APPENDIX VI-1 MAN-MADE OR HUMAN-CAUSED HAZARDS FROM SCOTT COUNTY, IOWA MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, 2012

Agro Terrorism

Definition: An action causing intentional harm to an agricultural product or vandalism of an agricultural/animal related facility. Activities could include the following examples: animal rights activists who release milk or lab animals; a disgruntled employee who intentionally contaminates bulk milk tanks or poisons animals; eco-terrorists who destroy crops/facilities; theft of agricultural products, machinery, or chemicals; or criminals who vandalize agricultural facilities.

Description: Agro-terrorism covers a large variety of incidents from potential intentional introduction of disease; vandalism of facilities; theft of agricultural products, machinery, or chemicals; release of animals; and contamination of agricultural products.

Maximum Extent: Depending on the time of action taken, the implications will vary greatly.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.46	0.56	0.59	0.30	1.91

Evaluation Criteria	Description
	No known incidents of agro-terrorism have occurred within Scott County. However incidents have occurred in the State of Iowa. Since 1997, Iowa has experienced at least 10 incidents in which animal rights activists have vandalized or released animals from agricultural facilities.
	There is a chance that an agro-terrorism related event could occur in Scott County since past incidents have occurred within the state, but an occurrence is unlikely in any given year.
	Agriculture is present in Scott County, therefore portions of the county where agriculture is prevalent are vulnerable to incident. Damages in dollar amounts could vary greatly from $100 to several millions of dollars, depending on the act or terrorism.
	Agro–terrorism could occur in most parts of Scott County. However, an incident would be mainly confined to the agricultural facility affected.
	A. *Health and safety of persons in affected areas:* Depending on the type of incident, safety could be affected especially when chemicals are involved. B. *Health and safety of response personnel:* Depending on the type of incident, safety could be affected especially when chemicals are involved. C. *Continuity of operations:* Depends on the location and extent of incident. D. *Property, facilities, and infrastructure:* Damage and/or destruction likely in case of an event. E. *Delivery of services:* Depends on the location and extent of incident. F. *Environment:* Depends on location and extent of incident. G. *Economic and financial conditions:* Threats and scares have psychological effects and disrupt activities at a cost to productivity. In the case of an actual incident loss in equipment, animals, and/or products could have major financial effects. H. *Regulatory and contractual obligations:* Depends on the type of incident and damage. In case of product tampering fulfilling certain types of contracts could be affected. I. *Reputation of the entity:* No known impact.
	In most incidents, there would be no warning time. The exception would be if someone called in a threat.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
Extension Disaster Education Network (EDEN)	*Pre-Disaster Mitigation Plan, February 2007*
United States Department of Agriculture (USDA)	*USDA Homeland Security Efforts* *http://www.usda.gov/documents/factsheet0504.pdf*

Please note that these profiles have not been updated since the *2012 Scott County Multijurisdictional Hazard Mitigation Plan* was adopted. They were retained in this appendix for reference. Maps noted are not included in this document. Said maps can be found in the full version of the previous plan.

Air Transportation Incident

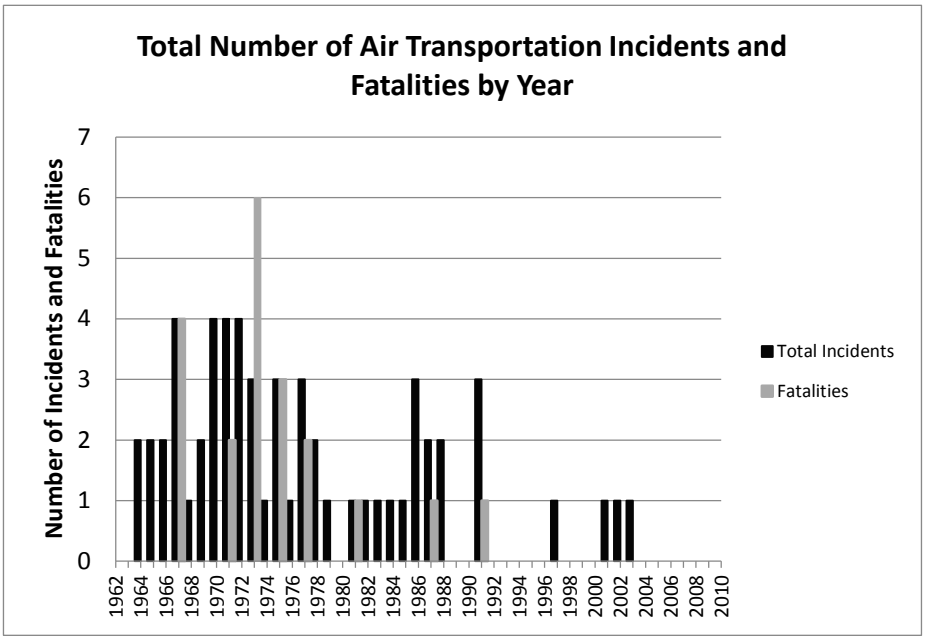
Definition: Any incident involving a military, commercial, or private aircraft.

Description: Air transportation is playing a more prominent role in transportation as a whole. Airplanes, helicopters, and other modes of air transportation are used to transport passengers for business and recreation as well as thousands of tons of cargo. A variety of circumstances can result in an air transportation incident. Mechanical failure, pilot error, enemy attack, terrorism, weather conditions, and on-board fire can all lead to an incident at or near the airport. Air transportation incidents can occur in remote unpopulated areas, residential areas, or downtown business districts. Incidents involving military, commercial, or private aircraft can also occur while the aircraft is on the ground.

Maximum Extent: More accidents occur during takeoffs and landings. Accordingly, the spatial extent of the majority of the incidents would occur on airport grounds or adjacent areas. Compared to many other hazards, an air transportation accident would occupy a relatively small area. The extent to which the impacts would be felt would depend on the materials involved. For example, if a cargo plane transporting volatile or hazardous substances were involved in an accident, the area of concern would be significantly larger than the area for an accident involving a small personal aircraft carrying stable materials. The largest share of accidents would likely affect only a few city blocks.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.48	0.71	0.32	0.27	1.78

Evaluation Criteria	Description
	According to the National Transportation Board, there have been a total 58 air transportation incidents in Scott County from 1962 to 2010. Nine (9) incidents resulted in 20 fatalities as a result of air transportation incidents within Scott County. This does not include the death of a Marine Corps pilot who on June 29, 1992 during an air show, was involved in a failed take-off wherein the plane left the runway and entered an alfalfa field. The pilot stayed with the plane in order to minimize the damage to the aircraft and public property. Upon ejection the heat and flames of the crash disintegrated his parachute while he was still airborne and caused him to fall headfirst 25 to 30 feet to the ground. This was also the most recent air transportation related fatality in Scott County. There have also been 5 serious injuries and an additional 89 individuals who had minor or no injuries. The largest number of fatalities during an air transportation incident occurred on April 19, 1973 when a commercial flight heading to Chicago experienced a fatigue fracture mid-flight. All six people on board died. It was determined that there was a pre-existing crack on one of the wings that had not been detected in previous inspections.

Evaluation Criteria	Description
	
	Based on the information provided by the National Transportation Board, Scott County is likely to experience over one incident in any given year (100% chance). There is a 19% chance an incident will include a fatality; however there is a high likelihood of multiple fatalities in occurring during those incidents.
	People aboard airplanes are the most vulnerable. Statistics from the National Transportation Safety Board and the airline industry show that the majority (over 75%) of airplane crashes and accidents occur during the takeoff and landing phases of a flight. As a result, developed areas adjacent to the airports and in airport flight paths are particularly vulnerable to this hazard. For areas away from the airport, a smaller percentage of the population would be directly in the area of impact. Because of the infrequency of aircraft in the skies above areas away from the airport, these areas would not be considered as vulnerable. Damages in dollar amounts were not reported; so no estimates on potential loss can be made at this time. Damages would be repairs or replacement of airplanes, repairs to facilities, and medical/legal costs associated with any incident.
	Air transportation incidents are more likely to occur near airport and heliports; however they can occur anywhere in the county. Map III-1 shows the locations of Scott County's airports, heliports and private landing strips. Davenport had 46 incidents from 1962 to 2010 with 7 of those incidents including 18 fatalities. This is largely due to the Davenport Municipal Airport located in northern Davenport. Following is the breakdown of where incidents occurred.

<table>
<tr><th>Evaluation Criteria</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Location</th><th>Number of Incidents</th><th>Fatalities</th><th>Serious Injuries</th><th>Minor or No Injuries</th></tr>
<tr><td>Bettendorf</td><td>1</td><td>0</td><td>0</td><td>2</td></tr>
<tr><td>Davenport</td><td>46</td><td>18</td><td>4</td><td>69</td></tr>
<tr><td>Dixon</td><td>2</td><td>1</td><td>0</td><td>2</td></tr>
<tr><td>Donahue</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Durant</td><td>1</td><td>0</td><td>0</td><td>4</td></tr>
<tr><td>Eldridge</td><td>2</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>LeClaire</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>Maysville</td><td>3</td><td>0</td><td>0</td><td>8</td></tr>
<tr><td>New Liberty</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
</table>
</td></tr>
<tr><td></td><td>The level of severity would depend on the type of aircraft involved, the type of cargo being transported, and the area on the ground on which the accident occurred.

A. Health and safety of persons in affected areas: The lives and health of the pilot, crew, and passengers, and the population on the ground would be at risk. There are very few injuries and fatalities when compared to the number of people involved in travel as a whole, but if there is an accident, it is very likely that the injuries would be serious or fatal.
B. Health and safety of response personnel: Response personnel would likely be exposed to fire hazards and other hazards associated with crashes such as sharp objects, glass, and confined spaces.
C. Continuity of operations: No impact unless the crash affects a critical facility.
D. Property, facilities, and infrastructure: Significant damage can also occur to property on the ground. Often buildings, fences, utility lines, and trees are damaged or destroyed in the event of a plane crash. The cargo aboard the plane that has crashed can also sustain damage or destruction. This too can be extremely costly.
E. Delivery of services: No impact unless the crash affects a critical facility.
F. Environment: Hazardous materials may be on board or result from spilled fuel or fire. Damage would be mostly localized.
G. Economic and financial conditions: Damage to the aircraft itself is costly to the owner in terms of direct value lost and amount lost because the airplane is now out of commission.
H. Regulatory and contractual obligations: None known.
I. Reputation of the entity: Reputation is based on effective and timely response.</td></tr>
<tr><td></td><td>The amount of warning time prior to an aircraft accident could vary from minutes to a matter of seconds. Crew aboard a troubled aircraft can radio to ground crew to prepare for the incident, but little can be done to lessen the direct effects of the impact. Rarely is there adequate time to do more than position onsite response personnel and alert mass casualty care providers of the possible event.</td></tr>
</table>

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
National Transportation Safety Board	*http://www/ntsb.gov*
Federal Aviation Administration	*http://www.faa.gov*
Transportation Security Administration	*http://www.tsa.gov/public*
CBS News Disaster Links	*http://www.cbsnews.com/digitaldan/disaster/disasters.shtml*
USGS Geographic Names Information System	*http://geonames.usgs.gov/domestic/*
Local Sources	*Quad City Times*

Animal/Crop/Plant Disease/Infestation

Definition: An outbreak of disease that can be transmitted from animal to animal or from plant to plant. The disease outbreak will likely have a significant economic implications or public health impact. The crop/plant pest infestation will likely have severe economic implications, cause significant crop losses, or cause significant environmental damage. The crop/plant pests may also have implications for public health.

Description: The introduction of some high consequence diseases may severely limit or eliminate our ability to move, slaughter, and export animals and animal products. The outbreak will have wide spread economic and societal implications for Iowa. Response and recovery to infectious animal disease outbreaks will be lengthy, and many producers may never be able to return to business.

Maximum Extent: There would be many indirect effects to the economy. Rumors of an infectious animal disease outbreak could have significant damage to the markets. Crop/plant pest infestations can cause widespread crop/plant loss and severe economic hardship on farmers and landowners and related businesses. Once infestation occurs, the pest may become endemic causing repeated losses in subsequent growing years. Loss of production will affect all related industries, such as fuel, food, synthetics, processors, etc.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.89	0.49	0.15	0.40	1.93

Evaluation Criteria	Description
	Scott County has not been immune to plant or crop diseases. According to the State Plant Health Director (USDA Animal and Plant Health Inspection Service), the main concerns for plants in the county are infestations from the Gypsy Moth and Emerald Ash Borer. The Gypsy Moth (GM) is a tree pest that affects deciduous trees where the GM defoliates the trees causing the trees to die. The Emerald Ash Borer (EAB) is one of the biggest threats. The EAB only attacks ash trees, none of which are immune to attack in the United States. The larvae of the EAB feed under the bark of the tree causing 100% mortality. The EAB was recently found in Iowa in Allamakee County, Iowa (located in the northeast corner of the state). Luckily the EAB has not been found in Scott County to date. See map for current locations of EAB in the United States. No record of animal disease outbreaks have been recorded in Scott County at this time. Plant Disease outbreaks in Scott County: • In the spring of 1995 there was a nursery that had an infestation of gypsy moth due to receiving infested nursery stock (trees). Fifteen acres were treated with Bacillus *thuringiensis* (bio-pesticide) two times to eradicate the infestation. • In January, 2004, there was a recall of many geraniums across the U.S. due to an infection of *Ralstonia solanacearum race 3, biovar 2*. The infected plants came from a source in Guatemala. The small plants from Guatemala were sent through distributors to greenhouses, where the plants were grown/finished for resale. In Iowa, there were 7,732 plants at 14 establishments that were inspected and sampled and destroyed. In Scott County, there was one establishment with 302 plants that were destroyed. • In the spring of 2004, there was a nursery that had an infestation of gypsy moth due to receiving infested nursery stock (trees). Ten acres were treated with Bacillus *thuringiensis* (bio-pesticide) two times to eradicate the infestation.

<table>
<tr><th>Evaluation Criteria</th><th>Description</th></tr>
<tr><td></td><td>Disease and pests are present in many other areas of the country and world. Many diseases and pests are easily transmitted, therefore the probability of introduction is high. Iowa leads the nation in production of pork, soybeans, eggs, and corn and is among the leading beef production states. With the millions of animals and animal products that move across the state yearly, the probability is high.</td></tr>
<tr><td></td><td>The movement of people, animals, animal products, wildlife, plants, crops, and potential disease/pest vectors could all cause the introduction of diseases/pests. Diseases and pests could also be introduced naturally (i.e. by hurricanes or jet streams).

As of 2007, there were 861 farms in Scott County totaling 248,646 acres (or approximately 289 acres per farm). The main crops grown in the county are: corn for grain, soybeans for beans, forage (hay, haylage, grass silage, and greenchop), corn for silage, and sod harvested. The main livestock inventory for the county was listed as: 120,704 hogs/pigs and 19,183 cattle/calves.

Plant and Crop Diseases
The main crops grown in Scott County are corn, soybeans, and hay (alfalfa). All of these crops are susceptible to diseases. The main animal productions in Scott County are hogs and cattle. The tables below show the common diseases that affect crops and animals. The State of Iowa 2010 Hazard Mitigation Plan stated that approximately $441,728 in crop damages occur annually.

