

Appendix A: Tama County Meeting Minutes

Tama County Hazard Mitigation Meeting Minutes

Meeting #1 – Toledo Community Center

February 10, 2015 – 2PM

Meeting attended by: Gordon Fassett, City of Clutier Mayor; Mark Zmolek, City of Toledo Superintendent of Public Works; John Lloyd, City of Tama Public Works Director; Dan Zimmerman, City of Tama Mayor; Steve McAdoo, South Tama Community School District Bus Barn and Maintenance Supervisor; Mindy Benson, Tama County EMA Manager; April McIntire, Tama County EMA employee; Mark Polich, GMG Community School District Principal, and; Lori Bearden, City of Gladbrook Clerk, and; Marty Wymore, Region 6 Planning Commission Executive Director.

Meeting started at 2:00PM

The Tama County Hazard Mitigation Committee met for the first time on February 10, 2015. Julie Whitson and Stacy Lentsch facilitated the meeting on behalf of Region VI. Facilitators explained the purpose of the meeting and mitigation plan, what the mitigation plan was intended to do for the community, and what the planning process would look like.

Next, the committee discussed which hazards could impact Tama County using a list of 21 hazards and their associated definitions from the State of Iowa 2013 Mitigation Plan. The committee determined that the following hazards would have little to no impact on Tama County and should be removed from further discussion:

- Earthquake
- Expansive soils
- Landslide
- Sinkholes

The committee also determined that the following hazards should be addressed at the county level, as they posed similar levels of risk to each jurisdiction if they were to occur:

- Drought
- Extreme Heat
- Radiological
- Severe Winter Storm
- Wind Storms

The committee did not identify any additional hazards that were not included on the list.

The group then conducted a risk assessment for the hazards that were to be addressed at the county level. The group agreed to a score for each county-wide hazard based on historical occurrence, probability of the hazard occurring in the future, vulnerability of people and property, severity of impact, and speed of onset. Individual communities then scored the remaining hazards using the same criteria. Communities were also provided with a map of their incorporated area and were asked to draw in areas where flash flooding was likely to occur.

The committee decided to hold their next meeting on Tuesday, March 17th at 2:00PM in the same location at the Toledo Community Center in Tama County. Meeting adjourned at 3:15.

Tama County Hazard Mitigation Meeting Minutes
Meeting #2 – Toledo Community Center
March 17, 2015 – 2PM

Meeting attended by: Dave Svoboda, City of Toledo Mayor; Susan Eberhart, City of Montour Mayor; Lori Bearden, City of Gladbrook Clerk; Steve McAdoo, South Tama Community School District Bus Barn and Maintenance Supervisor; John Lloyd, City of Tama Public Works Director; George Bazal, City of Vining Mayor; Fred Vore, City of Vining Councilman; Pam Thiele, City of Dysart Mayor; Keri Kopriva, City of Clutier Clerk; Gordon Fassett, City of Clutier Mayor; Mindy Benson, Tama County EMA Manager; Mark Polich, GMG Community School District Principal; Lori Speck, City of Garwin Clerk; Larry Yest, Tama County Board of Supervisors; Kendall Jordan, Tama County Board of Supervisors; Marty Wymore, Region 6 Planning Commission Executive Director.

Meeting started at 2:00PM

Julie Whitson and Stacy Lentsch facilitated the meeting on behalf of Region VI. Facilitators led the meeting participants through the following steps:

- Reviewed the risk assessment results and supporting information about hazards that they provided at the previous meeting. Communities were given the opportunity to make changes to scores and information as needed.
- Reviewed goals from the previous plan and agreed that communities wanted to keep the goals from the previous plan.
- Began a preliminary list of new mitigation actions
- Began an update of the status of existing actions from the previous plan
- Took home a critical facilities map and community asset information from the previous plan; will complete the final update of these items at the beginning of the next meeting
- Set the meeting date for the third and final meeting on Tuesday, April 21st in the same location (Toledo Community Center) at 2:00 PM.

Meeting ended at 3:05.

Tama County Hazard Mitigation Meeting Minutes
Meeting #3 – Toledo Community Center
April 21, 2015 – 2PM

Meeting attended by:

Dave Svoboda, City of Toledo Mayor; Susan Eberhart, City of Montour Mayor; Lori Bearden, City of Gladbrook Clerk; Steve McAdoo, South Tama Community School District Bus Barn and Maintenance Supervisor; John Lloyd, City of Tama Public Works Director; Pam Thiele, City of Dysart Mayor; Gordon Fassett, City of Clutier Mayor; Mindy Benson, Tama County EMA Manager; Jeremy Cremeans, Tama County EMA; Lori Speck, City of Garwin Clerk; Linda Rosenberger, Tama County Public Health; Marty Wymore, Region 6 Planning Commission Executive Director.

Meeting started at 2:00PM

Julie Whitson and Stacy Lentsch facilitated the meeting on behalf of Region VI. Marty Wymore, Executive Director of Region 6 Planning Commission, provided an introduction for the meeting. Meeting materials were prepared ahead of time according to mitigation actions that communities had indicated they wanted to carry over from the previous plan or add as new actions to the plan update. Facilitators led the meeting participants through the following steps:

- STAPLEE evaluation – Participants completed the economic portion of the STAPLEE evaluation for each mitigation action.
- Action plan – Participants completed an action plan for each mitigation action, including the hazards that each action addressed, the party or department that would be responsible for implementing the action, the estimated cost, funding source, mitigation measure category, estimated start date, and target completion date of the action.
- Prioritization – Participants viewed how their actions were prioritized based four criteria that considered the risk assessment score of the hazard (s) addressed with each action, start date of the project, total score of the STAPLEE economic evaluation, and a local preference “bonus” point for up to three actions that participants wished to give the actions that they hoped to accomplish if money were not an issue.

Participants were notified that they may be contacted for follow-up information.

Meeting ended at 3:00 PM.

Appendix B: Action Updates

The following 17 jurisdictions in Tama County participated in the previous Multi-Jurisdictional Hazard Mitigation Plan that was approved in 2010:

- City of Chelsea
- City of Clutier
- City of Dysart
- City of Elberon
- City of Garwin
- City of Gladbrook
- City of Lincoln
- City of Montour
- City of Tama
- City of Toledo
- City of Traer
- City of Vining
- Tama County (Unincorporated)
- Gladbrook-Reinbeck School District
- North Tama County Community School District
- South Tama County Community School District
- Union Community School District

Below is a table of the mitigation actions that were included in the previous plan. **Only the actions that were included in the previous plan are listed in this section.** For details about actions that communities have included in the plan update, including actions that were carried over from the previous plan, see the Mitigation Strategy section of this plan. Each activity has been given a “status” that explains whether a community has made progress on an action and whether the action has been included in the plan update. Activity status descriptions are as follows:

- **Completed:** Activities have already been completed and will not be carried over to the next hazard mitigation plan
- **Deleted:** Activities were not completed and are no longer a priority to pursue for the jurisdiction. Additional information about why the activity was deleted is included at the bottom of each table.
- **Carried Over:** Activities were not completed, but the jurisdiction wishes to pursue these actions in the next hazard mitigation plan. Information about progress towards an action is included at the bottom of each table when applicable.
- **Completed and Carried Over:** Activities are ongoing. Progress has already been made to implement and complete the action, and work on the action will continue as specified in the updated plan.

It is important to note that many communities listed the action “Maintain Participation in Code Red,” which is an alert system that many communities use to warn residents about hazard events. The Code Red system has been replaced by the “Alert Iowa” system. This change is reflected in the wording of actions throughout this plan. At the bottom of each table, additional details are included regarding activity statuses. When available, details may include how and when an action was completed, the extent of progress made on an action even if it is not completed, or why an action was deleted. Action updates are listed on the following pages in alphabetical order by jurisdiction. Participating school districts are listed at the end of this chapter.

Action Updates by Jurisdiction

Jurisdiction	Mitigation Action	Status
Chelsea	Acquisition and elevation of structures	Completed and Carried Over
	Maintain existing culverts and add new culverts	Completed and Carried Over
	Purchase generators	Completed
	Construct a levee to protect the community from flood waters	Carried over
	Construct a safe room	Deleted
Additional Details: Since the last plan, the city completed three owner-occupied buyouts on properties in Chelsea and elevated an additional five houses using a combination of NFIP and private funds. The construction of a safe room for the City of Chelsea was removed because cost of the action and availability of funds is a concern. The city funded the purchase of a generator to maintain the function of critical facilities in the event of a power loss.		

Jurisdiction	Mitigation Action	Status
Clutier	Add lift station	Carried over
	Add culverts	Carried over
	Elevate roads	Carried over
	Construct City Shed	Carried over
	Construct safe room	Carried over
	Purchase generator	Complete
	Recruit firemen and first responders	Completed and Carried over
	New emergency siren	Complete
	Public education program	Carried over
	Create list of emergency contacts	Carried over
Additional Details: The City has many “carried over” actions due to a limited budget. Many of the actions on Clutier’s action list require significant amounts of outside funding. The city did complete the purchase of a new emergency siren, generator, and it is continuing its recruitment of firemen and first responders. The public education program and list of emergency contacts projects have not formally begun, but the city has been working towards these projects and will begin them soon.		

Jurisdiction	Mitigation Action	Status
Dysart	Shutter city buildings and police stations	Deleted
	Purchase new rescue equipment for City Shop and Fire Department	Completed and

Dysart		Carried over
	Construct safe room	Carried over
	Update the City's Emergency Action Plan and complete training	Completed and Carried over
	Purchase generators and pumps for storm sewers	Completed
	Maintain Alert Iowa Participation	Completed and Carried over
	Prepare education flyers about storm procedures to go to all homes in Dysart	Carried over
	Stage practice drills and town meetings to educate citizens	Completed and Carried over
	Purchase new communication equipment	Completed and Carried over
<p>Additional Details: The action "shutter city buildings and police stations" was deleted due to shifting priorities of the City Dysart. The city added additional action items that are included in the Mitigation Strategy section of this plan. New rescue equipment was purchased, including a new fire truck (2013), ambulance (2014), and bucket truck for Public Works (2014). Two new pumps were purchased in November 2014 to assist in pumping the storm sewers. A large generator was purchased in 2013 to service the fire station, ambulance building, and community building in the event of a power outage. The city has also held public meetings about hazards and purchased some new communications equipment.</p>		

Jurisdiction	Mitigation Action	Status
Elberon	Construct safe room	Deleted
	Add new culverts	Completed and Carried over
	Update County-owned bridges and inspect annually	Completed and Carried over
	Enforce building codes	Carried over
	Smoke detector program	Completed and Carried over
	Educate residents about disaster kits and encourage them to build one	Carried over
	Distribute NOAA All-Hazard Radios to all Elberon residents	Carried over
	Construct new fire station with generators	Completed and Carried over
	Create a plan for quick cleanup	Carried over
	Establish a command center	Carried over
<p>Additional Details: The City of Elberon deleted the construction of a safe room from the plan because the action is too expensive and the city would not be able to fund it even if grant money could cover a majority of the cost. The city continues to make progress on the inspection and update of bridges. Inspection takes place on an annual basis, and the city is removing one bridge for safety reasons on the east side of town and installing a new culvert. New culvert progress has taken place as funding allows. The city has also made progress on starting a smoke detector program and intends to continue this program. The city has established an active committee to evaluate the fires station remodel or build. A generator has already been purchased and is currently housed in the existing fire station. Disaster kits are planned for 2015. The city also plans to establish a command center in 2015 in partnership with Tama County EMA.</p>		

Jurisdiction	Mitigation Action	Status
Garwin	Purchase generator	Completed
	Purchase warning siren with backup power	Deleted
	Construct a safe room	Carried over
	Establish a command center	Carried over
Additional Details: The City of Garwin deleted the purchase of a warning siren from the plan because the existing siren is now working correctly and serves the needs of the community. The purchase of a generator for use in critical facilities was completed. The construction of a safe room was not completed, although this action still remains a community priority. The city will work with Tama County EMA in the near future to establish a command center.		

Jurisdiction	Mitigation Action	Status
Gladbrook	Purchase generators to help prevent critical site damage from freezing temperatures	Carried over
	Water distribution system improvements	Completed
	Grand Street bridge improvements	Completed and Carried over
	Purchase generator for shelter(s)	Completed
	Install shower facilities at shelter	Deleted
	Maintain Alert Iowa participation and educate citizens	Completed and Carried over
	Develop emergency procedures with assistance	Carried over
	Procedure education	Carried over
	Danger and preparation education	Deleted
	Daycare/Pre-school age hazard education	Carried over
	Water source research and potential increase of supply	Carried over
	Storm drainage improvements	Carried over
	Sewer improvements and purchase generator for backup	Carried over
Additional Details: The City of Gladbrook has completed the purchase of generators for one critical site – a generator was purchased for the Memorial Building. Generators are still planned for the lagoon/lift station and for the tower and fire/ambulance. Funding has been received for the Grand Street Bridge improvements, and work will begin shortly. The action regarding installing shower facilities at the shelter has been deleted, and instead, the city will work with the school district to secure existing shower facilities in a school district facility that will be closing in the Summer of 2015. Danger and preparation education was deleted due to shifting city priorities. Storm drainage improvements are a particularly high priority. Sewer improvements are planned for the near future.		

Jurisdiction	Mitigation Action	Status
Lincoln	Update structures with fire retardant materials, sprinkler systems, metal roofs, etc.	Carried over
	Elevate structures and add lift stations	Removed
	Purchase road equipment for snow and debris removal	Completed and Carried over
	Purchases generators to run fire station and city hall	Completed
	Update all fire equipment	Completed and Carried over
	Update emergency siren	Removed
	Train a local citizen to be an EMT	Carried over
	Remodel Amvet Hall for community shelter	Carried over
	Create an emergency, strategic plan of action for disasters i.e. determine who makes the call to open a shelter, when should the shelter be opened, etc.	Carried over
	Elevate roads	Removed
	Install computer system and Internet for county communications	Completed
Additional Details: The City of Lincoln chose to remove the elevation of structures, adding of a lift station, and the elevation of roads because these action have proven too costly for the city to move forward with. The city also removed an update to the emergency siren because the siren now works and serves the purposes of the city. The city has made progress on the purchase of generators and the installation of a computer system since the last plan.		

Jurisdiction	Mitigation Action	Status
Montour	Purchase generators for critical points in infrastructure	Completed
	Create a sandbag committee	Carried over
	Maintain culverts	Completed and Carried over
	Regular debris removal from waterways	Completed and Carried Over
	Annually inspect roads, culverts, creeks, and city facilities	Completed and Carried over
	Purchase generator / battery for warning siren	Carried over
	Construct air-conditioned safe room	Completed
	Distribute NOAA All-Hazard Radios to residents	Deleted
	Active safety committee	Carried over
	Maintain participation in Alert Iowa	Completed and Carried over
Additional Details: The City of Montour has deleted the distribution of NOAA Hazard Radios from the plan because the city's priorities have shifted. The city has completed the purchase of generators, the construction of a safe room, maintenance of culverts, inspection of roads, and its continued participation in Alert Iowa since the last plan.		

Jurisdiction	Mitigation Action	Status
Tama	Bury power lines	Deleted
	28E Agreements with nearby cities for services	Completed
	Community smoke detector program	Completed and Carried over
	Establish citywide evacuation plan	Carried over
	Purchase two new warning sirens	Deleted
	Training for fire department and emergency medical services	Carried over
	Inform residents of evacuation plan for hazardous materials incident	Carried over
	Establish community building as communications station	Completed
<p>Additional Details: The City of Tama has removed “bury power lines” from the plan because it is too expensive and the city does not have funding for the project. The city also removed the purchase of two new warning sirens because they are expensive and not considered a significant need for the community. The city has started a smoke detector program, but the program will require additional funding to continue. Since the last plan, the city has established 28E agreements with nearby cities and has declared City Hall as a communications station in the event of a hazard.</p>		

Jurisdiction	Mitigation Action	Status
Toledo	Demolish current structures in Deer Creek flood hazard area	Carried over
	Construct safe room for combined mobile home park, Reinig Center, and daycare	Carried over
	Subsidize individual purchase of NOAA All-Hazard radios	Carried over
	Establish monthly publicity to remind residents of seasonal hazards	Completed and Carried over
	Purchase generators for water/sewer plant and Reinig Center	Completed and Carried over
	Purchase portable generation equipment and wiring for critical facilities like gas stations and grocery store	Carried over
<p>Additional Details: The City of Toledo has purchased a generator for the water/sewer plant but not the Reinig Center. The city has also begun a campaign to remind residents of seasonal hazards through the local newspaper. This work will continue into the next plan. All other actions carried over without progress were not completed due to lack of funding. The city will search for more funding opportunities and try to make progress towards these items in the next five years.</p>		

Jurisdiction	Mitigation Action	Status
Traer	Construct a shelter at the school or other location	Carried over
	Require formal emergency plans for vulnerable populations	Carried over
	Replace Mill Street bridge for public safety north of Traer	Completed

Traer	Purchase portable generators	Carried over
	Construct safe room	Carried over
	Purchase additional emergency equipment i.e. fire, ambulance, etc.	Carried over
	Create Police Department	Carried over
	Flood protection for sewer lift station and levees	Completed
	Upgrade capacity and backup sewer lift station	Completed
	Replace fire and ambulance buildings with buildings are that are storm safe	Carried over
Additional Details: The City of Traer has completed the replacement of the Mill Street Bridge, flood protection for the sewer lift station and levees, and the upgrade of the capacity and backup sewer lift station. All other items that were carried over to the plan update will be addressed as the community has capacity and funding to do so.		

Jurisdiction	Mitigation Action	Status
Vining	Hold Red Cross first aid classes and encourage attendance	Completed and Carried over
	Send letter to residents explain where shelter is located and when it will be open	Completed and Carried over
	Construct safe room	Completed
	Purchase generators	Completed
	Create call list for checking on vulnerable populations	Carried over
	Upgrade fire department equipment	Completed and Carried over
	Crown and grade streets	Carried over
	Establish and enforce a burn ban	Completed and Carried over
	Replace culverts	Completed and Carried over
	Encourage residents to have a battery-operated radio	Completed and Carried over
	Switch to a remote triggered warning siren	Carried over
Additional Details: The City of Vining began using a church basement in town as a safe room in 2007. The city partnered with the church to finance the purchase of a generator together in 2007 to power the church in case of an emergency/loss of power. There is no need for an additional shelter or generator since the city has completed these actions. All other actions that were carried over and are not yet completed are the result of limited funds for the City of Vining. Many of these actions must be funded with city money and limited grant funding is available.		

Jurisdiction	Mitigation Action	Status
Tama County	Enhance building codes	Carried over
	Acquisition and elevation of structures	Deleted
	Add/repair flood mitigation structures	Deleted
	Elevate roads	Carried over
	Implementation of burn bans	Completed and Carried over
	Install steel roofs on government buildings to protect from hail and other hazards	Carried over
	Inspect and maintain levees	Deleted
	Create list of disaster supplies and suppliers	Carried over
	Update zoning in critical areas	Completed and Carried over
	Maintenance of vegetation near power lines	Completed and Carried over
	Flood assessment requirement for building permit	Completed and Carried over
	Improve capital improvements planning process	Carried over
	Improve regular assessment and maintenance on county structures	Carried over
	Create fire extinguisher and fire alarm safety program	Completed and Carried over
	Train emergency responders in search and rescue for structural failure situations	Completed and Carried over
	Establish cooling centers	Completed and Carried over
	Train fire departments for grass fires and maintain needed equipment	Completed and Carried over
	Establish community shared shelters	Completed and Carried over
	Construct safe rooms in communities and recreational areas	Completed and Carried over
	Establish advance warning system for recreational areas	Carried over
	Require and enforce maintenance of vegetation near traffic signs	Completed and Carried over
	Improve fire code enforcement	Completed and Carried over
	Establish communication between emergency management and vets regarding animal/crop/plant diseases	Completed and Carried over
	Extreme heat, severe weather, pipeline safety, thunderstorms and lightning, etc. info, PSAs, and information on County website	Completed and Carried over
	Public education program about general fire prevention and prevention of grass and wildland fires	Carried over
	Encourage farmers to invest in crop insurance	Completed and Carried over
	Education on dangers of highway transportation incidents and how to avoid collisions	Completed and Carried over
	Complete government continuity planning	Carried over

	Establish an impact assessment form for communities	Carried over
	Purchase generators for critical facilities	Completed and Carried over
	Bury utility lines	Carried over
	Budget and plan for communication failures	Completed and Carried over
	Establish procedure for community to notify Tama County Emergency Management after Energy failure occurs	Carried over
	Create emergency fuel supply and map other sources	Carried over

Additional Details: Tama County has accomplished a significant amount in the last five years. Many of the items listed as “Completed and Carried over” have been adopted as ongoing activities by the various responsible parties. Many of the “Carried over” actions are planned to take place during the next plan. Three actions were deleted from the previous plan: Acquisition and elevation of structures, Add/repair flood mitigation structures, and Inspect and maintain levees. The first two activities were removed from the plan because the county does not foresee that it will identify additional structures to acquire, elevate, or repair in the next five years. The county removed “Inspect and maintain levees” because this action falls under the jurisdiction of the Iowa DNR and the county is not responsible for inspecting it.

Jurisdiction	Mitigation Action	Status
Gladbrook-Reinbeck School District	Regular, proper building maintenance	N/A
	Improve early warning system	N/A
	Establish cooling center in school	N/A
	Create a back-up water supply and maintain non-perishable food items	N/A
	Create a public education program	N/A
	Increase student education on fire safety	N/A
	Complete crisis planning	N/A
	Purchase generators for facilities	N/A

Additional Details: The Gladbrook-Reinbeck School district did not participate in the plan update and was not able to provide an update on their mitigation actions. The district is closing school facilities located in Tama County and will not participate in future Tama County Hazard Mitigation Plan updates.

Jurisdiction	Mitigation Action	Status
North Tama Community School District	Build a safe room for students, staff, and community members	Carried over
	Develop evacuation plan for the K-12 school building	Carried over

Additional Details: No actions are currently in process. Funding of mitigation actions is an issue for the district.

Jurisdiction	Mitigation Action	Status
South Tama Community School District	Early warning system (sirens) enhancements in Tama	Deleted
	Purchase generators	Carried over
	Communicate crisis plan to parents, officials, and the public	Completed and Carried over
	Improve vehicle access to Elementary School	Completed
<p>Additional Details: Early warning system (siren) enhancements were removed from the plan because the school district determined that the City of Tama would be responsible for such an action if it were to be implemented rather than the school district. To improve vehicle access, a parking lot was added to the elementary school which helps with the flow of traffic. The school district still intends to communicate their crisis plan and to purchase generators. In addition, they have added an action of building a storm shelter. See the Goals and Actions section for more information.</p>		
Jurisdiction	Mitigation Action	Status
Union Community School District	Construct a safe room	Carried over
	Improve communication systems	Carried over
	Complete crisis planning	Completed and Carried over
	Roof improvements	Carried over
	Crisis planning and drills	Completed and Carried over
	Safety education	Completed and Carried over
	Purchase generators	Carried over
<p>Additional Details: Funding of mitigation actions is an issue for the district, so the more expensive actions such as constructing a safe room, improving communications systems, roof improvements, and the purchase of generators were not completed. The school district began work on several other, less expensive items such as crisis planning and drills and safety education.</p>		

Appendix C: Examples of Public Notification

From the Dysart Reporter (Article also ran with Traer Star Clipper)
3-13-15

Hazard Mitigation Plan meeting March 17

Tama County has begun work on a county-wide Hazard Mitigation Plan. The plan will assess the county's risk to hazards and will identify actions to reduce vulnerability to such risks. This is the second of three county-wide meetings that will be held to assess risk, set goals for the county, and identify actions. The overall outcome of these meetings is the creation of a FEMA-approved Hazard Mitigation Plan, which will detail the strategies and actions that communities plan to take to improve quality of life and keep residents and visitors safe from hazards. Completion of this plan will also allow communities to qualify for certain types of grant funding. The meeting will take place on March 17, 2014 at the Reinig – Toledo Civic Center at 2:00 PM. We would like to invite the public to provide input on setting goals and identifying mitigation strategies for the county. If you have any questions or would like to RSVP, please contact Marty Wymore, Region 6 Planning Commission, by phone or email at 641-752-6202 ext. 107 or mwymore@region6planning.org.

From the Traer Star Clipper (Article also ran with Dysart Reporter)
4-17-15

County begins work on Hazard Mitigation Plan

April 17, 2015
Traer Star-Clipper

[Save](#) | [Post a comment](#) | [!\[\]\(de95854c7ee024cfadc48187bbb781b2_img.jpg\)](#) [!\[\]\(cef08d8c15d8a8acd5e25ab0d65432c3_img.jpg\)](#) [!\[\]\(c244836fd67166dc60ebf5279a0f8377_img.jpg\)](#) [!\[\]\(c9651b690bdf1dda88278b8b3445c7b1_img.jpg\)](#) [!\[\]\(3edfc2ea96443450a4381cfaba839e65_img.jpg\)](#)

Tama County has begun work on a county-wide Hazard Mitigation Plan. The plan will assess the county's risk to hazards and will identify actions to reduce vulnerability to such risks. This is the last of three county-wide meetings that will be held to assess risk, set goals for the county, and identify actions that communities will take in the coming years to mitigate the risk of certain hazards.

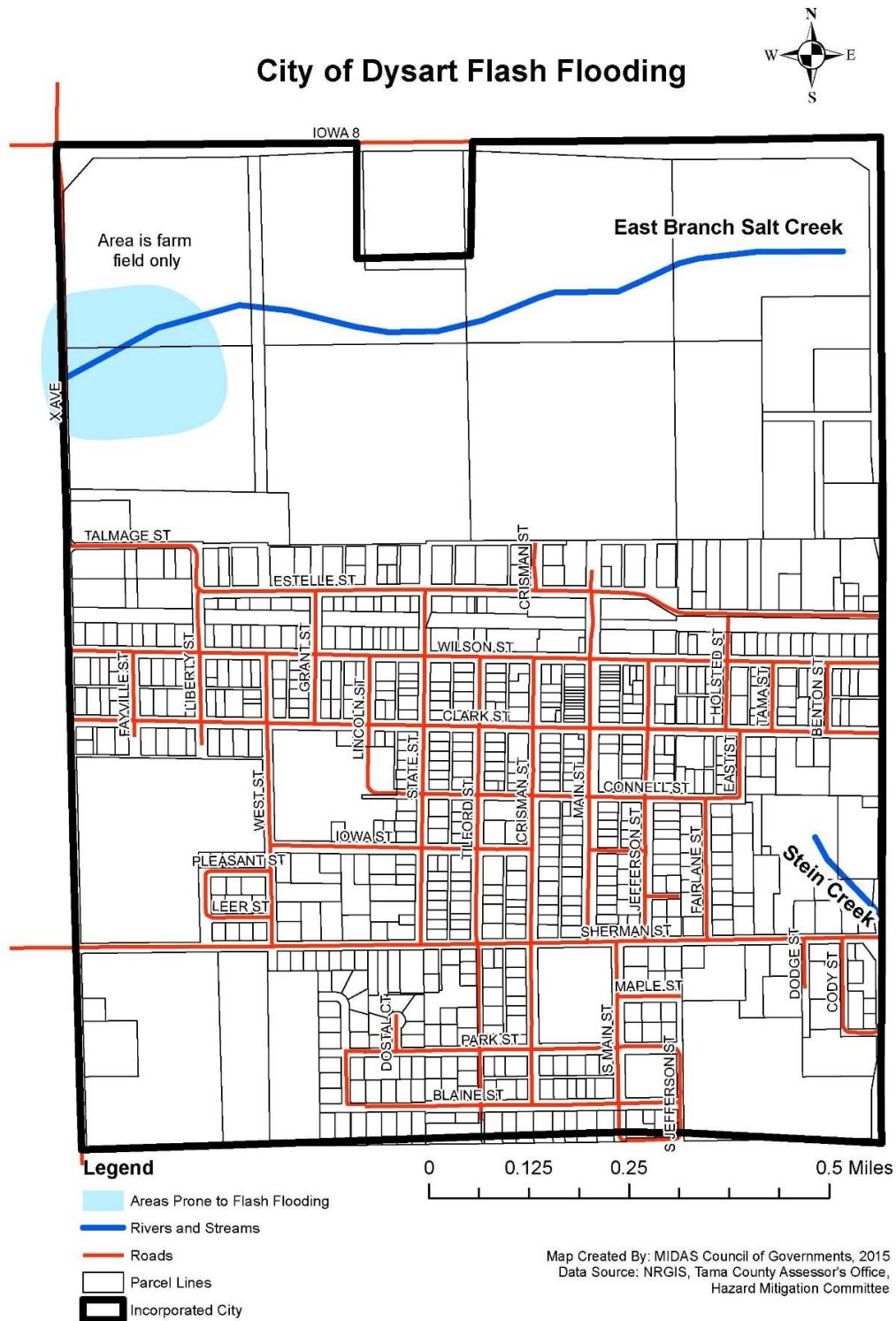
The overall outcome of these meetings is the creation of a FEMA-approved Hazard Mitigation Plan, which will detail the strategies and actions that communities plan to take to improve quality of life and keep residents and visitors safe from hazards. Completion of this plan will also allow communities to qualify for certain types of grant funding.

The meeting will take place on April 21, 2015 at the Reinig Toledo Civic Center at 2:00 PM. We would like to invite the public to provide input on setting goals and identifying mitigation strategies for the county.

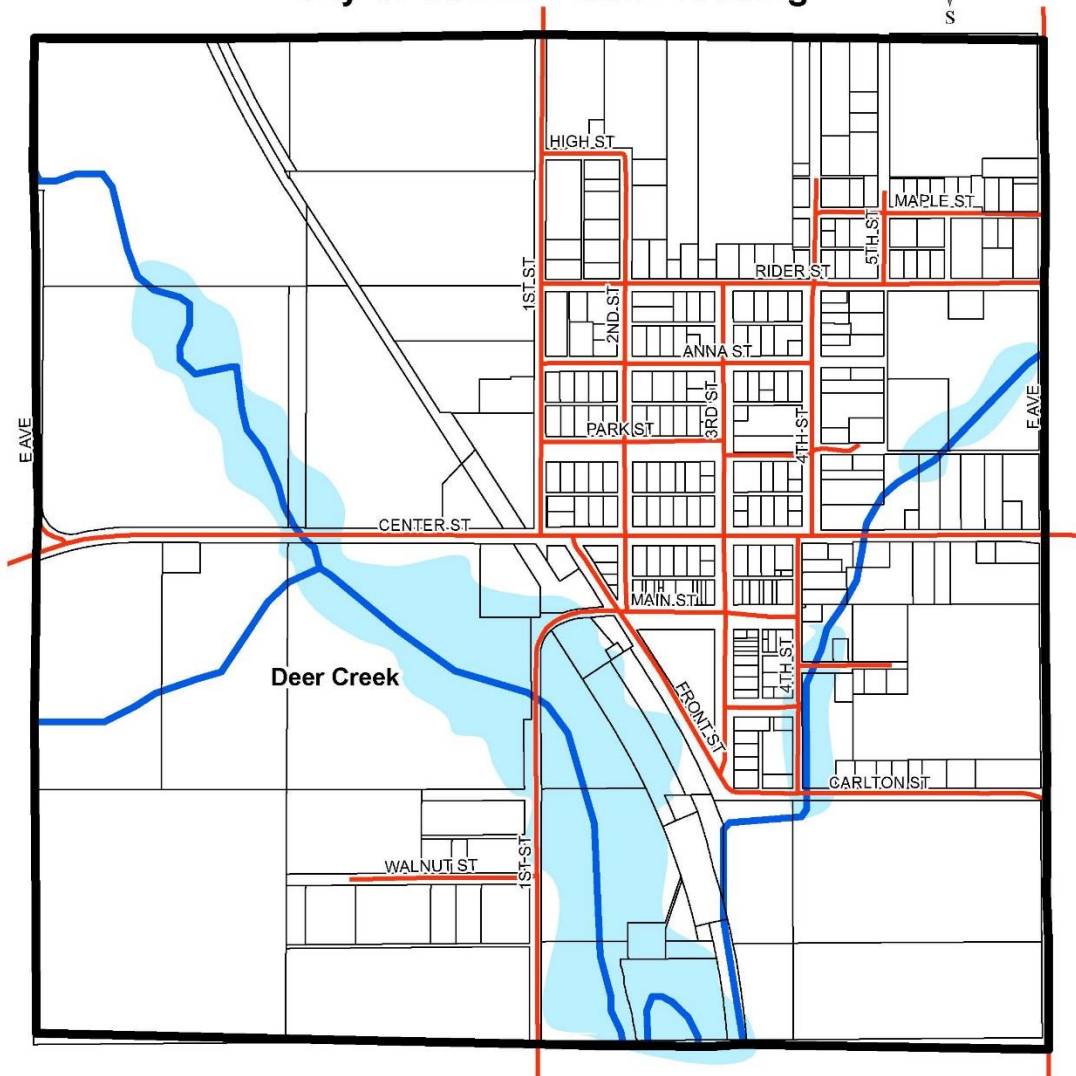
If you have any questions or would like to RSVP, please contact Marty Wymore, Region 6 Planning Commission, by phone or email at 641-752-6202 ext. 107 or mwymore@region6planning.org.

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Appendix D. Flash Flood Maps



City of Garwin Flash Flooding

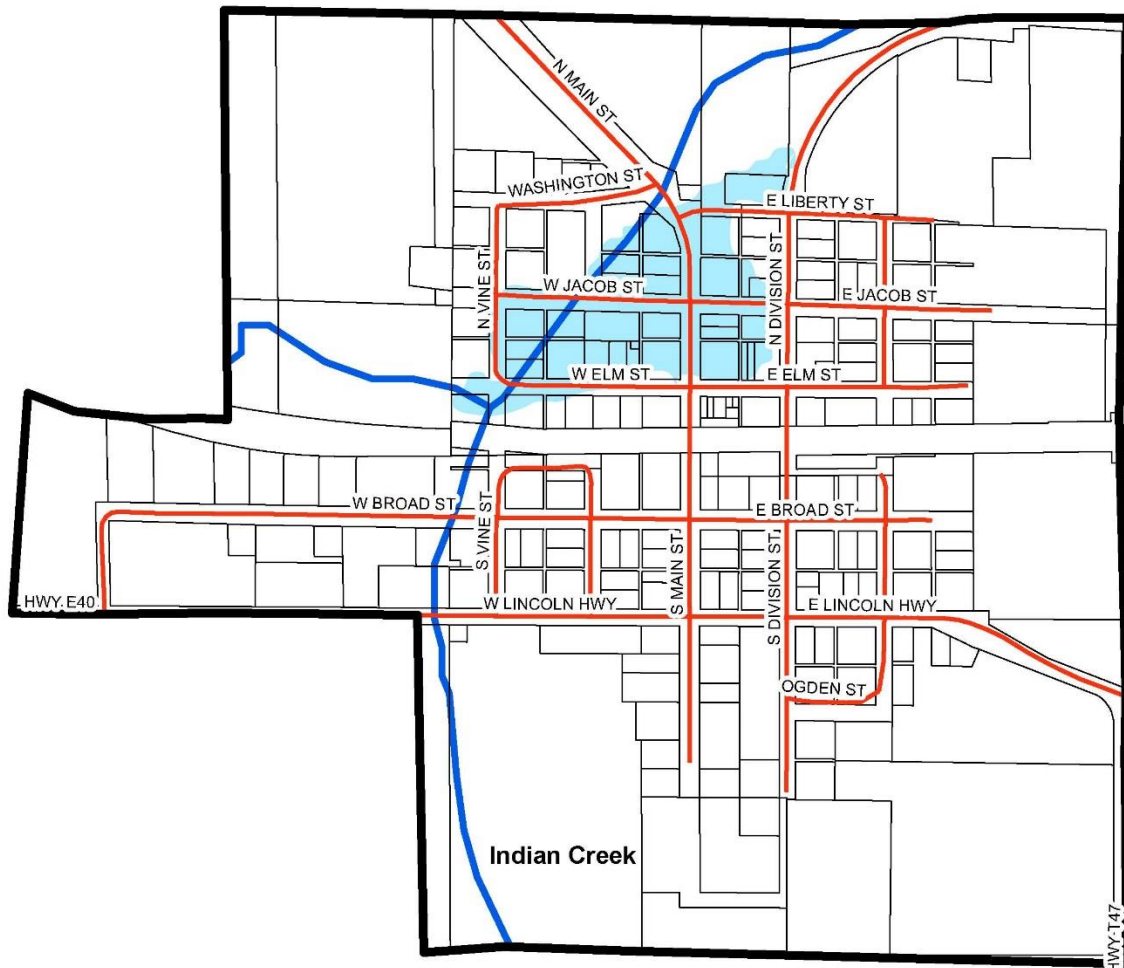


Legend

- Areas Prone to Flash Flooding
- Rivers and Streams
- Roads
- Parcel Lines
- Incorporated City

Map Created by: MIDAS Council of Governments, 2015
 Data Source: NRGIS, Tama County Assessor's Office,
 Hazard Mitigation Committee

City of Montour Flash Flooding



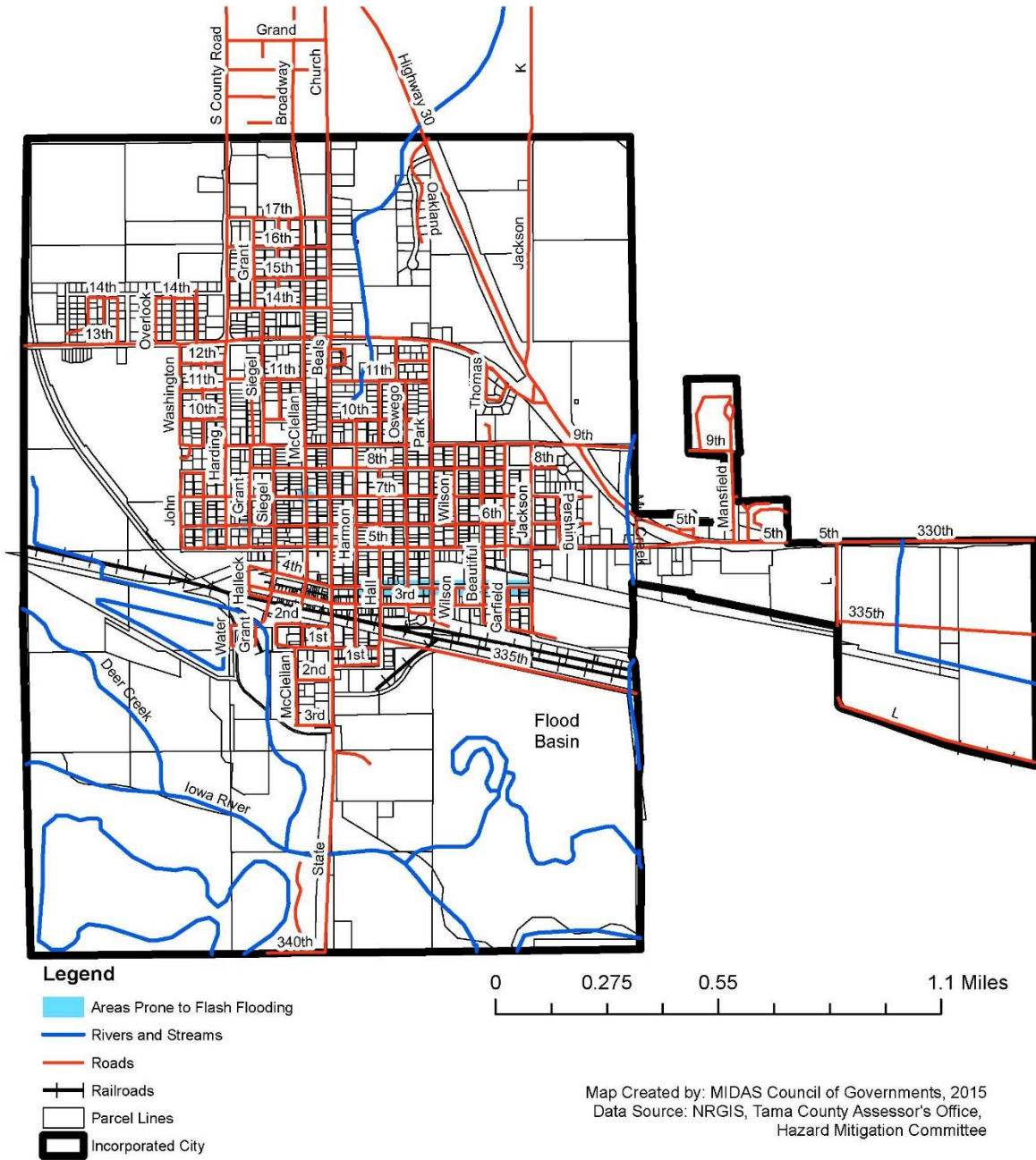
Legend

- Areas Prone to Flash Flooding
- Rivers and Streams
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- Incorporated City

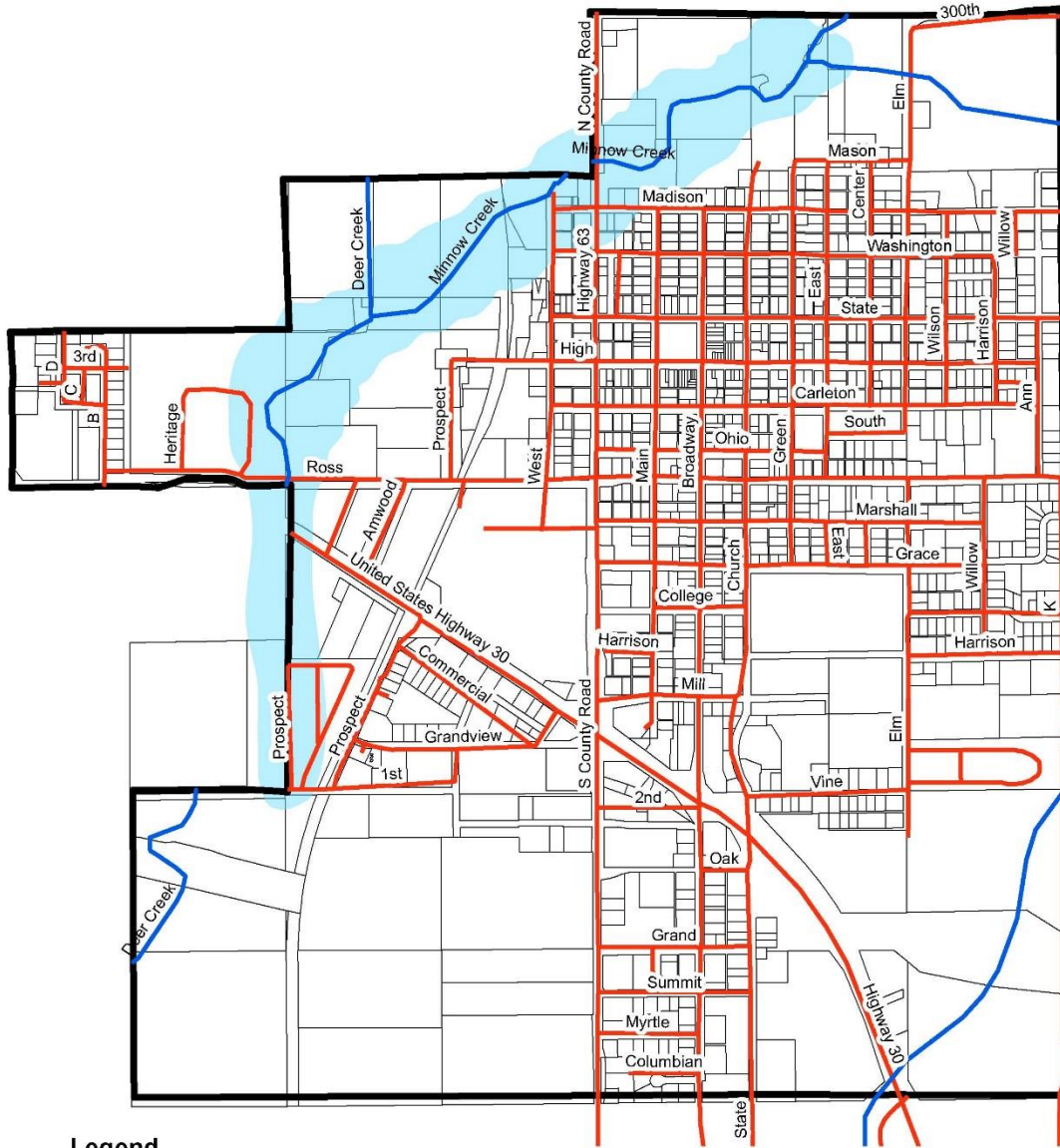
0 0.1 0.2 0.4 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office,
Hazard Mitigation Committee

