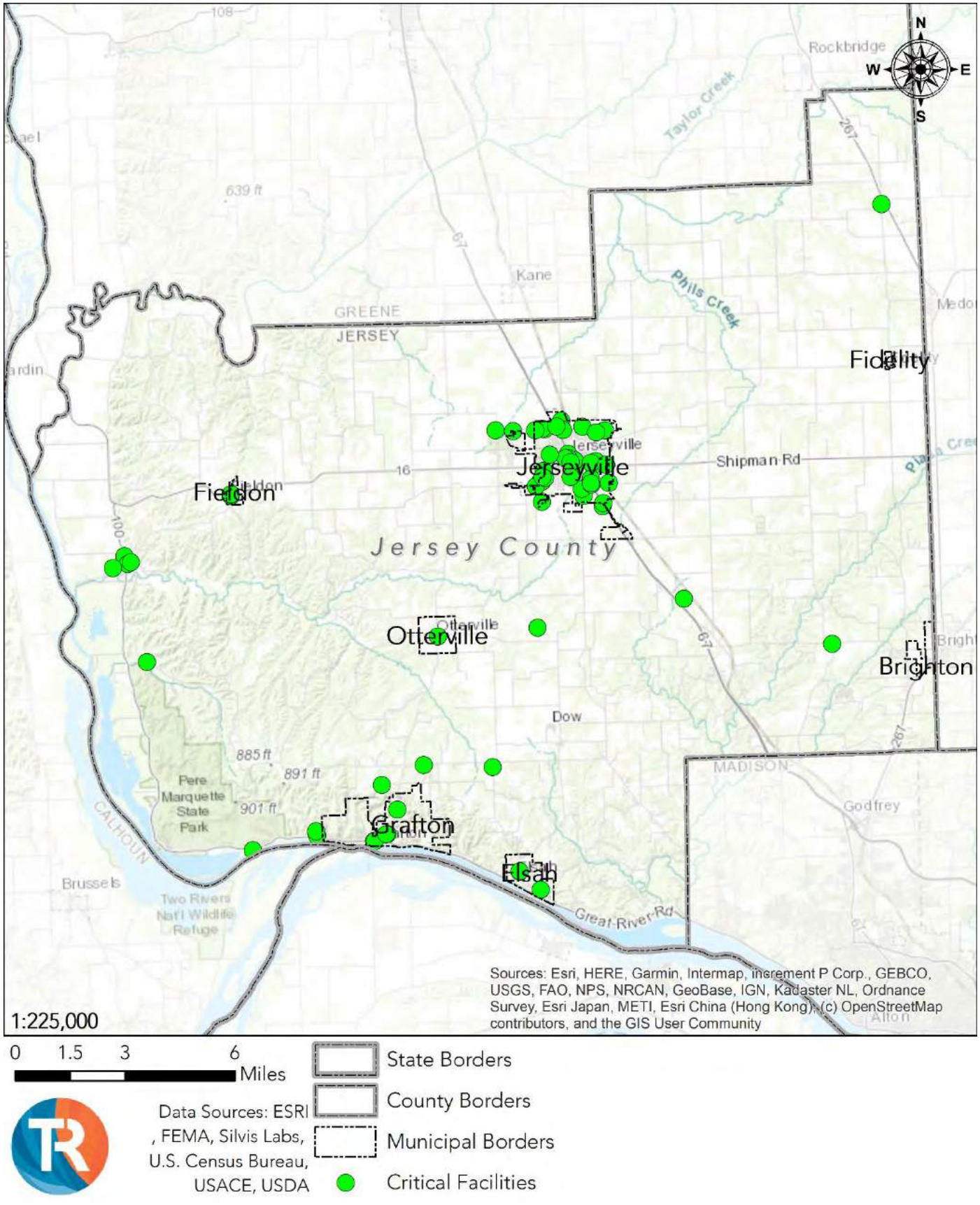
The Jersey County Code Administration Office and this plan's stakeholders have identified a total of 67 critical facilities throughout the planning area. These faciliites are deemed critical either by the nature in which they maintain basic services or that they house a high density of vulnerable populations. A breakdown by facility type of the 67 critical facilities is listed in the table below and shown in the map on the following page.

Table 2.4 – Critical Facilities, Countywide

Facility Type	Critical Facility Count
Airport/Heliport	5
Assisted Living/Healthcare	8
Education	3
Electric Utility	4
Fire Prevention/EMS	4
Hospital	1
Law Enforcement	5
Local Government	13
Public Works/Transportation	4
Water Utility	20
Total =	67

**The data are from Jersey County.*

Map 2.2 – Critical Facilities, Countywide



2.1 – Jersey County (Unincorporated)

The unincorporated portions of Jersey County have seen a significantly decreasing population since 2010 and a slightly less severe decrease in population since the development of its last plan in 2015. 89.55% of unincorporated Jersey County's building stock was constructed prior to 1999 while only 10.45% was constructed after 1999. The latest Census Bureau estimate places 9,748 people living in the unincorporated areas of Jersey County occupying 5,635 housing units.

Table 2.5 – Population Change, Jersey County (Unincorporated)

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	10,440	-	-
2015	9,946	- 4.73%	-
2019	9,748	- 6.63%	- 1.99%

**The data are from the U.S. Census Bureau.*

Table 2.6 – Structural Inventory, Jersey County (Unincorporated)

Structure Class	Structures	Total Class Value
Agricultural	41	$15,055,000
Commercial	93	$37,428,000
Government	3	$829,000
Industrial	44	$30,893,000
Residential	5,048	$594,244,000
Multi-Unit Residential*	13	$9,478,000
Total =	5,242	$687,927,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the Federal Emergency Management Agency.*

Of the 67 critical facilities within the planning area, 19 are geographically located within unincorporated portions of Jersey County. The following table lists these facilities.

Table 2.7 – Critical Facilities by Location, Jersey County (Unincorporated)

Name	Type	Owner
Brussels Ferry	Public Works/Transportation	Private
Department of Corrections Heliport	Airport/Heliport	State
Illinois Department of Corrections	Law Enforcement	State
Jersey Community Hospital Heliport	Airport/Heliport	Private
Jersey County Water Treatment Plan	Water Utility	County
Jersey Township Hall	Local Government	County
Jerseyville Aviation Airport	Airport/Heliport	Private
Jerseyville Wells (3) - Eagleton Park Road	Water Utility	Jerseyville
Koenig Airport	Airport/Heliport	Private
Piasa Village Hall	Local Government	County
QEM Fire District	Fire Prevention/EMS	County
Raymond RLA Airport	Airport/Heliport	Private
Rosedale Fire District	Fire Prevention/EMS	County
Rosedale Township Hall	Local Government	County
Ruyle Township Hall	Local Government	County
Substation - Central IL Maple Summit Road	Electric Utility	Private
Substation - Central IL N. Centennial Road	Electric Utility	Private
Substation - MJM Rosedale Sub-Station	Electric Utility	Private
Substation - Quarry Township	Electric Utility	Private

The data are from Jersey County Code Administration Office and the plan's stakeholders.

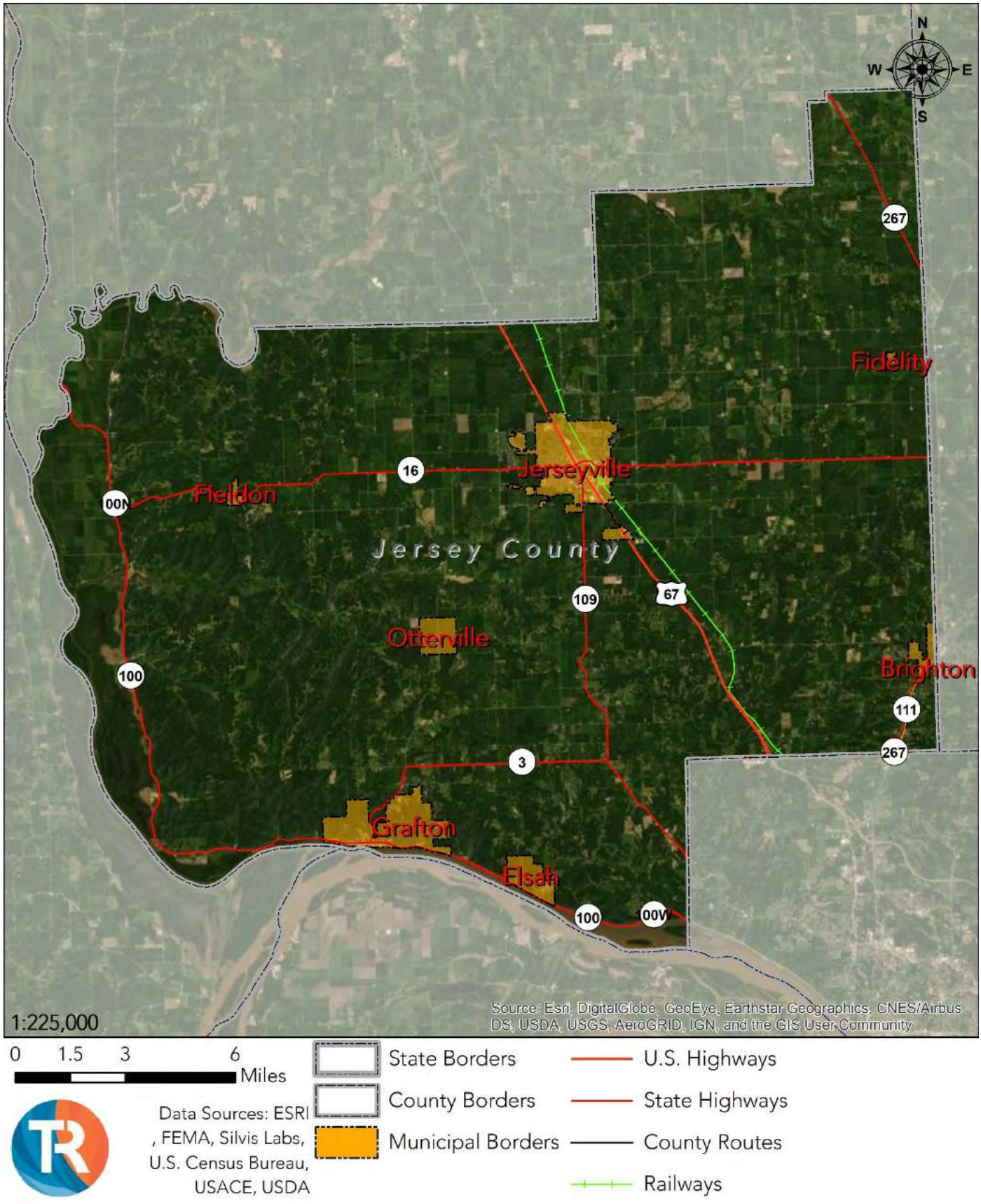
Of the 67 critical facilities within the planning area, 14 are owned and operated by the Jersey County Government. The table below lists all of these facilities and which geographic location they reside.

Table 2.8 – Critical Facilities by Owner, Jersey County (Unincorporated)

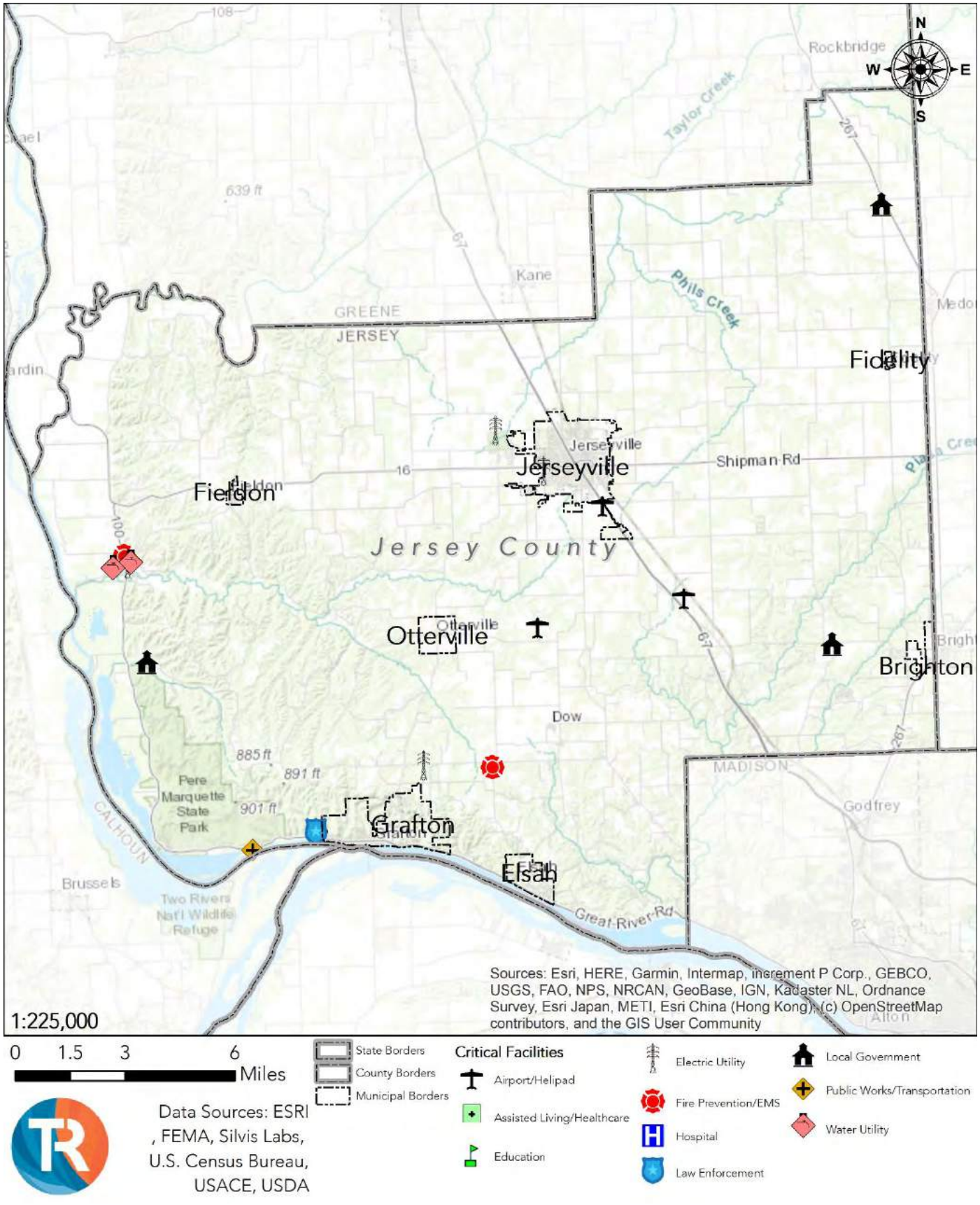
Name	Type	Location
Jersey County Administration Building	Local Government	Jerseyville
Jersey County Courthouse	Local Government	Jerseyville
Jersey County Health Department	Local Government	Jerseyville
Jersey County Highway Department	Public Works/Transportation	Jerseyville
Jersey County Housing Authority	Assisted Living/Healthcare	Jerseyville
Jersey County Sheriff's Department	Law Enforcement	Jerseyville
Jersey County Water Treatment Plan	Water Utility	County
Jersey Township Hall	Local Government	County
Jerseyville North Sewer Plant	Water Utility	Jerseyville
Piasa Village Hall	Local Government	County
QEM Fire District	Fire Prevention/EMS	County
Rosedale Fire District	Fire Prevention/EMS	County
Rosedale Township Hall	Local Government	County
Ruyle Township Hall	Local Government	County

The data are from Jersey County Code Administration Office and the plan's stakeholders.

Map 2.3 – Community Profile, Jersey County (Unincorporated)



Map 2.4 – Critical Facilities, Jersey County (Unincorporated)



2.2 – Brighton

The Village of Brighton has seen a significantly decreasing population since 2010 and a slightly less severe decrease in population since the development of its last plan in 2015. 90.48% of Brighton's building stock was constructed prior to 1999 while only 9.52% was constructed after 1999. The latest Census Bureau estimate places 2,131 people living in Brighton. However, the majority of Brighton exists in the neighboring Macoupin County. 308 people live within the portions of Brighton in Jersey County occupying 126 housing units.

Table 2.9 – Population Change, Brighton

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	2,257	-	-
2015	2,177	- 3.54%	-
2019	2,131	- 5.58%	- 2.11%

**The data are from the U.S. Census Bureau.*

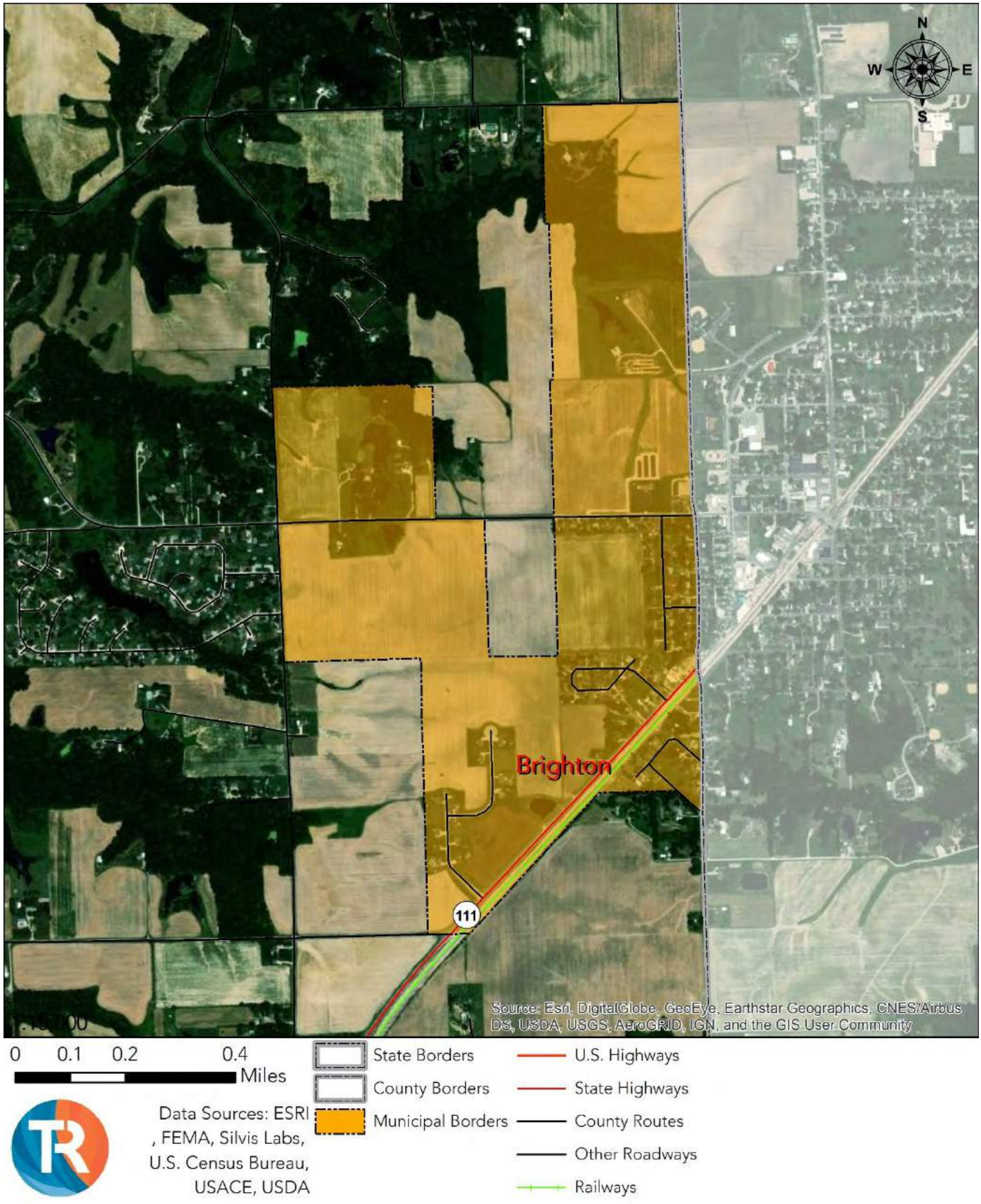
Table 2.10 – Structural Inventory, Brighton

Structure Class	Structures	Total Class Value
Agricultural	0	$0
Commercial	3	$1,484,000
Government	0	$0
Industrial	1	$218,000
Residential	126	$14,017,000
Multi-Unit Residential*	0	$0
Total =	130	$15,719,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the Federal Emergency Management Agency.*

Neither the Jersey County Code Administration Office or any of the plan's stakeholders identified any critical facilities within Brighton.

Map 2.5 – Community Profile, Brighton



2.3 – Elsah

The Village of Elsah has seen a significantly decreasing population since 2010 and still a relatively severe decrease in population since the development of its last plan in 2015. 95.35% of Elsah's building stock was constructed prior to 1999 (the highest proportion in the planning area) while only 4.65% was constructed after 1999. The latest Census Bureau estimate places 606 people living in Elsah occupying 129 housing units.

Table 2.11 – Population Change, Elsah

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	673	-	-
2015	638	- 5.20%	-
2019	606	- 9.96%	- 5.02%

**The data are from the U.S. Census Bureau.*

Table 2.12 – Structural Inventory, Elsah

Structure Class	Structures	Total Class Value
Agricultural	1	$133,000
Commercial	4	$1,685,000
Government	2	$871,000
Industrial	2	$1,161,000
Residential	124	$13,927,000
Multi-Unit Residential*	11	$19,034,000
Total =	273	$36,811,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the Federal Emergency Management Agency.*

Of the 67 critical facilities within the planning area, 3 are geographically located within Elsah. The following table lists these facilities.

Table 2.13 – Critical Facilities by Location, Elsah

Name	Type	Owner
Elsah Police Department	Law Enforcement	Elsah
Elsah Village Hall & Civic Center	Local Government	Elsah
Principia College	Education	Private

**The data are from Jersey County Code Administration Office and the plan's stakeholders.*

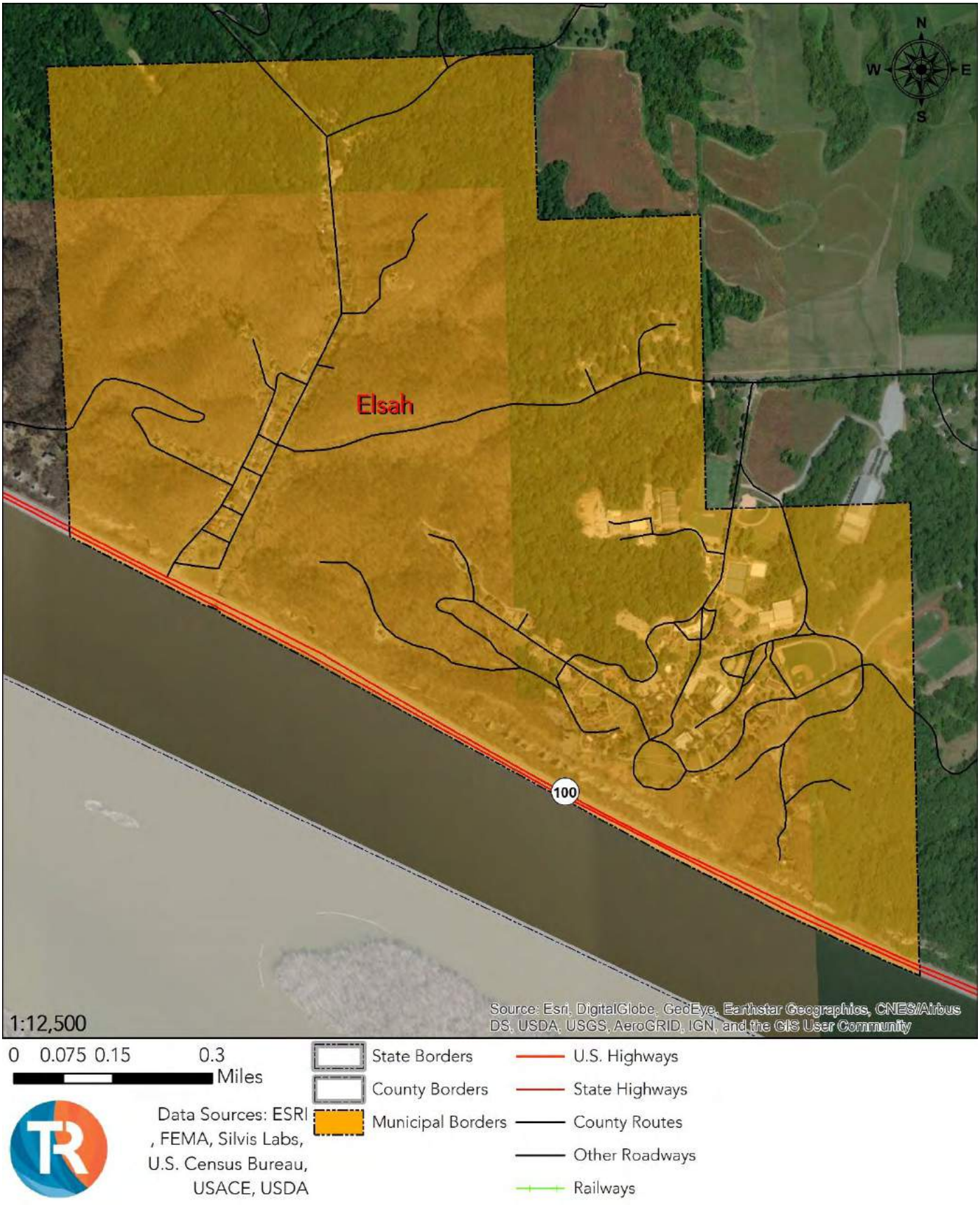
Of the 67 critical facilities within the planning area, 2 are owned and operated by the Elsah. The table below lists all of these facilities and which geographic location they reside.

Table 2.14 – Critical Facilities by Owner, Elsah

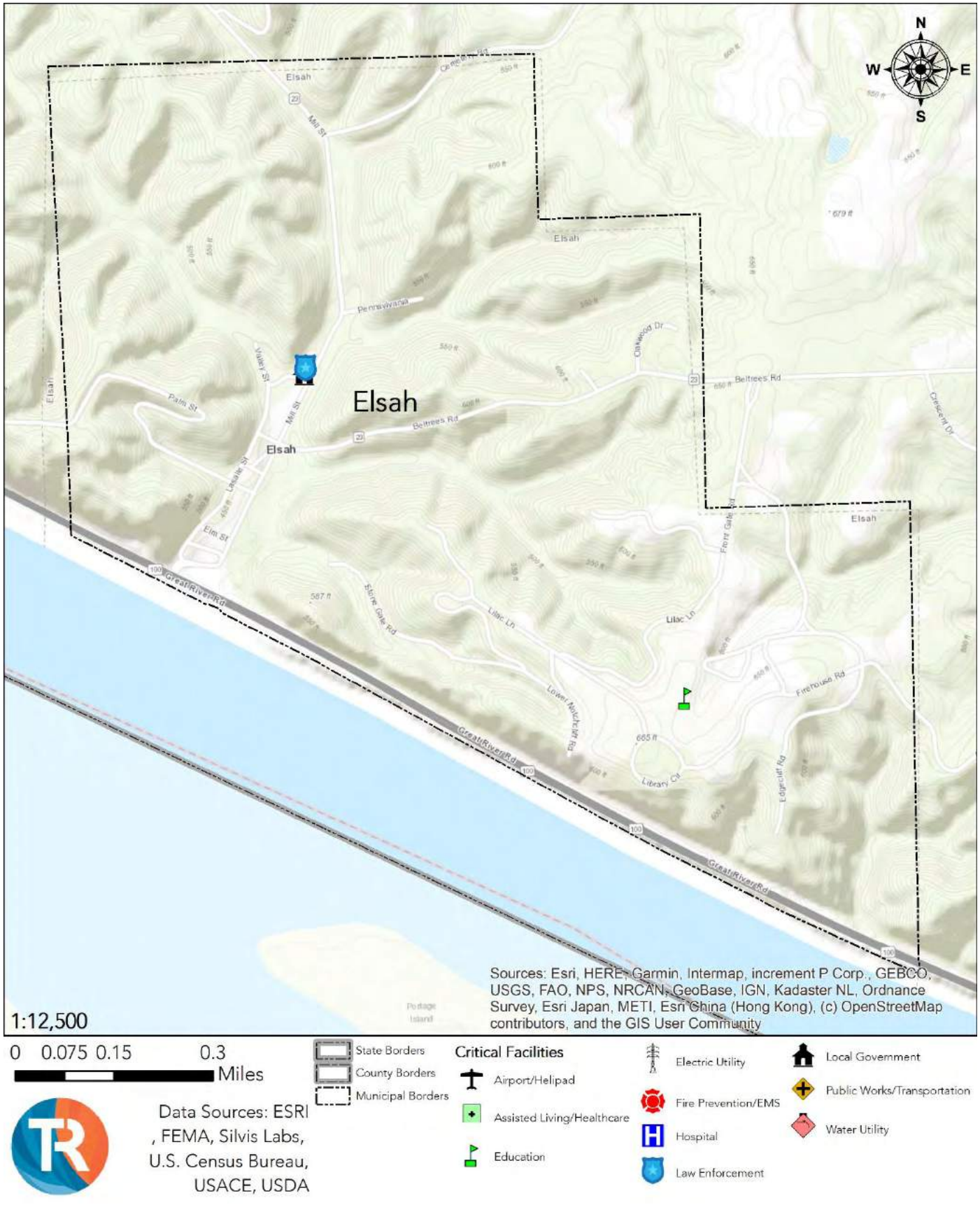
Name	Type	Location
Elsah Police Department	Law Enforcement	Elsah
Elsah Village Hall & Civic Center	Local Government	Elsah

**The data are from Jersey County Code Administration Office and the plan's stakeholders.*

Map 2.6 – Community Profile, Elsah



Map 2.7 – Critical Facilities, Elsah



2.4 – Fidelity

The Village of Fidelity has seen a slight decrease in population since 2010 and stagnant growth since the development of its last plan in 2015. 85.19% of Fidelity's building stock was constructed prior to 1999 while only 14.81% was constructed after 1999. The latest Census Bureau estimate places 112 people living in Fidelity occupying 54 housing units.

Table 2.15 – Population Change, Fidelity

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	114	-	-
2015	112	- 1.75%	-
2019	112	- 1.75%	0.00%

**The data are from the U.S. Census Bureau.*

Table 2.16 – Structural Inventory, Fidelity

Structure Class	Structures	Total Class Value
Agricultural	0	$0
Commercial	0	$0
Government	0	$0
Industrial	0	$0
Residential	56	$5,812,000
Multi-Unit Residential*	0	$0
Total =	56	$5,812,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the Federal Emergency Management Agency.*

Neither the Jersey County Code Administration Office or any of the plan's stakeholders identified any critical facilities within Fidelity.

Map 2.8 – Community Profile, Fidelity

2.5 – Fieldon

The Village of Fieldon has seen a significantly decreasing population since 2010 and still a relatively severe decrease in population since the development of its last plan in 2015. 94.69% of Fieldon's building stock was constructed prior to 1999 while only 5.31% was constructed after 1999. The latest Census Bureau estimate places 218 people living in Fieldon occupying 113 housing units.

Table 2.17 – Population Change, Fieldon

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	239	-	-
2015	226	- 5.44%	-
2019	218	- 8.79%	- 3.54%

The data are from the U.S. Census Bureau.

Table 2.18 – Structural Inventory, Fieldon

Structure Class	Structures	Total Class Value
Agricultural	1	$957,000
Commercial	4	$2,814,000
Government	1	$251,000
Industrial	3	$1,067,000
Residential	113	$11,559,000
Multi-Unit Residential*	1	$126,000
Total =	123	$16,774,000

Multi-Unit Residential is defined as a structure with 5 or more residential units.
The data are from the Federal Emergency Management Agency.

Of the 67 critical facilities within the planning area, 3 are geographically located within Fieldon. The following table lists these facilities.

Table 2.19 – Critical Facilities by Location, Fieldon

Name	Type	Owner
Fieldon Fire Protection District	Fire Prevention/EMS	Fieldon
Fieldon Village Hall	Local Government	Fieldon
Water Tower - Fieldon	Water Utility	Fieldon

The data are from Jersey County Code Administration Office and the plan's stakeholders.

Of the 67 critical facilities within the planning area, 3 are owned and operated by the Fieldon. The table below lists all of these facilities and which geographic location they reside.

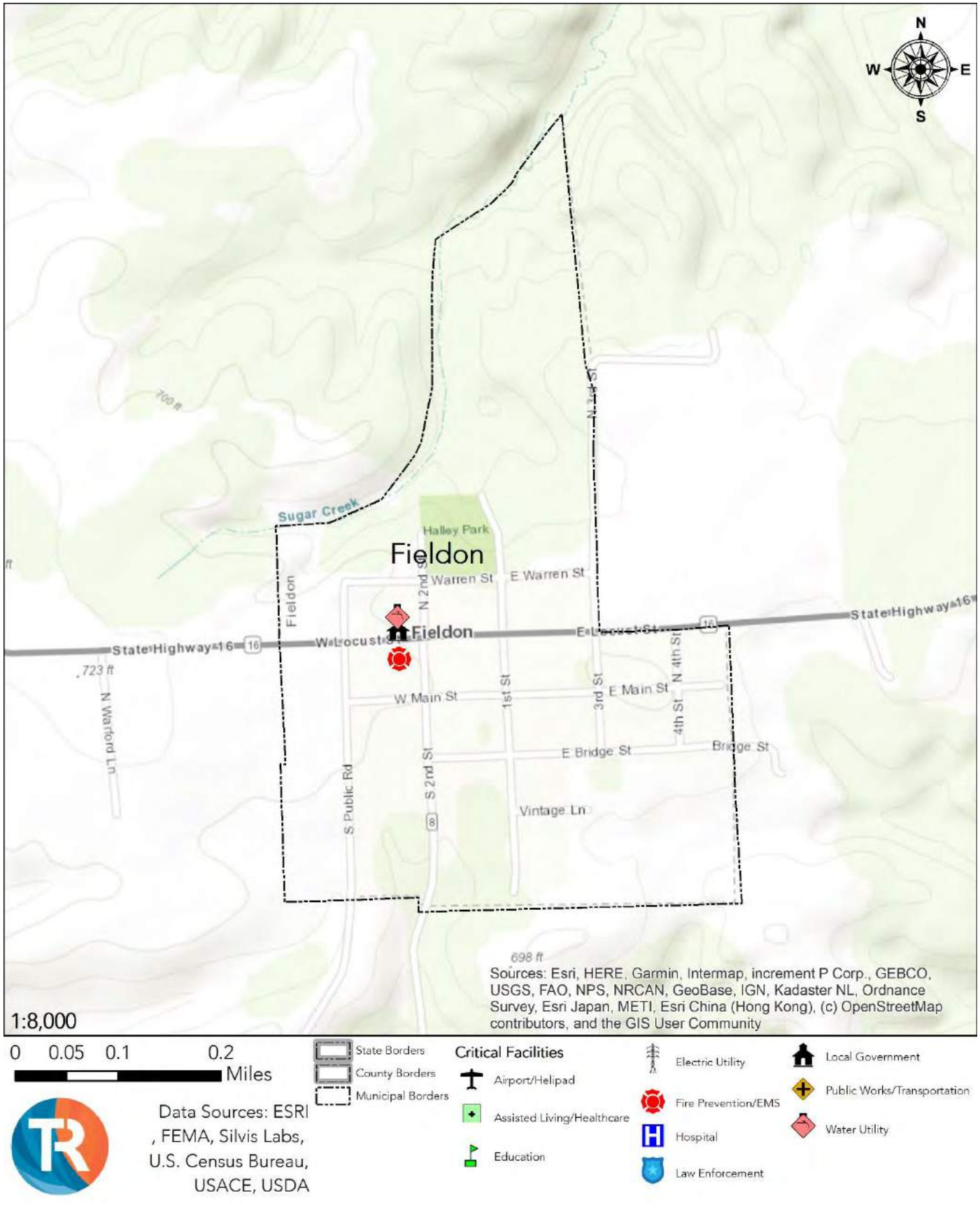
Table 2.20 – Critical Facilities by Owner, Fieldon

Name	Type	Location
Fieldon Fire Protection District	Fire Prevention/EMS	Fieldon
Fieldon Village Hall	Local Government	Fieldon
Water Tower - Fieldon	Water Utility	Fieldon

The data are from Jersey County Code Administration Office and the plan's stakeholders.

Map 2.9 – Community Profile, Fieldon

Map 2.10 – Critical Facilities, Fieldon



2.6 – Grafton

The City of Grafton has seen a significantly decreasing population since 2010 and still a relatively severe decrease in population since the development of its last plan in 2015. 84.79% of Grafton's building stock was constructed prior to 1999 while only 15.21% was constructed after 1999. The latest Census Bureau estimate places 640 people living in Grafton occupying 388 housing units.

Table 2.21 – Population Change, Grafton

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	682	-	-
2015	658	- 3.52%	-
2019	640	- 6.16%	- 2.74%

The data are from the U.S. Census Bureau.

Table 2.22 – Structural Inventory, Grafton

Structure Class	Structures	Total Class Value
Agricultural	2	$388,000
Commercial	35	$18,982,000
Government	2	$1,881,000
Industrial	8	$3,381,000
Residential	357	$41,876,000
Multi-Unit Residential*	5	$5,802,000
Total =	409	$72,310,000

Multi-Unit Residential is defined as a structure with 5 or more residential units.
The data are from the Federal Emergency Management Agency.

Of the 67 critical facilities within the planning area, 5 are geographically located within Grafton. The following table lists these facilities.