<table>
<tr><th colspan="3">Crop & Plant Diseases</th></tr>
<tr><th>Corn</th><th>Hay (Alfalfa)</th><th>Soybeans</th></tr>
<tr><td>Anthracnose Leaf Spot</td><td>Aphanomyces Root Rot</td><td>Bacterial Blight</td></tr>
<tr><td>Anthracnose Stalk Rot</td><td>Bacterial Wilt</td><td>Bacterial Pustule</td></tr>
<tr><td>Anthracnose Top Dieback</td><td>Crown Rots</td><td>Bean Pod Mottle</td></tr>
<tr><td>Aspergillus Ear Rot</td><td>Downy Mildew</td><td>Brown Stem Rot</td></tr>
<tr><td>Bacterial Stalk Rot</td><td>Fusarium Root Rot</td><td>Cercospora Leaf Blight</td></tr>
<tr><td>Carbonum Leaf Spot</td><td>Fusarium Wilt</td><td>Charcoal Rot</td></tr>
<tr><td>Charcoal Rot</td><td>Leptosphaerulina Leaf Spot</td><td>Downy Mildew</td></tr>
<tr><td>Cladosporium Ear Rot</td><td>Nematodes</td><td>Frogeye Leaf Spot</td></tr>
<tr><td>Common Rust</td><td>Phytophthora Root Rot</td><td>Fusarium Wilt</td></tr>
<tr><td>Common Smut</td><td>Pythium Root Rot</td><td>Phytophthora Root and Stem Rot</td></tr>
<tr><td>Crazy Top</td><td>Seed Rots</td><td>Pod and Stem Blight</td></tr>
<tr><td>Diplodia Ear Rot</td><td>Seedling Blights</td><td>Powdery Mildew</td></tr>
<tr><td>Diplodia Stalk Rot</td><td>Spring Black Stem</td><td>Pythium Root Rot</td></tr>
<tr><td>Eyespot</td><td>Verticillium Wilt</td><td>Rhizoctonia Root Rot</td></tr>
<tr><td>Fusarium Ear Rot</td><td>Wilt Diseases</td><td>Septoria Brown Spot</td></tr>
<tr><td>Fusarium Stalk Rot</td><td></td><td>Soybean Cyst Nematode</td></tr>
<tr><td>Gibberella Ear Rot</td><td></td><td>Soybean Mosaic</td></tr>
<tr><td>Gibberella Stalk Rot</td><td></td><td>Soybean Rust</td></tr>
<tr><td>Goss's Wilt</td><td></td><td>Stem Canker</td></tr>
<tr><td>Gray Leaf Spot</td><td></td><td>Sudden Death Syndrome</td></tr>
<tr><td>Head Smut</td><td></td><td>White Mold</td></tr>
<tr><td>Holcus Leaf Spot</td><td></td><td></td></tr>
<tr><td>Maize Dwarf Mosaic</td><td></td><td></td></tr>
<tr><td>Nematodes</td><td></td><td></td></tr>
<tr><td>Nigrospora Ear Rot</td><td></td><td></td></tr>
<tr><td>Northern Leaf Blight</td><td></td><td></td></tr>
<tr><td>Penicillium Ear Rot</td><td></td><td></td></tr>
<tr><td>Physoderma Brown Spot</td><td></td><td></td></tr>
<tr><td>Pythium Stalk Rot</td><td></td><td></td></tr>
<tr><td>Root Rots</td><td></td><td></td></tr>
</table>
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<table>
<tr><th>Evaluation Criteria</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Corn</th><th></th><th></th></tr>
<tr><td>Seed Decay and Seedling Blight</td><td></td><td></td></tr>
<tr><td>Southern Leaf Blight</td><td></td><td></td></tr>
<tr><td>Southern Rust</td><td></td><td></td></tr>
<tr><td>Stewart's Disease</td><td></td><td></td></tr>
<tr><td>Trichoderma Ear Rot</td><td></td><td></td></tr>
</table>
<table>
<tr><th colspan="3">Animal Diseases (Present in the United States)</th></tr>
<tr><th>Cattle</th><th>Swine</th><th>Multiple Species Diseases</th></tr>
<tr><td>Bovine Anaplasmosis</td><td>Porcine Reproductive and Respiratory Syndrome</td><td>Anthrax</td></tr>
<tr><td>Bovine Genital Campylobacteriosis</td><td>Transmissible Gastroenteritis</td><td>Aujeszky's Disease</td></tr>
<tr><td>Bovine Tuberculosis</td><td></td><td>Bluetongue</td></tr>
<tr><td>Bovine Viral Diarrhea</td><td></td><td>Brucellosis</td></tr>
<tr><td>Enzootic Bovine Leucosis</td><td></td><td>Echinococcosis/Hydatidosis</td></tr>
<tr><td>Infectious Bovine Rhinotracheitis/ Infectious Pustular Vulvovaginitis</td><td></td><td>Leptospirosis</td></tr>
<tr><td>Trichomonosis</td><td></td><td>Paratuberculosis (Johne's Disease)</td></tr>
<tr><td></td><td></td><td>Q Fever</td></tr>
<tr><td></td><td></td><td>Rabies</td></tr>
<tr><td></td><td></td><td>Tularemia</td></tr>
<tr><td></td><td></td><td>West Nile Virus/Encephalitis</td></tr>
</table>
</td></tr>
<tr><td></td><td>The majority of the agriculture is located in the north-west portion of the county, where the majority of the crop diseases could occur. Plant and animal diseases can occur anywhere within the county. See Map III-2 for locations of Emerald Ash Borer in the United States.</td></tr>
<tr><td></td><td>A. Health and safety of persons in affected areas: Depending on the severity and type of diseases and whether or not they could spread to humans, there could be a high risk for health concerns.
B. Health and safety of response personnel: Limited, if any.
C. Continuity of operations: Depending on type and scale of outbreak. A large animal or crop disease could have a major impact on the agricultural industry.
D. Property, facilities, and infrastructure: None directly.
E. Delivery of services: None directly, unless products were coming from quarantined areas.
F. Environment: Could be significant; in the case of the EAB migrating into the county.
G. Economic and financial conditions: Depending on the situation, could have significant losses.
H. Regulatory and contractual obligations: None directly.
I. Reputation of the entity: Depends on how situation is handled.</td></tr>
<tr><td></td><td>If the diseases or pests are highly infectious (many animals that are infected with the disease can be transmitting disease before they show clinical signs), by the time they are discovered, they will likely have spread across the county, state ,or the nation. This will put the county at a severe disadvantage during response and recovery. In the case of pest infestations, it can take years to discover and quarantine the area to prevent further spreading.</td></tr>
</table>

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007* *State Plant Health Director (Mr. Robert Meinders)*
Iowa State University Extension:	*http://www.extension.iastate.edu* *Crown and Root Diseases of Alfalfa, 1996- http://www.extension.iastate.edu/Publications/PM326.pdf* *Crop Management News: "Spring is Time to Check Alfalfa for Foliar Diseases" – http://www.extension.iastate.edu/CropNews/2009/0506yang.htm* *National Corn Handbook Corn Disease Management, 1993- http://www.extension.iastate.edu/Publications/NCH4.pdf* *Corn Field Guide, 2009 - http://www.extension.iastate.edu/Publications/CSI1.pdf* *Soybean Disease and Pest Management Field Guide, 2008- http://www.extension.iastate.edu/Publications/CSI10.pdf* *Integrated Crop Management – Distribution of Soybean Rust Map, 2007- http://www.ipm.iastate.edu/ipm/icm/node/2624* *Extension Field Agronomist, Region 7 (Mr. Virgil Schmitt)*
U.S. Department of Agriculture National Agricultural Statistics Service	*2007 Census of Agriculture, Scott County Iowa Profile – http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Iowa/cp19163.pdf*
U.S Department of Agriculture Animal and Plant Health Inspection Service	*2008 Untied States Animal Health Report - http://www.aphis.usda.gov/animal_health/animal_health_report/downloads/AHR_08/2008_US_Animal_Health_Report.pdf*
U.S. Department of Agriculture Animal and Plant Health Inspection Service	*Emerald Ash Borer Quarantine Map (September 16, 2010) - http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/multistateeab.pdf*

Biological Terrorism

Definition: Use of biological agents against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom.

Description: Liquid or solid contaminants can be dispersed using sprayers/aerosol generators, or by point or line sources such as munitions, covert deposits, and moving sprayers. Biological agents may pose viable threats from hours to years depending upon the agent and the conditions in which it exists. Depending on the agent used and the effectiveness with which it is deployed, contamination can be spread via wind and water. Infections can be spread via human or animal vectors.

Maximum Extent: Because of the characteristics of the weapons terrorists use, the area can be limited to a room, building, or the entire community. Depending on the agent used and the effectiveness with which it is deployed, contamination can spread via wind and water. Infections can be spread via human or animal vectors. Because of the variables described above, the geographic extent can become quite broad before the incident is recognized as a terrorist act.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.89	0.49	0.15	0.40	1.93

Evaluation Criteria	Description
	There have been no known acts of biological terrorism in Scott County.
	Internationally, such acts have become quite commonplace, as various religious, ethnic, and nationalistic groups have attempted to alter and dictate political and social agendas, seek revenge for perceived past wrong doing, or intentionally disrupt the political, social, and economic infrastructure of individual businesses, units of government, or nations. Unfortunately, there will never be a way to totally eliminate all types of these clandestine activities. Persons inclined to cause death and destruction are usually capable of finding a way to carry out their plans. As perpetrators of terrorism improve their ability to collect information, raise money, and issue rhetoric, implementation of effective counter measures becomes even more important; however the probability of an occurrence in Scott County in any given year is unlikely.
	Innocent people are often victims of terrorist activity at certain organizations and activities. Based on the method of delivery, the general public is vulnerable to bioterrorism. State and local agencies developed the Biological Chemical Threat Agent (BCTA) Protocol Model to guide response agencies. The American public is not vaccinated for many of the agents used as weapons by terrorist groups. Iowa vaccinated volunteers against small pox at 15 hospitals in early 2003. The U.S. Postal Service installed Bio-Detection Systems (BDS) in 2005-2006 in several postal sorting facilities in Iowa to address early detection since many of the threats have used the postal system for delivery. No historic data is available to estimate potential losses at this time. Should an incident occur in the future, a estimate of potential loss will be done in the next plan update.
	A biological terrorist attack could happen anywhere within Scott County; however, Scott County would also be vulnerable to attacks within the Quad City Metropolitan Area. This highly populated area in both Illinois and Iowa could cause biological agents to spread more quickly.

Evaluation Criteria	Description
	A. *Health and safety of persons in affected areas:* The intent of the terrorist is to cause fear based on illness, injury, and death. A bioterrorism incident would likely result in illness at a minimum, with multiple deaths and long-term health problems as a worst-case scenario. B. *Health and safety of response personnel:* Responders may not initially be aware that they are responding to a biological incident and may not have the personal protective equipment necessary to protect themselves against the released agent. This could result in injuries, illness, and death among responders at a high rate as well. C. *Continuity of operations:* Indirect effects would be felt, but chain of command could limit the impact. Limited direct impact in a biological incident. D. *Property, facilities, and infrastructure:* E. *Delivery of services:* Critical services could be affected such as health care. Capability of health care services to diagnose and treat a biological agent may severely be limited in rural areas. Most services would be affected by being overwhelmed. F. *Environment:* Biological agents could contaminate soil, air, and water resulting in loss of flora and fauna in the initial targeted area and eventually contaminated by transported biological agents. G. *Economic and financial conditions:* Effects would be far-reaching and severely damaging because of loss of production and long-term disruption of commodity flows. H. *Regulatory and contractual obligations:* None known. I. *Reputation of the entity:* Would be based on the adequacy of the response.
	Acts of terrorism can be immediate and often come after little to no warning. There are occasions when terrorists have warned the targeted organization beforehand, but often the attack comes without previous threat. Terrorists threaten people and facilities through "bomb threats" and other scare tactics. Even if it is a shallow threat, precautions must be taken to ensure the safety of the people and property involved.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Department of Homeland Security	*http://www.dhs.gov/dhspublic*
Iowa Homeland Security	*http://www.iowahomelandsecurity.org*
U.S. Department of Justice	*http://www.fbi.gov/terrorinfo/terrorism.htm*
Emergency Net News	*http://www.emergency.com*
Center for Disease Control	*http://www.bt.cdc.gov*
CBS News Disaster Links	*http://www.cbsnews.com/digitaldan/disaster/disasters.shtml*
The Disaster Center	*http://www.diastercenter.com*
Local Sources	

Chemical Terrorism

Definition: Use or threat of chemical agents against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom.

Description: Liquid/aerosol contaminants can be dispersed using sprayers or other aerosol generators, liquids vaporizing from puddles/containers, or munitions. Chemical agents may pose viable threats for hours to weeks depending on the agent and the conditions in which it exists. Persons, vehicles, water, and wind can carry contamination out of the initial target area. Chemicals may be corrosive or otherwise damaging over time if not mitigated.

Maximum Extent: Persons, vehicles, water, and wind can carry contamination out of the initial target area. The micro-meteorological effects of buildings and terrain can alter travel and duration of agents. The type of chemical, the method of dispersal, and the conditions largely determines the extent at the time it is released.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.49	0.71	0.59	0.37	2.16

Evaluation Criteria	Description
	No known acts of chemical terrorism have occurred in the State of Iowa, only threats and hoaxes. The chemical terrorism history has been limited. Available information has no known record of any such occurrences in Scott County.
	Unfortunately, there will never be a way to totally eliminate all types of these clandestine activities. Persons inclined to cause death and destruction are usually capable of finding a way to carry out their plans. As perpetrators of terrorism improve their ability to collect information, raise money, and issue rhetoric, implementation of effective counter measures becomes even more important. The State Hazard Mitigation Team (SHMT) analysis has evaluated the probability that chemical terrorism will occur in Iowa is between 1% and 10% chance in the next year or at least one chance in the next 100 years.
	Chemical agents may pose viable threats for hours to weeks depending on the agent and the conditions in which it exists. Shielding in the form of sheltering in place can protect people and property from harmful effects. There are no vaccines available to reduce the vulnerability from chemical agents. Due to local of historical occurrences, no potential losses can be estimated.
	Incidents of a terrorist attack can take place anywhere in the county; there is no way of telling where an incident could take place.
	A. *Health and safety of persons in affected areas:* Could be severe. The intent of the terrorist is to cause fear based on illness, injury, and death. B. *Health and safety of response personnel:* Could be severe. The intent of the terrorist is to cause fear based on illness, injury, and death. C. *Continuity of operations:* Depends on location of incident. D. *Property, facilities, and infrastructure:* Chemicals may be corrosive or otherwise damaging over time if not remediated. E. *Delivery of services:* Depends on location of event. F. *Environment:* Air temperature can affect evaporation of aerosols and ground temperatures affect evaporation of liquids. Humidity can enlarge aerosol particles, reducing the inhalation hazard. Precipitation can dilute and disperse agents, but can spread contamination.

Evaluation Criteria	Description
	G. *Economic and financial conditions:* Adverse effects intended in terrorism, but unknown at this time. H. *Regulatory and contractual obligations:* No known impact. I. *Reputation of the entity:* Based on response.
	Acts of terrorism can be immediate and often come after little or no warning. There are occasions where terrorists have warned the targeted organization beforehand, but often the attack comes without previous threat. Even if it is a false threat, precautions must be taken to ensure the safety of the people and property involved.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Davenport Pre-Disaster Mitigation Plan, 2007*

Communications Failure

Definition: The widespread breakdown or disruption of normal communication capabilities. This could include major telephone outages, loss of local government radio facilities, or long-term interruption of electronic broadcast services.

Description: Emergency 9-1-1, law enforcement, fire, emergency medical services, public works, and emergency warning systems are just a few of the vital services that rely on communication systems to effectively protect citizens. Business and industry rely heavily on various communication media as well. Mechanical failure, traffic accidents, power failure, line severance, and weather can affect communication systems and disrupt service. Disruptions and failures can range from localized and temporary to widespread and long-term. If switching stations are affected, outages could be more widespread.

