

CHAPTER 6. Natural Resource Protection

6.1 Introduction

Natural resource protection activities are generally aimed at preserving (or in some cases restoring) natural areas. In so doing, these activities enable the naturally beneficial functions of the land, such as fields, floodplains or wetlands, to be better realized.

Natural and beneficial functions of watersheds, floodplains and wetlands include:

- Reduction in runoff from rainwater and snow melt in pervious areas
- Infiltration that absorbs overland flood flow
- Removal and filtering of excess nutrients, pollutants, and sediments
- Storage of floodwaters
- Absorption of flood energy and reduction in flood scour
- Water quality improvement
- Groundwater recharge
- Habitat for flora and fauna
- Recreational and aesthetic opportunities

Hazards Addressed
➤ Flood
➤ Winter Storms
➤ Thunderstorms

As development occurs, many of the above benefits can be achieved though regulatory steps for protecting natural areas or natural functions. This chapter covers natural resource protection programs and standards that can help mitigate the impact of natural hazards, while they improve the overall environment. Seven areas are reviewed:

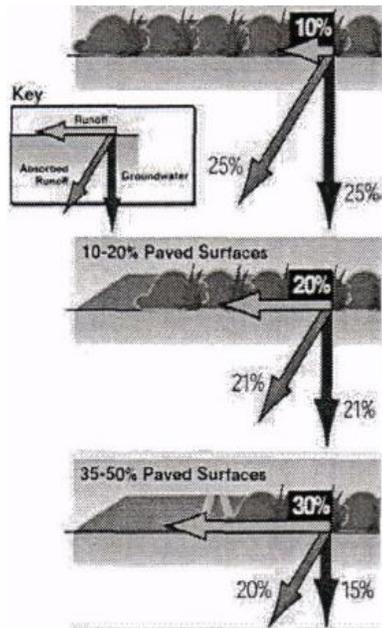
- Wetland protection
- Erosion and sedimentation control
- River and stream restoration
- Best management practices
- Dumping regulations
- Urban forestry
- Farmland protection

This chapter reviews the strategies for protection of natural resources, implementation of specific strategies in Jersey County, and two significant regional multi-strategy projects. The first project, the Piasa Creek Watershed Project, managed by the independent, non-profit Great Rivers Land Trust, covers thousands of acres in three counties and has been in successful operation for over a decade. The second project, the Otter Creek Watershed Project, has been recently initiated by the Jersey County Soil and Water Conservation District in response to the success of the Piasa Creek project.

6.2 Floodplain and Storm Water Management

Floodplain management in Jersey County is the responsibility of the county government through its office of floodplain management. Storm water management is the share responsibility of the county and the various municipalities, primarily through various storm water and open space ordinances and planning.

Development in floodplains is development in harm's way. New construction in the floodplain increases the amount of development exposed to damage and can aggravate flooding on neighboring properties.



Development outside a floodplain can also contribute to flooding problems. Stormwater runoff is increased when natural ground cover is replaced by urban development (see graphic). Development in the watershed that drains to a river can aggravate downstream flooding, overload the community's drainage system, cause erosion, and impair water quality.

- Stormwater management encompasses two approaches to protecting new construction from damage by surface water:
- Regulating development in the floodplain to ensure that it will be protected from flooding and that it won't divert floodwaters onto other properties, and
- Regulating all development to ensure that the post-development peak runoff will not be greater than under pre-development conditions.

Most communities participate in the National Flood Insurance Program (NFIP). The NFIP and the Illinois Department of Natural Resources set minimum requirements for regulating development in the floodplain. All new buildings must be protected from the base or 100-year flood and no development can cause an increase in flood heights or velocities.



Storm water runoff regulations require developers to build retention or detention basins to minimize the increases in the runoff rate caused by impervious surfaces and new drainage systems. Generally, each development must not let storm water leave at a rate higher than that under pre-development conditions.

CRS credit: CRS credit is provided for both higher regulatory standards in the floodplain and runoff management standards for new developments. Credit is based on how those standards exceed the minimum NFIP requirements.

6.3 Flash Flooding and Drainage System Maintenance

The reduction of the probability and impact of flash flooding is the share responsibility of county and local government and private landowners. The detrimental impact of flash flooding county-wide has been reduced by the educational and management efforts of two organizations—the Jersey County Soil and Water Conservation District and the Great Rivers Land Trust. Drainage system construction and maintenance is the responsibility of the county, municipal and township governments, primarily through their highway departments or road commissioners.



2015 Otter Creek flash flooding on to road

- A community's drainage system includes its stream channels, ditches, swales, culverts, and detention ponds. Drainage system maintenance is an ongoing program to clean out blockages caused by an accumulation of sediment or overgrowth of weedy, non-native vegetation or debris, and remediation of stream-bank erosion sites. This system can be very effective at reducing the threat of local flooding from smaller storms, even if all it does is remove trash and debris.
- Cities and counties usually accept responsibility for maintaining facilities on public property and drainage districts have a duty over their own channels. In Illinois, the responsibility for drainage maintenance on private property, where no easements have been granted, is with the individual private owner. This often results in very little maintenance being accomplished.