Table 2.23 – Critical Facilities by Location, Grafton

Name	Type	Owner
Grafton City Hall	Local Government	Grafton
Grafton Police Department	Law Enforcement	Grafton
Grafton Public Works	Public Works/Transportation	Grafton
Grafton Water Works	Water Utility	Grafton
Water Tower - Grafton Hills Drive	Water Utility	Grafton

The data are from Jersey County Code Administration Office and the plan's stakeholders.

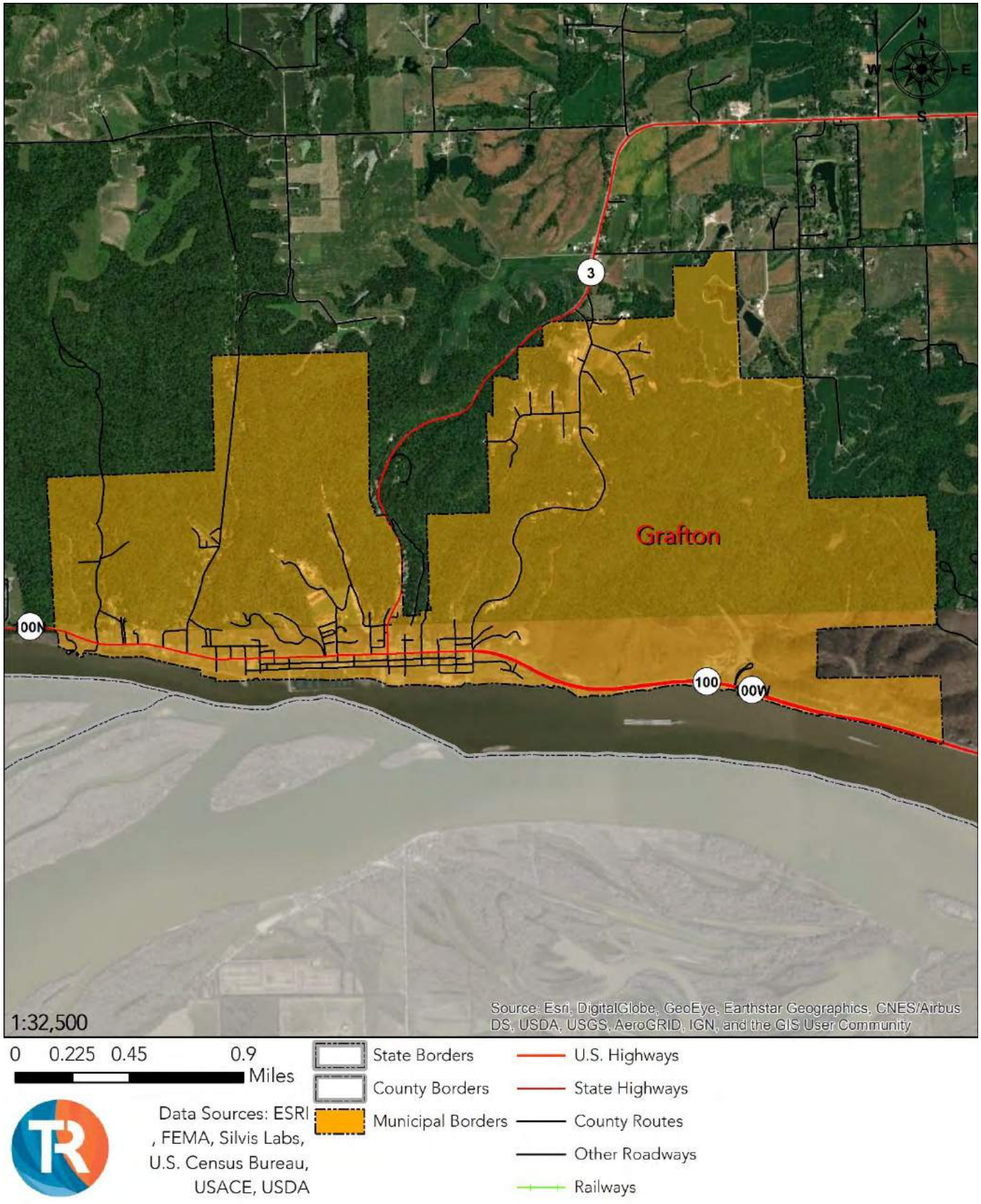
Of the 67 critical facilities within the planning area, 5 are owned and operated by the Grafton. The table below lists all of these facilities and which geographic location they reside.

Table 2.24 – Critical Facilities by Owner, Grafton

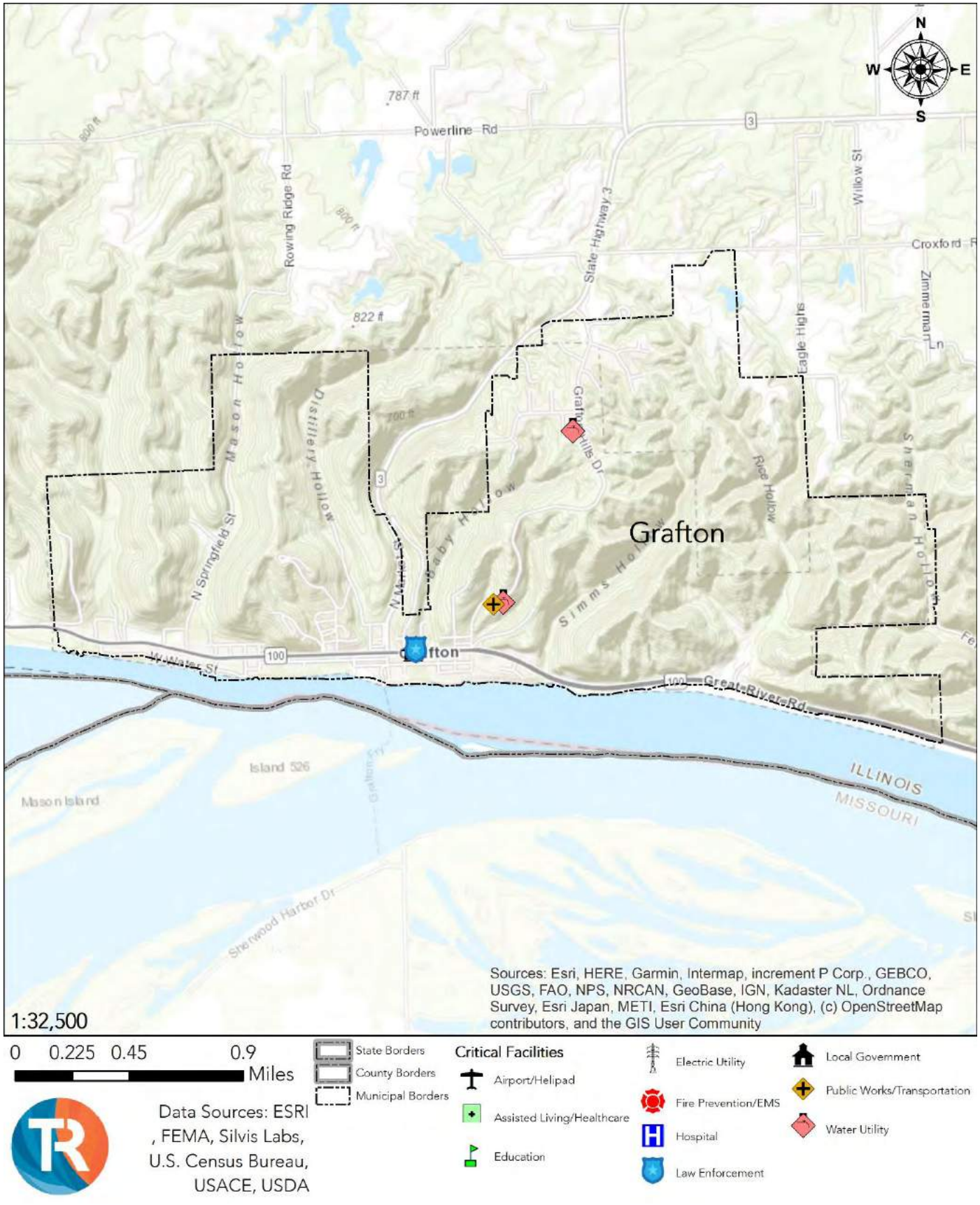
Name	Type	Location
Grafton City Hall	Local Government	Grafton
Grafton Police Department	Law Enforcement	Grafton
Grafton Public Works	Public Works/Transportation	Grafton
Grafton Water Works	Water Utility	Grafton
Water Tower - Grafton Hills Drive	Water Utility	Grafton

The data are from Jersey County Code Administration Office and the plan's stakeholders.

Map 2.11 – Community Profile, Grafton



Map 2.12 – Critical Facilities, Grafton



2.7 – Jerseyville

The City of Jerseyville has seen a slight decrease in population since 2010 and still a slight decrease since the development of its last plan in 2015. Its population, although decreasing, has been decreasing at a rate lower than the rest of the municipalities within Jersey County. 89.69% of Jerseyville's building stock was constructed prior to 1999 while only 10.31% was constructed after 1999. The latest Census Bureau estimate places 8,200 people living in Jerseyville occupying 3,772 housing units.

Table 2.25 – Population Change, Jerseyville

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	8,464	-	-
2015	8,384	- 0.95%	-
2019	8,200	- 3.12%	- 2.19%

**The data are from the U.S. Census Bureau.*

Table 2.26 – Structural Inventory, Jerseyville

Structure Class	Structures	Total Class Value
Agricultural	20	$4,196,000
Commercial	244	$206,269,000
Government	9	$7,451,000
Industrial	49	$35,180,000
Residential	3,230	$383,919,000
Multi-Unit Residential*	56	$60,729,000
Total =	3,608	$697,744,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the Federal Emergency Management Agency.*

Of the 67 critical facilities within the planning area, 36 are geographically located within Jerseyville. The following table lists these facilities.

Table 2.27 – Critical Facilities by Location, Jerseyville

Name	Type	Owner
DaVita Dialysis	Assisted Living/Healthcare	Private
Ground Water Storage Tank - West County Rd.	Water Utility	Jerseyville
Holy Ghost School	Education	Private
Jersey Community Hospital	Hospital	Private
Jersey County Administration Building	Local Government	County
Jersey County Courthouse	Local Government	County
Jersey County Health Department	Local Government	County
Jersey County Highway Department	Public Works/Transportation	County
Jersey County Housing Authority	Assisted Living/Healthcare	County
Jersey County Rural Water Company	Water Utility	Private
Jersey County Sheriff's Department	Law Enforcement	County
Jerseyville City Hall	Local Government	Jerseyville
Jerseyville Estates	Assisted Living/Healthcare	Private
Jerseyville Fire Department	Fire Prevention/EMS	Jerseyville
Jerseyville Manor	Assisted Living/Healthcare	Private
Jerseyville North Sewer Plant	Water Utility	County
Jerseyville Nursing & Rehabilitation Center	Assisted Living/Healthcare	Private
Jerseyville Parks & Recreation Department	Local Government	Jerseyville
Jerseyville Police Department	Law Enforcement	Jerseyville
Jerseyville Street Department	Public Works/Transportation	Jerseyville
Jerseyville Water Treatment Facility	Water Utility	Jerseyville
Lift Station - Airport	Water Utility	Jerseyville
Lift Station - East County Road	Water Utility	Jerseyville
Lift Station - East Fairgrounds	Water Utility	Jerseyville
Lift Station - Easton Avenue	Water Utility	Jerseyville
Lift Station - Highway 109	Water Utility	Jerseyville
Lift Station - Legacy Estates	Water Utility	Jerseyville
Lift Station - North WWTP	Water Utility	Jerseyville
Lift Station - West Fairgrounds	Water Utility	Jerseyville
Lift Station - Will Mill Road	Water Utility	Jerseyville
McDown Memorial Clinic	Assisted Living/Healthcare	Private
Saint Francis School	Education	Private
Vahle Terrace Group Home	Assisted Living/Healthcare	Private
Water Tower - East County Road	Water Utility	Jerseyville
Water Tower - West Arch Street	Water Utility	Jerseyville
Willow Rose Rehab & Healthcare	Assisted Living/Healthcare	Private

**The data are from Jersey County Code Administration Office and the plan's stakeholders.*

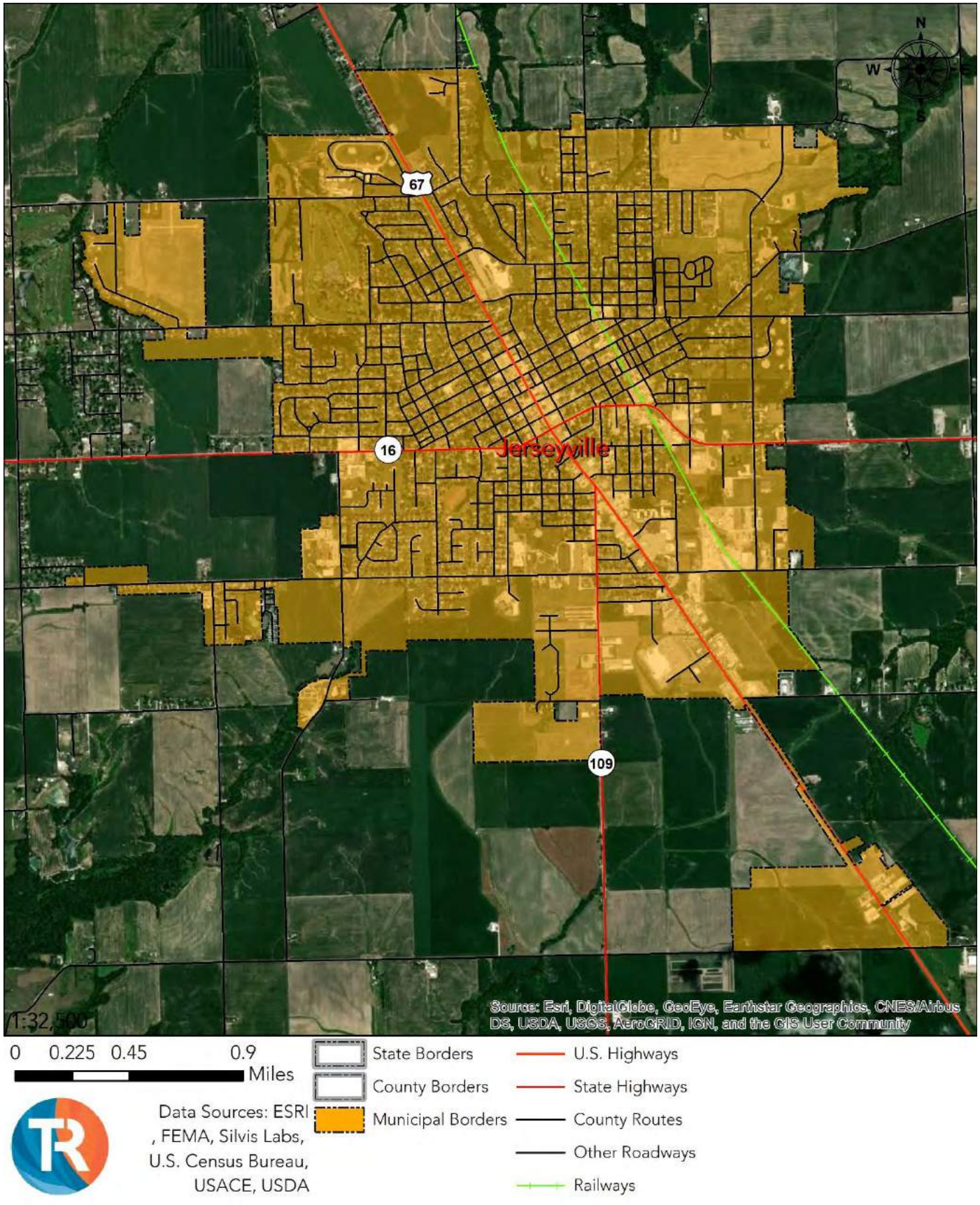
Of the 67 critical facilities within the planning area, 19 are owned and operated by the Jerseyville. The following table lists all of these facilities and which geographic location they reside.

Table 2.28 – Critical Facilities by Owner, Jerseyville

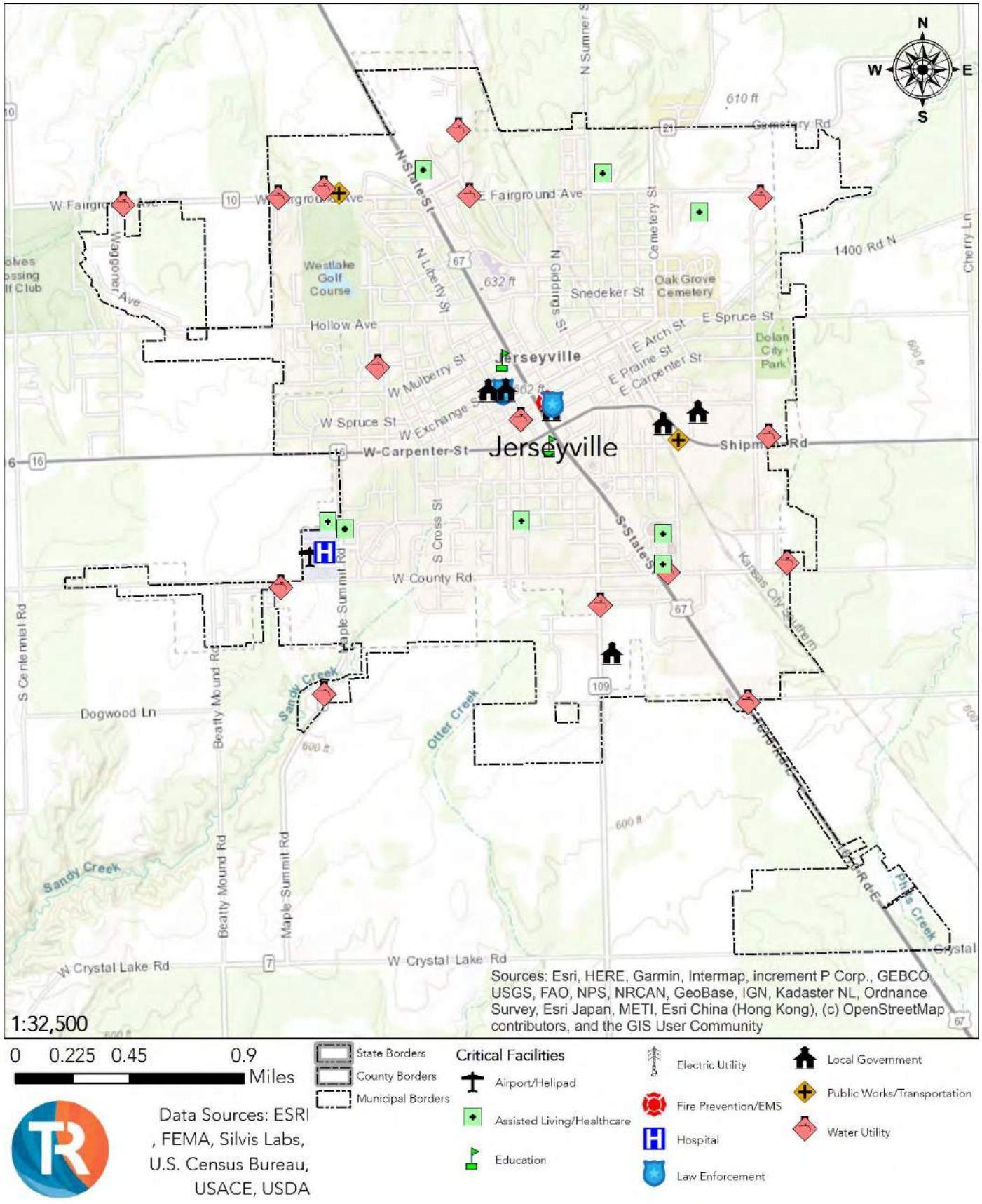
Name	Type	Location
Ground Water Storage Tank - West County Rd.	Water Utility	Jerseyville
Jerseyville City Hall	Local Government	Jerseyville
Jerseyville Fire Department	Fire Prevention/EMS	Jerseyville
Jerseyville Parks & Recreation Department	Local Government	Jerseyville
Jerseyville Police Department	Law Enforcement	Jerseyville
Jerseyville Street Department	Public Works/Transportation	Jerseyville
Jerseyville Water Treatment Facility	Water Utility	Jerseyville
Jerseyville Wells (3) - Eagleton Park Road	Water Utility	County
Lift Station - Airport	Water Utility	Jerseyville
Lift Station - East County Road	Water Utility	Jerseyville
Lift Station - East Fairgrounds	Water Utility	Jerseyville
Lift Station - Easton Avenue	Water Utility	Jerseyville
Lift Station - Highway 109	Water Utility	Jerseyville
Lift Station - Legacy Estates	Water Utility	Jerseyville
Lift Station - North WWTP	Water Utility	Jerseyville
Lift Station - West Fairgrounds	Water Utility	Jerseyville
Lift Station - Will Mill Road	Water Utility	Jerseyville
Water Tower - East County Road	Water Utility	Jerseyville
Water Tower - West Arch Street	Water Utility	Jerseyville

**The data are from Jersey County Code Administration Office and the plan's stakeholders.*

Map 2.13 – Community Profile, Jerseyville



Map 2.14 – Critical Facilities, Jerseyville



2.8 – Otterville

The Town of Otterville has seen a significantly decreasing population since 2010 and only a very slight decrease since the development of its last plan in 2015. 76.92% of Otterville's building stock was constructed prior to 1999 while only 23.08% (the highest proportion in the county) was constructed after 1999. The latest Census Bureau estimate places 118 people living in Otterville occupying 52 housing units.

Table 2.29 – Population Change, Otterville

Year	Estimated Population	Percent Change from 2010	Percent Change from 2015
2010	126	-	-
2015	119	- 5.56%	-
2019	118	- 6.35%	- 0.84%

**The data are from the U.S. Census Bureau.*

Table 2.30 – Structural Inventory, Otterville

Structure Class	Structures	Total Class Value
Agricultural	0	$0
Commercial	0	$0
Government	0	$0
Industrial	0	$0
Residential	52	$6,894,000
Multi-Unit Residential*	0	$0
Total =	52	$6,894,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the Federal Emergency Management Agency.*

Of the 67 critical facilities within the planning area, 1 is geographically located within Otterville. The following table lists these facilities.

Table 2.31 – Critical Facilities by Location, Otterville

Name	Type	Owner
Otterville Town Office	Local Government	Otterville

**The data are from Jersey County Code Administration Office and the plan's stakeholders.*

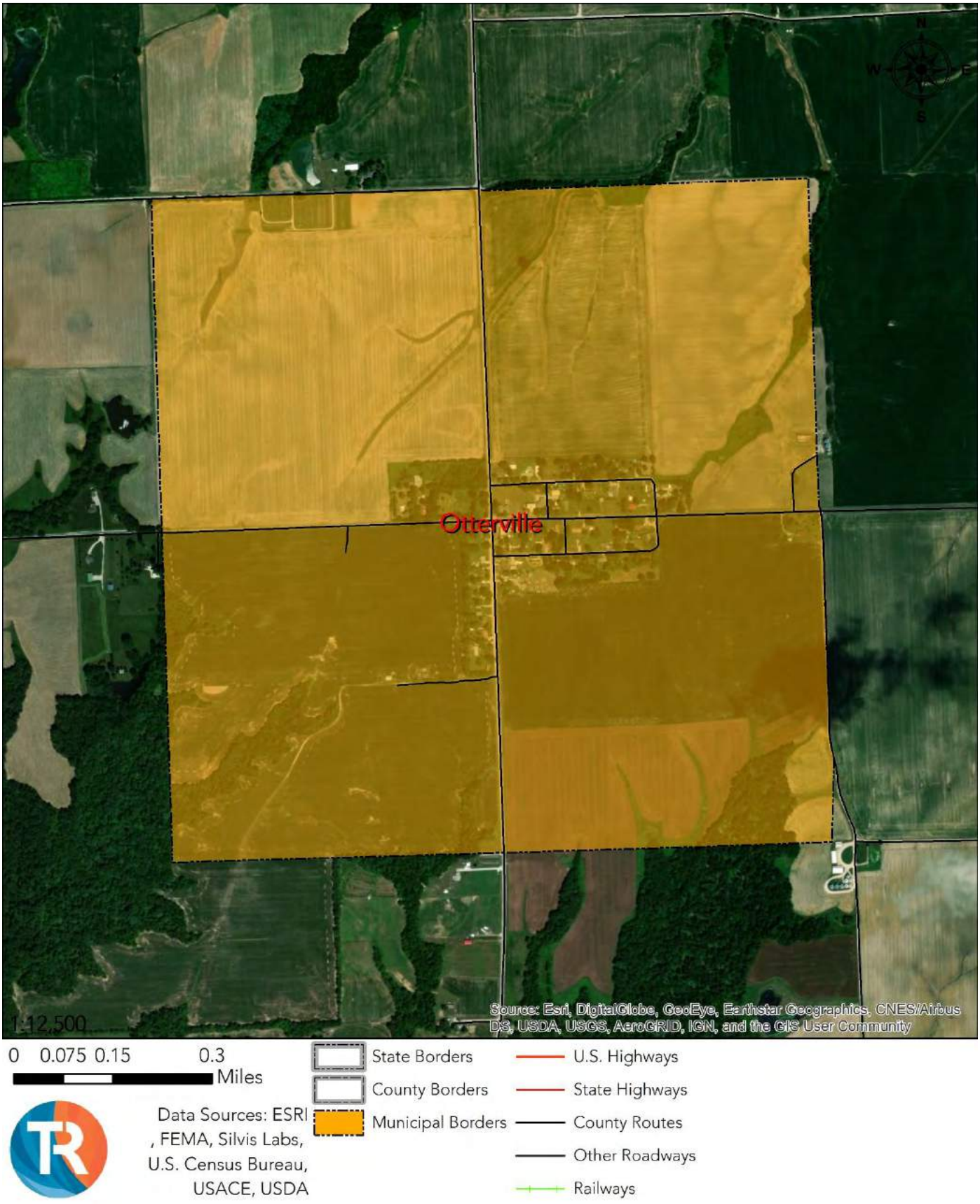
Of the 67 critical facilities within the planning area, 1 is owned and operated by the Otterville. The table below lists all of these facilities and which geographic location they reside.

Table 2.32 – Critical Facilities by Owner, Otterville

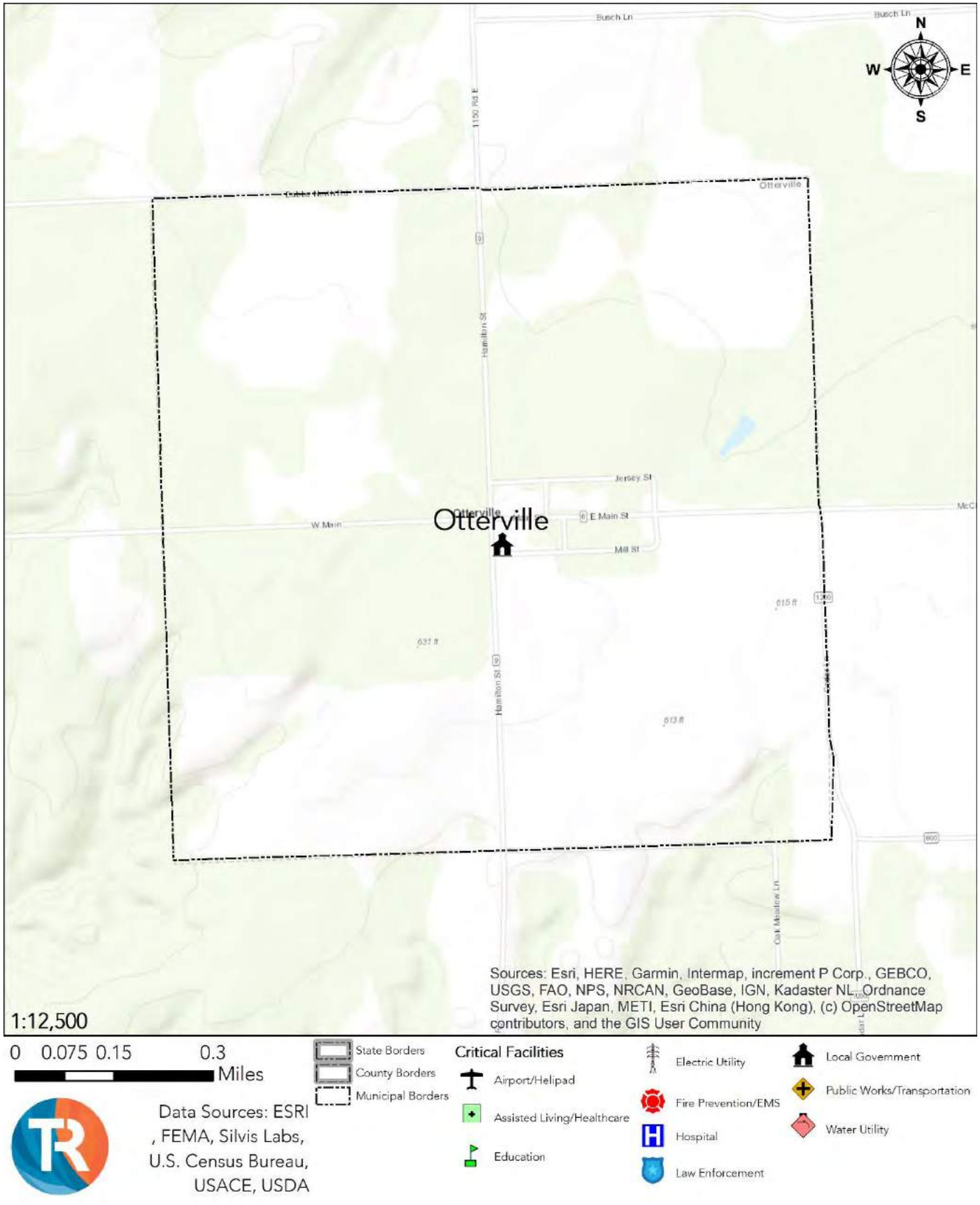
Name	Type	Location
Otterville Town Office	Local Government	Otterville

**The data are from Jersey County Code Administration Office and the plan's stakeholders.*

Map 2.15 – Community Profile, Otterville



Map 2.16 – Critical Facilities, Otterville



2.9 – Community Unit School District 100

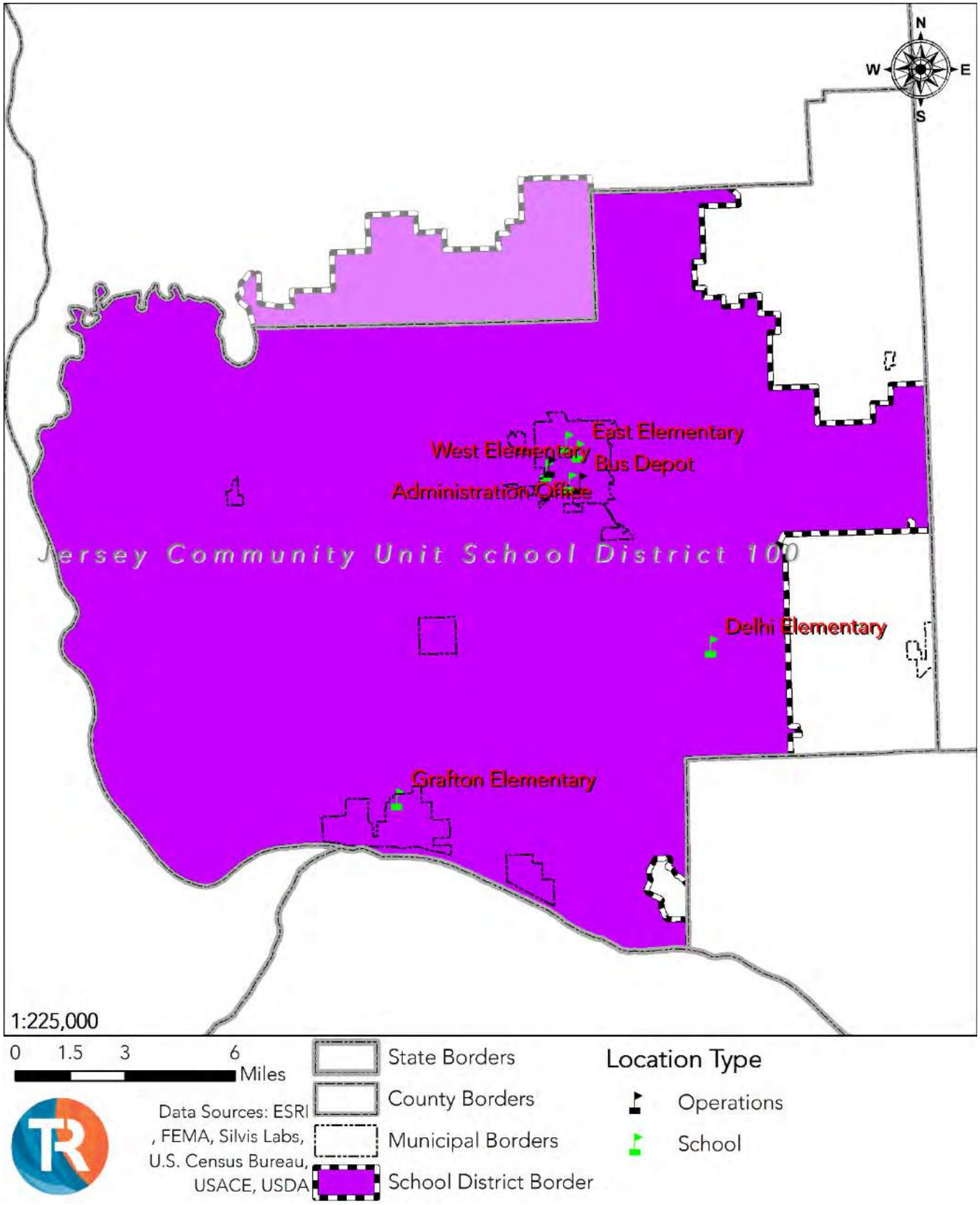
Jersey County is services by one public school district, the Jersey Community Unit School District 100. It accomplished this through 6 educations sites and 2 administrative and operations sites. They provide education for 2,400 students by way of 340 full-time teachers, administrators, and other support staff. The value of the CUSD 100's structures and their contents total $108,414,333. A full breakdown of each location's structural value can be found in Appendix B.

Table 2.33 – CUSD 100 Structural Summary

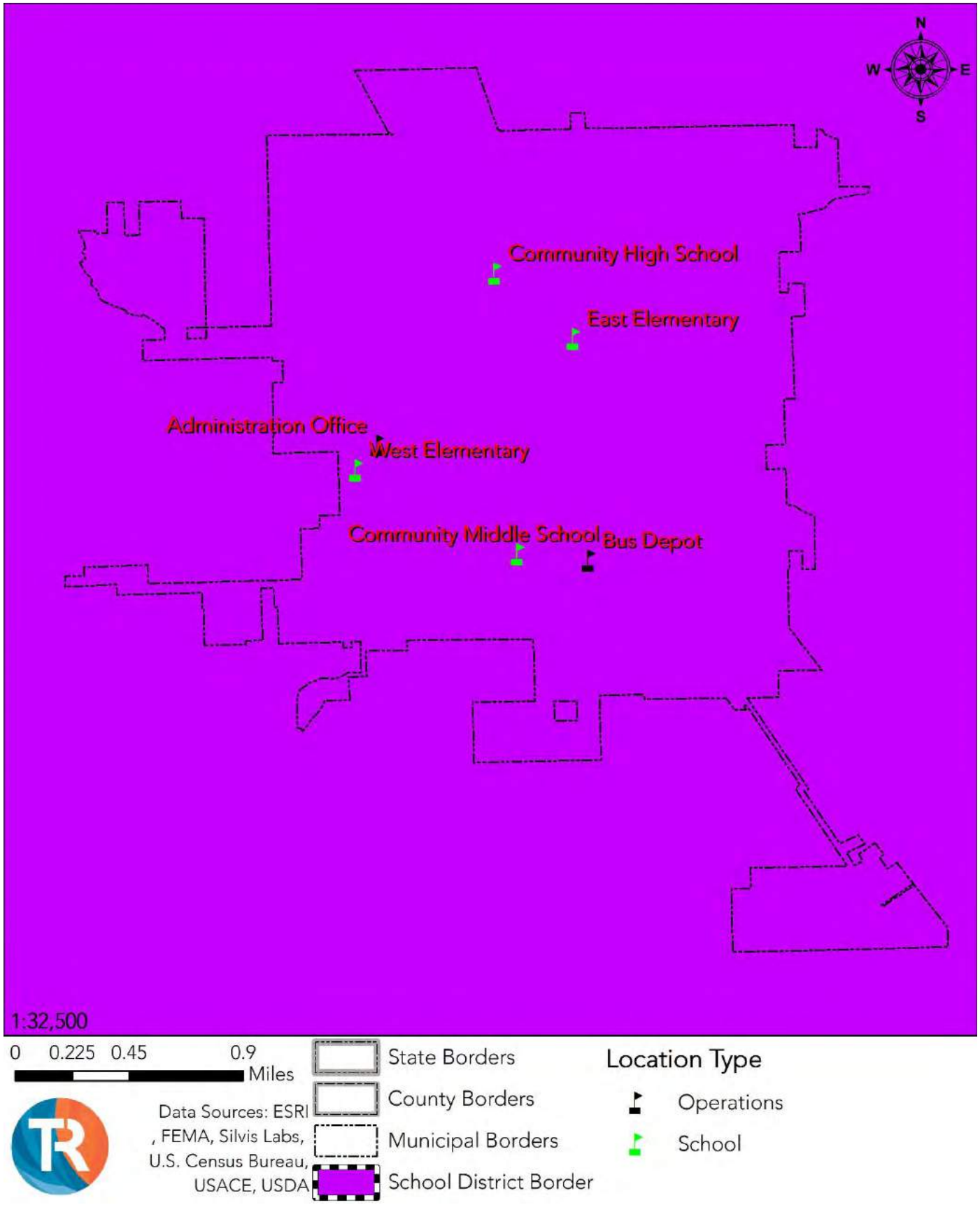
Location	Contents Value	Structural Value	Total Value
Administration Office	$200,850	$1,662,276	$1,863,126
Bus Depot	$229,175	$1,996,124	$2,225,299
Community High School	$5,776,240	$41,465,633	$47,241,873
Community Middle School	$1,957,000	$17,939,710	$19,896,710
Dheli Elementary	$0	$1,948,211	$1,948,211
East Elementary	$813,700	$8,373,613	$9,187,313
Grafton Elementary	$1,076,350	$5,989,141	$7,065,491
West Elementary	$628,300	$18,358,010	$18,986,310
Total =	$10,681,615	$97,732,718	$108,414,333

**The data are from the Jersey Community Unit School District 100.*

Map 2.17 – Community Profile, CUSD 100



Map 2.18 – Community Profile, CUSD 100 (Zoomed)



Purpose

This hazard mitigation plan's risk assessment depicts each participating entity's risk to each of the profiled hazards. These calculated risks serve as the justifying basis for the proposed mitigation activities and projects found in Section 4. Additionally, this risk assessment can further serve Jersey County and the plan's participating entities by aiding in decision making processes of other planning initiatives.