City of Tama Flash Flooding



City of Toledo Flash Flooding



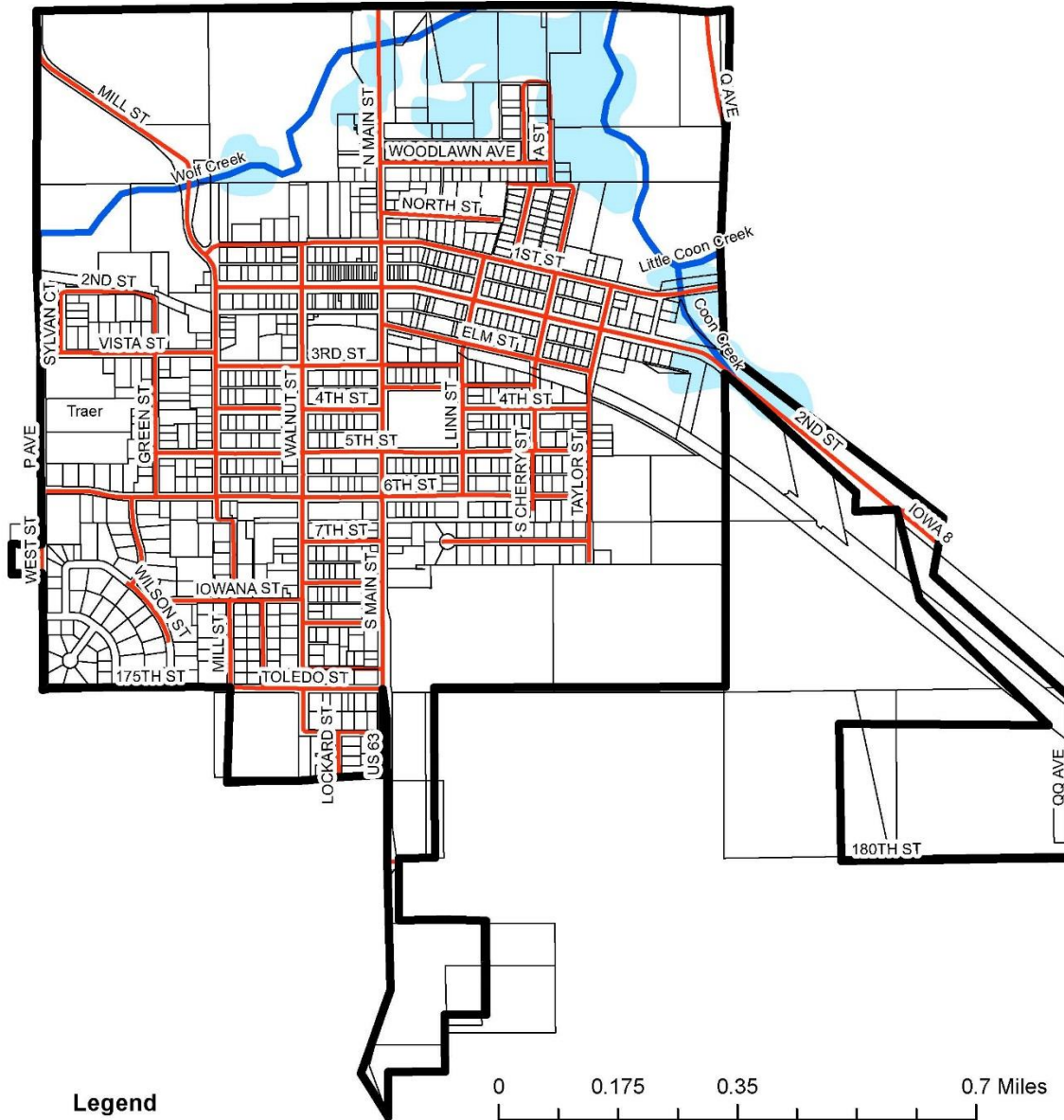
Legend

- Areas Prone to Flash Flooding
- Rivers and Streams
- Roads
- Parcel Lines
- Incorporated City

0 0.2 0.4 0.8 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office,
Hazard Mitigation Committee

City of Traer Flash Flooding



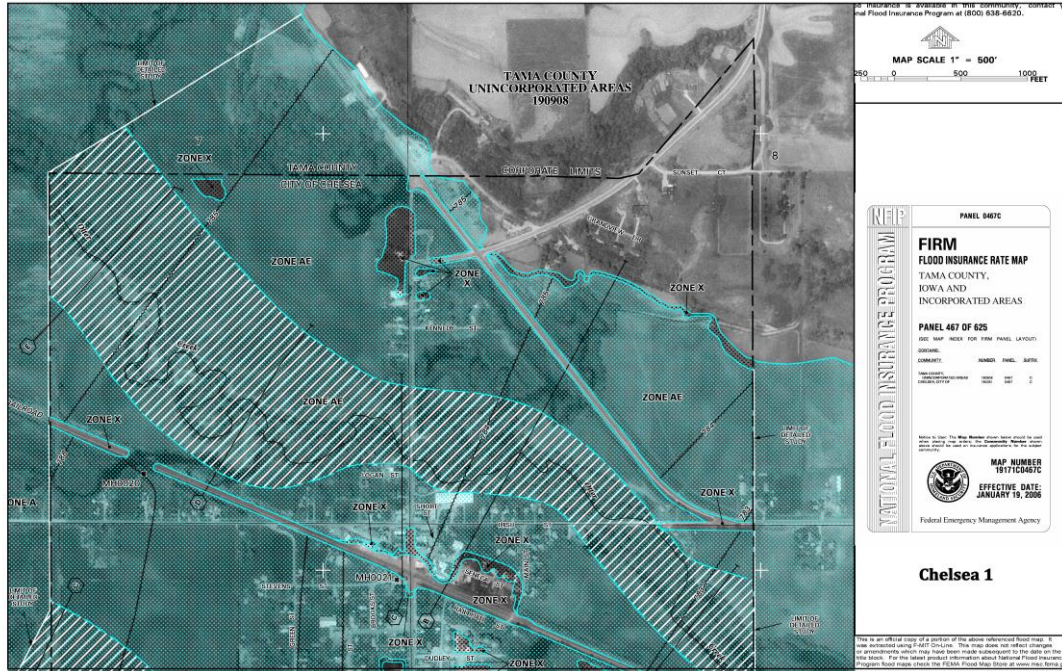
Legend

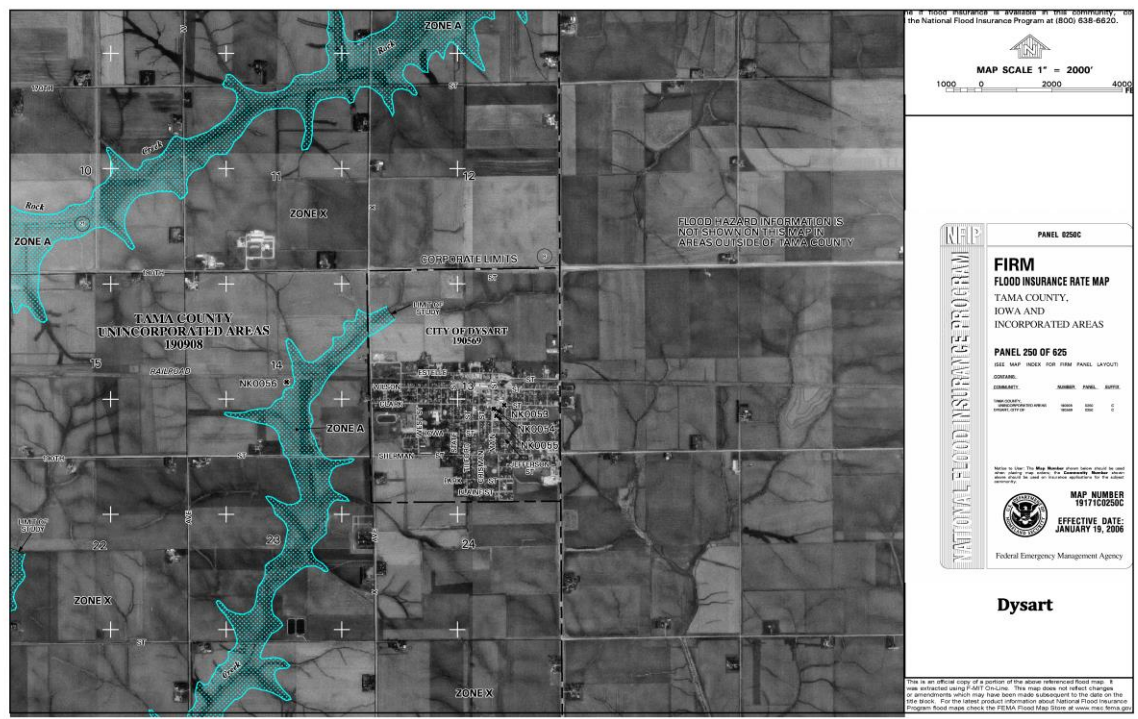
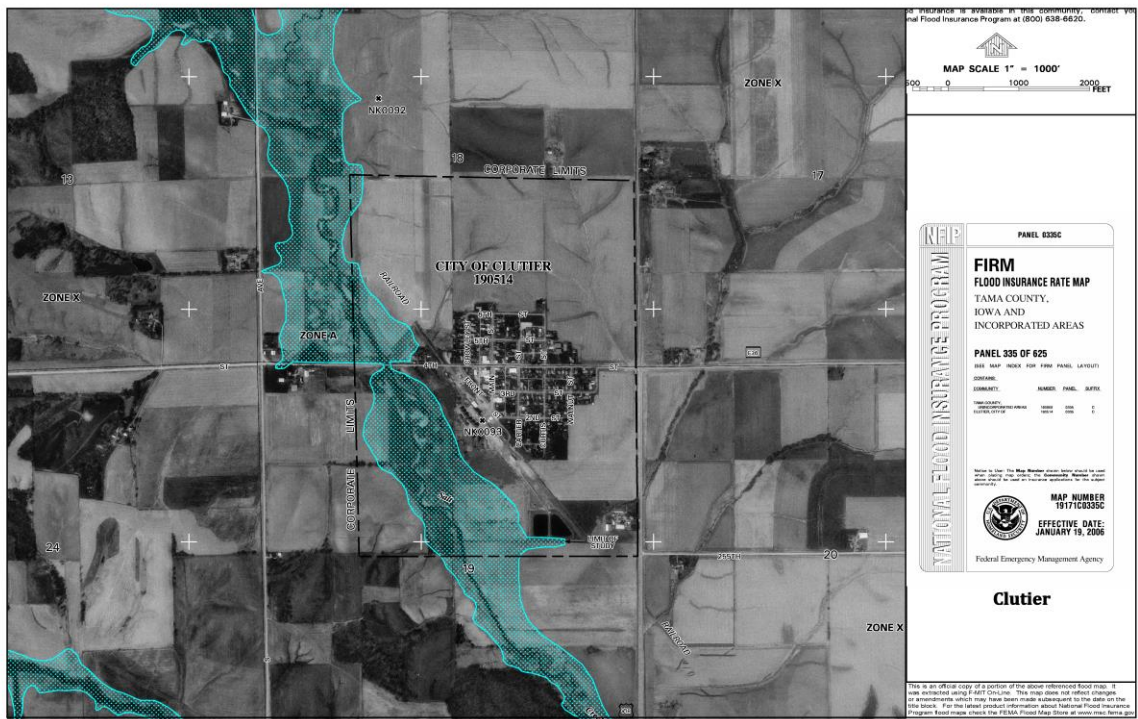
- Areas Prone to Flash Flooding
- Rivers and Streams
- Roads
- Parcel Lines
- Incorporated City

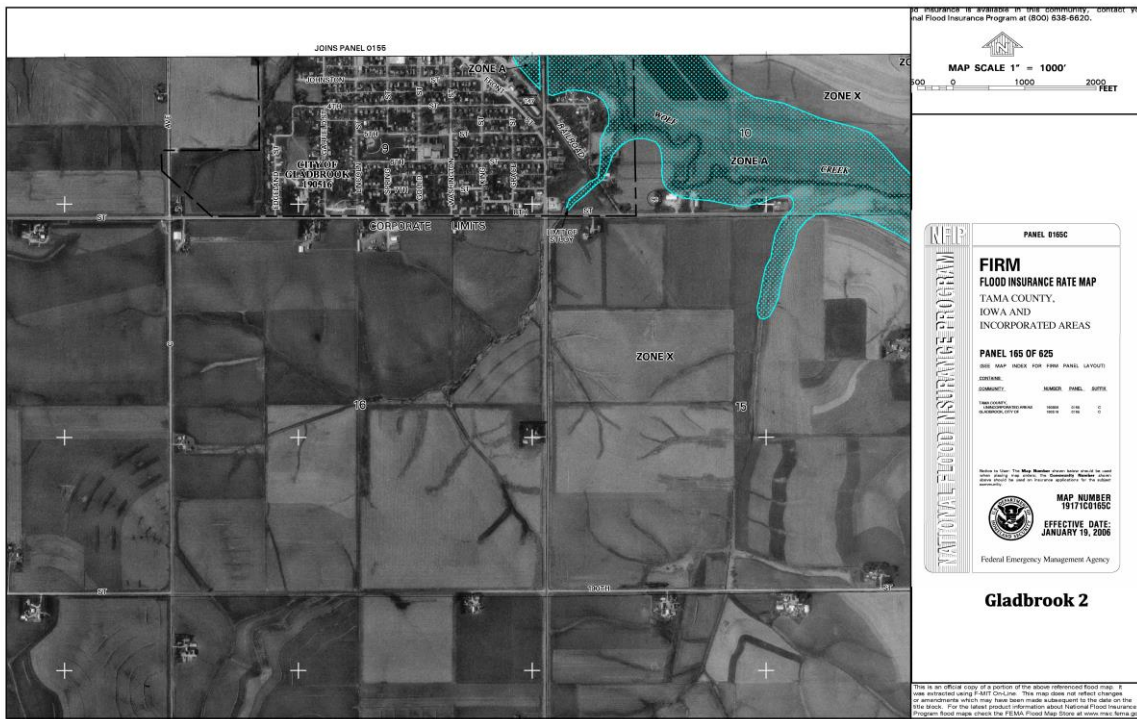
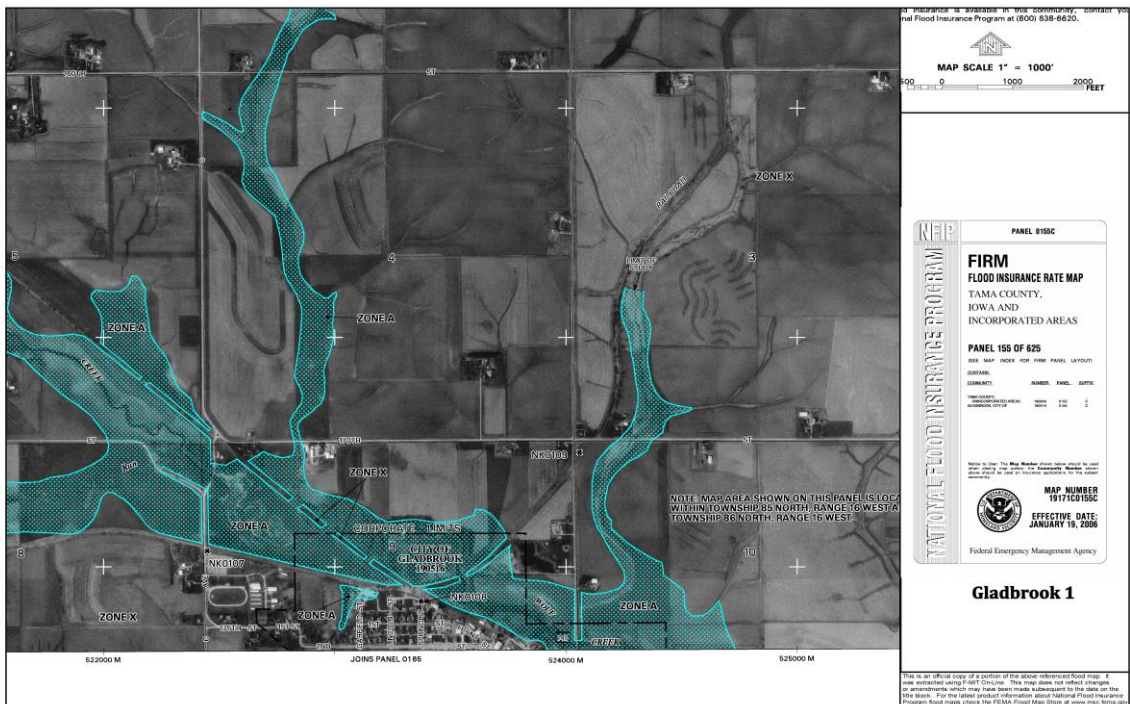
Map Created by: MIDAS Council of Governments, 2015
 Data Source: NRGIS, Tama County Assessor's Office,
 Hazard Mitigation Committee

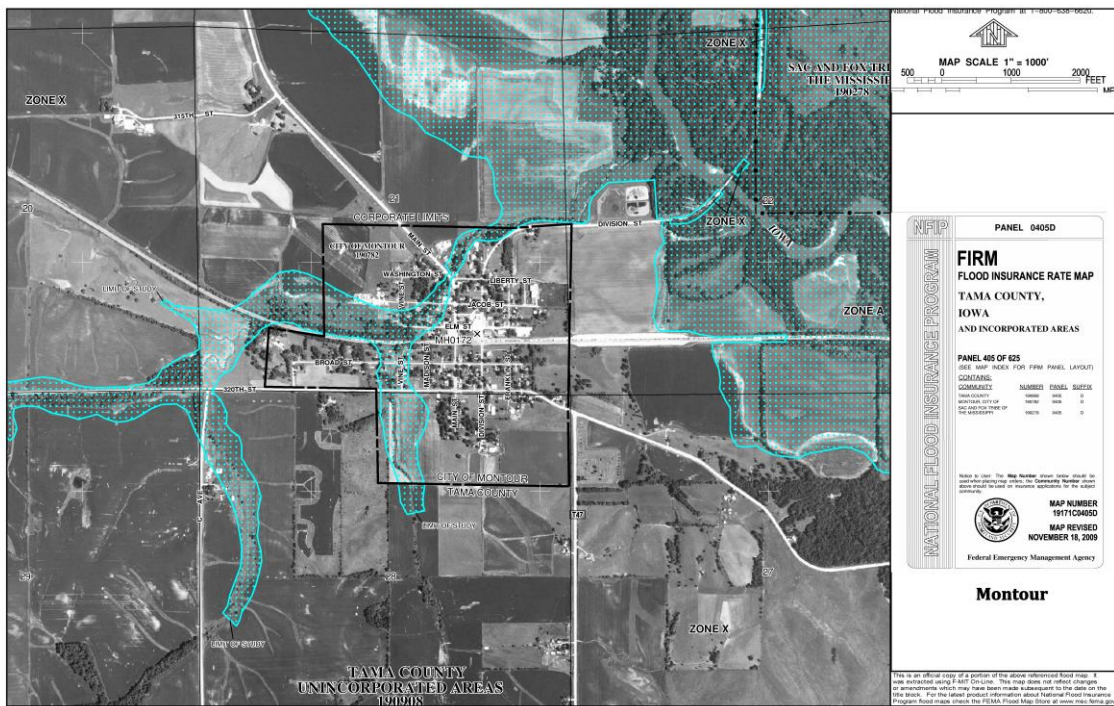
Appendix E. Tama County Floodplain Maps

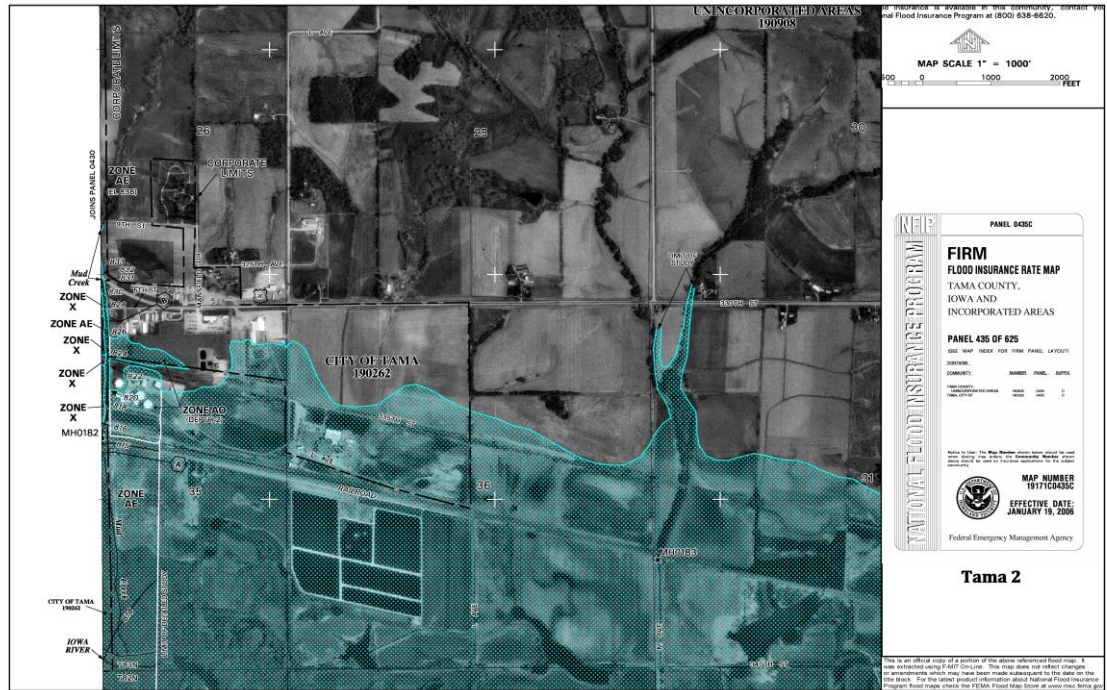
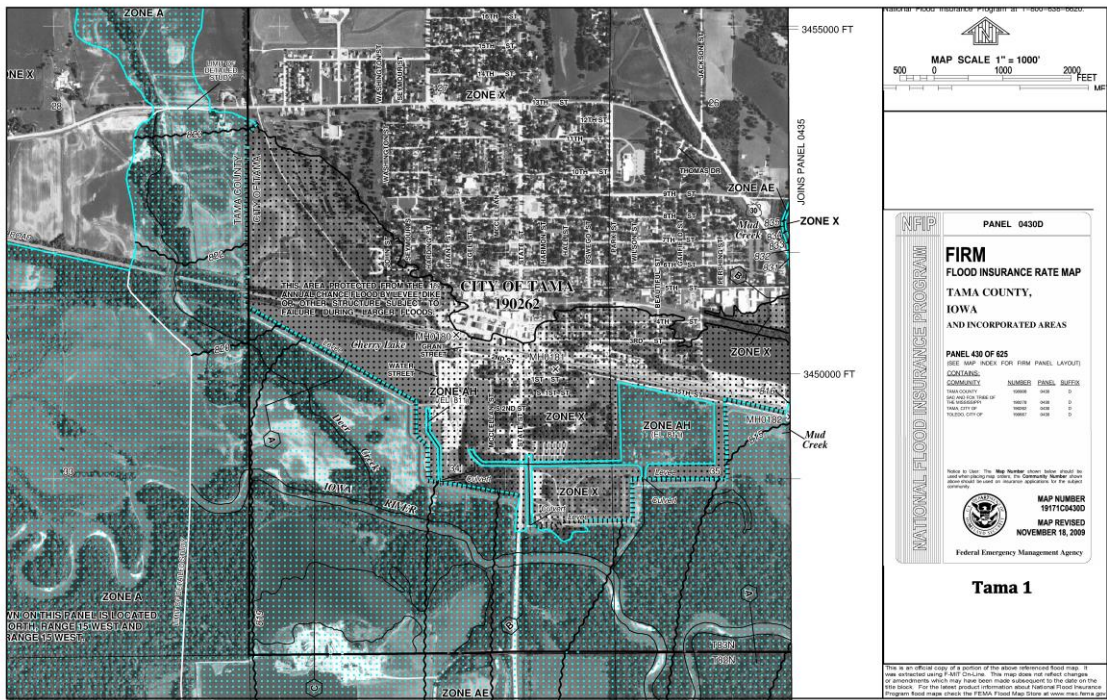
The following maps are FIRMettes of each incorporated area in Tama County. The floodplains of some incorporated areas require multiple FIRMettes and/or map panels to capture. Incorporated areas are listed in alphabetical order.

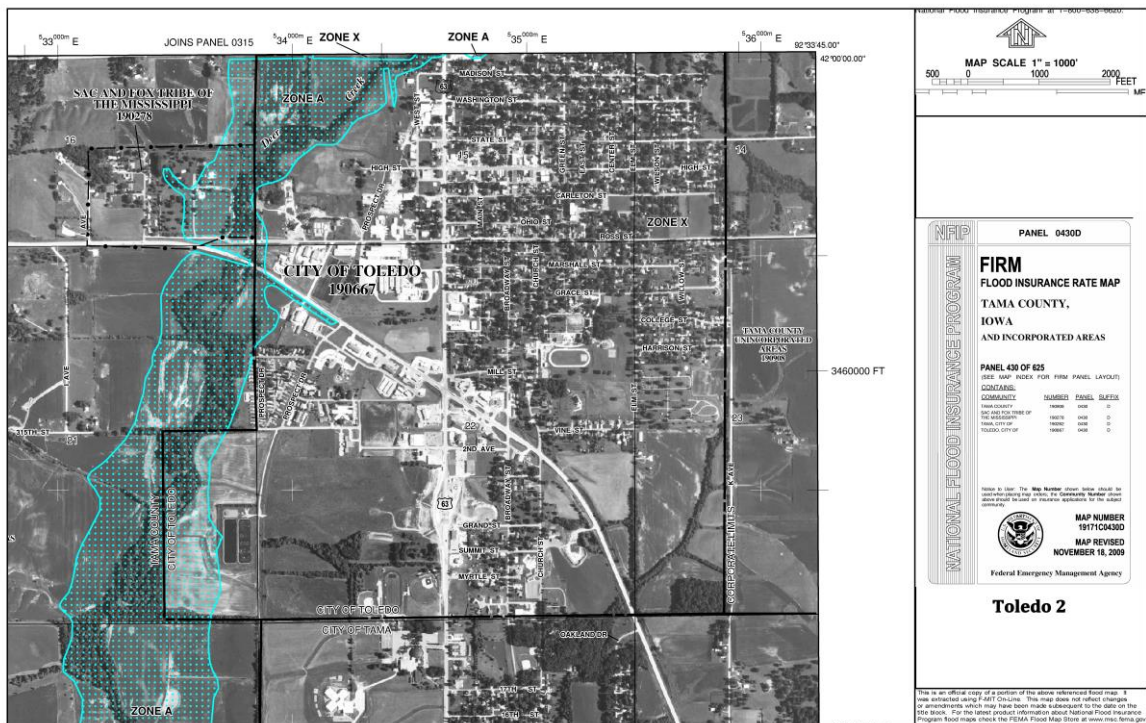
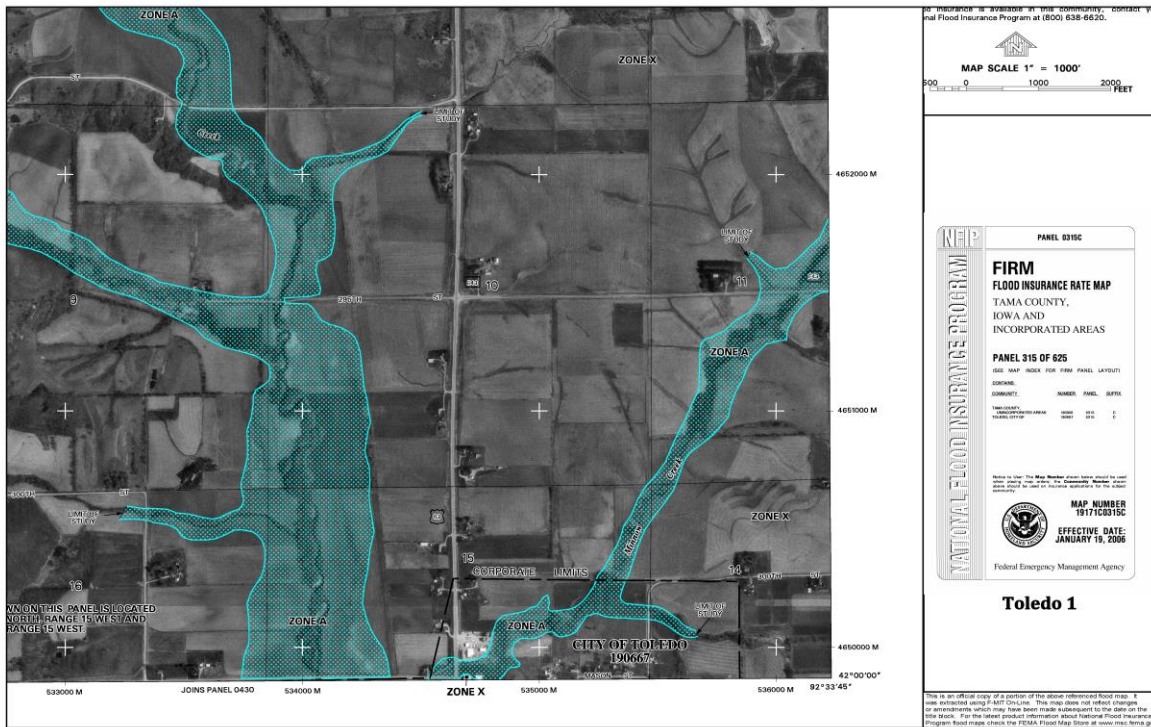


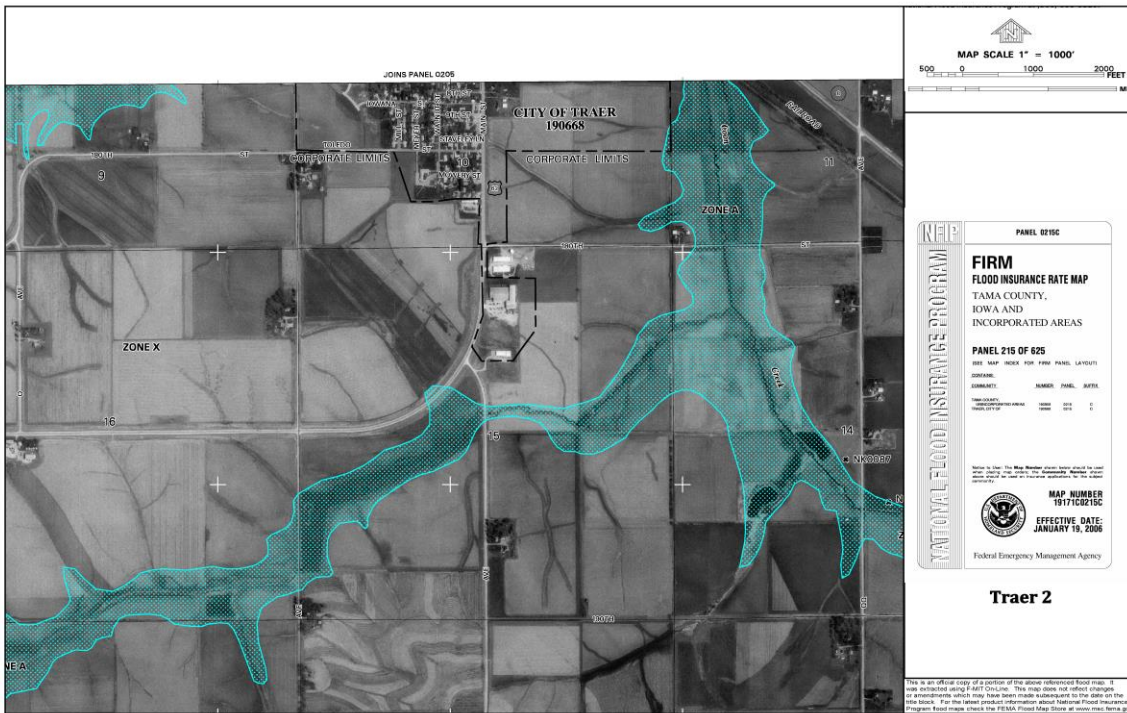
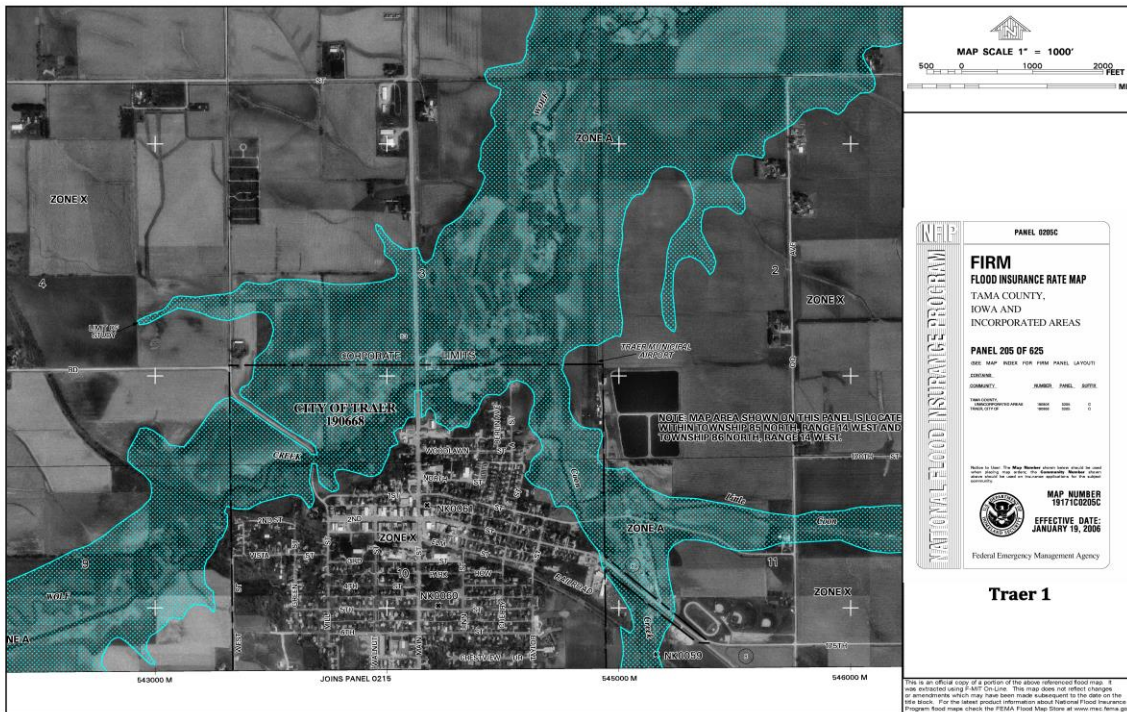


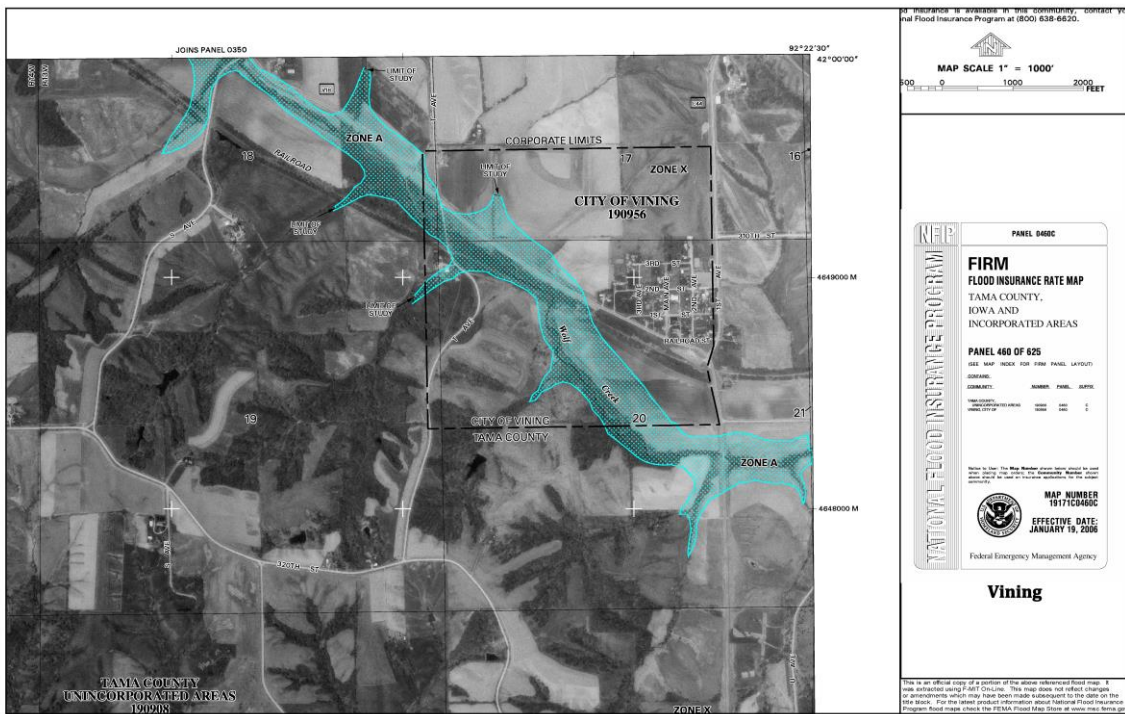












Appendix F. City of Chelsea, Iowa and Tama County Historic River Flooding News Articles

The following two articles document river flooding events in Chelsea, Iowa and other Iowa River communities in Tama County. Specific river flooding events that these articles document include river flooding in 1993, 2008, and 2013. The purpose of including these articles in the plan is to demonstrate that when the Iowa River basin floods, the Iowa River communities of Chelsea, Montour, Tama, and Toledo are affected. Extremely serious river flood events occurred in the years documented. Smaller river flooding events occur often. Despite the lack of media coverage for smaller flood events, Iowa River communities are still impacted by these events which result in closed roads, flooding of agricultural lands, and sometimes flooding that affects infrastructure and buildings.

Plain text of news articles and associated pictures have been collected. For the article as it appears at the source, follow the link provided.

Source name: Tama Toledo News

Flood date: References flooding in 2008 and 2013

Link: <http://www.tamatoledonews.com/page/content.detail/id/515112/Tama-County-declared-flood-disaster-area.html?nav=5006>

Tama County declared flood disaster area

Await Federal Word On Status

May 31, 2013

By John Speer - Editor (jspeer@tamatoledonews.com) , Toledo Chronicle, Tama News-Herald

Flood water level rivaling those of 2008 rolled into Tama County Monday night and Tuesday prompting the Tama County Board of Supervisors to declare a local disaster county-wide. By Thursday, more rain resulted in the topping of the water level in the Iowa River at Tama with just over 22 feet recorded compared to a record 21.6 inches set in 2008. The downpours which continued on Wednesday with a series of hard rains in the afternoon caused flash flooding in Tama. U.S. 63 (State Street) from 5th to 3rd downtown was under water for a time as the storm sewer system appeared overwhelmed. Water also rose high enough to flow through the letters of the historic Lincoln Highway Bridge on Easy 5th Street. It was reported most of Chelsea was evacuated as waters continued to rise there.

EARLIER STORY:

A total of 3.92 inches of rain fell here on Sunday according to Official Weather Observer Randy Cooper of rural Toledo. Supervisors Dan Anderson, Kendall Jordan and Larry Vest signed the declaration on Tuesday morning and it was forwarded to state officials seeking additional assistance. Governor Terry Branstad declared Tama and 12 other counties disaster areas on Tuesday afternoon and has requested President Obama designate the areas federal disaster areas.

Flash flooding occurred on Sunday afternoon with the Meskwaki Trading Post pump areas and parking on U.S. 30 west of Toledo and the Toledo City Park going under water within a couple of hours.

On Tuesday morning the city of Chelsea was completely under water and levels reported still rising by several local residents. Chelsea gets double dose of flood water, from the Iowa River to the south and Otter Creek along the north and center section of town. Chelsea firefighters were assisting residents on Tuesday.

Meanwhile, Tama and Toledo firefighters and the Iowa Department of Transportation were fighting flood waters with pumps and sandbags east of the Iowa River Bridge on the U.S. 30 Expressway some six miles west of Toledo. They were maintaining one lane of traffic in each direction of the four-lane divided highway. U.S. Highway 63 south of Tama was closed due to flood water from the Iowa River along the south edge of Tama.

Area farmers continued to be held up by the rains in efforts to get crops in. "The wet weather continues to slow planting progress as farmers remain well behind the five-year average for both corn and soybean planting progress," Secretary of Agriculture Bill Northey said in response to the weekly USDA Crop-Weather Report. The Tama County Engineer's Office was in the process of compiling a road closed list on Tuesday afternoon. Among the roads now closed were E Avenue from Montour north to the U.S. 30 Expressway and P Avenue south of U.S. south east of Tama at Longpoint. The Off-Road Vehicle Park on Tama's south side was also closed.

Article Photos



East 5th Street at U.S. Highway 63 (State street) in Tama was under water for a time just after 5 p.m. on Wednesday, May 29.

News-Herald/John Speer

Source name: USA Today

Flood date: May 31, 2013 (references flooding in 1993 and 2008)

Link: <http://www.usatoday.com/story/news/nation/2013/05/31/iowa-town-takes-flooding-in-stride/2378689/>

Iowa town takes flooding in stride

Timothy Meinich , The Des Moines Register 9:43 p.m. EDT May 31, 2013

This week's floodwaters bring back memories of washouts in 2008 and 1993 for some residents.

CHELSEA, Iowa -- Heavy rains fell, floodwaters climbed and once again, the residents of Chelsea remained.

Massive flooding within the Iowa River Valley this week conjured flashbacks of a similar washout in 2008 and the devastating flood of 1993, which left Chelsea underwater for about 30 days and wiped out more than 40 houses, according to city officials. The 1993 tragedy prompted an unsuccessful effort to relocate the entire town to higher ground. The proposal attracted national media attention and forged an iron will in the 250-some residents that city officials say seemed to seal any discussion about budging the community. "People have been living in this low-lying area for over 150 years and they are a hearty people," Rep. Bruce Braley, D-Iowa, said Friday morning, after taking a boat tour through the flooded streets of Chelsea. Officials said Friday's flooding appeared to be as bad as both floods over the past 20 years, and they expected water levels to rise a bit higher.

Emergency crews and volunteers used boats to rescue several families from their homes earlier this week. By Friday, those same emergency crews transported employees to and from their jobs in downtown Chelsea.

Floodwaters, exceeding 3 feet in many places, did not shut down community establishments such as the Silver Dollar Bar and Grill, Chelsea Savings Bank and the U.S. Post Office. "It's just another flood for us," Delfina Ordaz said Friday, shortly after wading through thigh-high water with her infant to return to her elevated home. The 21-year-old said she evacuated the town for three days because the electricity went out, not because water surrounded her home, covering the foundation and rising within a few inches of the exterior door frame.

"There's no water in here or anything," Ordaz said with a laugh inside her home. Running water and functioning electricity and Internet activity also meant Chelsea Savings Bank was open for business Friday. Only the drive-thru service window was closed because the building was surrounded by sandbags holding back the water. "Floodwater doesn't keep us down. We just keep working," said Julie Fisher, who was a little late for work at the bank Friday because she had to wait for a boat. Bank employee Marilyn Hrabak said residents have learned to embrace flooding as a way of life. When the water rises, it seems to trigger a spirit of community that makes the place

special, she said. That same spirit and experience got the residents through the week without any serious injuries or deaths. "It's survival, and why not be happy every day," said Hrabak, who moved to Chelsea 44 years ago. "We've been here a long time and we plan to be here a lot longer. ... This is home." Hrabak first lived in downtown Chelsea. But after the flood of 1993, she was one of the few residents who took up the city's offer of free lots.

Chelsea's recently retired mayor of 16 years, Roger Ochs, said the city bought six acres for an elevated development with more than 10 lots in the mid-1990s. The idea was to offer residents free property if they paid to move their houses up the hill. The program failed to take off. "We wanted to move 12 houses up there. But we couldn't get cooperation," Ochs said. "We moved two houses from down below."

Today the development has six houses: Two that residents moved, three built by private owners and one built and sold by the city. That means about half a dozen lots remain, and the same offer stands, said current Chelsea Mayor Leif Morris. Morris estimates that 80 percent of the residents in Chelsea temporarily evacuated at some point this week. Total damage is yet to be assessed as many homes remain submerged in several feet of water. Morris said he expects the city and residents will become eligible for aid money through the Federal Emergency Management Agency, which officials said became tedious and drawn out in the previous two major floods. Braley said Friday he hopes to improve that process this time around for the residents. "We want to be your ally and make sure you get what you deserve," Braley told Morris and emergency volunteers.

Between 1993 and 2008, about \$1.6 million in local, state and federal money was provided to Chelsea and its residents. Most of the money went toward the acquisition of 47 houses and the relocation of two others. Receiving FEMA aid for the latest flood will be crucial for residents without flood insurance, which Morris said likely accounts for the majority of the town's residents.

Article Photos



(Photo: Bryon Houlgrave, The Des Moines Register)



Chelsea residents are taken from their home via boat by volunteer EMS officials on Friday. *(Photo: Bryon Houlgrave, The Des Moines Register)*



Rep. Bruce Braley, D-Iowa, talks with residents Friday in Chelsea, where the Otter Creek had crested earlier in the day. *(Photo: Bryon Houlgrave, The Des Moines Register)*



A town sign sits in several feet of water on Friday in Chelsea. *(Photo: Bryon Houlgrave, The Des Moines Re*

Appendix G Tama County Historic Weather and Hazardous Materials Data

Historic Weather Data

Data from the earliest available records through December 2013 was obtained from the National Climatic Data Center (NCDC) Storm Event Database at <http://www.ncdc.noaa.gov/stormevents/>. The cutoff date of December 2013 was chosen in order to present a complete year of data. Data collection for the planning process began in December 2014 in order to prepare for the first meeting in February of 2015. This is not a comprehensive list of all storms or events that may have affected Tama County as all damage or storms may not have been recorded. Many of the events include a hyperlink to the NCDC website which provides a more detailed description of events (applied to digital copies of this plan only). This information can be accessed by clicking the hyperlinks in the "Location" column of the tables.

The following tables are organized alphabetically by hazard.