6.4 Dams and Levees

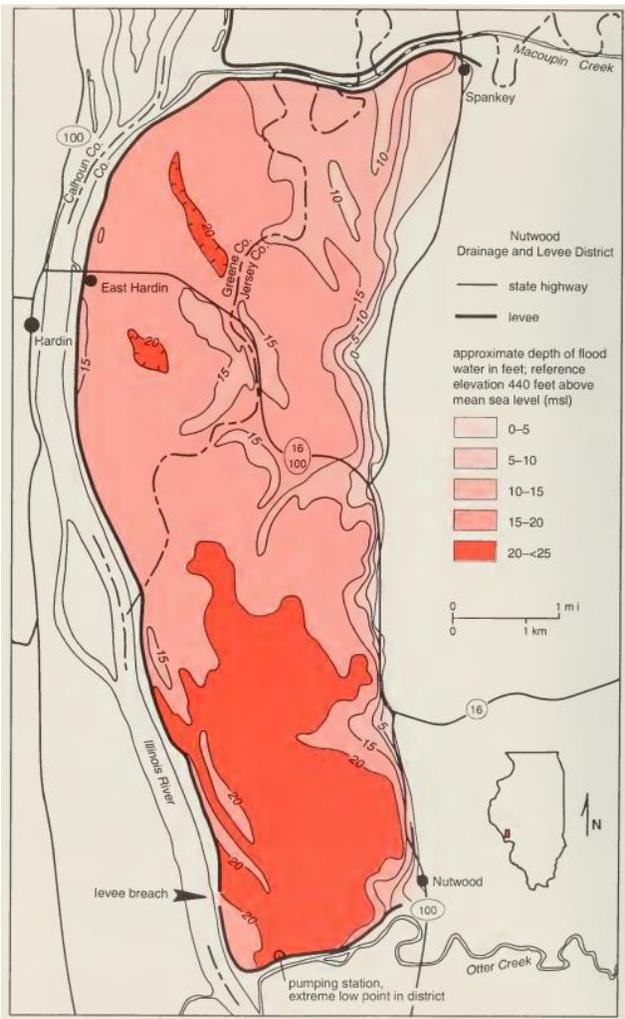
Within Jersey County, the construction of dams is a private activity undertaken by individual landowners. Two organizations are available to provide guidance and, when available, financial assets and other resources—the Soil and Water Conservation District (directed at farmers) and the Great Rivers Land Trust (primarily within the boundaries of the Piasa Creek watershed).

There are several considerations when evaluating the use of dams:

- There is a threat of flooding the protected area should the dam fail.
- There is a constant expense for management and maintenance of the facility.
- They may fail to prevent floods that exceed their design levels.
- Sediment deposition may occur and reduce the storage capacity over time.
- They can impact water quality as they are known to affect temperature, dissolved oxygen and nitrogen, and nutrients.
- If not designed correctly they may cause backwater flooding problems upstream.

The dams of Jersey County are earthen dams almost entirely for farm ponds and water retention. Many of these dams also serve to retard the flow of flood waters and reduce soil erosion. Jersey County has only one dam that has been identified as a potential hazard. It is the Airstrip Reservoir Dam – IL0065 located at north of Grafton. Maintenance and inspections have been done for the dam of Grafton.

Levees: Floodplains are usually excellent agricultural lands because they contain nutrient-rich sediments deposited by many floods. Soil moisture is commonly abundant because the river is so close and the water table is shallow. There has been a long history of protecting these agricultural assets through private and government projects that drain excess water from the floodplains and build levees.



The floodplains are divided into drainage and levee districts; each is managed by a local governing body. There are four drainage districts along the Illinois River. The Southern- most drainage and levee district in Illinois is the Nutwood Drainage and Levee District.

The Nutwood Drainage and Levee District currently protects 10,360 acres of primarily agricultural land and 20 residences¹ located in Jersey and Greene Counties on the left bank of the Illinois River between river miles 15.2 and 23.7 above the mouth of the Illinois River. It is a federally constructed levee providing for a 4 percent chance of exceedance (25-year even).

On July 18, 1993 the Nutwood Levee was overtopped and breached in its southwestern segment. Flood stage is 25 feet at the Hardin gauge. On the 18th the water rose to 37 feet; over-topping the levee. The river crested at 42.3 feet. Because of the break, 10,300 acres of the district flooded to depths of more than 20 feet.² In the December 2015 flood the Illinois River was pressing against its sides again with worries that the levee would once

again be breached as the Illinois River was expected to rise to 37 feet, however, in 2010 the U.S. Army Corps of Engineers raised 11.4 miles of the existing levee 3 feet more.

¹ www.myjournalcourier.com/news/84373/nutwood-district

² *The Great Flood of 1993*; Illinois State Geological Survey

6.5 Erosion and Sedimentation

Sedimentation is the deposit of sand and silt in the channel. Sedimentation raises the channel bottom and forms sand bars and islands. As a result, there is less room in the channel to carry higher flows, resulting overbank flooding (either due to flash flooding upstream or back-flow from the Illinois and Mississippi Rivers. In Jersey County, sand and silt come from two main sources: erosion of upstream riverbanks, and farms and construction sites in the watershed.