Intent

The hazards profiled within this section were identified and selected based on their ability to reasonably affect the entire planning area or portions of Jersey County and its communities. If a hazard has been excluded or removed, justification has been given.

To properly and accurately depict each hazard's risk, Two Rivers Emergency Management employed various methodologies appropriately tailored by hazard application. Generally, each hazard profile; describes the type, location, and extent the hazard; includes information on previous occurrences of hazard events and estimates on future occurrence; describes a hazard's estimated impact; assesses each participating entity's vulnerability to a hazard; and analyzes how changes in development have affected an area since the development of Jersey County's last hazard mitigation plan.

Each hazard profile conforms to FEMA's requirements as set forth in its Local Mitigation Plan Review Guide, Elements B1 through B3, and B4 and D1 where applicable.

3.1 – Methodology

The natural characteristics of each hazard dictate that not one single approach works to accurately depict risk. In general, the hazard profiled in this plan can be categorized as either area-wide hazards or those with discretely identified hazard areas.

Area-Wide Hazards

Area-wide hazards indiscriminately impact the entire planning. Since it is beyond scientific measurement where an area-wide hazard, such as winter storms, will impact, and likely it will impact everywhere, it is reasonable to assume any significant growth and development will increase vulnerability and risk. Additionally, a hazard such as a tornado, will impact a specific path, but we are unable to predict where exactly it will begin. Thus, having any increase in growth or development increases the chance that a tornado will strike a developed segment of a jurisdiction. For this plan, this is relevant for droughts, flash flooding, tornadoes, severe storms, and severe winter storms.

Hazards with Identified Hazard Areas

If a jurisdiction grows or develops into an established dam spillway, floodplain, WUI zone, or an area with greater linear extensibility, that jurisdiction's vulnerability and risk increase by an amount equal to

the development or growth that now exists in that identified hazard area. For this plan, this is relevant for dam failure, earthquakes, and riverine flooding.

3.2 – Hazard Selection

Appropriately identifying and selecting which natural hazards will be assessed is the first step in developing a risk assessment. The State of Illinois' Natural Hazard Mitigation Plan profiles ten natural and two human-caused hazards in its statewide hazard mitigation plan. Of those hazards, this plan profiles seven of those hazards.

Jersey County has been designated as an affected area by federal declaration 15 times. These declarations show a broad picture of the which hazards pose the greatest threat to the planning area. The table below lists each federal disaster declaration, the hazards which caused the impact, and the dates of the events:

Table 3.1 – Disaster Declarations

Designation	Declaration	Hazards	Start Date	End Date
DR-4461	09/19/2019	Flooding, Severe Storms	02/24/2019	07/03/2019
DR-1771	06/24/2008	Flooding, Severe Storms	06/01/2008	07/22/2008
DR-1681	02/09/2007	Severe Winter Storms	11/30/2006	12/01/2006
DR-1416	05/21/2002	Flooding, Severe Storms, Tornadoes	04/21/2002	05/23/2002
DR-1053	05/30/1995	Flooding, Severe Storms	05/15/1995	06/15/1995
DR-1025	04/26/1994	Flooding, Severe Storms	04/09/1994	05/04/1994
DR-997	07/09/1993	Flooding, Severe Storms	04/13/1993	10/22/1993
DR-776	10/07/1986	Flooding, Severe Storms	09/21/1986	10/15/1986
DR-735	03/29/1985	Flooding, Severe Storms	02/23/1985	04/05/1985
DR-684	06/06/1983	Flooding, Severe Storms, Tornadoes	06/06/1983	-
DR-674	12/13/1982	Flooding, Severe Storms, Tornadoes	12/13/1982	-
DR-583	04/30/1979	Flooding, Severe Storms	04/30/1979	-
DR-438	06/10/1974	Flooding, Severe Storms	06/10/1974	-
DR-373	04/26/1973	Flooding, Severe Storms	04/26/1973	-
DR-262	06/06/1969	Flooding	06/06/1969	-

**The data are from the Federal Emergency Management Agency*

Selecting only hazards that pose a reasonable risk to the planning area allows the mitigation strategy found in Section 4 to focus Jersey County's capabilities and resources where they are needed most and can be the most effective. We found those hazards to be: Dam & Levee Failures, Droughts, Earthquakes, Floods (River and Flash), Severe Storms (Hail, Lightning, Thunderstorms, and Windstorms), Severe Winter Storms, and Tornadoes.

The table below lists all of the natural hazards included in the statewide plan, whether they are included in this plan, and if excluded, a summary justification of why it has been excluded. A lengthier justification for exclusion can be found later in this section, 3.10 – Excluded Hazards.

Table 3.2 – Hazard Inclusion

Hazard	Determination	Summary Justification
Dam & Failures	Included	High Hazard Dam Identified
Droughts	Included	Disaster History
Earthquakes	Included	Risk Areas Identified
Extreme Heat	Excluded	No reasonable Risk
Floods	Included	Disaster History
Landslides	Excluded	No Reasonable Risk
Mine Subsidence	Excluded	No Reasonable Risk
Tornadoes	Included	Disaster History
Severe Storms	Included	Disaster History
Severe Winter Storms	Included	Disaster History
Wildfires	Excluded	No Reasonable Risk

3.3 – Dam & Levee Failures

A dam or levee is a barrier across flowing water that obstructs, directs or slows down the flow, often creating a reservoir, lake or impoundments. Most dams have a section called a spillway or weir, over or through, which water flows, either intermittently or continuously.

Dams and levees can fail in a number of ways. A rainy day failure occurs when heavy rain exceed the storage capacity of the dam or levee and overflows. A sunny day (or piping) failure occurs due to slope failure, smaller structural faults, or a controlled spillway release done to prevent full failure of overflowing water. Sunny day failures release a dam or levee's water over a period of time based on the size of the leak. In these scenarios, it is assumed the dam or levee is holding its normal water volume. A full or sudden failure caused by a major structural integrity issue is classified as a percentage of the probable maximum precipitation (PMP), i.e. a 50% PMP Breach means there was a sudden release of water while the dam is holding 50% of its maximum volume. In each instance an overwhelming amount of water, and potentially debris, is released.

Common causes for dam and levee failure are:

- Sub-standard construction materials/techniques
- Spillway design error
- Geological instability caused by changes to water levels during filling or poor surveying
- Sliding of a mountain into the reservoir
- Poor maintenance, especially of outlet pipes
- Human, computer or design error
- Internal erosion, especially in earthen dams.
- Earthquakes

Dam failures are rare, but when they occur can cause loss of life, and immense damage to infrastructure and the environment. The planning area contains one USACE designated high-hazard dam, the Airstrip Reservoir Dam, and the Nutwood Levee which spans 12.35 miles.

Location & Extent

Response to a dam or levee failure would be extensive and require wide ranging recovery efforts for reconstruction of the original flood control structures and any damaged property. There is usually little to no warning in the event of a dam or levee failure, depending on what lies below a dam or levee. By definition, the Airport Reservoir Dam threatens population and structures as does the Nutwood Levee.

However, an analysis of the Airport Reservoir Dam does not yield a risk to any population, structures, or systems within or outside the planning area. Built in 1957, the Airport Reservoir Dam can hold back a maximum of 170-acre feet of water. Compared to most dams, this is a low volume of water decreasing its ability to threaten people, structures, and systems within its spillway. Furthermore, a topographical and aerial map analysis shows that there are no structures or infrastructure in its spillway. The maps on

the following pages depict the location of the Airport Reservoir Dam, its spillway, local topography, and the lack of surrounding development.

Numerous topographic, hydrologic, and weather conditions (how much water is stored at a dam or levee based on rainfall) influence the extent and speed of waterflow exiting a failed or damaged dam or levee. The Nutwood Levee was constructed with the express purpose of curtailing riverine flooding a large swath of land in the northwestern portion of Jersey County and its neighbor, Calhoun County. The maps on the following pages show the Nutwood Levee's location, its primary pump station, and the area of land it intends to protect from flooding.

History & Probability

There have been no failures of high hazard dams in the planning area, however, the Nutwood Levee has been breached. In June of 2019, heavy rain accumulated to the point of overtopping and breaching the Nutwood Levee and the 150,000 sandbags atop it. This caused water to flow and flood over 1,500 acres of land reaching the unincorporated community of Nutwood.

Although heavy rains pose a threat to repeat this levee breach in the future, the uncommon history of such events in the planning area, the probability of experiencing another levee failure event is categorized as 'rare.'

Vulnerability of and Impact on Facilities

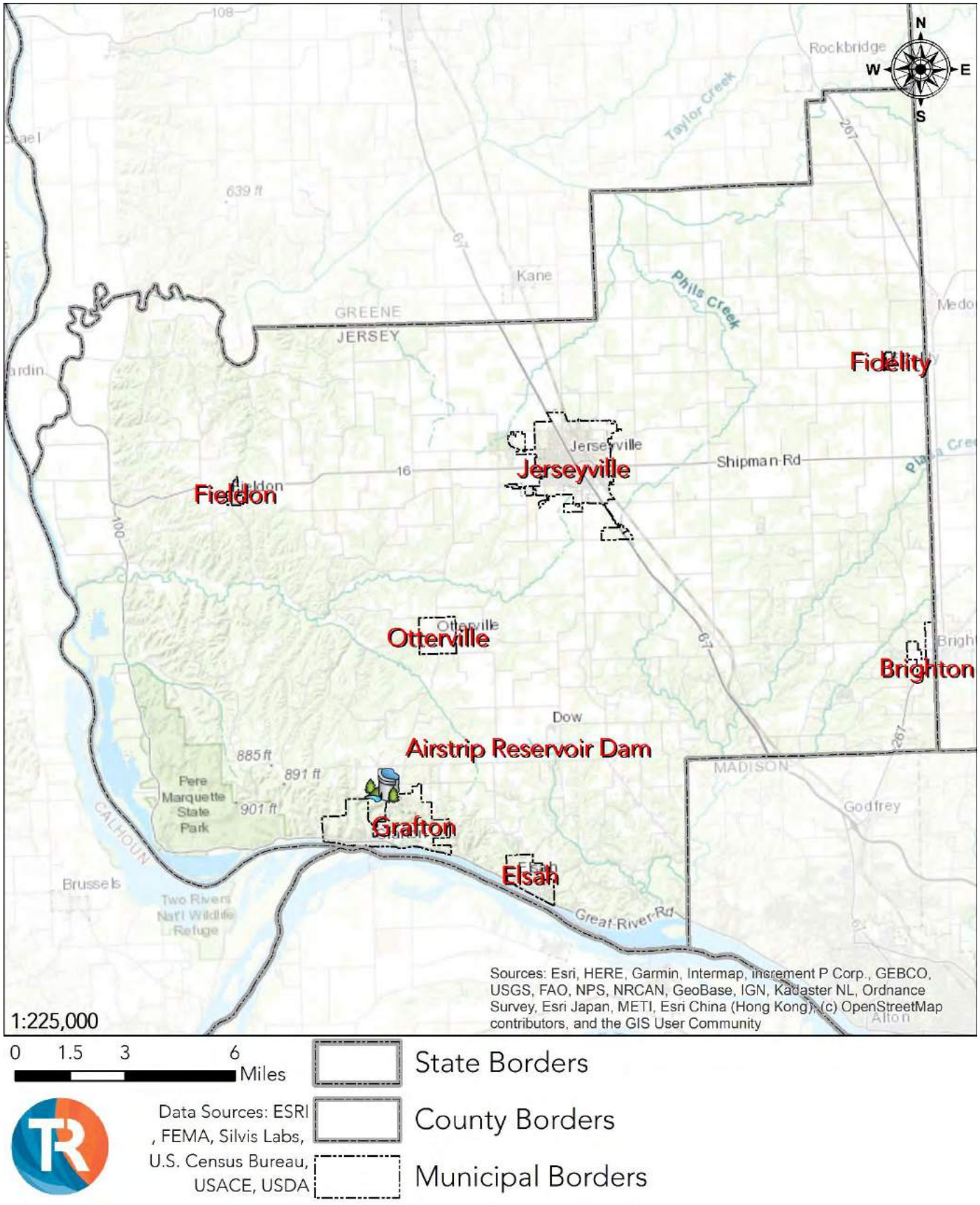
Facilities within a dam or levee failure inundation area are typically at extreme risk. The water level of a dam or levee failure can range from inches, causing damage similar to small floods, to completely engulfing a structure in water. Additionally, the speed of the flow can cause variations in the impact. A slow flow will cause damage similar to a riverine flood, however, a fast moving, high level flow has the potential to completely destroy a structure, wash it away, and create debris that impacts other structures. See the tables below for a breakdown of the planning area's structural vulnerability and impact from a failure of the Nutwood Levee. None of the CUSD 100's structures are threatened by the Nutwood Levee.

Table 3.3 – Vulnerability & Impact of Structures, Nutwood Levee

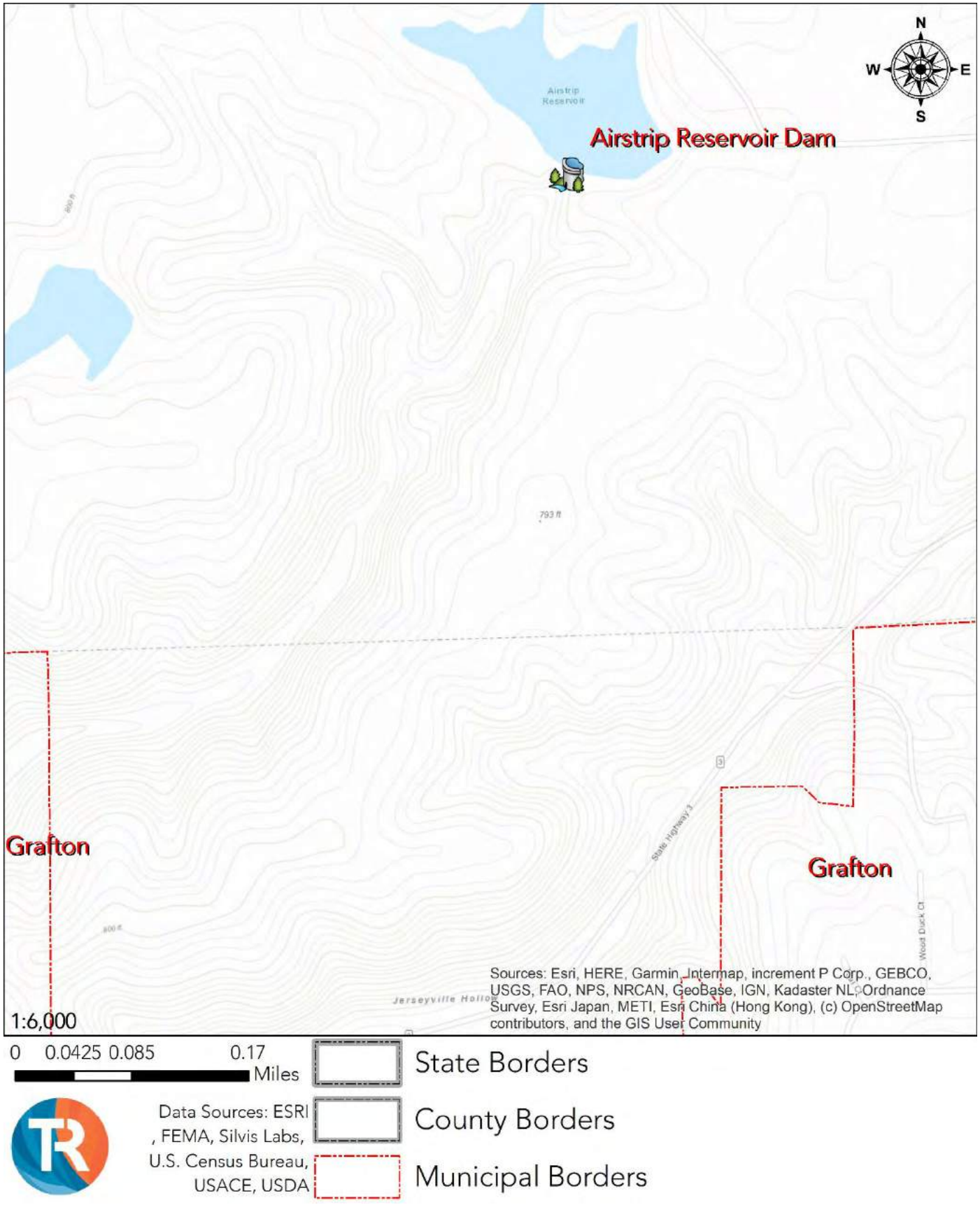
Structure Class	Structure Count	Total Class Value
Agricultural	0	$0
Commercial	1	$445,000
Government	0	$0
Industrial	0	$0
Residential	42	$4,921,000
Multi-Unit Residential*	0	$
Total =	43	$5,366,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units.*
***The data are from the U.S. Census Bureau and FEMA.*

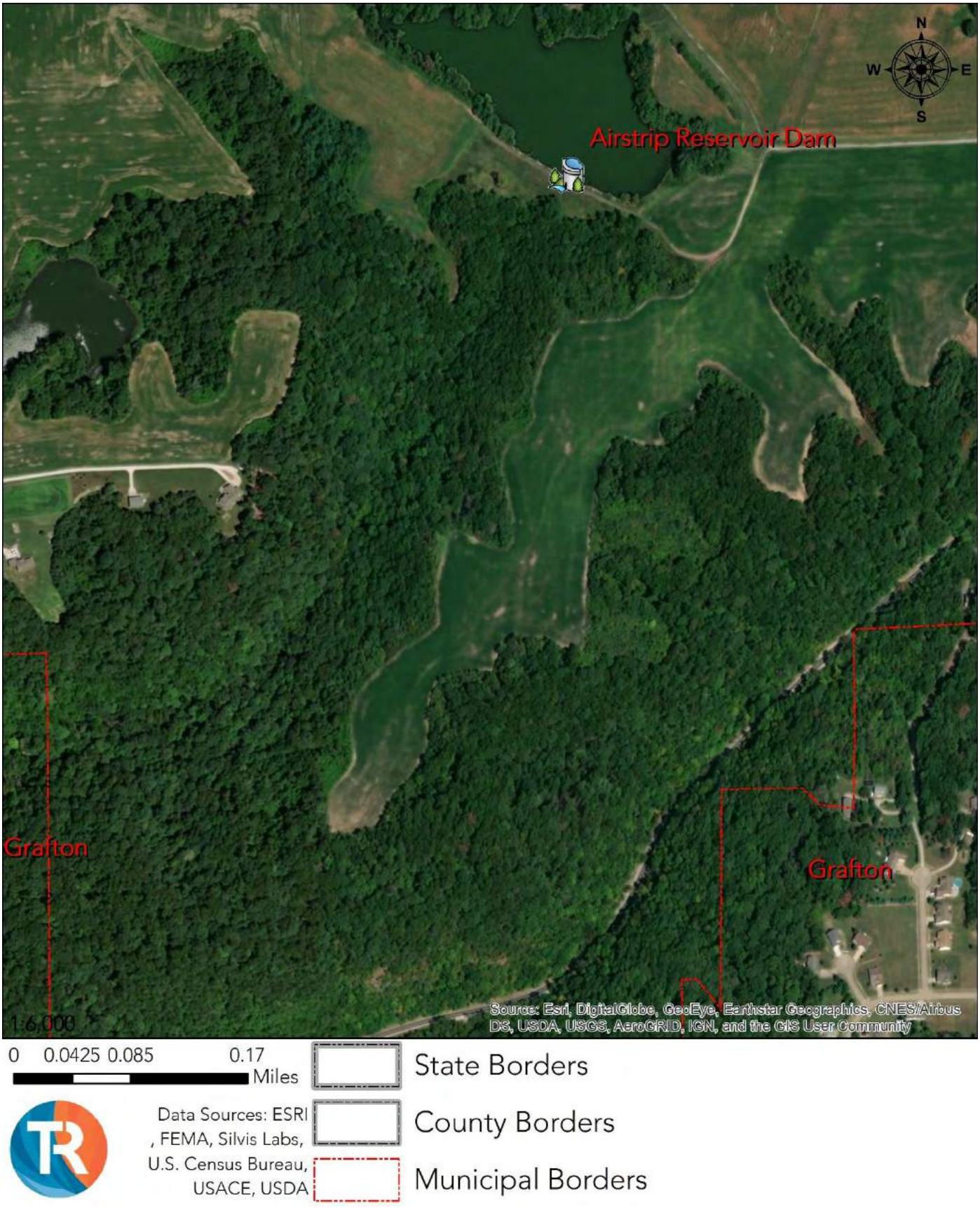
Map 3.1 – Location, Airport Reservoir Dam



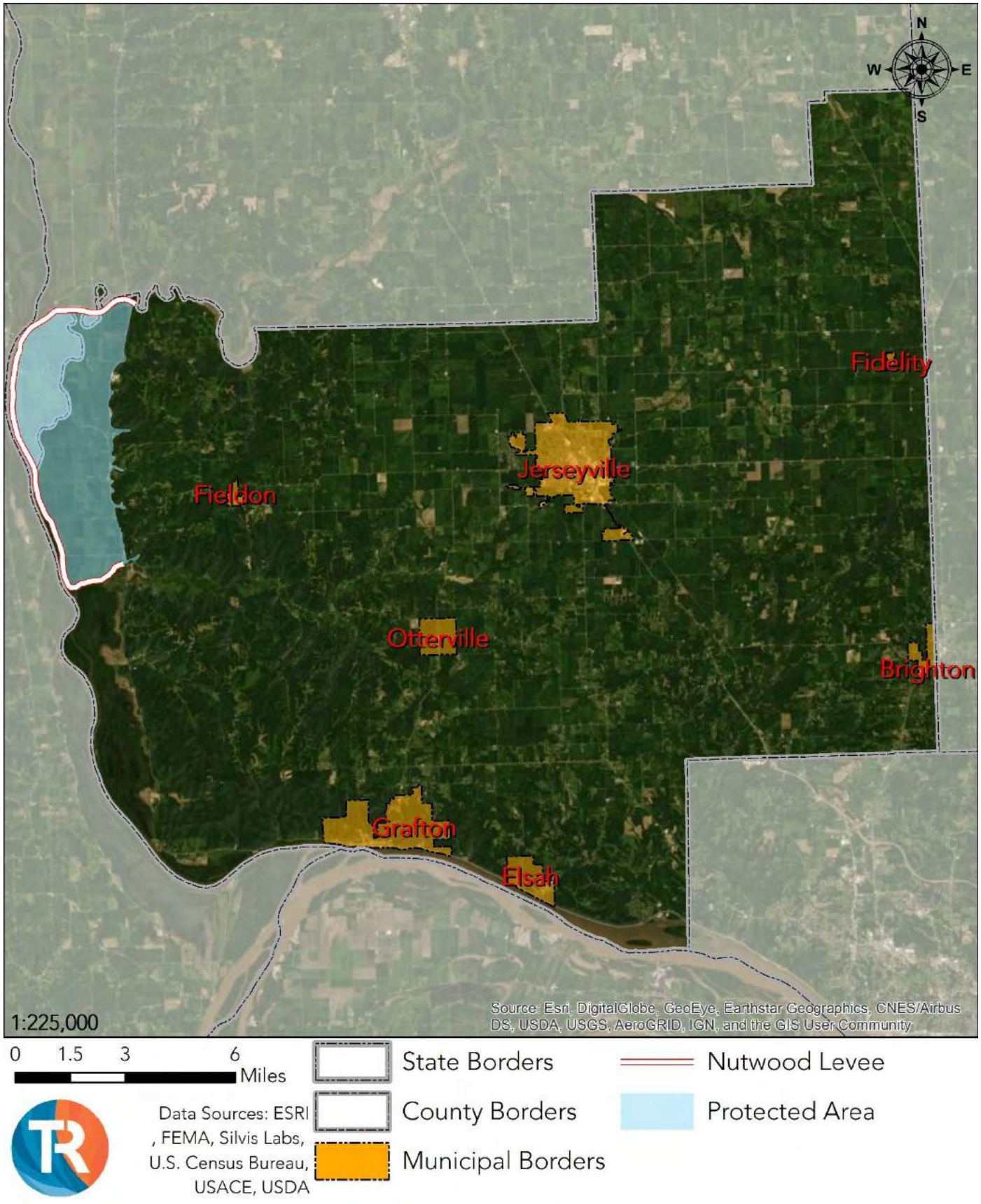
Map 3.2 – Topography, Airport Reservoir Dam



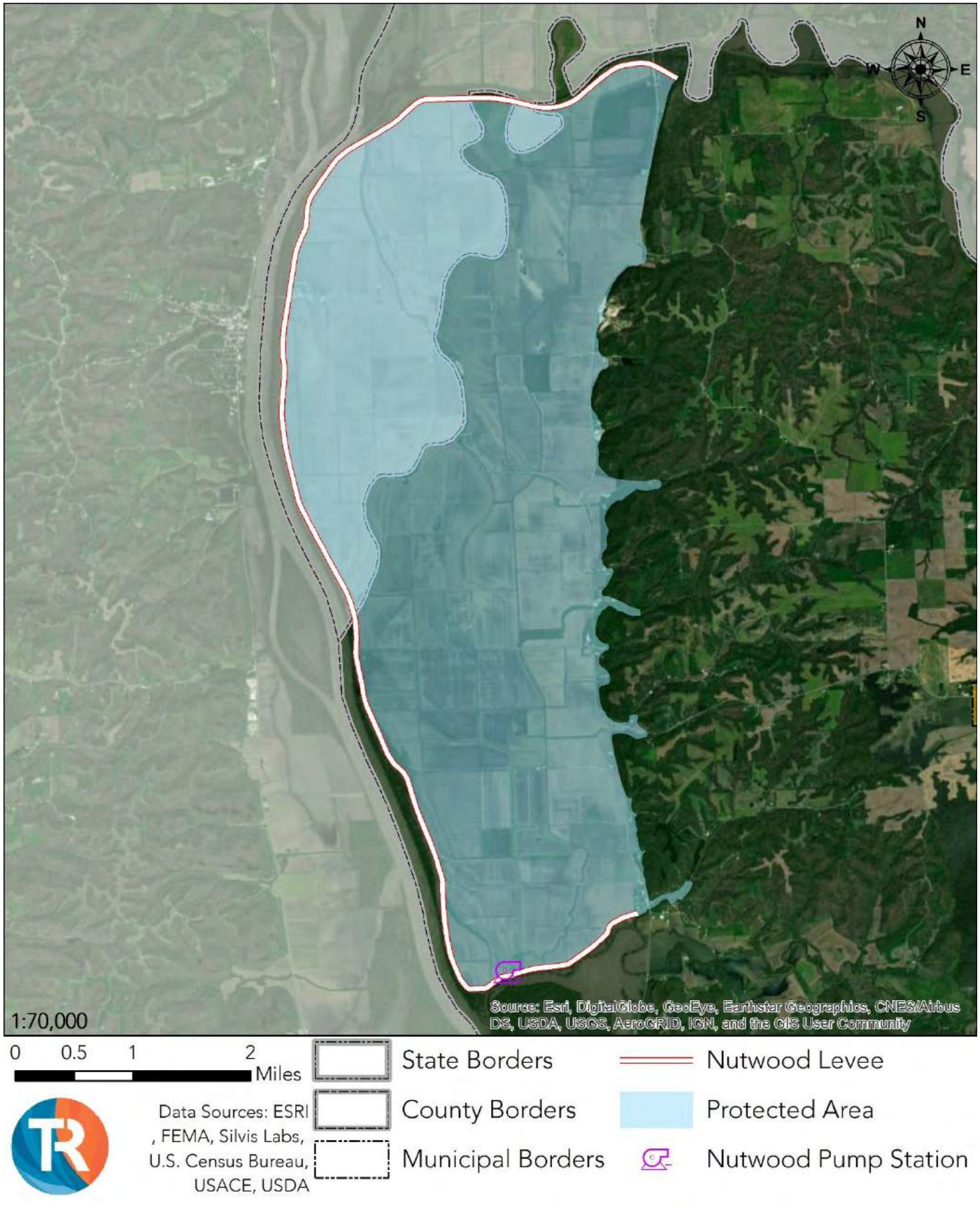
Map 3.3 – Aerial Imagery, Airport Reservoir Dam



Map 3.4 – Location, Nutwood Levee



Map 3.5 – Location (Zoomed), Nutwood Levee



Vulnerability of and Impact on Critical Facilities

Both the Rosedale Fire District and the Jerseyville Wells at Eagleton Park Road are vulnerable to a failure by the Nutwood Levee.

Vulnerability of and Impact on Population

Populations within a dam or levee failure inundation area are at extreme risk. Depending on the speed of the water's arrival, a community's population may not have time to evacuate. Additionally, evacuation routes can be blocked by the dam waters. If flood waters arrive quickly, many people can die. Depending on the elevation of the water, a community's population may not have any available shelter to avoid the waters.

The Nutwood Levee threatens 70 residents of unincorporated Jersey County in 45 housing units. None of the participating municipalities or the CUSD 100 are vulnerable to a failure from the Nutwood Levee.

Vulnerability of and Impact on Systems

A failure of the Nutwood Levee would have a significant impact on the agricultural industry that operates within the land of the levee's inundation area. Failure could leave flood water conditions that take a long enough time to drain that an entire season's crops are destroyed.

3.4 – Droughts

Drought is an abnormally dry period lasting months or years when an area has a deficiency of water and precipitation in its surface and or underground water supply. The hydrological imbalance can be grouped into the following non-exclusive categories.

Agricultural: When the amount of moisture in the soil no longer meets the needs of previously grown crops.
Hydrological: When surface and subsurface water levels are significantly below their normal levels.
Meteorological: When there is a significant departure from the normal levels of precipitation.
Socio-Economic: When the water deficiency begins to significantly affect the population.

Droughts are regularly monitored by multiple federal agencies using a number of different indices. Typically, they are seasonal occurring in the late spring through early fall. Drought monitoring focuses on precipitation and temperature. When precipitation is less than normal, and natural water supplied begins to decease, a drought is occurring.

When below average, little or no rain falls soil can dry out and plants can die. If unusually dry weather persists and water supply problems develop the time period is defined as a drought. Human activity such as over farming, excessive irrigation, deforestation, and poor erosion controls can exacerbate a drought's effects. It can take weeks or months before the effects of below average precipitation on bodies of water are observed. Depending on the region droughts can happen quicker, noticed sooner, or have their effects naturally mitigated. The more humid and wet an area is, the quicker the effects will be realized. A naturally dry region, which typically relies more on subsurface water will take more time to actualize its effects.

Periods of drought can have significant environment, agricultural, health, economic, and social consequences. The effects vary depending on vulnerability and regional characteristics. Droughts can also reduce water quality through a decreased ability for natural rivers and streams to dilute pollutants and increase contamination. See the list below for the most common effects of droughts.

- Diminished crop growth or yield
- Erosion
- Dust storms
- Ecosystem and environmental damage
- Increased probability of wildfires
- Reduced electricity production due to reduced flow through hydroelectric dams
- Shortages of water for industrial production

Location & Extent

Drought is part of normal climate fluctuations in the United States. According to Jersey County's drought history, most drought events affect the state for roughly 3 to 5 weeks in length. It should be noted, though, that climatic variability and the uncertainty of the future could contain dry conditions for

up to years at a time. Droughts occur over large geographic areas. It is extremely likely that if any part of the planning area is experiencing a drought that the whole planning area will also be experiencing drought conditions.

Historically, droughts have been measured by a number of indices, most notably the Palmer Drought Severity Index. However, NOAA currently uses an updated drought severity classification, the Drought Monitor Scale, shown below. Given the complex nature and unpredictability of droughts, the planning area can be affected by a drought ranging from D0 to D4 on the Drought Monitor Scale.

Table 3.4 – Drought Monitor Scale

	LEVEL	DESCRIPTION
 Abnormally Dry	D0	• Short-term dryness slowing planting, growth of crops • Some lingering water deficits • Pastures or crops not fully recovered
 Moderate Drought	D1	• Some damage to crops, pastures • Some water shortages developing • Voluntary water-use restrictions requested
 Severe Drought	D2	• Crop or pasture loss likely • Water shortages common • Water restrictions imposed
 Extreme Drought	D3	• Major crop/pasture losses • Widespread water shortages or restrictions
 Exceptional Drought	D4	• Exceptional and widespread crop/pasture losses • Shortages of water creating water emergencies

Drought warning is based on a complex interaction of many different variables, water uses, and consumer needs. Drought warning is directly related to the ability to predict conditions that produce drought, primarily precipitation and temperature. A drought is not official or declared until dry conditions have been met for a period of time, meaning that it is inherent that the planning area would be experiencing drought conditions prior to a drought being officially declared.

History & Probability

Comprehensive data on droughts, drought impacts, and drought forecasting is extremely limited and often inaccurate. Due to the complexity of drought monitoring, the complexity of agricultural and livestock market pricing, and the large areas droughts impact, the USDA and USGS have difficulty quantifying and standardizing drought data. Each of these contributing drought factors has confounding variables within them.

Since 2000, the NADM has recorded 331 weeks of drought in the planning area with an average index of 1.43. Please see the table on the following page for a breakdown of the severity of the recorded droughts. For a complete list of recorded drought events, please reference Appendix C.

Table 3.5 – Drought History

Drought Severity	Number of Weeks
D0	156
D1	126
D2	43
D3	6
D4	0
Total =	331

**The data are from the NADM.*

Given the historic precedent set by past droughts, it is highly likely that the planning area will experience season-long droughts in the future. As a rough estimate, the planning area should expect to see on average 16.5 weeks of drought per year or roughly 31.8% of each year.

Vulnerability of and Impact on Facilities

Droughts do not have an impact on structures.

Vulnerability of and Impact on Critical Facilities

Droughts do not have an impact on structures.

Vulnerability of and Impact on Population

Droughts do not have a direct impact that threatens injury or death to the planning area's population.

Vulnerability of and Impact on Systems

Drought's primary impact is on agriculture and livestock and thus can have significant effects on a jurisdiction's agricultural and tourist economies. If the precipitation level is below normal, farmers and

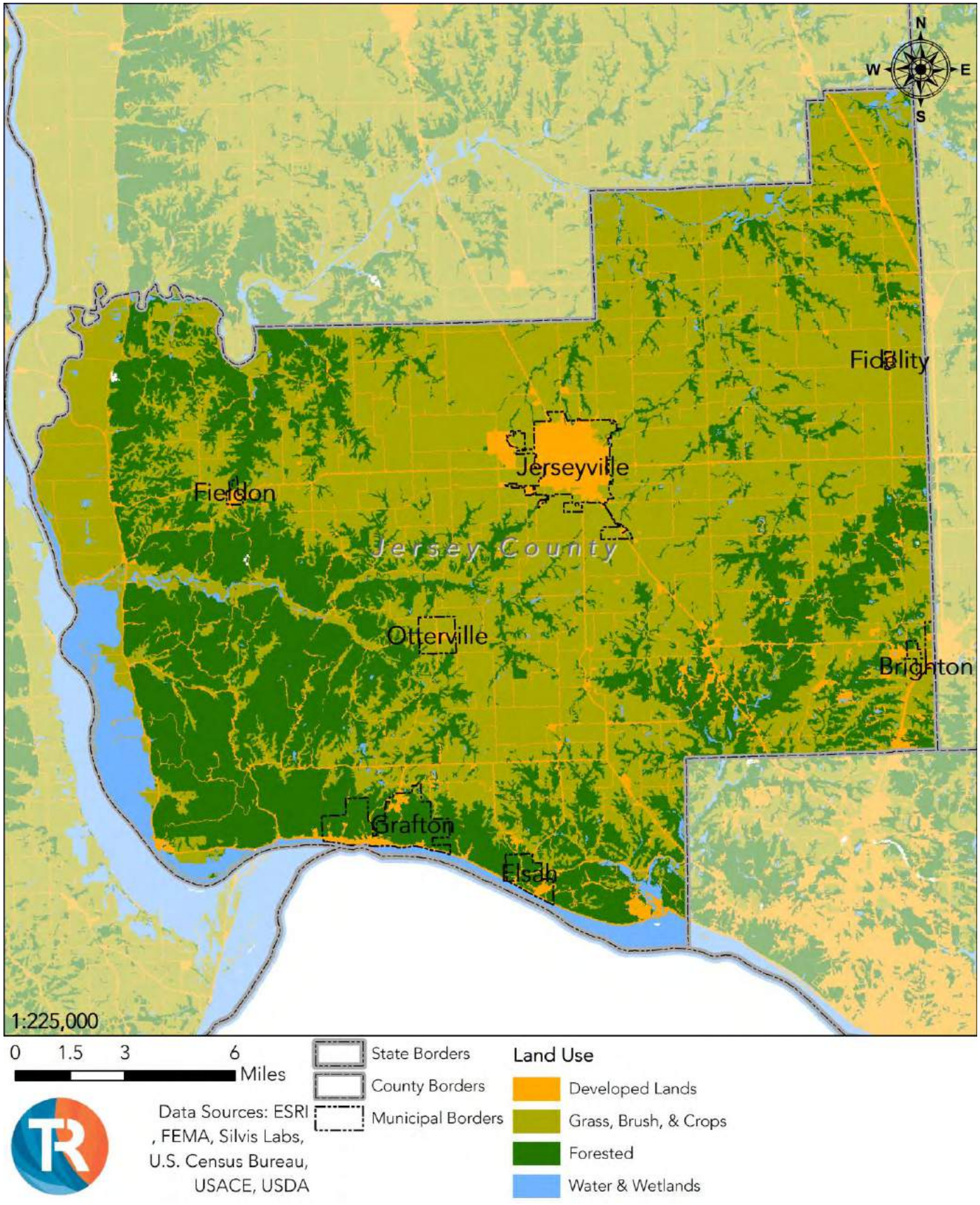
ranchers will struggle to grow their crops and feed their livestock. If rivers, streams, and lakes dry up, tourists will be less likely to enjoy a jurisdiction's amenity resources.