Mag = Magnitude Dth = Death Inj = Injury PrD = Property Damage CrD = Crop Damage

DROUGHT								
Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
TAMA (ZONE)	8/14/2000	0:00	Drought	N/A	0	0	0	\$4,690,000
TAMA (ZONE)	9/1/2000	0:00	Drought		0	0	0	\$5,030,000
TAMA (ZONE)	8/1/2001	0:00	Drought		0	0	0	\$11,350,000
TAMA (ZONE)	8/1/2003	0:00	Drought		0	0	\$12,650,000	0
TAMA (ZONE)	7/1/2012	0:00	Drought		0	0	0	\$90,000,000
TAMA (ZONE)	8/1/2012	0:00	Drought		0	0	0	\$6,000,000
TAMA (ZONE)	9/1/2012	0:00	Drought		0	0	0	0
TAMA (ZONE)	10/1/2012	0:00	Drought		0	0	0	0
TAMA (ZONE)	8/1/2013	0:00	Drought		0	0	0	\$21,000,000

FLASH FLOODING								
Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
COUNTYWIDE	7/10/2000	5:00	Flash Flood	N/A	0	0	\$100,000	\$150,000
COUNTYWIDE	7/26/2000	19:30	Flash Flood		0	0	\$200,000	\$50,000
CHELSEA	6/22/2007	17:30	Flash Flood		0	0	\$100,000	\$250,000
CLUTIER	6/18/2010	18:31	Flash Flood		0	0	\$10,000	0
GARWIN	7/26/2000	13:45	Flash Flood		0	0	\$50,000	\$10,000
GLADBROOK	4/25/2008	0:30	Flash Flood		0	0	\$10,000	0
MONTOUR	6/12/2008	3:55	Flash Flood		0	0	\$50,000	0
TAMA ARPT	6/8/2008	15:50	Flash Flood		0	0	\$10,000	0
TOLEDO	7/7/2010	12:00	Flash Flood		0	0	\$10,000	0
TRAER MUNI ARPT	6/12/2008	3:54	Flash Flood		0	0	\$20,000	0

TRAER MUNI ARPT	5/29/2013	17:16	Flash Flood		0	0	\$450,000	0
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RIVER FLOODING								
Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
TAMA (ZONE)*	2/9/1996	6:00	Flood	N/A	0	0	0	0
TAMA (ZONE)	6/17/1996	3:00	Flood		0	0	0	0
TAMA (ZONE)*	2/18/1997	18:00	Flood		0	0	0	0
TAMA (ZONE)*	3/9/1997	6:00	Flood		0	0	\$150,000	0
TAMA (ZONE)	3/19/1997	12:00	Flood		0	0	\$50,000	0
TAMA (ZONE)*	5/1/1997	0:00	Flood		0	0	0	0
TAMA (ZONE)*	6/8/1998	18:00	Flood		0	0	\$50,000	\$10,000
TAMA (ZONE)*	6/14/1998	9:00	Flood		0	0	\$100,000	\$20,000
TAMA (ZONE)*	6/18/1998	2:00	Flood		0	0	\$100,000	\$20,000
TAMA (ZONE)*	6/21/1998	6:00	Flood		0	0	\$100,000	\$20,000
TAMA (ZONE)*	6/24/1998	3:00	Flood		0	0	\$75,000	\$20,000
TAMA (ZONE)*	6/28/1998	6:00	Flood		0	0	\$75,000	\$20,000
TAMA (ZONE)*	3/15/2001	15:00	Flood		0	0	\$5,000	0
TAMA (ZONE)	3/23/2001	18:00	Flood		0	0	\$75,000	0
TAMA (ZONE)	5/22/2004	18:00	Flood		0	0	\$100,000	\$298,040
TAMA (ZONE)	6/26/2005	0:00	Flood		0	0	\$74,070	\$50,000
CLUTIER	8/27/2009	9:15	Flood		0	0	\$10,000	0
DYSART	4/18/2008	17:00	Flood		0	0	\$10,000	0
ELBERON	8/27/2009	10:40	Flood		0	0	\$10,000	0
GLADBROOK	4/25/2008	9:00	Flood		0	0	\$25,000	0
GLADBROOK	4/25/2008	9:00	Flood		0	0	\$10,000	0
GLADBROOK	4/25/2008	9:00	Flood		0	0	\$10,000	0
HAVEN	6/1/2008	8:44	Flood		0	0	\$50,000	0
IRVING	8/27/2009	16:51	Flood		0	0	\$10,000	0
LINCOLN	6/12/2010	12:00	Flood		0	0	0	\$20,000,000
MONTOUR	8/27/2009	14:40	Flood		0	0	\$10,000	0
TAMA	6/14/1998	11:00	Flood		0	0	\$100,000	\$75,000
TAMA	8/27/2009	10:40	Flood		0	0	\$10,000	0
TAMA	8/27/2009	11:30	Flood		0	0	\$10,000	0
TOLEDO	5/30/2008	6:11	Flood		0	0	\$100,000	\$10,000
*These river flooding events affected the Iowa River Basin. The four Iowa River communities in Tama County – Chelsea, Montour, Tama, and Toledo – added some or all of these flood events to their jurisdictional river flooding counts.								

SEVERE WINTER STORMS								
<u>Location</u>	<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Ini</u>	<u>PrD</u>	<u>CrD</u>
TAMA (ZONE)	1/18/1996	11:00	Heavy Snow	N/A	0	0	\$40,000	0
TAMA (ZONE)	1/18/1996	9:00	Blizzard		0	0	0	0
TAMA (ZONE)	1/18/1996	2:00	Cold/wind Chill		0	0	0	0
TAMA (ZONE)	1/26/1996	0:00	Heavy Snow		0	0	0	0
TAMA (ZONE)	1/26/1996	12:00	Blizzard		0	0	0	0
TAMA (ZONE)	1/28/1996	20:00	Blizzard		0	0	0	0
TAMA (ZONE)	2/1/1996	16:00	Cold/wind Chill		0	0	0	0
TAMA (ZONE)	5/1/1996	0:00	Cold/wind Chill		0	0	0	0
TAMA (ZONE)	11/14/1996	16:00	Ice Storm		0	0	0	0
TAMA (ZONE)	1/9/1997	21:00	Cold/wind Chill		0	0	0	0
TAMA (ZONE)	1/15/1997	21:00	Cold/wind Chill		0	0	0	0
TAMA (ZONE)	2/3/1997	14:00	Heavy Snow		0	0	0	0
TAMA (ZONE)	10/26/1997	3:00	Heavy Snow		0	0	\$640,000	\$2,600,000
TAMA (ZONE)	12/21/1997	14:00	Ice Storm		0	0	\$2,050	0
TAMA (ZONE)	1/4/1998	6:30	Ice Storm		0	0	\$20,400	0
TAMA (ZONE)	1/20/1998	18:00	Heavy Snow		0	0	\$10,450	0
TAMA (ZONE)	3/7/1998	21:00	Heavy Snow		0	0	\$50,000	0
TAMA (ZONE)	3/17/1998	2:00	Ice Storm		0	0	\$5,880	0
TAMA (ZONE)	1/1/1999	15:00	Winter Storm		0	0	\$10,000	0
TAMA (ZONE)	2/11/1999	9:00	Ice Storm		0	0	\$5,000	0
TAMA (ZONE)	3/8/1999	0:00	Winter Storm		0	0	\$10,000	0
TAMA (ZONE)	9/21/1999	1:00	Cold/wind Chill		0	0	0	\$294,120
TAMA (ZONE)	1/19/2000	7:00	Winter Storm		0	0	\$1,000	0
TAMA (ZONE)	2/17/2000	23:00	Winter Storm		0	0	\$10,000	0
TAMA (ZONE)	12/10/2000	21:00	Winter Storm		0	0	\$24,900	0
TAMA (ZONE)	12/21/2000	12:00	Blizzard		0	0	\$20,000	0
TAMA (ZONE)	12/28/2000	8:00	Heavy Snow		0	0	\$5,000	0
TAMA (ZONE)	2/8/2001	16:00	Ice Storm		0	0	\$75,000	0
TAMA (ZONE)	2/8/2001	23:00	Winter Storm		0	0	\$50,000	0
TAMA (ZONE)	3/1/2002	17:00	Heavy Snow		0	0	\$5,000	0
TAMA (ZONE)	1/28/2003	5:00	Winter Weather		0	0	0	0
TAMA (ZONE)	2/14/2003	11:00	Winter Storm		0	0	\$5,000	0
TAMA (ZONE)	3/15/2004	7:00	Heavy Snow		0	0	\$10,000	0
TAMA (ZONE)	1/1/2005	8:00	Ice Storm		0	0	\$5,000	0
TAMA (ZONE)	1/4/2005	17:00	Heavy Snow		0	0	\$10,000	0
TAMA (ZONE)	1/22/2005	1:00	Blizzard		0	0	\$5,000	0

TAMA (ZONE)	1/20/2007	23:00	Heavy Snow		0	0	0	0
TAMA (ZONE)	2/24/2007	3:00	Winter Storm		0	0	\$1,500	0
TAMA (ZONE)	12/1/2007	7:00	Ice Storm		0	0	\$10,000	0
TAMA (ZONE)	12/11/2007	1:00	Ice Storm		0	0	\$75,000	0
TAMA (ZONE)	2/5/2008	12:00	Winter Storm		0	0	\$10,000	0
TAMA (ZONE)	2/10/2008	4:00	Cold/wind Chill		0	0	0	0
TAMA (ZONE)	2/17/2008	2:00	Winter Storm		0	0	\$50,000	0
TAMA (ZONE)	12/18/2008	19:00	Winter Storm		0	0	\$5,000	0
TAMA (ZONE)	12/27/2008	8:00	Ice Storm		0	0	\$5,000	0
TAMA (ZONE)	1/9/2009	17:00	Heavy Snow		0	0	0	0
TAMA (ZONE)	4/5/2009	9:00	Winter Storm		0	0	\$5,000	0
TAMA (ZONE)	12/8/2009	2:00	Heavy Snow		0	0	\$10,000	0
TAMA (ZONE)	12/9/2009	6:00	Blizzard		0	0	\$50,000	0
TAMA (ZONE)	1/6/2010	16:00	Winter Storm		0	0	\$25,000	0
TAMA (ZONE)	1/20/2010	6:00	Ice Storm		0	0	\$100,000	0
TAMA (ZONE)	1/25/2010	14:00	Blizzard		0	0	\$75,000	0
TAMA (ZONE)	2/8/2010	7:00	Winter Storm		0	0	\$10,000	0
TAMA (ZONE)	12/11/2010	20:00	Blizzard		0	0	\$75,000	0
TAMA (ZONE)	12/23/2010	20:30	Heavy Snow		0	0	0	0
TAMA (ZONE)	2/1/2011	19:00	Blizzard		0	0	\$25,000	0
TAMA (ZONE)	1/20/2012	6:00	Heavy Snow		0	0	0	0
TAMA (ZONE)	12/19/2012	19:00	Winter Storm		0	0	\$25,000	0
TAMA (ZONE)	12/20/2012	2:00	Blizzard		0	0	\$100,000	0
TAMA (ZONE)	1/27/2013	6:00	Ice Storm		0	0	\$25,000	0
TAMA (ZONE)	1/30/2013	0:00	Winter Storm		0	0	\$25,000	0
TAMA (ZONE)	2/26/2013	8:00	Heavy Snow		0	0	\$5,000	0
TAMA (ZONE)	12/22/2013	0:00	Heavy Snow		0	0	0	0

THUNDERSTORMS, LIGHTNING, AND HAIL								
Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
CHELSEA	8/9/1993	20:35	Thunderstorm Wind	50 kts.	0	0	\$5,000	0
CHELSEA	4/15/1998	20:41	Hail	1.00 in.	0	0	\$1,000	0
CHELSEA	9/11/2000	17:25	Hail	1.00 in.	0	0	\$3,000	\$10,000
CHELSEA	9/11/2000	17:25	Hail	1.00 in.	0	0	\$3,000	\$10,000
CHELSEA	5/10/2003	16:06	Hail	1.00 in.	0	0	\$5,000	0
CHELSEA	8/9/2009	18:07	Thunderstorm Wind	52 kts. EG	0	0	\$3,000	0
CHELSEA	6/29/2012	16:00	Thunderstorm Wind	52 kts. MG	0	0	\$2,000	0
CHELSEA	8/7/2013	0:42	Thunderstorm Wind	50 kts. EG	0	0	\$1,000	0
CHELSEA	8/7/2013	0:43	Thunderstorm Wind	52 kts. EG	0	0	\$2,000	0

CHELSEA	8/7/2013	0:44	Thunderstorm Wind	52 kts. EG	0	0	\$5,000	0
CLUTIER	5/21/2004	15:23	Thunderstorm Wind	52 kts. EG	0	0	\$2,000	0
CLUTIER	6/4/2005	21:25	Thunderstorm Wind	50 kts. EG	0	0	\$2,000	0
CLUTIER	7/17/2006	16:18	Hail	1.75 in.	0	0	\$10,000	\$5,000
CLUTIER	7/17/2006	16:24	Hail	1.25 in.	0	0	\$5,000	\$5,000
CLUTIER	5/30/2008	6:38	Heavy Rain	N/A	0	0	0	0
CLUTIER	8/27/2009	6:00	Heavy Rain	N/A	0	0	0	0
CLUTIER	7/11/2011	3:35	Thunderstorm Wind	96 kts. EG	0	0	\$50,000	\$200,000
CLUTIER	6/25/2013	6:00	Heavy Rain	N/A	0	0	0	0
Dysart	4/14/1994	22:45	Thunderstorm Wind	50 kts.	0	0	\$5,000	0
DYSART	6/18/1998	14:35	Thunderstorm Wind	52 kts.	0	0	\$15,000	0
DYSART	7/8/2001	10:10	Thunderstorm Wind	61 kts. E	0	0	\$10,000	\$3,000
DYSART	3/9/2002	0:55	Thunderstorm Wind	52 kts. E	0	0	\$5,000	0
DYSART	4/30/2003	8:00	Lightning	N/A	0	0	\$40,000	0
DYSART	4/13/2006	18:15	Hail	1.00 in.	0	0	\$5,000	0
DYSART	7/22/2007	23:15	Thunderstorm Wind	50 kts. EG	0	0	\$2,000	0
DYSART	7/11/2011	3:40	Thunderstorm Wind	75 kts. EG	0	0	\$350,000	\$250,000
DYSART	7/11/2011	3:41	Thunderstorm Wind	70 kts. EG	0	0	\$30,000	\$50,000
GARWIN	5/19/1996	18:04	Thunderstorm Wind	50 kts.	0	0	\$1,000	0
GARWIN	5/15/1998	16:03	Thunderstorm Wind	52 kts.	0	0	\$10,000	0
GARWIN	3/9/2002	0:53	Thunderstorm Wind	56 kts. E	0	0	\$10,000	0
GARWIN	7/5/2003	0:10	Thunderstorm Wind	50 kts. EG	0	0	\$2,000	0
GARWIN	5/22/2004	20:50	Thunderstorm Wind	57 kts. EG	0	0	\$10,000	0
GARWIN	4/13/2006	18:30	Hail	1.75 in.	0	0	\$20,000	0
GARWIN	4/13/2006	18:36	Hail	1.00 in.	0	0	\$5,000	0
GARWIN	7/18/2007	17:11	Thunderstorm Wind	52 kts. EG	0	0	\$5,000	\$3,000
GARWIN	6/14/2008	13:40	Hail	1.00 in.	0	0	\$5,000	\$10,000
GARWIN	6/14/2008	13:51	Hail	1.00 in.	0	0	\$3,000	\$5,000
GARWIN	4/26/2009	6:00	Heavy Rain	N/A	0	0	0	0

GARWIN	6/18/2010	17:09	Thunderstorm Wind	52 kts. EG	0	0	\$5,000	0
GARWIN	7/11/2011	3:30	Thunderstorm Wind	96 kts. EG	0	0	\$750,000	\$250,000
GARWIN	4/15/2012	6:00	Heavy Rain	N/A	0	0	0	0
Gladbrook	7/4/1995	18:08	Thunderstorm Wind	50 kts.	0	0	\$35,000	\$1,000
GLADBROOK	6/20/1997	23:20	Thunderstorm Wind	69 kts.	0	0	\$75,000	\$15,000
GLADBROOK	5/15/1998	16:00	Thunderstorm Wind	52 kts.	0	0	\$10,000	0
GLADBROOK	6/29/1998	12:40	Thunderstorm Wind	56 kts.	0	0	\$30,000	\$3,000
GLADBROOK	6/13/2000	13:20	Thunderstorm Wind	61 kts. E	0	0	\$25,000	\$2,000
GLADBROOK	5/9/2001	21:55	Hail	1.75 in.	0	0	\$25,000	0
GLADBROOK	7/11/2004	10:27	Thunderstorm Wind	50 kts. EG	0	0	\$2,000	0
GLADBROOK	8/26/2004	20:05	Thunderstorm Wind	52 kts. EG	0	0	\$2,000	0
GLADBROOK	3/8/2006	17:50	Hail	1.00 in.	0	0	\$3,000	0
GLADBROOK	5/25/2008	20:25	Hail	1.00 in.	0	0	\$5,000	0
GLADBROOK	6/15/2008	2:30	Thunderstorm Wind	50 kts. EG	0	0	\$2,000	0
GLADBROOK	4/25/2009	5:40	Heavy Rain	N/A	0	0	0	0
GLADBROOK	6/8/2011	17:06	Hail	1.00 in.	0	0	\$1,000	\$5,000
GLADBROOK	7/11/2011	3:35	Thunderstorm Wind	75 kts. EG	0	0	\$50,000	\$250,000
Lincoln	7/19/1995	14:34	Thunderstorm Wind	52 kts.	0	0	\$2,000	\$1,000
Lincoln	7/19/1995	14:34	Thunderstorm Wind	52 kts.	0	0	\$3,000	0
LINCOLN	6/8/2011	16:27	Hail	1.75 in.	0	0	\$10,000	\$10,000
LINCOLN	6/8/2011	16:29	Hail	1.00 in.	0	0	\$2,000	\$10,000
LINCOLN	6/8/2011	16:34	Hail	1.00 in.	0	0	\$2,000	\$10,000
MONTOUR	6/18/1998	14:21	Thunderstorm Wind	78 kts.	0	0	\$50,000	\$5,000
MONTOUR	10/14/1998	16:19	Hail	1.00 in.	0	0	\$2,000	\$15,000
MONTOUR	10/29/1998	16:55	Hail	1.00 in.	0	0	\$1,000	\$1,000
MONTOUR	7/17/2001	12:27	Hail	1.75 in.	0	0	\$5,000	\$10,000
MONTOUR	8/3/2004	17:00	Thunderstorm Wind	50 kts. EG	0	0	\$2,000	0
MONTOUR	6/7/2009	19:30	Thunderstorm Wind	57 kts. EG	0	0	\$25,000	0
MONTOUR	7/7/2009	14:40	Heavy Rain	N/A	0	0	0	0
MONTOUR	8/10/2010	20:53	Thunderstorm	50 kts.	0	0	\$2,000	0

			Wind	EG				
MONTOUR	7/11/2011	3:22	Thunderstorm Wind	61 kts. EG	0	0	\$50,000	\$100,000
Tama	8/14/1993	14:40	Thunderstorm Wind	50 kts.	0	25	\$5,000	0
Tama	6/19/1994	16:31	Hail	1.75 in.	0	0	\$50,000	\$50,000
Tama	6/19/1994	16:57	Thunderstorm Wind	80 kts.	0	0	\$500,000	\$500
TAMA	5/19/1996	18:01	Thunderstorm Wind	57 kts.	0	0	\$5,000	0
TAMA	5/15/1998	16:12	Thunderstorm Wind	52 kts.	0	0	\$15,000	0
TAMA	6/18/1998	14:28	Thunderstorm Wind	52 kts.	0	0	\$2,000	0
TAMA	6/29/1998	12:57	Thunderstorm Wind	69 kts.	0	0	\$200,000	\$40,000
TAMA	6/29/1998	13:03	Thunderstorm Wind	54 kts.	0	0	\$20,000	\$2,000
TAMA	10/29/1998	17:05	Hail	1.75 in.	0	0	\$5,000	\$5,000
TAMA	7/20/1999	22:50	Thunderstorm Wind	55 kts.	0	0	\$10,000	0
TAMA	7/8/2001	9:50	Thunderstorm Wind	65 kts. E	0	0	\$15,000	\$5,000
TAMA	7/8/2001	10:25	Thunderstorm Wind	61 kts. E	0	0	\$10,000	\$3,000
TAMA	5/6/2002	20:03	Hail	1.00 in.	0	0	\$5,000	0
TAMA	5/8/2003	18:57	Hail	1.00 in.	0	0	\$10,000	0
TAMA	6/25/2003	11:10	Thunderstorm Wind	52 kts. EG	0	0	\$10,000	0
TAMA	6/25/2003	11:10	Thunderstorm Wind	52 kts. EG	0	0	\$10,000	0
TAMA	8/26/2004	20:19	Thunderstorm Wind	57 kts. EG	0	0	\$5,000	\$1,000
TAMA	6/29/2005	21:50	Thunderstorm Wind	52 kts. EG	0	0	\$5,000	0
TAMA	6/29/2005	22:16	Thunderstorm Wind	50 kts. EG	0	0	\$1,000	0
TAMA	6/22/2007	18:47	Thunderstorm Wind	68 kts. MG	0	0	\$50,000	0
TAMA	6/6/2008	0:39	Thunderstorm Wind	55 kts. MG	0	0	\$1,000	0
TAMA	6/19/2009	5:52	Thunderstorm Wind	54 kts. EG	0	0	\$10,000	\$2,000
TAMA	6/19/2009	5:53	Thunderstorm Wind	65 kts. EG	0	0	\$25,000	\$50,000
TAMA	6/18/2010	17:24	Hail	1.00 in.	0	0	\$1,000	\$5,000
TAMA	6/27/2010	3:27	Thunderstorm	61 kts.	0	0	\$2,000	0

			Wind	MG				
TAMA	8/31/2010	20:45	Thunderstorm Wind	52 kts. EG	0	0	\$5,000	0
TAMA	5/29/2011	6:48	Thunderstorm Wind	52 kts. MG	0	0	\$2,000	0
TAMA ARPT	4/6/2010	17:14	Hail	1.00 in.	0	0	\$1,000	0
TAMA CO.	6/7/1961	14:00	Hail	2.00 in.	0	0	0	0
TAMA CO.	7/19/1962	12:50	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	4/19/1966	18:15	Hail	1.50 in.	0	0	0	0
TAMA CO.	6/9/1967	10:40	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	7/30/1967	19:20	Hail	1.50 in.	0	0	0	0
TAMA CO.	7/30/1967	19:20	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	6/11/1969	20:45	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	7/13/1969	12:55	Hail	1.00 in.	0	0	0	0
TAMA CO.	7/13/1969	12:55	Thunderstorm Wind	52 kts.	0	0	0	0
TAMA CO.	7/8/1971	2:05	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	9/21/1973	9:30	Hail	2.75 in.	0	0	0	0
TAMA CO.	4/13/1974	23:20	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	5/13/1974	6:50	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	6/14/1974	16:30	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	6/14/1974	16:45	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	6/20/1974	16:30	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	6/4/1979	18:45	Thunderstorm Wind	52 kts.	0	0	0	0
TAMA CO.	6/12/1979	16:40	Hail	1.50 in.	0	0	0	0
TAMA CO.	7/30/1979	4:15	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	9/6/1980	12:30	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	4/3/1981	20:20	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	6/7/1981	20:23	Hail	1.00 in.	0	0	0	0
TAMA CO.	6/29/1983	15:10	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	8/26/1983	17:45	Thunderstorm Wind	0 kts.	0	0	0	0

TAMA CO.	3/15/1984	1:25	Hail	1.00 in.	0	0	0	0
TAMA CO.	3/15/1984	1:27	Hail	1.00 in.	0	0	0	0
TAMA CO.	6/10/1986	20:45	Thunderstorm Wind	52 kts.	0	0	0	0
TAMA CO.	9/28/1986	18:20	Hail	1.75 in.	0	0	0	0
TAMA CO.	9/28/1986	18:20	Hail	1.75 in.	0	0	0	0
TAMA CO.	11/8/1986	0:45	Thunderstorm Wind	0 kts.	0	0	0	0
TAMA CO.	7/8/1987	17:47	Thunderstorm Wind	60 kts.	0	0	0	0
TAMA CO.	8/16/1987	15:07	Hail	3.75 in.	0	0	0	0
TAMA CO.	3/24/1988	16:00	Thunderstorm Wind	61 kts.	0	0	0	0
TAMA CO.	5/8/1988	12:15	Hail	2.00 in.	0	0	0	0
TAMA CO.	7/14/1988	0:15	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	7/15/1988	23:29	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	8/5/1989	9:10	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	8/5/1989	9:15	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	8/5/1989	9:25	Thunderstorm Wind	57 kts.	0	0	0	0
TAMA CO.	6/2/1990	11:17	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	3/22/1991	18:00	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	7/6/1991	4:00	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	9/12/1991	14:52	Thunderstorm Wind	61 kts.	0	0	0	0
TAMA CO.	6/17/1992	2:40	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	7/7/1992	2:10	Thunderstorm Wind	50 kts.	0	0	0	0
TAMA CO.	8/25/1992	14:15	Thunderstorm Wind	52 kts.	0	0	0	0
TAMA CO.	9/19/2013	16:34	Thunderstorm Wind	54 kts. EG	0	0	\$10,000	0
TAMA CO.	9/19/2013	16:43	Thunderstorm Wind	54 kts. EG	0	0	\$50,000	0
Toledo	7/4/1995	18:57	Thunderstorm Wind	50 kts.	0	0	\$20,000	\$2,000
TOLEDO	5/19/1996	18:23	Thunderstorm Wind	50 kts.	0	0	\$3,000	
TOLEDO	6/29/1998	13:00	Thunderstorm	69 kts.	0	0	\$1,000,000	\$150,000

			Wind					
TOLEDO	8/1/2000	1:00	Lightning	N/A	0	0	\$60,000	0
TOLEDO	5/8/2003	19:04	Hail	1.00 in.	0	0	\$10,000	0
TOLEDO	8/3/2004	17:10	Thunderstorm Wind	52 kts. EG	0	0	\$10,000	0
TOLEDO	6/4/2005	21:20	Thunderstorm Wind	52 kts. EG	0	0	\$2,000	0
TOLEDO	6/8/2008	15:32	Hail	1.00 in.	0	0	\$2,000	\$5,000
TOLEDO	6/14/2008	14:00	Hail	1.00 in.	0	0	\$10,000	\$5,000
TOLEDO	6/14/2008	14:00	Thunderstorm Wind	57 kts. EG	0	0	\$5,000	0
TOLEDO	6/25/2008	19:38	Thunderstorm Wind	52 kts. EG	0	0	\$1,000	0
TOLEDO	7/7/2008	18:35	Thunderstorm Wind	52 kts. EG	0	0	\$5,000	0
TOLEDO	6/19/2009	5:57	Thunderstorm Wind	52 kts. EG	0	0	\$3,000	\$10,000
TOLEDO	7/4/2010	21:00	Heavy Rain	N/A	0	0	0	0
TOLEDO	7/11/2011	3:25	Thunderstorm Wind	100 kts. EG	0	0	\$300,000	\$500,000
TOLEDO	7/11/2011	3:25	Thunderstorm Wind	75 kts. EG	0	0	\$200,000	\$250,000
TOLEDO	7/11/2011	3:25	Thunderstorm Wind	78 kts. EG	0	0	\$150,000	\$250,000
TOLEDO	5/26/2013	6:00	Heavy Rain	N/A	0	0	0	0
TOLEDO	5/26/2013	16:12	Heavy Rain	N/A	0	0	0	0
TOLEDO	6/25/2013	6:00	Heavy Rain	N/A	0	0	0	0
Traer	7/19/1995	15:02	Thunderstorm Wind	50 kts.	0	0	\$75,000	\$5,000
TRAER	5/19/1996	18:15	Thunderstorm Wind	50 kts.	0	0	\$1,000	0
TRAER	6/29/1998	12:45	Thunderstorm Wind	56 kts.	0	0	\$15,000	\$1,000
TRAER	8/26/2000	14:40	Hail	1.10 in.	0	0	\$2,000	\$10,000
TRAER	3/9/2002	0:54	Thunderstorm Wind	56 kts. E	0	0	\$10,000	0
TRAER	5/21/2004	14:15	Hail	1.25 in.	0	0	\$5,000	\$5,000
TRAER	5/21/2004	15:16	Hail	1.00 in.	0	0	\$5,000	\$3,000
TRAER	5/21/2004	15:10	Thunderstorm Wind	57 kts. EG	0	0	\$5,000	0
TRAER	5/22/2004	21:06	Hail	1.75 in.	0	0	\$15,000	\$5,000
TRAER	5/22/2004	21:12	Hail	1.00 in.	0	0	\$3,000	\$5,000
TRAER	4/13/2006	17:52	Hail	1.75 in.	0	0	\$10,000	0
TRAER	4/13/2006	18:09	Hail	1.00 in.	0	0	\$5,000	0
TRAER	4/13/2006	18:10	Hail	2.00 in.	0	0	\$15,000	0
TRAER	4/13/2006	18:15	Hail	1.75 in.	0	0	\$25,000	0

TRAER	4/13/2006	18:17	Hail	2.50 in.	0	0	\$20,000	0
TRAER	5/12/2010	13:54	Hail	1.00 in.	0	0	\$5,000	0
TRAER	9/21/2010	10:05	Lightning	N/A	0	0	\$10,000	0
TRAER	6/8/2011	17:18	Hail	1.50 in.	0	0	\$5,000	\$10,000
TRAER MUNI ARPT	5/25/2008	20:52	Hail	1.00 in.	0	0	\$3,000	0
TRAER MUNI ARPT	4/25/2009	7:54	Heavy Rain	N/A	0	0	0	0
TRAER MUNI ARPT	4/15/2012	6:00	Heavy Rain	N/A	0	0	0	0
TRAER MUNI ARPT	4/18/2013	6:00	Heavy Rain	N/A	0	0	0	0
TRAER MUNI ARPT	6/25/2013	6:00	Heavy Rain	N/A	0	0	0	0

TORNADO								
<u>Location</u>	<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Mag</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
TAMA CO.	5/10/1953	16:30	Tornado	F2	0	0	\$25,000	0
TAMA CO.	4/26/1956	22:30	Tornado	F2	0	0	\$25,000	0
TAMA CO.	7/14/1958	19:50	Tornado	F2	0	0	\$25,000	0
TAMA CO.	5/9/1959	19:10	Tornado	F2	0	0	\$25,000	0
TAMA CO.	4/23/1961	10:25	Tornado	F3	1	6	\$2,500,000	0
TAMA CO.	6/22/1964	19:15	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/27/1965	20:15	Tornado	F2	0	0	\$2,500	0
TAMA CO.	4/19/1966	18:03	Tornado	F3	0	4	\$250,000	0
TAMA CO.	9/21/1973	19:30	Tornado	F1	0	0	\$25,000	0
TAMA CO.	11/9/1975	16:30	Tornado	F3	0	0	\$2,500	0
TAMA CO.	6/5/1979	18:05	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/5/1979	18:05	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/5/1979	18:10	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/5/1979	18:15	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/5/1979	18:20	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/29/1983	13:45	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/29/1983	13:55	Tornado	F1	0	0	\$250,000	0
TAMA CO.	6/10/1991	16:40	Tornado	F0	0	0	\$2,500	0
BUCKINGHAM	5/10/2001	16:40	Tornado	F0	0	0	\$1,000	0
CHELSEA	6/27/1998	23:20	Tornado	F0	0	0	0	0
CLUTIER	5/10/2003	17:27	Tornado	F0	0	0	0	0
CLUTIER	6/21/2011	0:15	Tornado	EF0	0	0	\$75,000	\$5,000
DYSART	5/31/1971	19:30	Tornado	F3	0	0	\$250,000	0

DYSART	9/1/1989	1:30	Tornado	F0	0	0	\$25,000	0
ELBERON	4/8/2001	21:50	Tornado	F0	0	0	0	0
GARWIN	6/13/2000	18:37	Tornado	F0	0	0	\$10,000	0
GARWIN	5/22/2004	20:15	Tornado	F0	0	0	0	\$1,000
GARWIN	8/19/2005	18:53	Tornado	F0	0	0	0	\$1,000
GLADBROOK	5/10/2001	16:21	Tornado	F2	0	0	\$35,000	0
MONTOUR	11/9/1975	17:45	Tornado	F1	0	0	\$250,000	0
TAMA	8/8/1998	14:55	Tornado	F0	0	0	0	0
TAMA	6/26/2002	15:14	Tornado	F0	0	0	0	0
TAMA	7/17/2006	15:50	Tornado	F0	0	0	\$1,000	\$2,000
TOLEDO	3/21/1953	17:00	Tornado	F2	0	0	\$25,000	0
TOLEDO	9/12/1991	15:20	Tornado	F0	0	0	\$250	0
TOLEDO	4/13/2006	18:10	Tornado	F0	0	0	0	0
TRAER	5/24/1989	19:07	Tornado	F4	0	0	\$25,000,000	0
TRAER	5/10/2001	16:43	Tornado	F0	0	0	\$1,000	0

WINDSTORM								
Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
TAMA (ZONE)	1/17/1996	21:00	High Wind	55 kts.	0	0	0	0
TAMA (ZONE)	2/10/1996	12:00	High Wind	56 kts.	0	0	0	0
TAMA (ZONE)	3/24/1996	17:00	High Wind	54 kts.	0	0	0	0
TAMA (ZONE)	4/25/1996	9:30	High Wind	52 kts.	0	0	0	0
TAMA (ZONE)	10/29/1996	11:00	High Wind	57 kts.	0	0	0	0
TAMA (ZONE)	4/6/1997	9:00	High Wind	55 kts.	0	0	0	0
TAMA (ZONE)	4/30/1997	12:00	High Wind	52 kts.	0	0	0	0
TAMA (ZONE)	5/5/1997	12:30	High Wind	52 kts.	0	0	0	0
TAMA (ZONE)	11/10/1998	2:00	High Wind	61 kts.	0	0	\$300,000	\$5,100
TAMA (ZONE)	3/17/1999	12:00	High Wind	50 kts.	0	0	\$30,000	0
TAMA (ZONE)	3/8/2000	11:00	High Wind	50 kts. E	0	0	\$10,000	0
TAMA (ZONE)	4/7/2001	4:00	High Wind	50 kts. M	0	0	\$50,000	0
TAMA (ZONE)	11/12/2003	9:00	High Wind	50 kts. EG	0	0	\$50,000	0
TAMA (ZONE)	3/7/2004	6:30	High Wind	36 kts. MS	0	0	\$10,000	0
TAMA (ZONE)	4/18/2004	15:10	High Wind	35 kts. MS	0	0	\$80,000	0
TAMA (ZONE)	4/27/2004	12:30	High Wind	35 kts. MS	0	0	\$75,110	0
TAMA (ZONE)	5/24/2004	17:30	High Wind	40 kts. MS	0	0	\$25,000	0
TAMA (ZONE)	12/12/2004	10:00	High Wind	35 kts.	0	0	\$50,000	0

				ES				
TAMA (ZONE)	1/22/2005	0:15	High Wind	35 kts. ES	0	0	\$10,000	0
TAMA (ZONE)	6/8/2005	9:00	High Wind	50 kts. EG	0	0	\$20,000	0
TAMA (ZONE)	11/15/2005	19:00	High Wind	35 kts. MS	0	0	\$30,000	0
TAMA (ZONE)	1/24/2006	9:30	High Wind	37 kts. MS	0	0	\$10,000	0
TAMA (ZONE)	5/27/2006	12:00	High Wind	50 kts. MG	0	0	\$10,000	0
TAMA (ZONE)	10/26/2008	10:30	High Wind	35 kts. ES	0	0	\$25,000	\$25,000
TAMA (ZONE)	3/29/2012	23:00	High Wind	50 kts. EG	0	0	\$10,000	0

Extreme Heat Data

Extreme Heat data was obtained from the NCDC Climate Data Online Search at <http://www.ncdc.noaa.gov/cdo-web/search>. Data was obtained from 1980 to December of 2013. Data collection stopped at 1980 because 33 years of data gives us adequate information on the occurrence of extreme heat events in Tama County.

EXTREME HEAT				
<u>Location</u>	<u>Type</u>	<u>Year</u>	<u># of Occurrences</u>	<u>Dates</u>
TAMA (ZONE)	Extreme Heat	1980	1	7/9-7/21
TAMA (ZONE)	Extreme Heat	1981	1	7/12-7/15
TAMA (ZONE)	Extreme Heat	1982	2	7/4-7/6, 8/2-8/5
TAMA (ZONE)	Extreme Heat	1983	6	6/22-6/27, 7/14-7/23, 8/3-8/11, 8/15-8/22, 8/25-8/27, 9/3-9/5
TAMA (ZONE)	Extreme Heat	1984	2	8/7-8/9, 8/28-8/30
TAMA (ZONE)	Extreme Heat	1985	2	8/6-8/8, 9/7-9/9
TAMA (ZONE)	Extreme Heat	1986	2	6/20-6/22, 7/17-7/20
TAMA (ZONE)	Extreme Heat	1987	3	6/13-6/19, 7/24-7/27, 7/29-8/3
TAMA (ZONE)	Extreme Heat	1988	6	6/19-6/23, 7/5-7/9, 7/14-7/19, 7/28-8/9, 8/11-8/13, 8/15-8/19
TAMA (ZONE)	Extreme Heat	1989	1	7/4-7/12
TAMA (ZONE)	Extreme Heat	1990	1	9/5-9/7
TAMA (ZONE)	Extreme Heat	1991	6	6/27-6/30, 7/1-7/3, 7/6-7/8, 7/17-7/23, 8/1-8/3, 8/26-8/29
TAMA (ZONE)	Extreme Heat	1992	0	None
TAMA (ZONE)	Extreme Heat	1993	0	None
TAMA (ZONE)	Extreme Heat	1994	0	None
TAMA (ZONE)	Extreme Heat	1995	6	6/20-6/24, 7/11-7/15, 7/27-7/31, 8/11-8/14, 8/17-8/19, 8/24-8/31

TAMA (ZONE)	Extreme Heat	1996	0	None
TAMA (ZONE)	Extreme Heat	1997	2	7/25-7/27, 8/2-8/4
TAMA (ZONE)	Extreme Heat	1998	1	6/25-6/28
TAMA (ZONE)	Extreme Heat	1999	3	7/4-7/6, 7/22-7/26, 7/29-7/31
TAMA (ZONE)	Extreme Heat	2000	0	None
TAMA (ZONE)	Extreme Heat	2001	3	7/22-7/24, 7/31-8/2, 8/6-8/10
TAMA (ZONE)	Extreme Heat	2002	1	9/8-9/10
TAMA (ZONE)	Extreme Heat	2003	2	8/16-8/21, 8/25-8/29
TAMA (ZONE)	Extreme Heat	2004	0	None
TAMA (ZONE)	Extreme Heat	2005	4	6/22-6/25, 7/16-7/18, 7/24-7/26, 9/10-9/12
TAMA (ZONE)	Extreme Heat	2006	2	7/15-7/18, 7/29-7/31
TAMA (ZONE)	Extreme Heat	2007	0	None
TAMA (ZONE)	Extreme Heat	2008	0	None
TAMA (ZONE)	Extreme Heat	2009	0	None
TAMA (ZONE)	Extreme Heat	2010	0	None
TAMA (ZONE)	Extreme Heat	2011	3	6/7-6/9, 7/16-7/21, 8/1-8/3
TAMA (ZONE)	Extreme Heat	2012	7	6/19-6/21, 7/1-7/8, 7/16-7/19, 7/23-7/26, 8/2-8/4, 8/23-8/25, 8/29-9/1
TAMA (ZONE)	Extreme Heat	2013	2	7/17-7/20, 8/26-8/31

Hazardous Materials Data

Data on hazardous materials spills was collected from the Iowa DNR's Hazardous Spills Summary Report database at <https://programs.iowadnr.gov/hazardousspills/Reports/SpillSummary.aspx>. Data from the earliest available records (1995) through December 2013 was obtained.

Hazardous Materials



Iowa Department Of Natural Resources Hazardous Spill Summary Report

Spill Number	Reported Date	County	Responsible Party	Mode	Type	Land	Air	Ground water	Surface Water	Material Name	Amount	Unit
051995-SM-0955	5/19/1995 09:55	Tama	RIVER F.S.,IOWA	Handling Storage Process	Acids/Bases	x	-	-	-	HARNESS EXTRA, CONCENTRATED		Unknown
062995-KL-0805	6/29/1995 08:05	Tama	CORPORATION OF AMERICA,PACKAGING	Handling Storage Process	Acids/Bases	-	x	-	-	SULFUR OXIDES		Unknown
062995-KL-0806	6/29/1995 08:05	Tama	CORPORATION OF AMERICA,PA	Handling Storage Process	Acids/Bases	-	x	-	-	NITROGEN OXIDES NO & NO2		Unknown

			CKAGING									
080795-KL-1720	8/7/1995 17:20	Tama	RIVER FS,IOWA	Motor Carrier	Acids/Bases	x	-	-	-	WHITE ENAMEL PAINT		Unknwn
092095-SM-1030	9/20/1995 10:30	Tama	RIVER FS,IOWA	Handling Storage Process	Petroleum	x	-	-	-	Fuel Oil		Unknwn
021996-SG-1445	2/19/1996 00:00	Tama	DAKOTA CITY,IBP,	Handling Storage Process	Acids/Bases	-	-	-	-	EVAPORATOR TOWER WATER, H2SO4		Unknwn
071896-KL-1503	7/18/1996 15:03	Tama	AT THIS TIME,UNKNO WN	Handling Storage Process	Acids/Bases	-	x	-	-	UNKNOWN - SUSPECT PESTICIDES		Unknwn
071996-KL-0912	7/19/1996 09:12	Tama	UTILITIES,IES	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil		Unknwn
050597-RK-1135	5/5/1997 11:35	Tama	HAWK CO CONSERVATION BOARD,BLACK	Handling Storage Process	Petroleum	x	-	-	-	Gasoline		Unknwn
053097-SM-2118	5/30/1997 21:18	Tama	RAUM,JERALD	Handling Storage Process	Petroleum	x	-	x	-	Diesel Fuel		Unknwn
072597-RK-1112	7/25/1997 11:12	Tama	RUAN,	Motor Carrier	Petroleum	x	-	-	-	Motor oil		Unknwn
101597-RK-1115	10/15/1997 11:15	Tama	OIL,MCGREW	Motor Carrier	Acids/Bases	x	-	-	-	GASOLINE AND #2 FUEL OIL		Unknwn
022698-SD-1430	2/26/1998 14:30	Tama	& SONS TRUCKING,B AUMBERGER	Motor Carrier	Petroleum	x	-	-	-	Diesel Fuel		Unknwn
050698-BG-1000	5/6/1998 10:00	Tama	AG SERVICES,ORAN	Motor Carrier	Acids/Bases	x	-	-	-	DUAL HERBISIDE		Unknwn
091798-KL-0603	9/17/1998 06:03	Tama	MATERIAL & SUPPLY,BITUMINOUS	Motor Carrier	Acids/Bases	x	-	-	-	DIESEL FUEL, ASPHALT EMULSIFIER		Unknwn
050300-CK1-1546	5/3/2000 15:46	Tama	Dairyland Power Co-op	Other	Petroleum	x	-	-	-	Hydraulic Oil	30	Unknwn
060900-KAL-1608	6/9/2000 16:08	Tama	Energy Partners	Handling And Storage	Petroleum	x	-	x	-	Unleaded gasoline	5600	gal
062400-KAL-2154	6/24/2000 21:54	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	Transformer mineral oil	3	gal
011401-CWO-0030	1/14/2001 00:30	Tama	Tama Paperboard	Handling And Storage	Petroleum	x	-	x	-	#6 Fuel Oil	100	gal
032601-CWO-1415	3/26/2001 14:15	Tama	Unknown	Transformer	Acids/Bases	x	-	-	-	Transformer oil PCB	7	gal
041301-CWO-1115	4/13/2001 11:15	Tama	Carma Hillman Trucking	Transportation	Petroleum	x	-	-	-	Diesel Fuel	50	gal
051901-CWO-0917	5/19/2001 09:17	Tama	Central Counties Cooperative	Transportation	Fertilizer Pesticide	x	-	-	-	28% nitrogen fertilizer	25	gal
091701-DLP-	9/17/2001 11:25	Tama	Alliant Energy	Transportation	Petroleum	x	-	-	-	Hydraulic Oil	1	pt

1125												
042402-WDG-1355	4/24/2002 13:55	Tama	Tama Paperboard	Handling And Storage	Inorganic Chemical	-	-	x	-	Clay Coating (Kaolin Clay)	1	unk
062802-DLP-0935	6/28/2002 09:35	Tama	TIP REC	Transformer	Petroleum	x	-	-	-	Mineral oil	1	gal
013103-RPL-0830	1/31/2003 08:30	Tama	Nutri-Ject	Transportation	Animal/Vegetable Product	x	-	-	-	Biosolids	3000	gal
020403-KAL-0916	2/4/2003 09:16	Tama	Union Pacific Railroad	RR Incident	Organic Chemical	x	-	-	-	Coal	3	units
022103-EDW-1655	2/21/2003 16:55	Tama	Unknown	Handling And Storage	Petroleum	x	-	-	-	Gasoline	10	gal
060503-AHB-1055	6/5/2003 10:55	Tama	Central Counties Cooperative	Transportation	Animal/Vegetable Product	x	-	-	-	Crop Oil	0	qt
					Fertilizer Pesticide					Aatrex herbicide	0	lbs
										Callisto	3	oz
					Fertilizer/Pesticide					Liquid Nitrogen	2	qt
061103-RLT-1342	6/11/2003 13:42	Tama	Michels,Bob	Handling And Storage	Fertilizer/Pesticide	x	-	-	-	Roundup Herbicide	2	gal
061403-DJA-1815	6/14/2003 18:15	Tama	Alliant Energy	Handling And Storage	Acids/Bases	x	-	-	-	Transformer oil PCB	1	qt
081103-RPL-2136	8/11/2003 21:36	Tama	Iowa Quality Beef	Handling And Storage	Ammonia/Ag-related	-	x	-	-	Ammonia	40	lbs
090403-JS1-0648	9/4/2003 06:48	Tama	Iowa Quality Beef	Handling And Storage	Ammonia/Ag-related	-	x	-	-	Ammonia	1	unk
122403-DLP-0032	12/24/2003 00:32	Tama	Iowa Quality Beef	Handling And Storage	Ammonia (anhydrous)	-	x	-	-	Anhydrous ammonia	20	lbs
012604-AHB-0834	1/26/2004 08:34	Tama	New Century FS	Handling And Storage	Petroleum	x	-	-	-	Heating Oil	95	gal
072004-KAL-0920	7/20/2004 09:20	Tama	Manatt's Inc.	Transportation	Petroleum	x	-	-	-	Asphalt Oil	4000	gal
081904-JAT-1930	8/19/2004 19:30	Tama	Sac & Fox Housing	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil - Non PCB Oil	17	gal
032905-TAP-1907	3/29/2005 19:07	Tama	Chantland,Arnold	Vandalism	Petroleum	x	-	-	-	#2 Diesel Fuel	175	gal
040705-AHB-1109	4/7/2005 11:09	Tama	Central Counties Cooperative	Handling And Storage	Ammonia (anhydrous)	-	x	-	-	Anhydrous ammonia	35	lbs
041605-AHB-0745	4/16/2005 07:45	Tama	New Century FS	Handling And Storage	Ammonia (anhydrous)	-	x	-	-	Anhydrous ammonia	1	unk
042105-JAT-1800	4/21/2005 18:00	Tama	Liqui-Gro, Inc.	Transportation	Fertilizer/Pesticide	x	-	-	-	Fertilizer-NPK	900	gal
091905-RLT-1234	9/19/2005 12:34	Tama	Decker Truck Line, Inc.	Transportation	Petroleum	x	-	-	-	Diesel Fuel	100	gal

012406-KAL-1645	1/24/2006 16:45	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	Transformer oil - PCB	20	gal
051506-RLT-1449	5/15/2006 14:49	Tama	Tama-Benton Cooperative	Handling And Storage	Propane/LPG/Natural Gas	-	x	-	-	Propane	2000	gal
110206-AHB-1505	11/2/2006 15:05	Tama	Central Counties Cooperative	Transportation	Fertilizer/Pesticide	x	-	-	-	Fertilizer-NPK	8	ton
032607-RLT-0908	3/26/2007 09:08	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil - Non PCB Oil	1	unk
051007-KAL-1412	5/10/2007 14:12	Tama	Tama-Benton Cooperative	Transportation	Fertilizer Pesticide	x	-	-	-	28% nitrogen fertilizer	2000	gal
										Guardsman Max	18	gal
053107-RLT-1359	5/31/2007 13:59	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil	1	gal
080607-AHB-1051	8/6/2007 10:51	Tama	Heartland Cooperative	Transportation	Fertilizer Pesticide	x	-	-	-	Esfenvalerate	1	gal
111207-DLP-1439	11/12/2007 14:39	Tama	Benda Ag. Service Inc.	Manure	Organic Chemical	x	-	-	-	Ammonium oxalate	25	ton
053008-KMB-0714	5/30/2008 07:14	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	transformer oil	0	Unknown
061508-WCG-1226	6/15/2008 12:26	Tama	Edler,Doug	Handling And Storage	Fertilizer Pesticide	x	-	x	-	2-4-D & Crossbow herbicide	220	gal
062808-DLP-0821	6/28/2008 08:21	Tama	Unknown			-	-	-	-			
071208-CWF-1212	7/12/2008 12:12	Tama	Union Pacific Railroad	RR Incident	Petroleum	x	-	-	-	#2 Diesel Fuel	25	gal
071808-AHB-1502	7/18/2008 15:02	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil - Non PCB Oil	19	gal
011909-WDG-0953	1/19/2009 09:53	Tama	Lekin,Jason	Manure	Ammonia/Ag-related	-	x	-	-	Ammonia	1	unk
011909-AHB-1106	1/19/2009 11:06	Tama	Jesina,Bill	Manure	Ammonia/Ag-related	-	x	-	-	Ammonia	1	unk
012109-AHB-1446	1/21/2009 14:46	Tama	Mayo,Kenny	Manure	Ammonia/Ag-related	-	x	-	-	Ammonia	1	unk
012109-RLT-1645	1/21/2009 16:45	Tama	Iowa Select Farms	Manure	Manure	-	x	-	-	Manure	1	unk
012909-AHB-1107	1/29/2009 11:07	Tama	Benda,Brad	Manure	Ammonia/Ag-related	-	x	-	-	Ammonia	1	unk
020409-AHB-1131	2/4/2009 11:31	Tama	Gienger,Dennis	Manure	Ammonia/Ag-related	-	x	-	-	Ammonia	1	unk
020409-KAL-1230	2/4/2009 12:30	Tama	Thede,Gary			-	-	-	-			

081009-WCG-1818	8/10/2009 18:18	Tama	Wending Quarry	Handling And Storage	Petroleum	x	-	-	x	Diesel Fuel	20	gal
090309-AHB-1525	9/3/2009 15:25	Tama	Tama-Benton Cooperative	Theft	Fertilizer/Pesticide	-	x	-	-	Ammonia (anhydrous) - Agricultural	80	lbs
091609-AHB-1141	9/16/2009 11:41	Tama	Casey's General Stores, Inc.	Handling And Storage	Petroleum	x	-	-	x	#2 Diesel Fuel	1	Unknown
110409-DJA-2120	11/4/2009 21:20	Tama	Calderwood Farms	Manure	Manure	x	-	-	-	Manure	10000	gal
112009-AHB-1036	11/20/2009 10:36	Tama	New Century FS	Handling And Storage	Inorganic Chemical	-	x	-	-	Ammonia (anhydrous) - Industrial	300	gal
012810-AHB-1335	1/28/2010 13:35	Tama	Union Pacific Railroad	Railroad	Petroleum	x	-	-	-	Oil	1	Unknown
041910-AHB-0906	4/19/2010 09:06	Tama	New Century FS	Handling And Storage	Inorganic Chemical	-	x	-	-	Ammonia (anhydrous) - Industrial	5	lbs
042910-WCG-2223	4/29/2010 22:23	Tama	McMartin Trucking	Transportation	Petroleum	x	-	-	-	Diesel Fuel	1	Unknown
060710-AHB-1218	6/7/2010 12:18	Tama	Heartland COOP	Transportation	Fertilizer Pesticide	x	-	-	-	Nitrogen, Liquid - 28%	1000	gal
081210-WCG-1750	8/12/2010 17:50	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil (Unknown PCB)	3	gal
100710-RLT-1041	10/7/2010 10:41	Tama	Iowa DHS	Handling And Storage	Petroleum	x	-	-	-	Diesel Fuel	1	Unknown
042911-AHB-0942	4/29/2011 09:42	Tama	Cedar Valley Steel	Transportation	Petroleum	x	-	-	-	Diesel Fuel	1	Unknown
										Hydraulic Oil	1	Unknown
071111-AHB-1002	7/11/2011 10:02	Tama	Alliant Energy	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil (Unknown PCB)	1	Unknown
071111-AHB-1418	7/11/2011 14:18	Tama	Dysart Municipal Utilities	Transformer	Transformer oil/PCB	x	-	-	-	Transformer Oil (Non PCB)	120	gal
020212-KMB-1637	2/2/2012 16:37	Tama	U.S.S. Polaris LLC	Handling And Storage	Petroleum	-	-	-	x	Waste Oil	1	Unknown
071712-JAG-0731	7/17/2012 07:31	Tama	Nagel Farms	Transportation	Petroleum	x	-	-	-	Diesel Fuel	95	gal
080212-RLT-1009	8/2/2012 10:09	Tama	Peterson Contractors, Inc.	Handling And Storage	Petroleum	x	-	-	-	Diesel Fuel	20	gal
082012-RLT-1229	8/20/2012 12:29	Tama	ITC Midwest	Handling And Storage	Petroleum	x	-	-	-	Hydraulic Oil	20	gal
042513-AHB-1156	4/25/2013 11:56	Tama	Tama-Benton Cooperative	Handling And Storage	Fertilizer/Pesticide	x	-	-	-	Roundup Herbicide	20	gal
100713-RDS-2045	10/7/2013 20:45	Tama	Tama-Benton Cooperative	Handling And Storage	Fertilizer/Pesticide	-	x	-	-	Anhydrous Ammonia - Ag related	1	lbs

Appendix G List of Levees Within 75 Miles of Tama County

Below is a list of 29 levees that are within 75 miles of Tama County. The list is organized in alphabetical order by county.