Erosion and siltation has been significantly reduced throughout a third of the county as a result of the Piasa Creek Watershed Project, funded by the Illinois American Water Company and managed by the Great Rivers Land Trust. This project is described in detail below. The success of the Piasa Creek Watershed Project has encouraged the county Soil and Water Conservation District to undertake a similar project in the Otter Creek Watershed, which is smaller in size, though entirely within Jersey County. The Piasa Creek project has been underway of 15 years, suggesting the time span and resources need to accomplish the intended impact. As discussed elsewhere, northern Jersey County is within the Macoupin Creek Watershed, which as of this date does not have a land management scheme.

Farmlands and construction sites typically contain large areas of bare exposed soil. Surface water runoff can erode soil from these sites, sending sediment into downstream waterways. Erosion also occurs along stream banks and shorelines as the volume and velocity of flow or wave action destabilize and wash away the soil.



Sediment suspended in the water tends to settle out where flowing water slows down. It can clog storm sewers, drain tiles, culverts and ditches and reduce the water transport and storage capacity of river and stream channels, lakes and wetlands. When channels are constricted and flooding cannot deposit sediment in the bottomlands, even more is left in the channels. The result is either clogged streams or increased dredging costs.

Not only are the drainage channels less able to do their job, but the sediment in the water reduces light, oxygen, and water quality and often brings chemicals, heavy metals and other pollutants.

There are two principal strategies to address these problems: minimize erosion and control sedimentation. Techniques to minimize erosion include phased construction, minimal land clearing, and stabilizing bare ground as soon as possible with vegetation and other soil stabilizing practices.

If erosion occurs, other measures are used to capture sediment before it leaves the site. Silt fences, sediment traps and vegetated filter strips are commonly used to control sediment transport. Runoff from the site can be slowed down by terraces, contour strip farming, no-till farm practices, hay or straw bales, constructed wetlands, and impoundments (e.g., sediment basins and farm ponds).



Slowing surface water runoff on the way to a drainage channel increases infiltration into the soil and reduces the volume of topsoil eroded from the site.

Local implementation: Jersey County and the City of Jerseyville work closely with Water and Soil Conservation Dept. on all subdivision and building in the floodplain. The county also follows state requirements so if a developer changes over one acre of ground they have to put up silt fences and follow state requirements.

Following the Flood of 1993, the City of Grafton acquired approximately 235 acres of property for a new residential and commercial development. During the process of preparing to develop this land, the city put into place several ordinances to protect the city's natural resources. In July of 1994 the city council passed a soil erosion and sediment control ordinance. The purpose of the ordinance was to safeguard persons, protect property, prevent damage to the environment and promote the public welfare by guiding, regulating and controlling the design, construction, use and maintenance of any development or other activity which disturbs or breaks the topsoil or otherwise results in the movement of earth on land situated in the city. It is the intentions of the ordinance that the delivery of sediment from sites affected by land disturbing activities be limited, as closely as practicable, to that which would have occurred if the land had been left in its natural undisturbed state.

The Nutwood Drainage and Levee District has applied for a Community Development Block Grant in the amount of \$600,000 to replace the pump system. A public hearing was held in July for written comments until August 7, 2015 at the office of the Greene County Board. The grant has been approved.



CRS credit: Storm water ordinance's erosion and sedimentation control provisions qualify for 35 points, the maximum credit for programs that do not address erosion from farmland.

Jersey County Soil and Water Conservation District: Since its establishment in 1951, the Jersey County Soil and Water Conservation District has assisted landowners, particularly farmers, with a wide variety of services and activities. The district works with the Natural Resources Conservation Service of the U.S. Department of Agriculture to advance conservation and land management practices throughout Jersey County. Under these programs, the SWCD survey, design and construct erosion control structures, funded primarily through cost-share assistance from the state and federal governments. SWCD also works with farmers and operators to develop comprehensive farm management systems and enhance their practices through a variety of government programs. These programs include the Conservation Reserve Program (CRP), the Conservation Practices Program, the Environmental Quality Incentive program (EQIP), the Wetlands Reserve Program, the Wildlife Habitat Improvement Program (WHIP), and the Conservation Reserve Enhancement Program. SWCD provides assistance in soil erosion control, water quality enhancement, pasture and hay-land establishment, wildlife habitat improvement, tree planting and timber stand improvement, reduce and no-till farming, pond site and pond construction guidelines and criteria, filter strips, riparian

buffers and grass waterways.

The SWCD is funded by the State of Illinois and supported by Jersey County government and farmer related businesses. Funding also comes from contracts for service from the District. The SWCD rents various types of conservation equipment (including drills, scrapers and pond aerators), and sells fish to stock ponds, pond aerators and fountains (to improve water quality), and trees. The district has a four person staff (including two conservationists, a soils technician, and an administrator). The district is governed by an eight person board, elected by members. In its 64th year, the District keeps contact with the community through an annual meeting and an annual “appreciation day,” as well as participation in community projects (such as the Natural Hazards Mitigation Planning team).