Maximum Extent: Most communications failures would be limited to localized areas. In the event of a widespread communications failure, larger portions of the county would be affected, but this is highly unlikely due to the support of neighboring jurisdictions and secondary communication devices.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.48	0.41	0.59	0.28	1.76

Evaluation Criteria	Description
	No widespread communications failures have occurred in Iowa, according to the State of Iowa Hazard Mitigation Plan, 2007. Local incidents due to weather conditions, equipment failure, excavation incidents, and traffic accidents have been reported, but outages have usually been resolved in a timely manner. There have also been isolated incidents of loss of partial communications functions due to system upgrades. None of the incidents have ever been completely without communications; there is always a backup available in the county.
	Widespread communications losses are unlikely due to backup systems and redundant system designs. Local communications failures are likely to only affect areas for a short period of time and be contained to smaller areas.
	Citizens of the county would be mainly affected indirectly. However, phone and data transmission could impact citizens more directly. Most communication systems that are highly necessary have backup and redundant designs to provide continuity of service. Potential damages caused by communication failure would be negligible.
	All areas of the county can be affected; communication systems run throughout the entire county and are all susceptible to failure from time to time.
	A. *Health and safety of persons in affected areas:* A communications failure would not directly result in injuries or fatalities. If 9-1-1 systems were to fail due to phone communication disruption, secondary effects could occur by the inability of citizens to alert responders of their needs for assistance. B. *Health and safety of response personnel:* None directly. C. *Continuity of operations:* Inter-agency and intra-agency communications would be limited. Data transmission could also be affected. D. *Property, facilities, and infrastructure:* Financial losses would be incurred due to the direct damage to electronic equipment and the communications infrastructure. E. *Delivery of services:* If 9-1-1 systems were to fail due to phone communications disruptions, secondary effects could occur by the inability of citizens to alert responders

Evaluation Criteria	Description
	of their needs. The event of a full system overload is reduced by having more than one service provider. F. *Environment:* None directly. Failed communications could result in malfunctioning systems and potential does exist for facilities to discharge hazardous materials into the environment. G. *Economic and financial conditions:* Most economic effects would be felt on those sectors dependent upon the communication system. This could result in multi-sector far reaching effects due to business disruption. H. *Regulatory and contractual obligations:* None known. I. *Reputation of the entity:* Widespread communication failures could moderately harm the reputation of affected jurisdictions. If 9-1-1 systems are affected, the reputation damage could be more serious.
	A communications failure would likely occur with little or no warning. It is usually impossible to predict a communications failure. Some communications may be shut down for a short while for improvements or maintenance. These disruptions are usually made during periods of low demand and those who rely on them are given previous notice that the system will be out of service.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
Local Sources	*Scott County EMA; Police Departments*

Conventional Terrorism

Definition: Use of conventional weapons and explosives against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom.

Description: Detonation of explosive device on or near target; delivery via person, vehicle, or projectile. Hazard effects are instantaneous. Additional secondary devices may be used, lengthening the duration of the hazard until the attack site is determined clear. The extent of damage is determined by the type and quantity of explosive. Effects are generally static other than cascading consequences, incremental structural failures, etc. Conventional terrorism can also include tactical assault or sniping from remote locations.

Maximum Extent: Extent of damage is determined by type and quantity of explosive. Effects are generally static other than cascading consequences, incremental structural failure, etc.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.46	0.43	0.32	0.17	1.38

Evaluation Criteria	Description
	There has only been one incident of conventional terrorism in Scott County. In 2002, as part of a nationwide mailbox bombing plot, Scott County was target of one attack in rural Northwest Davenport. Luckily the device did not detonate and no one was injured, unlike nearby counties where postal workers were injured in the explosions. May 3, 2002 – One incident in part of a nationwide string of mailbox bombings (Davenport).
	Unfortunately, there will never be a way to totally eliminate all types of these clandestine activities. Persons inclined to cause death and destruction are usually capable of finding a way to carry out their plans. As perpetrators of terrorism improve their ability to collect information, raise money, and issue rhetoric, implementation of effective counter measures becomes even more important. Acts of Conventional Terrorism are unlikely to occur in Scott County in any given year.
	Energy decreases logarithmically as a function of distance from the seat of the blast. Terrain, forestation, structures, etc. can provide shielding by absorbing or deflecting energy and debris. Exacerbating conditions include ease of access to the target, lack of barriers/shielding, poor construction, and ease of concealment of the device. Damages were not reported with the 2002 mailbox bombing so no estimate of potential loss is available at this time. Damages could range from negligible to catastrophic depending on individual incidents.
	Incidents of a terrorist attack can take place anywhere in the county. There is no way of telling where an incident could take place.

	A. *Health and safety of persons in affected areas:* Property damage and injuries are almost certain outcomes if a conventional bomb is detonated in a developed or populated area. B. *Health and safety of response personnel:* Could be severe. C. *Continuity of operations:* Depends on location of incident. D. *Property, facilities, and infrastructure:* Damage and/or destruction likely intent of terrorist event. E. *Delivery of services:* Depends on location of incident. F. *Environment:* Depends on scope and location of incident. G. *Economic and financial conditions:* Threats and scares have psychological effects and disrupt activities at a cost to productivity. H. *Regulatory and contractual obligations:* No known impact. I. *Reputation of the entity:* No known impact.
	Explosions are usually instantaneous. Additional secondary devices may be used, lengthening the duration of the hazard until the attack site is determined to be clear.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
Local Sources	*Scott County Sheriff's Department*

Cyber Terrorism

Definition: Electronic attack using one computer system against another in order to intimidate people or disrupt other systems.

Description: Cyber terrorism may last from minutes to days depending upon the type of intrusion, disruption, or infection. Generally there are no direct effects on the built environment, but secondary effects may be felt depending upon the system being terrorized. Inadequate security can facilitate access to critical computer systems, allowing them to be used to conduct attacks.

Maximum Extent: Our society is highly networked and interconnected. An attack could be launched from anywhere in the world and could cause effects as small as a computer lab to as large as the World Wide Web.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weight Score**
0.84	0.64	0.59	0.29	2.36

Evaluation Criteria	Description
Historical Occurrence	Cyber-security and critical infrastructure protection are among the most important national security issues facing our country today, and they will only become more challenging in the years to come. Recent attacks on our infrastructure components have taught us that security has been a relatively low priority in the development of computer software and Internet systems. These attacks not only have disrupted electronic commerce, but also have had a debilitating effect on public confidence in the Internet and/or the business that was affected by the security breech.
Probability	Security experts describe the threat as eminent and highly likely to occur in any given year in Scott County. The level of success or damage will vary greatly. Intrusion detection systems log thousands of attempts in a single month. There are constant probes by individuals and groups with intent to cause anything from total system shutdown to simply "seeing if they can do it."
Vulnerability	Security professionals argue that current approaches to preventing cyber terrorism are inadequate. With companies increasingly using the Internet to connect to suppliers and customers, they say organizations place too much faith in technology to protect their data and do not pay enough attention to security education and awareness. Inadequate security can facilitate access to critical computer systems, allowing them to be used to conduct attacks. No accurate method of estimating potential losses related to cyber terrorism is available at this time for Scott County; however this will be reviewed for the next plain update.
Location	A cyber attack could occur anywhere within Scott County including personal computers, businesses, industries, and government systems.
Severity	A. *Health and safety of persons in affected areas:* No direct loss of life. Indirect injuries or deaths may result from secondary effects to critical life sustaining sectors such as energy, water, etc. B. *Health and safety of response personnel:* None directly. C. *Continuity of operations:* Severe effects to continuity of operations could result if cyber-attack reached critical operational systems or systems that were needed to carry out the operation.

Evaluation Criteria	Description
	D. *Property, facilities, and infrastructure:* Effects can range from annoyance to complete shutdown of critical infrastructures due to infiltration of supervisory control and data acquisition (SCADA) systems. Secondary effects could affect welfare of people and property by denying services or providing false readings. E. *Delivery of services:* Only effects would result if system was infiltrated and directed to malfunction by self-destructing, overloading, etc. F. *Environment:* Generally there are no direct effects on the built environment. G. *Economic and financial conditions:* Because of the heavy reliance on the electronic transfer of economic and commercial information, the economy could be effected because of communication difficulties. H. *Regulatory and contractual obligations:* No significant effects other than the possible elimination of electronic records or regulatory and contractual obligations. I. *Reputation of the entity:* If exposed vulnerabilities were known and not reduced or eliminated before the attack, the entity would suffer major damage to their reputation for not taking action before the incident.
Speed of Onset	Because of the networks (formal and informal) that exist to share intrusion attempts and effects, warnings can be put out in advance to alert those in similar situations to take protective security recommendations such as updating virus detection software, making sure security patches are in place, etc. Warning times can range from no warnings to days. Because of our highly evolved computer networks and data sharing, bugs, viruses, and worms can proliferate rapidly. Effects of hacking can be instantaneous.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Cyber Terrorism	*http://csciwww.etsu.edu/gotterbarn/stdntppr/*

Fixed-Hazardous Materials Incident

Definition: Accidental release of chemical substances or mixtures that presents danger to the public health or safety during production or handling at a fixed facility.

Description: A hazardous substance is one that may cause damage to persons, property, or the environment when released to soil, water, or air. Chemicals are manufactured and used in ever increasing types and quantities. As many as 500,000 products pose physical or health hazards and can be defined as "hazardous chemicals." Each year, over 1,000 new synthetic chemicals are introduced. Hazardous substances are categorized as toxic, corrosive, flammable, irritating, or explosive. Hazardous materials incidents generally affect a localized area and the use of planning and zoning can minimize the area of impact.

Maximum Extent: Most of the hazardous materials incidents are localized and are quickly contained or stabilized by the highly-trained fire departments and hazardous materials teams. Depending on the characteristics of the hazardous material or the volume of the product involved, the affected area can be as small as a room in a building or as large as 5 square miles or more. Many times, additional regions outside the immediately affected area are evacuated for precautionary reasons. More widespread effects occur when the product contaminates the municipal water supply or water system such as a river, lake, or aquifer.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
1.33	0.50	0.59	0.28	2.70

Evaluation Criteria	Description
	According to the Iowa Department of Natural Resources Chemical Spills Report Database, 327 chemical spills were reported at fixed facilities within Scott County between 1995 and February of 2010. Costs associated with spill clean-ups were not reported.
	There are 152 sites in Scott County that because of the volume or toxicity of the materials on-site are designated as Tier II facilities under the Superfund Amendments and Reauthorization Act. Despite increasing safeguards, more and more potentially hazardous materials are being used in commercial, agricultural, and domestic activities. Based on information provided from the Iowa Department of Natural Recourses Chemical Spills Report Database, the City of Davenport has the highest probability of a hazardous materials incident at a fixed facility. The table below shows the number of hazardous materials incidents at a fixed facility between 1995 and February of 2010 by jurisdiction and the average number of incidents per year.

Jurisdiction	Fixed Hazardous Materials Incidents	Average Number of Incidents per Year
City of Bettendorf	82	5.79
City of Blue Grass	3	0.21
City of Buffalo	8	0.56
City of Davenport	152	10.73
City of Dixon	3	0.21

<table>
<tr><th>Evaluation Criteria</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Jurisdiction</th><th>Fixed Hazardous Materials Incidents</th><th>Average Number of Incidents per Year</th></tr>
<tr><td>City of Donahue</td><td>1</td><td>0.07</td></tr>
<tr><td>City of Eldridge</td><td>16</td><td>1.13</td></tr>
<tr><td>City of LeClaire</td><td>9</td><td>0.64</td></tr>
<tr><td>City of Long Grove</td><td>3</td><td>0.21</td></tr>
<tr><td>City of Maysville</td><td>1</td><td>0.07</td></tr>
<tr><td>City of McCausland</td><td>2</td><td>0.14</td></tr>
<tr><td>City of New Liberty</td><td>1</td><td>0.07</td></tr>
<tr><td>City of Panorama Park</td><td>0</td><td>0.00</td></tr>
<tr><td>City of Princeton</td><td>6</td><td>0.42</td></tr>
<tr><td>City of Riverdale</td><td>14</td><td>0.99</td></tr>
<tr><td>City of Walcott</td><td>15</td><td>1.06</td></tr>
<tr><td>Unincorporated Area</td><td>11</td><td>0.78</td></tr>
</table>
</td></tr>
<tr><td></td><td>A hazardous materials incident can occur almost anywhere, so any area is considered vulnerable to an incident. People, pets, livestock, and vegetation in close proximity to facilities producing, storing, or transporting hazardous substances are at a higher risk. Populations downstream, downwind, and downhill of a released substance are particularly vulnerable. Depending on the characteristics of the substance released, a larger area may be in danger from explosion, absorption, injection, ingestion, or inhalation. Occupants of areas previously contaminated by a persistent material may also be harmed either directly or through consumption of contaminated food and water. Facilities are required to have an off-site consequence plan that addresses the population of the surrounding area. Responding personnel are required to be trained to HAZMAT operations level to respond to the scene, and those personnel that come into direct contact with substances released are required to have HAZMAT technician level training. Costs of the hazardous materials incidents were not reported; therefore it is difficult to estimate the potential loss or structures that would be damaged.</td></tr>
<tr><td></td><td>There are 152 registered Tier II facilities within Scott County. Extremely Hazardous Substances and are shown by general location in Map III-7. The majority of facilities are located within the City of Davenport, which also has the largest amount of industrial land. Other jurisdictions with a larger portion of the fixed-hazardous materials facilities include the Cities of Bettendorf, Eldridge, and Walcott. Fixed-hazardous material facilities within Scott County tend to cluster along the railroads as well as major highways and interstates.</td></tr>
<tr><td></td><td>A. Health and safety of persons in affected areas: The release of some toxic gases may cause immediate death, disablement, or sickness if absorbed through the skin, injected, ingested, or inhaled. Some chemicals may cause painful and damaging burns to skin if they come in direct contact with your body.
B. Health and safety of response personnel: Specialized training is needed to respond to these types of incidents. If inadequately trained personnel attempt to respond, the effects could be the same as those for the general public exposed to the toxic materials. Proper training and equipment greatly reduce the risk to response personnel.
C. Continuity of operations: None directly unless the incident occurs on or near critical facilities or services.
D. Property, facilities, and infrastructure: Damage is usually limited to the immediate property involved. Proper decontamination is needed before facilities go back in service.</td></tr>
</table>

Evaluation Criteria	Description
	E. *Delivery of services:* Contaminated water resources may be unsafe and unusable, depending on the amount of contaminant. F. *Environment:* Contamination of air, ground, or water may result in harm to fish, wildlife, livestock, and crops. The release of hazardous materials into the environment may cause debilitation, disease, or birth defects over a long period of time. G. *Economic and financial conditions:* Loss of livestock and crops may lead to economic hardships within the communities. H. *Regulatory and contractual obligations:* None known. I. *Reputation of the entity:* Safe and timely response will greatly limit any damage to the jurisdiction's reputation. Proper warning and public information before, during, and after the incident can also limit reputation damage.
	When managed properly under regulations, hazardous materials pose little risk; however when handled improperly or in the event of an accident, hazardous materials can pose a significant risk to the population. Hazardous materials incidents usually occur very rapidly with little to no warning. Even if reported immediately, people in the area of the release have very little time to be warned and evacuated safely. Public address systems, television, radio, and the NOAA Weather Alert Radios are used to disseminate emergency messages about hazardous materials incidents.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Iowa Department of Natural Resources	*Iowa Tier II Emergency and Hazardous Chemical Inventory Database* *Chemical Spills Reporting Database 1/1/1995-2/15/2010*

Fixed-Radiological Incident

Definition: An incident resulting in a release of radiological or nuclear material at a fixed facility to include power plants, hospitals, laboratories, and other facilities that employ radiological materials.

Description: Although the term "nuclear accident" has no strict technical definition, it generally refers to events involving the release of significant levels of radiation. Most commercial nuclear facilities in the United States were developed in the mid-1960s and are designed to withstand aircraft attack. Therefore, they should withstand most natural hazards even though they may not have been specifically designed for those forces. Medical facilities may also have radiological materials on site.