Levees Within 75 Miles of Tama County

FEMA Region	County	System Name	Length (Miles)	Inspection Type	Inspection Date	Inspection Rating	Leveed Area Type	Leveed Area Acreage
7	Black Hawk	WATERLOO, IA - RDB CEDAR RIVER / LDB BLACK HAWK CK. (NORTH WEST)	4.61	Periodic	15-May-12	UNACCEPTABLE	Urban	811.92
7	Black Hawk	WATERLOO, IA - VIRDEN CREEK DRY RESERVIOR	0.58	-	-	-	Urban	485.67
7	Black Hawk	WATERLOO, IA - WASTE WATER TREATMENT PLANT (SOUTH)	1.08	Periodic	5-May-10	UNACCEPTABLE	Urban	53.28
7	Black Hawk	Cedar Falls, IA	1.09	Routine	20-Nov-13	ACCEPTABLE	Urban	71.38
7	Black Hawk	WATERLOO & EVANS DALE, IA - LDB CEDAR RIVER	11.39	Periodic	5-May-10	UNACCEPTABLE	Urban	3,485.06
7	Black Hawk	WATERLOO, IA - RDB CEDAR RIVER / RDB BLACK HAWK CK. (SOUTH WEST)	6.41	Periodic	16-May-12	UNACCEPTABLE	Urban	899.3
7	Dallas	VAN METER, IA - LEFT DESCENDING BANK	0.08	Routine	15-Nov-10	MINIMALLY ACCEPTABLE	Urban	11.07
7	Dallas	VAN METER, IA - RIGHT DESCENDING BANK	0.8	Periodic	2-May-12	UNACCEPTABLE	Urban	69.43
7	Fayette	OELWEIN, IL - DRY RUN CREEK	0	Routine	27-Nov-13	ACCEPTABLE	Urban	105.73
7	Iowa	Marengo, IA	4.57	Routine	13-Nov-13	ACCEPTABLE	Urban	1,297.30
7	Iowa	AMANA, IA - CORALVILLE REMEDIAL WORKS	0.44	Periodic	18-Jun-14	MINIMALLY ACCEPTABLE	Agricultural	10.5
7	Marshall	MARSHALLTOWN, IA - RDB IOWA RIVER / LDB LINN CREEK (NORTH)	5.51	Routine	14-Nov-14	MINIMALLY ACCEPTABLE	Urban	1,014.12
7	Marshall	MARSHALLTOWN, IA - RDB LINN CREEK/RDB ANSON CREEK (SOUTH EAST)	2.32	Routine	14-Nov-14	MINIMALLY ACCEPTABLE	Urban	272.63
7	Marshall	MARSHALLTOWN, IA - RDB LINN CREEK/LDB ANSON CREEK (SOUTH WEST)	1.28	Routine	14-Nov-14	MINIMALLY ACCEPTABLE	Urban	74.55
7	Polk	AVON STATION, IA - RED ROCKS REMEDIAL WORKS	2.05	Periodic	6-Mar-12	MINIMALLY ACCEPTABLE	Urban	266.92
7	Polk	DES MOINES, IA - RR I - RDB RACCOON RIVER	1.52	Periodic	27-May-14	MINIMALLY ACCEPTABLE	Urban	177.18
7	Polk	WEST DES MOINES & DES MOINES, IA	4.27	Periodic	3-Apr-12	MINIMALLY ACCEPTABLE	Urban	857.53

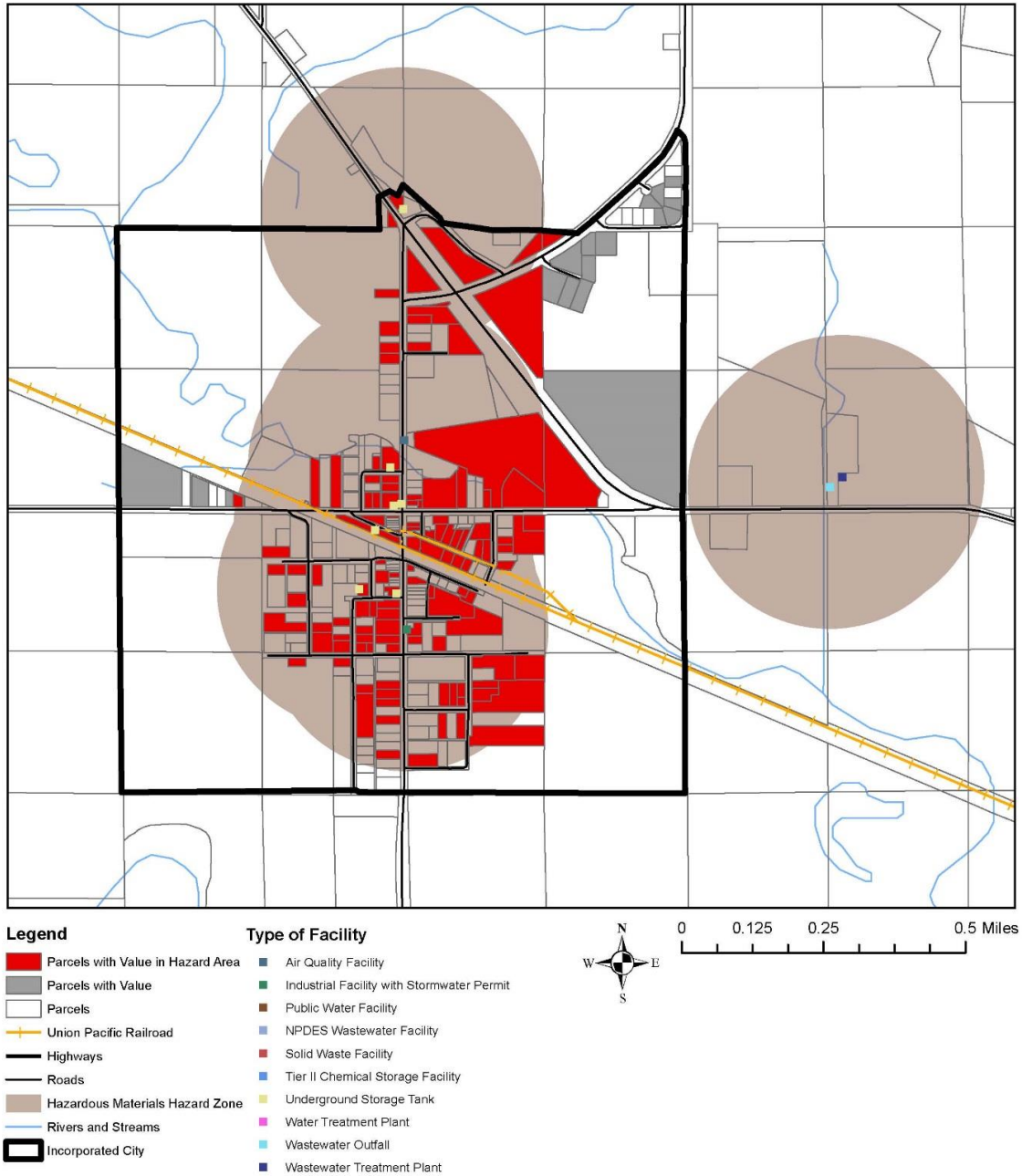
7	Polk	Des Moines, IA - RDB Des Moines River (Central Place)	1.11	Periodic	8-Aug-13	ACCEPTABLE	Urban	174.65
7	Polk	DES MOINES, IA - DM III - RDB DES MOINES RIVER / RACCOON RIVER	2.1	Periodic	1-May-12	MINIMALLY ACCEPTABLE	Urban	462.28
7	Polk	DES MOINES, IA - DM II - RDB DES MOINES RIVER / LDB RACCOON RIVER	3.14	Periodic	27-Apr-10	MINIMALLY ACCEPTABLE	Urban	749.26
7	Polk	DES MOINES, IA & SE DM - SW PLEASANT HILL RED ROCK REMEDIAL WORKS	10.19	Periodic	21-Mar-11	MINIMALLY ACCEPTABLE	Urban	2,574.16
7	Polk	Des Moines, IA - LDB Des Moines River (Birdland)	1.44	Periodic	8-Aug-13	ACCEPTABLE	Urban	211.48
7	Tama	TAMA, IA	2.71	Routine	13-Nov-13	MINIMALLY ACCEPTABLE	Urban	498.89
7	Wapello	Ottumwa, IA - LDB Des Moines R LDB Harrows B CK (Westside - Lower Cell)	0.48	-	-	-	Urban	13.95
7	Wapello	OTTUMWA, IA - LDB DES MOINES R (SOUTH)	3.03	-	-	-	Urban	980.78
7	Wapello	Ottumwa, IA - LDB Des Moines R RDB Har. B CK LDB Dr D (Westside-Middle C.)	0.93	-	-	-	Urban	64.11
7	Wapello	OTTUMWA, IA - RDB DES MOINES R (NORTH)	3.67	-	-	-	Urban	495.23
7	Wapello	Ottumwa, IA - LDB Des Moines R RDB Drainage D (Westside - Upper Cell)	0.62	-	-	-	Urban	27.16
7	Warren	CARLISLE, IA - RED ROCK REMEDIAL WORKS	1.33	Periodic	6-Mar-12	MINIMALLY ACCEPTABLE	Urban	144.29

Data Source: US Army Corps of Engineers Levee Database 2014

Appendix I. Fixed Hazardous Materials Hazard Areas

City of Chelsea

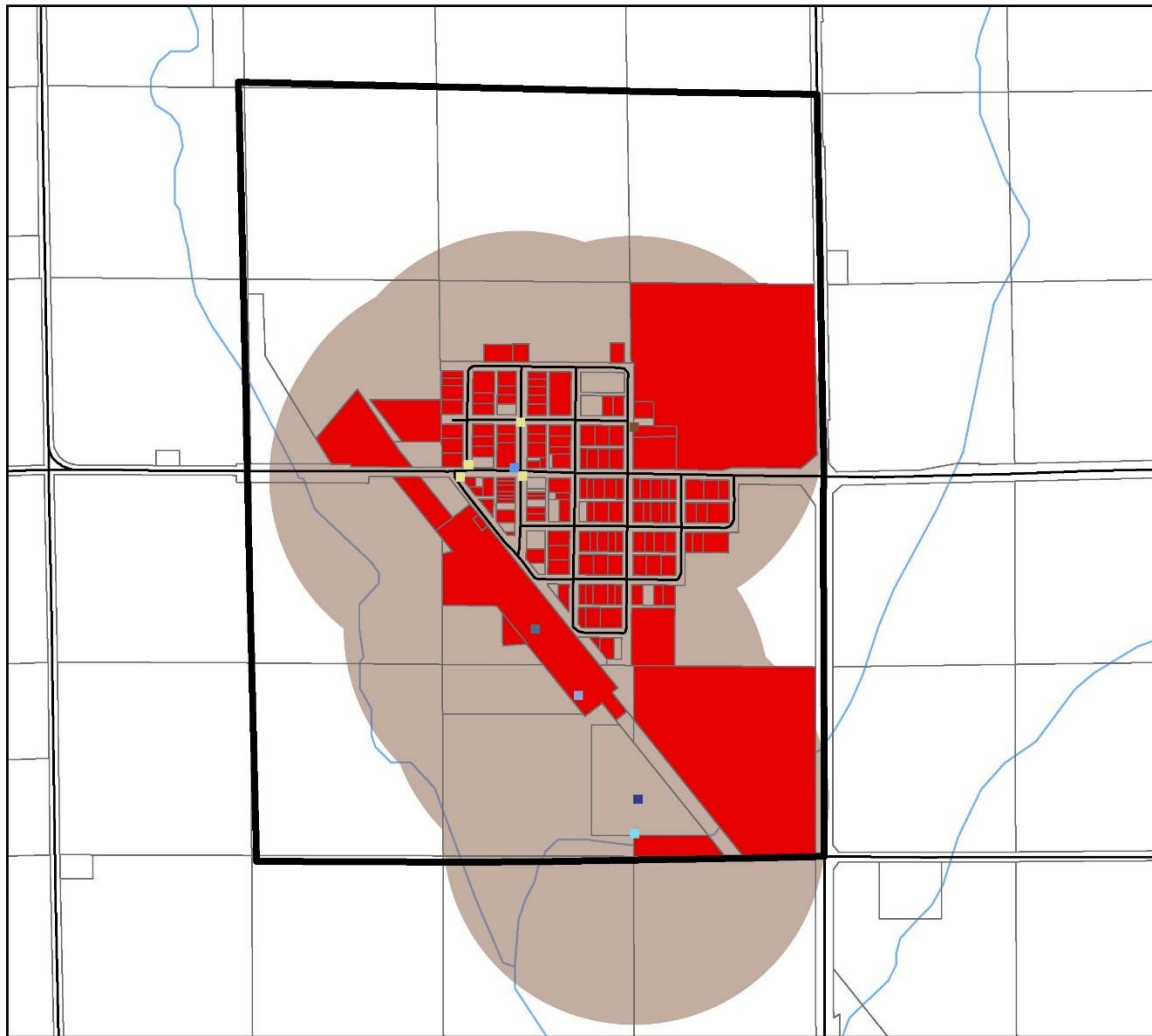
Fixed Hazardous Materials Hazard Area



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Clutier

Fixed Hazardous Materials Hazard Area



Legend

- Hazardous Materials Hazard Zone
- Parcels With Value In Hazard Area
- Parcels With Value
- Parcels
- Union Pacific Railroad
- Highways
- Roads
- Rivers and Streams
- Incorporated City

Type of Facility

- Air Quality Facility
- Industrial Facility with Stormwater Permit
- Public Water Facility
- NPDES Wastewater Facility
- Solid Waste Facility
- Tier II Chemical Storage Facility
- Underground Storage Tank
- Water Treatment Plant
- Wastewater Outfall
- Wastewater Treatment Plant

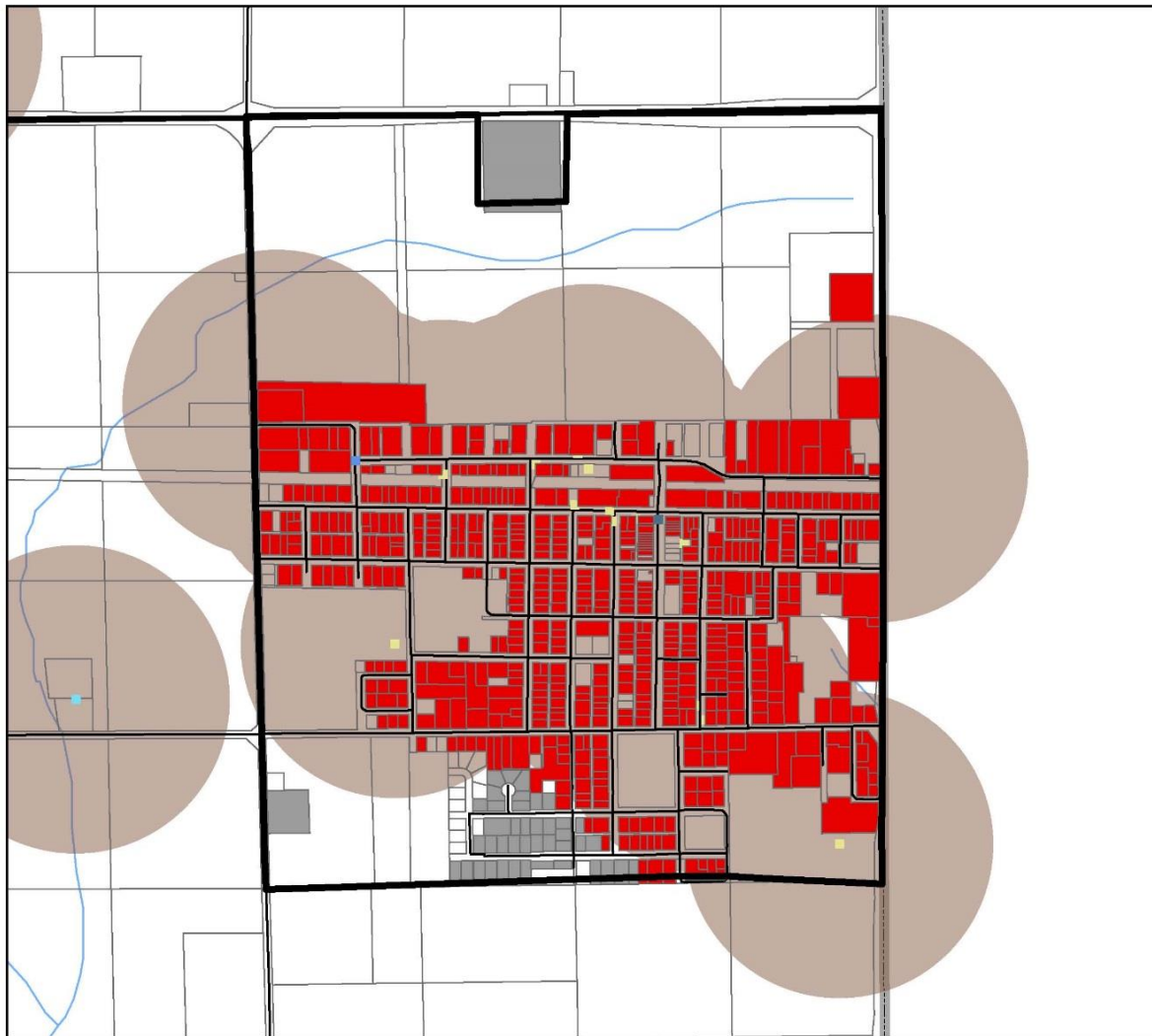


0 0.1 0.2 0.4 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Dysart

Fixed Hazardous Materials Hazard Area



Legend

- Hazardous Materials Hazard Zone
- Parcels with Value in Hazard Area
- Parcels with Value
- Parcels
- Union Pacific Railroad
- Highways
- Roads
- Rivers and Streams
- Incorporated City
- County Boundary

Type of Facility

- Air Quality Facility
- Industrial Facility with Stormwater Permit
- Public Water Facility
- NPDES Wastewater Facility
- Solid Waste Facility
- Tier II Chemical Storage Facility
- Underground Storage Tank
- Water Treatment Plant
- Wastewater Outfall
- Wastewater Treatment Plant

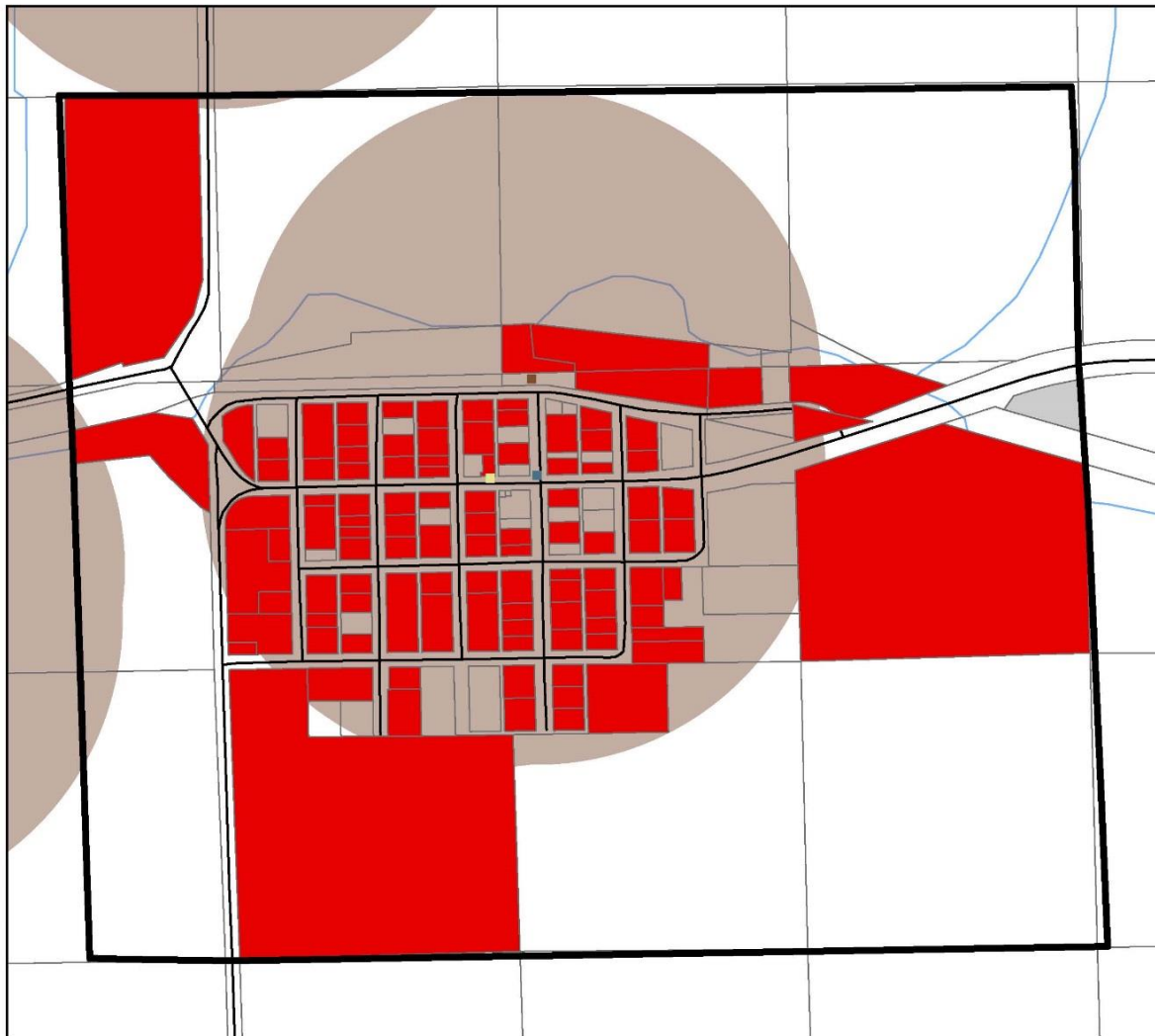


0 0.125 0.25 0.5 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Elberon

Fixed Hazardous Materials Hazard Area



Legend

- Hazardous Materials Hazard Zone
- Parcels with Value in Hazard Area
- Parcels with Value
- Parcels
- Union Pacific Railroad
- Highways
- Roads
- Rivers and Streams
- Incorporated City

Type of Facility

- Air Quality Facility
- Industrial Facility with Stormwater Permit
- Public Water Facility
- NPDES Wastewater Facility
- Solid Waste Facility
- Tier II Chemical Storage Facility
- Underground Storage Tank
- Water Treatment Plant
- Wastewater Outfall
- Wastewater Treatment Plant



0 0.05 0.1 0.2 Miles

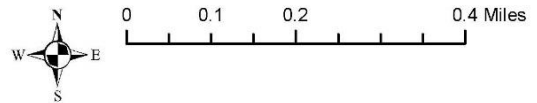
Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Garwin

Fixed Hazardous Materials Hazard Area



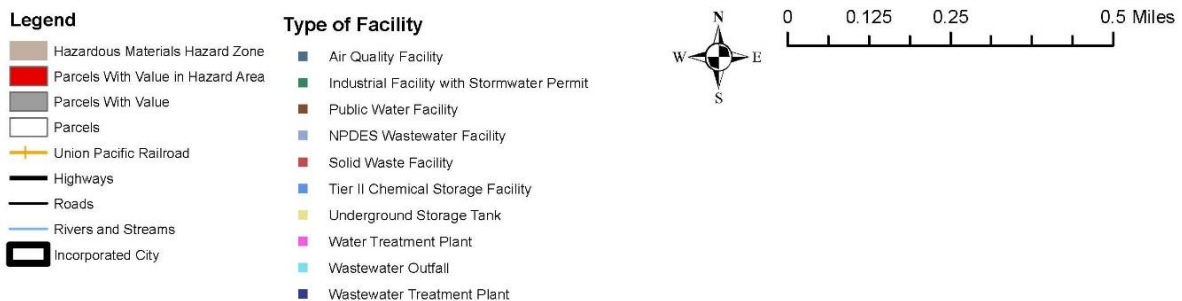
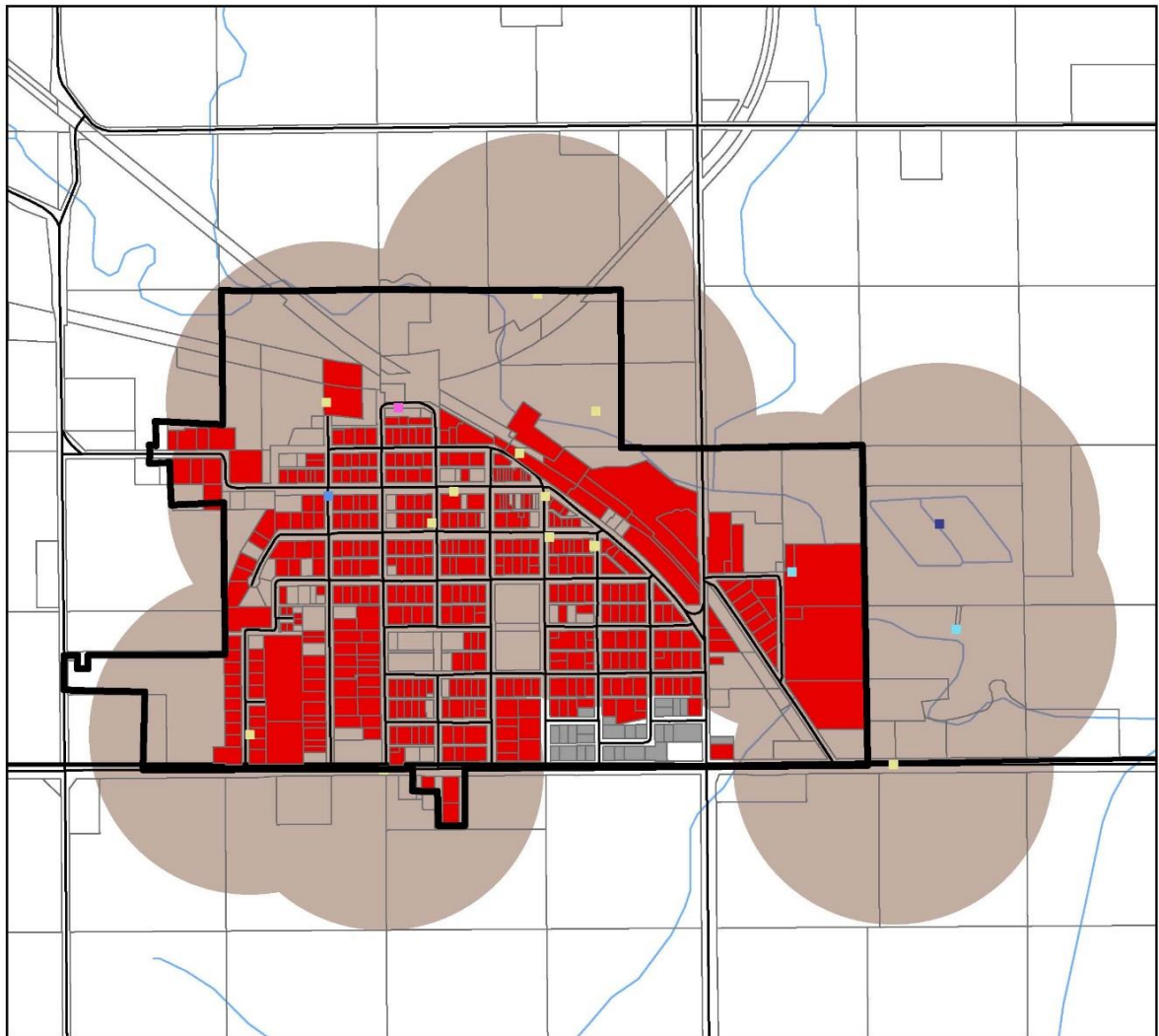
- Legend**
- Hazardous Materials Hazard Zone
 - Parcels With Value in Hazard Area
 - Parcels With Value
 - Parcels
 - Union Pacific Railroad
 - Highways
 - Roads
 - Rivers and Streams
 - County Boundary
 - Incorporated City
- Type of Facility**
- Air Quality Facility
 - Industrial Facility with Stormwater Permit
 - Public Water Facility
 - NPDES Wastewater Facility
 - Solid Waste Facility
 - Tier II Chemical Storage Facility
 - Underground Storage Tank
 - Water Treatment Plant
 - Wastewater Outfall
 - Wastewater Treatment Plant



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Gladbrook

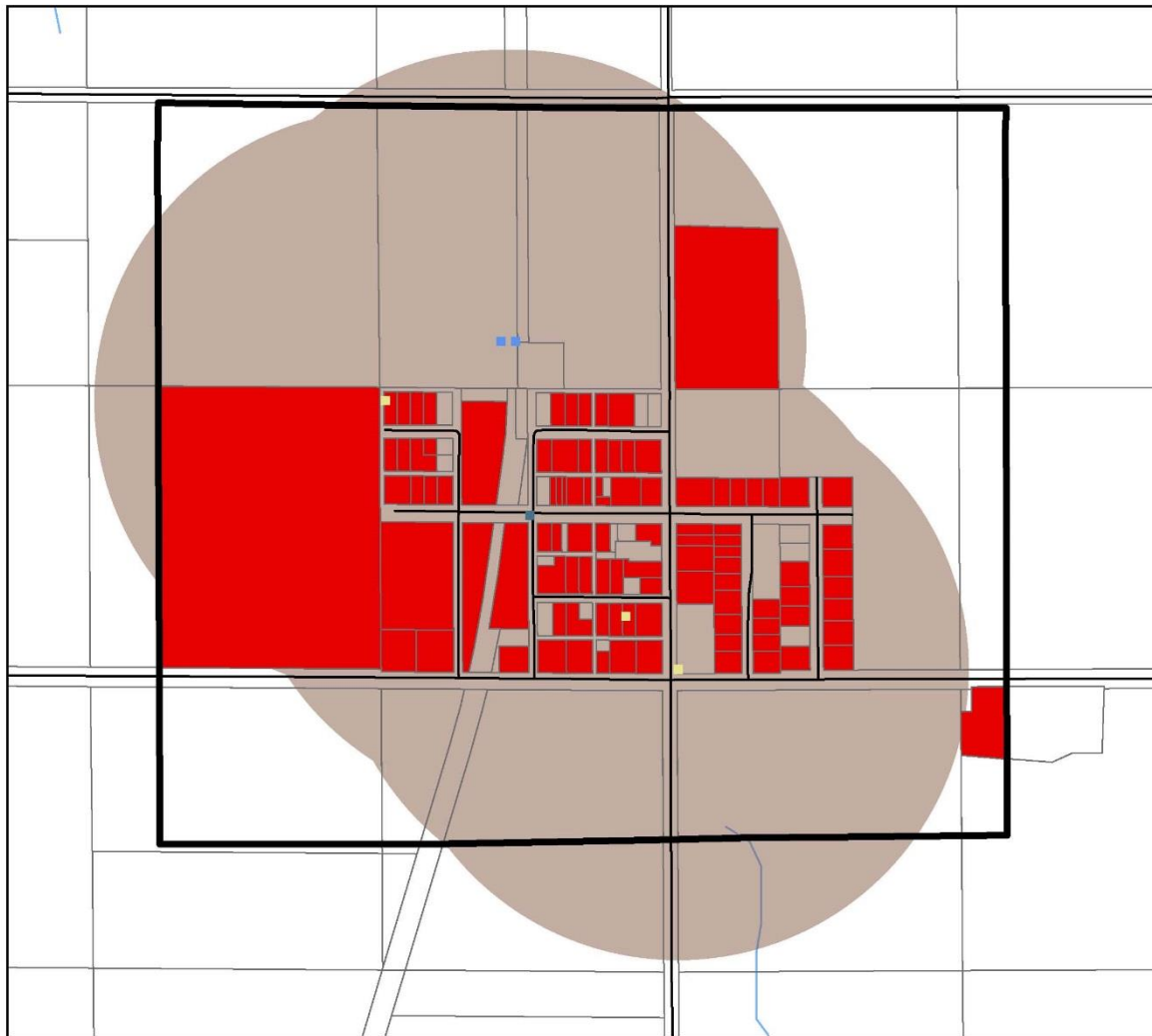
Fixed Hazardous Materials Hazard Area



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Lincoln

Fixed Hazardous Materials Hazard Area



Legend

- Hazardous Materials Hazard Zone
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels
- Union Pacific Railroad
- Highways
- Roads
- Rivers and Streams
- Incorporated City

Type of Facility

- Air Quality Facility
- Industrial Facility with Stormwater Permit
- Public Water Facility
- NPDES Wastewater Facility
- Solid Waste Facility
- Tier II Chemical Storage Facility
- Underground Storage Tank
- Water Treatment Plant
- Wastewater Outfall
- Wastewater Treatment Plant

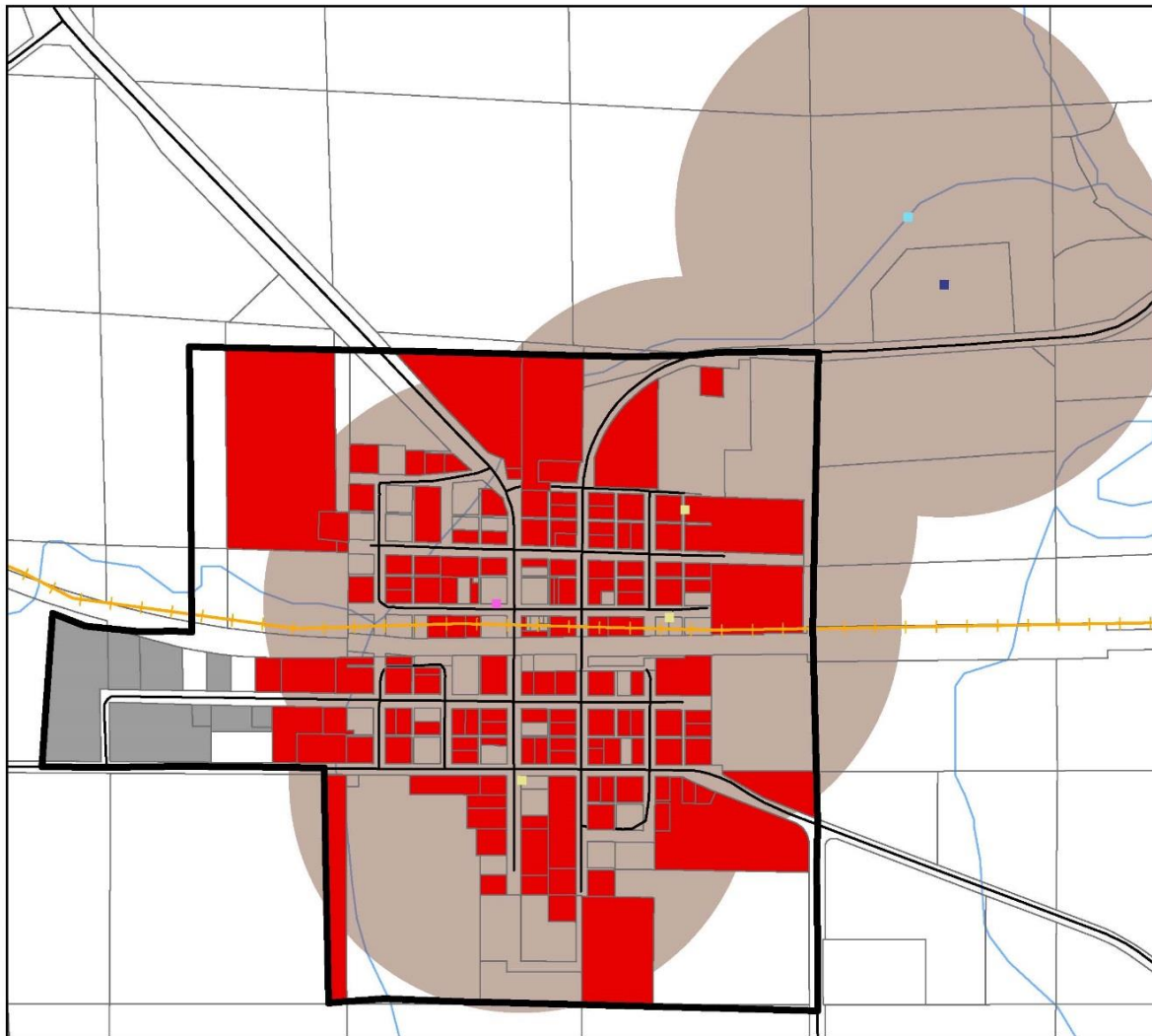


0 0.05 0.1 0.2 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Montour

Fixed Hazardous Materials Hazard Area



- | Legend | Type of Facility |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazardous Materials Hazard Zone | Air Quality Facility |
| Parcels With Value in Hazard Area | Industrial Facility with Stormwater Permit |
| Parcels With Value | Public Water Facility |
| Parcels | NPDES Wastewater Facility |
| Highways | Solid Waste Facility |
| Roads | Tier II Chemical Storage Facility |
| Union Pacific Railroad | Underground Storage Tank |
| Rivers and Streams | Water Treatment Plant |
| Incorporated City | Wastewater Outfall |
| | Wastewater Treatment Plant |

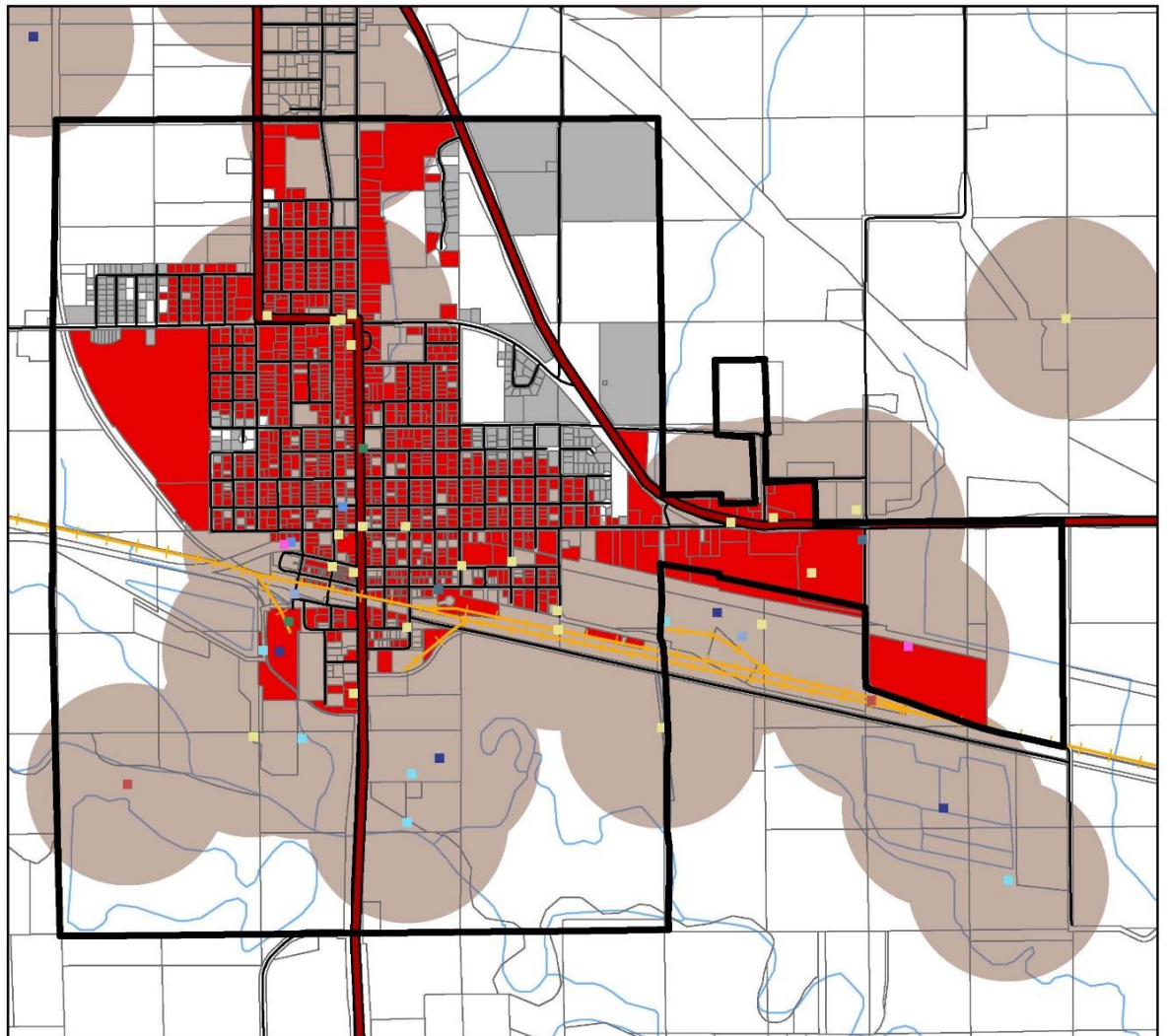


0 0.075 0.15 0.3 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Tama

Fixed Hazardous Materials Hazard Area



Legend

- Hazardous Materials Hazard Zone
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels
- Union Pacific Railroad
- Highways
- Roads
- Rivers and Streams
- Incorporated City