Table 6.5.1 Jersey County Soil and Water Conservation District

Jersey County SWCD annual reports:	2012	2013	2014
Individuals assisted	1550	854	854
Farm management plans developed	3155 acres	5554 acres	3183 acres
Farm management plans applied	4165 acres	2364 acres	3477 acres
Forest grassland management plans developed	3	4	0
Erosion reduction	16,660 tons	7086 tons	8692 tons
Wetlands creation, restoration, enhancement	384 acres	120 acres	40 acres
Wildlife habitat management applied	378 acres	450 acres	375 acres
Forest stand improvement	263 acres	130 acres	199 acres
Water and sediment control basins created	67	36	26
Grade stabilization structures	2	5	8
Tile for conservation structures	18,650 ft	13,000 ft	17,376 ft
Pond construction or maintenance	85	93	46
Cover crop acres planned	2508 acres	3200 acres	3100 acres
Cool season grass planting	66.5 acres	2505.1 acres	2356 acres
Warm season grass planting	37.0 acres	546.0 acres	329.2 acres
Hardwood tree plantings	325.5 acres	328.3 acres	300.1 acres
Wildlife habitat plantings	406.1 acres	784.8 acres	652.3 acres
CRP waterways		195.6 acres	189.7 acres
Wetlands restoration		2.3 acres	2.3 acres
Wildlife food plots		95.9 acres	84.5 acres
Living snow fence		4.5 acres	4.5 acres
Cool season field border strips	38.4 acres	188.7 acres	155.7 acres
Riparian tree plantings	318.7 acres	321.6 acres	278.2 acres
Warm season quail habitat buffers	529.5 acres	518.2 acres	571.9 acres
Total CRP Practices	5915.0 acres	5534.4 acres	4,924.4 acres

6.6 Wetland Protection

Wetlands are often found in floodplains and depression within a watershed. Wetlands receive and store floodwaters, thus slowing and reducing downstream flows. They also serve as a natural filter, which helps to improve water quality, and provide habitat for many species of fish, wildlife, and plants. As found in other parts of the United States, wetlands can also serve as barriers against surges of water.



Wetlands that are determined to be part of the waters of the United States are regulated by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (US EPA) under Section 404 of the Clean Water Act. Before a “404” permit is issued, the plans are reviewed by several agencies, including the Corps and the U.S. Fish and Wildlife Service. Each of these agencies must sign off on individual permits. If a permit is issued by the Corps, the impact of the development is typically required to be mitigated. Wetland mitigation can include creation, restoration, enhancement or preservation of wetlands elsewhere. Wetland mitigation is often accomplished within the development site, however, mitigation is allowed off-site and sometimes in another watershed. The appropriate type of mitigation is addressed in each permit.

A 1993 study by the Illinois State Water Survey concluded that for every one percent increase in protected wetlands along a stream corridor, peak stream flows decreased by 3.7 percent.

Local implementation: In Jersey County we have a group of investors called Great River Road Land Trust that does several projects in the wetlands. One of their projects is coming up in this plan. For every acre that Jersey County takes out of wetland for roads or construction we replace it with wetlands somewhere else in the county. County Environmental Health Director works closely to put out mosquito packets in the wetland areas to reduce risk.

The City of Grafton presently has designated wetlands areas, particularly, at the west end of the city along the bike trail. The city will soon begin construction of the Marquette and Joliet Wetlands Nature Walk, a grant funded project that will provide an elevated walkway allowing visitors to view the natural habitat of a semi-controlled wetlands.



CRS credit: The Community Rating System focuses on activities that directly affect flood damage to insurable buildings. While there is no credit for relying on the Corps of Engineers’ 404 regulations, there is credit for preserving open space in its natural condition or restored to a state approximating its natural condition. The credit is based on the percentage of the floodplain that can be documented as wetlands protected from development by ownership or local regulations.

6.7 River and Stream Restoration

Jersey County has three primary streams—Macoupin Creek, Piasa Creek and Otter Creek, each with an extensive network of tributaries. These three creeks form the three watersheds that cover Jersey County (aside for a few minor streams that flow directly into the Illinois or Mississippi Rivers).

There is a growing movement that has several names, such as “stream conservation,”

“bioengineering” or “riparian corridor restoration.” The objective of these approaches is to return streams, stream banks and adjacent land to a more natural condition, including the natural meanders. Another term is “ecological restoration” which restores native indigenous plants and animals to an area.

A key component of these efforts is to use appropriate native plantings along the banks that resist erosion. This may involve retrofitting the shoreline with willow cuttings, wetland plants, and/or rolls of landscape material covered with a natural fabric that decomposes after the banks are stabilized with plant roots.