Maximum Extent: In 30 years of nuclear power production in the United States, no deaths or serious injuries from radiation have been recorded among the general public. Except in a nuclear detonation, exposure to large amounts of radiation is less likely to cause large-scale damage, death, and injury than many of the conventional occurring radiation such as radon. According to the USGS, all of Iowa has a high potential to geologic radon.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.45	0.80	0.38	0.28	1.91

Evaluation Criteria	Description
Historical Occurrence	Emergency incidents are divided into four categories. Each calls for a certain level of response from plant and government personnel. From least to most severe, the classifications are: unusual event, alert, site area emergency, and general emergency. Since 1990, the Quad Cities Nuclear Power Plant has had 17 unusual events, 7 alerts, and no site area emergencies or general emergencies.
Probability	All operators of facilities that use radioactive materials and transporters of radioactive waste are circumspect in the packaging, handling, and shipment of radioactive waste, and also, since they are closely regulated by a variety of federal, state, and local organizations, the likelihood of an incident is remote. Hospital facilities in Davenport that have radiological materials have recently upgraded facilities to avoid future incidents. The State Hazard Mitigation Team (SHTM) has estimated that the probability of a fixed-radiological incident occurring in Iowa in the next 100 years is less than 1%.
Vulnerability	Radiation exposure from the sun, radioactive elements in the soil and rocks, household appliances, and medical and dental x-rays account for most radiation exposure sources. Natural background radiation accounts for 71% of radiation exposure sources in the U.S. Radon from rocks and soil provide 55% of all sources of radiation in the U.S. Cracked, poorly ventilated basements can contain high levels of radon and as a result, increase exposure household residents and those that spend a significant amount of time in the contaminated basement. Other sources of radioactive materials include medical products, industrial products, nuclear power plant fuel, nuclear weapons, and radioactive waste from hospitals, laboratories, nuclear reactors, and military facilities. An incident is not likely to cause much damage to physical property; however the effects to human health and the environment would be catastrophic.

Evaluation Criteria	Description
Location	Scott County does not have a nuclear power plant located within the county borders. However, the Quad Cities Nuclear Power Plant is located across the Mississippi River from Scott County in Cordova, Illinois. Map III-8 shows a 10-mile radius from the Cordova Nuclear Power Plant in addition to two local hospitals and two businesses that use radioactive materials in their processing.
Severity	A. *Health and safety of persons in affected areas:* Depending on the level of exposure, radiation can cause loss of life and long and short-term health effects. Time, distance, and shielding minimize radiation exposure to the body. Nuclear radiation above normal levels could be a health and safety consideration because of its ability to damage human cells biologically. B. *Health and safety of response personnel:* Specialized training is needed to respond to these types of incidents. If inadequately trained personnel attempt to respond, the effects could be the same as those for the general public exposed to toxic materials. Proper training and equipment greatly reduce the risk to response personnel. C. *Continuity of operations:* None directly. D. *Property, facilities, and infrastructure:* Property damage can result from contamination and disruption of business because of evacuations. E. *Delivery of services:* Power plants may be taken off line for extended periods of time. Other effects would be indirect and only if in the contaminated area. F. *Environment:* Damage to the environment can be very long-lasting depending on the half-life of the products involved. G. *Economic and financial conditions:* If the land and facilities cannot be used for weeks, months, or even years, the loss of production would be devastating. Economic effects would be multi-sector and long lasting, especially in and around the affected region. H. *Regulatory and contractual obligations:* Indemnification would be a vital issue to address. Because of the ownership of the facility by the private sector, the courts would have to address all of the diverse issues related to damages direct and indirect. I. *Reputation of the entity:* Reputation of the county can be very damaging because of the high profile of these events. The negative impact can be felt for decades following a contamination.
Speed of Onset	Ionizing radiation cannot be seen, smelled, heard, or detected with human senses. Detection instruments are needed to indicate the existence of dangerous radiation. Distance from the incident would dictate the amount of time needed to avoid exposure from damaging radiation. Protective actions directed by state, county, and city officials would depend upon weather conditions and developments at the power plant. In an actual emergency, the public can turn to their local Emergency Alert System Station or NOAA Weather Radio.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*

Highway Transportation Incident

Definition: A single or multi-vehicle incident that results in property damage and/or death(s)/injury(s).

Description: An extensive surface transportation network exists in Iowa. Local residents, travelers, business, and industries rely on this network on a daily basis. Thousands of trips per day are made on the streets, roads, highways, and interstates in the state. If the designed capacity of the roadway is exceeded, the potential for a major highway incident increases. Weather conditions play a major factor in the ability of traffic to flow safely in and through the state as does the time of day (rush hour) and day of week. Incidents involving buses and other high-occupancy vehicles could trigger a response that exceeds the normal day-to-day capabilities of response agencies.

Maximum Extent: Highway incidents are usually contained to areas on the roadway or directly adjacent to the roadway. Very few highway incidents affect areas outside the traveled portion of the road and the right-of-way. Extensive segments of the transportation system can be affected during significant weather events, such as a large snowstorm, where multiple separate accidents occur. The area of impact can extend beyond the localized area if the vehicle(s) involved are transporting hazardous materials.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
1.47	0.32	0.60	0.19	2.58

Evaluation Criteria	Description
Historical Occurrence	Numerous major and minor traffic accidents occur each year in Scott County and result in property damage and/or death(s)/injury(s). Major accidents involving multiple vehicles and serious injury unfortunately are not uncommon. In 2009, there were a total of 3,962 traffic accidents, resulting in a total number of 1,603 injuries. Of those injuries there were 97 major injuries, 476 minor injuries, 1,040 possible and/or unknown injuries. There were 14 fatalities. Speed was the most frequent factor in injuries and deaths from accidents.
Probability	Although traffic engineering, inspection of traffic facilities, land use management of areas adjacent to roads and highways, and the readiness of local response agencies have increased, highway incidents continue to occur. As the volume of traffic on the county streets, highways, and interstates increases, the number of traffic accidents will likely also increase. The combination of large numbers of people on the road, wildlife, unpredictable weather conditions, potential mechanical problems, and human error always leaves the potential for a transportation accident highly likely.
Vulnerability	Those who use the surface transportation system are most vulnerable. Travelers, truckers, delivery personnel, and commuters are at risk at all times they are on the road. During rush hours and holidays, the number of people on the road in Scott County is significantly higher. This is also true before major gatherings such as sporting events, concerts, and conventions. Pedestrians and citizens of the community are less vulnerable but still not immune from the effects of a highway incident. A November 2011 report prepared by Cambridge Systematics for AAA stated that the annual cost of crashes per person in cities under 500,000 is $1,778.

<table>
<tr><th>Evaluation Criteria</th><th>Description</th></tr>
<tr><td>Location</td><td>A highway transportation incident can happen on any road in Scott County or in adjacent property. As shown in Map III-9a and Map III-9b, U.S. HWY 61, U.S. 6, U.S. 67, I-74, and I-80 were common roads where incidents occurred. Incidents are more likely to occur in areas with denser population, more roads, and increased transportation. As seen in Map III-9b, a large proportion of incidents happened within Davenport and Bettendorf. The table below breaks down the number of incidents by jurisdiction and severity.
<table>
<tr><th>Place</th><th>Crashes</th><th>Fatalities</th><th>Injuries</th><th>Major Injuries</th><th>Minor Injuries</th><th>Possible Injuries</th><th>Unknown Injuries</th></tr>
<tr><td>Unincorporated Scott Co.</td><td>338</td><td>4</td><td>112</td><td>12</td><td>37</td><td>62</td><td>1</td></tr>
<tr><td>Bettendorf</td><td>544</td><td>1</td><td>233</td><td>9</td><td>85</td><td>139</td><td>0</td></tr>
<tr><td>Blue Grass</td><td>4</td><td>0</td><td>4</td><td>1</td><td>2</td><td>1</td><td>0</td></tr>
<tr><td>Buffalo</td><td>11</td><td>0</td><td>5</td><td>1</td><td>0</td><td>4</td><td>0</td></tr>
<tr><td>Davenport</td><td>2960</td><td>6</td><td>1223</td><td>73</td><td>341</td><td>774</td><td>35</td></tr>
<tr><td>Donahue</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Eldridge</td><td>54</td><td>0</td><td>14</td><td>0</td><td>5</td><td>7</td><td>2</td></tr>
<tr><td>LeClaire</td><td>21</td><td>3</td><td>5</td><td>1</td><td>2</td><td>2</td><td>0</td></tr>
<tr><td>Long Grove</td><td>3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Princeton</td><td>5</td><td>0</td><td>2</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Riverdale</td><td>9</td><td>0</td><td>2</td><td>0</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td>Walcott</td><td>12</td><td>0</td><td>3</td><td>0</td><td>2</td><td>1</td><td>0</td></tr>
</table>
Source: Iowa DOT, Office of Traffic and Safety. Areas Selected Using a Spatial Join of crashes to Corporate Limits using ArcMap (GIS).</td></tr>
<tr><td>Severity</td><td>A. Health and safety of persons in affected areas: Highway incidents threaten the health and lives of people in the vehicles, pedestrians, and citizens of the community if hazardous materials are involved. Mass causality events can occur if mass transit vehicles are involved. Community bus lines, metro transit buses, and school buses have a good safety record, but accidents can and do still occur. Numerous injuries are a very real possibility in situations involving mass transit vehicles.
B. Health and safety of response personnel: Response personnel are certainly not immune to traffic accidents. Because of the number of hours that law enforcement are on the road, they have a higher risk than do other response personnel.
C. Continuity of operations: No significant impact
D. Property, facilities, and infrastructure: Property damage would be limited to vehicles and cargo involved; roads, bridges, and other infrastructure; utilities such as light and power poles; and third-party property adjacent to the accident scene such as buildings and yards.
E. Delivery of services: No significant effects. There may be short-term localized effects if utility poles are affected.
F. Environment: Fuel and other fluids can be spilled from the affected vehicles and affect the environment. If hazardous material hauling vehicles are involved, the impact could be much greater. Thousands of gallons or pounds of product can be released to the environment if the container is damaged.
G. Economic and financial conditions: No significant impact other than business disruption of those in the affected area.
H. Regulatory and contractual obligations: None known.
I. Reputation of the entity: Unfortunately, these incidents occur very frequently and are not a significant impact on the reputation of the jurisdiction.</td></tr>
<tr><td>Speed of Onset</td><td>There is usually no warning of highway incidents. During snow storms and other weather events that may impede travel, travelers, response agencies, and hospitals alike can be notified of hazardous travel conditions.</td></tr>
</table>

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Iowa Department of Transportation	*http://www.dot.state.ia.us/sitemap.htm#safety*
National Transportation Safety Board	*http://www.ntsb.gov*
National Highway Traffic Safety Administration	*http://www.nhtsa.dot.gov*
Iowa Department of Public Safety	*http://www.state.ia.us/government/dps/isp/*
AAA Crashes vs. Congestion Report	http://www.camsys.com/pubs/2011_AAA_CrashvCongUpd.pdf
CBS News Disaster Links	*http://www.cbsnews.com/digitaldan/disaster/disasters/shtml*
The Disaster Center	*http://www.disastercenter.com*

Human Disease Incident

Definition: A medical, health, or sanitation threat to the general public (such as contamination, epidemics, plagues, and insect infestation).

Description: Public health action to control infectious diseases in the 21st century is based on the 19th century discovery of microorganisms as the cause of many serious diseases (e.g. cholera and Tuberculosis). Disease control has resulted from improvements in sanitation and hygiene, the discovery of antibiotics, and the implementation of universal childhood vaccination programs. Scientific and technologic advances have played a major role in each of these areas and are the foundation for disease surveillance and control systems today. Scientific findings also have contributed to a new understanding of the evolving relation between humans and microbes. As of January 1, 2000, a total of 60 infectious diseases were designated as notifiable at the national level. A notifiable disease is one for which regular, frequent, and timely information regarding individual cases is considered necessary for the prevention and control of the disease.

Maximum Extent: Because of our highly mobile society, these diseases can move rapidly across the state and across the nation within days, weeks, or months.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.54	0.59	0.34	0.39	1.85

Evaluation Criteria	Description
	Main concerns in Scott County include West Nile Virus and Lyme disease; both of which are transmitted by insects. West Nile virus is transmitted by infected mosquitoes and can cause meningitis or encephalitis in some individuals. There is no vaccination available for West Nile virus, the best way to prevent contracting West Nile is to use insect repellent, wear long sleeve clothing, and avoid high mosquito activity hours (dawn and dusk). The Scott County Health Department works in conjunction with Iowa State University to monitor and test for infected mosquitoes in the county; the yearly cost is $2,500. Scott County has not had a confirmed case of West Nile since 2005. Lyme disease is caused by the bacterium transmitted by infected blacklegged ticks. Symptoms of Lyme disease include fever, headache, fatigue, and skin rash. The best way to prevent Lyme disease is to use insect repellent, remove ticks promptly, and keeping yards cleaned up of brush and weeds. The risk of human infection is the greatest in late spring and summer. Scott County averages 5 cases of Lyme disease per year. Scott County does not have a Lyme disease program; they partner with Iowa State University who tests for Lyme disease on ticks that have been collected off people. The county does not run or pay for this program. The table below shows confirmed cases of both West Nile virus and Lyme disease in Scott County. Scott County has also had past incidents of food borne disease outbreaks and the Norovirus outbreak, none of which have been out of the ordinary or that could not be handled by the county's protocols.

Year	West Nile Virus Confirmed Cases	Lyme Disease Confirmed Cases
2000	n/a	0
2001	0	3
2002	3	7
2003	2	8

<table>
<tr><th>Evaluation Criteria</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Year</th><th>West Nile Virus Confirmed Cases</th><th>Lyme Disease Confirmed Cases</th></tr>
<tr><td>2004</td><td>0</td><td>6</td></tr>
<tr><td>2005</td><td>1</td><td>3</td></tr>
<tr><td>2006</td><td>0</td><td>5</td></tr>
<tr><td>2007</td><td>0</td><td>6</td></tr>
<tr><td>2008</td><td>0</td><td>9</td></tr>
<tr><td>2009</td><td>0</td><td>11</td></tr>
</table>
</td></tr>
<tr><td></td><td>Public health agencies work to protect Iowans from infectious diseases and preserve the health and safety of Iowans through disease surveillance, investigation of suspect outbreaks, education, and consultation to county, local, and public health agencies.</td></tr>
<tr><td></td><td>Public health agencies also work to reduce the impact of communicable diseases in Iowa and to eliminate the morbidity associated with these diseases. Programs guide community-based prevention planning, monitor current infectious disease trends, prevent transmission of infectious diseases, provide early detection and treatment for infected persons, and ensure access to health care for refugees in Iowa. While vaccines are available for many diseases, Iowans remain vulnerable to other diseases known and unknown. The 2010 State of Iowa Hazard Mitigation Plan states that $2,500 in monitoring mosquitoes for West Nile Virus. This does not include the costs of spraying or any other forms of human disease incidents.</td></tr>
<tr><td></td><td>Incident of disease can occur in every part of the county, it is not isolated to a particular area. Infected insects can be everywhere. Ideal conditions for those insects to be can be reduced by taking the proper precautions (i.e. application of insect repellant) resulting in reducing chances of an infection.</td></tr>
<tr><td></td><td>A. Health and safety of persons in affected areas: Many of the diseases on the national notification list result in serious illness if not death. Some are treatable; however only the symptoms of other diseases are treatable.
B. Health and safety of response personnel: Doctors, nurses, paramedics, and emergency medical technicians are vulnerable to contagious diseases. Universal precautions can greatly diminish the transfer rate and risk to responders to human disease.
C. Continuity of operations: Minor.
D. Property, facilities, and infrastructure: None.
E. Delivery of services: Limited impact on critical services. Healthcare services may be at the limits of capacity.
F. Environment: No direct impact.
G. Economic and financial conditions: No direct impact, but large outbreaks may warrant travel and advisories to the area and will affect tourism and general commerce in the area.
H. Regulatory and contractual obligations: None known.
I. Reputation of the entity: Adequate disease prevention programs and response to the outbreak can limit the damage to the jurisdiction’s reputation.</td></tr>
<tr><td></td><td>The private practitioner is the first line of defense and will undoubtedly be the first to witness the symptoms of human disease incidents. The Scott County Health Department, Iowa Department of Public Health and the Centers for Disease Control (CDC) monitors reports submitted by doctors, hospitals, and labs to identify patterns. The Scott County Health Department, Iowa Department of Public Health, and CDC are proactive in providing information to the health care community on medical concerns.</td></tr>
</table>

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
Center for Disease Control	*www.cdc.gov*
U.S. Geological Survey	*http://diseasemaps.usgs.gov/wnv_ia_human.html*
Local Sources	*Scott County Health Department*

Human Disease Pandemic

Definition: A pandemic disease is defined as a disease that has spread around the world to many people.