Type of Facility

- Air Quality Facility
- Industrial Facility with Stormwater Permit
- Public Water Facility
- NPDES Wastewater Facility
- Solid Waste Facility
- Tier II Chemical Storage Facility
- Underground Storage Tank
- Water Treatment Plant
- Wastewater Outfall
- Wastewater Treatment Plant

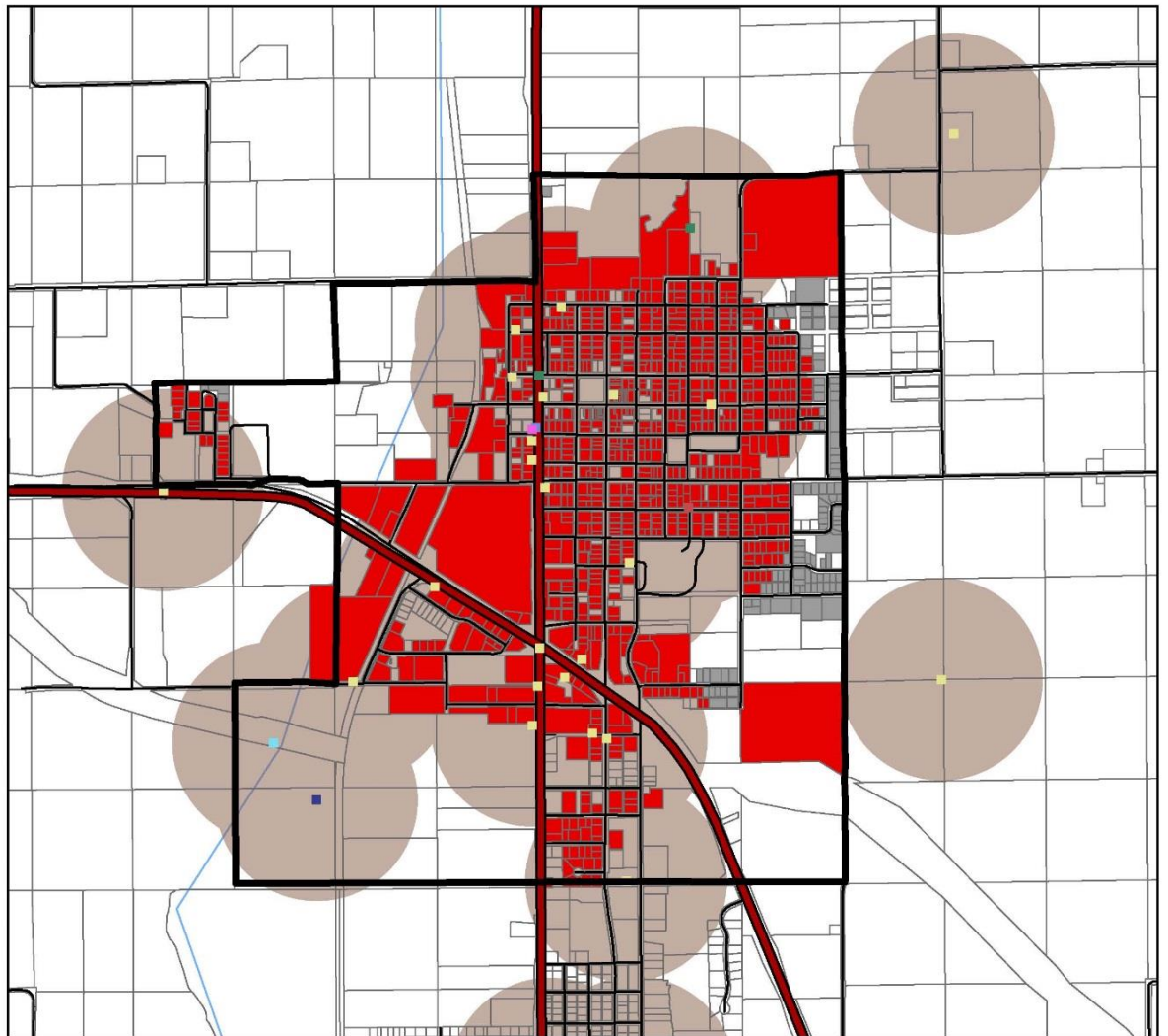


0 0.2 0.4 0.8 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Toledo

Fixed Hazardous Materials Hazard Area



Legend

- Hazardous Materials Hazard Zone
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels
- Union Pacific Railroad
- Highways
- Roads
- Rivers and Streams
- Incorporated City

Type of Facility

- Air Quality Facility
- Industrial Facility with Stormwater Permit
- Public Water Facility
- NPDES Wastewater Facility
- Solid Waste Facility
- Tier II Chemical Storage Facility
- Underground Storage Tank
- Water Treatment Plant
- Wastewater Outfall
- Wastewater Treatment Plant

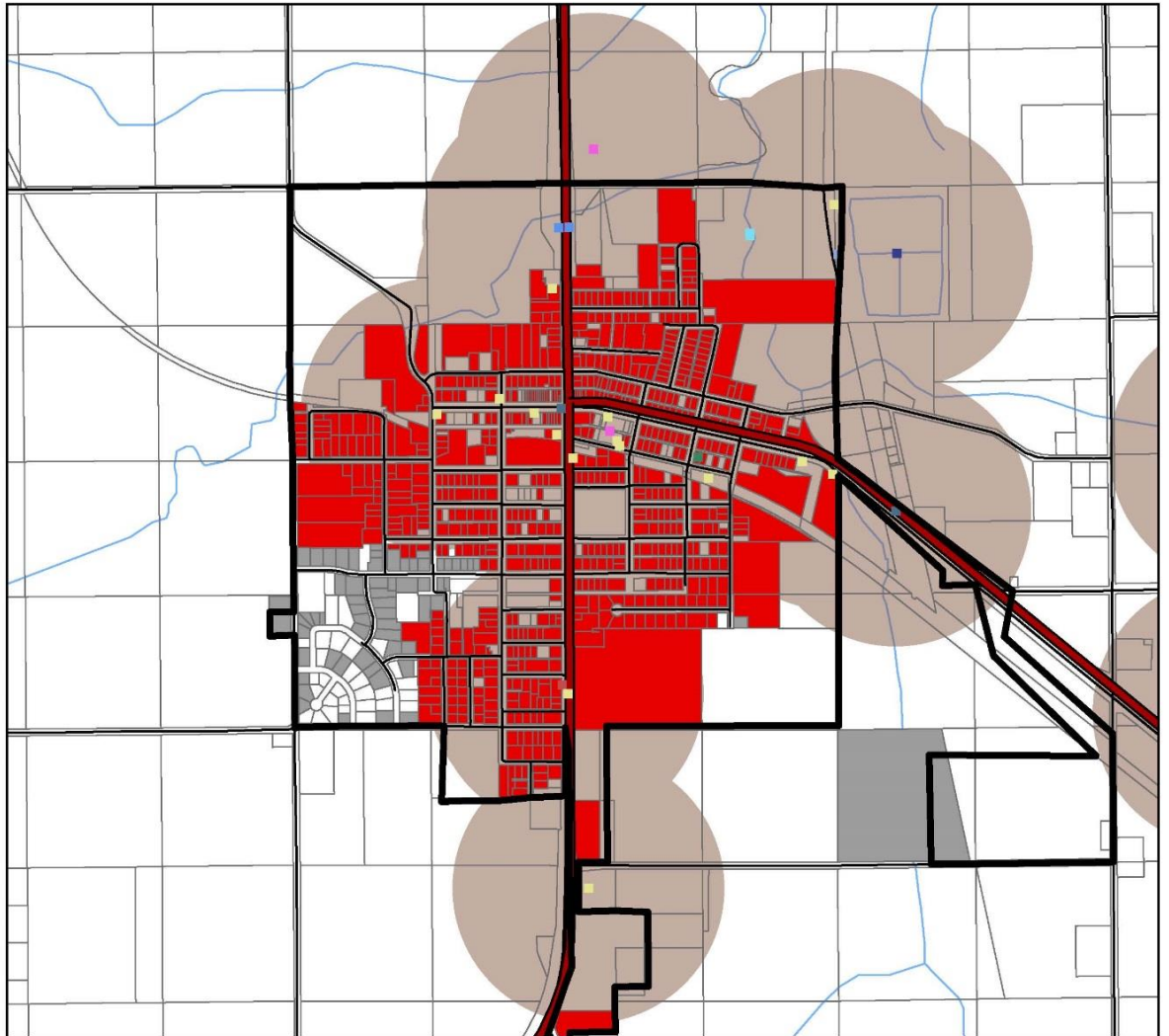


0 0.2 0.4 0.8 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Traer

Fixed Hazardous Materials Hazard Area



Legend

- Hazardous Materials Hazard Zone
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels
- Union Pacific Railroad
- Highways
- Roads
- Rivers and Streams
- Incorporated City

Type of Facility

- Air Quality Facility
- Industrial Facility with Stormwater Permit
- Public Water Facility
- NPDES Wastewater Facility
- Solid Waste Facility
- Tier II Chemical Storage Facility
- Underground Storage Tank
- Water Treatment Plant
- Wastewater Outfall
- Wastewater Treatment Plant

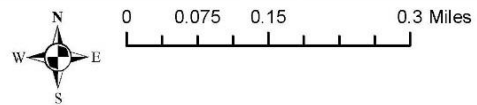


0 0.15 0.3 0.6 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

City of Vining

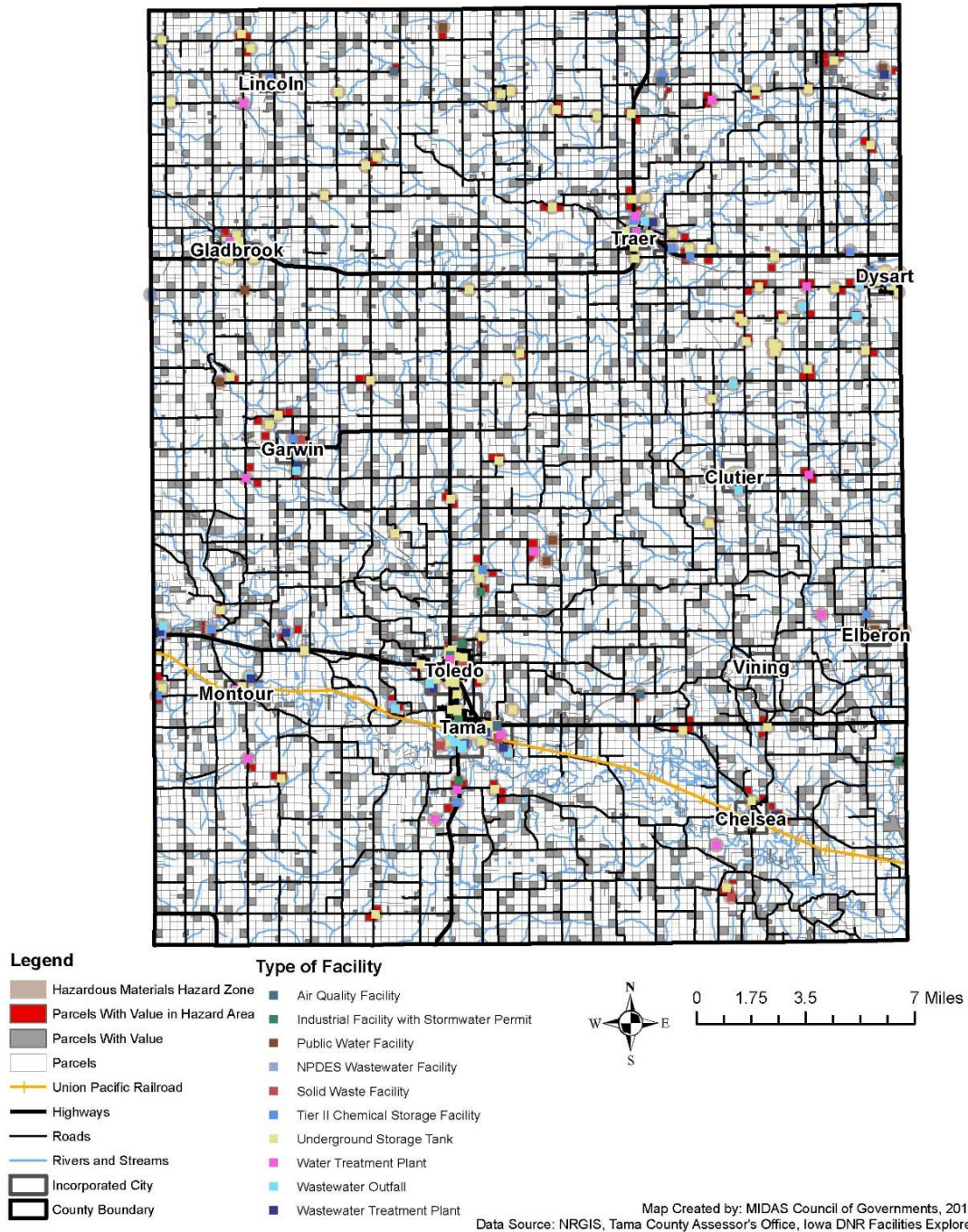
Fixed Hazardous Materials Hazard Area



Map Created by: MIDAS Council of Governments, 2015
 Data Source: NRGIS, Tama County Assessor's Office, Iowa DNR Facilities Explorer

Tama County

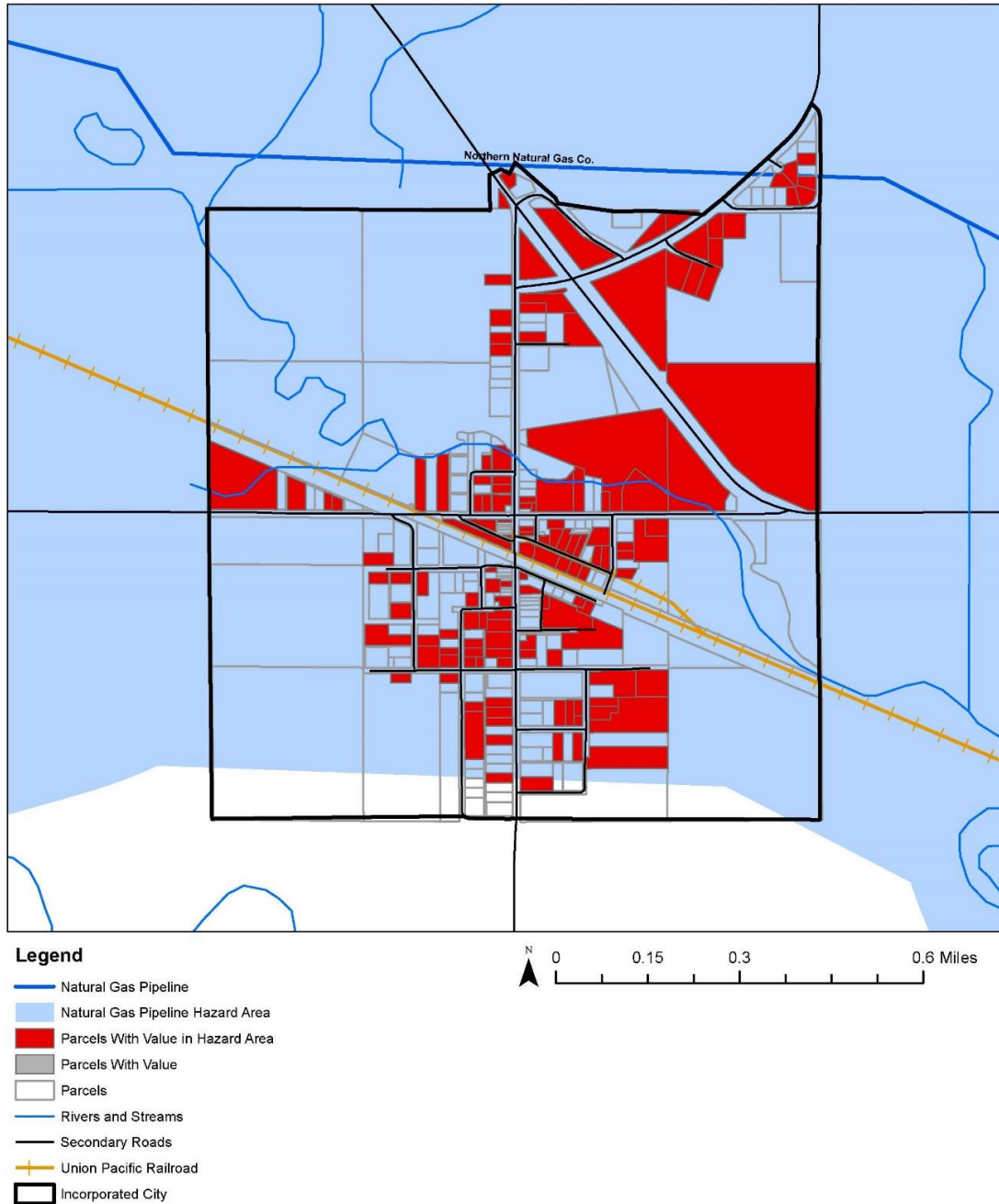
Fixed Hazardous Materials Hazard Area



Appendix J. Pipeline Hazard Areas

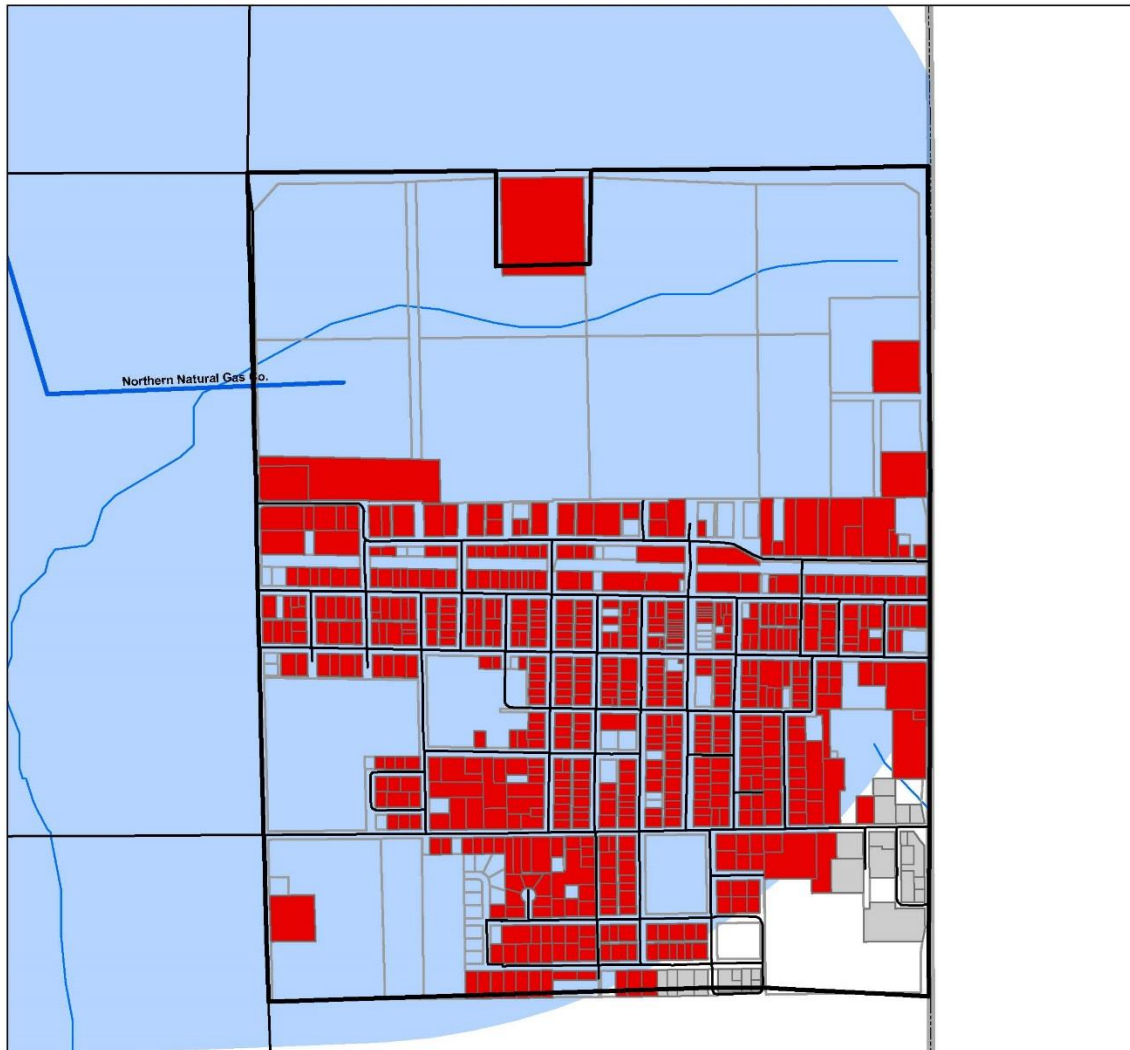
City of Chelsea

Pipeline Hazard Area



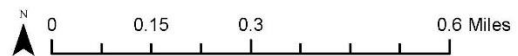
City of Dysart

Pipeline Hazard Area



Legend

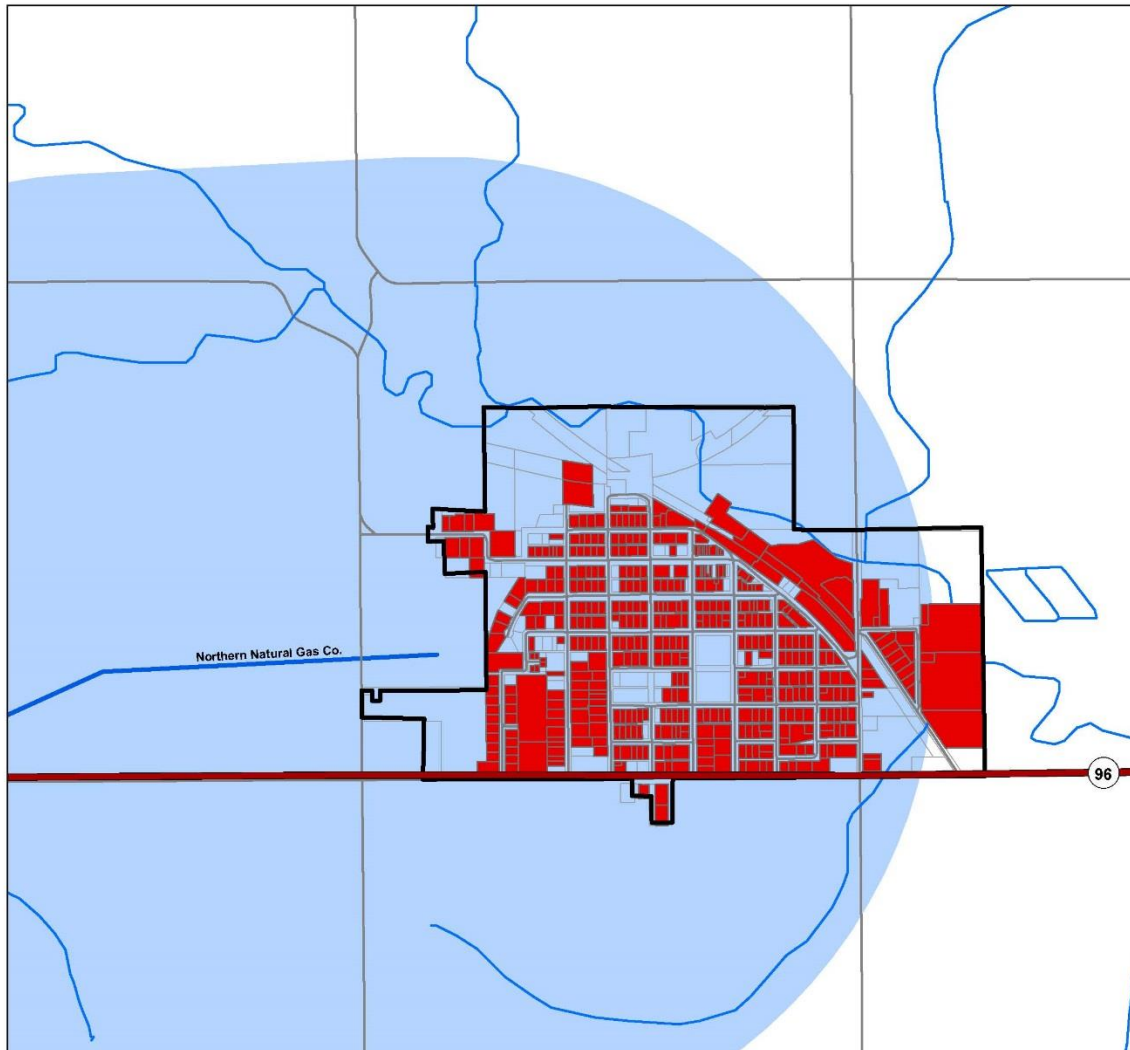
- Natural Gas Pipeline
- Natural Gas Pipeline Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

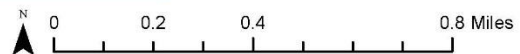
City of Gladbrook

Pipeline Hazard Area



Legend

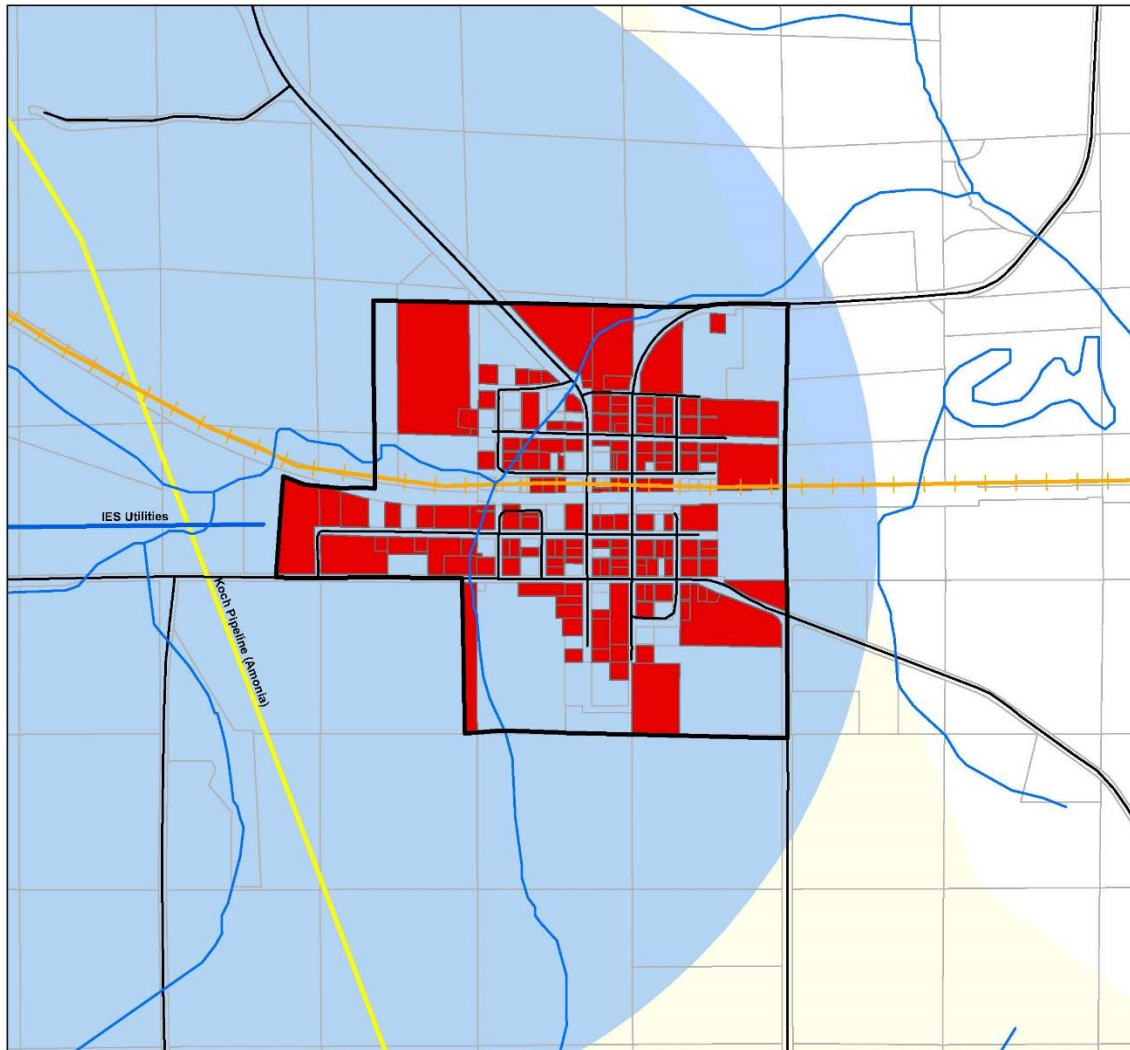
- Natural Gas Pipeline
- Natural Gas Pipeline Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Rivers and Streams
- Highways
- Secondary Roads
- Incorporated City



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Montour

Pipeline Hazard Area



Legend

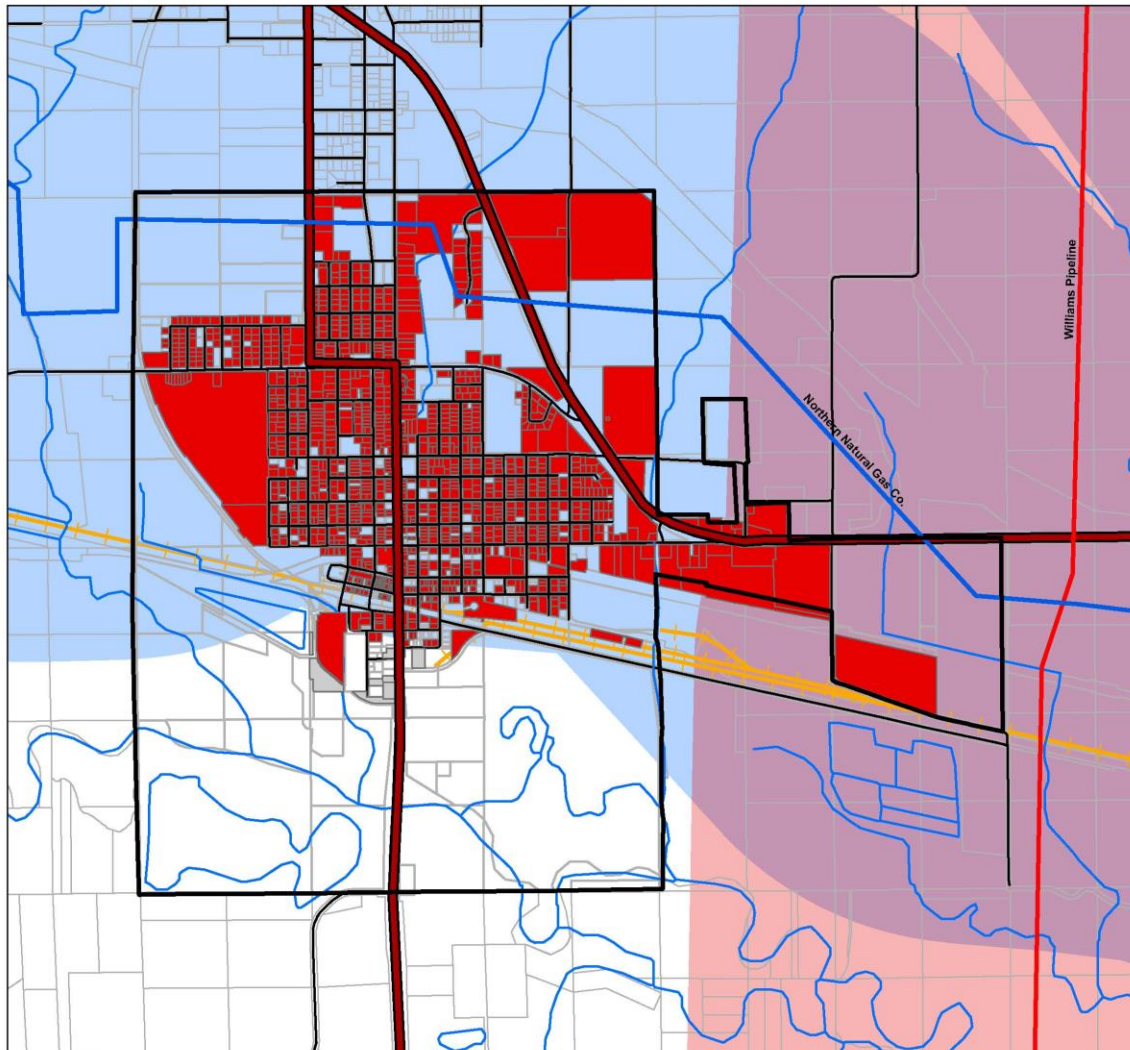
- Ammonia Pipeline
- Natural Gas Pipeline
- Ammonia Pipeline Hazard Area
- Natural Gas Pipeline Hazard Area
- Parcels With Value in Hazard Area
- Parcels Without Value
- Rivers and Streams
- Union Pacific Railroad
- Secondary Roads
- Incorporated City

N 0 0.175 0.35 0.7 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

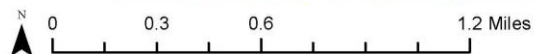
City of Tama

Pipeline Hazard Area



Legend

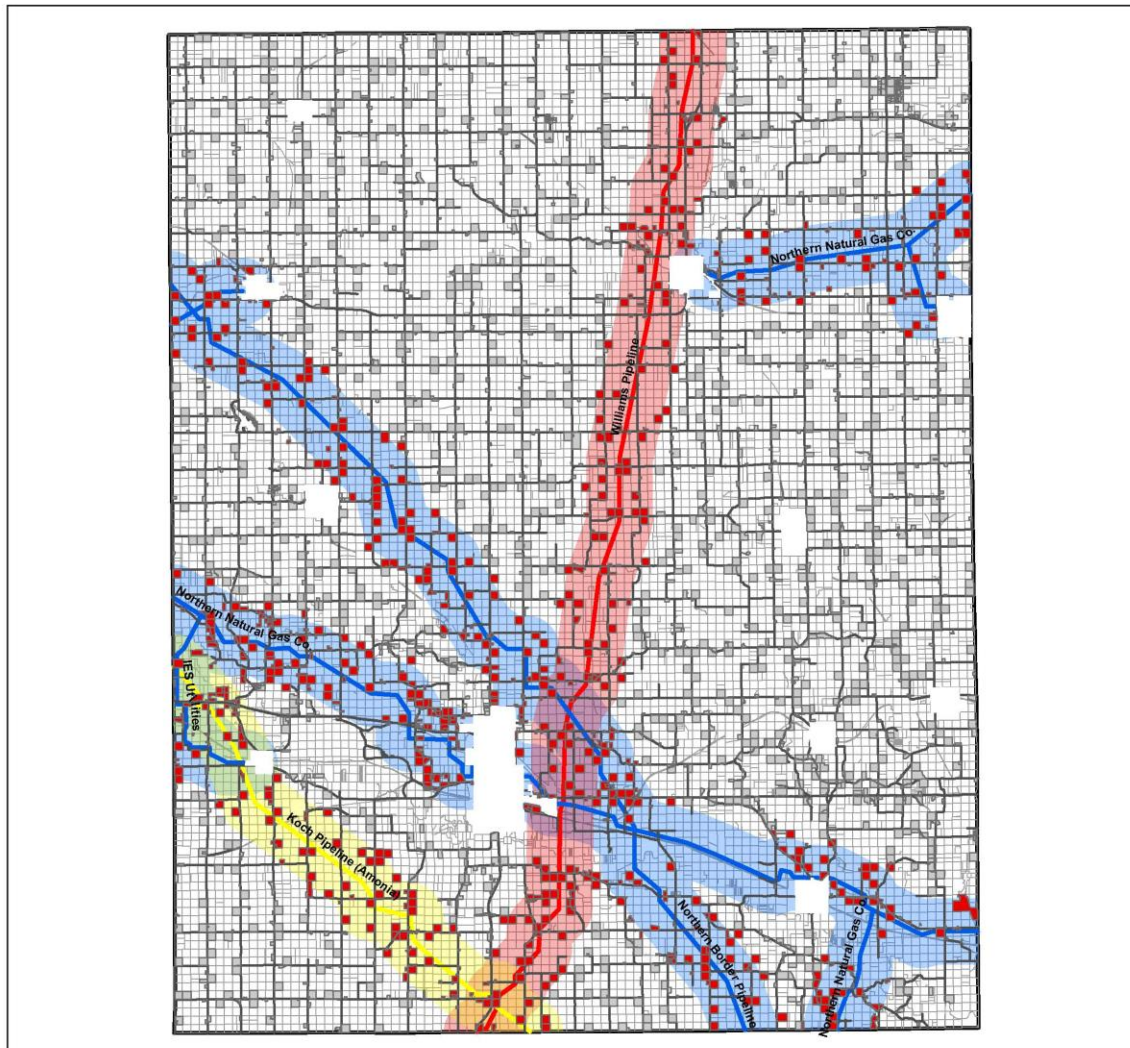
- Oil Pipeline Hazard Area
- Natural Gas Pipeline Hazard Area
- Crude Oil/Petroleum Pipeline
- Natural Gas Pipeline
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Rivers and Streams
- Union Pacific Railroad
- Highways
- Secondary Roads
- Incorporated City



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

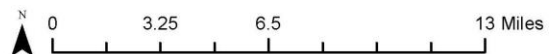
Tama County Unincorporated Area

Pipeline Hazard Area



Legend

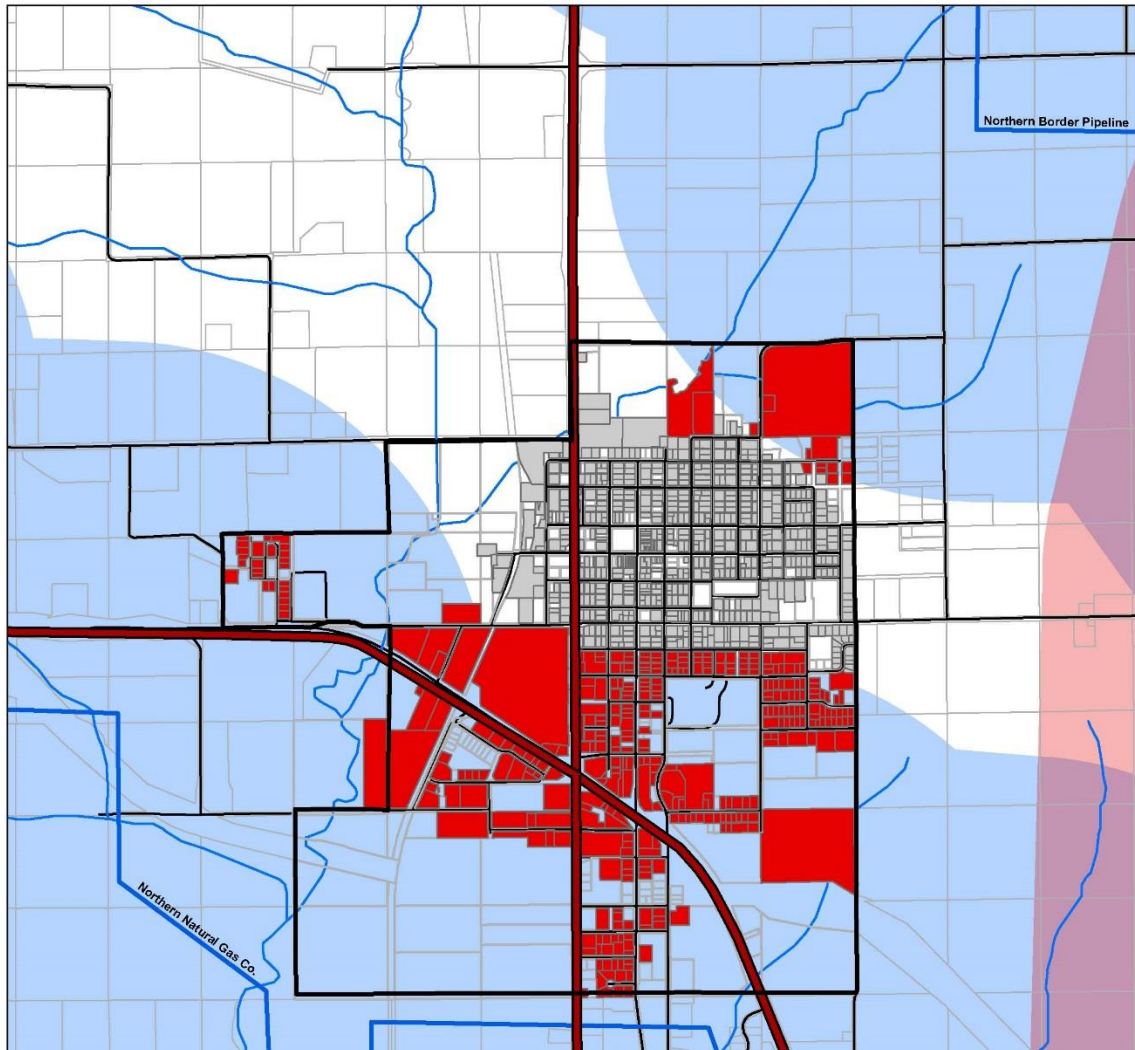
- Ammonia Pipeline
- Crude oil/petroleum
- Natural Gas Pipeline
- Ammonia Pipeline Hazard Area
- Oil Pipeline Hazard Area
- Natural Gas Pipeline Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Incorporated City



Map Created by: MIDAS Council of Governments, 2014
Data Source: NRGIS

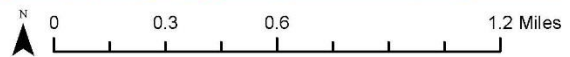
City of Toledo

Pipeline Hazard Area



Legend

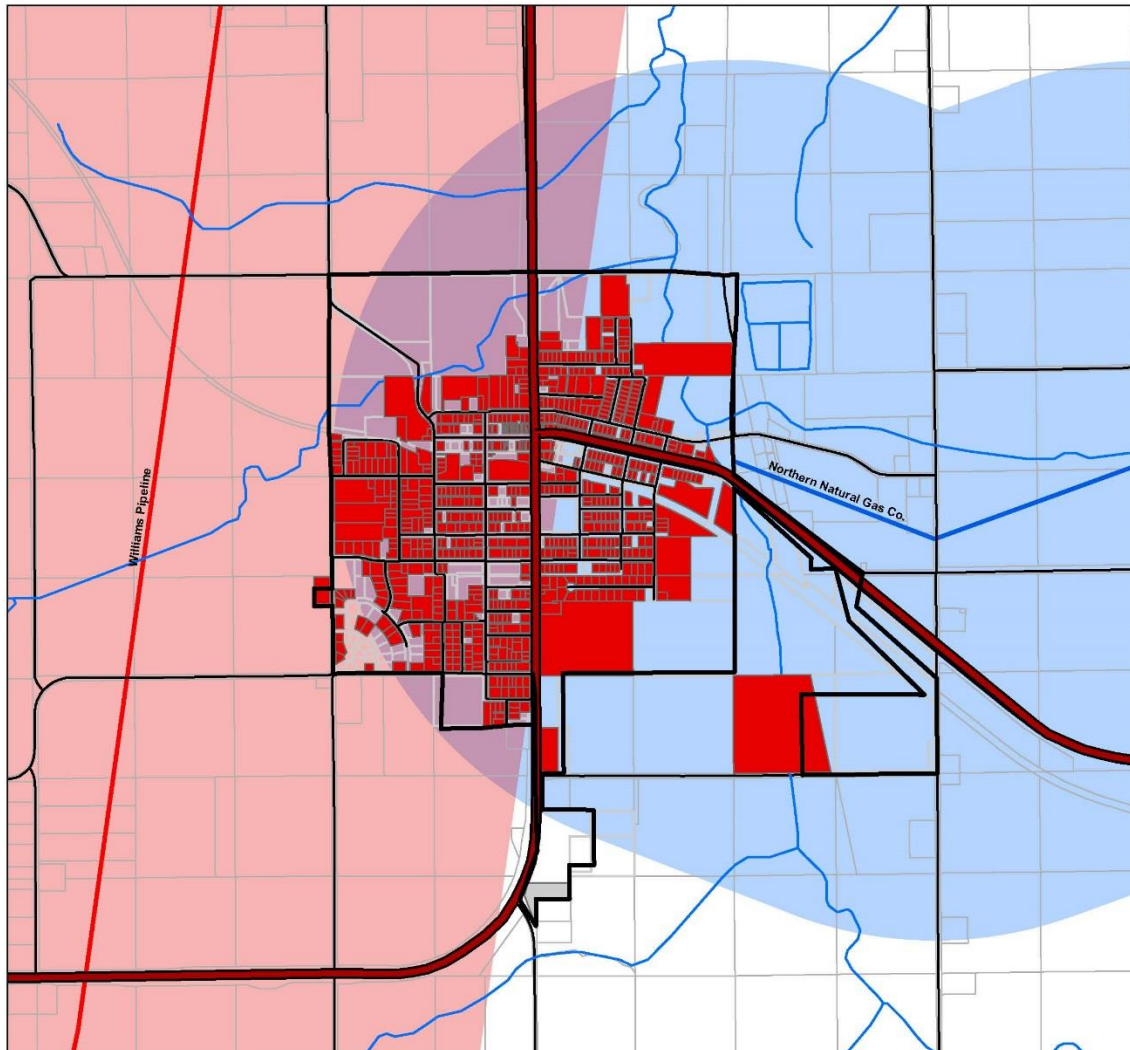
- Crude oil/petroleum
- Natural Gas Pipeline
- Oil Pipeline Hazard Area
- Natural Gas Pipeline Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Highways
- Secondary Roads
- Rivers and Streams
- Incorporated City