In all, restoring the right vegetation to a stream has the following advantages:

- Reduces the amount of sediment and pollutants entering the water
- Enhances aquatic habitat by cooling water temperature
- Provides food and shelter for both aquatic and terrestrial wildlife
- Can reduce flood damage by slowing the velocity of water
- Increases the beauty of the land and property value
- Prevents property loss due to erosion
- Provides recreational opportunities, such as hunting, fishing, and bird watching
- Reduces long term maintenance costs

Studies have shown that after establishing the right vegetation, long term maintenance costs are lower than if the banks were concrete. The Natural Resources Conservation Service estimates that over a ten year period, the combined costs of installation and maintenance of a natural landscape may be one-fifth of the cost for conventional landscape maintenance, e.g., mowing turf grass.

Local implementation: In Jersey County we have several streams and creeks to maintain with the help of local townships and our County Highway Engineer maintains the creeks and streams along with local landowners that work together to clear log and brush jams before they become a threat. We work closely with the Corp of Engineers to regulate river conditions throughout Jersey County.



CRS credit: The Community Rating System focuses on activities that directly affect flood damage to insurable buildings. However, there are credits for preserving open space in its natural condition or restored to a state approximating its natural condition. There are also credits for channel setbacks, buffers and protecting shorelines.

6.8 Open Space Preservation

Keeping the floodplain and other hazardous areas open and free from development is the best approach to preventing damage to new developments. Open space can be maintained in agricultural use or can serve as parks, greenway corridors and golf courses. Another approach related to space preservation in the regulation of water run-off; such as requirements for major commercial developments to have rain retention ponds; and to provide for natural space mitigation (for example, if development impacts natural wetlands).

Capital improvement plans and comprehensive land use plans can identify areas to be preserved through any or all of the following means:

- Acquisition,

- Dedication by developers,
- Dedicating or purchasing an easement to keep the land open, and
- Specifying setbacks or buffer zones where development is not allowed.

Local implementation: Jersey County has over 1,563 acres that are open space. The City of Jerseyville expanded in a park district with the construction of a recreational lake, which preserves significant open space while service as a rain retention basin.

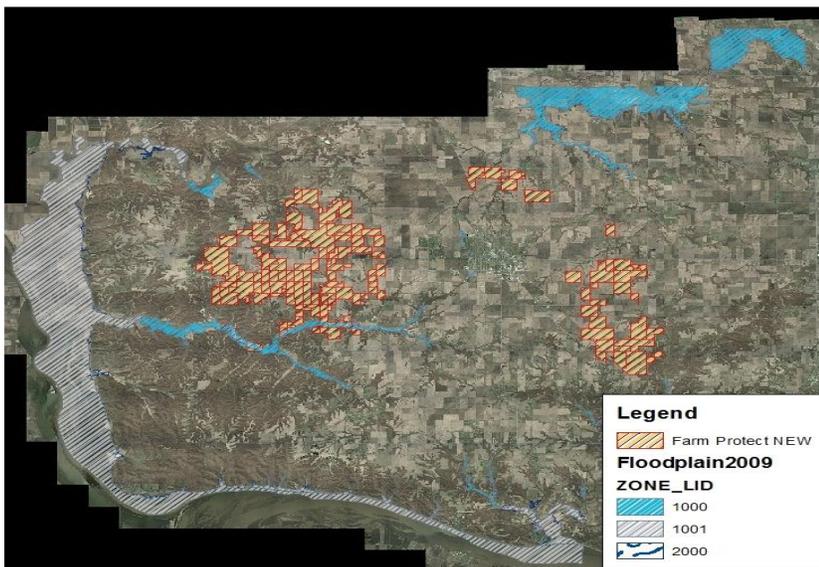


CRS credit: Preserving flood prone areas as open space is one of the highest priorities of the Community are one of the highest priorities of the Community Rating System. Up to 700 points can be given, based on how much of the floodplain is in parks, forest preserves, golf courses, undeveloped floodway or other uses that can be depended on to stay open. Additional credit provided if there are deed restrictions on the parcels.

6.9 Farmland Protection

Farmland protection is quickly becoming an important piece of comprehensive planning and zoning throughout the United States. The purpose of farmland protection is to provide mechanisms for prime, unique, or important agricultural land to remain as such, and to be protected from conversion to nonagricultural uses.

Many programs are available to Jersey County farmers and agriculturalists, including the Conservation Reserve Program (CRP), the Conservation Practices Program, the Environmental Quality Incentive program (EQIP), the Wetlands Reserve Program, the Wildlife Habitat Improvement Program (WHIP), and the Conservation Reserve Enhancement Program (CREP). These programs were extended under the 2014 Farm Bill, though the last program in the list—CREP—is limited to lands in the Illinois River Watershed, which includes both the Macoupin Creek and Otter Creek watersheds, but excludes the Piasa Creek Watershed. These programs are managed through the Soil and Water Conservation District.



Frequently, farm owners sell their land to residential or commercial developers and the property is converted to non-agricultural land uses. With development comes more buildings, roads and other infrastructure. Urban sprawl occurs, which can create additional storm water runoff and emergency management difficulties. Farms on the edge of cities are often appraised based on the price they could be sold for to urban developers. This may drive farmers to sell to developers

because their marginal farm operations cannot afford to be taxed as urban land.