Description: Pandemic refers to a microbe that has the ability to spread across the world. The word "pandemic" means that a disease has caused illness in a person on nearly every continent. Many diseases throughout the history of the world have been pandemics. Examples are HIV/AIDS, and Influenza/H1N1. A pandemic disease will have wide spread economic and societal implications for Scott County. Response and recovery to a pandemic disease will likely be lengthy.

Maximum Extent: Because of our highly mobile society, diseases can move rapidly across the county, state, and nation within days, weeks, or months.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.46	0.89	0.15	0.39	1.90

Evaluation Criteria	Description
Historical Occurrence	Pandemics of influenza have occurred three times about every 100 years. From 1900-2000, there were three influenza pandemics, all about 30 years apart. Reports of a new strain of influenza, known as H1N1, were first reported in April of 2009. While individual cases were not tracked in Scott County, there has been one known death from H1N1 within Scott County. AIDS has been a reportable disease in Iowa since 1983. Diagnoses of AIDS peaked in 1992 coinciding with the change in the definition of AIDS. The advent of highly active antiretroviral therapy sparked a dramatic decline in diagnoses of AIDS from 1995 – 1998. After reaching a low in 1998, the number of diagnosed AIDS cases increased to an annual average of 77 cases through 2005. Deaths of persons with HIV/AIDS declined from 1995 until 1998, when 17 deaths were reported. The number of deaths rebounded somewhat after 1998 but peaked in 2002 at 34. This rebound may indicate that while HAART therapy was initially effective for some people, it may have only delayed death for a period of time for those who were late in the course of the disease. The reporting of HIV-infected persons began in 1998. HIV diagnoses in Iowa averaged 102 annually for the 10 years from 1997 to 2007. There were 128 diagnoses in 2007, the most since HIV reporting began. On December 31, 2007, 1,522 Iowans are reported to be living with HIV or AIDS. The Iowa Department of Public Health estimates that another 566 persons are infected but have not yet been diagnosed. This estimation is based in part on estimates from the Centers for Disease Control (CDC) that as many as 25% of persons who are infected with HIV may be undiagnosed. According to the Iowa Department of Public Health, 157 people in Scott County are living with HIV or AIDS as of the end of 2007.
Probability	Public health agencies work to protect Iowans from infectious diseases and preserve the health and safety of Iowans through disease surveillance, investigation of suspect outbreaks, education, and consultation to county, local, and public/private agencies. Historically influenza pandemics occur every 30 years, and since H1N1 is the most recent influenza pandemic, another flu pandemic is not likely to occur in the near future. There has been an upward trend in HIV infection diagnoses in recent years. The 128 HIV infection diagnoses in 2007 equate to 4.3 per 100,000 people. This is 14% increase from 2006 numbers. Males accounted for 84% of new diagnoses in 2007. New diagnoses between the ages of 25 and 44

Evaluation Criteria	Description
	were 59%; however the number of diagnoses of those 45 years old and older has more than doubled since 2003. In 2007 86% of HIV diagnoses were from U.S.-born persons compared to only 70% in 2003. The number of white, non-Hispanic persons diagnosed with HIV has doubled from 2003 to 2007.
Vulnerability	Influenza (flu) happens every year in nearly every country in the world. It spreads through a population for a few months and then will disappear or will move on to another country. Influenza usually occurs in the fall and winter months. Typically people who usually become ill are the elderly, the very young, those with chronic medical conditions, and those with high risk behaviors. The individuals that travel internationally and have high exposure to potential vectors of disease are the most susceptible. Greater than 20% of Iowa's population is considered at risk. CDC's HIV Prevention Progress in the US Fact Sheet from July 2010 states that the US federal government spent an estimated $12.3 billion on HIV care and treatment in 2009. For every HIV infection that is prevented, an estimated $355,00 is saved in the cost of providing lifetime HIV treatment.
Location	The entirety of Scott County is susceptible to a human pandemic disease.
Severity	A. *Health and safety of persons in affected areas:* Historically pandemics result in serious illness if not death. Some are treatable while only the symptoms of some diseases can be treated. B. *Health and safety of response personnel:* Doctors, nurses, paramedics, and emergency medical technicians are vulnerable to contagious diseases. Universal precautions can greatly diminish the transfer rate and risk to responders to human disease. C. *Continuity of operations:* Potential for severe or complete disruption. D. *Property, facilities, and infrastructure:* None. E. *Delivery of services:* Healthcare and essential services infrastructure and human resource personnel infrastructure would be affected. F. *Environment:* Potential impact to essential environmental service personnel. G. *Economic and financial conditions:* Large outbreaks may warrant travel advisories to the area and will affect the tourism and general commerce on the area. High number of ill human resources across the board. H. *Regulatory and contractual obligations:* None known. I. *Reputation of the entity:* None known.
Speed of Onset	If the disease is highly infectious by the time it is discovered, it will likely have already spread across the state or nation. This will put the people of Scott County at a severe disadvantage during response recovery.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
Center for Disease Control	http://www.cdc.gov/ *http://www.cdc.gov/hiv/resources/factsheets/PDF/cdcprev.pdf*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Iowa Department of Public Health	http://www.idph.state.ia.us/
Pandemic Flu	http://www.pandemicflu.gov/

Pipeline Transportation Incident

Definition: An incident is a break in a pipeline creating a potential for an explosion or leak of a dangerous substance (oil, gas, etc.) possibly requiring evacuation.

Description: Scott County is served by many high pressure pipelines to residents and industries as well as several cross-country pipelines. An underground pipeline incident can be caused by environmental disruption, accidental damage, or sabotage. Incidents can range from a small slow leak that is not ignited to a large rupture in which the gas is ignited. Inspection and maintenance of the pipeline system along with marked gas line locations and an early warning and response procedure can lessen the risk to those in proximity to the pipelines. Sixty-four percent of pipeline miles in Iowa are used to transport natural gas. Transport of refined products, highly volatile liquid, anhydrous ammonia, natural gas liquids, crude oil, and nitrogen in that order make up the rest of the pipeline miles.

Maximum Extent: Though often overlooked, petroleum and natural gas pipelines pose a real threat in the community. Scott County has 137 miles of pipeline carrying gas and 127 miles of pipeline carrying liquid as of 2008 annual reports. This is the 5th highest percentage of pipeline miles per county in the State of Iowa. Most incidents affect only the area directly above or near the damaged pipeline. Depending on the size of the pipeline and the amount of product released, the extent of the impact could be several hundred feet in diameter. Large areas may need to be evacuated to remove people from the threat of fire, explosion, or exposure. Pipelines have automatic shutoff valves installed so that damaged sections can be isolated and the volume of product escaping can be limited. Identification and caution signs are posted wherever pipelines are located.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.46	0.52	0.60	0.21	1.79

Evaluation Criteria	Description
	According to the Iowa Utilities Board, 186 pipeline accidents, incidents, or service outages were reported between 2000 and 2005, resulting in a total of 29 injuries and 6 fatalities in Iowa. Small incidents have occurred several times per year in Scott County and usually involve construction crews hitting natural gas lines. Only one significant instance was reported in Scott County during 2000 - 2009. This occurred in Davenport on December 2, 2004 when 52 barrels of hazardous liquid were lost, and the damage was $3,713.
Probability	The vast majority of pipeline incidents that occur are caused by third-party damage to the pipeline, often due to construction or some other activity that involves trenching or digging operations. With development occurring at an unprecedented rate and the ground becoming more and more congested with utilities, the probability of an underground pipeline incident is highly likely. Petroleum and natural gas pipeline accidents occur with some regularity, but they usually have a limited impact and are quickly and adequately handled by pipeline company emergency crews and local and state responders. Pipeline operators are required to coordinate all safety preparedness and response activities with the communities. The planning, training, and exercising of emergency procedures with all involved parties helps to limit the occurrence and severity of incidents.

Evaluation Criteria	Description
	Operator compliance with state and federal pipeline safety regulations is monitored through the Iowa Enforcement Program. The program is comprised of field inspections of operations, maintenance, and construction activities; programmatic inspections of operator procedures, processes, and records; incident investigations and corrective actions; and direct dialogue with operator management. The agency or agencies work in partnership with the Federal Pipeline and Hazardous Materials Safety Administration (PHMSA) to assure pipeline operators are meeting requirements for safe, reliable, and environmentally sound operation of their facilities.
Vulnerability	About 5 interstate pipelines operate in the state under federal pipeline jurisdiction. There are many high-pressure gas mains throughout the county that supply residential and industrial users. People and property with pipelines on their land or nearby are the most at risk. People excavating earth near a pipeline are also at risk. Whether the greater hazard is posed to those upwind or downwind from a site depends on the product spilled, for example: natural gas is lighter than air. Private homes and business served by natural gas have smaller diameter pipelines connected to their structure. The underground pipelines cross public streets, roads, and highways as well as streams. Iowa's natural environment is also vulnerable to contamination from an underground pipeline incident. The average cost per pipeline incident is $3,713, according to
Location	An incident could occur where ever pipelines are located in the county. Reference Map III-11 *Pipelines* for more information.
Severity	A. *Health and safety of persons in affected areas:* All petroleum liquids pose dangers from fire or explosion, and the fire may produce poisonous or irritating gases. Toxic fumes and direct contact can cause health hazards. Vapor clouds can travel a distance and settle in low-lying areas where the fumes may overcome people and animals. Released products should be treated as any other hazardous material. Large areas may need to be evacuated to remove people from the threat of fire, explosion, or exposure. B. *Health and safety of response personnel:* Specialized training is required to work around the pipeline because of hazardous materials, potential high pressure liquids and gases, and trench rescue techniques. C. *Continuity of operations:* Services that depend on the product moving through the pipeline may be affected if they do not have an auxiliary source. D. *Property, facilities, and infrastructure:* Petroleum and natural gas pipelines can leak or erupt and cause property damage, environmental contamination, injuries, and even loss of life. Accidents may be caused by internal or external corrosion, defective welds, incorrect operation, outside damage, or other defective pipeline or equipment. The explosion can damage adjacent properties. E. *Delivery of services:* A break in water pipelines may affect fire protection. Petroleum products will not be delivered or will be delivered in limited quantity. F. *Environment:* Effects to the area result from saturating the soil with hazardous materials and/or causing rapid erosion. G. *Economic and financial conditions:* These evacuations potentially save lives and limit injury, but they also disrupt businesses and inconvenience residents. H. *Regulatory and contractual obligations:* None known. I. *Reputation of the entity:* A well informed public before, during, and after an incident will greatly reduce the impact to the jurisdiction's reputation.
Speed of Onset	A pipeline incident may occur suddenly, but sight, sound, and smell can alert individuals that there may have been damage done to a pipeline in the area. Products may bubble up from the ground or collect in low-lying areas, a roaring or hissing noise may be heard, and most products give off a distinct odor. These warning signs can alert individuals not to use any devices that may act as ignition sources and cause a fire or explosion.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
U.S. Office of Pipeline Safety	*http://ops.dot.gov/*
Iowa Utilities Board	*http://www.state.ia.us/government/com/util/*
U.S. Senate	*http://www.senate.gov/~murray/pipelinestate.html*
CBS News Disaster Links	*http://www.cbsnews.com/digitaldan/disaster/disasters.shtml*
National Transportation Safety Board	*http://www.ntsb.gov/Surface/pipeline/pipeline.htm*
The Disaster Center	*http://www.disastercenter.com*
PHMSA Pipeline Safety Program	*http://primis.phmsa.dot.gov/comm/reports/safety*

Public Disorder

Definition: Mass demonstrations or direct conflict by large groups of citizens such as marches, protest rallies, riots, and non-peaceful strikes.

Description: People assembled together in a manner to substantially interfere with public peace constitute a threat, by use of unlawful force or violence against another person, causing property damage; or attempting to interfere with, disrupt, or destroy the government, political subdivision, or group of people. Labor strikes and work stoppages are not considered in this hazard unless they escalate into a threat to the community. Vandalism is usually initiated by a small number of individuals and limited to a small target group or institution. Most events are within the capacity of local law enforcement.

Maximum Extent: The social rage that causes civil unrest often comes from racism, poverty, lack of economic opportunity, and unemployment. Events usually affect a localized area of the community. Often times only a couple of blocks or streets are affected. The local government units are left to pick up the pieces in the aftermath, cleaning up the area, reestablishing services, repairing or replacing damaged public facilities and infrastructure, and trying to restore some level of citizen and private investor confidence in the community.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.46	0.30	0.48	0.10	1.35

Evaluation Criteria	Description
	There has been only one event in the county that could be considered a public disorder; this event occurred in LeClaire on November 13, 2004. An ex-minister put up a picture in his front yard of an aborted fetus. The image was so graphic that the police chief closed the road until the display was removed. According to the LeClaire Police Department, this incident caused a lot of public unrest in the community. Luckily all other public disorder type of incidents that have occurred in the county have remained peaceful.
	Although destructive civil disturbances are rare, the potential is always there for an incident to occur. This is even more true today, where television, radio, cell phones, and the internet provide the ability to instantly broadcast information (factual or not) in real time to the entire community. Oftentimes, that coverage helps to spread the incident to other uninvolved or unaffected areas, exacerbating an already difficult situation. This also allows insightful people, previously not involved, to participate in the disturbance for no other reason than to riot, loot, burn, and destruct. Alcohol is often involved in a public disorder, especially related to college campuses, sporting events, and concerts.
	Civil disturbances are often difficult for local communities to handle. There is a fine line between the constitutional right of individuals and groups to assemble and air their grievances and the overall needs of the community to provide essential services, ensure personal safety of citizens, prevent property damage, and facilitate normal commerce. Fortunately, most demonstrations and large public gatherings are held in a peaceful, responsible manner. However, there never seems to be a shortage of groups (drugs and alcohol are often involved) whose primary objective is to disrupt normal activities and perhaps even cause injury and property damage. People at risk are mainly the willing participants and law enforcement officials. Innocent bystanders and their property can be at risk as well. Because the public disorder incidents in Scott County have been peaceful, there have been no actual damages.

	Incidents of public disorders can take place anywhere in the county; there is no way of telling where an incident could take place.
	A. *Health and safety of persons in affected areas:* Minimal to moderate and severe. Possibility of injuries to participants and by-standers. Deaths possible in worst case. B. *Health and safety of response personnel:* Moderate. C. *Continuity of operations:* Minimal. Usually localized event. D. *Property, facilities, and infrastructure:* Some damages, destruction possible based on nature or unrest. E. *Delivery of services:* Minor impact. F. *Environment:* No impact. G. *Economic and financial conditions:* Business disruptions and damages may occur at location of event. H. *Regulatory and contractual obligations:* Impact unknown. I. *Reputation of the entity:* Depends on how response is handled.
	Events that incite such activity can build up over hours, days, or years, and the violent disturbance is a culmination of the long-term situation. Civil disruptions can also escalate very rapidly following events where people are gathered such as sporting events, concerts, or speeches.

Sources	
State of Iowa	*Iowa Hazard Mitigation Plan, 2007*
Local Sources	*Various Police Departments within Scott County, Scott County Sheriff Department*

Radiological Terrorism

Definition: The use of radiological materials against a person or persons in order to bestow fear upon a larger group of people with the ultimate goal of creating coercion to achieve a specific political or religious agenda. It is the strategic use of intimidation, threats, and pressure in order to cause disruption to an opposing system and align that system with that of a specific group or organization.

Description: Radioactive materials can be dispersed using sprayers/aerosol generators, or by point of line sources such as munitions, covert deposits, and moving sprayers.