The planning area hosts 519 farms across 189,749 acres of land. The USDA estimates that the total value of products from these farms is $82,076,000 per year. All of them are considered vulnerable to droughts. An estimate of the land engaged in agricultural activities can be found in the map at the end of this section.

Key Considerations

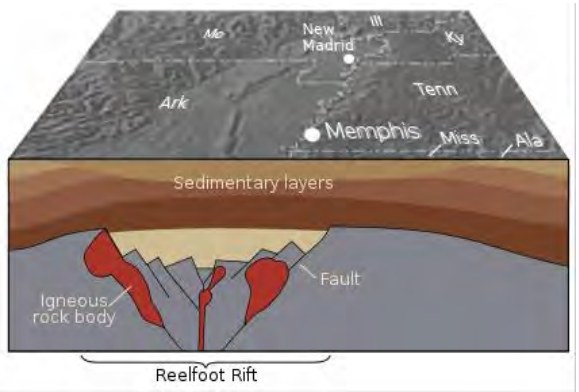
The entire planning area is at risk to droughts. Even though the direct impact of a drought will likely affect the county at large and tertiarily the municipalities, a drought's effects would quickly spread to the interdependent economies. Additionally, a greater population would place various communities at a higher vulnerability to droughts, the usage of water by the population pales in comparison to the amount used by agricultural activities and is largely negated.

Map 3.6 – Land Use, Jersey County



3.5 – Earthquakes

An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. In the most general sense, the word earthquake is used to describe any event that generates seismic waves. Earthquakes are typically caused by the rupturing of geological faults. Occasionally, they are also caused by other events such as volcanic activity, landslides, mine blasts, and nuclear tests. An earthquake's point of initial rupture is called its focus or hypocenter. The epicenter is the point at ground level directly above the hypocenter.



At the Earth's surface, earthquakes manifest themselves by shaking and sometimes displacement of the ground. When the epicenter of a large earthquake is located offshore, the seabed may be displaced sufficiently to cause a tsunami. Earthquakes can also trigger landslides, and occasionally volcanic activity. The shallower an earthquake, the more damage to structures it causes, all else being equal.

Location & Extent

Portions of Illinois are at risk from the New Madrid Seismic Zone. Earthquakes strike suddenly and without warning, occur at any time of the year, and at any time of the day. A damaging earthquake occurs without definitive signals and massive earthquakes are accompanied by aftershocks. The duration of shaking can last anywhere from a second to a period of minutes.

There are numerous characteristics measured when observing earthquake activity, however: its force, depth, peak ground acceleration, and the distance to the epicenter are the most influential factors in determining damage. Two scales are used when referring to earthquake activity; estimating the total force of the earthquake, the Richter Scale, and the observed damage from an earthquake, the Modified Mercalli Intensity Scale. Please see the figures on the following pages for both scales and their estimated matching equivalent index.

Earthquakes of magnitude 5.5 or greater are considered potentially threatening to Jersey County and its jurisdictions, as this is the point at which structures can become damaged. Any earthquake felt at this magnitude or greater would cause for cessation of operations until sight inspections can take place.

Table 3.6 – Modified Mercalli Scale Vs. Richter Scale

Category	Impacts	Richter Scale (approximate)	Minimum %g	Maximum %g
I. Instrumental	Not felt	1 – 2	0.00%	0.17%
II. Just perceptible	Felt by only a few people, especially on upper floors of tall buildings	3	0.17%	1.40%
III. Slight	Felt by people lying down, seated on a hard surface, or in the upper stories of tall buildings	3.5	0.17%	1.40%
IV. Perceptible	Felt indoors by many, by few outside; dishes and windows rattle	4	1.40%	3.90%
V. Rather Strong	Generally felt by everyone; sleeping people may be awakened	4.5	3.90%	9.20%
VI. Strong	Trees sway, chandeliers swing, bells rings, some damage from falling objects	5	9.20%	18.00%
VII. Very Strong	General alarm; walls and plaster crack	5.5	18.00%	34.00%
VIII. Destructive	Felt in moving vehicles; chimneys collapse; poorly constructed buildings seriously damaged	6	34.00%	65.00%
IX. Ruinous	Some houses collapse; pipes break	6.5	65.00%	124.00%
X. Disastrous	Obvious ground cracks; railroad tracks bent; some landslides on steep hillsides	7	124.00%	-
XI. Very Disastrous	Few buildings survive; bridges damaged or destroyed; all services interrupted (electrical, water, sewage, railroad); severe landslides	7.5	124.00%	-
XII. Catastrophic	Total destruction; objects thrown into the air; river courses and topography altered	8	124.00%	-

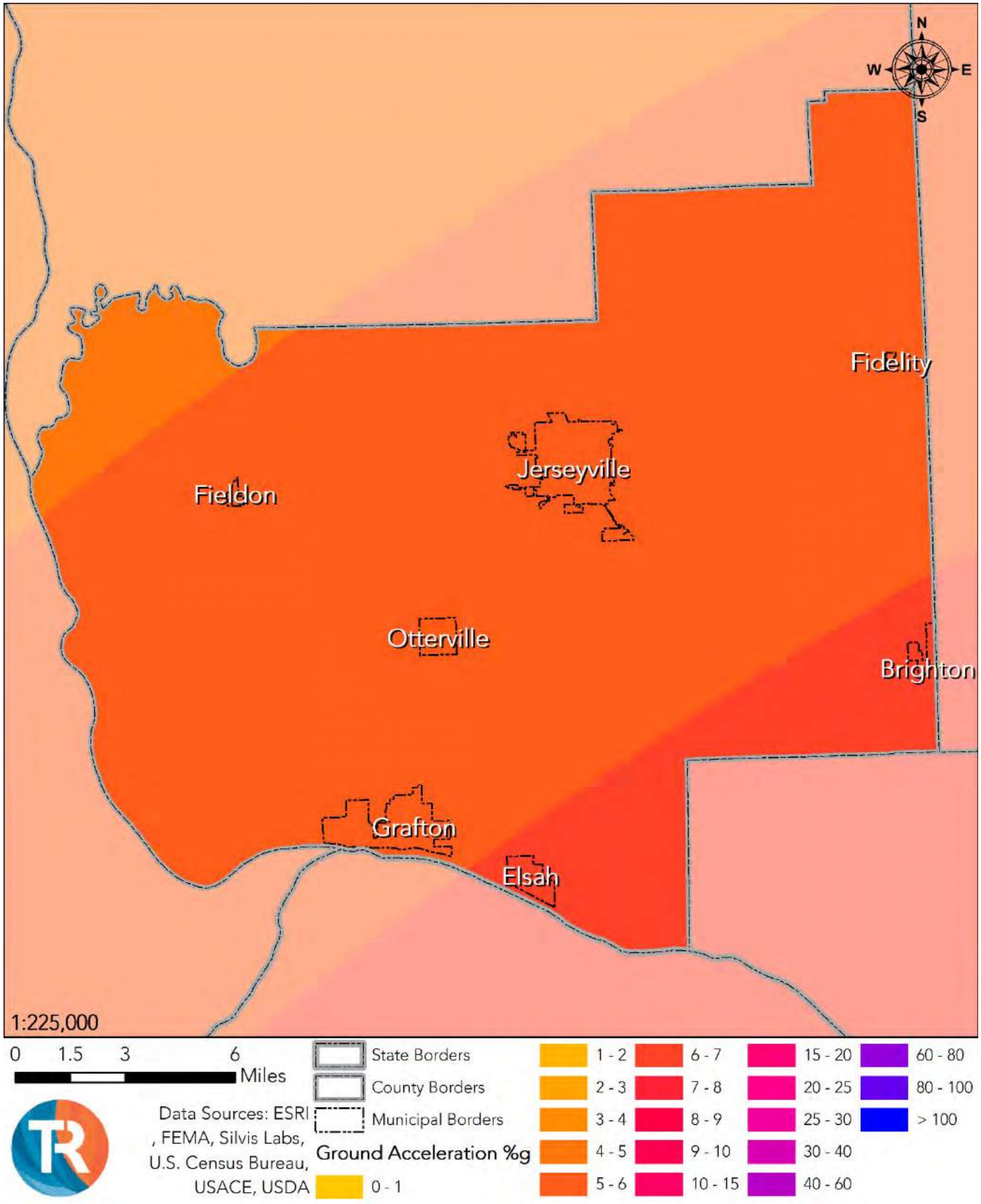
History & Probability

The NMSZ differs from traditional fault lines in many ways. There has not been any notable and intense seismic activity from the NMSZ in 200 years. The lack of an extensive historical record and other unique characteristics make it difficult to predict the frequency of events. Please see Map 42 on page 95 for historical NMSZ earthquakes.

The largest earthquakes felt in the United States were along the New Madrid Fault. A three-month long series of quakes from 1811 to 1812 included four major earthquakes. These earthquakes were felt over the entire Eastern United States, with Missouri, Tennessee, Kentucky, Indiana, Illinois, Ohio, Alabama, Arkansas, and Mississippi experiencing the strongest ground shaking.

- **December 16, 1811**, 0815 UTC (2:15 a.m.); (M ~7.2 – 8.1) Epicenter in northeast Arkansas. It caused only slight damage to man-made structures, mainly because of the sparse population in the epicentral area. The future location of Memphis, Tennessee experienced level IX shaking on the Mercalli Intensity Scale. A seismic seiche propagated upriver, and Little Prairie (a village that was on the site of the former Fort San Fernando, near the site of present-day Caruthersville, Missouri) was heavily damaged by soil liquefaction.

Map 3.7 – Peak Ground Acceleration, Jersey County



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- **December 16, 1811**, 1415 UTC (8:15 a.m.); (M ~7.2–8.1) Epicenter in northeast Arkansas. This shock followed the first earthquake by six hours and was similar in intensity.
- **January 23, 1812**, 1500 UTC (9 a.m.); (M ~7.0–7.8) Epicenter in the Missouri Bootheel. The meizoseismal area was characterized by general ground warping, ejections, fissuring, severe landslides, and caving of stream banks.
- **February 7, 1812**, 0945 UTC (4:45 a.m.); (M ~7.4–8.0) Epicenter near New Madrid, Missouri. New Madrid was destroyed. At St. Louis, Missouri, many houses were severely damaged, and their chimneys were toppled. Uplift along a segment of this reverse fault created temporary waterfalls on the Mississippi at Kentucky Bend, created waves that propagated upstream, and caused the formation of Reelfoot Lake by obstructing streams in what is now Lake County, Tennessee.

A recent USGS study on the NMSZ, "Earthquake Hazard in the New Madrid Seismic Zone Remains a Concern" states:

> *"There are historical accounts of major earthquakes in the New Madrid region during 1811–12. The geologic record of pre-1811 earthquakes also reveals that the New Madrid seismic zone has repeatedly produced sequences of major earthquakes, including several of magnitude 7 to 8, over the past 4,500 years. These prehistoric earthquakes caused severe and widespread ground failures in the New Madrid region, much like those caused by the 1811–12 earthquake sequence."*

Included in the USGS 2006 study on the NMSZ was a scientific prediction on the future probability of an earthquake event.

In summary, the study predicts the NMSZ will produce the following:

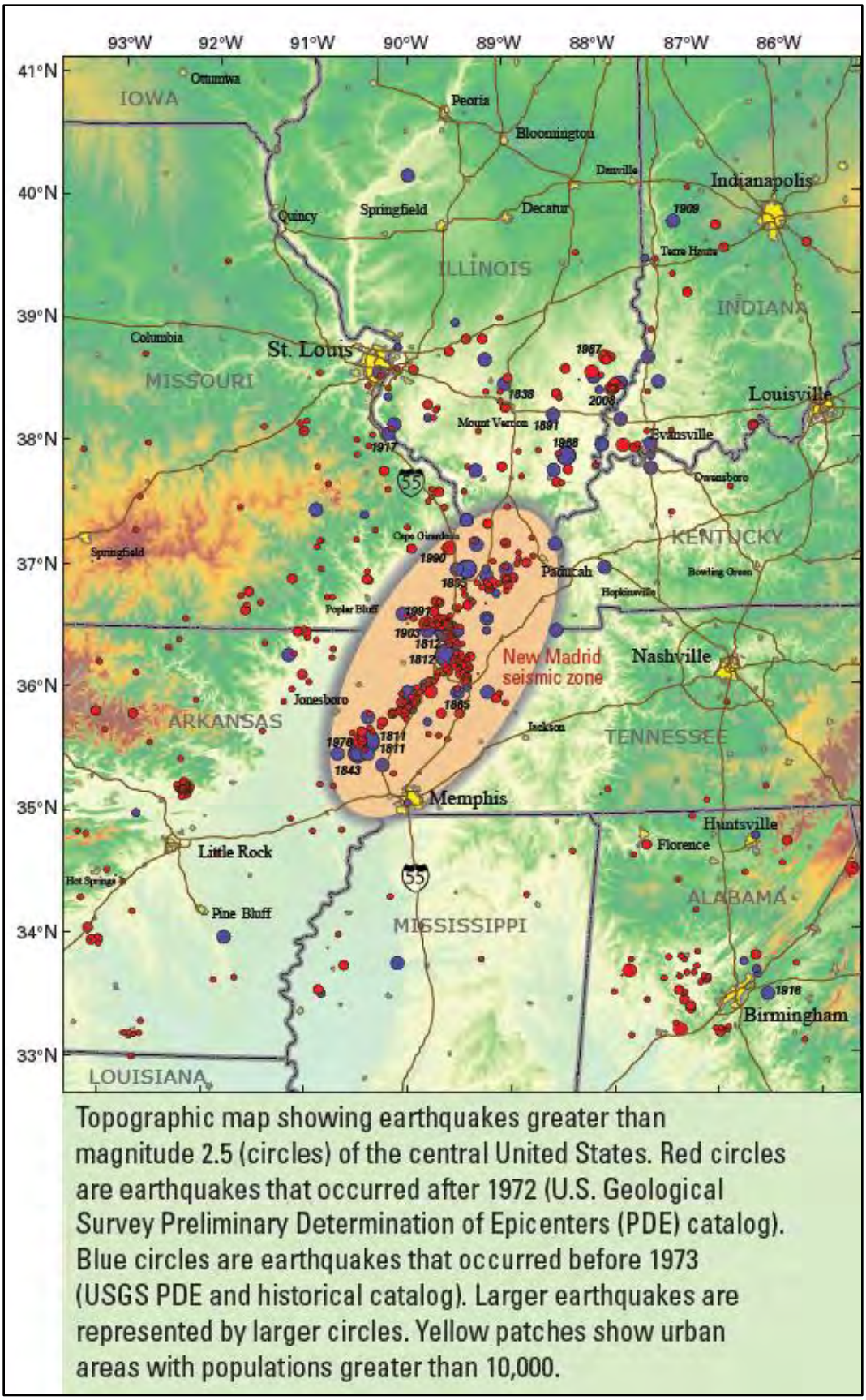
- A Magnitude 6 earthquake at a probability of 25% - 50% in the next 50 years.
- An earthquake sequence similar to the 1811-12 earthquakes at a probability of 7% - 10% in the next 50 years.

Vulnerability of and Impact on Facilities

Jersey County and its jurisdictions' structural vulnerability to earthquakes vary based on the construction quality, construction material, soil and foundation, and earthquake resilience of each structure. Therefore, the planning area's most vulnerable structures are those which are older, have not been subject to new and improved building codes, are built over unstable soil, and those susceptible to secondary hazards. Since most of the planning area's structures were built decades ago, it's safe to assume their seismic resiliency is extremely low. Historically, the planning area has not sustained any property damage from earthquakes.

All $108,414,333 of the CUSD 100's structures are located in a 5-6% peak ground acceleration zones. Additionally, the entire planning area is within a 4-5%, 5-6%, or a 6-7% peak ground acceleration zones. All three of these zones correspond to a Mercalli Intensity Index of V: Rather Strong: Generally felt by everyone; sleeping people may be awakened. Due to the construction age deficiency mentioned, it is

Map 3.8 – Earthquakes, NMSZ



Topographic map showing earthquakes greater than magnitude 2.5 (circles) of the central United States. Red circles are earthquakes that occurred after 1972 (U.S. Geological Survey Preliminary Determination of Epicenters (PDE) catalog). Blue circles are earthquakes that occurred before 1973 (USGS PDE and historical catalog). Larger earthquakes are represented by larger circles. Yellow patches show urban areas with populations greater than 10,000.

believed that the portion of the planning area susceptible to an estimated 6-7% peak ground acceleration is at the most reasonable risk from a NMSZ event. A total of $231,115,000 of the planning area's municipal inventory lies within the 6-7% peak ground acceleration zones. The tables below detail the municipal structures located in the 6-7% peak ground acceleration zones.

Table 3.7 – Vulnerable Municipal Structures by Count, Earthquakes

Municipality	Ag	Com	Gov	Ind	Res	Res-M	Total
Jersey County	2	16	0	8	1,458	3	1,487
Brighton	0	3	0	1	126	0	130
Elsah	1	4	2	2	124	11	144
Fidelity	0	0	0	0	0	0	0
Fieldon	0	0	0	0	0	0	0
Grafton	0	0	0	0	0	0	0
Jerseyville	0	0	0	0	0	0	0
Otterville	0	0	0	0	0	0	0
Total =	3	23	2	11	1,708	14	1,761

**Multi-Unit Residential is defined as a structure with 5 or more residential units*
***The data are from the U.S. Census Bureau and FEMA*

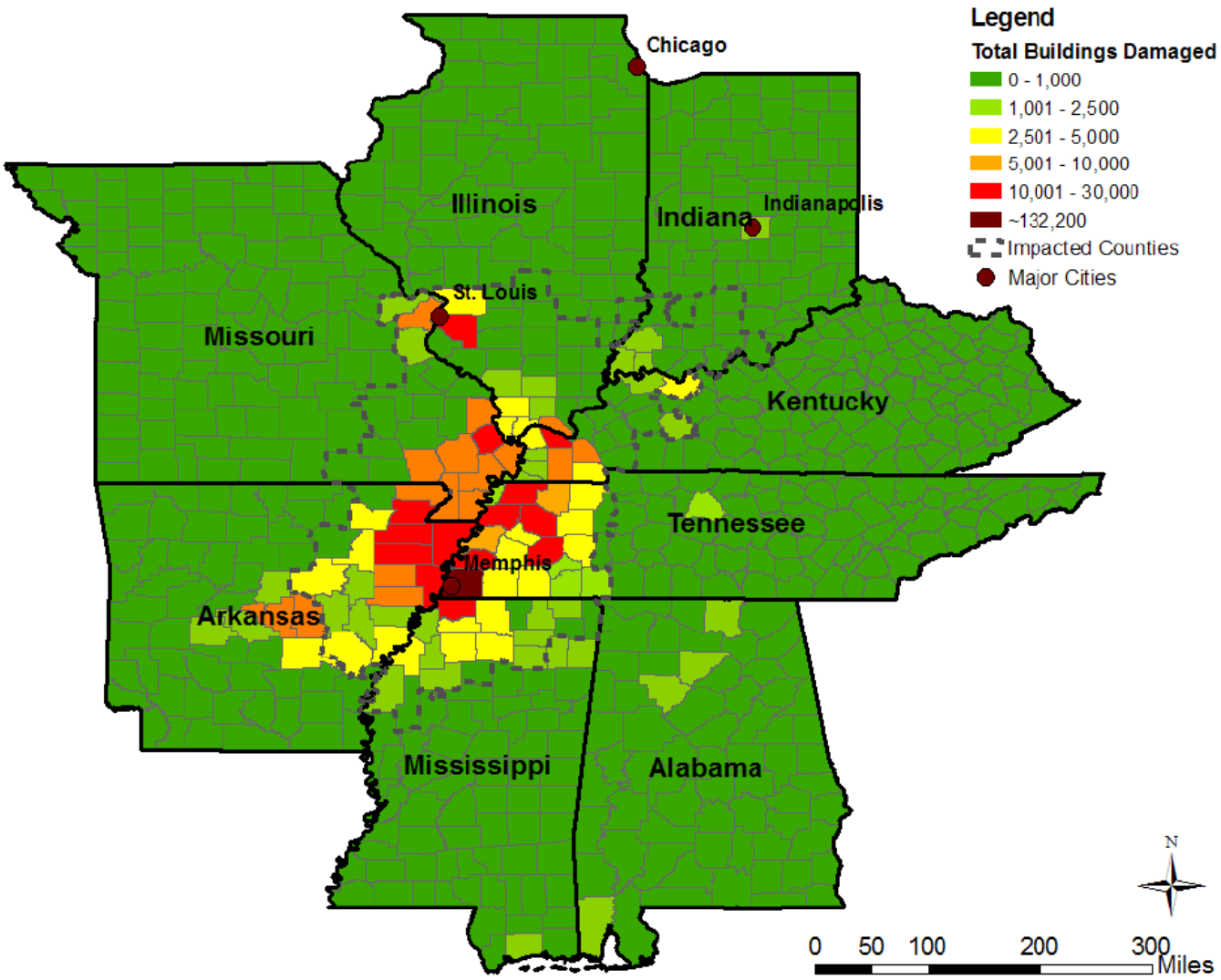
Table 3.8 – Vulnerable Municipal Structures by Value, Earthquakes

Municipality	Ag	Com	Gov	Ind	Res	Res-M	Total
Jersey County	$278,000	$6,487,000	$0	$5,644,000	$164,751,000	$1,425,000	$178,585,000
Brighton	$0	$1,484,000	$0	$218,000	$14,017,000	$0	$15,719,000
Elsah	$133,000	$1,685,000	$871,000	$1,161,000	$13,927,000	$19,034,000	$36,811,000
Fidelity	$0	$0	$0	$0	$0	$0	$0
Fieldon	$0	$0	$0	$0	$0	$0	$0
Grafton	$0	$0	$0	$0	$0	$0	$0
Jerseyville	$0	$0	$0	$0	$0	$0	$0
Otterville	$0	$0	$0	$0	$0	$0	$0
Total =	$411,000	$9,656,000	$871,000	$7,023,000	$192,695,000	$20,459,000	$231,115,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units*
***The data are from the U.S. Census Bureau and FEMA*

The Mid America Earthquake Center ran a comprehensive region wide NMSZ simulation in 2008. They estimate Jersey County will have less than 1,000 buildings damaged in the event of a catastrophic NMSZ event. Although the range of this category is from 0 to 1,000, the previous analysis is roughly congruent with theirs. The results of the simulation are shown in the map below.

Map 3.9 – NMSZ Simulation, Buildings Damaged



Vulnerability of and Impact on Critical Facilities

Of the 67 identified critical facilities in the planning area, 4 are within the 6-7% peak ground acceleration zones.

Table 3.9 – Vulnerable Critical Facilities, Earthquakes

Facility	Type	Location
Elsah Police Department	Law Enforcement	Elsah
Elsah Village Hall & Civic Center	Local Government	Elsah
Piasa Village Hall	Local Government	County
Principia College	Education	Elsah

Vulnerability of and Impact on Population

Jersey County and the vulnerability of its jurisdictions' population to earthquakes is largely dependent on its vulnerability to facilities. An earthquake will shake objects off a wall or shake off parts of a structure which has the potential to hurt the population. Additionally, there is the risk of a facility partially or fully collapsing which would injure or kill the inhabitants. Any number of residents are vulnerable in relation to the structures in which they live, work, and visit. An estimate of the populations vulnerable to an earthquake are those residing in the 6-7% peak acceleration areas and are detailed in the table below.

Historically, there are no recorded incidents of death or injury from earthquakes in the planning area.

Table 3.10 – Vulnerable Municipal Populations, Earthquakes

Municipality	Population	Housing Units
Jersey County	4,407	1,802
Brighton	308	126
Elsah	606	129
Fidelity	0	0
Fieldon	0	0
Grafton	0	0
Jerseyville	0	0
Otterville	0	0
Total =	5,321	2,057

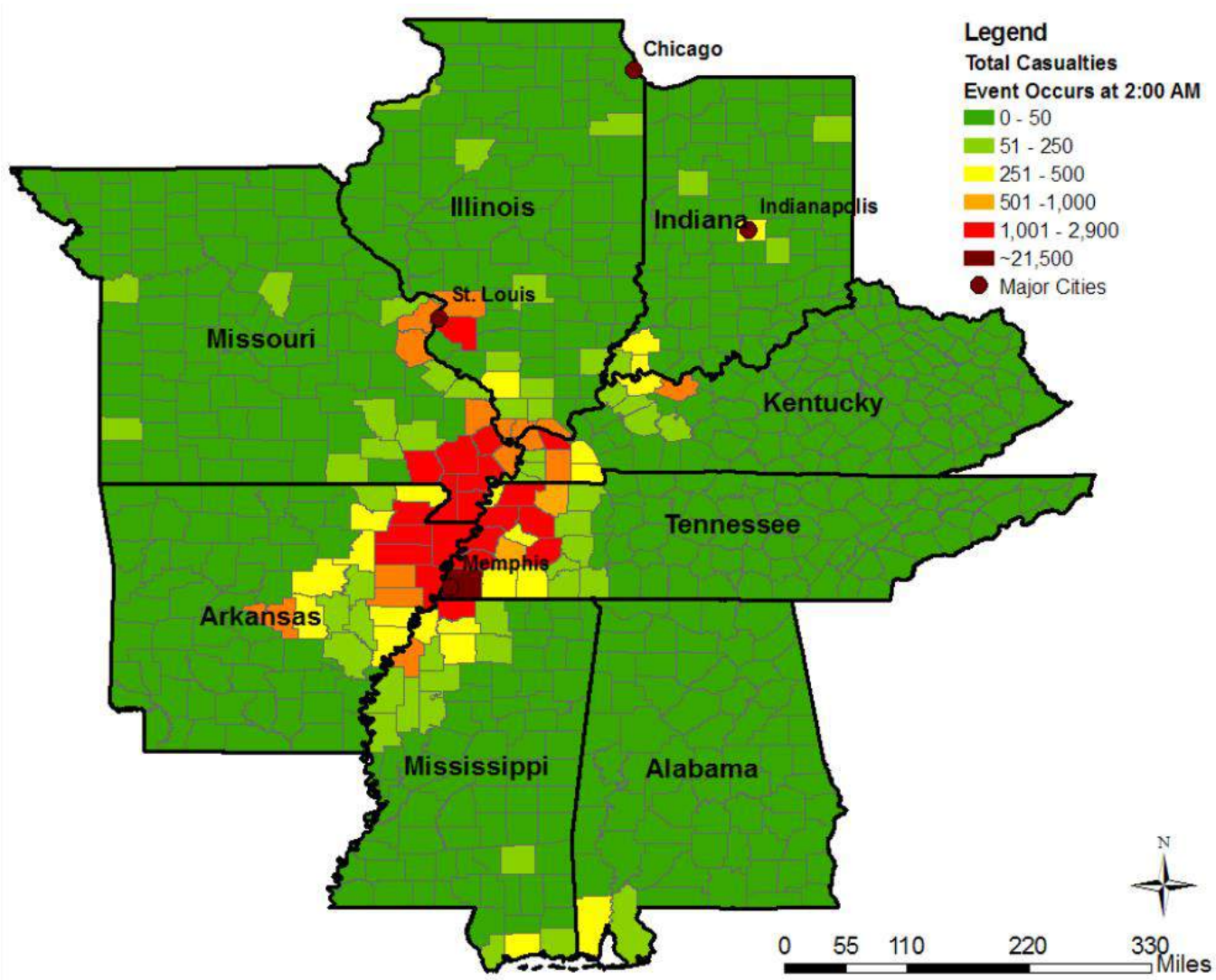
**Multi-Unit Residential is defined as a structure with 5 or more residential units*
***The data are from the U.S. Census Bureau and FEMA*

The Mid America Earthquake Center ran a comprehensive region wide NMSZ simulation in 2008. They estimate Jersey County will have less than 50 casualties in the event of a catastrophic NMSZ event. It is difficult to say how accurate this number is when compared to our previous analysis, especially given the age of building construction throughout the planning area. The results of the simulation are shown in the map on the following page.

Vulnerability of and Impact on Systems

In the event of a catastrophic NMSZ event, it is unlikely that Jersey County or any of this plan's participants will be as catastrophically affected when compared to areas more southerly. Bridges may be damaged and some roadways might become temporarily unusable, but for the most part, the planning area is far enough away from the epicenter to see any sort of systematic collapse.

Map 3.10 – NMSZ Simulation, Casualties



3.6 – Floods

Flooding is the most prevalent and costly disaster in the United States. Flooding occurs when water, due to dam failures, rain, or melting snows, exceeds the absorptive capacity of the soil and the flow capacity of rivers, streams or coastal areas. At this point, the water concentration hyper extends the capacity of the flood way and the water enters the floodplain. Floods are most common in seasons of rain and thunderstorms.

Intense rainfall, accompanying the large thunderstorms in the planning area, may result in water flowing rapidly from higher elevations, exceeding river flow capacity, collecting in agricultural areas, inadequate municipal stormwater drainage, or inadequate soil absorption capacity caused by urban and suburban development.

Location & Extent

Various types of floods can happen quickly, under an hour, in the form of a flash flood, or accumulate seasonally over a period of weeks as is the case in a riverine flood. Flooding can occur anytime throughout the year, but typically happens May through August. A variety of factors affect the severity of flash and riverine flooding. These include topography, weather characteristics, development, and geology. Intense flooding will create havoc in any jurisdiction affected. The predicative magnitude of flash and riverine floods varies greatly.

Flash flooding is unpredictable and can occur anywhere throughout the planning area. Jersey County, its municipalities, and CUSD 100 are generally equally likely to experience flash flooding in low-lying areas, areas of poor drainage, or suburban sprawl. The City of Grafton has identified itself as having box and primary culverts within its drainage system that are much too small in size to handle its typical flash flood event.

Road closures are common after flooding events. Flooding records show Highways 67, 111, 267, and Route 16 have been closed numerous times as are many rural, county roads. Jersey County reports that during most significant floods, Highway 100 becomes unsafe and unusable. Some reports details of full waterflow over these highways. Gravel roads have been washed out and there are records of vehicles being washed away by flood waters.

NOAA flash flood records indicate that rural parts of the planning area have seen up to 3 feet of accumulation, with countless incidents of 6 to 12 inches of water accumulating throughout the rural parts of the county.

Riverine flooding throughout the planning area varies, but is more limited to specific identified floodplains. Special Flood Hazard Areas (SFHA) were identified via effective NFHL maps produced by FEMA and are located later in this hazard profile. FEMA identified floodplains exist in numerous places throughout unincorporated Jersey County as well as Elsah, Grafton, and Jerseyville. None of the CUSD 100's structures are within identified floodplains.

Table 3.11 – Floodplain Classifications

Zone Class	Description
A	Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.
AE	Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.
AH	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually in the form of a pond) with an average depth ranging 1 to 3 feet. Some Zone AH have been designated in areas with high flood velocities such as alluvial fans and washes. Communities are encouraged to adopt more restrictive requirements for these areas.
AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding each year (usually in the form of sheet flow) with an average depth ranging from 1 to 3 feet. Some Zone AO have been designated in areas with high flood velocities such as alluvial fans and washes. Communities are encouraged to adopt more restrictive requirements for these areas.
B	Areas subject to inundation by 0.2-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.

History & Probability

Since 2000, NOAA has recorded 35 floods (16 flash and 19 riverine) in the planning area. Most flash floods have shown to accumulate under 6 inches, but riverine floods have been recorded 14.5 feet over flood stage.

These floods have caused no recorded no injuries and 2 fatalities in the planning area per NWS and NOAA records as well as local reports. They have however caused $14,000 from riverine and $46,000 from flash floods in property damage. These numbers are what has been recorded by the NWS and NOAA, but it is believed they are significantly underreported and not accurate. Local reports put the number for property and crop damage in the millions. For a complete list of NOAA recorded flash and riverine floods, please reference Appendix C.

Based on the data recorded by NOAA, the planning area should expect a notable flash flood at a rate of 0.80 per year or at a 80% chance per year. All FEMA identified SFHAs classified as primary zone A floodplains meaning they are subject to inundation at a rate of 1% per year, while those identified as zone B are subject to riverine flood at 0.2% per year. Please see the table above for the various floodplain classifications that exist throughout the planning area.

Vulnerability of and Impact on Facilities

Jersey County and the participating jurisdictions have school buildings, agricultural, commercial, industrial, and residential structures in floodplains. Flooding can cause minimal or complete damage to any of these types of facilities taking them offline for days to years depending on the resources available and remediation costs after an event.

The average riverine flood event in Jersey County costs $736, while the existing range of a single incident has been from $0 to $5,000. The average flash flood costs $2,875, while the existing range of a single incident has been from $0 to $45,000. The planning area has incurred a total of $14,000 in property damage from riverine floods and $46,000 in property damage from flash floods. As previously mentioned, these numbers recorded by the NWS and NOAA are inaccurate and the true number is likely in the millions.

The planning areas municipal and school district structures are valued at $1,648,405,333. Since flash flooding threatens the entire planning area, all structures are considered exposed and vulnerable. A GIS analysis of FEMA's identified SFHAs puts a total of $100,960,000 worth of the planning area's municipal structural inventory exposed to riverine flooding while the CUSD 100 is not vulnerable to riverine flooding.

Table 3.12 – Vulnerable Municipal Structures by Count, Riverine Floods

Municipality	Ag	Com	Gov	Ind	Res	Res-M	Total
Jersey County	3	6	0	5	343	2	359
Brighton	0	0	0	0	0	0	0
Elsah	1	2	2	2	54	4	65
Fidelity	0	0	0	0	0	0	0
Fieldon	0	0	0	0	0	0	0
Grafton	1	22	1	3	105	1	133
Jerseyville	0	1	0	0	20	0	21
Otterville	0	0	0	0	0	0	0
Total =	5	31	3	10	522	7	578

**Multi-Unit Residential is defined as a structure with 5 or more residential units*
***The data are from the U.S. Census Bureau and FEMA*

Table 3.13 – Vulnerable Municipal Structures by Value, Riverine Floods

Municipality	Ag	Com	Gov	Ind	Res	Res-M	Total
Jersey County	$2,720,000	$5,306,000	$0	$2,791,000	$39,732,000	$2,832,000	$53,381,000
Brighton	$0	$0	$0	$0	$0	$0	$0
Elsah	$133,000	$1,368,000	$871,000	$1,161,000	$6,046,000	$8,912,000	$18,491,000
Fidelity	$0	$0	$0	$0	$0	$0	$0
Fieldon	$0	$0	$0	$0	$0	$0	$0
Grafton	$158,000	$10,939,000	$1,004,000	$620,000	$12,052,000	$1,773,000	$26,546,000
Jerseyville	$0	$222,000	$0	$0	$2,320,000	$0	$2,542,000
Otterville	$0	$0	$0	$0	$0	$0	$0
Total =	$3,011,000	$17,835,000	$1,875,000	$4,572,000	$60,150,000	$13,517,000	$100,960,000

**Multi-Unit Residential is defined as a structure with 5 or more residential units*
***The data are from the U.S. Census Bureau and FEMA*

Vulnerability of and Impact on Critical Facilities

Since flash floods have the potential to affect the entire planning area, all of this plan's identified critical facilities are equally vulnerable to flash flooding. Of the planning area's 67 critical facilities, 10 are located within FEMA identified SFHAs. Please see the following table for a list of these facilities.