The Farmland Protection Program in the United States Department of Agriculture’s 2002 Farm Bill (Part 519) allows for funds to go to state, tribal, local governments and to nonprofit organizations to help purchase easements on agricultural land to protect against the development of the land. Eligible land includes crop-land, range-land, grass-land, prairie-land, and forest land that are part of an agricultural operation. Certain lands with historical or archaeological resources are also included.

The hazard mitigation benefits of farmland protection are similar to those of open space preservation. Preventive measures:

- Farmland is preserved for future generations
- Farmland in the floodplain keeps damageable structures out of harm’s way
- Farmland keeps more storm water on site and lets less runoff downstream
- Rural economic stability and development is sustained
- Ecosystems are maintained, restored and/or enhanced
- The rural character and scenic beauty of the area is kept

Local implementation: The City of Grafton and the City of Jerseyville have been working on a new Comprehensive Plan, land use plan and a new zoning map. This plan should be completed and adopted by their City Councils. In the city’s of Grafton and Jerseyville Zoning is applied to control farm land protection. In the 1980s Jersey County set up a farmland protection committee that oversees the land that was dedicated to that program. It takes a 2/3rd vote to remove the land once it is placed into farmland protection. Jersey County also has 20,000 acres of floodplain that is in protection under and levee district. The Nutwood levee district is to undergo an elevation in the next few years. An increase height of 3-5 ft. it had failed in 1993 and the farmland was flooded. Jersey County has very little in the way of stream cleanup and protection. It does have some outside groups that are willing to take on large projects and follow compliance.



CRS credit: Credit is given to preserving open space in the floodplain, regardless of why it is being preserved. Credit is also provided for low density zoning of flood prone areas. Agricultural zones that require minimum 10 or 20 acre lots would qualify.

6.10 Best Management Practices

The term “best management practices” (BMPs) refers to design, construction and maintenance practices and criteria that minimize the impact of storm water runoff rates and volumes, prevent erosion, protect natural resources and capture non point source pollutants (including sediment). They can prevent increases in downstream flooding by attenuating runoff and enhancing infiltration of storm water. They also minimize water quality degradation, preserve beneficial natural features onsite, maintain natural base flows, minimize habitat loss, and provide multiple uses of drainage and storage facilities.

Local implementation: Jersey County and the City of Jerseyville are in contact at all times with our local Soil and Water Conservation District who offer advice and services to the county and municipalities.

Hazards Addressed
➤ Flood
Tornado
Winter Storms
➤ Thunderstorms
Earthquake
Drought

The City of Grafton passed an ordinance providing for the control of storm water runoff. The purpose of this ordinance is to diminish threats to public health, safety and welfare caused by runoff of excessive storm water from new development and redevelopment. This excessive storm water could result in the inundation of damageable properties, the erosion and destabilization of downstream channels, and the pollution of valuable stream and lake resources. The cause of increases in storm water runoff quantity and rate and impairment of quality is the development and improvement of land.



CRS credit: A storm water ordinance would receive up to 40 points for requirements that protect channel banks and lakeshores from development through setbacks or buffer zones and for requiring storm water management facilities to incorporate BMP.

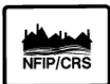
6.11 Dumping Regulations

Dumping regulations address solid matter, such as shopping carts, appliances and landscape waste that can be accidentally or intentionally thrown into channels or wetlands. Such materials may not pollute the water, but they can obstruct even low flows and reduce the channels' and wetlands' ability to convey or clean storm water.

Many cities have nuisance ordinances that prohibit dumping garbage or other “objectionable waste” on public or private property. Waterway dumping regulations need to also apply to “non objectionable” materials, such as grass clippings or tree branches which can kill ground cover or cause obstructions in channels. Regular inspections to catch violations should be scheduled.

Many people do not realize the consequences of their actions. They may, for example, fill in the ditch in their front yard not realizing that it is needed to drain street runoff. They may not understand how regarding their yard, filling a wetland, or discarding leaves or branches in a watercourse can cause a problem to themselves and others. Therefore, a dumping enforcement program should include public information materials that explain the reasons for the rules as well as the penalties.

Local implementation: Being a small community like Jersey County we do not see too much stream dumping. When it does occur the Floodplain Coordinator works with the County Highway Dept. to get the job cleaned up as soon as possible. The City of Jerseyville has a full time Code Enforcement Officer to keep track of dumping.



CRS credit: The CRS provides up to 30 points for enforcing and publicizing a regulation that prohibits dumping in the drainage system. As currently written, the Jersey County Storm Water Ordinance would not receive this credit.

6.12 Urban Forestry

The major damage caused by wind, ice and snow storms is to trees. Downed trees and branches break utility lines and damage buildings, parked vehicles and anything else that was under them. An urban forestry program can reduce the damage potential of trees. The cities in central Illinois are prone to ice storms and have initiated programs that select species that are resistant to ice and storm damage.