Maximum Extent: Initial effects will be localized to the site of the attack. Depending on meteorological conditions, subsequent behavior of radioactive contaminants may be dynamic. A nuclear blast is divided into three areas that are measured by the radius from the blast center: Red, Blue and Yellow Zones. In the Red Zone, intense heat will cause widespread fires and incinerate almost everything, including organisms. In the Blue Zone, most homes will be completely destroyed and stronger commercial buildings will be severely damaged due to the high-pressure blast wave. In the Yellow Zone, there will be moderate damage to buildings, causing some risk to people due to flying debris. The surface area of these zones is dependent on the size of the blast.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.45	0.92	0.58	0.32	2.27

Evaluation Criteria	Description
	There have been no historical occurrences of radiological terrorism within Scott County.
	With no prior events by which to judge probability, it becomes necessary to consider the technical feasibility of radiological terrorism. Given that the radiation would kill anyone before they could amass enough material to produce a weapon, the threat is relatively low.
	Duration of exposure, distance from the source of radiation, and the amount of shielding between the source and target would determine exposure to radiation. Data is not available to estimate potential losses associated with radiological terrorism.
	A radiological terrorist attack could occur anywhere within the planning area; however, areas with higher populations or concentration of people would likely be at a higher risk of attack.
	A. *Health and safety of persons in affected areas:* The potential for mass casualties is great if an event were to take place. Several factors come into play on the number of persons affected including the amount and type of material used, the construction of the device, the site of the detonation, and the population of the detonation area. Nuclear fallout is caused by ionizing radiation moving at high speeds throughout the air. These combine and attach to the radioactive materials from the bomb itself and dispense radioactive contamination into the environment. This may create sickness or even death in organisms and to nature. B. *Health and safety of response personnel:* There could be a significant risk to the health and safety of personnel that would respond to the site. This would depend on the magnitude of the explosion and the infrastructure in the area. Precautions must be made prior to deploying emergency services. Radiation detection and protection equipment must be available and utilized in the event of such an attack. These measures greatly reduce the risk of health and safety of responding personnel. Another risk is the positive charge that may be present in metal objects due to the electromagnetic pulse (EMP).

Evaluation Criteria	Description
	C. *Continuity of operations:* Depending on where the detonation occurs and its proximity to critical facilities/infrastructure, there could be a great impact on operations due to the lack of resources to handle the situation. The continuity of operations will depend upon the capabilities of all responders. If a detonation occurs in a larger city and the response is limited to less capable smaller cities, then the continuity of operations may be severely compromised. Conversely, if the detonation is in an area in which the most capable response personnel are not affected, then the continuity of operations is only minimally affected. The electromagnetic pulse may also disrupt communication lines in some equipment. D. *Property, facilities, and infrastructure:* The extent of destruction to property and infrastructure is dependent on the size and location of the blast itself. E. *Delivery of services:* Delivery of services from within the blast area will be rendered incapable. All delivery services outside the blast ring will be affected by the range and capabilities of their own services. EMP may also disrupt some equipment. F. *Environment:* A nuclear blast would have a severe impact on the environment. As stated before, nuclear fallout is caused by ionizing radiation moving at high speeds throughout the air. These combine and attach to the radioactive materials from the bomb itself and dispense radioactive contamination into the environment. This may create sickness or even death in organisms and to nature. G. *Economic and financial conditions:* Disruption of business due to potential evacuations. H. *Regulatory and contractual obligations:* None known. I. *Reputation of the entity:* Could be very damaging because of the high profile of these events. The negative impact can be felt for decades following a contamination.
	Acts of terrorism can be immediate and often come after little or no warning. There are occasions where terrorists have warned the targeted organization beforehand, but often the attack comes without previous threat. Even if it is a false threat, precautions must be taken to ensure the safety of the people and property involved. With radiation, the initial release may not be identified for a period of time until symptoms become apparent.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Department of Homeland Security	*http://www.dhs.govpublic/*
Iowa Homeland Security	*http://www.iowahomelandsecurity.org*
Federation of American Scientists	*http://www.fas.org*
U.S. Department of Justice	*http://www.fbi.gov/terrorinfo/terrorism.htm*

Railway Transportation Incident

Definition: A derailment or train accident that directly threatens life or property, or that adversely affects community capabilities to provide emergency services.

Description: Railway incidents may include derailments, collisions, and highway/rail crossing incidents. Train incidents can result from a variety of causes. Human errors, mechanical failure, faulty signals, and problems with the track can all lead to railway incidents. Results of an incident can range from minor "track hops" to catastrophic hazardous materials incidents and even passenger casualties. With the many miles of track in Scott County, there are numerous at-grade crossings at which vehicles must cross the railroad tracks.

Maximum Extent: Vehicle/train collisions are usually limited to areas in and near intersections. Rarely, the incident will result in widespread effects. The area of impact is usually quite small, but depending on the products and materials involved, the area could become extensive. If hazardous materials are involved, the area could reach areas up to 1.5 miles from the scene.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.92	0.55	0.60	0.24	2.31

Evaluation Criteria	Description
	From January 1975 to January 2010, there have been 217 documented rail incidents in Scott County, according to the Federal Railroad Administration (FRA). Fifty of those incidents resulted in a total of 64 injuries. There were a total of 6 fatalities reported in a Railway Transportation Incident.
	There are 170 at-grade railroad crossings in Scott County. Based on the incident reporting data from the FRA, an average of 6 incidents, 1.8 injuries, and 0.17 fatalities have occurred per year since 1975. It is highly probably that there will be more than one railway incident somewhere in Scott County in any given year. The probability of a railway incident occurring in a specific jurisdiction will be addressed in each jurisdiction's individual risk assessment narrative.
	People and property in close proximity to the railway lines, crossings, sidings, switching stations, and loading/unloading points are most at risk. Those away from railroad tracks and facilities are vulnerable only to large-scale incidents including those in which hazardous materials are involved. The three FRA reported railroad accidents that occurred in 2011 caused just under $38,000 in damages.
	Vehicle/train collisions are usually limited to areas in and near intersections. Rarely, the incident will result in widespread effects. Map II-1 in Chapter II shows the locations of railways within Scott County. Railway Transportation Incidents are most likely to occur within the railroad corridor.
	A. *Health and safety of persons in affected areas:* Deaths and injuries can range from those directly involved to citizens in the community affected by hazardous materials. Depending on the materials involved, evacuations may occur, moving residents away from dangerous products and the possibility of explosion. B. *Health and safety of response personnel:* If hazardous materials are involved (see Transportation of Hazardous Materials Incident), railroad officials have specially trained personnel and equipment to respond to rail incidents. C. *Continuity of operations:* No significant effects. D. *Property, facilities, and infrastructure:* Damage may be limited to the train, railcars, and cargo involved, but it could also include rail infrastructure and adjacent properties.

Evaluation Criteria	Description
	E. *Delivery of services:* Rail transportation routes may be out of commission until the accident is cleaned up and the infrastructure repaired. Cargo will be delayed significantly as well as services that depend on that cargo. F. *Environment:* Gases, liquids, and solids can contaminate air soil and water in and near the incident scene. G. *Economic and financial conditions:* Effects include loss of production, business disruption due to evacuations, and business disruptions of those served by the railroad. Business and traffic disruptions could last several days until the clean-up efforts are complete. H. *Regulatory and contractual obligations:* None known. I. *Reputation of the entity:* Most communities with rail routes in them are familiar with the level of rail traffic, but they may not be familiar with the cargo that may be transported on them. Most are not aware of the significant risk that hazardous materials pose to the community. Education, public information, and a timely and effective response will determine the impact to the reputation of the jurisdiction.
	Like other transportation incidents, a railway incident could occur with no warning. There may be a limited amount of time to warn those in the pathway of the harmful effects.

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Iowa Department of Transportation	*http://www.dot.ia.us/rail/index.htm*
National Transportation Safety Board	*http://www.ntsb.gov/*
Federal Railroad Administration	*http://www.fra.dot.gov/site/index.htm* *http://safetydata.fra.dot.gov/officeofsafety/publicsite/Query/incabbr.aspx*
Association of American Railroads	*http://www.aar.org/*

Structural Failure

Definition: The collapse (part or all) of any public or private structure including roads, bridges, towers, and buildings.

Description: A road, bridge, or building may collapse due to the failure of the structural components or because the structure was overloaded. Natural events such as heavy snow may cause a roof of a building to collapse under the weight of the snow. Heavy rains and flooding can undercut and washout a road or bridge. The age of the structure is sometimes independent of the cause of the failure. Enforcement of building codes can better guarantee that structures are designed to hold up under normal conditions. Routine inspection of older structures may alert inspectors to "weak" points. The level of damage and severity of the failure is dependent on factors such as the size of the building or bridge, the number of occupants of the building, the time of day, day of week, amount of traffic on the road or bridge, and the type and amount of products stored in the structure.

Maximum Extent: The effects of the failed structure would be contained to the immediate area and adjacent properties. This could be as small as the house and yard of a fallen chimney, or the area could be relatively extensive if the structure that failed was a multi-story building of a downtown high-rise or a tall communication tower. Dam and levee failures would affect a much larger area and are discussed as separate hazards.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.46	0.58	0.58	0.38	2.00

Evaluation Criteria	Description
	Scott County has not been subject to many instances of structural failure. The most recent was in the spring of 2009, during a routine inspection of the Interstate 80 Bridge cracking was found on the overhang floor beam bracket. Interstate 80 runs through Scott County, where the bridge begins in LeClaire, IA and then crosses the Mississippi River into Illinois. Further inspection of the bridge revealed a total of 100 critical points. Bridge construction to repair the damage will be in two phases, beginning in the spring of 2010, with construction work to be complete in fall 2010. Another concern to the county is small or partial collapses of roadway infrastructure, commonly referred to as "sinkholes" (Note: Naturally occurring sinkholes are a different type of hazard and are addressed in the "Sinkholes" natural hazard profile. Please refer to the "Sinkholes" and "Land Subsidence" profiles for more information). These "sinkholes" can start by the ground shifting, which in turn breaks the underground piping, which then leaks water eroding the ground around the pipe eventually leading to the cave in of the roadway above it. These "sinkholes" are an annual problem and will continue to be an ongoing issue in the county in areas with older infrastructure. In the spring of 2010, the City of Davenport alone fixed around 100 "sinkholes," with a cost of $750,000.
	Civil structures may fail in a variety of modes. The unprecedented growth in technology has resulted in a host of problems related to complex structures, special materials, and severe operational and environmental loads, such as fire, excessive vibrations, explosion, high-energy piping failures, missiles, and earthquakes. With the possible exception of misuse or accidental or environmental loads, the causes of failure may be found in deficiencies of design, detailing, material, workmanship, or inspection. Scott County has five major bridges that all cross the Mississippi River into Illinois: I-80, I-74, I-280, Government Bridge, and Centennial Bridge. There are times when there is construction on more than one bridge and heavier than normal

Evaluation Criteria	Description
	traffic on the others. With the aging structures in the country along with problems with new materials discussed above, structural failures will continue to occur. Efforts to inspect and maintain these structures will lessen the probability of a failure, but not guarantee that it will not happen in the future.
	As our infrastructure ages, there will always be a threat of deterioration. Continual inspection in the county will always be needed to monitor the conditions of the infrastructure.
	The entire county has the possibility of structural failure. Due to the nature of the hazard, any area in the county could be at risk. Reference Map III-14 *Major Roadways and Bridges* for more information.
	A. *Health and safety of persons in affected areas:* Personal injury, death, and property damage may occur in the collapse itself or by falling debris from nearby structures. B. *Health and safety of response personnel:* Response personnel could limit their risk through proper training and equipment. Structural collapse rescue is a specialized form of rescue and can result in injury or death to responders. C. *Continuity of operations:* Functional purpose of the building would be terminated or suspended until the integrity of the structure could be restored. D. *Property, facilities, and infrastructure:* Effects could range from minor disruption to full destruction of the structure. Structures that could be affected would range from private homes and businesses to government facilities to transportation infrastructure. E. *Delivery of services:* Bridge failures and debris in the streets and sidewalks would interrupt normal routes of travel. Utilities may be cut off to surrounding areas and communication transmissions may be lost for a period of time. F. *Environment:* No severe impact to the environment unless the structural failure released a hazardous substance that could contaminate the air, water, or soil. G. *Economic and financial conditions:* There would be a considerable cost to replace or fix the structure, including the loss of revenue that would occur because the structure could not be used. H. *Regulatory and contractual obligations:* Failure during construction can be the liability of the contractor or the owner. This would depend upon the contract for construction and at which time the property ownership is transferred. Code development and enforcement can play a significant role in limiting the impact from structural failures in the jurisdiction. I. *Reputation of the entity:* If the structural collapse could have been averted or limited in any way by code enforcement, the reputation could suffer from public outcry.
	The actual failure of the structure would likely occur suddenly with little or no warning. There are several events that could lead up to the failure, and these have various warning times and are discussed in separate hazard worksheets. Casual hazards can include fire, explosion, overloading of ice and snow, earthquakes, flooding, high wind, or erosion.

Sources	
State of Iowa	*Iowa Hazard Mitigation Plan, 2007*
Bi-State Regional Commission	*I-80 Bridge Construction*
Local Sources	*Various*

Structural Fire

Definition: An uncontrolled fire in a populated area that threatens life and property and is beyond normal day-to-day response capabilities.

Description: Structural fires present a far greater threat to life and property and the potential for much larger economic losses. Modern fire codes set the minimum fire suppression requirements in new construction and building renovations. Builders and property owners should strive for more than the minimum requirements. These requirements coupled with improved firefighting equipment, training, and techniques, lessen the chance and impact of a major urban fire. Most structural fires occur in residential structures, but the occurrence of a fire in a commercial or industrial facility could affect more people and pose a greater threat to those near the fire or fighting the fire because of the volume or type of the material involved.

Maximum Extent: With modern training, equipment, fire detection devices, sprinkler systems and building regulations and inspections, most fires can be quickly contained and limited to the immediate structure involved. Certain circumstances, such as the involvement of highly combustible materials or high winds, can threaten a larger area. The age and density of a particular neighborhood can also make it more vulnerable to fire due to the spreading of fire from neighboring structures. However, it has been found that older commercial structures have fairly good fire containment with double thick brick firewalls between buildings. Firefighters in Scott County have also had to contend with broken fire hydrants and silicone in the water lines that has clogged the filter screens in the pumps of fire trucks. The majority of the Scott County Metro area is served by Iowa-American Water Company, a private water utility. Fire hydrants that are part of Iowa-American Water System are now flushed annually to check for hydrant problems.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.89	0.78	0.60	0.20	2.47

Evaluation Criteria	Description
Historical Occurrence	Small structural fires are almost a daily occurrence in Scott County due to the urban nature of the county and concentration of residential structures. Nearly all fires are quickly extinguished by on-site personnel or local fire departments. **February 2009:** A three-story abandoned building containing 14 apartments burned at 14th and Harrison Streets in Davenport. Arson was ruled as the cause of the fire. The 2006 estimated value of the building was $263,000. The cost to the City of Davenport was $83,600 to have the debris removed and remove the building foundation. **February 2008:** A Davenport apartment building burned. Six people had to be rescued and over $200,000 damage was done. **November 15, 2006:** The City of Bettendorf had one of the worst fires in its history in a new structure at Eagle Heights Court. The structure was a 9,400 square foot, single family structure. The fire required the use over 80 firefighters from Bettendorf and seven other mutual aid fire departments plus communication specialists, police officers, citizen academy personnel, and Scott County Emergency Management volunteers. The loss claim was for $3,141,094.80. The insulation company and a general contractor were found responsible for the fire spread and ordered to pay $3.2 million to the insurance company.