Table 3.14 – Vulnerable Critical Facilities, Riverine Floods

Facility	Type	Location
Brussels Ferry	Public Works/Transportation	County
Department of Corrections Heliport	Airport/Heliport	County
Elsah Police Department	Law Enforcement	Elsah
Elsah Village Hall & Civic Center	Local Government	Elsah
Grafton City Hall	Local Government	Grafton
Grafton Police Department	Law Enforcement	Grafton
Illinois Department of Corrections	Law Enforcement	County
Jerseyville Wells (3) - Eagleton Park Road	Water Utility	County
Rosedale Fire District	Fire Prevention/EMS	County
Substation - MJM Rosedale Sub-Station	Electric Utility	County

Vulnerability of and Impact on Population

If evacuation is not heeded, or flood waters rise quickly enough, Jersey County and it participating jurisdictions' population can drown or become trapped on rooftops or points of high elevations. Depending on the conditions, this will expose them to elements and deprive them of basic needs and services.

As described previously, water that is long lasting and slow to drain will encourage the growth of mold and other bio-hazardous material, rendering a facility unusable until remediation is finished. Extra care, assessment, and sanitization are required before students and staff can re-inhabit a school or university facility, or they may face serious health concerns. Assisted care facilities housing vulnerable populations can take longer to evacuate. Additionally, the potential presence of mold after a flood requires extra care to be taken before their population can re-inhabit an assisted care facility where the inhabitants

are at greater risk of infection. The planning area has seen significant flooding and as a result has incurred 2 fatalities from floods.

The entire population of 21,773 and their 10,269 housing units are considered vulnerable and exposed to flash flooding while 1,020 residents in 560 housing units are currently identified as exposed and vulnerable to riverine floods. Similarly, all 2,400 of CUSD 100's students and their respective 340 staff and faculty are considered vulnerable and exposed to flash flooding. Of the CUSD 100 locations identified or suspected to be in a floodplain, none of them are fully within the geographic range that would reasonably put any of their students, staff, or faculty at risk.

Table 3.15 – Vulnerable Municipal Populations, Riverine Flooding

Municipality	Population	Housing Units
Jersey County	475	369
Brighton	0	0
Elsah	312	56
Fidelity	0	0
Fieldon	0	0
Grafton	173	114
Jerseyville	60	21
Otterville	0	0
Total =	1,020	560

**The data are from the U.S. Census Bureau and FEMA*

Vulnerability of and Impact on Systems

Flash flooding does not often cause widespread damage to property or infrastructure limited its ability to impact systems. Even in the case of a swept away roadway, the problem is often limited to secondary roadways. However, catastrophic riverine flooding can cause significant damage to a community's systems.

Extensive riverine flooding can significantly impact local governments' ability to provide basic goods and services to their communities either by losing essential facilities or by blocked infrastructure. This can take the form of lost law enforcement, fire prevention, medical, or water treatment facilities.

Significant damage to residential and or commercial structures can irrevocably damage a community and its economy creating refugees and economic hardship. If a chemical facility is significantly impacted it is possible the chemicals stored at the facilities can wash away with the flood waters and have detrimental effects on the local environment.

As previously discussed, both riverine and flash flooding has closed down numerous transportation routes within the planning area causing temporary limitations of the planning area's residents and business to go about their daily lives.

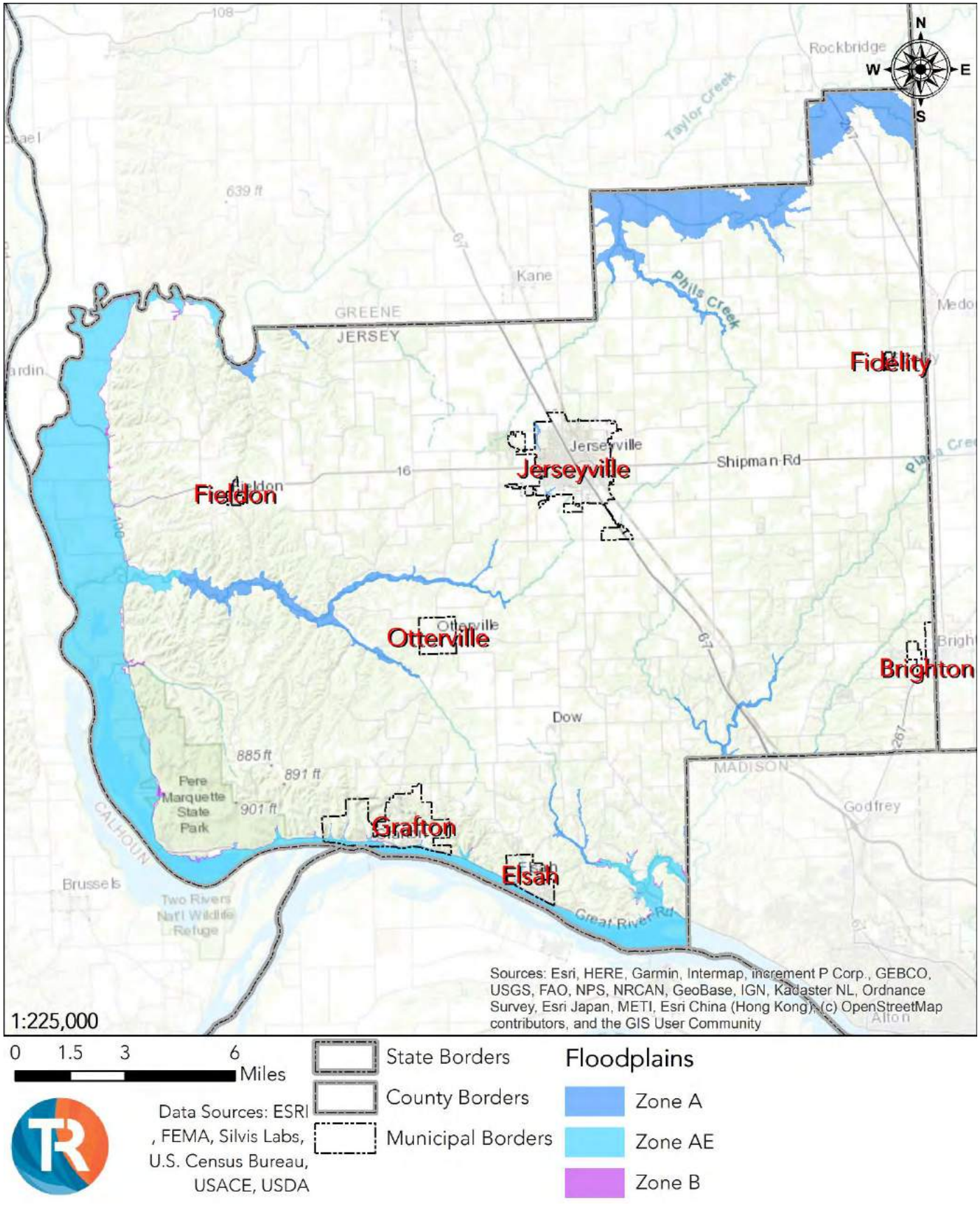
Key Considerations

Unincorporated Jersey County has 15 repetitive loss properties owned by private citizens and some USACE buildings. These 15 properties are responsible for 53 flood loss claims totaling $460,553 is insurance payments.

Table 3.16 – Repetitive Loss Properties

Unincorporated Community	# of Buildings	# of Losses	Total Payments
Hannah	2	7	$46,837
Piasa Haven	3	10	$93,397
Otter Creek	2	12	$65,521
Powerline	2	5	$7,609
Harbor Dell	1	4	$11,184
Route 100	1	3	$185,549
Beltrees	1	2	$15,106
Rosedale	2	6	$25,195
Shady Acres	1	4	$10,155
Total =	15	53	$460,553

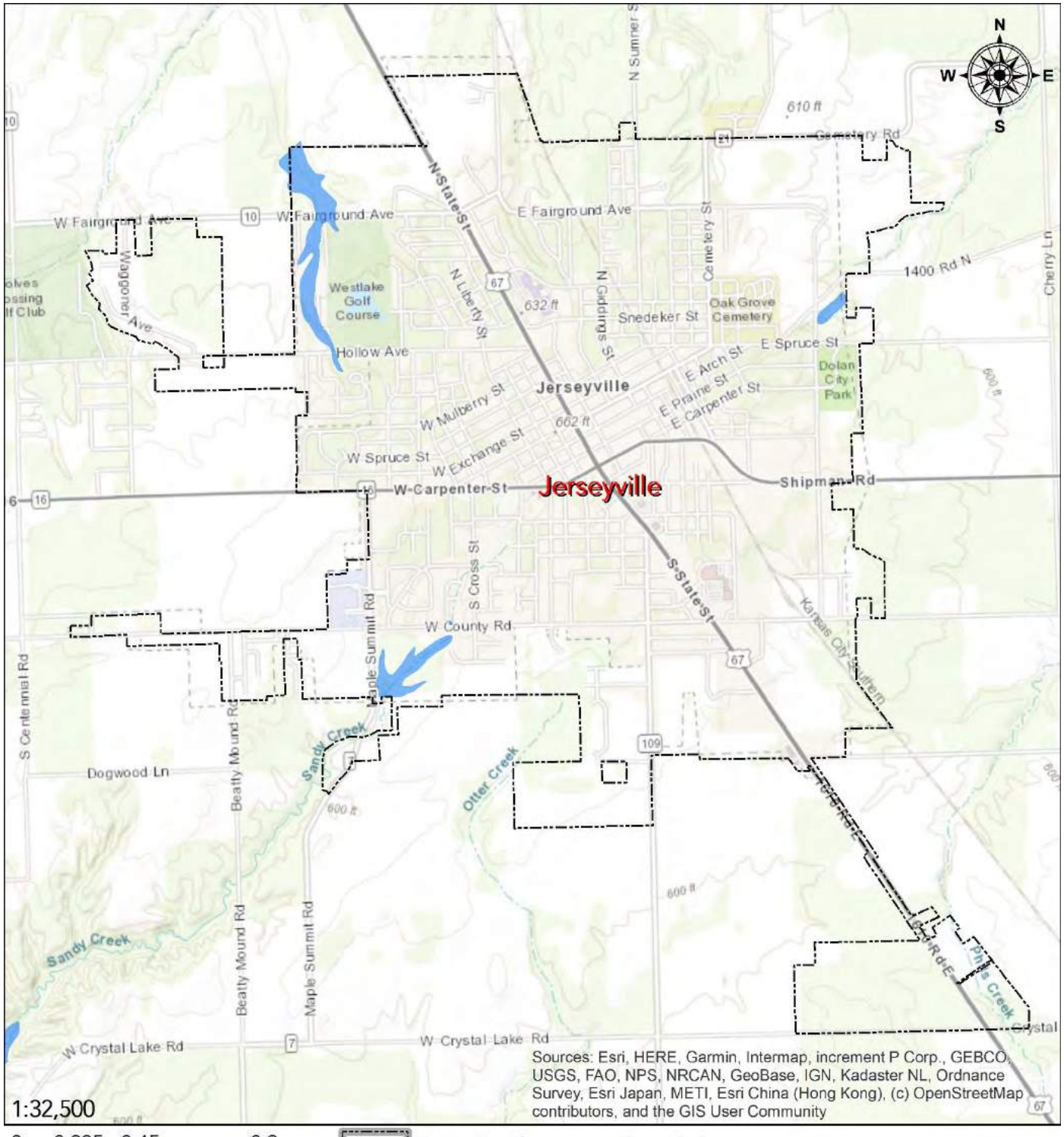
Map 3.11 – Floodplains, Jersey County



Map 3.12 – Floodplains, Elsah

Map 3.13 – Floodplains, Grafton

Map 3.14 – Floodplains, Jerseyville



3.7 – Severe Storms

Severe storms comprise the hazardous and damaging weather effects often found in violent storm fronts. They can occur together or separate, they are common and usually not hazardous, but on occasion they can pose a threat to life and property.

This plan defines Severe Storms as a combination of the following severe weather effects as defined by NOAA and the NWS.

Hail: Showery precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud.

High/Strong Wind: Sustained wind speeds of 40 miles per hour or greater lasting for 1 hour or longer, or winds of 58 miles per hour or greater for any duration. Often referred to as straight line winds to differentiate from rotating or tornado associated wind.

Lightning: A visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds, between the cloud and air, between a cloud and the ground or between the ground and a cloud.

Thunderstorm Winds: The same classification as high or strong winds, but accompanies a thunderstorm. It is also referred to as a straight-line wind to differentiate from rotating or tornado associated wind.

For consistency with the NWS and NOAA, high and strong winds are shown separate from thunderstorm winds when raw, collected data is displayed. However, for their impacts and probability, they are combined and referred to simply as "wind" events. Undoubtedly, numerous more lightning strikes have occurred in the planning area throughout recorded history. However, for the purposes of assessing the planning area's vulnerabilities and risk, only the strikes recorded by the NWS and NOAA are considered. The NWS and NOAA records consist of lightning strikes that have caused a significant impact, that is, they damaged property, infrastructure, or harmed people.

Location & Extent

Severe storms are an area-wide hazard as they can strike anywhere in the planning area. Storms, severe or not, are often predicted within a day or multiple days in advance.

The severity of a storm is not as easily predicted and when it is, the window of notification is up to a few hours to under an hour. When a storm is imminent, it is unknown whether or not hail, lightning, or damaging winds will occur until after an incident has been reported. Since severe storms typically affect an area the size of a region, the expected intensity is the same throughout the planning area. Thunderstorms, and the accompanying hail, lightning, and wind, typically last less than an hour. The portions of this timeframe where each storm classification would be considered "severe" should last less than 30 minutes.

Hail regularly falls in the planning area each year and has been recorded up to 2.5 inches in size. A complete hail index with size and typical damages can be found in the table below. Any incidents of hail can cause injury to the planning area's citizens, while anything above 1 inch could cause damage to structures. If windows are broken, some facilities will be rendered unusable until repaired.

Table 3.17 – NOAA/TORRO Hailstorm Intensity Scale

Class	Intensity Category	Diameter (Inches)	Size Comparison	Damage Impacts
H0	Hard Hail	0 – 0.33	Pea	No damage
H1	Potentially Damaging	0.33 – 0.60	Marble/Mothball	Slight damage to crops
H2	Potentially Damaging	0.60 – 0.80	Dime/Grape	Significant damage to crops
H3	Severe	0.80 - 1.20	Nickel to Quarter	Severe damage to crops, damage to glass and plastic, paint and wood scored
H4	Severe	1.20 - 1.60	Half Dollar	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.60 - 2.00	Silver Dollar to Golf Ball	Damage to tiled roofs, significant risk of personal injury.
H6	Destructive	2.00 - 2.40	Egg	Aircraft bodywork dented, brick walls pitted
H7	Very Destructive	2.40 - 3.00	Tennis Ball	Severe roof damage, risk of serious injuries to persons not protected
H8	Very Destructive	3.00 - 3.50	Baseball to Orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.50 - 4.00	Grapefruit	Extensive structural damage, risk of severe injury or fatal injuries to persons not protected
H10	Super Hailstorms	4.00 +	Softball and up	Extensive structural damage, risk of severe injury or fatal injuries to persons not protected

It can safely be assumed any severe storm has the potential to cause a lightning strike. It can happen instantly with no warning and happen anytime throughout the storm's passage. A storm's lightning intensity is measured by lightning activity intensity levels outlined in the table on the following page. A strike could damage structures throughout the planning area and render it unusable for a period of time, or cause it to catch fire and damage it beyond repair. Most lightning strikes do not hit structures or people and therefore go unreported. The planning area can and has experienced lightning of all intensities listed in the table below.

Table 3.18 – Lightning Activity Intensity Scale

Level	Description
LAL 1	No activity
LAL 2	Isolated thunderstorms: Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud-to-ground strikes in a 5-minute period.
LAL 3	Widely scattered thunderstorms: Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud-to-ground strikes in a 5-minute period.
LAL 4	Scattered thunderstorms: Moderate rain is commonly produced Lightning is frequent, 11 to 15 cloud-to-ground strikes in a 5-minute period.
LAL 5	Numerous thunderstorms: Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud-to-ground strikes in a 5-minute period.

Strong, high, and thunderstorm winds are classified as winds which occur between 40 and 70 miles per hour lasting for 1 hour or greater or of 58 miles per hour for any duration. The Beaufort Scale shown on the next page displays the ranges of wind speed and correlates them with their typical effects. At a level 7 and 8 citizens should remain indoors and anywhere above a level 8 will cause damage to structures. Damage to any amount of structures can cause serious disruption to the participating governments and school district. The scope of damage can range from one residential house up to widespread destruction of homes and reinforced buildings throughout the planning area. The planning area occasionally receives wind events between 50 and 65 miles per hour or a Beaufort level between 9 and 10.

Table 3.19 – Beaufort Scale

Beaufort Number	Wind Speed (MpH)	Seaman's Term	Effects
0	Under 1	Calm	Calm, smoke rise vertically
1	1 – 3	Light Air	Smoke drift indicates wind direction, but vanes do not move
2	4 – 7	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	8 – 12	Gentle Breeze	Leaves, small twigs in constant motion, light flags extended
4	13 – 18	Moderate Breeze	Dust, leaves, and loose paper raised up, small branches move
5	19 – 24	Fresh Breeze	Small trees begin to sway
6	25 – 31	Strong Breeze	Large branches of trees in motion, whistling heard in wires
7	32 – 38	Moderate Gale	Whole trees in motion, resistance felt in walking against the wind
8	39 – 46	Fresh Gale	Twigs and small branches brake off of trees
9	47 – 54	Strong Gale	Slight structural damage occurs, slate blown from roofs
10	55 – 63	Whole Gale	Trees broken, structural damage occurs
11	64 – 72	Storm	Widespread damage
12	73 or Higher	Hurricane Force	Violence and destruction

History & Probability

Since 1996, NOAA has recorded 67 hailstorms in the planning area. In most of these cases the hail remained under 1.75 inches in size. This hailstorm did not cause any personal injuries or deaths in the planning area. The NWS and NOAA do not have any recorded numbers for property damage, however, as was the case with their flooding data and Jersey County, this number seems specious.

Since 1996, NOAA has recorded 1 significant lightning strike in the planning area. The event did not cause any injuries or deaths, but caused $150,000 in property damage.

Since 1996, NOAA has recorded 72 wind events in the planning area. Most of these events have been measured at between 40 to 55 miles per hour, but have a few have been measured in the low 60s. There are no recorded injuries or fatalities from these wind events. Wind events have caused a total of $2,000 in property damage throughout the planning area, but as is the case with the NWS and NOAA's flood and hail data, this number seems suspiciously low.

Based on the data recorded by NOAA, the planning area should expect a significant lightning strike in rarity, about once every 25 years while it should experience a significant hailstorm about twice per year at a rate of 2.68 hailstorms per year. Additionally, the planning area should expect just under 3 significant wind events per year or at a rate of 2.88 events per year.

For a complete list of NOAA recorded hail, high wind, lightning, and thunderstorm winds, please reference Appendix C.

Vulnerability of and Impact on Facilities

Structural vulnerability to severe storms is the same throughout the planning area. Hail can be costly by damaging rooftops, outdoor equipment, and windows. Lightning can strike anything with the potential to significantly damage electrical infrastructure or ignite a fire. Wind events create flying debris which can damage infrastructure and buildings. Strong enough wind can cause structure damage to older, less well constructed buildings even toppling or leveling them. A FEMA Code 361 Tornado Safe Room will provide more than sufficient protection and resistance to any form of severe storm as they are designed and constructed above the standard metrics of a severe storm. NOAA records catalog that the planning area regularly reports severe storm damage to roofs and power lines while also uprooting and downing trees.

Significant changes to national building codes were implemented in 1999, and structures built before then are considered to be more vulnerable than those constructed afterwards. The majority of the planning area's structures were constructed before 1999.

The average hailstorm in the planning area costs $0 according to the NWS and NOAA.

There is only one recorded incident of a significant lightning strike in the planning area that caused $150,000 in property damage. Since there has not been more than one, an average and a range cannot be calculated.

The average wind event in the planning area costs $27, while the existing range of a single incident has been from $0 to $2,000.

Jersey County, participating municipality's structures, and the CUSD 100 are valued at $1,648,405,333 Since severe storms threaten the entire planning area equally, all structures are considered exposed and vulnerable.

Vulnerability of and Impact on Critical Facilities

All infrastructure and critical facilities within the planning are equally vulnerable and at risk since severe storms can affect any portion of the planning area and damage indiscriminately.

Vulnerability of and Impact on Population

In the absence of proper shelter, hail can cause serious injury to an unprotected person. As long as the planning area's citizens stay indoors and away from windows, they will be protected against hail injury and death. Similarly, they can avoid being struck by lightning by staying indoors. Although lightning may strike a structure sheltering people, it is extremely unlikely that the strike itself will directly injure or kill a sheltered person. As long as a structure is able to maintain its integrity during high speed winds, it will protect people from wind injury or death. However, old or poorly constructed facilities are not good shelters as previously mentioned, flying debris can break windows or cause structural damage. Either of these instances have the potential to seriously injure or kill anyone taking shelter in older, less well constructed building.

Jersey County and its municipalities have a total population of 21,773 in 10,269 housing units all of which are vulnerable and at risk to severe storms. Similarly, all of the CUSD 100's 2,400 students and 340 staff and faculty are vulnerable and at risk.

Historically, there have been no fatalities or injuries from severe storms in the planning area.

Vulnerability of and Impact on Systems

The planning area's assets and systems' vulnerability to severe storms is directly correlated to its population density throughout the planning area with its power grid being the most likely to suffer damage. Where there are people, there are power related infrastructure.

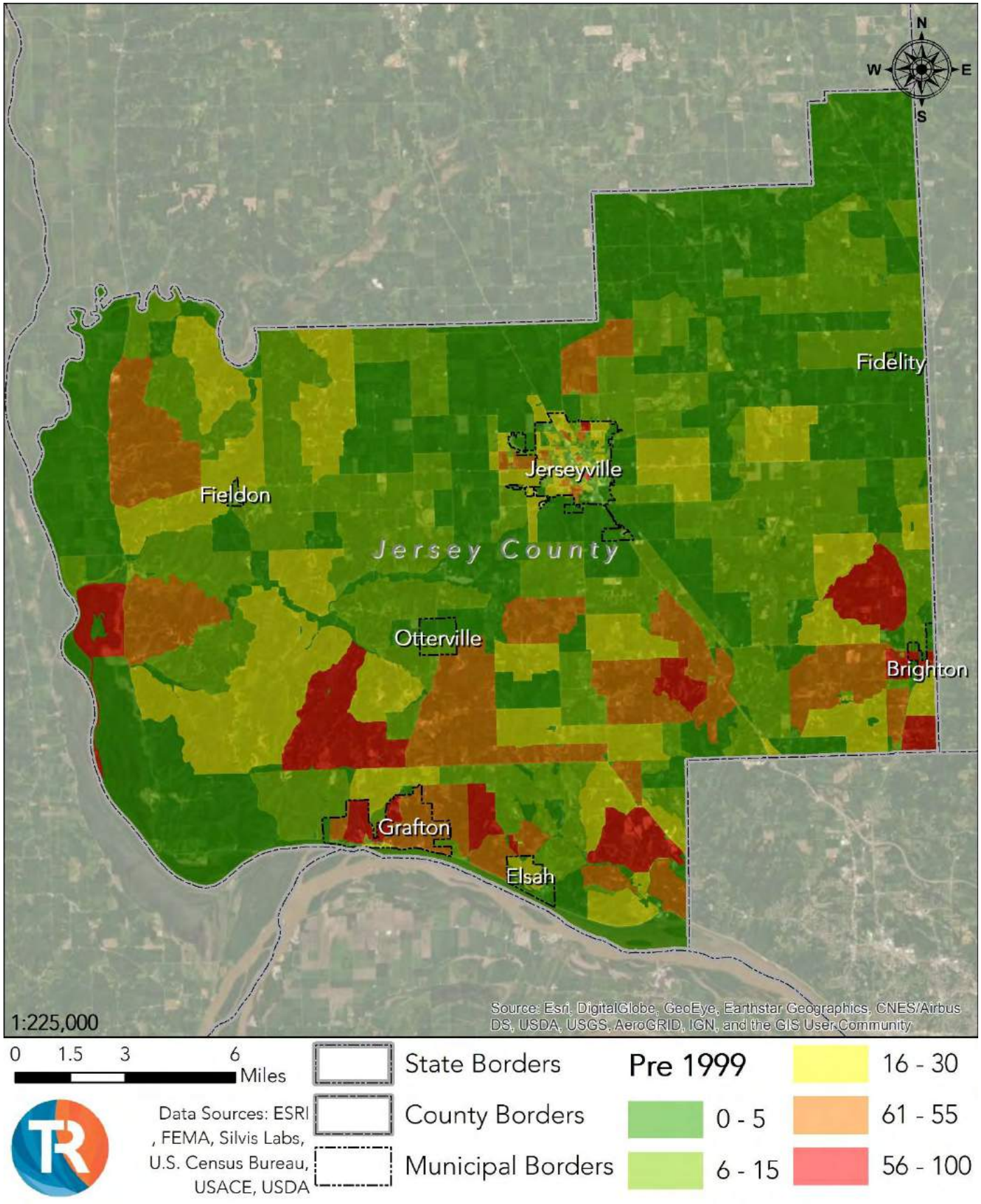
Hail damage is typically superficial and does not hamper a community's assets, systems, or activities. Lightning strikes can destroy or damage a community asset, but since their strikes are typically isolated and rarely hit anything, it is unlikely to significantly impact a larger system. Wind events can destroy and damage multiple structures and points of infrastructure. It has the potential to significantly impact a community's power grid compounding the effects of other hazards such as tornadoes, and winter storms.

Key Considerations

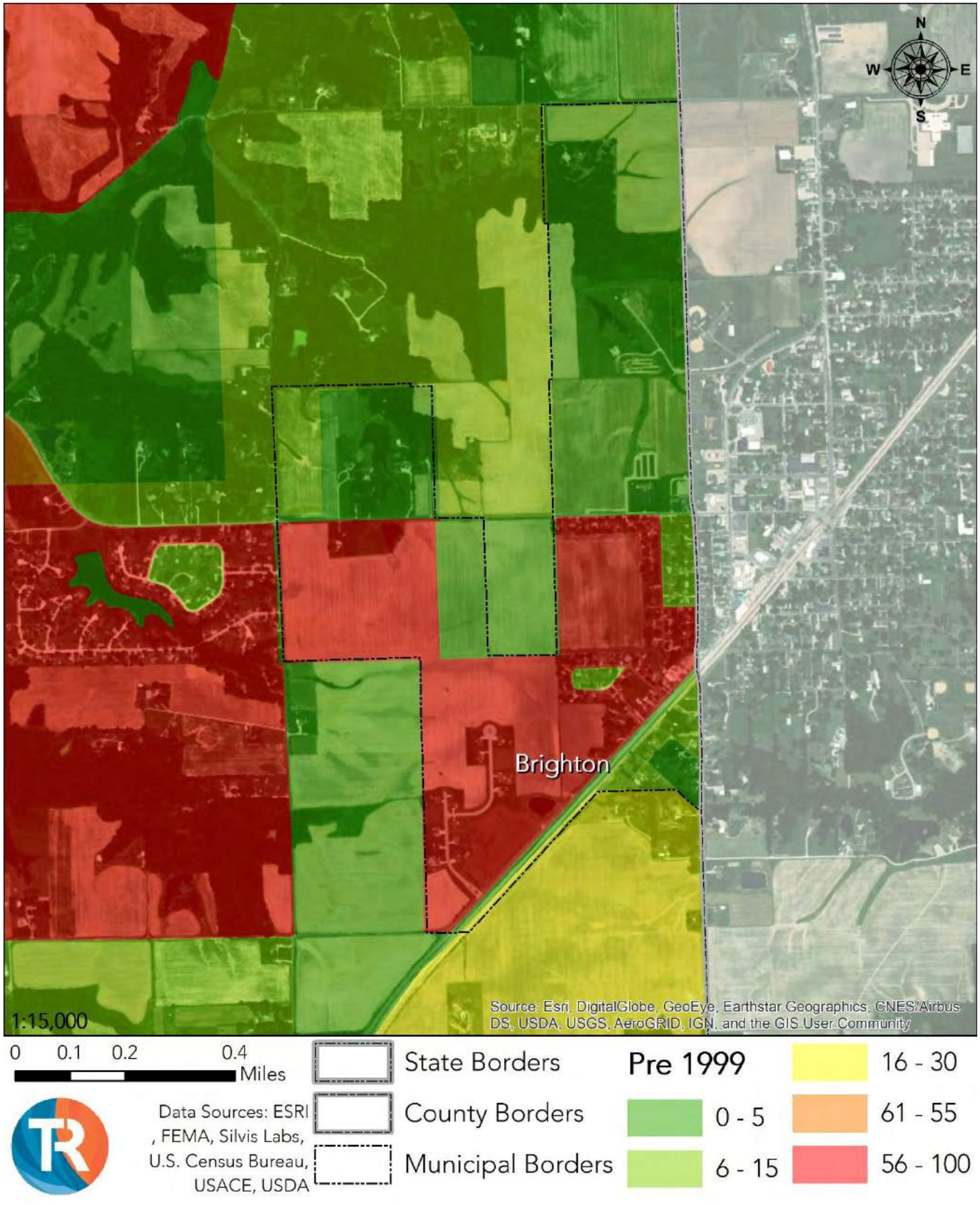
Since severe storms strike over large areas and indiscriminately, there is not any particular portion of the planning area that is more likely than another to experience a severe storm. However, there are portions of the planning area that are more vulnerable to hail and wind related damage due to the age of a significant portion of their building stock.

As previously mentioned, the majority of the planning area's structures were built prior to 1999 and thus are more vulnerable and at risk to severe storms. The maps on the following pages depict the density and areas where these buildings exist in greater numbers in relation to structures built after 1999.

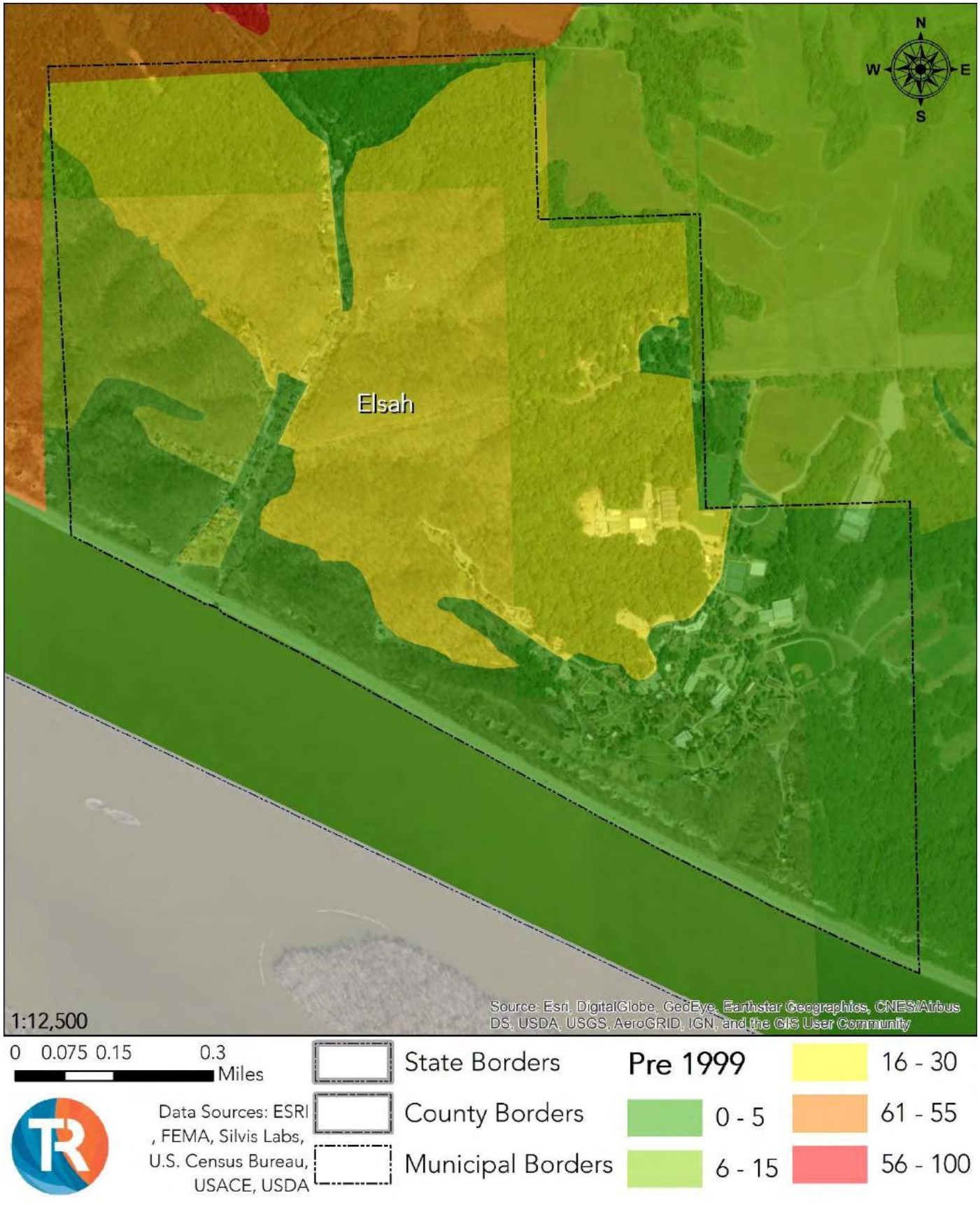
Map 3.15 – Pre-1999 Built Structures, Jersey County



Map 3.16 – Pre-1999 Built Structures, Brighton



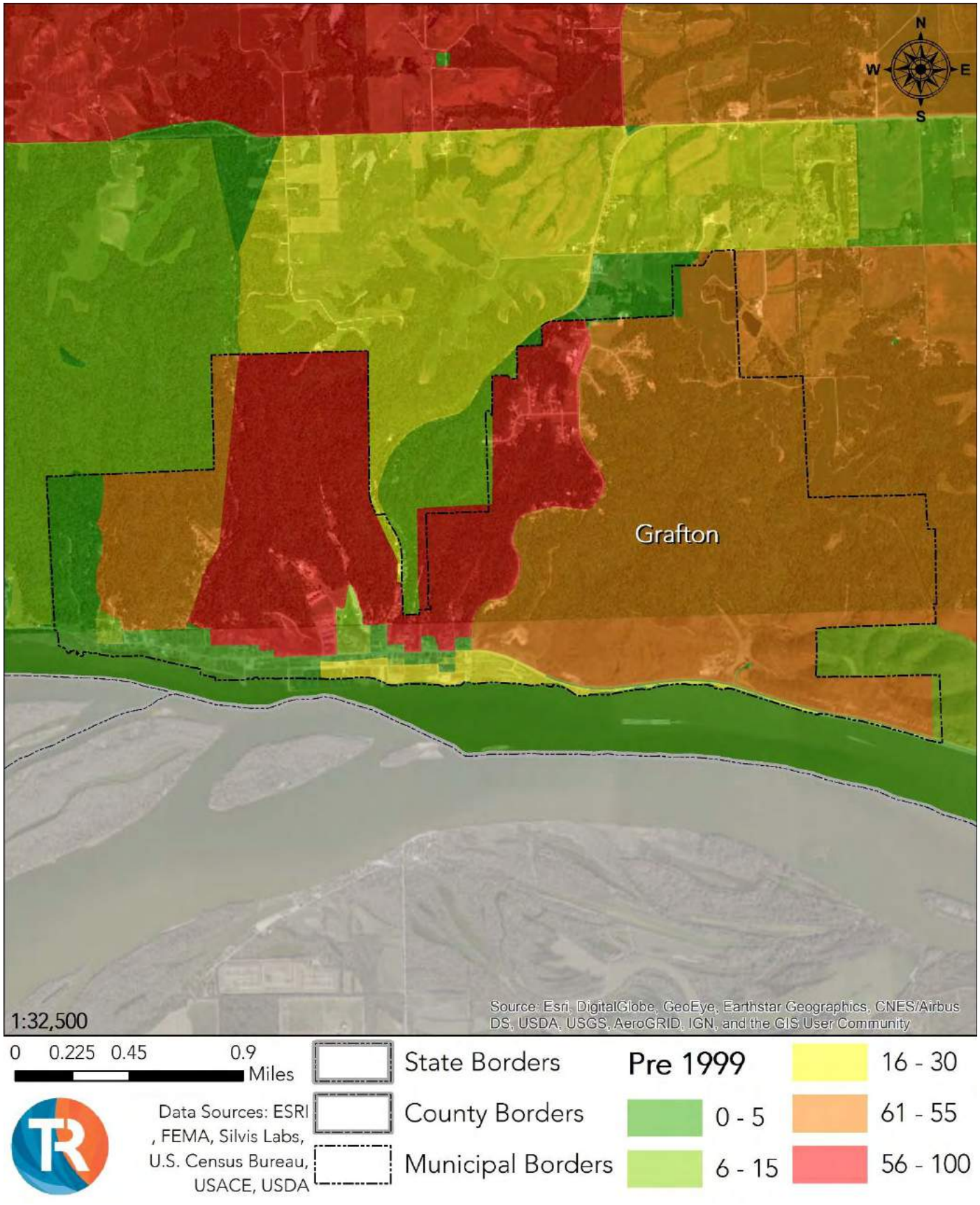
Map 3.17 – Pre-1999 Built Structures, Elsah