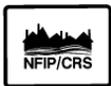
Urban foresters or arborists can select hardier trees which can better withstand high wind and ice accumulation. Only trees that attain a height less than the utility lines should be allowed along

the power and telephone line rights-of-way. Just as important as planting the right trees is correct pruning after a storm. If not done right, the damaged tree will not heal properly, decay over the next few years, and cause a hazard in the future. A trained person should review every damaged tree to determine if it should be pruned or removed

By having stronger trees, programs of proper pruning, and on-going evaluation of the trees, communities can prevent serious damage to their tree population. A properly written and enforced urban forestry plan can reduce liability, alleviate the extent of fallen trees and limbs caused by wind and ice build-up, and provide guidance on repairs and pruning after a storm.

Local implementation: Local utility companies are now in the process of clearing tree limbs away from utility lines and have been an ongoing process. In the County it is every man for himself but in the city of Jerseyville they do have pickup procedures for residence. Grafton also has similar methods.

In the fall of 2006, the City of Grafton started a riverfront improvement project with the planting of indigenous trees and native grasses. In an effort to become a Tree City USA, the City of Grafton along with the Grafton Chamber of Commerce is presently planning an Arbor/May Day celebration. This should become an annual event with emphasis on meeting the four required standards to become Tree City USA.



CRS credit: Being a part of the National Flood Insurance Program, the CRS recognizes only activities that affect flood damage. It does not provide credit for projects or programs that only affect damage from other types of hazards.