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

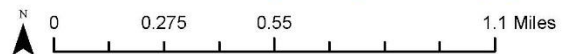
City of Traer

Pipeline Hazard Area



Legend

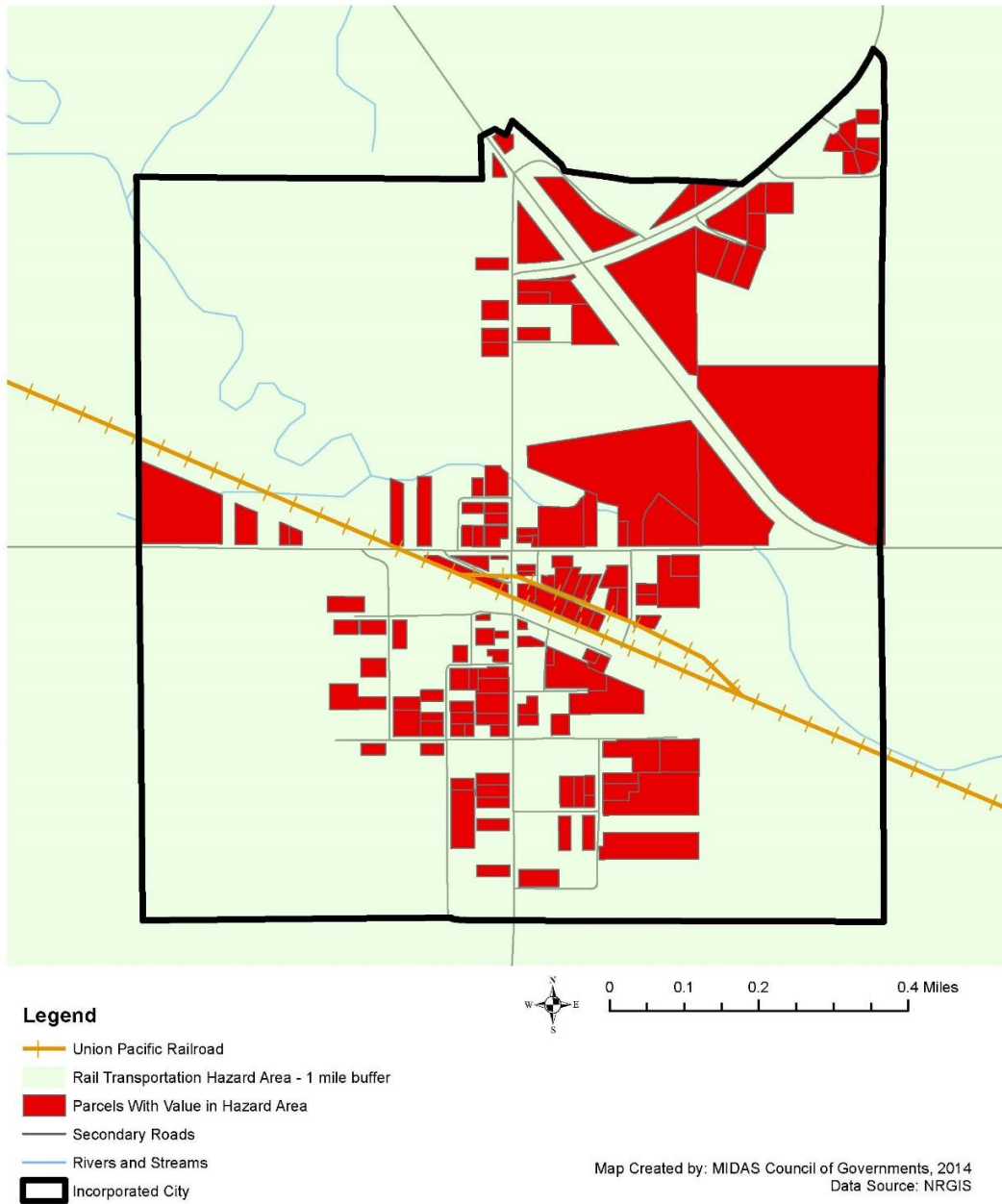
- Crude Oil/Petroleum Pipeline
- Natural Gas Pipeline
- Oil Pipeline Hazard Area
- Natural Gas Pipeline Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels
- Rivers and Streams
- Highways
- Secondary Roads
- Incorporated City



Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

Appendix K. Rail Transportation Hazard Areas

City of Chelsea Rail Transportation Hazard Areas



City of Montour

Rail Transportation Hazard Areas



Legend

- Union Pacific Railroad
- Rail Transportation Hazard Area - 1 mile buffer
- Parcels With Value in Hazard Area
- Secondary Roads
- Rivers and Streams
- Incorporated City

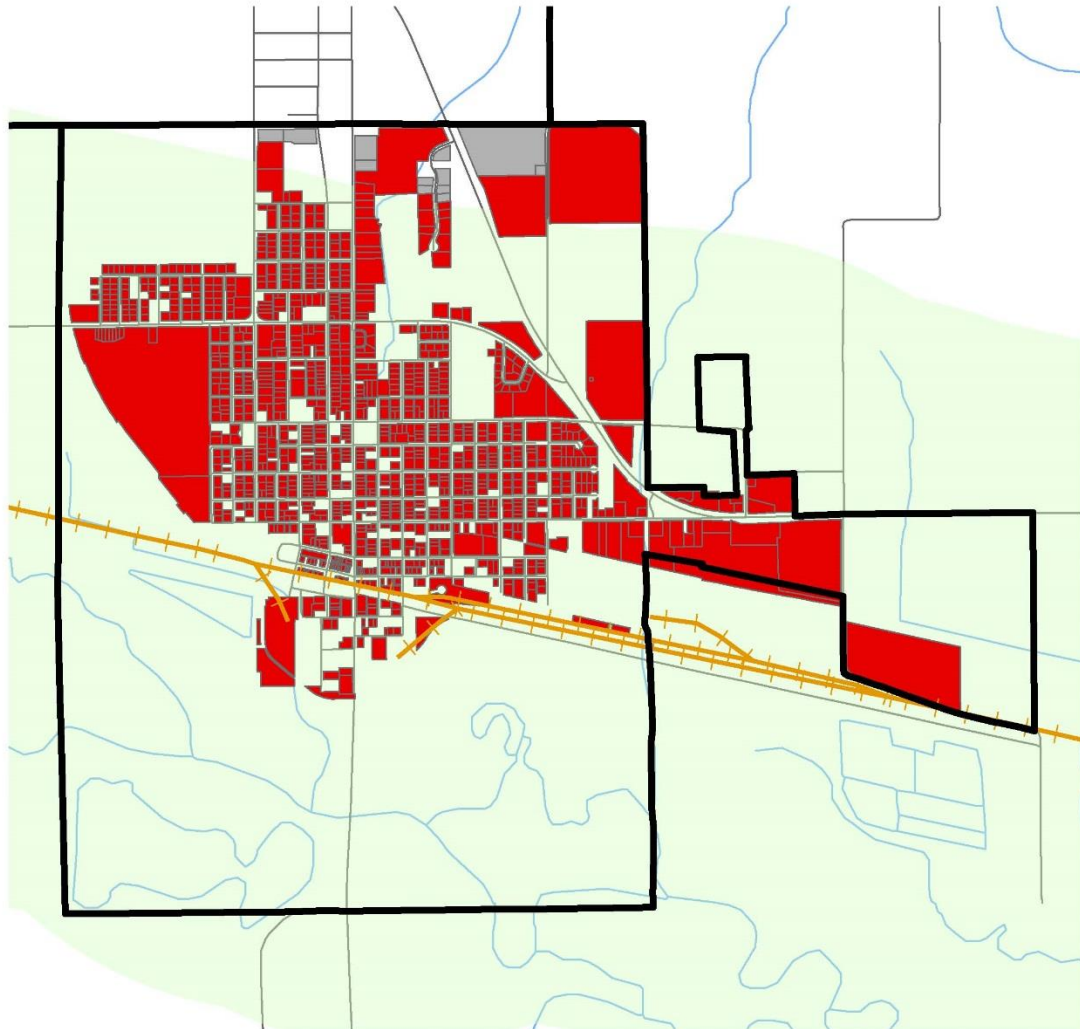


0 0.075 0.15 0.3 Miles

Map Created by: MIDAS Council of Governments, 2014
Data Source: NRGIS

City of Tama

Rail Transportation Hazard Areas



Legend

-  Union Pacific Railroad
-  Rail Transportation Hazard Area - 1 mile buffer
-  Parcels With Value in Hazard Area
-  Secondary Roads
-  Rivers and Streams
-  Incorporated City

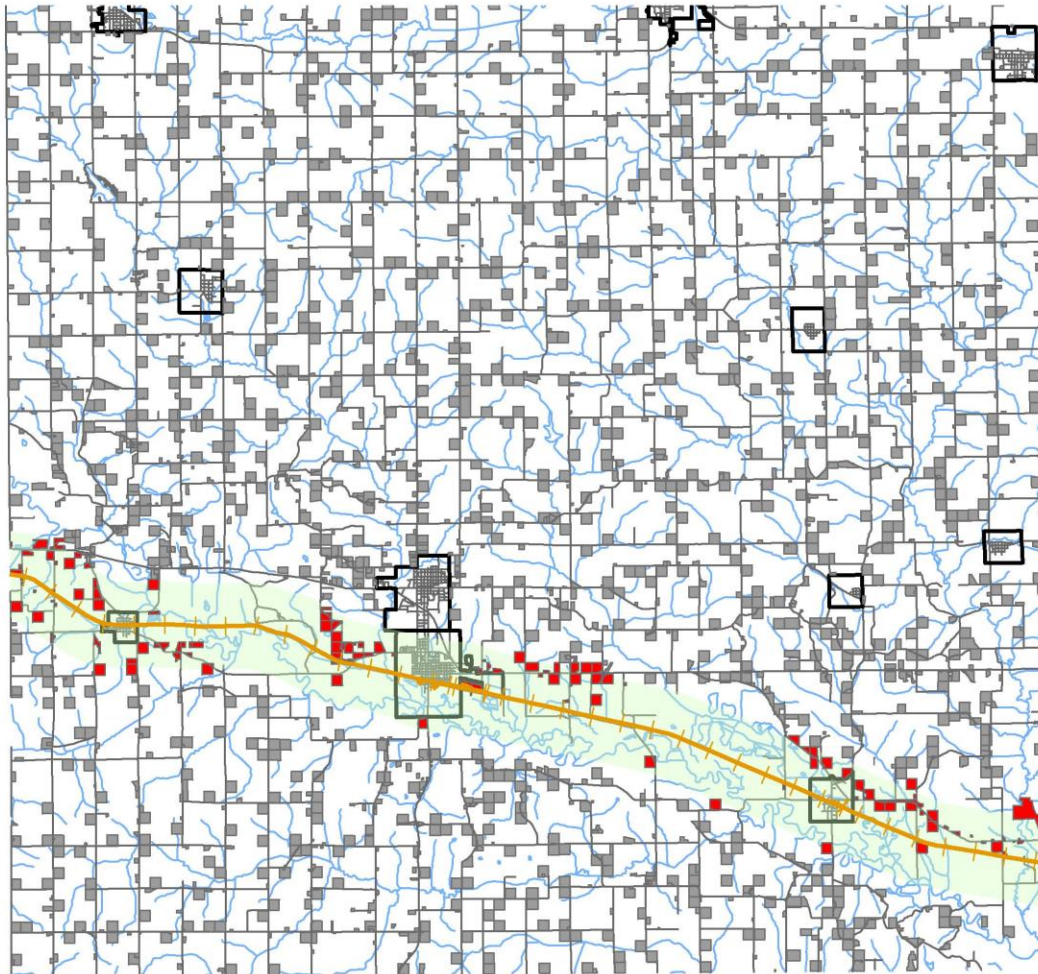


0 0.225 0.45 0.9 Miles

Map Created by: MIDAS Council of Governments, 2014
Data Source: NRGIS

Tama County Unincorporated

Rail Transportation Hazard Areas



Legend

-  Union Pacific Railroad
-  Rail Transportation Hazard Area - 1 mile buffer
-  Parcels With Value in Hazard Area
-  Parcels With Value
-  Incorporated City
-  Secondary Roads
-  Rivers and Streams

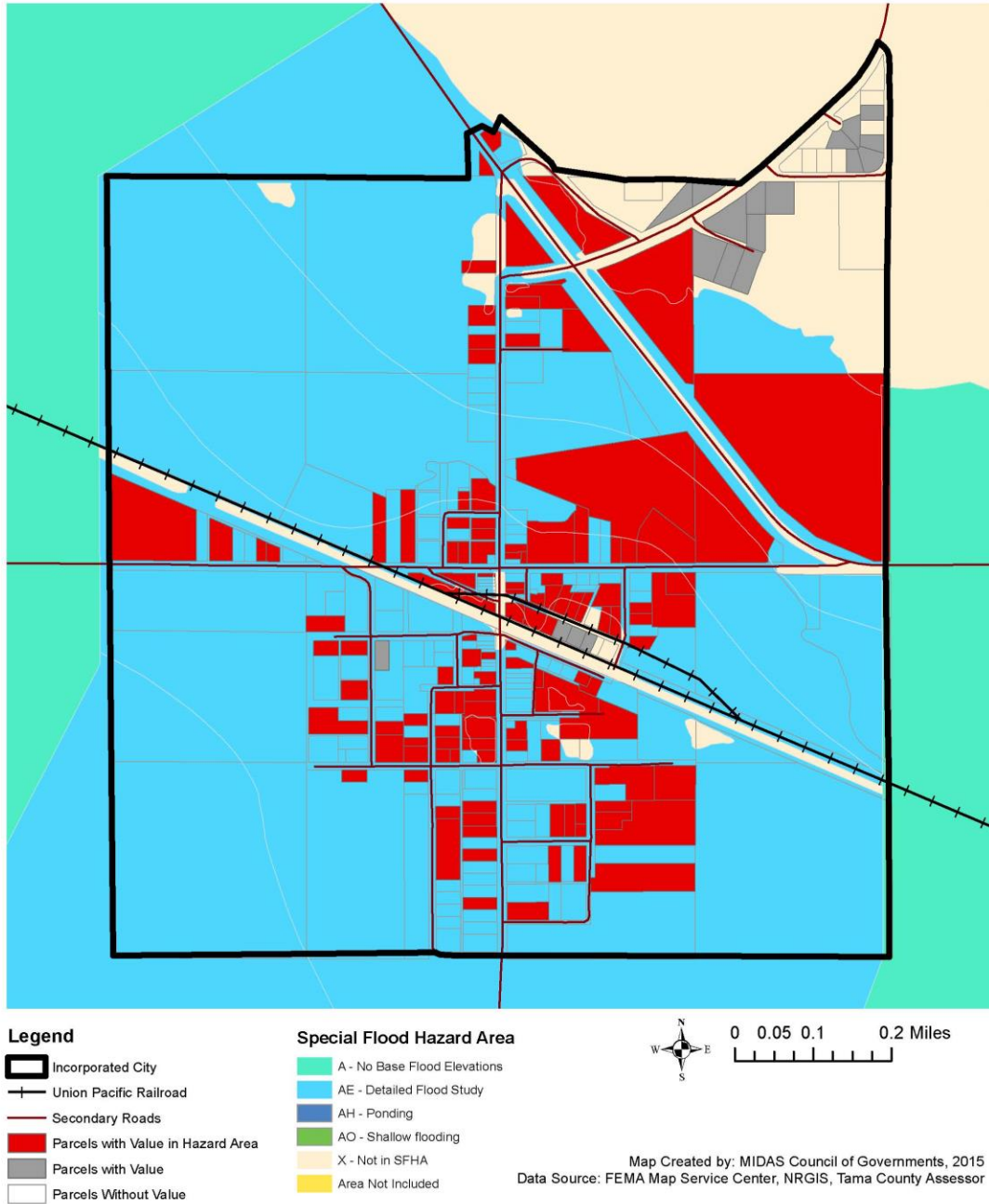


0 2 4 8 Miles

Map Created by: MIDAS Council of Governments, 2014
Data Source: NRGIS

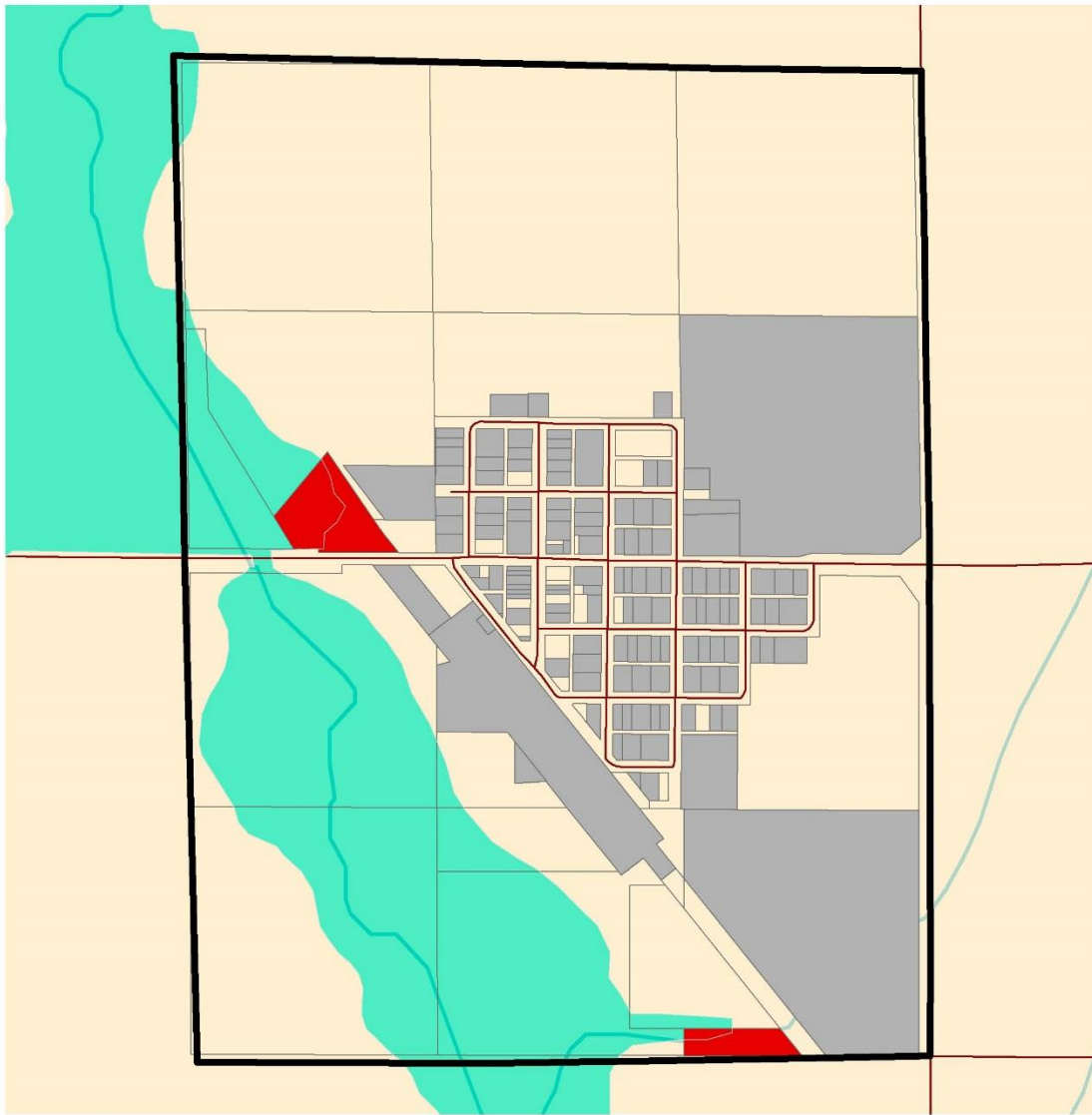
Appendix L. Special Flood Hazard Areas

City of Chelsea Special Flood Hazard Areas



City of Clutier

Special Flood Hazard Areas



Legend

- Parcels with Value in SFHA
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

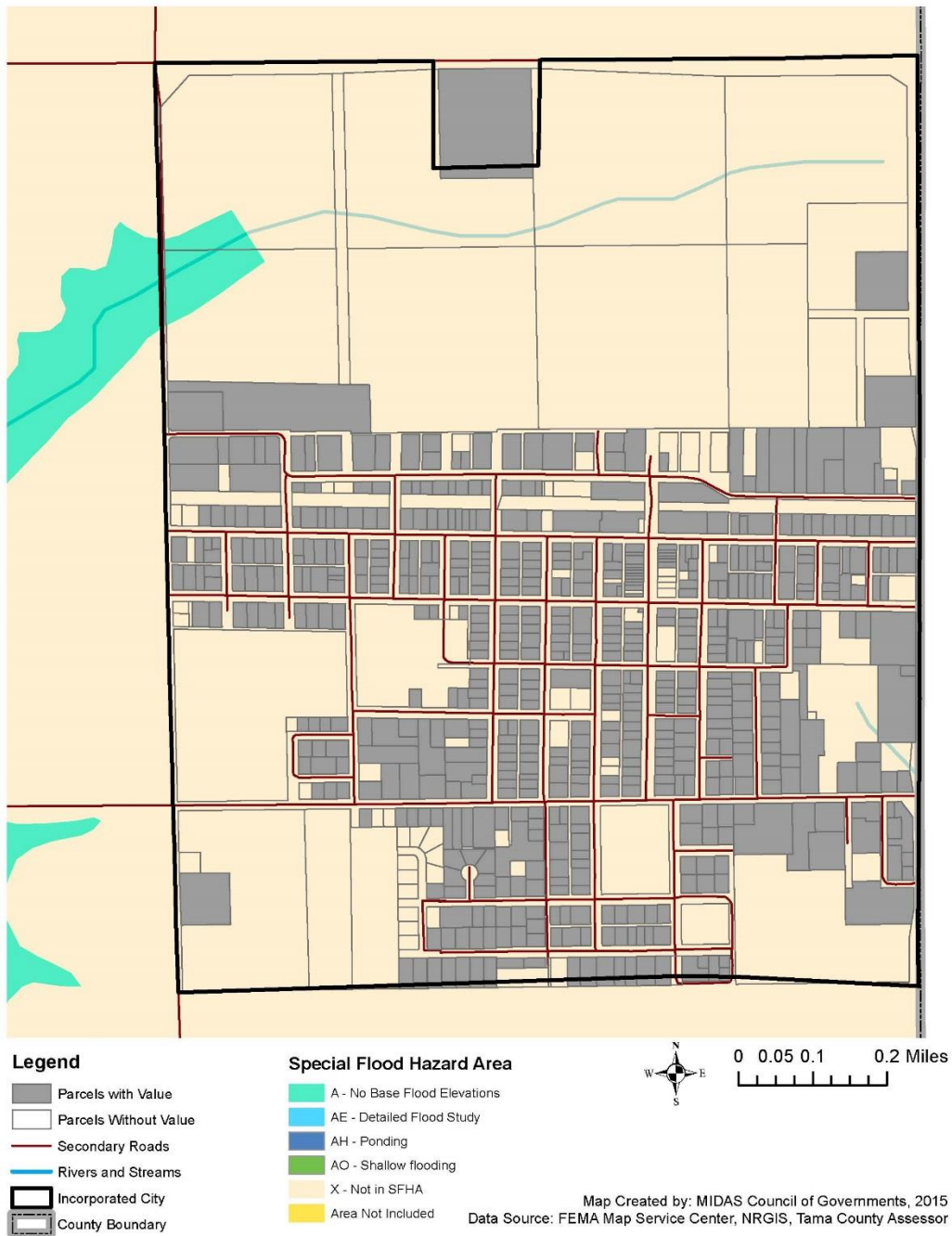


0 0.0450.09 0.18 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor's Office

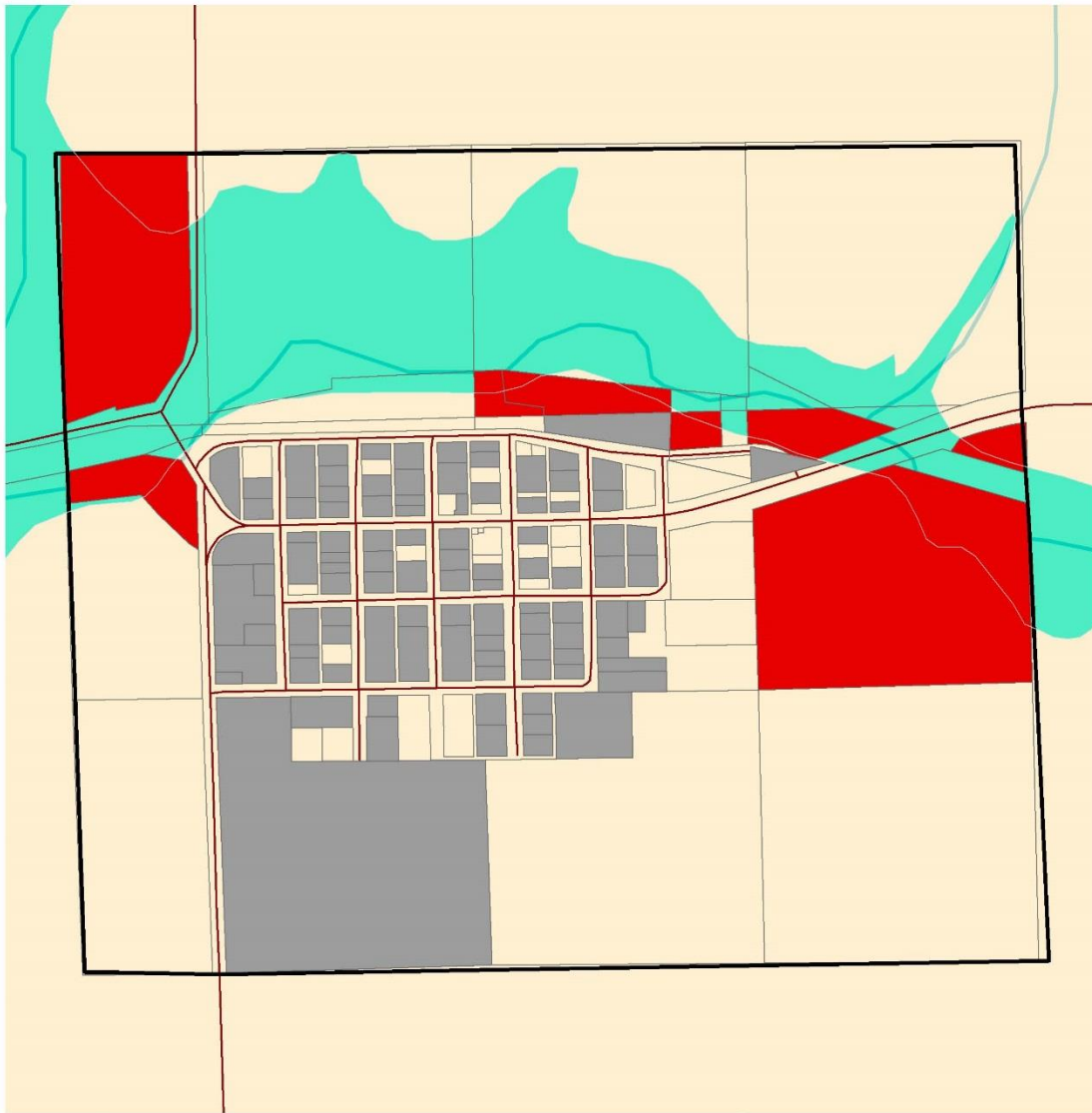
City of Dysart

Special Flood Hazard Areas



City of Elberon

Special Flood Hazard Areas



Legend

- Parcels With Value in SFHA
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

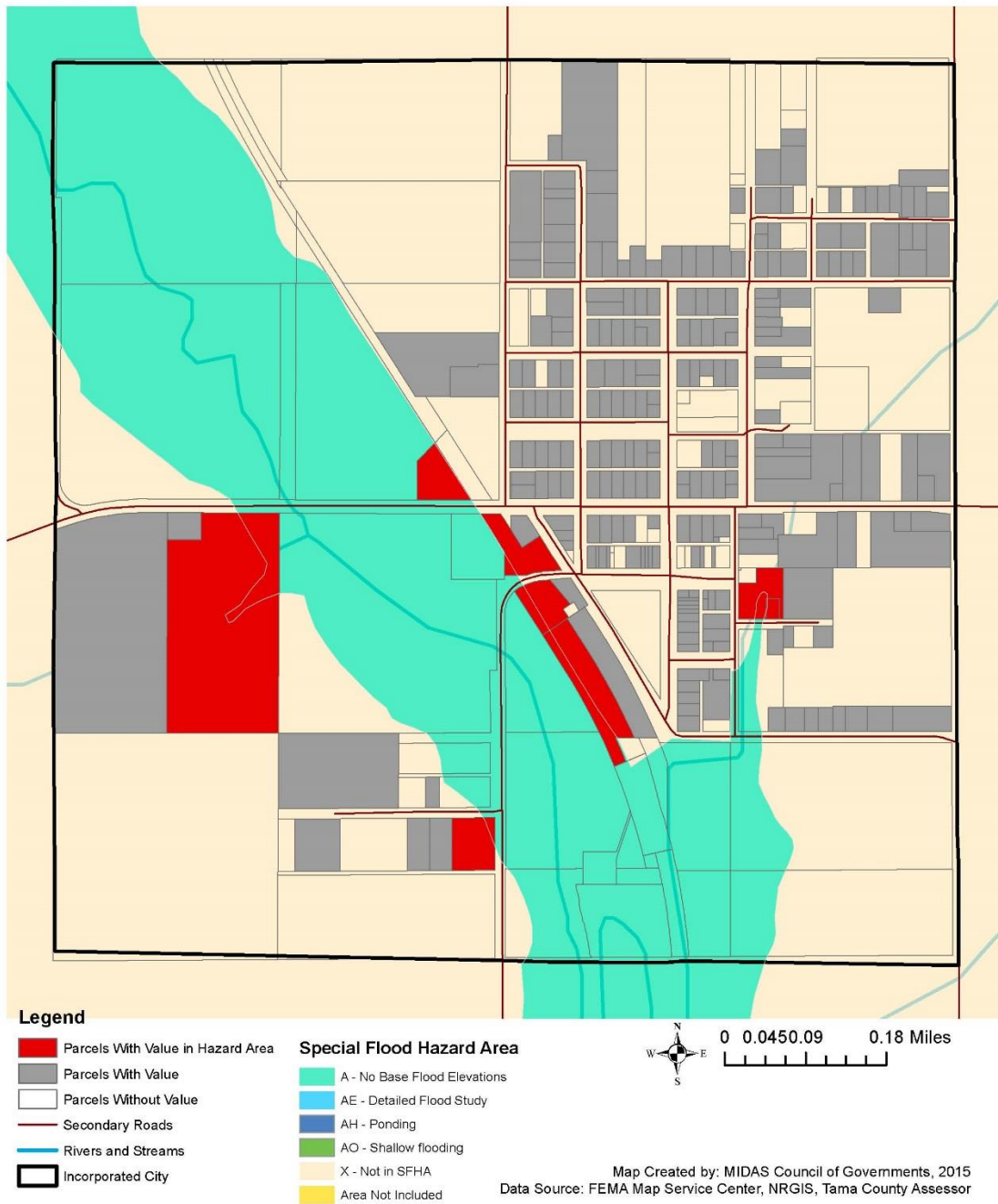


0 0.04 0.08 0.16 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

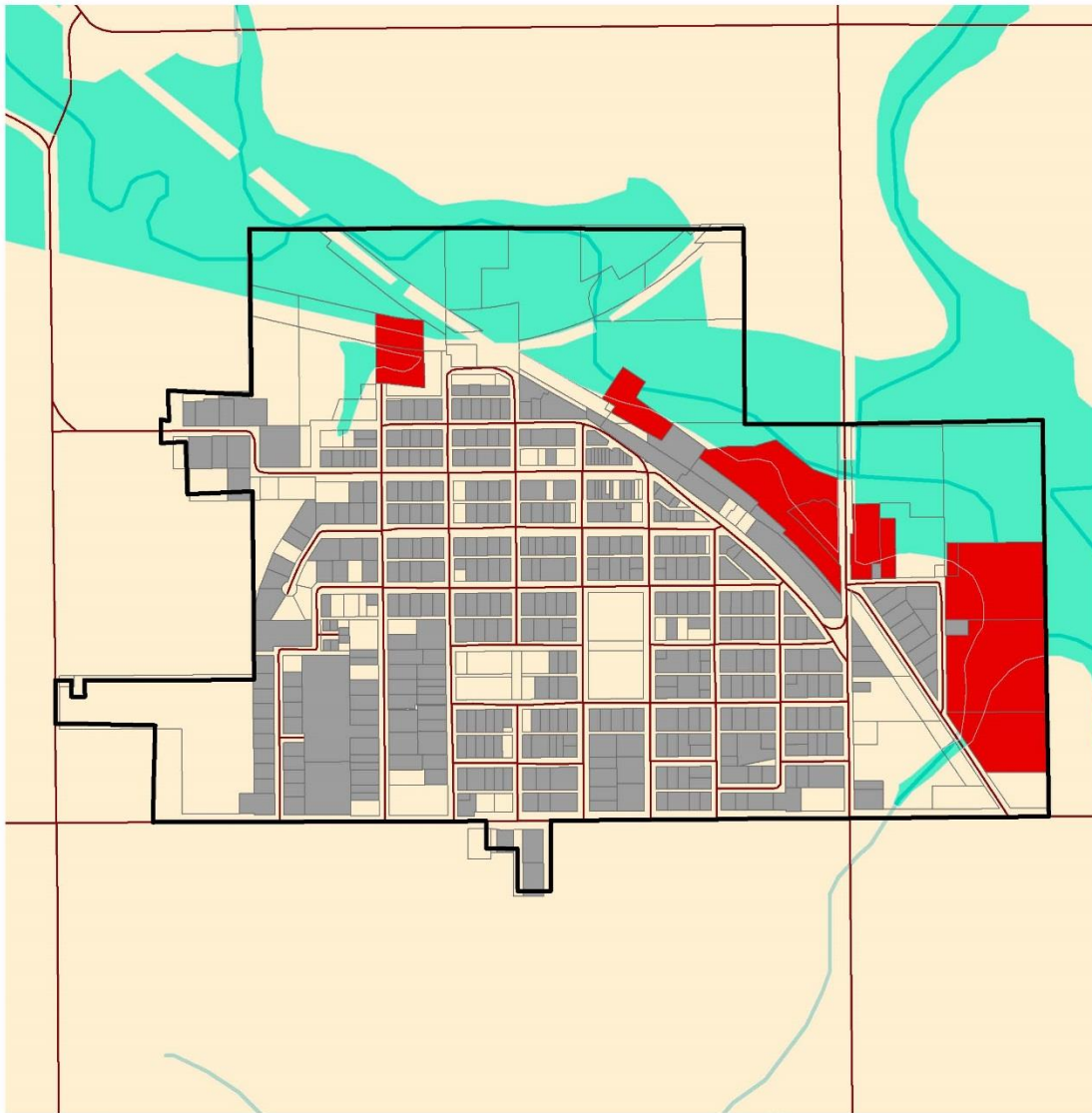
City of Garwin

Special Flood Hazard Areas



City of Gladbrook

Special Flood Hazard Areas



Legend

- Parcels With Value in SFHA
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

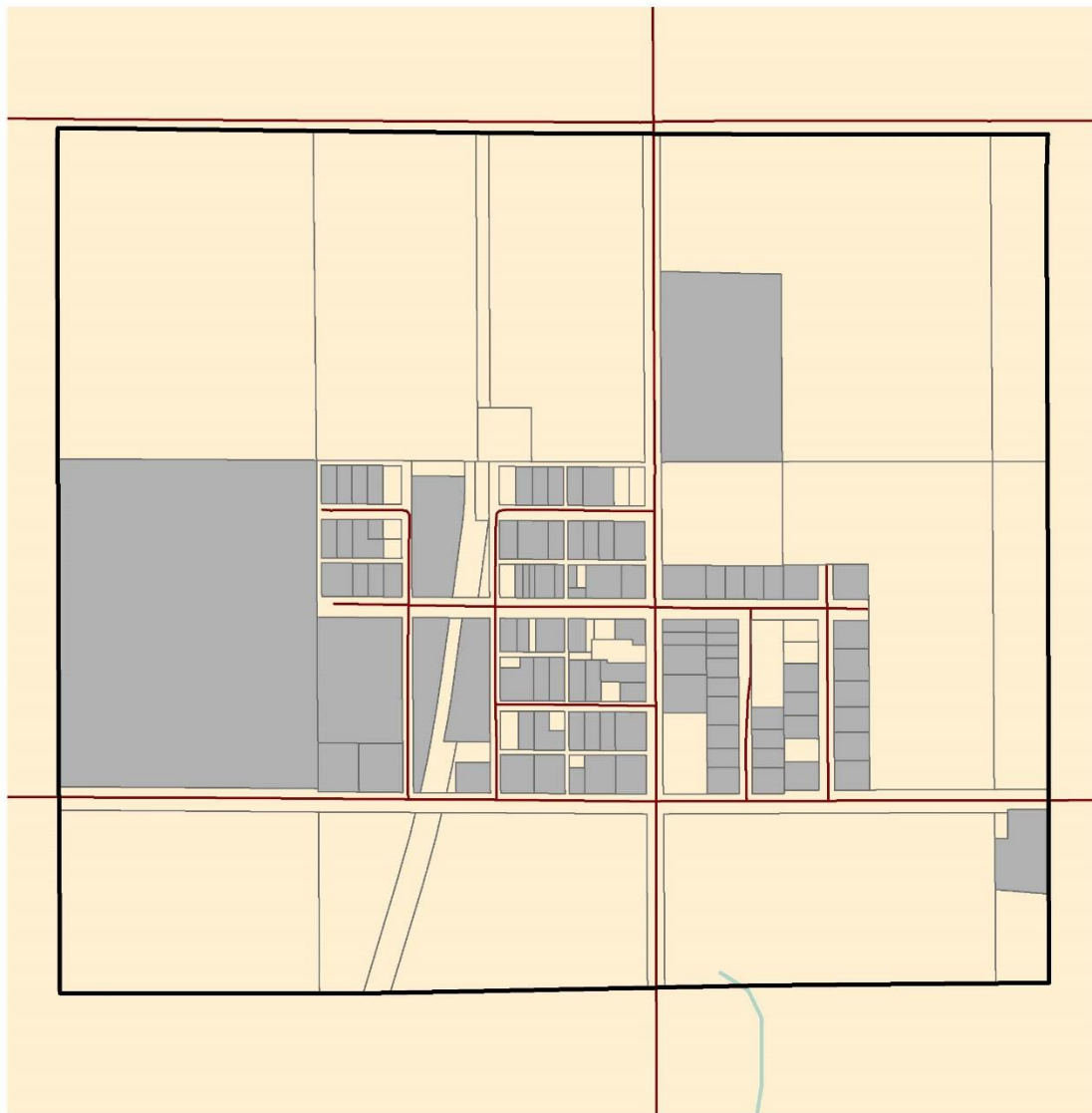


0 0.05 0.1 0.2 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

City of Lincoln

Special Flood Hazard Areas



Legend

- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

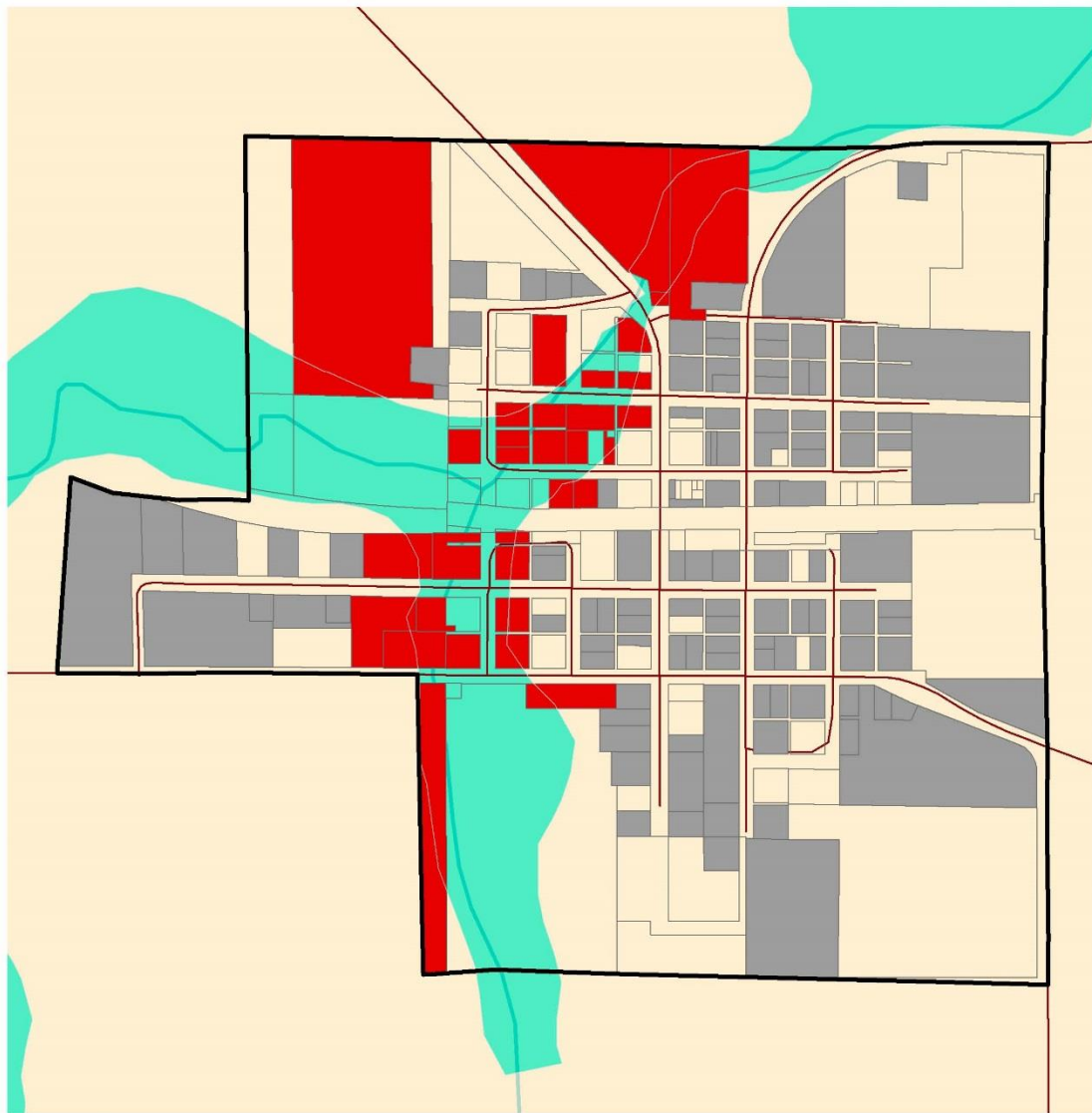


0 0.0375 0.075 0.15 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

City of Montour

Special Flood Hazard Areas



Legend

- Parcels with Value in SFHA
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

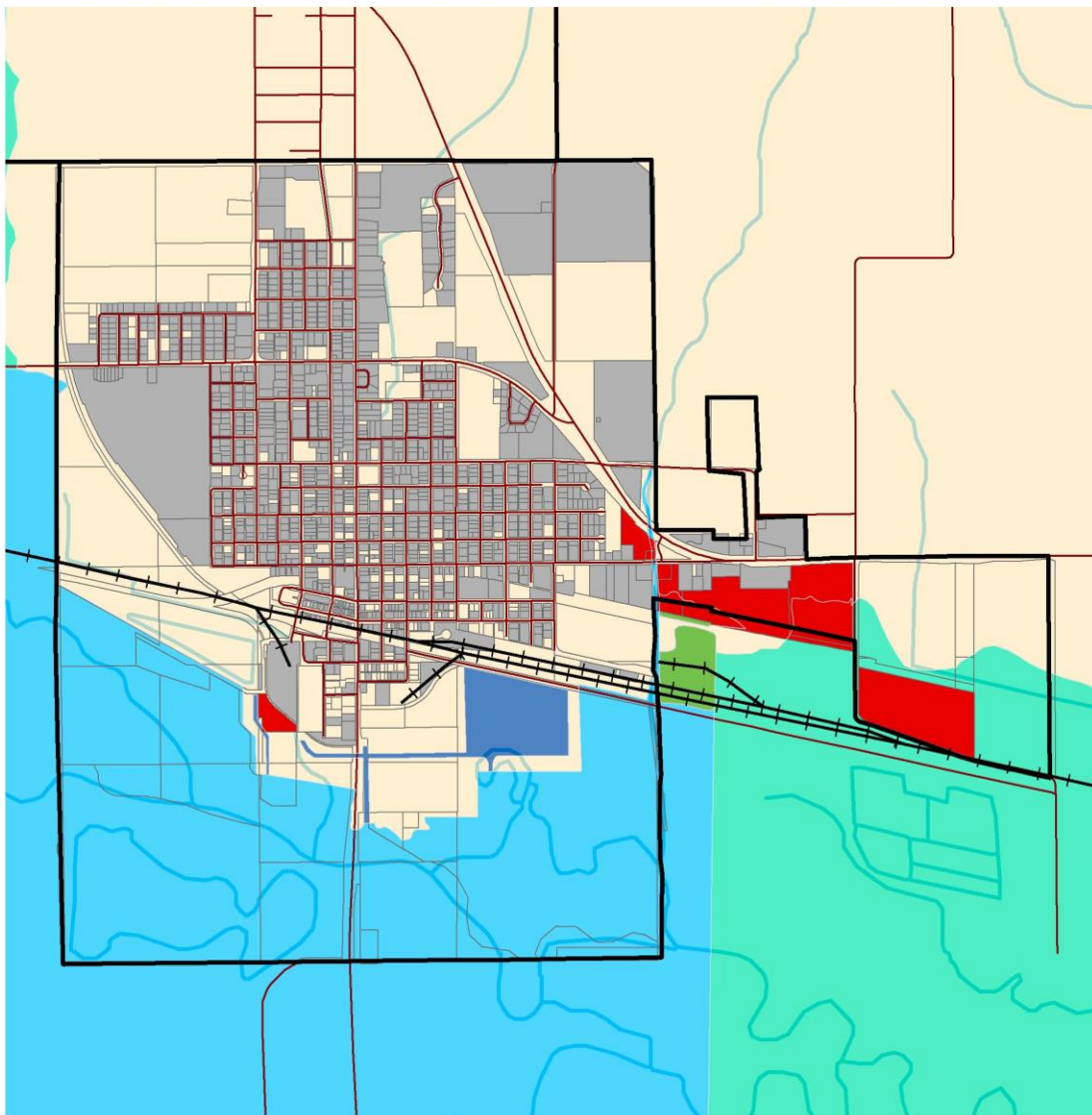


0 0.0375 0.075 0.15 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

City of Tama

Special Flood Hazard Areas



Legend

- Parcels With Value in SFHA
- Parcels With Value
- Parcels Without Value
- Rivers and Streams
- Secondary Roads
- Tama_railroads
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