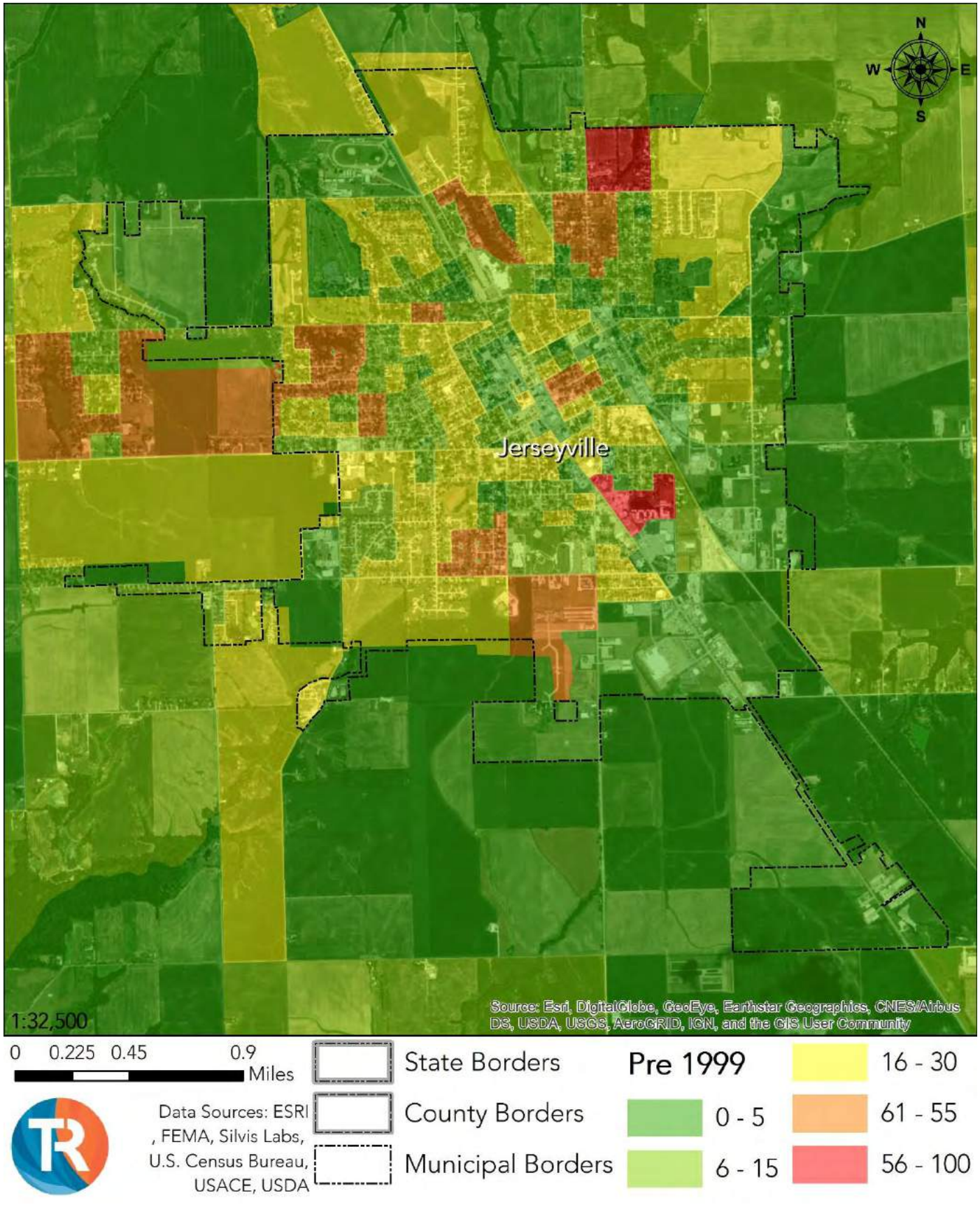
Map 3.18 – Pre-1999 Built Structures, Fidelity

Map 3.19 – Pre-1999 Built Structures, Fieldon

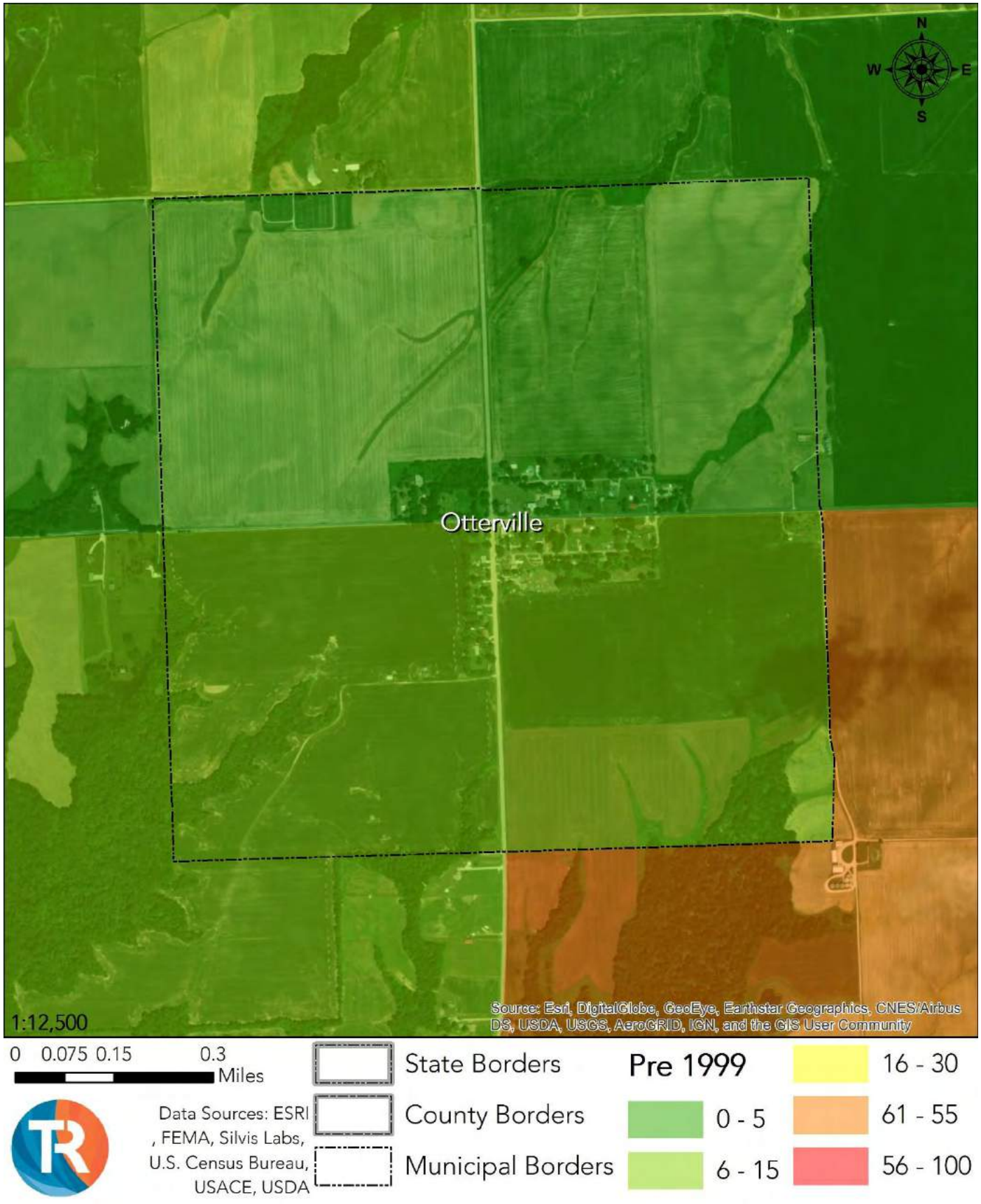
Map 3.20 – Pre-1999 Built Structures, Grafton



Map 3.21 – Pre-1999 Built Structures, Jerseyville



Map 3.22 – Pre-1999 Built Structures, Otterville



3.8 – Severe Winter Storms

A severe winter storm encompasses multiple effects caused by winter weather. Included ice storms, heavy or prolonged snow, sleet, and extreme temperatures.

This plan defines severe winter storms as a combination of the following winter weather effects as defined by NOAA and the NWS.

Ice Storm: An ice storm is used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice make walking and driving extremely dangerous. Significant ice accumulations are usually accumulations of ¼" or greater.

Heavy Snow: This generally means snowfall accumulating to 4" or more in depth in 12 hours or less; or snowfall accumulating to 6" or more in depth in 24 hours or less. In forecasts, snowfall amounts are expressed as a range of values, e.g., "8 to 12 inches." However, in heavy snow situations where there is considerable uncertainty concerning the range of values, more appropriate phrases are used, such as "...up to 12 inches..." or alternatively "...8 inches or more."

Winter Storm: Hazardous winter weather in the form of heavy snow, heavy freezing rain, or heavy sleet. May also include extremely low temperatures and increased wind.

Location & Extent

Winter storms are an area-wide hazard as they can strike anywhere in the planning area. Winter storms can range from moderate snow over a few hours to blizzard conditions with high winds, freezing rain or sleet, heavy snowfall with blinding wind-driven snow and extremely cold temperatures that last several days.

Winter storms typically form with warning and are often anticipated. Like other large storm fronts, the severity of a storm is not as easily predicted and when it is, the window of notification is up to few hours to under an hour. Although meteorologists estimate the amount of snowfall a winter storm will drop, it is not known exactly how many feet of snow will fall, whether or not it will form an ice storm, or how powerful the winds will be until the storm is already affecting a community.

Jersey County and this plan's participants will typically receive 4 to 6 inches of snow during a winter storm, but a single storm in the planning area has managed to accumulate up to a reported 22 inches. Additionally, Jersey County and its participating jurisdictions have seen up to 0.5 inches of accumulated ice. They should be prepared for the typical average of anywhere between 0.1 to 0.25 inches of ice during a winter storm.

History & Probability

Since 1996, NOAA has recorded 35 winter storms in the planning area. Most ice storms leave under 0.25 inches of accumulation however, on one occasion the planning area has seen ice accumulation as much

as 0.5 inches. Snowfall from winter storms has varied greatly ranging from just a few inches to greater than a foot of snow accumulation.

These winter storms have not caused any recorded direct injuries or fatalities. The NWS and NOAA have not recorded any property damage as a result of severe winter storms. For a complete list of NOAA recorded winter storms, please reference Appendix C.

Based on the data recorded by NOAA, the planning area should expect a severe winter storm at a rate of 1.4 per year.

Vulnerability of and Impact on Facilities

Structural vulnerability to winter storms is the same throughout Jersey County and its participating jurisdictions. Heavy snow accumulation can cause roofing to collapse on old or poorly constructed facilities. Ice storms will coat a facility's exterior, but is unlikely to cause anything more than superficial damage. Prolonged, extremely cold temperatures can cause significant damage to poorly insulated or heated facilities. The cold temperatures can cause a facility's water pipes and plumbing systems to freeze. As the water in these systems turns to ice it expands and eventually will cause pipes to burst.

Jersey County and its participating jurisdictions' municipal and school district structures are valued at a total of $1,645,405,333. Since winter storms threaten the entire planning area equally, all municipal and school district structures are considered exposed and vulnerable.

The NWS and NOAA have not recorded any property damage as a result of severe winter storms and therefore we can assume future storms will not cause individual property damage.

Vulnerability of and Impact on Critical Facilities

All infrastructure and critical facilities within the planning are equally vulnerable and at risk since winter storms can affect any portion of the planning area and damage indiscriminately.

Vulnerability of and Impact on Population

Jersey County and its participating jurisdictions' population are equally vulnerable throughout the planning area. Jersey County and its participating jurisdictions' citizens are at risk from prolonged, cold temperatures if they fail to be sheltered in an adequately heated structure or are unable to reach shelter. Some structures are dependent on electricity or steam for their heating making them vulnerable if a winter storm causes a power outage. Additionally, if a winter storm restricts travel, people may become immobile on roadways and be at the mercy of their vehicle's fuel supply. Exposure from winter storms in any of these cases can lead to frostbite and hypothermia. Both of these conditions if untreated can lead to death.

Jersey County and its participating jurisdictions have a total population of 21,773 in 10,269 housing units all of which are vulnerable and at risk to severe winter storms. Additionally, all 2,400 CUSD 100 students and their 240 staff and faculty are considered exposed and vulnerable.

Historically, there have been no recorded fatalities or injuries relating to severe winter storms across region wide fronts in Jersey County and its participating jurisdictions.

Vulnerability of and Impact on Systems

Jersey County and its participating jurisdictions' assets and systems vulnerability to severe winter storms is the roughly same throughout the planning area. Winter storms create havoc on roads impacting travel from decreased speeds and traffic jams to an ice storm or blowing snow drifts making any travel impossible or extremely dangerous. Additionally, ice storms and snow accumulation can directly bring down power lines or bring down vegetation onto power lines. From these scenarios, Jersey County and its participating jurisdictions can suffer power outages making it difficult to heat structures and exposing its citizens to prolonged cold temperatures. Winter storms can cause a problem for school districts in lost education days and transportation to and from their schools. Winter storms can trap students and staff on roadways exposing them to hazardous conditions and cold temperature. Severe winter storms have been recorded as depriving 300,000 people throughout south western Illinois of power due to electrical utility and infrastructure damage.

Key Considerations

Winter storms have ability to affect a portion of or the entire planning area. Unfortunately, there is no way to predict ahead of time which areas will likely be more or less adversely directly affected. In regards to winter storm impacts, the rural municipalities of the planning area are less dense than a metro area and rely on a more decentralized power grid. Residents of these communities stand to last without out power for a greater period of time caused by a debilitating ice storm or blizzard.

3.9 – Tornadoes

A tornado is a violent, dangerous, rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud. Often referred to as a twister or a cyclone, they can strike anywhere and with little warning. Tornadoes come in many shapes and sizes, but are typically in the form of a visible condensation funnel, whose narrow end touches the earth and is often encircled by a cloud of debris and dust.

Tornadoes can cause several kinds of damage to buildings. Tornadoes have been known to lift and move objects weighing more than 3 tons, toss homes more than 300 feet from their foundations, and siphon millions of tons of water. However, less spectacular damage is much more common. Houses and other obstructions in the path of the wind cause the wind to change direction. This change in wind direction increases pressure on parts of the building. The combination of increased pressures and fluctuating wind speeds creates stress on the building that frequently causes connections between building components, roofing, siding, windows, etc., to fail. Tornadoes can also generate a tremendous amount of flying debris. If wind speeds are high enough, airborne debris can be thrown at buildings with enough force to penetrate windows, roofs, and walls.

Location & Extent

Many tornadoes only exist for a few seconds in the form of a touchdown. A tornado may arrive with a storm front and touchdown in a matter of seconds without warning. Other times tornado watches and sirens will alert communities of high potential tornado producing weather or an already formed tornado and its likely path.

The most extreme tornados can attain wind speeds of more than 200 mph, stretch more than two miles across, and travel dozens of miles. Tornadoes are an area-wide hazard as they can strike anywhere in the planning area.

Until 2007 the Fujita Tornado Scale ranked the severity of tornadoes. The Fujita scale assigned a numerical F value, F0 through F5, based on the wind speeds and estimated damage. Since 2007 the U.S. switched over to the Enhanced Fujita Scale. The altered scale adjusted the wind speed values per F level and introduced a rubric for estimating damage. Most tornados have wind speeds less than 110 miles per hour, and travel a few miles before dissipating. The planning area should expect to see tornadoes of EF0 or EF1, but should be prepared for a tornado up to an EF5.

Table 3.20 – Fujita Scale

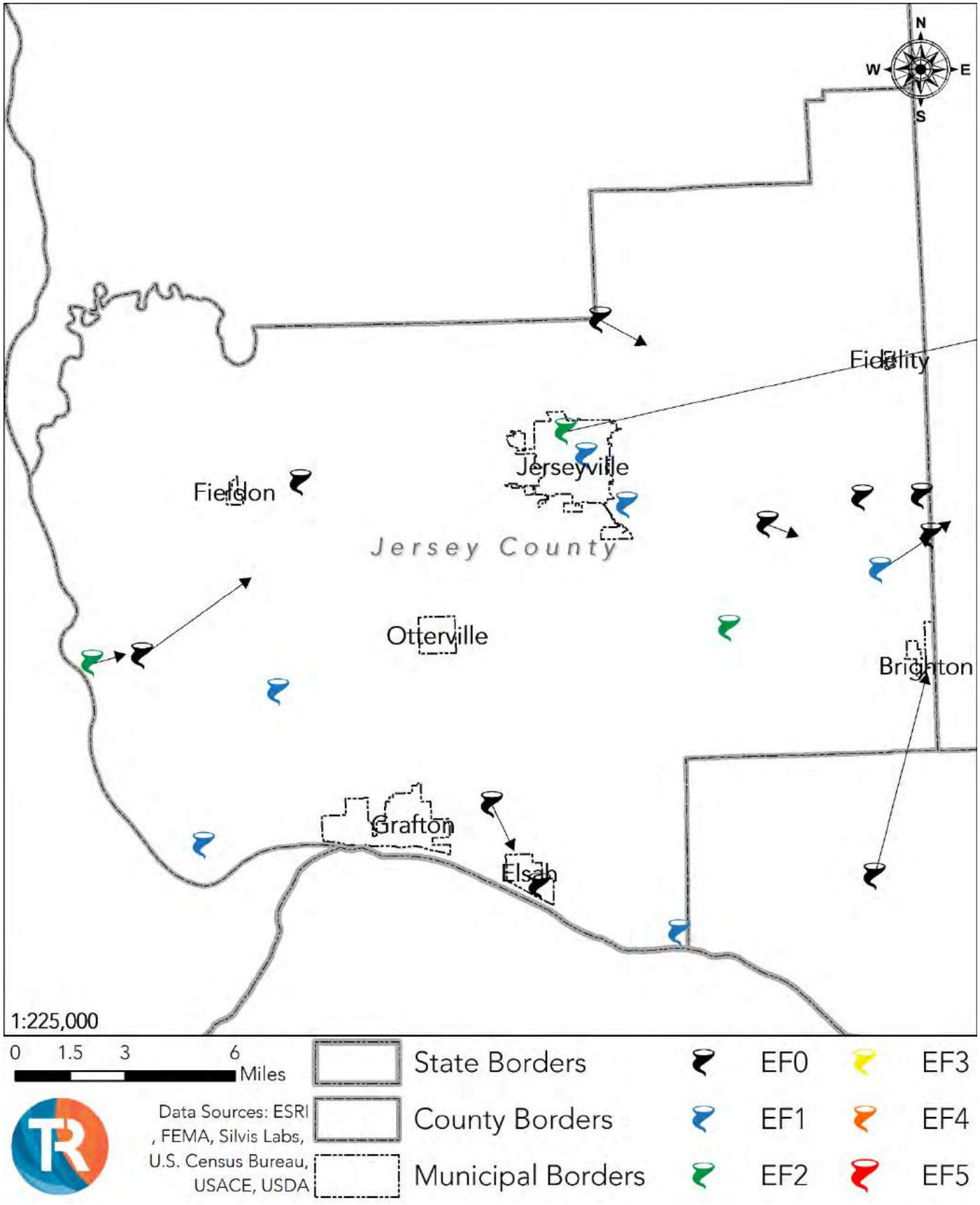
	SCALE	WIND SPEED	DESCRIPTION
	EF-0	65-85 MPH	'Minor' damage: shingles blown off or parts a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.
	EF-1	86-110 MPH	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.
	EF-2	111-135 MPH	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can tossed.
	EF-3	136-165 MPH	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.
	EF-4	166-200 MPH	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, to story exterior wall of masonry buildings would likely collapse.
	EF-5	> 200 MPH	'Massive/incredible' damage: well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.

History & Probability

Since 1957, the NWS has recorded 17 tornadoes in the planning area. Most have been EF0 or EF1 while the most intense has been an EF2. These tornadoes have caused 2 recorded injuries, 1 death, and an estimated $5,577,500 in property damage. For a complete list of NWS recorded tornadoes, please reference Appendix C.

Based on the data recorded by the NWS, the planning area should expect a tornado at a rate of 0.26 tornadoes per year or a tornado roughly every 4 years.

Map 3.23 – Historical Tornadoes



Vulnerability of and Impact on Facilities

Most tornadoes are in the EF0 – EF2 class. Building to modern wind standards and state codes provides significant protection from these hazard events; however, a community in the direct path of a violent, high scale tornado can do little to prevent significant property damage. Designing buildings to protect against extreme wind speeds, such as those associated with an EF4 or EF5 is extremely challenging and cost prohibitive. Anything less than a FEMA Code 361 compliant structure is susceptible to significant damage or complete destruction. A comparison of EF scale to the expected impact on facilities can be seen in the table on the following page.

The average tornado event in the planning costs $328,088, while the existing range of a single incident has been between and EF0 and EF2 costing between $0 and $2,500,000.

Jersey County and its participating jurisdictions' municipal and school district structures are valued at a total of $1,648,405,333. Since tornadoes threaten the entire planning area equally, all municipal and school district structures are considered exposed and vulnerable.

Vulnerability of & Impact on Critical Facilities

All infrastructure and critical facilities within the planning are equally vulnerable and at risk since tornadoes can affect any portion of the planning area and damage indiscriminately.

Vulnerability of and Impact on Population

An EF4 or EF5 tornado has the potential to level the smaller jurisdictions and kill everyone in them while being able to do nearly the same in the larger ones. A lesser magnitude tornado has the ability to kill and injure citizens as it rips off the roofs and walls of its structures while launching airborne missiles born from debris.

Jersey County and its participating municipal jurisdictions have a total population of 21,773 in 10,269 housing units all of which are vulnerable and at risk to tornadoes. Additionally, all 2,400 CUSD 100 and their 340 staff and faculty are considered exposed and vulnerable.

Vulnerability of and Impact on Systems

All of the planning area's community assets and systems' vulnerability to tornadoes is equal throughout the planning area. A small magnitude tornado will not significantly damage a community and its systems, but a larger magnitude tornado can impact a community for weeks, months, or years and even destroy a city completely. Significant damage to any portion of the planning area would hinder the community's economy and increase its social vulnerability.

Key Considerations

Since tornadoes affect large areas and indiscriminately, there is not any particular portion of the planning area that is more likely than another to experience a severe storm. However, there are portions of the planning area that are more vulnerable to wind related damage due to the age of a significant portion of their building stock.

All plan participants retain significant levels of building stock constructed prior to 1999. These buildings were generally constructed to lower wind resistant standards and codes and thus these jurisdictions are considered more vulnerable.

3.10 – Excluded Hazards

There exists a slim chance that any type of natural hazard could occur in any location throughout the United States. However, the probability of them occurring is so infinitesimally small and their impact so slight that it is not considered reasonable to develop a fully-profiled risk assessment for them. Additionally, without historical information or data to drive an analysis, it is unlikely that their conclusions would yield functional or practical strategies to mitigate them.

Extreme Heat

Although incidents of extreme heat due occur throughout the planning area, they have never caused any recorded injuries, deaths, or property damage. The heat index levels that do occur, exist within a range or temperatures that are typically expected and known in advance allowing residents of Jersey County to take routine precautions.

Landslides

There is not a significant threat from landslides to the planning area or throughout Illinois.

Mine Subsidence

Historically, no sinkholes have formed in Jersey County. Typically, sinkholes only occur in areas that have what is called "Karst Formations," but the existence of a Karst Formation does not guarantee a sinkhole will ever form.

Other than their formation occurring where Karst Formations also exist, sinkholes are extremely difficult to pinpoint and predicting them based on a general historical precedent is best.

Wildfires

There have only been two recorded incidents of wildfires within the planning area that could be considered mildly significant. One of these fires burned 345 acres in 1974 and another burned 1,500 acres in 2011. Both of these fires were human-caused and were extinguished relatively quickly. Due to the topography, vegetative characteristics, and the planning area's climate the probability of a wildfire occurring is extremely low. Additionally, due to these mentioned characteristics and the historical precedence set, typical mitigation actions and projects are not feasible or effective in deterring the outlier events that appear to sparingly occur in the planning area.

3.11 – Risk Summary

The table below outlines each participating jurisdiction's general risk to this plan's profiled hazards. The rankings are based on a composite evaluation of this plan's risk assessment, namely, a hazard's probability of occurring in the future, the vulnerability of a jurisdiction to a particular hazard, the intensity of past hazard impacts, and a joint evaluation of local experts and stakeholders.

Each participating jurisdiction was assessed against each hazard on a scale of 0 to 6, 0 meaning there is no reasonable risk, 1 being the lowest level of reasonable risk, and 6 being the highest level of risk.

Table 3.21 – Hazard Risk Summary

Jurisdiction	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Jersey County	2	3	1	5	3	2	4
Brighton	0	3	1	3	3	2	4
Elsah	0	2	1	5	3	2	4
Fidelity	0	3	1	3	3	2	4
Fieldon	0	3	1	3	3	2	4
Grafton	0	2	1	5	3	2	4
Jerseyville	0	3	1	3	3	2	4
Otterville	0	3	1	3	3	2	4
CUSD 100	0	0	1	3	3	2	4

Section 4 – Mitigation Strategy

A mitigation strategy is a set of mitigation actions meant to prevent the potential impacts of hazards. There are several types of mitigation actions with a different method of reducing vulnerability.

Jersey County and this plan's stakeholders have identified the sustained, proposed, and completed mitigation actions for each of the hazards identified as having the potential to affect the jurisdiction. For proposed mitigation actions, the planning team in each jurisdiction considered each type of mitigation action before identifying mitigation actions to include their final mitigation strategy. The mitigation strategy of each jurisdiction is included in this section of the plan.

4.1 – Mitigation Capabilities

Each type of stakeholder provides a set of capabilities, in some cases broad and in some cases narrow, by which they can increase the planning area's resiliency. The broadest form of mitigation capabilities come from the county and the municipal governments. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The Jersey CUSD 100 has broad authority over their campuses and although budgets may be tight, they are more far reaching than some of the smaller organizations. Additionally, the necessity to protect the planning area's children grants them greater influence and political capital to institute change.

Fiscal Capability

The planning area's municipal governments are not unique in the issues felt by small governments to retain the staff and resources necessary to accomplish the strategies necessary to mitigate hazards. However, they are aware of potential diverse funding sources available to communities for, assisting in the fiscal needs required to implement local hazard mitigation plans, including both government and private programs.

While federal and state programs carry out the bulk of disaster relief programs that provide funds for mitigation, local governments are able to search for alternative funding sources to supplement the local hazard mitigation budget. The participants in the mitigation planning process are aware that before effective mitigation strategies can be applied, stable funding sources and effective incentives must be established on a per project basis to encourage participation by the private and public sectors.

Jersey County and this plan's municipal governments should seek out FEMA grant funding from the Pre-Disaster Mitigation Grant Program (PDM), Hazard Mitigation Grant Program (HMGP), and the Flood Mitigation Assistance Grant Program (FMA). Given the size of the municipalities involved in this plan and the pocketed areas of significant flood risk, municipal governments should have access to the United States Department of Housing and Urban Development's Community Development Block Grant Program (CDBG) which occasionally will award grants to assist with projects that fall under hazard mitigation.

Institutional Capability

Jersey County as a whole community is capable of implementing the strategies identified herein. In addition, they are capable of promoting the mitigation process and educating the public about the hazards prevalent to their area, as well as mitigation process necessary to mitigate those hazards.

In an emergency, the county and each municipality's response is an extraordinary extension of responsibility and action, coupled with normal day-to-day activity. Normal governmental duties will be maintained, with emergency operations carried out by those agencies assigned specific emergency functions.

Political Capability

During the process of the development of this plan, opposition to mitigation measures was not evident in any the plan's participants. The primary limiting factor is funding, which is made more difficult by the current situation in the local, state, and national economies.

The county, cities, and their partnerships with the participating agencies are well-organized and responsive to community needs. Leadership is informed and remains up-to-date on the hazards that threaten the area. Citizens who did participate in the public meetings and presentations showed an interest in doing things to promote a safer community. Therefore, the county and cities (the governing board, staff, and citizen population) appear willing to promote the economic efficiency and social utility of the mitigation measures contained in this plan, if appropriate funding can be identified.

General Authority & Regulations

State of Illinois law provides the legal authority for local governments to implement regulatory measures. The basis for much of this authority is the local government power designed to protect public health, safety and welfare. This authority enables local government to enact and enforce ordinances, and to define and abate nuisances. Hazard mitigation is a form of protecting public health, safety, and welfare, and falls under the general regulatory powers of local government. This also extends to building codes and inspections, land use, acquisition, and floodplain development regulation.

Building Codes & Inspection

Building codes and inspections provide local governments with the means to maintain county structures that are resilient to natural hazards. Jersey County has adopted the 2015 International Building and Fire Prevention Codes while the rest of the communities in the planning area have adopted the 2006 International Building and Fire Prevention Codes. These codes prescribe minimum standards for building construction, which ensures that new buildings and structures are built to standards that are seismically sound, fire resistant and developed within flood-proofing measures. These codes also require appropriate hazard code updating and compliance when certain thresholds are met for remodel and renovation of existing buildings. These codes also authorize local

governments to carry out building inspections to ensure local structures adhere to the minimum state building standards.

Municipal officials have the primary role of enforcement of the International Building Code structural regulations. Fire departments also take part in the inspection process for fire and general public safety inspections. They enforce the appropriate codes both at the plan approval stage and the site inspection stage. Jersey County and this plan's municipal governments are committed to the high standards of building provided through the respective codes, and requires that the same codes and the same enforcement procedures apply during routine permitting procedures as well as following a disaster.

Jersey County is classified at level 4 in the Building Code Effectiveness Grading Schedule (BCEGS).

Land Use Planning

Through land use regulatory powers granted by the state, local governments can control the location, density, type and timing of land use and development in the community. Provisions of the land use plans are implemented through regulatory tools that include zoning and subdivision ordinances, and taxation. As of now, Jersey County, Elsah, Fieldon, Grafton, and Jerseyville employ zoning policies with varying degrees of specificity. Jersey County and Jerseyville also both have subdivision ordinances to further regulate development.

Taxation

Taxation can be a powerful mitigation tool by providing local governments with a way to guide development. Tax abatements may be used to encourage landowners and developers to integrate mitigation measures into the process of building new developments and retrofitting existing properties in the floodplain. These tools can be especially effective in encouraging the mitigation of existing structures. Additionally, school districts have the ability to levy revenue through referendums for specific projects whether it is mitigation related or not.

Technical Capability

Jersey County and this plan's participants have the basic technology needed to mitigate and respond to natural disasters. None of the participating jurisdictions have 24/7 emergency operations center.

Floodplain Programs

Floodplain management is the operation of a community program of measures for reducing flood damage. These measures take a variety of forms; and generally, include zoning plans, subdivision, or building requirements, and special-purpose floodplain ordinances. Jersey County, Elsah, Grafton, and Jerseyville each have codified floodplain development regulations in place while the remaining municipalities utilize the county's regulations in luau of their own. Every municipality relies on the county to act as their floodplain administrator.

The regulations place the base flood elevation at the FEMA determined Zone A measurement established per FEMA's Flood Insurance Study of Jersey County dated April 2, 2009. In order to build or modify a structure in an identified Zone A, the builder must apply for a development certificate requiring the lowest level of the structure (that includes the basement) to be built above or at the BFE. Jersey County uses FEMA Elevation Certificate Form FF-086-0-33 certify engineering and building designs.

Of the 8 participating municipal governments, 5 are active participants in the NFIP while Jersey County itself is an active member of the CRS program with a rating of 5.

Table 4.1 – NFIP Community Status

Jurisdiction	CID	CRS Rating	Initial FHBM Identified	Initial FIRM Identified	Current Effective Map Date	Registration Entry Date
Jersey County	170312	5	01/27/78	02/01/874	04/02/09	02/01/84
Brighton	171168	-	-	02/01/84	NSFHA	05/13/09
Elsah	170313	-	11/23/73	02/18/81	04/02/09	02/18/81
Fidelity	Unknown	-	N/A	N/A	N/A	N/A
Fieldon	Unknown	-	N/A	N/A	N/A	N/A
Grafton	170314	-	03/22/74	09/30/77	04/02/09	09/30/77
Jerseyville	170315	-	06/07/74	07/18/85	04/02/09	07/18/85
Otterville	Unknown	-	N/A	N/A	N/A	N/A

**The data are from FEMA.*

Table 4.2 – NFIP Claims History

Community	Year	# of Claims	$ Paid Out
Jersey County	1979-2014	1,019	$10,496,195
Elsah	1979-2014	26	$299,644
Grafton	1979-2014	364	$4,046,406
Jersey County	2015	9	$206,561
Elsah	2015-2018	4	$38,529
Grafton	2015	20	$365,695
Jersey County	2016	3	$74,848
Jersey County	2017	1	$19,719
Grafton	2017	12	$226,695
Jersey County	2019	4	$603,898
Elsah	2019	3	$186,573
Grafton	2019	35	$1,633,814
	Total =	1,500	$17,928,897

In addition to the previously mentioned robust floodplain programs, Jersey County also participates in the Illinois Silver Jackets program. On March 29th, 2020, Jersey County completed a loss avoidance study in coordination with the USACE. This report concluded that funding spent on flood mitigation in the planning area will likely yield a 289% return on investment. A copy of the loss avoidance study's transmittal letter can be found on the following page.

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

MAR 29 2019

Programs and Project Management Division
Project Management Branch

Ms. Rita Lee
Illinois Silver Jackets Team Chair
Illinois Department of Natural Resources
Office of Water Recourses
1 Natural Resources Way
Springfield, IL 62702

Dear Ms. Lee:

The Jersey County, Illinois, Loss Avoidance Study has been completed. It has been a pleasure working with the Illinois Silver Jackets Team on this interagency flood risk management project to provide a report that documents the cumulative losses avoided due to mitigation since 1993.

This report concludes that a cumulative $2.89 of losses are avoided for every one dollar of mitigation invested for the combined nine flood events that spanned from 1993 to 2017. Additionally, an event of the size of the Great Flood of 1993 occurring today would be expected to yield a total of approximately $17 million in losses avoided for the Jersey County study area. As presented at the recent 2019 Illinois Association of Floodplain and Stormwater Management conference, the 289% return on investment should be taken into consideration when county officials, state floodplain administrators and the public are evaluating responsible uses of tax funded initiatives and grant programs to reduce flood impacts.

Enclosed you will find three copies of the final report. A digital copy will be provided electronically.

For questions or additional information, please contact the Project Manager, Mr. Hal Graef, at (314) 331-8790 or by e-mail at harold.w.graef@usace.army.mil.

Sincerely,

Bryan K. Sizemore
Colonel, U.S. Army
District Commander

Enclosures

4.2 – Mitigation Goals

The mitigation goals for Jersey County and this plan's participating jurisdictions were established based upon results from the local and state risk assessments, stakeholder meetings, and input from an extensive public survey. These goals represent the plan's participants' long-term vision for the continued reduction of hazard risks and the enhancement of their mitigation capabilities.

Goal 1: Reduce the risk from natural hazard events utilizing community cooperation and an all-hazards approach.

Goal 2: Pursue additional, complete, and accurate data in support of mitigation planning, disaster preparedness, disaster response, and disaster recovery operations.

Goal 3: Integrate the hazard mitigation plan's findings into the planning, and decision-making processes for all current and future emergency management and preparedness related activities.

Goal 4: Minimize the risk to life and property from dam and levee failures.

Goal 5: Minimize the risk to property from droughts.

Goal 6: Minimize the risk to life and property from earthquakes.

Goal 7: Minimize the risk to life and property from floods.

Goal 8: Minimize the risk to life and property from severe storms.

Goal 9: Minimize the risk to life and property from severe winter storms.

Goal 10: Minimize the risk to life and property from tornadoes.

4.3 – Mitigation Projects

This plan identifies a comprehensive range of 22 possible and unique mitigation projects and 6 possible and unique mitigation actions. The selected set carefully takes an all-hazards approach to mitigation while simultaneously addressing each of the individual eight profiled hazards.

The projects and actions were selected based upon their potential to reduce the risk to life and property with an emphasis on new and existing infrastructure, ease of implementation, community and departmental support, consistency with other relevant plans and capabilities, available funding, vulnerability, and total risk. For further information on evaluation criteria, please see Section 4.4. The full list of mitigation projects and their descriptions can be found in Appendix D.

Some projects and actions mitigate risk and vulnerability to multiple hazards. Some of these projects and actions list participating jurisdictions that are only at risk from one or a few of the mitigation hazards. For example, the project: "Backup Generators" mitigates against multiple hazards. All participating jurisdictions are interested in this project, but some will not be using it to mitigate against riverine flooding. Instead they will be using it to mitigate against severe storms and severe winter storms.

Table 4.2 – Mitigation Projects Summary

Project/Action	Jurisdictions
Backup Generators	All Jurisdictions
Bury Utility Lines, Pipes, and Tanks	Jersey County, All Municipalities
Earthquake Assessment & Retrofit	All Jurisdictions
Elevate Structures	All Jurisdictions
FEMA Code 361 Safe Rooms	All Jurisdictions
Floodproofing	All Jurisdictions
Flood Level Monitoring System	Jersey County
Insulation & Energy Efficiency	All Jurisdictions
Interior Furnishing Hazard Reduction	All Jurisdictions
Irrigation Storage Tanks	Jersey County, All Municipalities
Levee Retrofit	Jersey County
Looped Grid Power Systems	Jersey County, All Municipalities
Low Flow Utilities	Jersey County, All Municipalities
Rainwater Retention Basins	Jersey County, All Municipalities
Raise Transportation Infrastructure	Jersey County, All Municipalities
Relocate or Buyout Vulnerable Structures	All Jurisdictions
Snow Fences	All Jurisdictions
Storm Water Drainage System Upgrade	All Jurisdictions
Storm Water Pump Stations	Jersey County, All Municipalities
Structural Integrity Monitoring Instruments	Jersey County
Water Line Insulation	All Jurisdictions
Wind Resistance Structural Retrofit	All Jurisdictions

Table 4.3 – Mitigation Actions Summary

Project/Action	Lead Agency
Public Awareness & Education	Jersey County, CUSD 100
SKYWARN Storm Spotter Training	Jersey County
StormReady Accreditation	Jersey County

Mitigation Project Updates

Jersey County's prior approved mitigation plan (2015) contained suggested projects and actions that are no longer considered qualified mitigation projects or actions, rather, they classify as response, recovery, preparedness, or mere basic emergency management functions. Examples of these items include the development of basic emergency plans, risk assessments that are already part of mitigation planning, and basic municipal functions. If a project or action that was included in Jersey County's prior plan is not listed below or listed as "carried forward" in Appendix D, it has been deleted. The table below lists the mitigation projects that have been completed or initiated since the development of their last hazard mitigation plan.