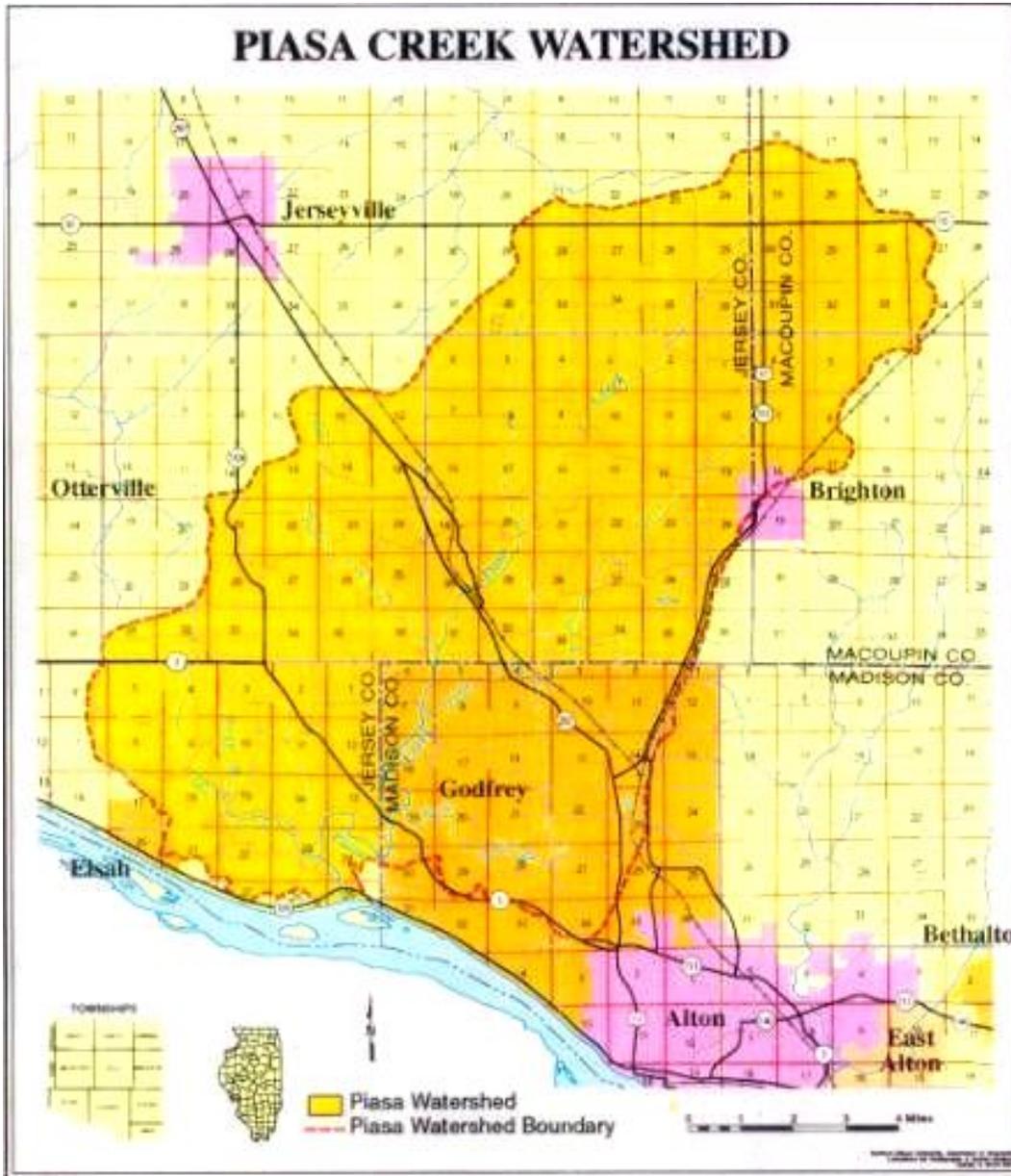
6.13 Watershed Planning

Jersey County is covered by three significant watersheds: Piasa Creek, Otter Creek, and Macoupin Creek. Piasa Creek covers 7800 acres of eastern Jersey County and portions of western Madison County (Godfrey Township), and southwestern Macoupin County. The creek has several branches—including Rocky Fork, Mill Creek, and Little Piasa. It empties into the Mississippi River at Lockhaven in the southwest corner of the county. Piasa Creek has a history of riverine flooding, backing up from the Mississippi River, as well as flash flooding on its tributaries. The creek is used for recreational purposes, including small boating (including canoe and kayak), fishing and hunting in the wetlands. The watershed is a mixture of agricultural and undeveloped (forests, wetlands, etc) land, with some urbanization.

The watershed is managed through private-public cooperation, supervised by Great Rivers Land Trust, through a multi-year program of funding by the Illinois American Water Company. The original program was designed to reduce sediment flow into the Mississippi River. The program has been highly successful. Original ten-year program met its sediment reduction goal by the sixth year. As a result of the successful cooperation, the water company has extended its support of the program for another decade.

Many strategies are used to reduce soil erosion, loss of top soil, and movement of sedimentation. Many acres have been placed—through public and private efforts—into land protection programs—wetland preservation and mitigation, conservation reserve lands, wildlife habitat programs, stream protection, tree-planting, forest buffers, etc. The Great Rivers staff has

identified one of the most significant problems in the watershed has been “field edge gullying” in which water runoff has caused significant erosion along the edge of fields, creating or expanding gullies. This runoff has the most significant damages as the result of severe storms, such as thunderstorms. In effect, severe storms and thunderstorms, causing flash flooding, have an impact on an important economic asset of Jersey County—our agricultural land. Connected with the erosion are loss of valuable top soil and the loss of tillable acreage to gullying. Downstream, flash flooding damages the ecosystem and water quality through sedimentation. Flash flooding has also cause damage to developed properties, personal injury, and loss of life.



The Piasa Creek Watershed Project: The Piasa Creek Watershed covers approximately 78,000

acres, or 121.9 square miles, in portions of Jersey, Madison and Macoupin Counties. Almost the entire Macoupin County portion of the watershed (12%) is devoted to intense agricultural practices. The Jersey County portion of the watershed (62%) is predominantly intense agriculture with the exception of areas of steeper topography and stream corridor, which are primarily grasslands and forest cover. The Madison County portion of the watershed (26%) is the only segment with any significant urban population.

Otter Creek Water Shed Project: The Jersey County Soil and Water Conservation District (through the NRCS field office) has been working on the Otter Creek Water Shed Project as time and resources allow. In early 2014, the SWCD held a landowners meeting to discuss the watershed boundaries and identify landowner concerns. The SWCD staff has started field inventories to collection soil erosion information on twenty four separate 160 acres parcels. The staff plans to investigate twenty gully sites and twenty-two stream bank erosion sites. The soil loss information will be tabulated by the NRCS state staff using the Rapid Assessment Point Method (RAP-M). The goal of the project is to obtain dedicated funding for landowners within the watershed boundaries to undertake conservation practices such as sediment basins, dry dams, and appropriate waterways, using cost-share funding.

6.14 Recommendations

1. Jersey County and local municipalities promulgate and enforce appropriate regulation of subdivisions, open spaces, and storm water run-off. The County adopted a Stormwater Management Ordinance in 2009.
2. Jersey County, and local municipalities, engages in comprehensive land use planning.
3. Jersey County adopts and enforces various ordinances, including anti-dumping and storm water management.
4. Appropriate Jersey County organizations engage in and expand open space, agricultural lands, and urban forest programs.
5. Jersey County enhances and continues the implementation of their program of bridge, culvert, and structure monitoring maintenance.
6. Appropriate Jersey County organizations, such as Great Rivers Land Trust, expansion of watershed preservation scheme from the Piasa Creek Watershed to the Macoupin Creek and Otter Creek watersheds.
7. The City of Grafton should continue to enforce erosion control, sediment control and storm water runoff ordinances. Keep the public informed about the use of retention basins to control gully erosion, reduce sediment and improve water quality.

Local implementation: The City of Grafton and the City of Jerseyville have been working on a new Comprehensive Plan, land use plan and a new zoning map. This plan should be completed and adopted by their City Councils. In the city's of Grafton and Jerseyville Zoning is applied to control farm land protection. In the 1980s Jersey County set up a farmland protection committee that over sees the land that was dedicated to

that program. It takes a 2/3rd vote to remove the land once it is placed into farmland protection. Jersey County has very little in the way of stream cleanup and protection. It does have some outside groups that are willing to take on large projects and follow compliance.

6.15 References

Great Rivers Land Trust, www.greatriverslandtrust.com

The Great Flood of 1993, Illinois State Geological Survey (March 1994)

Blitzkrieg of a flood hits Jersey County; Dec. 30, 2015 *Jersey County Journal*

www.mvs.usace.army.mil Nutwood Drainage and Levee District