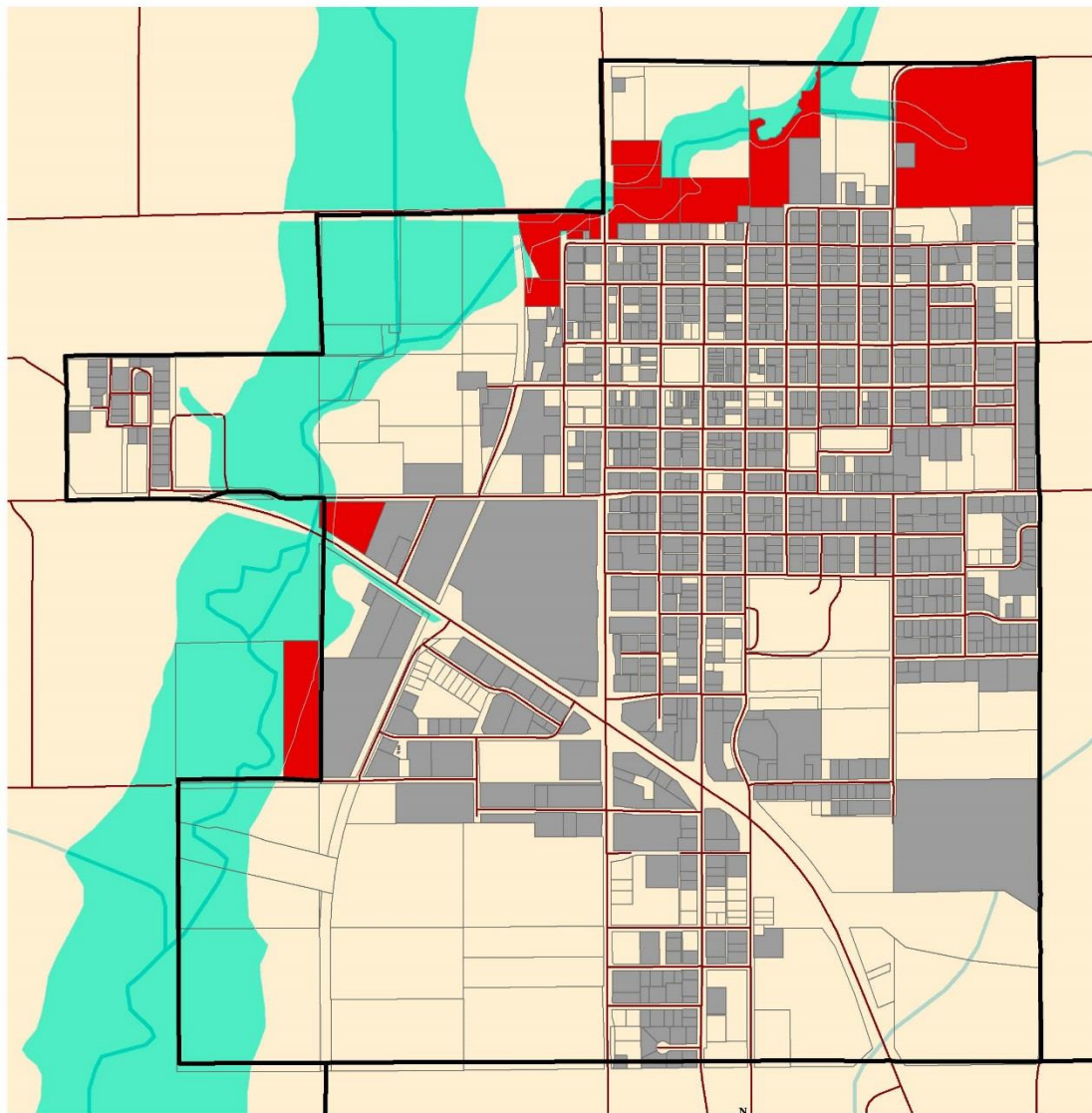


0 0.1 0.2 0.4 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

City of Toledo

Special Flood Hazard Areas



Legend

- Parcels With Value in SFHA
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

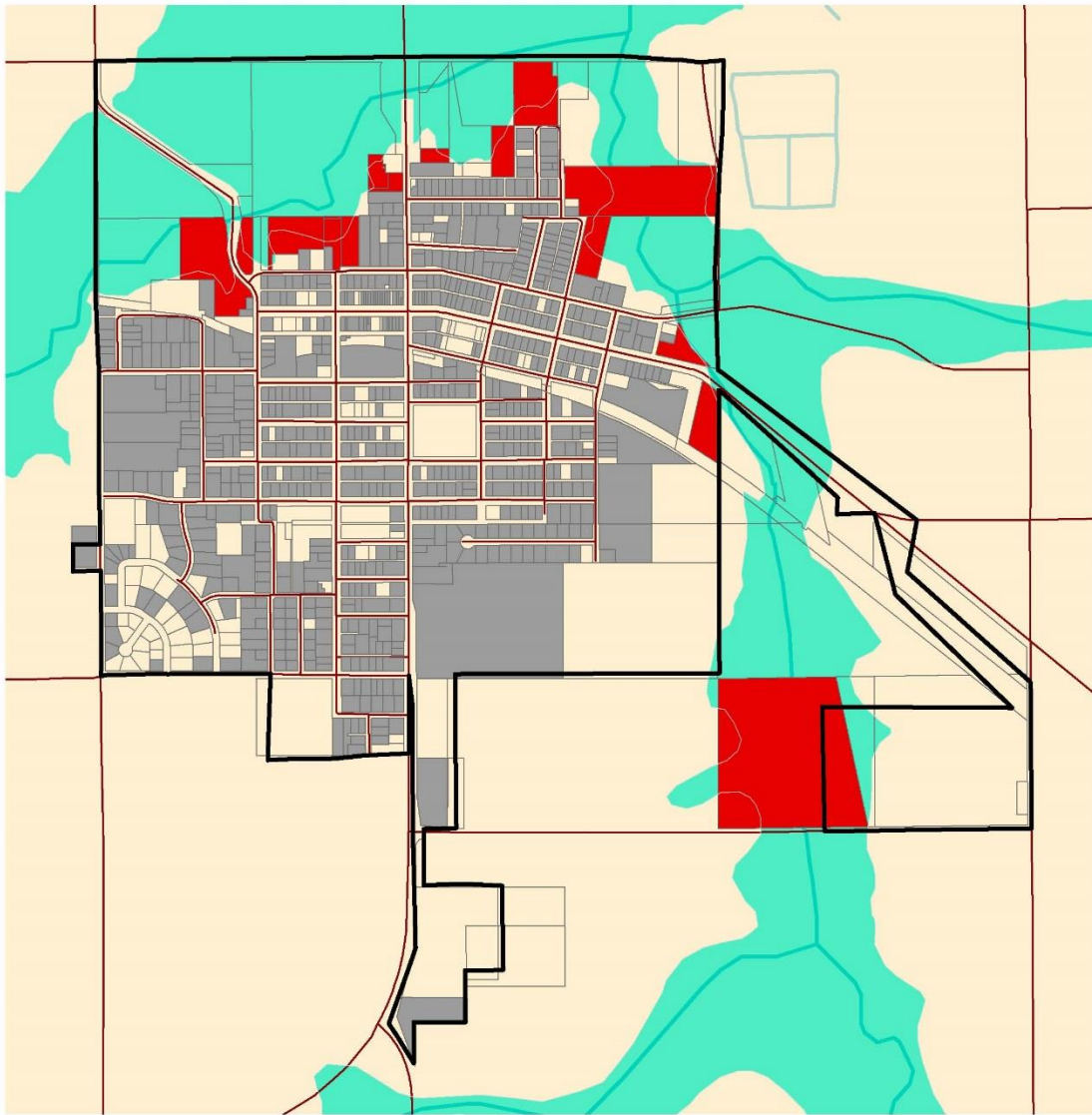


0 0.0750.15 0.3 Miles

Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

City of Traer

Special Flood Hazard Areas



Legend

- Parcels With Value in SFHA
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included



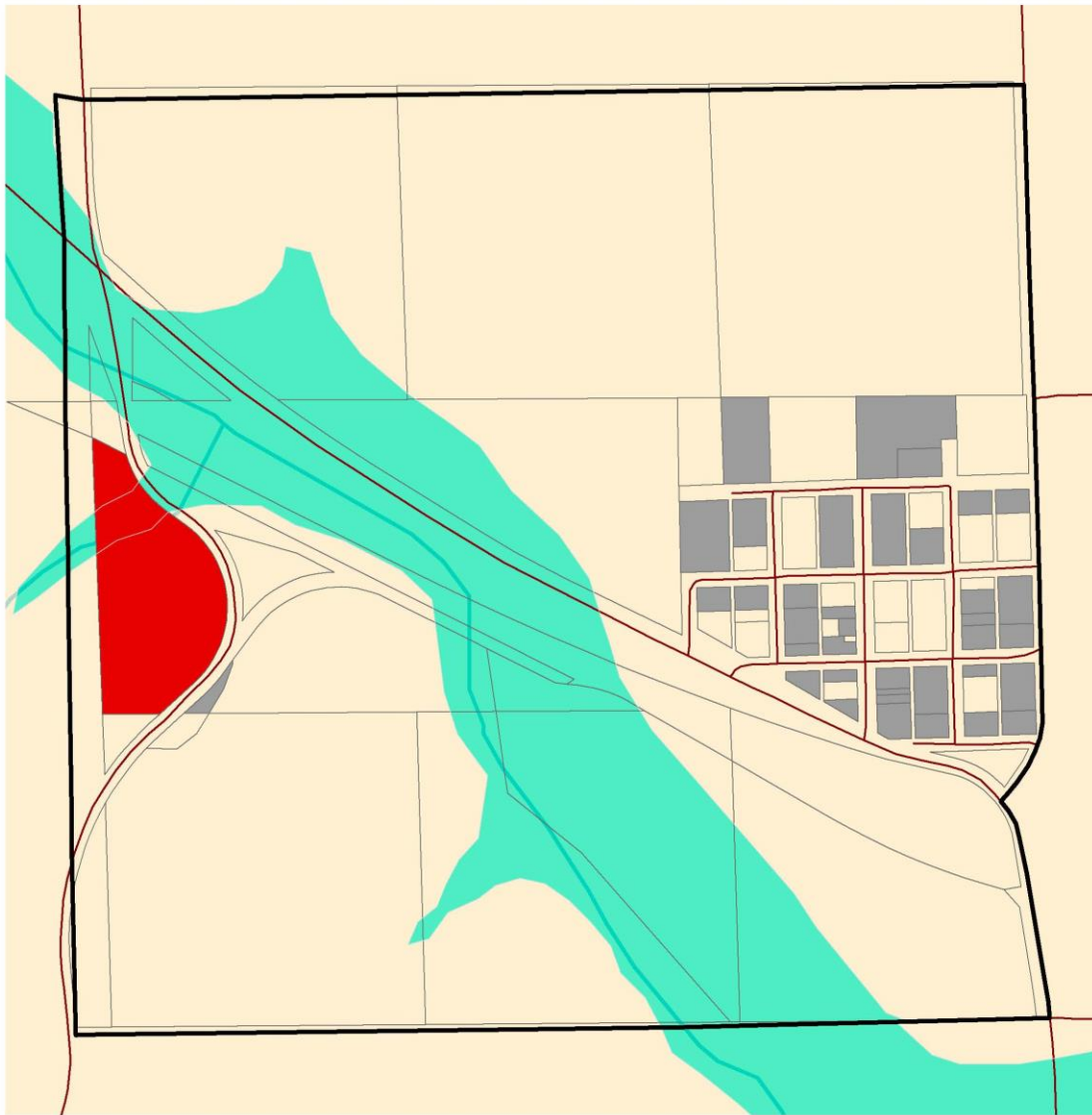
0 0.075 0.15 0.3 Miles



Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

City of Vining

Special Flood Hazard Areas



Legend

- Parcels With Value in SFHA
- Parcels With Value
- Parcels Without Value
- Secondary Roads
- Rivers and Streams
- Incorporated City

Special Flood Hazard Area

- A - No Base Flood Elevations
- AE - Detailed Flood Study
- AH - Ponding
- AO - Shallow flooding
- X - Not in SFHA
- Area Not Included

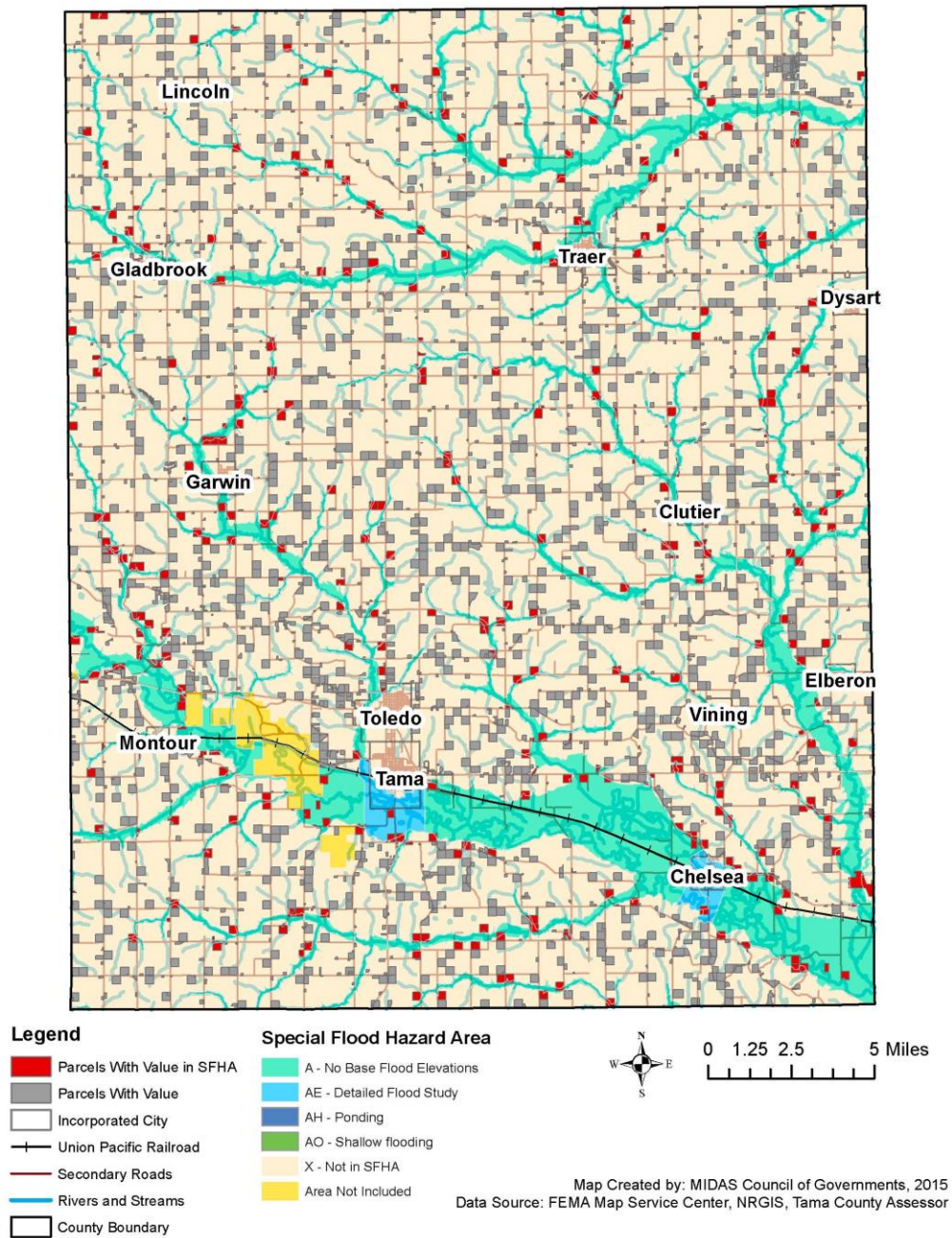


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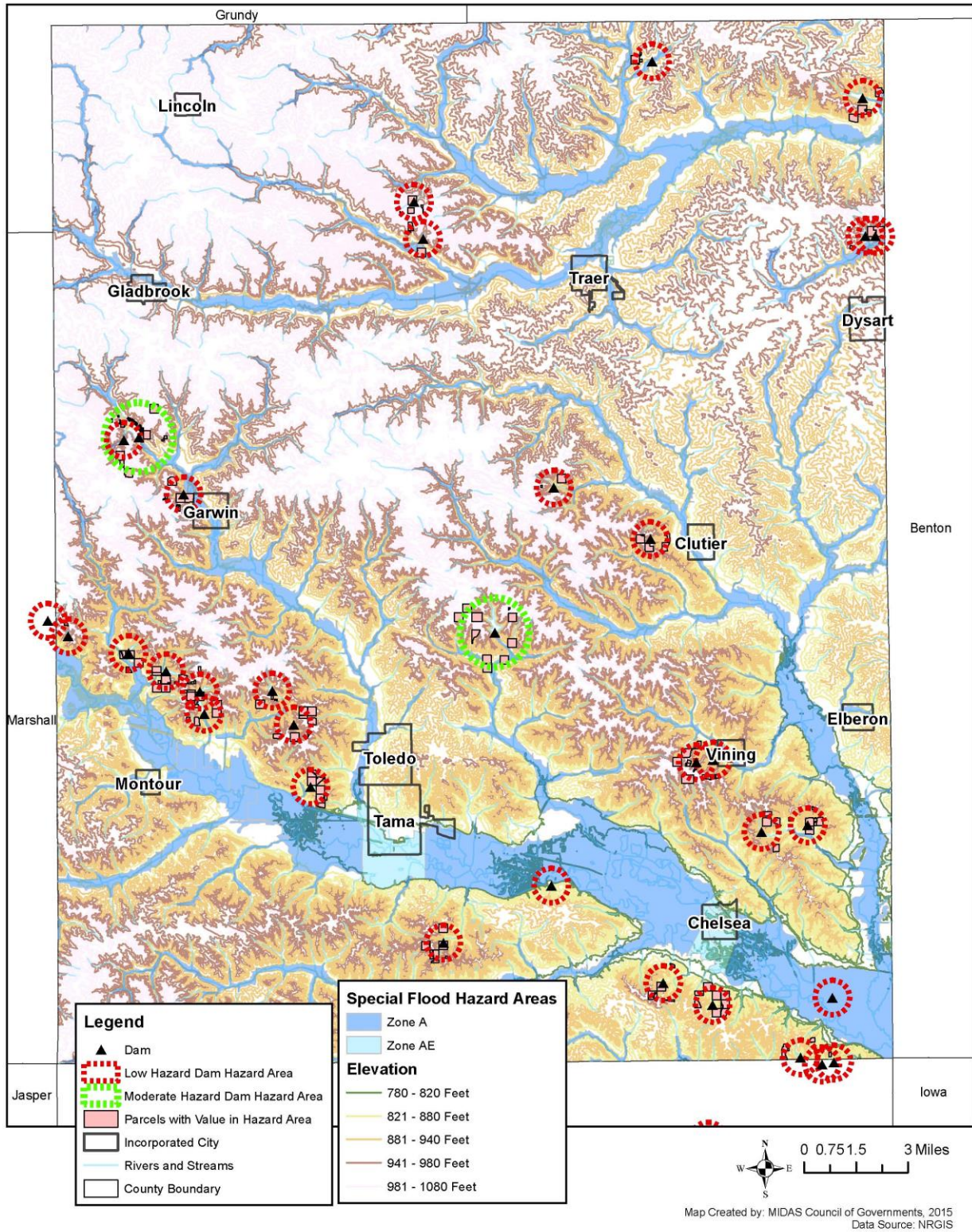
Map Created by: MIDAS Council of Governments, 2015
Data Source: FEMA Map Service Center, NRGIS, Tama County Assessor

Tama County

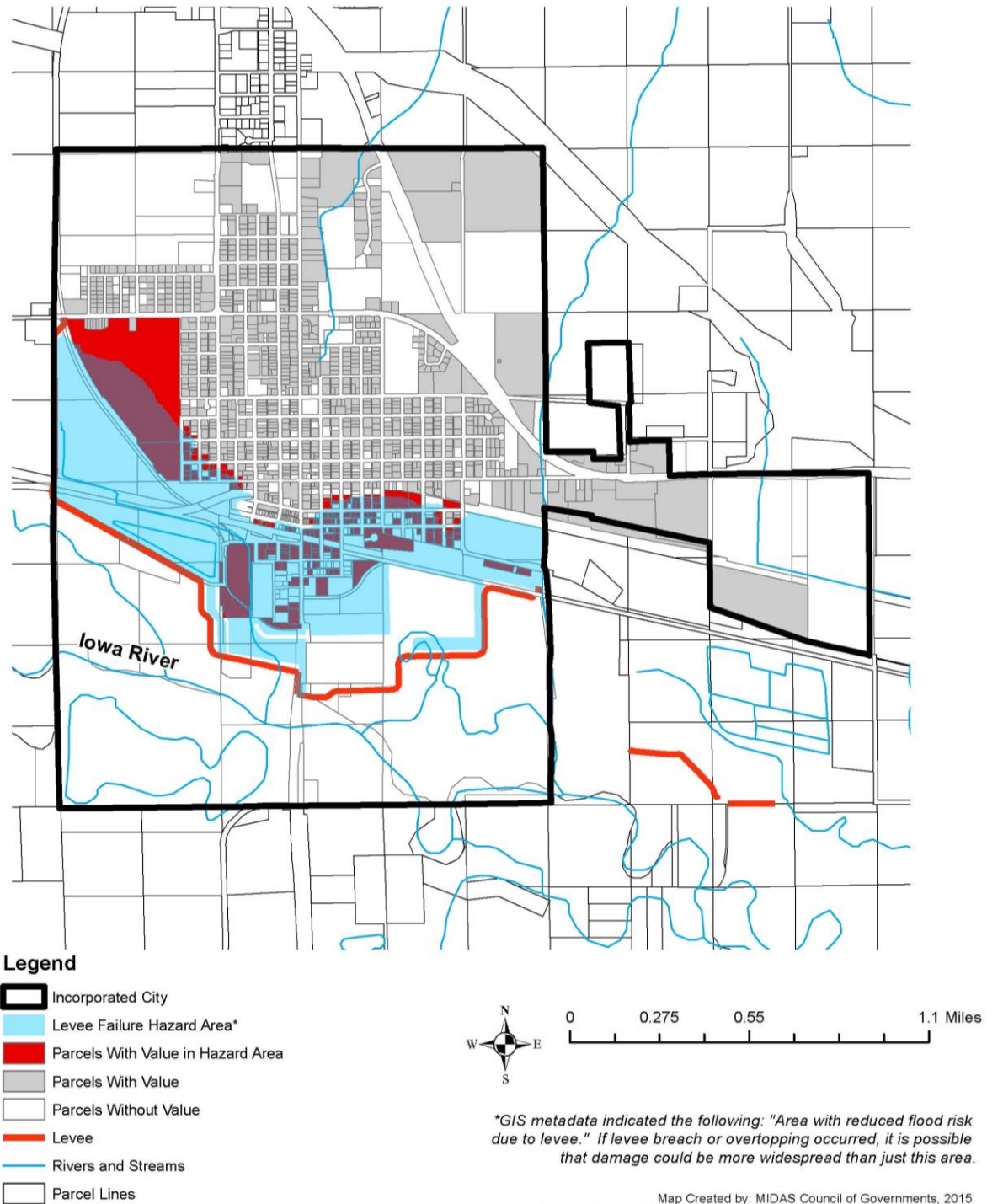
Special Flood Hazard Areas



Appendix M. Dam Hazard Areas in Tama County

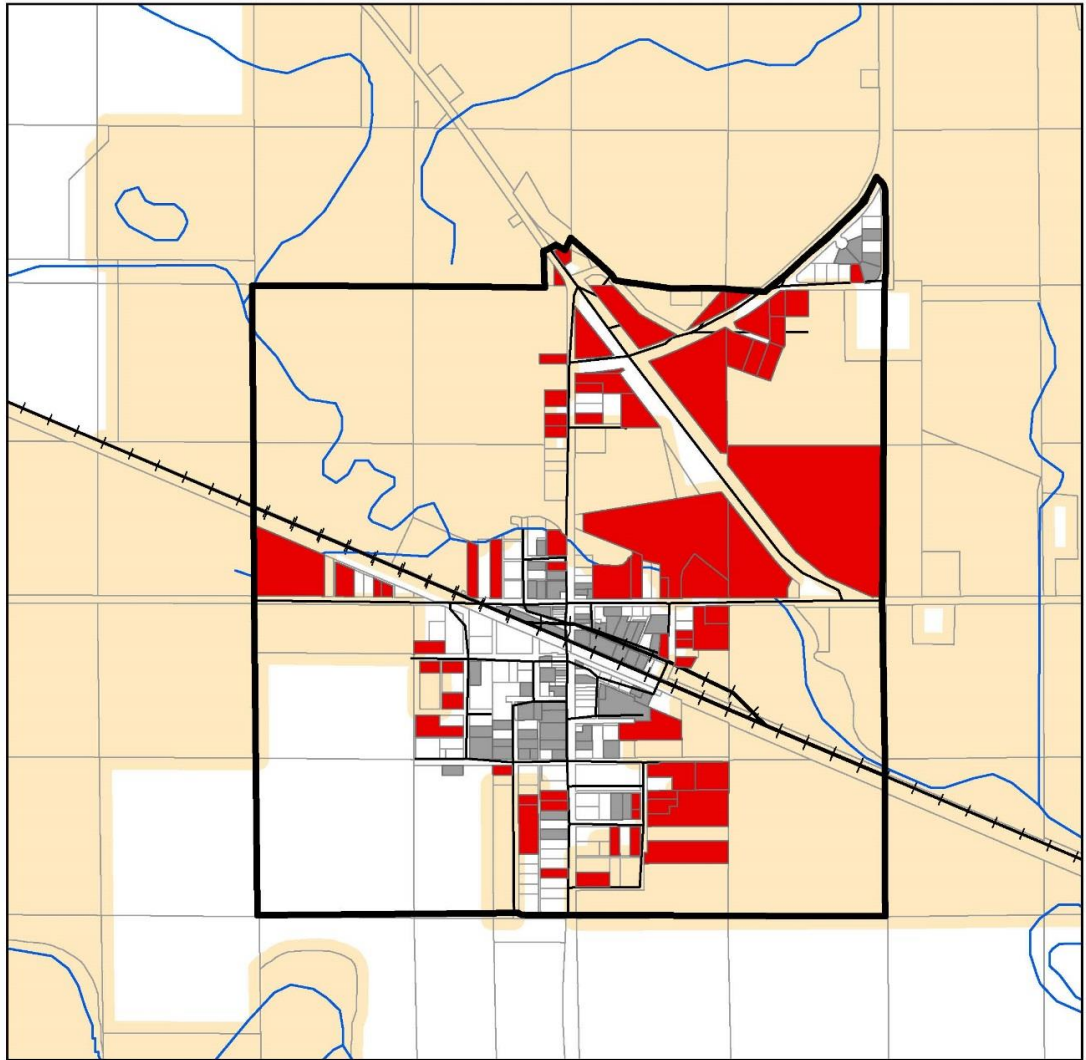


Appendix N. City of Tama Levee Failure Hazard Area



Appendix O. Grass and Wildland Fire Hazard Areas

City of Chelsea Grass or Wildland Fire Hazard Area



Legend

-  Grass or Wildland Fire Hazard Area
-  Parcels with Value in Hazard Area
-  Parcels with Value
-  Parcels Without Value
-  Roads
-  Rivers and Streams
-  Railroads
-  Incorporated City



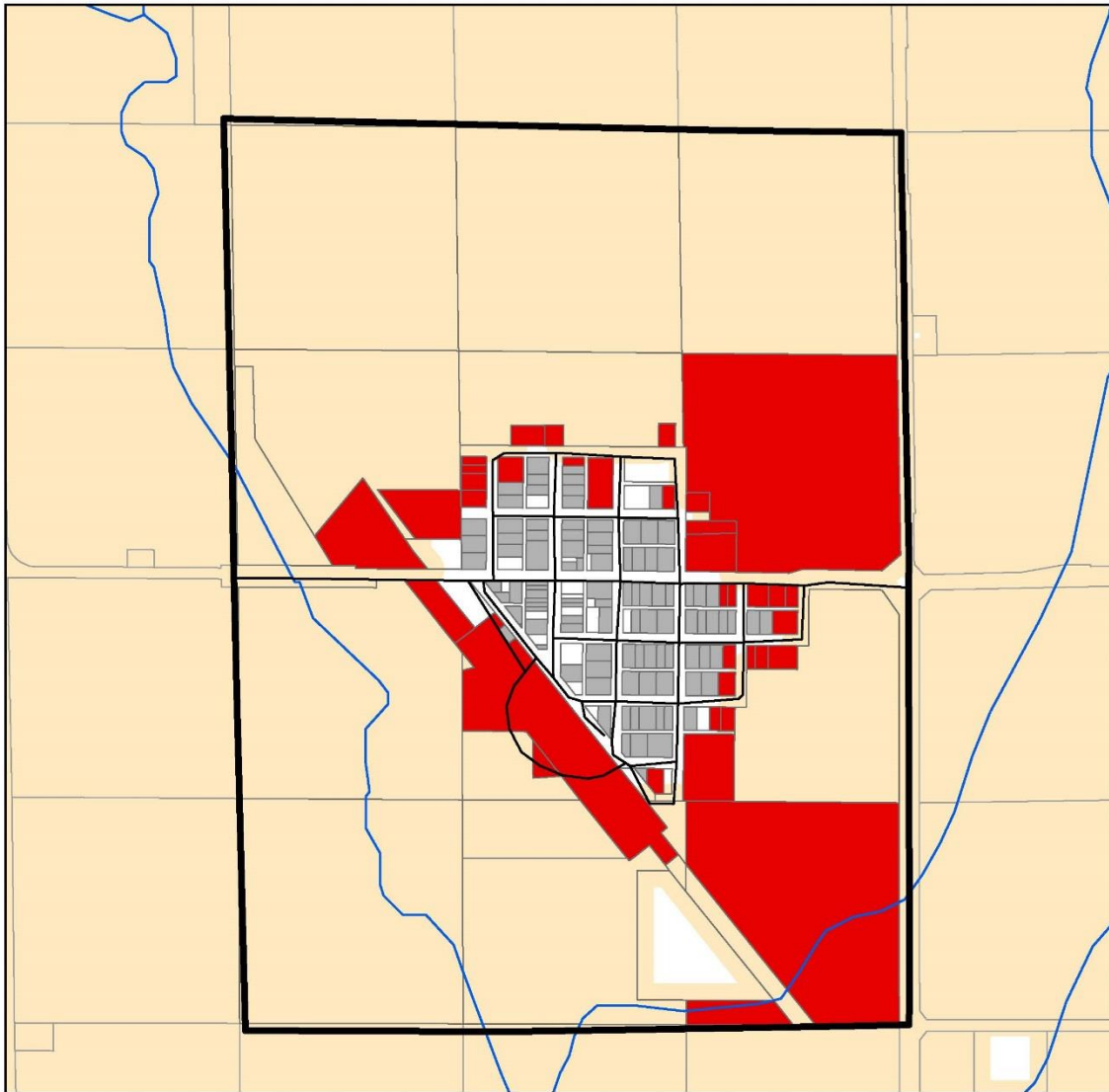
0 0.2 0.4 0.8 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Clutier

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Roads
- Rivers and Streams
- Railroads
- Incorporated City



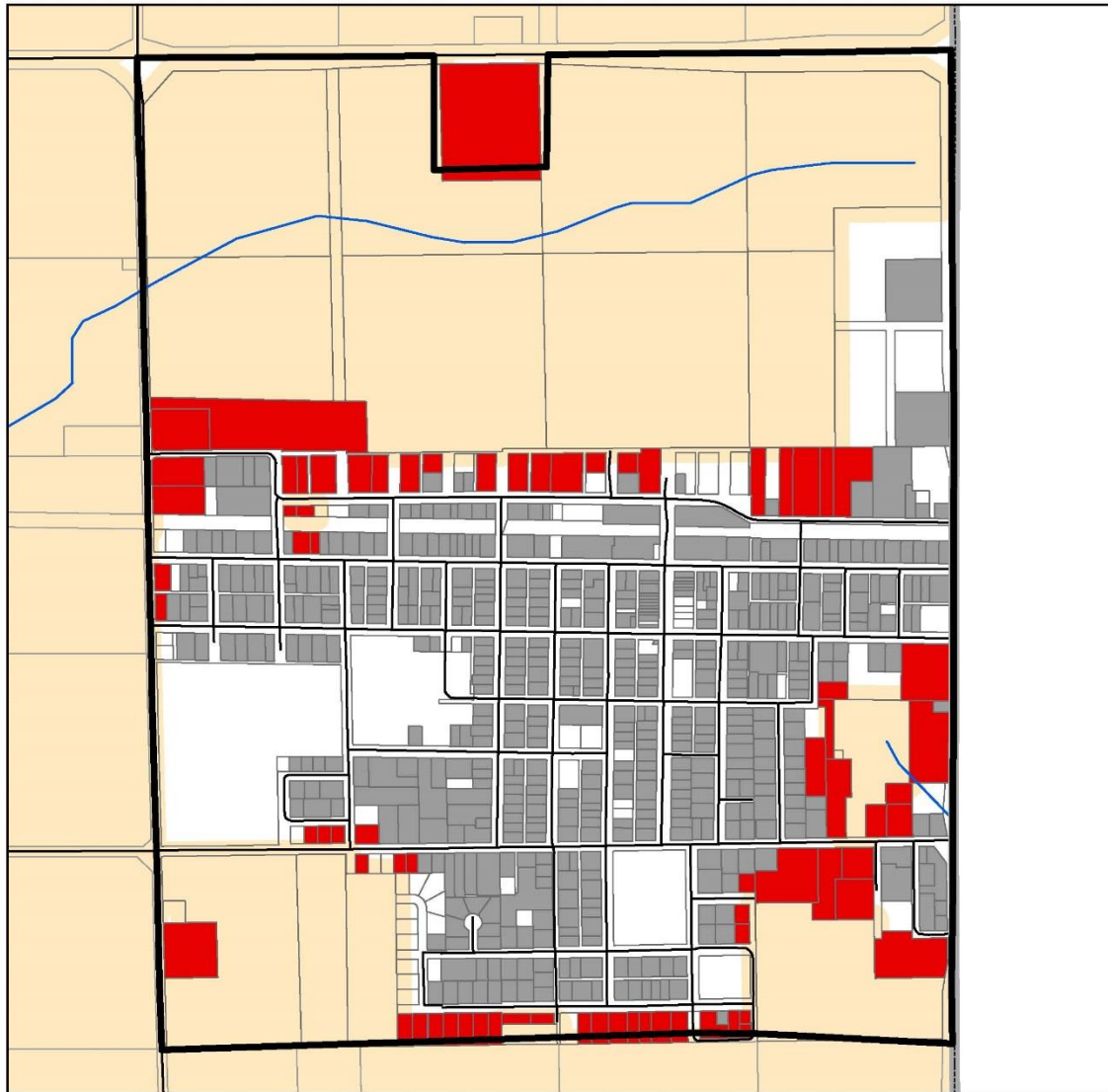
0 0.125 0.25 0.5 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Dysart

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels with Value in Hazard Area
- Parcels with Value
- Parcels Without Value
- Rivers and Streams
- Roads
- Railroads
- Incorporated City
- County Boundary



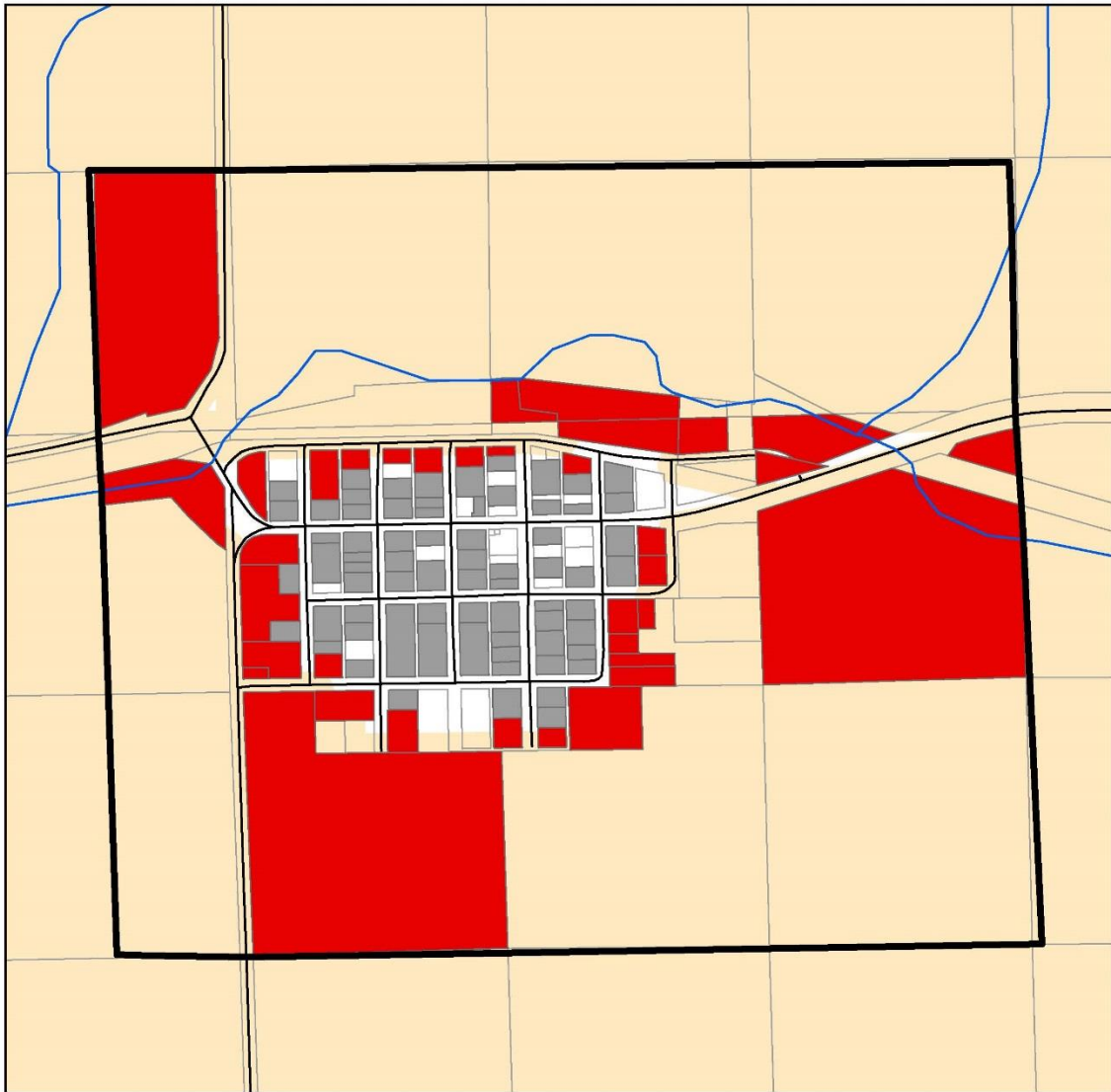
0 0.15 0.3 0.6 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Elberon

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Roads
- Railroads
- Rivers and Streams
- Incorporated City



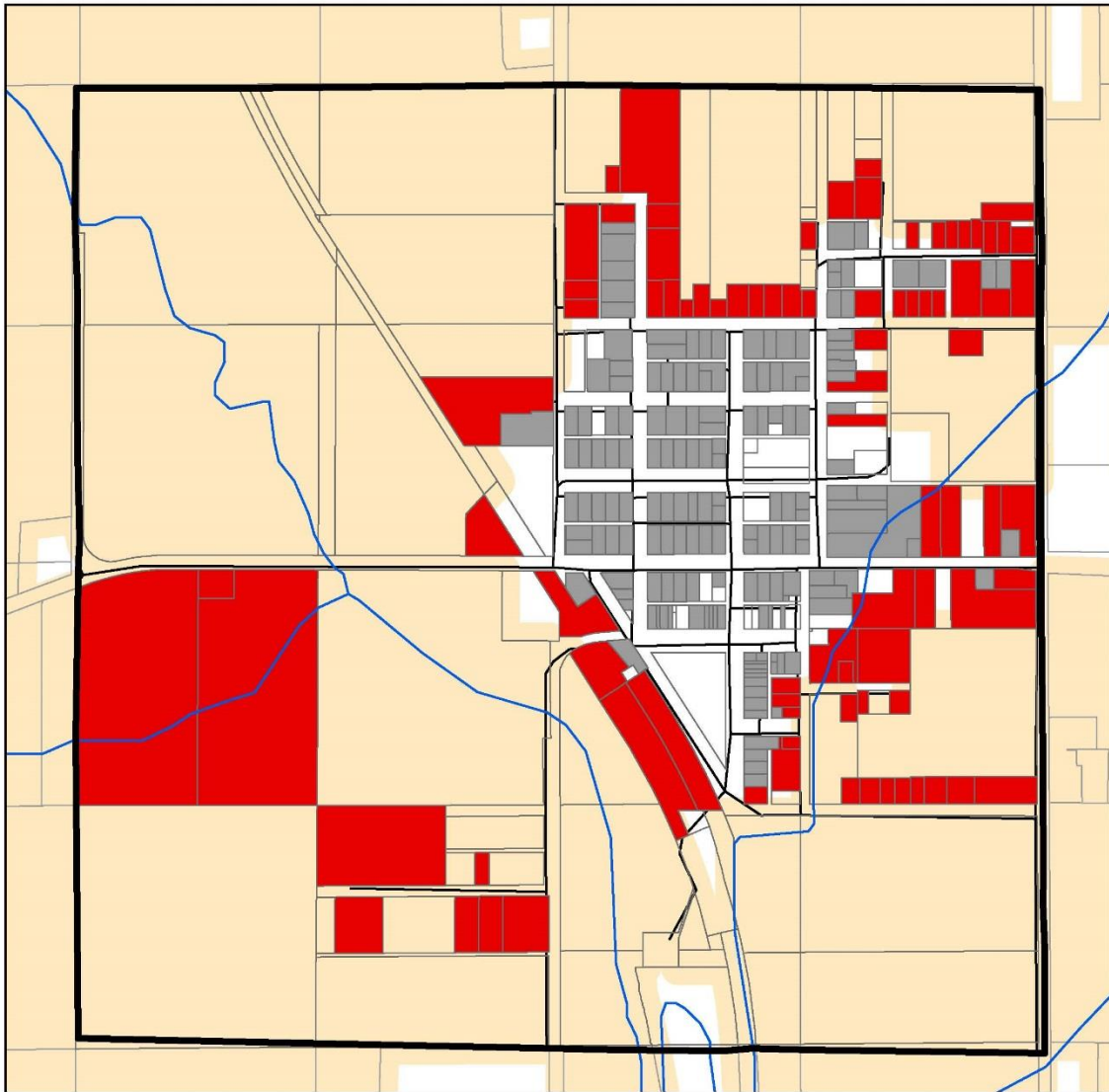
0 0.125 0.25 0.5 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Garwin

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Roads
- +

+

 Railroads
- Incorporated City



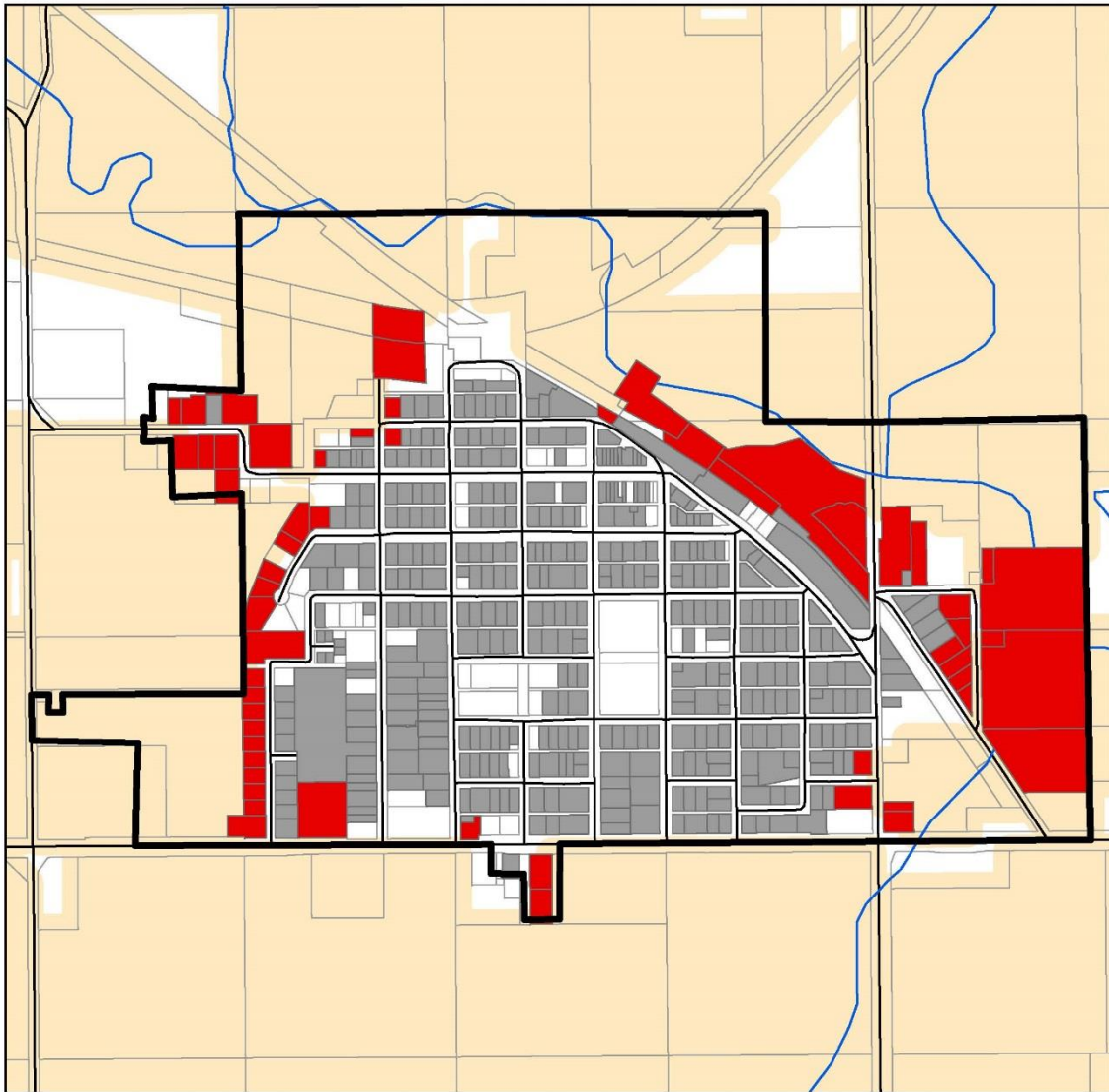
0 0.125 0.25 0.5 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Gladbrook