Evaluation Criteria	Description
	February 20, 2001: The fire, described by Davenport Fire Chief Mark Frese as the largest Quad-City blaze in 25 years, gutted about 80 percent of the 990,000-square-foot warehouse known as the River Cities Industrial Center, about a mile northwest of the U.S. 61 and Interstate 80 interchange near Mt. Joy, Iowa. At least 40 Davenport, firefighters were on the scene, joined by crews from Eldridge, Bettendorf, Long Grove, and Donahue. It took over four hours to get the blaze under control due to lack of water pressure from the privately-owned water system on site. APAC Customer Services with 600 employees was among several tenants filling the former Caterpillar plant. The facility also was the location of one of John Deere's three nationwide consolidation and distribution centers for lawn and garden equipment. John Deere received an $11 million insurance settlement for the fire during the first quarter of 2002. No cause of the fire was ever determined. **February 7, 1950**: The third worst fatality hospital fire in the nation was the Mercy Hospital, St. Elizabeth Women's Psychopathic Building fire at 2:00 a.m. Forty-one patients died in the fire and an additional 25 were treated for burns or injuries. Most of the victims were mental patients and elderly. The facility was 7,000 square feet, 40-50 feet wide, and 155 feet long. It was 60-80 years old. The building had three stories and a basement. Most doors were locked and windows barred. The outside fire escape was blocked by barred windows. There were no evacuation procedures in place, and only 25 of 64 occupants could be rescued, two later died. There was no sprinkler system, no automatic fire detection system, no system to release locks on patient doors, and windows should have been barred on inside with fastenings that can be quickly released by firefighters.
Probability	Much of the fire prevention efforts have gone into nonresidential fires, and the results have been highly effective. Even with an increase in the prevention efforts in residential fires, both residential and nonresidential fires will continue to occur. During colder months, clogged chimneys and faulty furnaces and fire places can increase the probability of structural fires. Twenty-five percent of structure fires in non-residential structures from 2003-2006 were caused by contained trash or rubbish. Cooking equipment came in second at 17%, and heating equipment was third at 9%. Arson is another cause of structural fires in the county. The county has had a convicted serial arsonist who set 12 separate apartment fires over six months in the Kimberly Club Apartment complex. The Blackhawk Hotel in downtown Davenport suffered significant damage in a fire caused by a meth lab in one of the guest rooms. Nationally, approximately 5% of all structural fires are intentionally set. From 2003-2006, 8% of non-residential structure fires were intentionally set nationally. Based on the historical occurrences listed above for the City of Davenport, an average of $452,740 in damages per year are caused by structural fire.
Vulnerability	Older structures with outdated electrical systems not built to current fire codes are particularly vulnerable to fire. Combustible building materials obviously are more vulnerable than structures constructed of steel or concrete. Structures without early detection devices are more likely to be completely destroyed before containment by response agencies. Structures in areas served by older, smaller, or otherwise inadequate water distribution infrastructure, such as water mains and hydrants, are also at significant risk. Problems vary from location to location, number of empty structures, poverty, education, and demographics. In the U.S. based on 2003-2007 data, the very young and very old are at highest risk from home fires. Males are at higher risk than females. Black individuals are at higher risk than Whites and Hispanics who are at higher risk than Asian-Americans. Adults 85 and older are at the highest risk in fires caused by cooking equipment with a risk 4.5 times that of the general public.
Location	A fire of this type is most likely to occur within the urbanized area of Scott County.
Severity	A) *Health and safety of persons in affected areas:* Based on national averages in the 1990s, there is one death for every 119 residential structure fires and one injury for every 22 residential fires. In nonresidential fires, there is one death for every 917 fires, one injury for each 52 fires. Statistically, in 2006, Iowa had 10.8 fire-related deaths per million people. This is down from 1999 where Iowa had 15 fire-related deaths per million people. The national average in 2006 was 13.2 deaths per million people. Nationally, arson fires

Evaluation Criteria	Description
	resulted in an average of approximately 290 deaths, 850 injuries, and $533 million in property loss each year. Scott County has had at least one fatality fire each year 2000-2009 according to the Davenport Fire Investigator. B) *Health and safety of response personnel:* In the U.S., about 100 firefighters die each year in duty-related incidents. In 2008, the number was 104. The top two reasons for death were internal trauma (38.5%) and cardiac arrest most likely caused by exertion and stress (34.6%). Scott County has lost several firefighters in its history, and many firefighters have been injured fighting fires. There were 79,700 firefighter injuries nationally in 2008 with almost half the injuries occurring during fireground operations. The most recent very serious injury in Scott County happened on the Davenport Fire Department in 2008. A fall from a ladder at a structure fire left a firefighter partially paralyzed and unable to walk. C) *Continuity of operations:* Only in rare cases would a structural fire affect continuity of operations. These cases could be fire at a critical facility, data storage areas, communications, infrastructure, etc. Structural fires do cause loss of continuity of operation to the businesses affected. The most substantial example of this in Scott County was the River Cities Industrial Plant fire. Housed in a section of the building was one of only three distribution facilities in the country for John Deere's lawn and garden equipment. The fire occurred when the facility was full of equipment ready to be shipped to dealers at the start of the spring season. The building also housed APAC Customer Services, one of Davenport's largest employers with over 600 employees. Three shifts of employees were not able to take customer service calls for their clients. D) *Property, facilities, and infrastructure:* On average, each residential fire causes nearly $11,000 of damage. Each nonresidential fire causes an average of $20,000 in damage. Damage per fire is 40-70% lower in properties with sprinkler systems. *(National Fire Protection Association 2003-2007 statistics for fires with sprinklers.)* E) *Delivery of services:* Fires can affect critical services such as electricity and water pressure. Very large structure fires use a significant number of personnel and equipment, thereby reducing availability to respond to multiple calls for assistance. F) *Environment:* Large structure fires containing environmentally hazardous materials could have an impact on air quality. Large amounts of potentially polluted water used to contain the fire could run off into nearby drainage areas or streams. G) *Economic and financial conditions:* Localized effects. H) *Regulatory and contractual obligations:* No significant impact known. I) *Reputation of the entity:* Structural fires are common occurrences, hence little damage is done to reputations for routine fires. The loss of large structure or lives could produce questions of insufficient personnel available to fight the fire, insufficient training of the personnel, insufficient firefighting equipment, and insufficient public resources such as water supply or working hydrants.
Speed of Onset	While fires usually start with little or no warning time, alert devices can allow time for responders to contain the fire and allow occupants to evacuate the area.

Sources	
United States Fire Administration	*http://www.usfa.fema.gov*
Iowa Division of State Fire Marshal	*http://www.state.ia.us/government/dps/fm/*
National Fire Protection Association	*http://www.nfpa.org/*
Institute for Business and Home Safety	*http://www.ibhs.org/building_codes/*
CBS News Disaster Links	*http://www.cbsnews.com/digitaldan/disaster/disasters.shtml*
Disaster Center.com	*http://www.disastercenter.com*
U.S. Department of Homeland Security	*U.S. Fire Administration National Fire Data Center Topical Fire Report Series - Intentionally Set Fires in Residential Buildings, Volume 9, Issue 8 / December 2009* *http://www.usfa.dhs.gov/downloads/pdf/tfrs/v9i8.pdf*
Local Sources	*Various*

Transportation Hazardous Materials Incident

Definition: Accidental release of chemical substances or mixtures that presents danger to the public health or safety as a result of transportation.

Description: A hazardous substance is one that may cause damage to persons, property, or the environment when released to soil, water, or air. Chemicals are manufactured and used in ever increasing types and quantities. As many as 500,000 products pose physical or health hazards and can be defined as "hazardous chemicals." Each year, over 1,000 new synthetic chemicals are introduced. Hazardous substances are categorized as toxic, corrosive, flammable, irritating, or explosive. Hazardous materials incidents generally affect a localized area, and the use of planning and zoning can minimize the area of impact.

Maximum Extent: Most of the hazardous materials incidents are localized and are quickly contained or stabilized by the highly-trained fire departments and hazardous materials teams. Depending on the characteristics of the hazardous material or the volume of the product involved, the affected area can be as small as a room in a building or as large as 5 square miles or more. Many times, additional regions outside the immediately affected area are evacuated for precautionary reasons. More widespread effects occur when the product contaminates the municipal water supply or water system such as a river, lake, or aquifer.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
1.31	0.49	0.60	0.18	2.58

Evaluation Criteria	Description
	According to the Iowa Department of Natural Resources Chemical Spills Report Database, 200 chemical spills were reported as transportation related incidents within Scott County between 1995 and February of 2010. Costs associated with spill clean-ups were not reported.
	Based on information provided from the Iowa Department of Natural Recourses Chemical Spills Report Database, the City of Davenport has the highest probability of a transportation-related hazardous materials incident. The table below shows the number of hazardous materials incidents at a fixed facility between 1995 and February of 2010 by jurisdiction and the average number of incidents per year.

Transportation Hazard Materials Incidents by Jurisdiction

Jurisdiction	Transportation Hazardous Materials Incidents	Average Number of Incidents per Year
City of Bettendorf	35	2.47
City of Blue Grass	2	0.14
City of Buffalo	1	0.07
City of Davenport	88	6.21
City of Dixon	1	0.07
City of Donahue	0	0
City of Eldridge	2	0.14
City of LeClaire	11	0.78
City of Long Grove	2	0.14
City of Maysville	3	0.21
City of McCausland	0	0

<table>
<tr><th>Evaluation Criteria</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><td>City of New Liberty</td><td>2</td><td>0.14</td></tr>
<tr><td>City of Panorama Park</td><td>0</td><td>0.00</td></tr>
<tr><td>City of Princeton</td><td>3</td><td>0.21</td></tr>
<tr><td>City of Riverdale</td><td>5</td><td>0.35</td></tr>
<tr><td>City of Walcott</td><td>23</td><td>1.62</td></tr>
<tr><td>Unincorporated Area</td><td>22</td><td>1.55</td></tr>
</table>
</td></tr>
<tr><td></td><td>A hazardous materials incident can occur almost anywhere, so any area is considered vulnerable to an incident. People, pets, livestock, and vegetation in close proximity to transportation corridors and populations downstream, downwind, and downhill of a released substance are particularly vulnerable. Depending on the characteristics of the substance released, a larger area may be in danger from explosion, absorption, injection, ingestion, or inhalation. Occupants of areas previously contaminated by a persistent material may also be harmed either directly or through consumption of contaminated food and water. The IA DNR Chemical Spills report does not include costs associated with damage and clean-up of hazardous material incidents. Therefore estimating potential losses is difficult at this time.</td></tr>
<tr><td></td><td>A hazardous materials incident can occur almost anywhere within Scott County.</td></tr>
<tr><td></td><td>A. Health and safety of persons in affected areas: The release of some toxic gases may cause immediate death, disablement, or sickness if absorbed through the skin, injected, ingested, or inhaled. Some chemicals may cause painful and damaging burns to skin if they come in direct contact with the body.
B. Health and safety of response personnel: Specialized training is needed to respond to these types of incidents. If inadequately trained personnel attempt to respond, the effects could be the same as those for the general public exposed to the toxic materials. Proper training and equipment greatly reduce the risk to response personnel.
C. Continuity of operations: None directly unless the incident occurs on or near critical facilities or services. Transportation corridors can be shut down for many hours at a time while the scene is stabilized, the product is off-loaded, and reloaded on a replacement container.
D. Property, facilities, and infrastructure: Damage may be limited to the cargo liner involved, but it could also include highway, interstate, or street infrastructure, and adjacent property.
E. Delivery of services: Contaminated water resources may be unsafe and unusable, depending on the amount of contaminant.
F. Environment: Contamination of air, ground, or water may result in harm to fish, wildlife, livestock, and crops. The release of hazardous materials into the environment may cause debilitation, disease, or birth defects over a long period of time.
G. Economic and financial conditions: Loss of livestock and crops may lead to economic hardships within the communities.
H. Regulatory and contractual obligations: Transportation of hazardous materials is regulated by the Department of Transportation. However, if a release of a hazardous material were to take place, the Department of Natural Resources becomes the regulatory and managing agency.
I. Reputation of the entity: Although citizens are aware of the shipping industry, they may not be aware of the dangers that some cargo may pose. Most are not aware of the significant risk that hazardous materials pose to the community. Education, public information, and a timely and effective response will determine the impact to the jurisdiction’s reputation.</td></tr>
<tr><td></td><td>When managed properly under regulations, hazardous materials pose little risk; however, when handled improperly or in the event of an accident, hazardous materials can pose a significant risk to the population. Hazardous materials incidents usually occur very rapidly with little to no warning. Even if reported immediately, people in the area of the release have</td></tr>
</table>

Evaluation Criteria	Description
	very little time to be warned and evacuated safely. Public address systems, television, radio, and the NOAA Weather Alert Radios are used to disseminate emergency messages about hazardous materials incidents.

Sources	
State of Iowa	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport	*Pre-Disaster Mitigation Plan, February 2007*
Iowa Department of Natural Resources	*Chemical Spills Reporting Database 1/1/1995-2/15/2010*
U.S. Department of Transportation	*http://www.hazmat.dot.gov*
Federal Railroad Administration	*http://www.fra.dot.gov/safety/hazmat.htm*

Transportation Radiological Materials Incident

Definition: An incident resulting in a release of radioactive materials during transportation.

Description: The transportation of radioactive materials through Scott County over the interstate highway system is considered a radiological hazard. The transportation of radioactive materials by all means of transport is licensed and regulated by the federal government. As a rule, there are two categories of radioactive materials that are shipped over the interstate highways. Low-level waste consists primarily of materials that have been contaminated by low-level radioactive substances, but pose no serious threat, except through long-term exposure. These materials are shipped in sealed drums within placarded trailers. The danger to the public is no more than a wide array of other hazardous materials. High level waste usually in the form of spent fuel from nuclear power plants is transported in specially constructed casks, which are built to withstand a direct hit from a locomotive. When these materials are moved across Iowa highways, Iowa officials are notified and appropriate escorts are provided.

Maximum Extent: Only in an all-out nuclear attack on the U.S. would the county face community-wide exposure to radioactive substances. Other than a transportation incident involving large amounts of high-level radioactive materials, radiation exposure will be limited to extremely localized areas.

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
0.47	0.60	0.60	0.24	1.91

Evaluation Criteria	Description
	There have been no occurrences of transportation radiological incidents reported in Scott County or the State of Iowa.
	Transportation accidents are the most common type of incident involving radioactive materials because of the sheer number of radioactive shipments. Operators of facilities that use radioactive materials and transporters of radioactive waste are circumspect in packaging, handling, and shipment of the radioactive waste. Since they are closely regulated by a variety of federal, state, and local organizations, the likelihood of an incident is remote. The State Hazard Mitigation Team (SHTM) has estimated that the probability of a transportation radiological incident occurring in Iowa in the next year is between 1% and 10%.
	Transportation of radioactive materials is mostly low-level waste consisting primarily of materials that pose no serious threat except through long-term exposure. Those working with or near sources of radiation are at a greater risk than the general population of Scott County. Those responding to a radiological incident should be trained in recognizing a radiological incident and minimizing exposure to radioactive materials. No occurrences of transportation of radiological insurances have been reported in Scott County, therefore it is difficult to estimates the potential loss if an incident were to occur.
	An accident involving the transportation of hazardous materials can occur anywhere within Scott County.
	A. *Health and safety of persons in affected areas:* Time, distance, and shielding minimize radiation exposure to the body. Nuclear radiation above normal levels could be a health and safety consideration because of its ability to damage human cells biologically as well as its long-lasting effect on the environment. Depending on the level of exposure, radiation can cause loss of life, long and short-term health effects, and property damage

Evaluation Criteria	Description
	from contamination, and disruption of business because of potential evacuations. Despite the frequency of shipments, there have been no known serious nuclear radiation exposures resulting from transportation accidents. This is due to the nature of the materials being transported, protective packaging, and labeling and response information. B. *Health and safety of response personnel:* Specialized training is needed to respond to these types of incidents. If inadequately trained personnel attempt to respond, the effects could be the same as those for the general public exposed to toxic materials. Proper training and equipment greatly reduce the risk to response personnel. C. *Continuity of operations:* None directly. D. *Property, facilities, and infrastructure:* Property damage can result from contamination and disruption of business because of evacuations. E. *Delivery of services:* Depending on the severity of the incident, transportation routes could be temporarily closed. F. *Environment:* Damage to the environment can be very long-lasting depending on the half-life of the products involved and the severity of the incident. G. *Economic and financial conditions:* None directly. H. *Regulatory and contractual obligations:* None directly. I. *Reputation of the entity:* Reputation of the county can be very damaged because of the high profile of these events. The negative impact can be felt for decades following a contamination.
	A radiological incident in Scott County would result from an incident in handling or transporting radioactive materials. This incident would occur with little or no warning. Ionizing radiation cannot be seen, smelled, heard, or detected with human senses. Detection instruments are needed to indicate the existence of dangerous radiation. Distance from the incident would dictate the amount of time needed to avoid exposure from damaging radiation. The federal Department of Transportation requires the use of placards on transport vehicles to indicate to the public and first responders the types of materials on board.