Table 4.4 – Mitigation Project Updates

Mitigation Project	Jurisdictions	Status	Notes
Construct Flood Road	Grafton	Completed	
Demolish Structures	Jersey County	Completed	18 Structures
Dredge Tributary and Creek	Elsah	Completed	Near Playground
Elevate Structures	Jersey County	Completed	1 Structure
Improve Storm Water Drainage	Jersey County	Completed	Increased culvert sizes
Install Creek Wall	Elsah	Completed	Across from Methodist Church
Purchase Flood Prone Properties	Elsah	Completed	
Rechannel and Wall Creek	Elsah	Completed	Valley Street Creek
Storm Water Drainage Plan	Jerseyville	In-Progress	

4.4 – Project Evaluation, Implementation, & Administration

Situational changes will likely occur throughout the 5-year life cycle of a mitigation plan. This can happen due to any number of factors such as public influence, local and grant funding allotments, changing demographics, other developmental changes, and numerous more. These factors and many others have great influence over how activities and projects will need to be evaluated for feasibility and demand. Therefore, a flexible methodology will serve Jersey County and this plan's participants best when determining what, when, and where to engage an activity or project.

Project Evaluation

Jersey County and this plan's participants will utilize the STAPLE+E method of assessing mitigation actions, projects, and alternatives. Upon deciding to move forth with a mitigation project, according to decision-making process of the participating jurisdiction, the decision-making body will use the form on the following page. Preliminary evaluations, per hazard, per project, per jurisdiction are found in Appendix E and are a composite of the STAPLE+E methodology and the composite risk for from each hazard for each jurisdiction.

The evaluations were conducted according the definitions in the table below:

Table 4.5 – STAPLE+E

Category	Concept of Analysis
Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the communities' social and cultural values.
Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost-benefit review, and possible to fund.
Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

1.) Fill in the name of the mitigation action or project followed by two other viable alternatives which address the same hazards.
2.) For each consideration, indicate a plus (+) for favorable or negative (-) for less favorable. If the consideration does not apply, leave it blank.
3.) Compare the total number of pluses and negatives to the alternative actions. Some considerations may carry more weight than others, so a simple tally does not necessarily indicate a more viable or feasible action or project.

Table 4.6 – STAPLE+E Sample Form

Criteria	Considerations	Action/Project	Alternative 1	Alternative 2
Social	Community Acceptance			
	Effect on Segment of the Population			
Technical	Technical Feasibility			
	Long-Term Solution			
	Secondary Impacts			
Administrative	Staffing			
	Funding Allocated			
	Maintenance/Operations			
Political	Political Support			
	Local Champion			
	Public Support			
Legal	State Authority			
	Existing Local Authority			
	Political Legal Challenge			
Economic	Benefit of Action			
	Cost of Action			
	Contributes to Economic Goals			
Environmental	Effect on Land or Water			
	Effect on Endangered Species			
	Effect on HAZMAT Waste Sites			
	Consistent with Environmental Goals			
	Consistent with Federal Laws			
	Total =			

Project Implementation

Each municipal government participating in this plan has their own decision-making bodies that are free to implement the mitigation strategies found in this plan as they see fit. Each decision-making body will choose municipal departments to head up implementation efforts appropriate for that municipal department's area of responsibility.

The activity and project evaluation methodology described in this section serves as an aid for them to enhance their decision-making. It is highly suggested that the county coordinates with the other municipal governments as well as the non-municipal plan participants to work towards an organized and concentrated effort when implementing activities and projects. That is, it would better serve their implementation effectiveness to work as a whole community when deciding how to allocate staff and funding resources when implementing mitigation activities and projects.

The participating community school districts will be in complete sole control of what, when, and where to implement mitigation activities or projects. Its decision-making bodies that are free to implement as they see fit. The activity and project evaluation methodology provide earlier in this section acts as an aid for them to best apply the prescribed mitigation strategy found in this plan.

Project Administration

Jersey County will be self-administering each project through its own government departments. The department chosen to administer a project will vary depending on the characteristics of each activity or project whereas public works would be better suited for some projects while county records and risk management would be better suited for others. For each of the participating municipalities, they have the option and flexibility to administer their own activities and projects if they so choose. However, for the purpose of efficiency and governmental scale, activities and projects will default to be administered by the Jersey County Code Administration Office.

The Jersey Community Unit School District 100 will administer activities and projects inhouse with individuals designated administrative responsibility on an ad-hoc, per project basis. Individual will be designated on a case-by-case basis as seen most fitting by the organization according to the specific characteristics of the project or activity as oversight and administration duties can vary wildly among these organizations.

4.5 – Planning Integration

Mitigation doesn't end at plan approval. Plan approval is only the beginning. The successful implementation of any number mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

This plan is not only useful for implementing mitigation activities and projects, but is also critical in making development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development into identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Comprehensive Land Use Planning

As of now, no communities in the planning area have a comprehensive land use plan. However, future efforts could exist to develop comprehensive plans for some of the larger municipalities in Jersey County and the county itself. These plans typically detail building codes, ordinances, zoning, and other land use measures, but in one centralized document making them more effective in achieving their goals, especially as they relate to hazard risk reduction. Upon development of such plans, at a minimum, this mitigation plan will be considered for serving as a base guide to updating and improving hazard risk reduction measures contained within the comprehensive land use plans for each of the participating municipalities.

Democratic Governments & Boards

All the participating jurisdictions use some form of a democratic voting process. These organizations rely on agenda proposals, deliberation and discussion, and voting to solidify their decision-making.

All participating jurisdictions engage in capital improvement, infrastructure, and other various projects on an ad hoc basis. For these stakeholders, this plan should be integrated into agenda proposal's designs and cross-referenced during deliberation and discussion of proposed activities and projects. By using this plan's risk assessment, development and capital improvement projects can be appropriately implemented taking into consideration a community's resiliency.

Emergency Management Planning

Any and all emergency management related planning will at a minimum cross reference this document during its production. In some instances, this plan or portions of it will be fully integrated depending on the circumstances and nature of the planning document.

Emergency Operations Plans

Jersey County's next EOP update will reflect the most probable and dangerous hazard event scenarios from the plan's risk assessment. Additionally, the plan will be referenced in its entirety as an appendix to the EOP. This revision is the responsibility of Jersey County for all of the jurisdictions participating in this plan. Upon revision completion, all participating jurisdictions and appropriate emergency services will be notified of the revisions and sent out new copies of the EOP.

State of Illinois Emergency Management Agency

IEMA has a FEMA approved mitigation plan current as of 2018 and is updated every 5 years. The state's mitigation plan is required by FEMA regulation to include a discussion and summary of local hazard mitigation plans. The process of integrating this plan is already an established process and is managed by IEMA.

Jersey Community Unit School District 100 Facilities Master Plan

CUSD 100 is responsible for maintaining a facilities master plan and updating it at regular intervals. Their current plan outlines enrollment projections and facilities needs and capabilities, and capital improvement planning. Upon FEMA approval and school district adoption, this plan needs to be integral in the updating of the facilities master plan.

Their outlined planning process entails 4 primary steps to updating their plan, the second of which is "Inventory/Analysis of Conditions." Review of this plan's risk assessment and mitigation strategy needs to be considered during this phase of their planning process as it can help guide their decision-making process to better plan their capital improvement projects to incorporate hazard mitigating measures and thus increasing their resiliency.

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Jerseyville | Fieldon | Grafton
Delhi | Dow | Kane | Brighton
Elsah | Fidelity | Otterville

DEPARTMENTS

911 ETSB
Animal Control
Assessor
Before you sell your mobile home
County Board
Circuit Clerk
County Clerk and Recorder
Code Administrator
Notice to all contractors
(Building Permits)
- Flood
- Natural Hazard Mitigation Plan
Economic Development
Emergency Management Agency
Health Department
Highway Department
Parks Department
Probation and Court Services
Sheriff's Department
Tourism
Treasurer's Office
Subdivision and Land Use

WELCOME TO JERSEY COUNTY

Located to the north of St. Louis on US 67, Jersey County covers over 240,000 acres and is predominately rural. Jerseyville, the county seat, is the largest municipality and offers shopping, restaurants, recreation and a friendly atmosphere for visitors. Grafton, a tourist town along the river, is the second largest municipality and located on Illinois 100, part of the National Scenic Byway called The Great River Road. The Mississippi River delineates the southern edge of the county and the Illinois River along much of the western edge. The bluffs of Pere Marquette State Park overlook the confluence of the Mississippi, Illinois, and Missouri Rivers.

Mission Statement:

The County Officials of Jersey County are committed to providing the highest quality services in a fiscally responsible manner to promote the health, safety and general welfare of all Jersey County residents. Our guiding principles will be honesty and integrity, community service, fiscal responsibility, and respect for others.

Free Discount Prescription Cards are available for Jersey County residents in the lobby of the Jersey County Government Building, County Clerk, County Board, Assessor, Treasurer, or Recorders offices, located at 200 N. Lafayette St. in Jerseyville, or ask for it at your local pharmacy.

Useful Links

Invitation to the Public

The public is invited to participate in the update of the 2016 Multi-jurisdictional Natural Hazard Mitigation Plan. Jersey County has contracted with Two Rivers Emergency, LLC for the update and is planning future meetings to provide a forum for public input. For more information contact the Code Office at 618-498-5571 Ext. 145

Notice of Public Meeting

News Release

Piasa Creek Watershed Map

HOURS

Monday-Friday 8:00 AM - 4:00 PM
Saturday-Sunday Closed

LOCAL EVENTS

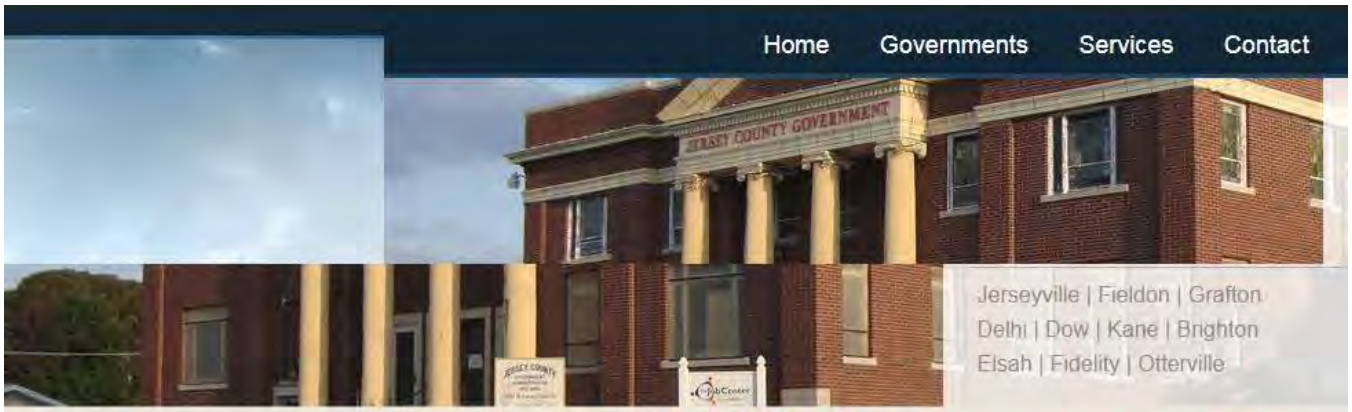
Oct 15
Finance Committee 6:30

Nov 11
Offices Closed - Veteran's Day

Nov 12
Claims Committee 6:00pm

Nov 12
Jersey County Board Meeting 7:00 p.m.

Nov 28
Offices Close - Thanksgiving Day



DEPARTMENTS

911 ETSB
Animal Control
Assessor
County Board
Circuit Clerk
County Clerk and Recorder
Code Administrator
(Building Permits)
- Flood
- Natural Hazard Mitigation Plan
Take Survey
Economic Development
Emergency Management Agency
Health Department
Highway Department
Parks Department
Probation and Court Services
Sheriff's Department
Tourism
Treasurer's Office
- Property Tax Inquiry
Subdivision and Land Use

SUPERVISOR OF ASSESSMENTS

The office of the Supervisor of Assessments administers the property assessment cycle for the local real estate tax.

Office responsibilities include, but are not limited to:

- Working with elected township assessors.
- Making name and address changes for tax billing.
- Calculating farmland assessments from values which are certified from the Illinois Department of Revenue.
- Applying equalization factors.
- Assisting the Board of Review by providing needed information. For an explanation of its duties see Board of Review.
- Assisting taxpayers in preparation of the Senior Homestead Exemption and the Senior Citizens Assessment Freeze Application.
- Processing other types of exemptions.
- Maintaining mapping of aerial photography.
- Compiling abstract information for the Illinois Department of Revenue.

The Supervisor of Assessments is appointed by the County Board for a four-year term. In Illinois the level of assessment is to be 33 1/3 percent of market value. The assessed value of the property, minus any exemptions if applicable, is the base on which tax levies are calculated. The tax rate is determined by the property tax dollars each local taxing body needs to operate. That rate multiplied by the equalized assessed value results in the tax dollar amount on your tax statement.

Rate questions are answered by the County Clerk's Office.

The office of Supervisor of Assessments Crystal Perry is located on the second floor of the Government Building.

Hours are:

8:00 AM-4:00 PM Monday - Thursday

8:00 AM – 12:00 PM Friday

Phone:(618) 498-5571 x126
FAX: (618) 498-2375

Senior Freeze eligibility income raised to $65,000

2017 Board of Review Notice

2017 Equalization Factor

Frequently Asked Questions

Links

Property Tax Inquiry

Illinois Property Tax Appeals Board

Illinois Department of Revenue

Documents & Forms

Board of Review

2016 Board of Review Decisions

Board of Review Rules

2017 Assessment Changes

CERTIFICATE OF PUBLICATION
JERSEY COUNTY JOURNAL
Jerseyville, Illinois

I, the undersigned, do hereby certify that I am the publisher of the Jersey County Journal, a weekly secular newspaper of general circulation; that said newspaper is being published and has been published in the city of Jerseyville, County of Jersey, and State of Illinois, for more than one year prior to the date of the first insertion of the notice annexed hereto; that said annexed notice was published in said newspaper in each and every copy and impression thereof

2 consecutive weeks commencing on the 2nd day of October 2019, and ending on the 9th day of October 2019,

which are the dates of the first and last papers containing notice.

I further certify that said newspaper is a newspaper as defined in 'an Act to revise the law in relation to notices' as amended by Act approved July 17, 1959 – Illinois Revised Statutes, Chap. 100, Pars. 1 & 5.

Given under my hand this 10th day of October 2019.

Jessica E Abbott

Digitally signed by Jessica E Abbott
Date: 2019.10.10 11:39:18 -06'00'

Publisher

JERSEY COUNTY JOURNAL

NOTICE OF PUBLIC MEETING

The Jersey County Code Administration Office is working with Two Rivers Emergency Management to update their multi-jurisdictional hazard mitigation plan under FEMA. The plan, known as Jersey County Hazard Mitigation Plan will assess natural hazards' risk and vulnerabilities to the county and each municipality within the county and provide recommendations to increase their resiliency.

All Residents, businesses, community neighbors, and other interested parties are invited to attend the plan's kick-off meeting on **Tuesday, October 15th at 2:00 PM.** The meetings will be held in the Auditorium in the Jersey County Administration Building, 200 N. Lafayette St. Jerseyville, IL.

10.2 '19.9

TWO RIVERS EMERGENCY MANAGEMENT

Sign-In Documentation

Jersey County Multi-Jurisdictional Hazard Mitigation Plan
October 15th, 2019

Name (Printed)	Position & Organization	Phone Number	Email Address
Anthony Goertz	Mitigation Manager, Two Rivers Emergency Management	(618) 598-4429	tonyg@tworiversem.com
Tom Klasner	County Engineer, Jersey County Hwy Dept	(618) 498-9074	tklasner@jerseycounty-il.us
Mark Wagner	Jersey Co Board	(618) 535-4027	wags316@frontiernet.net
Jeff Blackorby	Jersey County SWCD	618-498-3712	jeff.blackorby@il.nacdnet.net
Linda Davidson	Jersey County GIS	618-498-5571 (107)	itadmin@jerseycounty-il.us
Anna Yates	Jersey County Health Dept	618-792-3046	ayates@jerseycountyhealth.org
Keith Norman	EMA, City of Jerseyville	618-535-6924	knorman@jerseyville-il.us
Bob Manns	Dir. of Public Works, Jerseyville	618-946-0323	bmanns@jerseyville-il.us
Cindy Crecmiles	Co. Code Admin & CFM	618-498-5571	CODEADMIN1@JERSEYCOUNTY-IL.US
Derek Russell	Co. Code Admin Chief Deputy	618-498-5571	Codeadmin@jerseycounty-il.us
Mike Morgan	Jersey County ETSB	618-498-5571	morgan5418@sbcglobal.net

CERTIFICATE OF PUBLICATION
JERSEY COUNTY JOURNAL
Jerseyville, Illinois

I, the undersigned, do hereby certify that I am the publisher of the Jersey County Journal, a weekly secular newspaper of general circulation; that said newspaper is being published and has been published in the city of Jerseyville, County of Jersey, and State of Illinois, for more than one year prior to the date of the first insertion of the notice annexed hereto; that said annexed notice was published in said newspaper in each and every copy and impression thereof

2 consecutive weeks commencing on the

6th day of May 2020, and

ending on the 13th day of May 2020,

which are the dates of the first and last papers containing notice.

I further certify that said newspaper is a newspaper as defined in 'an Act to revise the law in relation to notices' as amended by Act approved July 17, 1959 – Illinois Revised Statutes, Chap. 100, Pars. 1 & 5.

Given under my hand this 13th day of May 2020.

Jessica E. Abbott

Digitally signed by Jessica E. Abbott
Date: 2020.05.13 10:41:31 -06'00'

Publisher

JERSEY COUNTY JOURNAL

NOTICE

The Jersey County Code Administration Office is finalizing its Hazard Mitigation Plan draft prior to submission to the Illinois Emergency Management Agency and FEMA for review and approval. The plan assesses natural hazards' risks and vulnerabilities to the county, its municipalities, and school district. It provides recommendations to increase their hazard resiliency and reduce risk. In doing so, these actions aim to protect property and those who reside within the county.

Due to current conditions, the draft plan will not be available for viewing in person, but is instead available online in PDF format at: **www.tworiversem.com/jerseycountyil/**. We invite you to take the next two weeks to review the draft, provide any input you may have, or ask any related questions. Please direct all inquiries to: **tony@tworiversem.com**.

5.6, 5.13

The Telegraph

TUES MAY 5, 2020

LEGALS

20-0324

PUBLIC NOTICE

Notice is hereby given by the Board of Education of School District #14 in the County of Madison, State of Illinois, the amended budget for said School District for the fiscal year beginning July 1, 2019, will be on file and conveniently available for public inspection at the Superintendent's Office, 777 North Wood River Ave., Wood River, Illinois, as of May 10, 2020, 6:00 PM. A public hearing on said budget will be held at 6:00 PM on the 9th day of June 2020, in the District Board Room.

Secretary of the Board,
Melissa Bell-Yates

MARKETPLACE

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LEGALS

20-0325

The Jersey County Code Administration Office is finalizing its Hazard Mitigation Plan draft prior to submission to the Illinois Emergency Management Agency and FEMA for review and approval. The plan assesses natural hazards' risks and vulnerabilities to the county, its municipalities, and school district. It provides recommendations to increase their hazard resiliency and reduce risk. In doing so, these actions aim to protect property and those who reside within the county.

Due to current conditions, the draft plan will not be available for viewing in person, but is instead available online in PDF format at: **www.tworiversem.com/jerseycountyil/.** We invite you to take the next two weeks to review the draft, provide any input you may have, or ask any related questions. Please direct all inquiries to: **tony@tworiversem.com.**

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SWIMMING POOL
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Apartments / Townhouses

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Move In Specials
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FREE Parking for 3 Months Included
Includes Application & Deposit
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Starting at $517-$600
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1 Br Apts Available For Rent
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★Laundry Room
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To Apply

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★ Security
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NOW ACCEPTING APPLICATIONS
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TTY/TDD 711
Equal Housing Opportunity

Autos For Sale

2009 Impala, Bright Red, Show Room Perfect, 130K Miles, $5,500 obo
618-288-3894

Appendix B – School District Facilities

Table B.1 – Community Unit School District 100 Facilities

Buildings	Contents Values	Structural Values
Baseball Concession/Restrooms	$7,725	$61,787
Baseball Press Box	$2,575	$17,564
Baseball Storage Shed	$5,150	$13,800
Bus Depot	$77,250	$989,310
Delhi Elementary	$0	$1,903,623
District 100 Admin Office	$200,850	$1,660,384
East Elementary	$813,700	$8,365,691
Football Field House	$77,250	$471,916
Football Press Box, Bleachers, & Storage	$7,725	$79,036
Football Storage Building	$15,450	$86,250
Grafton Hills Grade School	$1,076,350	$5,937,843
Illini Junior High School	$1,957,000	$16,717,791
Jerseyville High School	$5,768,000	$40,239,266
Greenhouse	$2,060	$34,814
Property in the Open – Admin Office	$0	$1,892
Property in the Open – Delhi Elementary	$0	$41,452
Property in the Open – East Elementary	$0	$7,922
Property in the Open – Grafton Hills Grade School	$0	$51,298
Property in the Open – Illini Junior High School	$0	$1,221,919
Property in the Open – Jerseyville High School	$0	$1,136,980
Property in the Open – Stadium	$0	$99,361
Property in the Open – West Elementary	$0	$100,259
Soccer Press Box	$1,030	$30,109
Storage Garage #1	$30,900	$80,500
Storage Garage #2	$5,150	$96,600
Storage Garage – Jerseyville High School	$5,150	$24,464
Storage Shed – Delhi Elementary	$0	$3,136
West Elementary	$628,300	$18,257,751
Total =	$10,681,615	$97,732,718

**The data are from the Community Unit School District 100.*

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Appendix C – Hazard Records

Table C.1 – Drought Records

Date	D0	D1	D2	D3	D4	DSCI
1/4/2000	100	0	0	0	0	100
1/11/2000	8.24	91.76	0	0	0	191.76
1/18/2000	2.02	97.98	0	0	0	197.98
1/25/2000	0	100	0	0	0	200
2/1/2000	0	100	0	0	0	200
2/8/2000	0	100	0	0	0	200
2/15/2000	0	100	0	0	0	200
2/22/2000	19.33	80.67	0	0	0	180.67
2/29/2000	0	100	0	0	0	200
3/7/2000	0	100	0	0	0	200
3/14/2000	0	79.2	20.8	0	0	220.8
3/21/2000	0	79.2	20.8	0	0	220.8
3/28/2000	0	79.19	20.81	0	0	220.81
4/4/2000	0	94.36	5.64	0	0	205.64
4/11/2000	0	66.22	33.78	0	0	233.78
4/18/2000	0	58.59	41.41	0	0	241.41
4/25/2000	0	0	100	0	0	300
5/2/2000	0	0	100	0	0	300
5/9/2000	0	100	0	0	0	200
5/16/2000	21.75	52.12	26.13	0	0	204.38
5/23/2000	0	57.25	42.75	0	0	242.75
5/30/2000	70.11	25.02	4.87	0	0	134.76
6/6/2000	54.76	37.94	7.31	0	0	152.57
6/13/2000	0	92.69	7.31	0	0	207.31
6/20/2000	0	0	100	0	0	300
6/27/2000	100	0	0	0	0	100
1/23/2001	100	0	0	0	0	100
5/1/2001	10.1	0	0	0	0	10.1
5/8/2001	21.05	0	0	0	0	21.05
5/15/2001	100	0	0	0	0	100
7/31/2001	100	0	0	0	0	100
8/21/2001	100	0	0	0	0	100
7/23/2002	94.49	0	0	0	0	94.49
7/30/2002	100	0	0	0	0	100
8/6/2002	100	0	0	0	0	100
10/1/2002	100	0	0	0	0	100
11/26/2002	99.85	0	0	0	0	99.85
12/3/2002	100	0	0	0	0	100
12/10/2002	48.6	0	0	0	0	48.6
12/17/2002	51.54	0	0	0	0	51.54
12/24/2002	0.66	0	0	0	0	0.66
1/21/2003	100	0	0	0	0	100
1/28/2003	100	0	0	0	0	100
2/4/2003	100	0	0	0	0	100
2/11/2003	100	0	0	0	0	100
4/15/2003	100	0	0	0	0	100
4/22/2003	100	0	0	0	0	100
4/29/2003	100	0	0	0	0	100
8/26/2003	100	0	0	0	0	100
4/20/2004	21.76	0	0	0	0	21.76
10/5/2004	100	0	0	0	0	100
10/12/2004	100	0	0	0	0	100
5/10/2005	100	0	0	0	0	100
5/17/2005	100	0	0	0	0	100
5/24/2005	48.22	51.78	0	0	0	151.78
5/31/2005	0	100	0	0	0	200
6/7/2005	0	100	0	0	0	200
6/14/2005	42.28	57.72	0	0	0	157.72
6/21/2005	78.6	21.4	0	0	0	121.4
6/28/2005	0	100	0	0	0	200
7/5/2005	0	22.39	77.61	0	0	277.61
7/12/2005	0	22.39	77.61	0	0	277.61
7/19/2005	0	17.43	82.57	0	0	282.57

7/26/2005	0	19.86	78.65	1.49	0	281.63
8/2/2005	0	19.95	78.56	1.49	0	281.54
8/9/2005	0	2.09	96.42	1.49	0	299.4
8/16/2005	0	100	0	0	0	200
8/23/2005	0	79.27	20.73	0	0	220.73
8/30/2005	0	89.21	10.79	0	0	210.79
9/6/2005	0	89.21	10.79	0	0	210.79
9/13/2005	0	89.21	10.79	0	0	210.79
9/20/2005	91.28	8.72	0	0	0	108.72
9/27/2005	100	0	0	0	0	100
10/4/2005	66.69	0	0	0	0	66.69
10/11/2005	66.69	0	0	0	0	66.69
10/18/2005	97.34	0	0	0	0	97.34
10/25/2005	97.34	0	0	0	0	97.34
11/1/2005	97.34	0	0	0	0	97.34
11/8/2005	97.34	0	0	0	0	97.34
11/15/2005	97.34	0	0	0	0	97.34
11/22/2005	97.34	0	0	0	0	97.34
11/29/2005	97.34	0	0	0	0	97.34
12/6/2005	97.34	0	0	0	0	97.34
12/13/2005	97.34	0	0	0	0	97.34
12/20/2005	97.34	0	0	0	0	97.34
12/27/2005	97.34	0	0	0	0	97.34
1/3/2006	96.55	0	0	0	0	96.55
1/10/2006	96.55	0	0	0	0	96.55
1/17/2006	100	0	0	0	0	100
1/24/2006	100	0	0	0	0	100
1/31/2006	54.4	0	0	0	0	54.4
2/7/2006	54.4	0	0	0	0	54.4
2/14/2006	100	0	0	0	0	100
2/21/2006	100	0	0	0	0	100
2/28/2006	1.12	98.88	0	0	0	198.88
3/7/2006	0	100	0	0	0	200
3/14/2006	100	0	0	0	0	100
3/21/2006	100	0	0	0	0	100
3/28/2006	100	0	0	0	0	100
4/4/2006	100	0	0	0	0	100
4/11/2006	100	0	0	0	0	100
4/18/2006	100	0	0	0	0	100
4/25/2006	100	0	0	0	0	100
5/2/2006	97.98	2.02	0	0	0	102.02
5/9/2006	93.48	6.52	0	0	0	106.52
5/16/2006	93.48	6.52	0	0	0	106.52
5/23/2006	93.48	6.52	0	0	0	106.52
5/30/2006	93.48	6.52	0	0	0	106.52
6/20/2006	47.78	0	0	0	0	47.78
6/27/2006	70.46	0	0	0	0	70.46
7/4/2006	65.81	0	0	0	0	65.81
7/11/2006	100	0	0	0	0	100
7/18/2006	100	0	0	0	0	100
7/25/2006	100	0	0	0	0	100
8/1/2006	100	0	0	0	0	100
8/8/2006	7.99	92.01	0	0	0	192.01
8/15/2006	6.45	93.55	0	0	0	193.55
8/22/2006	5.67	94.33	0	0	0	194.33
8/29/2006	70.88	29.12	0	0	0	129.12
9/5/2006	70.88	29.12	0	0	0	129.12
9/12/2006	63.35	36.65	0	0	0	136.65
9/19/2006	63.35	36.65	0	0	0	136.65
9/26/2006	63.35	36.65	0	0	0	136.65
10/3/2006	24.27	75.73	0	0	0	175.73
10/10/2006	24.27	75.73	0	0	0	175.73
10/17/2006	24.27	75.73	0	0	0	175.73
10/24/2006	31.53	68.47	0	0	0	168.47
10/31/2006	99.87	0.13	0	0	0	100.13
11/7/2006	99.87	0.13	0	0	0	100.13
11/14/2006	99.87	0.13	0	0	0	100.13
11/21/2006	99.29	0.71	0	0	0	100.71

11/28/2006	98.36	1.64	0	0	0	101.64
6/12/2007	100	0	0	0	0	100
6/19/2007	100	0	0	0	0	100
6/26/2007	100	0	0	0	0	100
7/31/2007	100	0	0	0	0	100
8/7/2007	100	0	0	0	0	100
8/14/2007	0	100	0	0	0	200
8/21/2007	0	100	0	0	0	200
8/28/2007	0	100	0	0	0	200
9/4/2007	0	100	0	0	0	200
9/11/2007	0	100	0	0	0	200
9/18/2007	0	100	0	0	0	200
9/25/2007	0	100	0	0	0	200
10/2/2007	0	100	0	0	0	200
10/9/2007	0	100	0	0	0	200
10/16/2007	0	100	0	0	0	200
10/23/2007	0	100	0	0	0	200
10/30/2007	0	100	0	0	0	200
11/6/2007	0	100	0	0	0	200
11/13/2007	0	100	0	0	0	200
11/20/2007	0	100	0	0	0	200
11/27/2007	0	100	0	0	0	200
12/4/2007	0	100	0	0	0	200
12/11/2007	0	100	0	0	0	200
12/18/2007	0	100	0	0	0	200
12/25/2007	0	100	0	0	0	200
1/1/2008	0	100	0	0	0	200
1/8/2008	100	0	0	0	0	100
1/15/2008	100	0	0	0	0	100
1/22/2008	100	0	0	0	0	100
1/29/2008	100	0	0	0	0	100
8/2/2011	100	0	0	0	0	100
8/9/2011	54.05	45.95	0	0	0	145.95
8/16/2011	0.03	99.97	0	0	0	199.97
8/23/2011	0.03	99.97	0	0	0	199.97
8/30/2011	0	100	0	0	0	200
9/6/2011	0	100	0	0	0	200
9/13/2011	0	100	0	0	0	200
9/20/2011	95.85	4.15	0	0	0	104.15
9/27/2011	100	0	0	0	0	100
10/4/2011	100	0	0	0	0	100
10/11/2011	100	0	0	0	0	100
10/18/2011	61.22	0	0	0	0	61.22
10/25/2011	72.03	0	0	0	0	72.03
11/1/2011	37.08	62.92	0	0	0	162.92
11/8/2011	37.08	62.92	0	0	0	162.92
11/15/2011	70.44	0	0	0	0	70.44
11/22/2011	70.44	0	0	0	0	70.44
3/27/2012	0.04	0	0	0	0	0.04
4/3/2012	0.04	0	0	0	0	0.04
6/5/2012	100	0	0	0	0	100
6/12/2012	100	0	0	0	0	100
6/19/2012	98.14	1.86	0	0	0	101.86
6/26/2012	98.14	1.86	0	0	0	101.86
7/3/2012	0	100	0	0	0	200
7/10/2012	0	0	100	0	0	300
7/17/2012	0	0	100	0	0	300
7/24/2012	0	0	0	100	0	400
7/31/2012	0	0	0	100	0	400
8/7/2012	0	0	0	100	0	400
8/14/2012	0	0	0	100	0	400
8/21/2012	0	0	0	100	0	400
8/28/2012	0	0	0	100	0	400
9/4/2012	0	0	100	0	0	300
9/11/2012	0	0	100	0	0	300
9/18/2012	0	0	100	0	0	300
9/25/2012	0	0	100	0	0	300
10/2/2012	0	100	0	0	0	200

10/9/2012	0	100	0	0	0	200
10/16/2012	0	100	0	0	0	200
10/23/2012	0	100	0	0	0	200
10/30/2012	100	0	0	0	0	100
11/6/2012	100	0	0	0	0	100
11/13/2012	100	0	0	0	0	100
11/20/2012	100	0	0	0	0	100
11/27/2012	100	0	0	0	0	100
12/4/2012	14.7	85.3	0	0	0	185.3
12/11/2012	14.7	85.3	0	0	0	185.3
12/18/2012	14.7	85.3	0	0	0	185.3
12/25/2012	14.7	85.3	0	0	0	185.3
1/1/2013	14.7	85.3	0	0	0	185.3
1/8/2013	11.04	88.96	0	0	0	188.96
1/15/2013	11.04	88.96	0	0	0	188.96
1/22/2013	11.04	88.96	0	0	0	188.96
1/29/2013	11.04	88.96	0	0	0	188.96
2/5/2013	76.1	0	0	0	0	76.1
2/12/2013	76.66	0	0	0	0	76.66
2/19/2013	100	0	0	0	0	100
2/26/2013	100	0	0	0	0	100
8/13/2013	100	0	0	0	0	100
8/20/2013	100	0	0	0	0	100
8/27/2013	100	0	0	0	0	100
9/3/2013	100	0	0	0	0	100
9/10/2013	100	0	0	0	0	100
9/17/2013	47.38	52.62	0	0	0	152.62
9/24/2013	47.38	52.62	0	0	0	152.62
10/1/2013	30.22	69.78	0	0	0	169.78
10/8/2013	30.22	69.78	0	0	0	169.78
10/15/2013	30.22	69.78	0	0	0	169.78
10/22/2013	30.22	69.78	0	0	0	169.78
10/29/2013	30.22	69.78	0	0	0	169.78
11/5/2013	30.22	69.78	0	0	0	169.78
11/12/2013	26.12	73.88	0	0	0	173.88
11/19/2013	26.12	73.88	0	0	0	173.88
11/26/2013	26.12	73.88	0	0	0	173.88
12/3/2013	26.12	73.88	0	0	0	173.88
12/10/2013	26.12	73.88	0	0	0	173.88
12/17/2013	26.12	73.88	0	0	0	173.88
12/24/2013	32.13	41.75	0	0	0	115.63
12/31/2013	32.13	41.75	0	0	0	115.63
1/7/2014	32.13	41.75	0	0	0	115.63
1/14/2014	32.13	41.75	0	0	0	115.63
1/21/2014	32.13	41.75	0	0	0	115.63
1/28/2014	32.13	41.75	0	0	0	115.63
2/4/2014	32.13	41.75	0	0	0	115.63
2/11/2014	32.13	41.75	0	0	0	115.63
2/18/2014	32.13	41.75	0	0	0	115.63
2/25/2014	34.77	39.12	0	0	0	113.01
3/4/2014	34.77	39.12	0	0	0	113.01
3/11/2014	54.26	39.12	0	0	0	132.5
3/18/2014	54.26	39.12	0	0	0	132.5
3/25/2014	52.31	41.07	0	0	0	134.45
4/1/2014	57.92	42.08	0	0	0	142.08
4/8/2014	41.44	0	0	0	0	41.44
4/15/2014	42.49	0	0	0	0	42.49
4/22/2014	42.49	0	0	0	0	42.49
10/27/2015	100	0	0	0	0	100
11/3/2015	100	0	0	0	0	100
11/10/2015	100	0	0	0	0	100
3/29/2016	88.36	0	0	0	0	88.36
6/14/2016	67	0	0	0	0	67
6/21/2016	68.04	0	0	0	0	68.04
6/28/2016	67.79	0	0	0	0	67.79
10/18/2016	0.17	0	0	0	0	0.17
10/25/2016	0.17	0	0	0	0	0.17
11/1/2016	0.17	0	0	0	0	0.17