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Roads
- Railroads
- Rivers and Streams
- Incorporated City



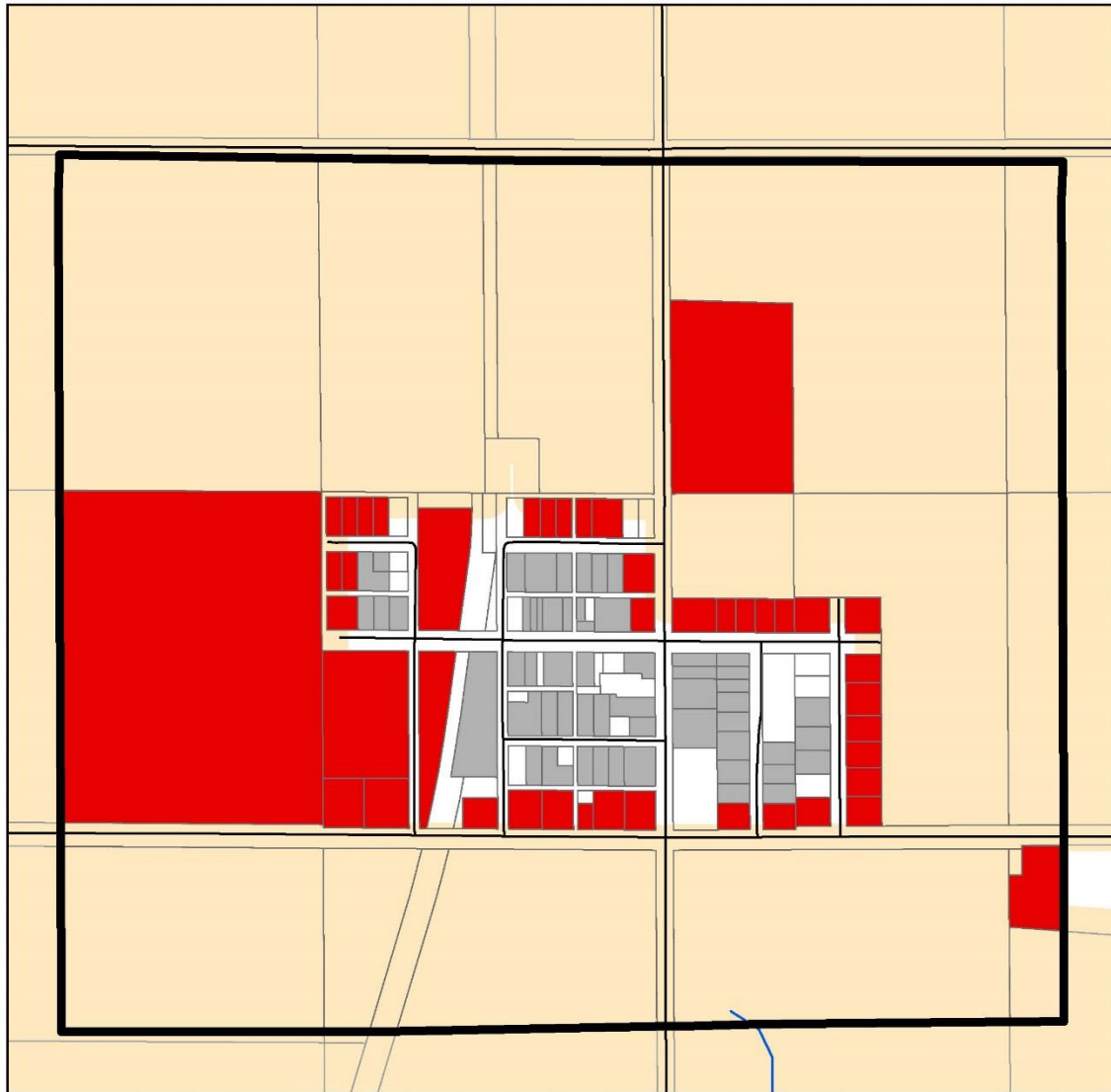
0 0.15 0.3 0.6 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Lincoln

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Rivers and Streams
- Roads
- ++ Railroads
- Incorporated City



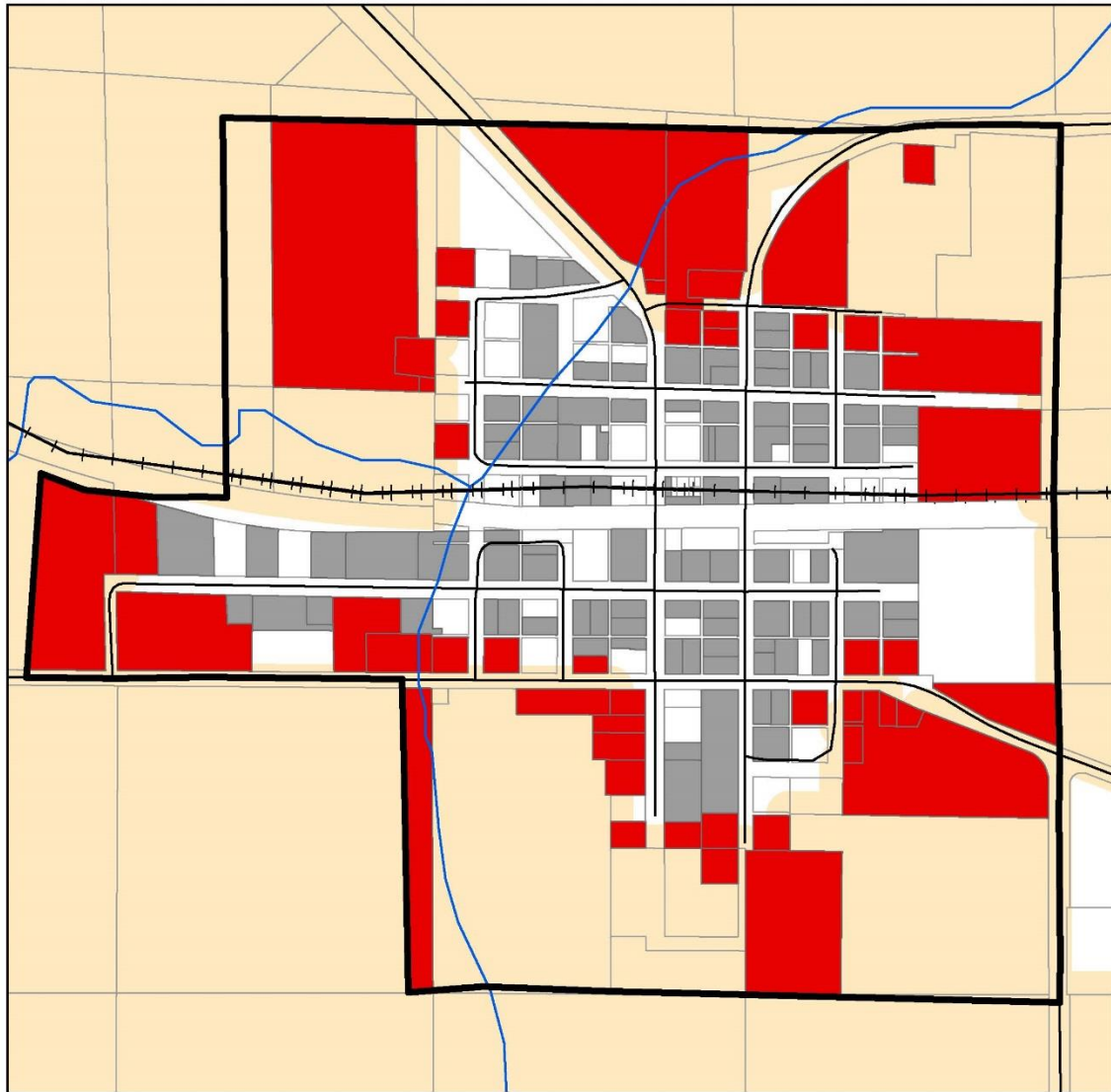
0 0.075 0.15 0.3 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Montour

Grass or Wildland Fire Hazard Area

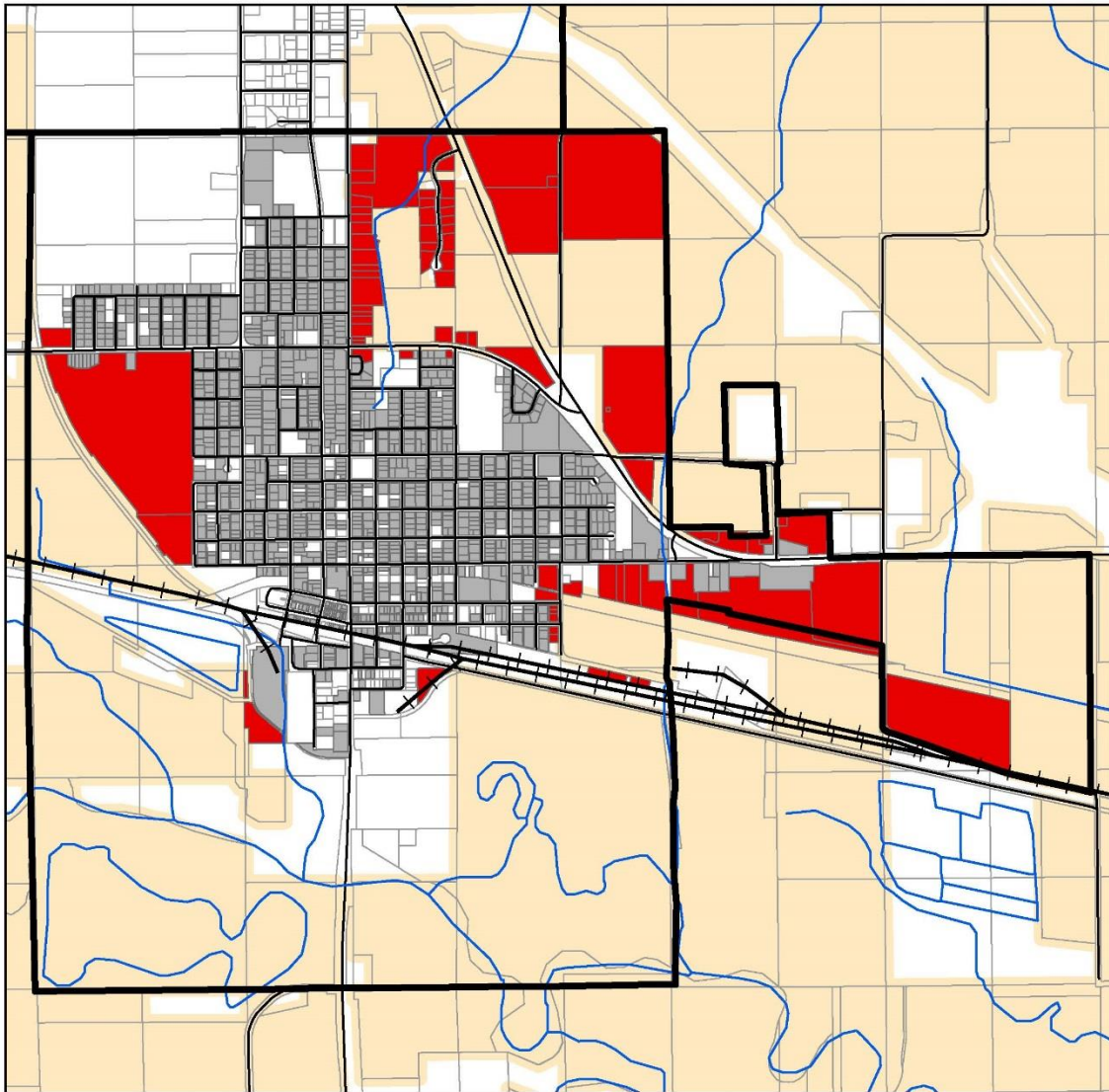


Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Roads
- ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

City of Tama

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Rivers and Streams
- Railroads
- Roads
- Incorporated City



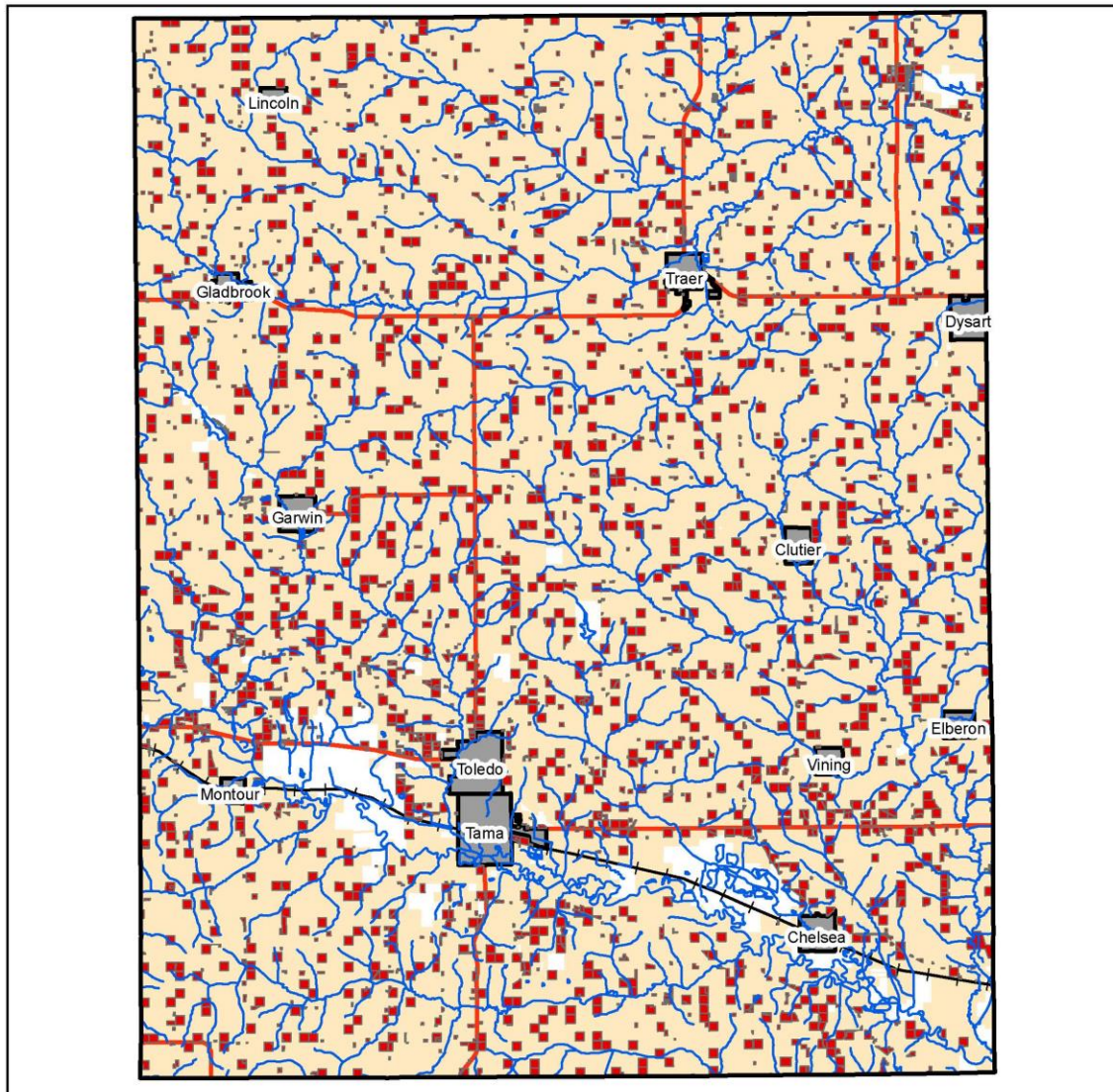
0 0.3 0.6 1.2 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

Tama County

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Highways
- Railroads
- Incorporated City
- County Boundary



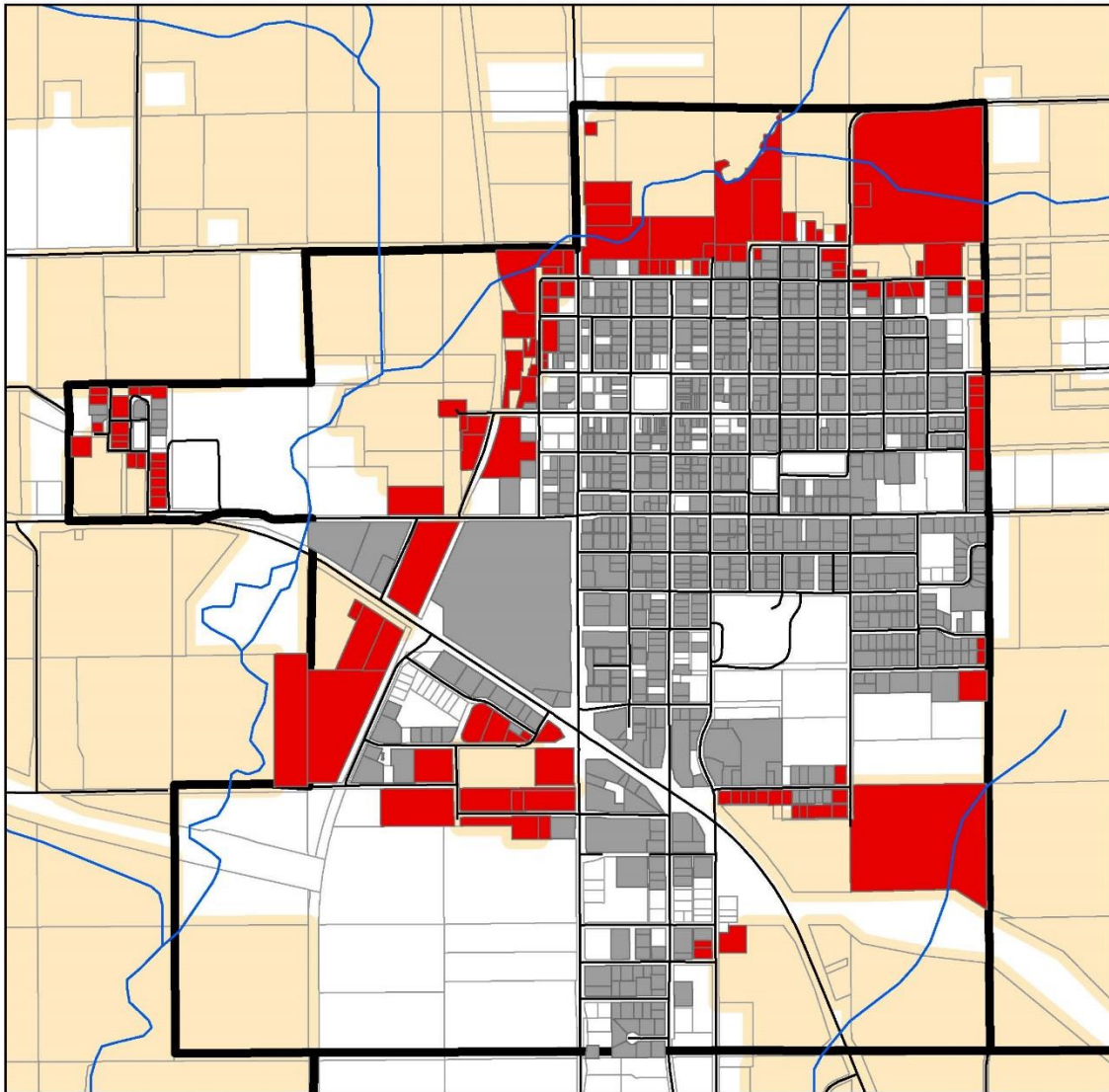
0 3.75 7.5 15 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Toledo

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value
- Parcels With Value in Hazard Area
- Parcels Without Value
- Rivers and Streams
- Roads
- Railroads
- Incorporated City



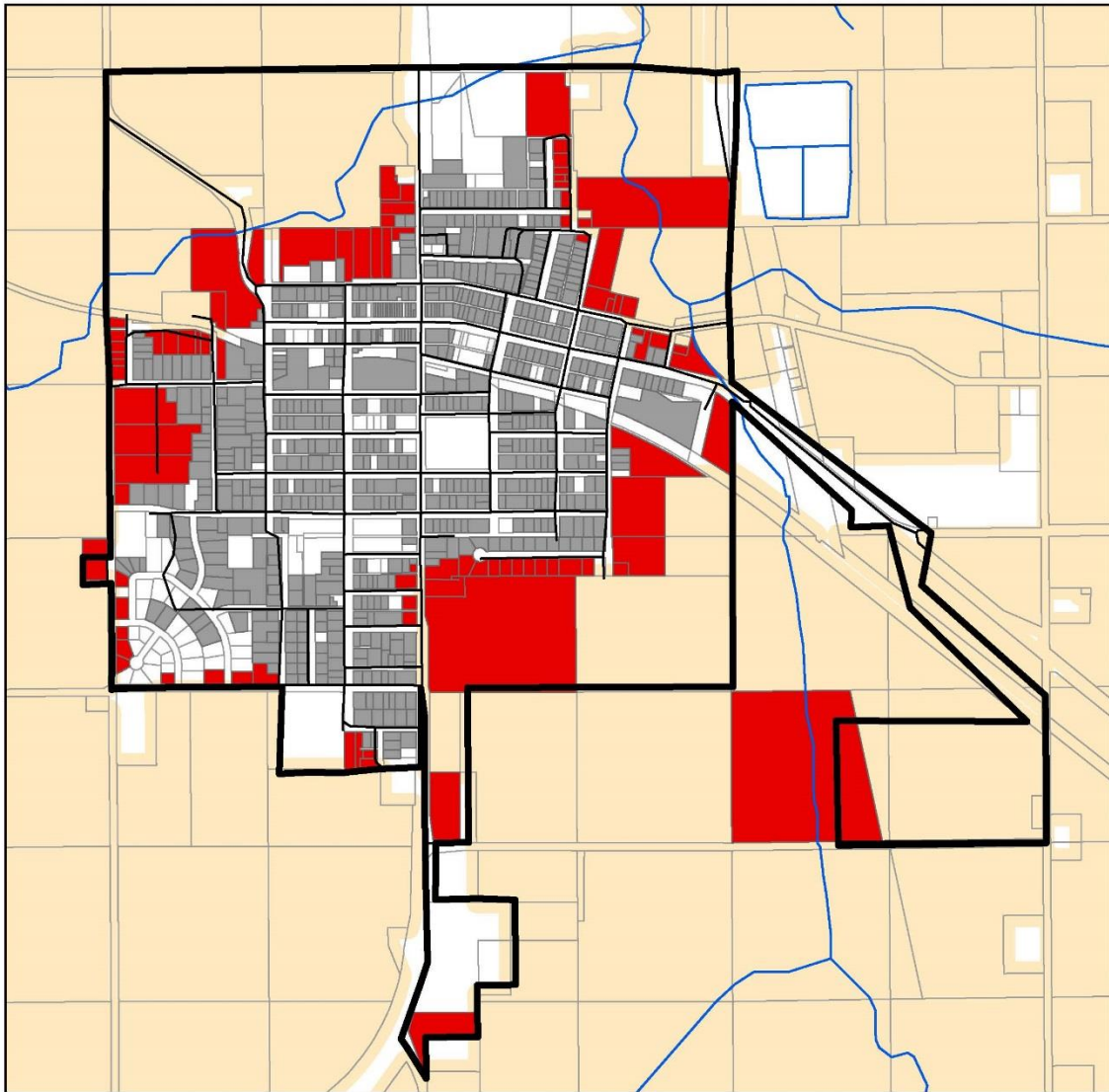
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The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Traer

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Railroads
- Roads
- Rivers and Streams
- Incorporated City



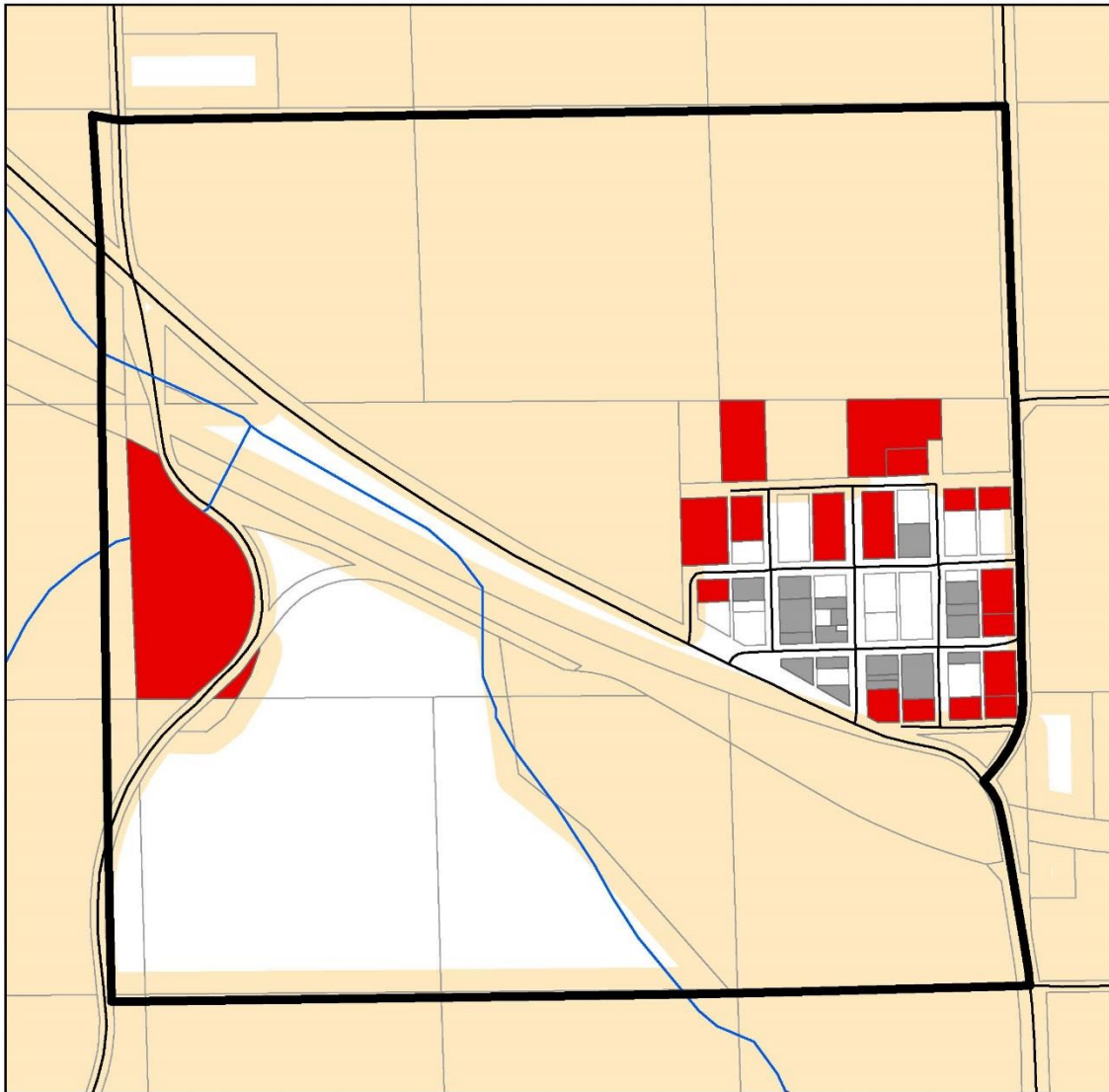
0 0.2 0.4 0.8 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

City of Vining

Grass or Wildland Fire Hazard Area



Legend

- Grass or Wildland Fire Hazard Area
- Parcels With Value in Hazard Area
- Parcels With Value
- Parcels Without Value
- Rivers and Streams
- Roads
- + Railroads
- Incorporated City



0 0.1 0.2 0.4 Miles

The Grass or Wild Land Fire Hazard Area includes all agricultural parcels both inside and outside of the incorporated area and a 100 foot buffer zone around those parcels.

Map Created by: MIDAS Council of Governments, 2015
Data Source: NRGIS, Tama County Assessor's Office

Appendix P. Results of Mitigation Action Prioritization

The following appendix provides the complete results of the mitigation action prioritization by jurisdiction. For an explanation of the methodology that was used to rank actions, see the Goals and Actions Section of this plan. STAPLEE worksheets that each jurisdiction filled out were not included in this appendix to avoid redundancy. The exact questions that communities used to obtain their STAPLEE score are covered in the section referenced above.

Chelsea

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Acquisition and elevation of structures	3	2	2	1	8
2	Construct a levee to protect the community from flood waters	3	1	2	1	7
3	Maintain existing culverts and add new culverts	3	2	0		5

Clutier

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Recruit firemen and first responders	4	4	3		11
	Public education program	4	4	3		11
	Create list of emergency contacts	4	4	3		11
	Develop emergency command center	4	4	3		11
2	Construct City Shed	4	4	1	1	10
3	Construct safe room	4	2	1	1	8
4	Add lift station	1	1	-4	1	2
5	Add culverts	1	1	-1		1
	Elevate roads	1	1	-1		1

Dysart

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Purchase new rescue equipment for City Shop and Fire Department	4	4	1	1	10
	Prepare education flyers about storm procedures to go to all homes in Dysart	4	3	3		10
	Purchase new communication equipment	4	4	1	1	10
2	Use siren to warn Dysart residents of severe weather	4	4	1		9
3	Update the City's Emergency Action Plan and complete training	4	4	-1		7
	Maintain Code Red Participation	4	4	-1		7
	Stage practice drills and town meetings to educate citizens	4	4	-1		7
	Construct safe room	4	1	1	1	7

Elberon

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Update County-owned bridges and inspect annually	2	4	3	1	10
	Enforce building codes	4	3	3		10
	Educate residents about disaster kits and encourage them to build one	4	3	3		10
	Establish a command center	4	3	3		10
2	Smoke detector program	2	4	3		9
	Create a plan for quick	4	2	3		9

	cleanup					
3	Add new culverts	1	3	3	1	8
	Construct new fire station with generators	4	2	1	1	8
4	Distribute NOAA All-Hazard Radios to all Elberon residents	4	1	1		6

Garwin

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Purchase new SCBA air tanks for the fire department	4	4	3		11
	Establish a command center	4	4	3		11
2	Encourage residents to sign up for Code Red	4	3	3		10
	Construct a safe room	4	2	3	1	10
3	Create ditches and repair culverts	2	4	3		9
4	Build a new fire station	4	2	1	1	8
	Update water metering system	2	4	1	1	8

Gladbrook

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Relocate smaller tornado siren to east side of town and install wireless/radio control capability	4	4	3	1	12
	Develop emergency procedures with assistance	4	4	4		12
	Procedure education	4	4	4		12
	Youth-oriented hazard education	4	4	4		12

2	Purchase generators to help prevent critical site damage from freezing temperatures	4	4	2		10
3	Grand Street bridge improvements	3	4	2		9
	Work with school district to isolate west side of school so that it could be designated as an emergency shelter	4	3	1	1	9
	Storm drainage improvements	3	2	3	1	9
	Sewer improvements and purchase generator for backup	3	4	2		9
4	Maintain Alert Iowa participation and educate citizens	4	4	0		8
5	Water source research and potentially increase	3	2	1		6

Lincoln

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Purchase road equipment for snow and debris removal	4	4	3	1	12
2	Train a local citizen to be an EMT	4	4	3		11
	Create an emergency, strategic plan of action for disasters i.e. determine who makes the call to open a shelter, when should the shelter be opened, etc.	4	3	3	1	11
3	Remodel Amvet Hall for community shelter	4	3	1	1	9
4	Update all fire equipment	3	4	1		8
5	Update emergency siren	4	1	1		6

Montour

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Maintain culverts	4	4	3		11
	Regular debris removal from waterways	4	4	3		11
2	Create a sandbag committee	4	3	3		10
	Install surge protection	4	3	3		10
	Active safety committee	4	3	3		10
	Plan a community meeting	4	3	3		10
3	Annually inspect roads, culverts, creeks, and city facilities	4	4	1		9
	Update the siren warning system to include audio	4	3	1	1	9
	County firefighter training for Montour fire department	4	3	1	1	9
	Create hazard manual for Montour fire department	3	3	3		9
	Maintain participation in Alert Iowa	4	4	1		9
4	Purchase generator for warning siren	4	3	1		8
	Purchase backup generator for City Shed	4	3	1		8
5	Look into backflow rebate forms	3	2	1	1	7

Tama

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Scan and maintain critical records	4	3	3		10
	Purchase generator and generator hookup	4	3	3		10
2	Continue annual maintenance of dikes, dike pumps, and dike gates	2	4	3		9
	Training for fire	4	4	1		9

	department and emergency medical services					
3	Establish citywide evacuation plan	4	2	1	1	8
4	Community smoke detector program	1	4	1	1	7
	Inform residents of evacuation plan for hazardous materials incident	4	2	1		7
	Purchase generator for City Hall	4	3	-1	1	7
5	Create a plan for a backup water supply if the water treatment facility fails	1	2	3		6
	Public outreach about hazards through mailings or Facebook	4	1	1		6

Toledo

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Subsidize individual purchase of NOAA All-Hazard radios	4	4	2	1	11
2	Establish monthly publicity to remind residents of seasonal hazards	4	4	2		10
3	Water conservation	2	4	2	1	9
	Purchase generators for water/sewer plant and Reinig Center	4	4	0	1	9
	Construct safe room for combined mobile home park, Reinig Center, and daycare	4	2	2	1	9
4	Homeowner inspections	4	3	0		7
5	Purchase portable generation equipment and wiring for critical facilities like gas stations and grocery store	4	4	-2		6

7	Develop drought plan	2	1	2		5
8	Demolish current structures in Deer Creek flood hazard area	2	1	0		3

Traer

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Create Police Department	4	2	3		9
2	Require formal emergency plans for vulnerable populations	4	3	1		8
	Purchase portable generators	4	3	1		8
3	Purchase a siren for west side of the city	4	3	-1	1	7
	Purchase additional emergency equipment i.e. fire, ambulance, etc.	4	2	1		7
4	Construct a shelter at the school or other location	4	2	0		6
5	Construct safe room	4	1	-1	1	5
	Replace fire and ambulance buildings with buildings are that are storm safe	4	1	-1	1	5

Vining

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Upgrade fire department equipment	4	4	1	1	10
2	Hold Red Cross first aid classes and encourage attendance	4	4	1		9
	Crown and grade streets	4	2	1	1	9
	Encourage residents to have a battery-operated	4	4	1		9

	radio					
3	Create call list for checking on vulnerable populations	4	3	1		8
4	Send letter to residents explain where shelter is located and when it will be open	4	4	-1		7
	Switch to a remote triggered warning siren	4	2	1		7
	Establish and enforce a burn ban	2	4	1		7
5	Replace culverts	1	4	1		6

Tama County

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Purchase generators for critical facilities	4	4	3		11
2	Construct safe rooms in communities and recreational areas	4	4	1		9
	Establish an impact assessment form for communities	4	2	3		9
	Budget and plan for communication failures	2	4	3		9
3	Improve regular assessment and maintenance on county structures	4	1	2		7
	Create fire extinguisher and fire alarm safety program	2	4	2		8
	Establish community shared shelters	4	4	0		8
	Extreme heat, severe weather, pipeline safety, thunderstorms and lightning, etc. info, PSAs, and information on County website	4	4	0		8
	Establish procedure for community to notify Tama County Emergency	4	2	2		8

	Management after Energy failure occurs					
	Complete government continuity planning	4	4	0		8
4	Update zoning in critical areas	4	4	-1		7
	Flood assessment requirement for building permit	3	4	0		7
	Establish cooling centers	3	4	0		7
	Train fire departments for grass fires and maintain needed equipment	3	4	0		7
	Establish advance warning system for recreational areas	4	2	1		7
	Require and enforce maintenance of vegetation near traffic signs	2	4	1		7
	Elevate roads	3	4	0		7
5	Implementation of burn bans	3	4	-1		6
	Maintenance of vegetation near power lines	2	4	0		6
	Train emergency responders in search and rescue for structural failure situations	2	4	0		6
	Improve fire code enforcement	2	4	0		6
	Public education program about general fire prevention and prevention of grass and wildland fires	2	4	0		6
	Encourage farmers to invest in crop insurance	4	4	-2		6
	Education on dangers of highway transportation incidents and how to avoid collisions	2	4	0		6
	Install steel roofs on government buildings to protect from hail and	4	1	1		6

	other hazards					
6	Enhance building codes	4	2	-1		5
	Create list of disaster supplies and suppliers	4	2	-1		5
	Establish communication between emergency management and vets regarding animal/crop/plant diseases	1	4	0		5
	Create emergency fuel supply and map other sources	4	1	0		5
	Bury utility lines	4	1	0		5
7	Improve capital improvements planning process	4	1	-2		3

GMG Community School District

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Purchase generator for high school in Garwin	4	3	1	1	9
2	Bury overhead electrical lines near school	4	3	1		8
	Increase tree planting around school	2	3	3		8
3	Hazardous materials drop-off program	2	3	1		6
	Build safe room	4	3	-1		6

North Tama Community School District

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Build a safe room for students, staff, and community members	4	1	1		6

South Tama Community School District

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic)	Local Significance	Total Score
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				Rating		
1	Communicate crisis plan to parents, officials, and the public	4	4	0		8
2	Purchase generators	4	3	-1	1	7
3	Build a storm shelter	4	2	-1	1	6

Union Community School District

Rank	Mitigation Action	Risk Assessment	Start Date	STAPLEE (Economic) Rating	Local Significance	Total Score
1	Safety education	4	4	2		10
2	Improve communication systems	4	2	2	1	9
	Complete crisis planning	4	4	1		9
	Crisis planning and drills	4	4	0	1	9
3	Roof improvements	4	2	1	1	8
4	Purchase generators	4	1	-1		4
5	Construct a safe room	4	1	-3		2

Appendix Q. Resolutions

This section includes copies of each jurisdiction's Resolution to Adopt the Tama County Multi-Jurisdictional Hazard Mitigation Plan.

Tama County Resolution

RESOLUTION NUMBER 10-12-2015A

A RESOLUTION OF THE TAMA COUNTY BOARD OF SUPERVISORS
ADOPTING THE TAMA COUNTY MULTI-JURISDICTIONAL HAZARD
MITIGATION PLAN

WHEREAS the Board of Supervisors of Tama County, Iowa has authorized the development of a multi-jurisdictional hazard mitigation plan; and,
WHEREAS the Tama County Multi-Jurisdictional Hazard Mitigation Plan was prepared in compliance with the Hazard Mitigation Planning Requirements of Disaster Mitigation Act of 2000 provided by the Iowa Homeland Security and Emergency Management Division; and,
WHEREAS all meetings of the Tama County Planning Committee were open to the public; and,
WHEREAS the municipalities within Tama County that participated in the multi-jurisdictional plan process will each pass their own resolution to approve and adopt the plan.
NOW THEREFORE BE IT RESOLVED that the Tama County Board of Supervisors herewith adopts said plan, incorporating citizen comment and recommendation.
PASSED AND ADOPTED THIS 12th DAY OF OCTOBER 2015.

Passed this 12th day of October, 2015.



Chairman, Tama County Board of Supervisors

Attest:



Tama County Auditor

Appendix R: Data Sources Used in Plan

- Council of State Governments Midwestern Office. Handbook of radioactive waste transportation.
<http://www.csgmidwest.org/%5C/MRMTP/documents/HandbookofRadioactiveWaste.pdf>
- Federal Railroad Administration Railroad Accident Reports. 2015.
[via the Des Moines Register] <http://db.desmoinesregister.com/dangerous-crossings/page=3&searchterms%5Bcol8%5D=tama&searchterms%5Bcol1%5D=&searchterms%5Bcol3%5D=&searchterms%5Bcol7%5D=&searchterms%5Bcol9%5D=&searchterms%5Bcol10%5D=&searchterms%5Bcol11%5D=>
- FEMA Disaster Declarations for Iowa. January 2015.
<https://www.fema.gov/disasters/grid/state-tribal-government/65>
- FEMA Map Service Center. 2014. <https://msc.fema.gov/portal>
- Insurance Institute for Business and Home Safety. 2015. Creating Defensible Space Zones [against grass and wildlife fires]. https://www.disastersafety.org/wildfire/defensible_space/
- Iowa Department of Agricultural and Land Stewardship. 2014. Information about Scapies.
<http://www.iowaagriculture.gov/animalIndustry/pdf/2014/2014FINALNewsletter.pdf>
- Iowa Department of Agricultural and Land Stewardship. 2015. Information about Bird Flu.
<http://www.iowaagriculture.gov/avianinfluenza.asp>
- Iowa Department of Natural Resources Facility Explorer. 2015.
<https://facilityexplorer.iowadnr.gov/FacilityExplorer/>
- Iowa Department of Natural Resources Hazardous Materials Release Database. 2014.
<https://programs.iowadnr.gov/hazardousspills/Introductory.aspx>
- Iowa Department of Natural Resources Hazardous Spills Summary Report. 2014.
<https://programs.iowadnr.gov/hazardousspills/Reports/SpillSummary.aspx>
- Iowa Department of Public Health, Center for Acute Disease Epidemiology (CADE). 2015. Annual Reports. <http://www.idph.state.ia.us/cade/Default.aspx#CR>
- Iowa Department of Transportation. 2015. [Email]
- Iowa Emergency Management Association. 2014. Nuclear Event Classifications.
http://homelandsecurity.iowa.gov/programs/radio_emerg_prep.html
- Iowa Geological Survey. 2015. Earthquake map.
<http://www.iuhr.uiowa.edu/igs/browse/quakes/quakes.htm>
- Iowa Homeland Security and Emergency Management Department (HSEMD) 2008. [Email]
- Iowa State Hazard Mitigation Plan 2007.
- Iowa State Hazard Mitigation Plan 2013.
- Iowa State University Veterinary Medical Center. 2013.
http://vetmed.iastate.edu/sites/default/files/vdpam/Disease_Topics/PED-virus-fact-sheet-5-17-13.pdf
- National Agriculture Statistics Service Cropscape Tool. 2014.
<http://nassgeodata.gmu.edu/CropScape/>
- National Agriculture Statistics Service. 2015. <http://quickstats.nass.usda.gov/>
- National Climate Data Center (NCDC). 2015. Storm Events Database.
<http://www.ncdc.noaa.gov/stormevents/>
- National Drought Mitigation Center. 2015.
<http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx>
- National Flood Insurance Program (NFIP) Bureau Net. 2015.
<http://bsa.nfipstat.fema.gov/reports/1011.htm#IAT>

National Flood Insurance Program (NFIP) Community Status Book. 2015.
<https://www.fema.gov/cis/IA.pdf>

National Inventory of Dams. 2015. US Army Corps of Engineers.
http://nid.usace.army.mil/cm_apex/f?p=838:12

National Levee Database. 2015. US Army Corps of Engineers.
<http://nld.usace.army.mil/egis/f?p=471:1:>

National Oceanic and Atmospheric Association. 2015. Fujita Tornado Damage Scale.
<http://www.spc.noaa.gov/faq/tornado/f-scale.html>

National Oceanic and Atmospheric Association. 2015. Wind Chill Chart.
<http://www.nws.noaa.gov/om/winter/windchill.shtml>

National Oceanic and Atmospheric Association. 2015. Climate Chart.
<http://www.crh.noaa.gov/dmx/?n=climategraphicsDSM2014>

National Oceanic and Atmospheric Association. 2015. Beaufort Wind Scale.
<http://www.spc.noaa.gov/faq/tornado/beaufort.html>

National Oceanic and Atmospheric Association. 2014. Climate Data Online Search.
<http://www.ncdc.noaa.gov/cdo-web/search?datasetid=GHCND>

Natural Resources Geographic Information Systems (NRGIS) Library. 2014, 2015.
<https://programs.iowadnr.gov/nrgislibx/>

National Transportation Safety Board Aviation Accident Reports. 2015.
<http://www.nts.gov/investigations/AccidentReports/Pages/aviation.aspx>

State Data Center of Iowa. 2009. www.iowadatacenter.org

Sure Void Products. 2015. Swelling Clays Map. http://www.surevoid.com/soil_maps/ia.php

Tama County Assessor's Office. 2014. [Email]

Tama County Conservation. 2015. [Email]

Tama County Economic Development Commission. 2009, 2015. [Email]

Tama County Emergency Management. 2010, 2015. [in person, email]

US Census Bureau. 2014. www.factfinder.census.gov/

US Census Bureau "On The Map" Tool. 2014. <http://onthemap.ces.census.gov/>

US DOT Pipeline and Hazardous Materials Safety Administration. 2014.
<http://www.phmsa.dot.gov/pipeline/library/datastatistics/pipelineincidenttrends>

Weather.gov. Heat index chart <http://www.weather.gov/om/heat/index.shtml>

Woods and Poole Economics, Inc. 2007.