Sources	
State of Iowa	*Iowa Hazard Mitigation Plan, 2007*
City of Davenport, IA	*Davenport Pre-Disaster Mitigation Plan, February 2007*

Waterway Incident

Definition: An accident involving any water vessel that threatens life or adversely effects community capability to provide emergency services.

Description: Waterway incidents will primarily involve pleasure craft on area rivers and lakes. In the event of an incident involving a water vessel, the greatest threats would be drowning, fuel spillage, and property damage. Water rescue events would largely be handled by first responding agencies. Waterway incidents may also include events in which persons fell through the ice on partially frozen water bodies.

Maximum Extent: The maximum extent of a waterway incident would be limited. Effects would not extend beyond the immediate incident scene. The only exception would include a search and rescue event that could expand downstream. In the case of a hazardous material being released to the waterway, the impact could expand considerably (See "Transportation Hazardous Materials Incident" profile for more details).

Hazard Score Calculation				
Probability	**Magnitude/Severity**	**Warning Time**	**Duration**	**Weighted Score**
1.02	0.31	0.49	0.18	1.98

Evaluation Criteria	Description
	The Mississippi River is subject to both commercial incidents as well as recreational incidents. Commercial waterway incidents are tracked by the U.S. Coast Guard. Since 1998, there have been 30 commercial incidents that have occurred on the Mississippi River between river miles 469 to 506. The most common incident is barge grounding, and the most common location is around the Burlington Northern Santa Fe Crescent Railroad Bridge that crosses the river approximately at Division Street in Davenport, IA into Rock Island, IL. All commercial incidents have had minimal damage and no loss of lives. Recreational waterway incidents are tracked by the Department of Natural Resources. Since 1998, there have been 32 recreational waterway incidents. The most common type of incident is a boat hitting an object, followed by two boats (including personal watercrafts) colliding. Twenty-eight percent of the recreational incidents involved alcohol. There has been one fatality, and the majority of incidents are property damage. A complete list of commercial and recreational incidents is in a table at the end of this profile.
	The Mississippi River is used by commercial boaters as well as recreational boaters and approximately 37 river miles adjacent to the county. Over the past 10 years, the Mississippi River has averaged approximately three commercial incidents per year and approximately three recreational incidents per year. There will always be a chance for waterway incidents to occur in the county; its location and heavy use put its chances of an incident high. While some incidents cannot be prevented, others can be prevented or minimized with proper boater education classes.
	Scott County is bordered by one of the largest rivers in the world, the Mississippi River. The Mississippi River is a widely used river by both commercial and recreational boaters, anytime there is a boat on the water there is a chance of an incident. The environment is also vulnerable to the materials that are transported on the river as well as hazardous material spills that could be the result of an accident. Damages were not reported for each incident; however the average damage for commercial vehicles was $2,240 while the average damage for a recreational vehicle is $25,478.

Evaluation Criteria	Description
	The Mississippi River forms the eastern border of Scott County and runs along the cities of Bettendorf, Buffalo, Davenport, LeClaire, Pleasant Valley, Princeton, and Riverdale. Scott County is approximately located between Mississippi River miles 469-506. Reference Map III-15 *Waterway Mile Marker* and *Commercial and Recreation Waterway Incidents* table for more information.
	A. *Health and safety of persons in affected areas:* Effects would be limited to personal injuries and possibly death of the persons directly involved. B. *Health and safety of response personnel:* Small fuel spills could result from damaged watercraft. C. *Continuity of operations:* Minor disruption to operations may occur due to the possibility of conflicting operations in the area. Site may be restricted until the rescue, salvage, or possible cleanup/decontamination operations have been completed. D. *Property, facilities, and infrastructure:* Property damage would be restricted to the craft involved. E. *Delivery of services:* Minor disruption to operations may occur due to the possibility of conflicting operations in the area. Site may be restricted until the rescue, salvage, or possible cleanup/decontamination operations have been completed. F. *Environment:* Environmental damage could affect aquatic flora and fauna, as well as water quality (if hazardous materials are released from boats or barges). G. *Economic and financial conditions:* Varies. H. *Regulatory and contractual obligations:* The Army Corps of Engineers is responsible for the upkeep on the county waterways, as well as accurately recording and mapping topographical data. They then must locate and designate dangerous areas in the water and mark them accordingly. The Department of Natural Resources monitors watercraft regulations and serves as an aquatic police force (shore patrol) in the county. I. *Reputation of the entity:* An incident/accident may only affect the watercraft operator's reputation directly. No other entity's reputation may be scarred unless the incident/accident involved a single watercraft and the Army Corps of Engineers did not accurately mark the area a danger zone. The waterway's reputation may then have a scar due to the threat of other possible unmarked danger zones.
	Incidents would occur with little or no warning. Leading causes of waterway incidents are inclement weather and operator error. Accidents can also occur with commercial vessels in periods of high or low waters.

Commercial Waterway Incidents					
Date	**Body of Water**	**Location**	**River Mile**	**River Flow**	**Incident**
7/27/1998	Mississippi River	Bettendorf	490.0	Low Water	M/V Grandma Gert was grounded.
11/25/1998	Mississippi River	Bettendorf	486.0	Low Water	M/V Darin Adrian starboard stern barge bumped bottom of inside channel causing holes to starboard wing tanks.
5/5/1999	Mississippi River	Bettendorf	491.0	High Flow Rate	M/V J.W. Hershey was southbound, while navigating inside buoy line current starboard stern barge came in contact with river bottom.
5/16/1999	Mississippi River	Davenport	484.0	Low Water	M/V Coral Dawn was waiting for L&D 15 when the barges grounded. Minor damages totaling $350.00
6/15/1999	Mississippi River	Lock and Dam 15	482.0	High Flow Rate	M/V Nathen was southbound locking through L&D 15 when barge hit the bullnose, vessel was then being pulled into rollerdams.

Commercial Waterway Incidents					
Date	**Body of Water**	**Location**	**River Mile**	**River Flow**	**Incident**
					Vessel attempted to backup but current was too strong, forced to release barge to save vessel. Barge came to rest on the #2 gate. Damage to lock was $3000 and damage to barge was $7000. No other damage or pollution was reported.
9/1/1999	Mississippi River	Davenport	476.0	Low Water	M/V Darin Adrian was northbound grounded near river mile 476. Low water and buoys off station were blamed for incident.
11/30/1999	Mississippi River	Pleasant Valley	493.0	Low Water	M/V Starfire was southbound locking through L&D 14; the starboard steering rudder struck ground causing $350.00 in damages.
3/12/2000	Mississippi River	Pleasant Valley	492.0	Low Water	M/V Decatur Lady was southbound departing L&D 14, maneuvering around construction barges when barge grounded. Barge received 2 holes in the wing void with damages around $500.00.
5/25/2000	Mississippi River	LeClaire	497.0	Low Water	M/V Decatur Lady was northbound, during a passing situation with another vessel the barge became grounded.
6/10/2000	Mississippi River	Pleasant Valley	493.0	Low Water	M/V Crimson Glory was southbound waiting for L&D 15 when vessel grounded.
6/15/2000	Mississippi River	BSNF Crescent Railroad Bridge	481.0	High Flow Rate	M/V Gladiator was northbound, barge landed on fencing bridge.
7/17/2000	Mississippi River	Bettendorf	491.0	Low Water	M/V Julies was northbound was waiting for L&D 14 when vessel drifted towards red buoy line and starboard barge grounded, swinging the rest of the tow around and grounding the remaining barges.
8/29/2000	Mississippi River	Bettendorf	488.0	Low Water	M/V Lloyd Beesecker was southbound when center lead barge grounded mid-channel. Portside wings of barges had damage.
10/5/2000	Mississippi River	Pleasant Valley	493.0	Low Water	M/V Richard C. Young was northbound when vessel came into contact with the river bottom. Minor damages to barge.
5/25/2001	Mississippi River	Lock and Dam 15	482.9	High Flow Rate	M/V George King bumped into the upper end wall of L&D 15 breaking wires on the first coupling. There was no damage to lock, vessel, or barges.
6/17/2001	Mississippi River	BSNF Crescent Railroad Bridge	481.0	High Flow Rate	M/V Washington was southbound, barge came in contact with bridge.
6/30/2001	Mississippi River	Davenport	485.0	High Flow Rate	M/V Sharon Wildman was southbound when starboard barges came in contact with right descending pier.

Commercial Waterway Incidents					
Date	**Body of Water**	**Location**	**River Mile**	**River Flow**	**Incident**
8/3/2001	Mississippi River	Bettendorf	486.0	Low Water	M/V Joe Pat Eckstein was northbound when stern barge touched ground; 4 barges broke off landing on left bank.
8/4/2001	Mississippi River	Bettendorf	489.0	Low Water	M/V Jane Huffman northbound and was grounded by a rock. Vessel was grounded for 19 hours.
8/15/2001	Mississippi River	Davenport	484.0	Low Water	Channel Cat II (small passenger vessel) grounded in a marina. Marina was closed due to low water, pilot stated he had seen water rise and believed it was good water. Damages included breaking off outboard drive.
5/1/2002	Mississippi River	South of Lock and Dam 14	493.3	High Flow Rate	M/V Joe Pat Eckstein was exiting L&D 14 when a strong draft pushed tow against wall causing a scratch in upper wall of Lock.
5/16/2002	Mississippi River	BSNF Crescent Railroad Bridge	481.0	High Flow Rate	M/V Julie S was southbound starboard barge came in contact with bridge.
7/27/2002	Mississippi River	Lock and Dam 15	483.0	High Flow Rate	M/V Lady Lone Star was southbound, entering the lock gate an outdraft pulled the vessel outwards, causing the head of the toe to be in the wrong direction.
8/22/2002	Mississippi River	LeClaire	497.5	Low Water	M/V Show Me State ran aground and 4 barges broke loose.
5/23/2003	Mississippi River	BSNF Crescent Railroad Bridge	481.0	High Flow Rate	M/V Mary Evelyn-Allison was southbound, starboard stern of tow rubbed the bridges approach cell.
9/8/2003	Mississippi River	BSNF Crescent Railroad Bridge	482.0	Low Water	M/V Robin B. Ingram-Allison was southbound when barge rubbed left hand pier of bridge.
9/23/2003	Mississippi River	BSNF Crescent Railroad Bridge	482.0	Low Water	M/V Darin Adrian was southbound approaching the bridge when the lead barge bumped the bottom causing a crack in the barge.
6/24/2004	Mississippi River	BSNF Crescent Railroad Bridge	481.0	High Flow Rate	M/V Butch Barras was southbound, starboard barge made contact with upper cell of bridge.
4/8/2005	Mississippi River	South of Lock and Dam 14	493.3	High Flow Rate	M/V James F. Neal southbound, had just departed from L&D 14. Current caused vessel to right side of channel where boat bumped in shallow water. Vessel was backed up to stop tow when starboard side of tow grounded; 6 barges broke loose and 9 barges grounded.
4/12/2005	Mississippi River	BSNF Crescent Railroad Bridge	481.4	High Flow Rate	M/V Andrea Leigh Allison was southbound made contact with the left descending span of the bridge.

Source: U.S. Coast Guard - Upper Mississippi River Annex 2009

Recreational Waterway Incidents					
Date	Body of Water	Location	Type of Accident	Cost Estimates	Incident
7/19/1998	Mississippi River	Scott County	PD	N/A	PWC and Boat Collision
8/23/1998	Mississippi river	Scott County	PD	N/A	Boat hit rock, causing hole in hull
8/25/1998	Mississippi River	Scott County	PD	N/A	Boat hit submerged object
9/12/1998	Mississippi River	Scott County	PI/PD	N/A	PWC and Boat Collision
7/18/1998	Mississippi River	Scott County	PI	N/A	Person fell off tube
6/24/1999	Mississippi River	Scott County	PD	N/A	PWC collided with beached vessel
7/3/1999	Mississippi River	Scott County	PD	N/A	Capsized boat
7/31/1999	Mississippi River	Scott County	PD	N/A	Boat hit barge
8/1/1999	Mississippi River	Scott County	PI/PD	N/A	2 PWC collided; leg injury
4/15/2000	Mississippi River	Scott County	PD	N/A	2 boats collided
6/11/2000	Mississippi River	Scott County	PD	N/A	Boat sunk
8/12/2000	Mississippi River	Scott County	PI	N/A	PWC and Boat Collision
8/26/2000	Mississippi River	Scott County	F	N/A	Person fell overboard; alcohol involved
6/17/2001	Mississippi River	Scott County	PI	$10,200	2 PWC collided; neck injury; alcohol involved
6/30/2002	Mississippi River	Scott County	PI	N/A	Boat hit a fixed object; cut hand
8/10/2002	Mississippi River	Scott County	PI	N/A	Mechanical problem with boat, boat veered and person fell in boat; dislocated shoulder
9/1/2002	Mississippi River	Scott County	PI	$100	PWC was rounding corner; persons finger struck tree amputating end of finger; alcohol involved
7/13/2003	Mississippi River	Scott County	PI	$0	Tube fell out of boat and pulled person in; injury to arm
7/26/2003	Mississippi River	Scott County	PI/PD	$0	PWC stopped, boat collided with PWC; injury to elbow
8/17/2003	Mississippi River	Scott County	PD	$5,000	2 boats collided
7/4/2004	Mississippi River	Scott County	PI	$0	When anchoring boat person broke rib
7/21/2004	Mississippi River	Scott County	PI	$0	2 boats collided; alcohol involved
7/31/2004	Mississippi River	Scott County	PD	$500	description not available; alcohol involved
6/18/2005	Mississippi River	Scott County	PD	$500	Boat was traveling downstream and hit either wing dam or submerged log
6/17/2005	Mississippi River	Scott County	PD	$30,000	Operator not paying attention and grounded boat; alcohol involved
7/22/2005	Mississippi River	Scott County	PD	$5,000	Boat hit a navigational buoy; alcohol involved

Recreational Waterway Incidents					
Date	**Body of Water**	**Location**	**Type of Accident**	**Cost Estimates**	**Incident**
7/22/2006	Mississippi River	Scott County	PI	N/A	Boat left beach when storm hit, wave capsized boat ejecting occupants into river; one person with cut above eye; alcohol involved
7/22/2006	Mississippi River	Scott County	PI	N/A	Operator ran boat aground when attempting to reverse boat drifted into cable of gambling boat, cable broke off hitting operator in head; large gash to head; alcohol involved
11/29/2007	Mississippi River	Scott County	N/A	N/A	Information not available for incident
7/26/2008	Mississippi River	Scott County	PI	N/A	Waterskiing accident
8/1/2009	Mississippi River	Scott County	PD	$120,000	Damage to vessel during high speed operation
8/9/2009	Mississippi River	Scott County	PD	$58,000	Damage to vessel while starting engine

Source: Iowa Department of Natural Resources; Local Law Enforcement Division Scott County
Notes: PWC = Personal Watercraft; PD= Property Damage; PI= Personal Injury; F= Fatal

Sources	
State of Iowa, IHSEMD	*Iowa Hazard Mitigation Plan, 2007*
U.S. Coast Guard: *Mississippi River and Tributaries Waterway Action Plan – Upper Mississippi River Annex 2009*	*(http://www.uscg.mil/d8/WesternRivers/docs/NC%20-%20UMR%20-%202008.pdf)*
Iowa Department of Natural Resources	*Local Law Enforcement Bureau for Scott County*
U.S. Army Corps of Engineers	*2001 Upper Mississippi River Navigation Charts (http://www2.mvr.usace.army.mil/NIC2/mrcharts_omni.cfm)*