11/8/2016	0.17	0	0	0	0	0.17
11/15/2016	0.17	0	0	0	0	0.17
11/22/2016	0.17	0	0	0	0	0.17
11/29/2016	0.17	0	0	0	0	0.17
12/6/2016	0.17	0	0	0	0	0.17
12/13/2016	0.17	0	0	0	0	0.17
12/20/2016	68	0	0	0	0	68
12/27/2016	68	0	0	0	0	68
1/3/2017	68	0	0	0	0	68
1/10/2017	68	0	0	0	0	68
1/17/2017	68	0	0	0	0	68
1/24/2017	65.95	0	0	0	0	65.95
1/31/2017	65.95	0	0	0	0	65.95
2/7/2017	65.95	0	0	0	0	65.95
2/14/2017	64.27	1.68	0	0	0	67.63
2/21/2017	98.32	1.68	0	0	0	101.68
2/28/2017	98.32	1.68	0	0	0	101.68
3/7/2017	0.67	99.33	0	0	0	199.33
3/14/2017	0.67	99.33	0	0	0	199.33
3/21/2017	0.67	99.33	0	0	0	199.33
3/28/2017	0.67	99.33	0	0	0	199.33
4/4/2017	46.03	0	0	0	0	46.03
7/18/2017	100	0	0	0	0	100
7/25/2017	100	0	0	0	0	100
8/1/2017	16.7	0	0	0	0	16.7
8/8/2017	16.7	0	0	0	0	16.7
8/15/2017	16.7	0	0	0	0	16.7
8/22/2017	100	0	0	0	0	100
8/29/2017	100	0	0	0	0	100
9/5/2017	100	0	0	0	0	100
9/12/2017	100	0	0	0	0	100
9/19/2017	100	0	0	0	0	100
9/26/2017	50.13	49.87	0	0	0	149.87
10/3/2017	50.13	49.87	0	0	0	149.87
10/10/2017	50.13	49.87	0	0	0	149.87
10/17/2017	99.57	0.43	0	0	0	100.43
10/24/2017	99.57	0.43	0	0	0	100.43
10/31/2017	43.73	56.27	0	0	0	156.27
11/7/2017	43.73	56.27	0	0	0	156.27
11/14/2017	2.15	46.62	51.24	0	0	249.11
11/21/2017	2.15	46.62	51.24	0	0	249.11
11/28/2017	2.15	46.62	51.24	0	0	249.11
12/5/2017	2.15	6.83	91.02	0	0	288.87
12/12/2017	2.15	6.83	91.02	0	0	288.87
12/19/2017	0	8.98	91.02	0	0	291.02
12/26/2017	0	8.98	91.02	0	0	291.02
1/2/2018	0	8.98	91.02	0	0	291.02
1/9/2018	0	8.98	91.02	0	0	291.02
1/16/2018	0	8.98	91.02	0	0	291.02
1/23/2018	0	8.98	91.02	0	0	291.02
1/30/2018	0	8.98	91.02	0	0	291.02
2/6/2018	0	7.75	92.25	0	0	292.25
2/13/2018	0	0	100	0	0	300
2/20/2018	0	0	100	0	0	300
2/27/2018	100	0	0	0	0	100
3/6/2018	100	0	0	0	0	100
3/13/2018	100	0	0	0	0	100
3/20/2018	99.95	0	0	0	0	99.95
7/24/2018	0.03	0	0	0	0	0.03
7/31/2018	74.74	0	0	0	0	74.74
8/7/2018	74.74	0	0	0	0	74.74
8/14/2018	79.28	0	0	0	0	79.28
8/21/2018	0.02	0	0	0	0	0.02
10/2/2018	80.72	0	0	0	0	80.72

**The data are from the National Drought Mitigation Center.*

Table C.2 – Flash Flood Records

Location	Event Date	Injuries	Deaths	Property Damage
South Portion	6/24/2000	0	0	$0
Countywide	5/7/2002	0	0	$0
Countywide	5/12/2002	0	0	$0
Countywide	5/12/2002	0	0	$0
Fieldon	5/8/2003	0	1	$0
Countywide	6/25/2003	0	0	$0
Countywide	5/27/2004	0	0	$0
New Delhi	8/10/2006	0	0	$0
Jerseyville	5/10/2007	0	0	$45,000
Grafton	5/25/2008	0	0	$1,000
Delhi	8/5/2008	0	0	$0
Jerseyville	12/27/2008	0	0	$0
Nutwood	7/12/2010	0	0	$0
Monument	10/2/2014	0	0	$0
Grafton	12/26/2015	0	1	$0
Grafton	8/12/2019	0	0	$0
	Totals =	0	2	$46,000

**The data are from the NOAA NCDC Storm Events Database.*

Table C.3 – Hail Records

Location	Event Date	Size (Inches)	Injuries	Deaths	Property Damage	Crop Damage
Grafton	5/3/1996	1.75	0	0	$0	$0
Grafton	5/2/1997	1	0	0	$0	$0
Grafton	5/1/1998	0.75	0	0	$0	$0
Jerseyville	5/22/1998	0.75	0	0	$0	$0
Jerseyville	6/12/1998	1	0	0	$0	$0
Jerseyville	6/12/1998	1.75	0	0	$0	$0
Jerseyville	6/12/1998	1	0	0	$0	$0
New Delhi	6/11/1999	0.75	0	0	$0	$0
Rosedale	4/20/2000	0.88	0	0	$0	$0
Jerseyville	4/20/2000	0.88	0	0	$0	$0
Otterville	5/18/2000	1.75	0	0	$0	$0
Jerseyville	10/24/2001	0.75	0	0	$0	$0
Jerseyville	4/24/2002	1.75	0	0	$0	$0
Grafton	4/4/2003	1.75	0	0	$0	$0
Grafton	5/4/2003	0.88	0	0	$0	$0
Grafton	5/4/2003	1	0	0	$0	$0
Jerseyville	5/8/2003	0.75	0	0	$0	$0
Jerseyville	8/2/2003	0.75	0	0	$0	$0
Fieldon	5/26/2004	1	0	0	$0	$0
Jerseyville	5/31/2004	0.75	0	0	$0	$0
Jerseyville	6/26/2004	1	0	0	$0	$0
Nutwood	6/13/2005	0.75	0	0	$0	$0
Nutwood	6/13/2005	0.75	0	0	$0	$0
Fieldon	6/13/2005	0.75	0	0	$0	$0
Jerseyville	6/13/2005	1.75	0	0	$0	$0
Fieldon	11/5/2005	0.88	0	0	$0	$0
Nutwood	2/16/2006	0.88	0	0	$0	$0
Jerseyville	2/16/2006	1	0	0	$0	$0

Fieldon	4/6/2006	1.75	0	0	$0	$0
Kemper	5/24/2006	0.75	0	0	$0	$0
Kemper	5/24/2006	1	0	0	$0	$0
Grafton	6/22/2006	0.88	0	0	$0	$0
Grafton	6/22/2006	0.75	0	0	$0	$0
Elsah	6/22/2006	2.5	0	0	$0	$0
Elsah	6/22/2006	1	0	0	$0	$0
Fieldon	6/1/2007	0.75	0	0	$0	$0
Grafton	2/3/2008	1	0	0	$0	$0
Grafton	2/5/2008	0.75	0	0	$0	$0
Otterville	5/31/2008	1	0	0	$0	$0
Grafton	5/31/2008	1	0	0	$0	$0
Elsah	5/31/2008	1	0	0	$0	$0
Jerseyville	5/31/2008	1	0	0	$0	$0
New Delhi	5/31/2008	0.88	0	0	$0	$0
Rosedale	3/8/2009	1.25	0	0	$0	$0
Fieldon	3/8/2009	1	0	0	$0	$0
Rosedale	5/3/2010	0.75	0	0	$0	$0
Otterville	5/3/2010	1.75	0	0	$0	$0
Mc Clusky	5/3/2010	1	0	0	$0	$0
Dow	5/3/2010	1.75	0	0	$0	$0
Delhi	5/3/2010	1.75	0	0	$0	$0
Jerseyville	4/19/2011	1.75	0	0	$0	$0
Grafton	4/19/2011	1.5	0	0	$0	$0
Otterville	4/19/2011	1.75	0	0	$0	$0
Jerseyville	4/19/2011	1.75	0	0	$0	$0
Delhi	4/19/2011	1	0	0	$0	$0
Kemper	5/28/2011	1	0	0	$0	$0
Grafton	6/25/2011	2	0	0	$0	$0
Jerseyville	10/22/2012	0.88	0	0	$0	$0
Elsah	4/10/2013	0.88	0	0	$0	$0
Otterville	5/10/2014	0.88	0	0	$0	$0
Dow	5/10/2014	1	0	0	$0	$0
Jerseyville	4/8/2015	0.88	0	0	$0	$0
Otterville	4/9/2015	2.25	0	0	$0	$0
Otterville	6/25/2015	0.75	0	0	$0	$0
Beltrees	4/27/2016	0.75	0	0	$0	$0
Jerseyville	10/20/2016	0.75	0	0	$0	$0
Dow	2/28/2017	0.88	0	0	$0	$0
		Totals =	0	0	$0	$0

The data are from the NOAA NCDC Storm Events Database.

Table C.4 – High Winds Records

Location	Event Date	Wind Speed (MpH)	Injuries	Deaths	Property Damage
Countywide	4/30/1997	45	0	0	$0
Countywide	2/25/2001	40	0	0	$0
Countywide	3/13/2001	40	0	0	$0
Countywide	3/9/2002	43	0	0	$0
Countywide	5/11/2008	43	0	0	$1,000
Countywide	12/9/2009	39	0	0	$1,000
		Totals =	0	0	$2,000

The data are from the NOAA NCDC Storm Events Database.

Table C.5 – Lightning Records

Location	Event Date	Injuries	Deaths	Property Damage
Jerseyville	5/22/2011	0	0	$150,000
	Totals =	0	0	$150,000

*The data are from the NOAA NCDC Storm Events Database.

Table C.6 – Riverine Flood Records

Location	Event Date	Injuries	Deaths	Property Damage
Countywide	5/1/1996	0	0	$0
Countywide	4/16/2001	0	0	$0
Countywide	5/1/2001	0	0	$0
Countywide	5/20/2001	0	0	$0
Countywide	6/4/2001	0	0	$0
Countywide	4/27/2002	0	0	$0
Countywide	4/27/2002	0	0	$0
Countywide	5/1/2002	0	0	$0
Countywide	5/1/2002	0	0	$0
Grafton	8/28/2007	0	0	$0
Nutwood	6/4/2008	0	0	$0
Grafton	7/18/2008	0	0	$0
Grafton	6/14/2010	0	0	$0
Grafton	4/14/2013	0	0	$5,000
Nutwood	4/19/2013	0	0	$5,000
Nutwood	5/1/2013	0	0	$2,000
Nutwood	6/1/2013	0	0	$1,000
Grafton	6/1/2013	0	0	$1,000
Elsah	6/2/2019	0	0	$0
	Totals =	0	0	$14,000

*The data are from the NOAA NCDC Storm Events Database

Table C.7 – Severe Winter Storm Records

Location	Event Date	Storm Type	Injuries	Deaths	Property Damage
Countywide	1/2/1996	Winter Storm	0	0	0
Countywide	1/8/1997	Winter Storm	0	0	0
Countywide	1/15/1997	Winter Storm	0	0	0
Countywide	4/10/1997	Winter Storm	0	0	0
Countywide	1/8/1998	Winter Storm	0	0	0
Countywide	1/12/1998	Winter Storm	0	0	0
Countywide	3/8/1998	Winter Storm	0	0	0
Countywide	12/21/1998	Winter Storm	0	0	0
Countywide	1/1/1999	Winter Storm	0	0	0
Countywide	1/13/1999	Ice Storm	0	0	0
Countywide	1/28/2000	Winter Storm	0	0	0
Countywide	3/11/2000	Winter Storm	0	0	0
Countywide	1/26/2001	Winter Storm	0	0	0
Countywide	2/25/2002	Winter Storm	0	0	0
Countywide	3/25/2002	Winter Storm	0	0	0
Countywide	12/24/2002	Winter Storm	0	0	0
Countywide	2/23/2003	Winter Storm	0	0	0
Countywide	12/13/2003	Winter Storm	0	0	0

Countywide	1/25/2004	Winter Storm	0	0	0
Countywide	11/24/2004	Winter Storm	0	0	0
Countywide	12/8/2005	Winter Storm	0	0	0
Countywide	11/29/2006	Winter Storm	0	0	0
Countywide	12/1/2006	Winter Storm	0	0	0
Countywide	1/12/2007	Ice Storm	0	0	0
Countywide	12/6/2007	Winter Weather	0	0	0
Countywide	12/8/2007	Ice Storm	0	0	0
Countywide	2/11/2008	Winter Weather	0	0	0
Countywide	1/6/2010	Winter Weather	0	0	0
Countywide	1/31/2011	Winter Storm	0	0	0
Countywide	2/1/2011	Winter Storm	0	0	0
Countywide	2/21/2013	Winter Storm	0	0	0
Countywide	1/1/2014	Winter Storm	0	0	0
Countywide	1/5/2014	Winter Storm	0	0	0
Countywide	2/4/2014	Winter Storm	0	0	0
Countywide	2/20/2015	Winter Storm	0	0	0
		Totals =	0	0	$0

The data are from the NOAA NCDC Storm Events Database.

Table C.8 – Thunderstorm Records

Location	Event Date	Wind Speed (MpH)	Injuries	Deaths	Property Damage
Grafton	5/25/1996	50	0	0	$0
Jerseyville	5/27/1996	54	0	0	$0
Jerseyville	3/27/1998	52	0	0	$0
Grafton	5/22/1998	55	0	0	$0
Grafton	6/14/1998	70	0	0	$0
Jerseyville	6/18/1998	52	0	0	$0
Jerseyville	11/10/1998	56	0	0	$0
Dow	7/9/1999	52	0	0	$0
Rosedale	8/12/1999	55	0	0	$0
Jerseyville	4/20/2000	60	0	0	$0
Rosedale	4/20/2000	60	0	0	$0
Jerseyville	6/23/2000	52	0	0	$0
Delhi	8/7/2000	51	0	0	$0
Grafton	2/9/2001	60	0	0	$0
Jerseyville	2/9/2001	55	0	0	$0
Jerseyville	5/20/2001	52	0	0	$0
Kemper	7/17/2001	55	0	0	$0
Jerseyville	7/17/2001	55	0	0	$0
Jerseyville	7/17/2001	55	0	0	$0
Nutwood	5/7/2002	55	0	0	$0
Grafton	7/18/2003	55	0	0	$0
Elsah	7/18/2003	55	0	0	$0
Beltrees	7/18/2003	55	0	0	$0
Jerseyville	8/2/2003	60	0	0	$0
Dow	8/2/2003	55	0	0	$0
Jerseyville	5/24/2004	55	0	0	$0
Jerseyville	5/24/2004	55	0	0	$0
Jerseyville	5/24/2004	55	0	0	$0
Jerseyville	5/24/2004	55	0	0	$0
Kemper	5/24/2004	55	0	0	$0
Fieldon	5/27/2004	55	0	0	$0

Jerseyville	5/27/2004	55	0	0	$0
Jerseyville	5/31/2004	52	0	0	$0
Fidelity	5/31/2004	52	0	0	$0
Elsah	8/25/2004	55	0	0	$0
Kemper	6/8/2005	50	0	0	$0
Jerseyville	6/8/2005	55	0	0	$0
Jerseyville	6/13/2005	55	0	0	$0
Elsah	6/13/2005	55	0	0	$0
Jerseyville	9/19/2005	52	0	0	$0
Fieldon	2/16/2006	55	0	0	$0
Elsah	4/2/2006	55	0	0	$0
Grafton	5/24/2006	52	0	0	$0
Jerseyville	7/19/2006	60	0	0	$0
Kemper	8/13/2007	52	0	0	$0
Nutwood	10/2/2007	52	0	0	$0
Fieldon	10/18/2007	52	0	0	$0
Elsah	7/12/2008	52	0	0	$0
Jerseyville	8/5/2008	61	0	0	$0
Elsah	5/15/2009	50	0	0	$0
Elsah	6/19/2009	52	0	0	$0
Monument	6/27/2010	52	0	0	$0
Elsah	8/20/2010	52	0	0	$0
Jerseyville	6/27/2011	56	0	0	$0
Otterville	7/12/2011	52	0	0	$0
Fidelity	10/17/2012	61	0	0	$0
Dow	4/28/2014	56	0	0	$0
Dow	5/10/2014	56	0	0	$0
Jerseyville	4/9/2015	52	0	0	$0
Rosedale	5/15/2015	56	0	0	$0
Jerseyville	5/7/2016	56	0	0	$0
Grafton	7/13/2016	56	0	0	$0
Beltrees	4/29/2017	78	0	0	$0
Fieldon	6/28/2018	56	0	0	$0
Delhi	6/28/2018	56	0	0	$0
Fidelity	5/22/2019	61	0	0	$0
		Totals =	0	0	$0

**The data are from the NOAA NCDC Storm Events Database*

Table C.9 – Tornado Records

Location	Event Date	Fujita Class	Injuries	Deaths	Property Damage
County	3/6/1961	F1	0	0	$2,500
County	9/24/1961	F1	0	1	$25,000
County	12/21/1967	F1	0	0	$25,000
County	6/1/1970	F1	0	0	$25,000
County	5/1/1983	F2	1	0	$2,500,000
County	5/1/1983	F2	1	0	$2,500,000
County	11/15/1988	F1	0	0	$250,000
County	11/27/1990	F1	0	0	$250,000
Elsah	7/18/2000	F0	0	0	$0
New Delhi	6/13/2005	F0	0	0	$0
Jerseyville	9/6/2007	EF0	0	0	$0
Rosedale	3/8/2009	EF2	0	0	$0
Rosedale	3/8/2009	EF0	0	0	$0

Fieldon	8/31/2012	EF0	0	0	$0
Jerseyville	6/4/2014	EF0	0	0	$0
Delhi	4/29/2017	EF1	0	0	$0
Chautauqua	6/28/2018	EF0	0	0	$0
		Totals =	2	1	$5,577,500

**The data are from the NOAA NCDC Storm Events Database*

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Backup Generators

Backup generators provide critical facilities with electricity in the event a community's electrical transmission grid is either damaged by a disaster or overloaded by excessive use during an event.	
Hazard/s Addressed	Earthquakes, Floods, Severe Storms, Severe Winter Storms, Tornadoes
Effectiveness	Medium
Timeframe	1 – 2 Years
Lead Organization	Jersey County (Relevant Building Department), Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Bury Utility Lines, Pipes, and Tanks

Transferring existing utilities lines, pipes, and chemical storage tanks from above ground to below ground will significantly reduce the amount of property damage incurred from wind, ice, and snow related events.	
Hazard/s Addressed	Earthquakes, Severe Storms, Severe Winter Storms, Tornadoes
Effectiveness	Medium
Timeframe	1 – 5 Years
Lead Organization	Jersey County Highway Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Earthquake Assessment & Retrofit

An earthquake vulnerability assessment will detail a jurisdiction's high-risk facilities, infrastructure, and make retrofit recommendations. Using the assessment, a jurisdiction can retrofit their facilities and infrastructure there by reducing their structural vulnerabilities to seismic events.	
Hazard/s Addressed	Earthquakes
Effectiveness	High
Timeframe	1 – 5 Years
Lead Organization	Jersey County (Relevant Building Department), Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, PDM, Local Budgets

Elevate Structures

Structures located within identified flood zones can be elevated above base flood elevation or predicted other predicted flood inundation levels.	
Hazard/s Addressed	Dam & Levee Failures, Floods
Effectiveness	High
Timeframe	1 – 3 Years
Lead Organization	Jersey County Code Administration Office, Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	FMA, HMGP, Local Budgets, PDM

FEMA Code 361 Safe Rooms

FEMA Code 361 regulations ensure a structure is capable of withstanding wind speeds greater than 200 miles per hour. Additionally, these anti-tornado regulations also ensure the structure is protected against hail, lightning, high and strong winds. This project can be implemented as a retrofit of a current structure or the construction of a new facility. Any critical facility is a potential target for this, but realistically location will be determined by which participating jurisdictions have the want and resources to accomplish this project.	
Hazard/s Addressed	Severe Storms, Tornadoes
Effectiveness	High
Timeframe	1 – 3 Years
Lead Organization	Jersey County (Relevant Building Department), Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Floodproofing

This technique is often used when relocation or buying out is not an option as is the case with a historic building or it would require astronomical funding that is not available. Floodproofing projects constitute any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage. Wet floodproofing reduces property damage counteracting hydrostatic pressure on walls or other support structures by equalizing the pressure between the interior and exterior of a structure.	
Hazard/s Addressed	Dam & Levee Failures, Floods
Effectiveness	Medium
Timeframe	1 – 3 Years
Lead Organization	Jersey County (Relevant Building Department), Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	FMA, HMGP, Local Budgets, PDM

Flood Level Monitoring System

Strategically installing water monitoring stations will assist in measuring the severity of an existing or impending drought, the real-time and historical levels of flooding, as well as dam failures. Accurately measuring water levels will allow the community to take the necessary conservation and regulatory measures to mitigate the droughts, flood, and dam failure effects. This project should be implemented in all major basins and water retention, rivers and streams prone to flooding, natural and man-made, areas throughout the planning area. Additionally, having precise historical data from past floods will enhance the planning area's ability to develop future mitigation planning actions and projects.	
Hazard/s Addressed	Dam & Levee Failures, Droughts, Floods
Effectiveness	Low
Timeframe	1 – 3 Years
Lead Organization	Jersey County Code Administration Office (With USACE)
Funding Sources	FMA, HMGP, Local Budgets, PDM

Insulation & Energy Efficiency

Upgrading a facility's windows, windows frames, roofing, and insulation will allow it to better maintain a desired warm or cool temperature during prolonged extreme heat or winter storms. Additionally, it decreases the energy load necessary to do so, decreasing the burden on the local energy grid.	
Hazard/s Addressed	Severe Winter Storms
Effectiveness	Low
Timeframe	1 – 3 Years
Lead Organization	Jersey County (Relevant Building Department), Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Interior Furnishing Hazard Reduction

Fastening, removing, or modifying interior furnishing prevent them from shaking, becoming unstable, or falling loose into people and other objects during seismic events.	
Hazard/s Addressed	Earthquakes
Effectiveness	Low
Timeframe	1 – 2 Years
Lead Organization	Jersey County Code Administration Office, Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, PDM, Local Budgets

Irrigation Storage Tanks

Storage tanks can significantly increase the water supply available to rural communities. They are instrumental in providing relief to agricultural sectors in places without sizable water delivery infrastructure during drought events. Further, they help enhance and maintain the ability of local responders to fight wildfires during drought periods.	
Hazard/s Addressed	Droughts
Effectiveness	High
Timeframe	1 – 2 Years
Lead Organization	Jersey County (Relevant Building Department), Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Levee Retrofit

Hazard/s Addressed	Dam & Levee Failures
Effectiveness	Medium
Timeframe	1 – 4 Years
Lead Organization	Jersey County Code Administration Office (With USACE)
Funding Sources	FMA, HMGP, Local Budgets, PDM

Looped Grid Power Systems

Linear power grids have single points of failure that are vulnerable to a number of hazards. Looped power grids operate in parallel and are thus significantly more resistant to damage allowing the utilities to maintain power after an event.	
Hazard/s Addressed	Dam & Levee Failures, Earthquakes, Floods, Severe Storms, Severe Winter Storms, Tornadoes
Effectiveness	Medium
Timeframe	1 – 5 Years
Lead Organization	Jersey County (Relevant Building Department), Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Low Flow Utilities

To decrease water usage before, during, and after a drought, communities can install low water flow utilities throughout its critical facilities and infrastructure. This will not only decrease water usage, but also decrease water demands. The planning area should implement this project in conjunction with their school districts and critical facilities standard maintenance cycles.	
Hazard/s Addressed	Droughts
Effectiveness	Low
Timeframe	1 – 2 Years
Lead Organization	Jersey County (Relevant Building Department), Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Public Awareness & Education

A campaign will inform and educate the public on hazard risks, allowing them to better protect their property through preparation and their lives through appropriate evacuation and survival procedures.	
Hazard/s Addressed	Dam & Levee Failures, Droughts, Floods, Severe Storms, Severe Winter Storms, Tornadoes
Effectiveness	Low
Timeframe	1 Year
Lead Organization	Jersey County Code Administration Office, Jersey CUSD 100 Maintenance Department
Funding Sources	Local Budgets

Rainwater Retention Basins

Rainwater retention basins are artificial basins built in strategic locations to protect against floods and droughts by collecting and holding rainwater for an extended period of time. The participating jurisdictions should implement these installations in areas where the water can be used during a drought, for agricultural or urban use, or in areas where poor functioning, outdated, or old stormwater drainage systems are in place. Construction of these basins will occur in conjunction with local and regional irrigation districts to multiply their effectiveness and benefit.	
Hazard/s Addressed	Droughts, Floods
Effectiveness	Low
Timeframe	1 – 4 Years
Lead Organization	Jersey County (Relevant Building Department), Department, Municipal Public Works
Funding Sources	FMA, HMGP, Local Budgets, PDM

Raise Transportation Infrastructure

To combat uncontrollable waters emanating from a dam or levee failure, flash flood, or riverine flood, transportation infrastructure may be raised to allow its continued use in a disaster as well as a partial earthen berm to protect a neighboring lower elevation area. Additionally, the increased elevation of road or railway bridges can prevent the buildup of debris during incidents of high floodwaters and preventing further water buildup.	
Hazard/s Addressed	Dam & Levee Failures, Floods
Effectiveness	High
Timeframe	1 – 5 Years
Lead Organization	Jersey County Highway Department, Municipal Public Works
Funding Sources	FMA, HMGP, Local Budgets, PDM

Relocate or Buyout Vulnerable Structures

Some structures may be able to be relocated from identified floodplains or dam inundation zones. Removing them from identified hazard area will eliminate their risk.	
Hazard/s Addressed	Dam & Levee Failures, Floods
Effectiveness	High
Timeframe	1 – 5 Years
Lead Organization	Jersey County (Relevant Building Department), Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	FMA, HMGP, Local Budgets, PDM

SKYWARN Storm Spotter Training

The NWS' SKYWARN Storm Spotter training program educates and delivers basic weather identification, spotting, and reporting information to any concerned citizens. Educating citizens in this program helps increase specific awareness and creates a skillset that helps the NWS create more accurate and timely warnings for tornadoes, severe storms, flash flooding, and other severe weather.	
Hazard/s Addressed	Floods, Severe Storms, Severe Winter Storms, Tornadoes
Effectiveness	Low
Timeframe	1 – 2 Years
Lead Organization	Jersey County Code Administration Office
Funding Sources	Local Budgets

Snow Fences

Snow fences force drifting snow to accumulate in a desired place minimizing the amount of snowdrift on roads and railways. Controlling snow accumulation decreases the danger to a jurisdiction's citizens traveling during and after a winter storm. This project should be implemented along major transportation routes throughout the planning area.	
Hazard/s Addressed	Severe Winter Storms
Effectiveness	Low
Timeframe	1 – 2 Years
Lead Organization	Jersey County Highway Department, Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Storm Water Drainage System Upgrade

Significant flood damage in developed communities can be prevented by upgrading their storm water drainage system by way of increasing culvert sizes, installing debris blocking grates, and weir dams. This mitigation measure will allow flood waters to drain quicker and prevent excess accumulation. This project should be implemented in older drainage systems and any expanding areas throughout the planning area.	
Hazard/s Addressed	Floods
Effectiveness	Medium
Timeframe	1 – 4 Years
Lead Organization	Jersey County Highway Department, Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	FMA, HMGP, Local Budgets, PDM

Storm Water Pump Stations

Storm water pump stations help protect areas by pumping away large volumes of water therefore preventing or decreasing the level of a flood. Pump stations can vary in size and design, allowing them to be tailored to the needs of a specific floodplain, region, or site-specific facility.	
Hazard/s Addressed	Dam & Levee Failures, Floods
Effectiveness	Medium
Timeframe	1 – 4 Years
Lead Organization	Jersey County (Relevant Building Department), Municipal Public Works
Funding Sources	FMA, HMGP, Local Budgets, PDM

StormReady Accreditation

The NWS' StormReady helps arm communities with the communication and safety skills needed to save lives and property before, during, and after an event. Communities who have achieved this accreditation are better prepared to save lives from severe weather through advanced planning, education, and awareness.	
Hazard/s Addressed	Floods, Severe Storms, Tornadoes, Winter Storms
Effectiveness	Low
Timeframe	1 – 2 Years
Lead Organization	Jersey County Code Administration Office, Jersey CUSD 100 Maintenance Department
Funding Sources	Local Budgets

Structural Integrity Monitoring Instruments

Dam failure is often preventable, but due to the structural nature of their construction and limited inspection resources, inspections happen too infrequently. Installing a series of seismic monitoring instruments at strategic locations along a dam can detect small, often unnoticed or detected, shifts in the dam's substructure that are the primary cause in premature collapse or failure. These instruments serve not only as early warning devices, but as the means to ensuring a dam's maintenance and repair schedule is kept.	
Hazard/s Addressed	Dam & Levee Failures
Effectiveness	Medium
Timeframe	1 Year
Lead Organization	Jersey County Code Administration Office (With USACE)
Funding Sources	HMGP, Local Budgets, PDM

Water Line Insulation

Insulating a facility's water pipes helps prevent them from freezing and bursting due to sudden and prolonged low temperatures during winter storms. The planning area should implement this project in conjunction with their school districts and critical facilities standard maintenance cycles.	
Hazard/s Addressed	Severe Winter Storms
Effectiveness	Low
Timeframe	1 Year
Lead Organization	Jersey County Highway Department, Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

Wind Resistance Structural Retrofit

Enhancing a structure's wind resistance according to FEH bronze, silver, or gold specifications will significantly reduce probability of a structure incurring damage and potentially hurting its occupants during a wind related event. Efforts to do so are, but not limited to, strengthening gable anchorages, soffits, roof sheathing, anchoring attached structures such as porches or carports, replacing thing windows, enhancing the integrity of building openings, and developing continuous load paths throughout a structure.	
Hazard/s Addressed	Severe Storms, Tornadoes
Effectiveness	Medium
Timeframe	1 – 5 Years
Lead Organization	Jersey County Highway Department, Jersey CUSD 100 Maintenance Department, Municipal Public Works
Funding Sources	HMGP, Local Budgets, PDM

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Appendix E – Action & Project Prioritization

Table E.1 – Action & Project Prioritization, Jersey County (Unincorporated)

Project/Action	Dam Failure	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures	High			High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing	Medium			Medium			
Flood Level Monitoring System	Low	Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit	Medium						
Looped Grid Power Systems	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education	Low	Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure	High			High			
Relocate or Buyout Vulnerable Structures	High			High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments	Medium						
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant

= Mitigation Project or Action Not Applicable to this Hazard

Table E.2 – Action & Project Prioritization, Brighton

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System		Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education		Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant

= Mitigation Project or Action Not Applicable to this Hazard

Table E.3 – Action & Project Prioritization, Elsah

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System		Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education		Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant

= Mitigation Project or Action Not Applicable to this Hazard

Table E.4 – Action & Project Prioritization, Fidelity

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System		Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education		Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant
= Mitigation Project or Action Not Applicable to this Hazard

Table E.5 – Action & Project Prioritization, Fieldon

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System		Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education		Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant
= Mitigation Project or Action Not Applicable to this Hazard

Table E.6 – Action & Project Prioritization, Grafton

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System		Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education		Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant

= Mitigation Project or Action Not Applicable to this Hazard

Table E.7 – Action & Project Prioritization, Jerseyville

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System		Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education		Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant
= Mitigation Project or Action Not Applicable to this Hazard

Table E.8 – Action & Project Prioritization, Otterville

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System		Low		Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities		Low					
Public Awareness & Education		Low	Low	Low	Low	Low	Low
Rainwater Retention Basins		Low		Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant

= Mitigation Project or Action Not Applicable to this Hazard

Table E.9 – Action & Project Prioritization, Jersey Community Unit School District 100

Project/Action	Dam & Levee Failures	Droughts	Earthquakes	Floods	Severe Storms	Severe Winter Storms	Tornadoes
Backup Generators			Medium	Medium	Medium	Medium	Medium
Bury Utility Lines, Pipes, and Tanks			Medium		Medium	Medium	Medium
Earthquake Assessment & Retrofit			High				
Elevate Structures				High			
FEMA Code 361 Safe Rooms					High		High
Floodproofing				Medium			
Flood Level Monitoring System				Low			
Insulation & Energy Efficiency							
Interior Furnishing Hazard Reduction			Low				
Irrigation Storage Tanks		High					
Levee Retrofit							
Looped Grid Power Systems		Medium	Medium	Medium	Medium	Medium	Medium
Low Flow Utilities							
Public Awareness & Education			Low	Low	Low	Low	Low
Rainwater Retention Basins				Low			
Raise Transportation Infrastructure				High			
Relocate or Buyout Vulnerable Structures				High			
SKYWARN Storm Spotter Training				Low	Low	Low	Low
Snow Fences						Low	
Storm Water Drainage System Upgrade				Medium			
Storm Water Pump Stations				Medium			
StormReady Accreditation				Low	Low	Low	Low
Structural Integrity Monitoring Instruments							
Water Line Insulation						Low	
Wind Resistance Structural Retrofit					Medium		Medium

= Hazard or Project Not Applicable to this Plan Participant

= Mitigation Project or Action Not Applicable to this Hazard

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Resolution to Adopt the 2020 Jersey County Multi-Hazard Mitigation Plan

Whereas, the County of Jersey recognizes the threat that natural disasters pose to people and property within our community; and

Whereas, undertaking disaster mitigation actions will reduce the potential for harm to people and property from future disaster occurrences; and

Whereas, an adopted Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the County of Jersey fully participated in the FEMA-prescribed mitigation planning process to prepare this Multi-Hazard Mitigation Plan; and

Whereas, the County of Jersey participated jointly in the planning process with the other local units of government within the County to prepare a Multi-Hazard Mitigation Plan; and

Now, therefore, be it resolved, that the County of Jersey adopts the Jersey County Multi-Hazard Mitigation Plan as an official Plan; and

Be it further resolved, the County of Jersey will submit this Adoption Resolution to the Illinois Emergency Management Agency and Federal Emergency Management Agency officials to enable the Plan's final approval.

Passed this 12th day of January year 2021

Chairman of the Board

County Clerk

VILLAGE OF ELSAH, IL

Resolution to Adopt the 2020 Jersey County Multi-Hazard Mitigation Plan

Whereas, the Village of Elsah recognizes the threat that natural disasters pose to people and property within our community; and

Whereas, undertaking disaster mitigation actions will reduce the potential for harm to people and property from future disaster occurrences; and

Whereas, an adopted Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the Village of Elsah participated jointly in the planning process with the County of Jersey to prepare a Multi-Hazard Mitigation Plan; and

Now, therefore, be it resolved, that the Village of Elsah recognizes the Jersey County Multi-Hazard Mitigation Plan as an official Plan.

Passed this 16TH day of Feb year 2021

Mayor

Village Clerk

Resolution No. 2021-01

Resolution to Adopt the 2020 Jersey County Multi-Hazard Mitigation Plan

Whereas, the City of Grafton recognizes the threat that natural disasters pose to people and property within our community; and

Whereas, undertaking disaster mitigation actions will reduce the potential for harm to people and property from future disaster occurrences; and

Whereas, an adopted Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the City of Grafton participated jointly in the planning process with the County of Jersey to prepare a Multi-Hazard Mitigation Plan; and

Now, therefore, be it resolved, that the City of Grafton recognizes the Jersey County Multi-Hazard Mitigation Plan as an official Plan.

Passed by the City Council of the City of Grafton, this 19th day of January, 2021.

Ayes: 6

Nays: 0

Absent: —

Approved by the Mayor of the City of Grafton, this 19th day of January, 2021.

Rick Eberlin

Mayor, City of Grafton, Illinois

ATTEST:

City Clerk, City of Grafton, Illinois

CITY OF JERSEYVILLE

Resolution to Adopt the 2020 Jersey County Multi-Hazard Mitigation Plan

Whereas, the City of Jerseyville recognizes the threat that natural disasters pose to people and property within our community; and

Whereas, undertaking disaster mitigation actions will reduce the potential for harm to people and property from future disaster occurrences; and

Whereas, an adopted Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the City of Jerseyville participated jointly in the planning process with the County of Jersey to prepare a Multi-Hazard Mitigation Plan; and

Now, therefore, be it resolved, that the City of Jerseyville recognizes the Jersey County Multi-Hazard Mitigation Plan as an official Plan.

Passed this 23rd day of February year 2021

Dee L. Russell
Mayor

Del Hayes
Village Clerk

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Appendix G – FEMA Approval Letter

U.S. Department of Homeland Security
FEMA Region 5
536 S. Clark St., 6th Floor
Chicago, IL 60605

FEMA

May 11, 2021

Mr. Sam AL-Basha
State Hazard Mitigation Officer
Illinois Emergency Management Agency
1035 Outer Park Drive
Springfield, IL 62704

Dear Mr. AL-Basha:

Thank you for submitting adoption documentation for the Jersey County Hazards Mitigation Plan. The plan was reviewed based on the local plan criteria contained in 44 CFR Part 201, as authorized by the Disaster Mitigation Act of 2000. The plan met the required criteria for a multi-jurisdictional hazard mitigation plan and the plan is now approved for Jersey County, the cities of Grafton and Jerseyville, and the village of Elsah. Please submit adoption resolutions for any remaining jurisdictions who participated in the planning process.

The approval of this plan ensures continued availability of the full complement of Hazard Mitigation Assistance (HMA) Grants. All requests for funding, however, will be evaluated individually according to the specific eligibility and other requirements of the particular program under which the application is submitted.

We encourage the participating jurisdictions to work with Jersey County to follow the plan's schedule for monitoring and updating the plan and continue their efforts to implement the mitigation measures. The expiration date of the Jersey County Hazards Mitigation Plan is five years from the date of this letter. The plan must be reviewed, revised as appropriate, resubmitted, and approved no later than the plan expiration date.

Please pass on our congratulations to the approved jurisdictions for completing this significant action. If you or the participating jurisdictions have any questions, please contact Lorena Reyes at (312) 408-5270 or Lorena.reyes@fema.dhs.gov.

Sincerely,

Julia McCarthy
Chief, Risk Analysis Branch
Mitigation Division