

Bradford County Hazard Mitigation Plan - Municipal Project Opportunities

Municipality	Community Rank	Date	Project Name	Mitigation Measures		Hazard Mitigated	Total Cost	Review Status
				Project Description	Description of Problem to be Solved			
Bradford County	None	None	Stream Monitoring System	Enhance existing manual stream flow monitoring systems installed by the Conservation District and the Watershed Groups. Need to enhance by installing automatic gauges. Also put gauge on the Susquehanna River at Wylusing.	Help alert citizens to flash flooding by giving them more time to evacuate and get to safety.	Flooding	\$35,000	This project is still valid and not completed. Funding is needed to complete the project.
Athens Borough	None	6/29/2009	Raise River Bank	To raise the river bank on the Susquehanna River between Susquehanna St. north to and including Joint Sewer Plant	By raising the bank will prevent flooding of this area as it is prone to frequent flooding at times of heavy rains or rising river levels	Flooding	\$1,000,000	Keeping
Alba Borough	None	6/26/2009		Cleanout on Alba Creek and all tributaries				This project will remain. The project has not been completed
Alba Borough	None	11/1/2012	Sister Street Bridge Replacement	Replace the washed out bridge	Replace the bridge	Flooding	\$263,078.00	This project is in progress and 75% complete.
Albany Township	None		Heath Hill Road	Fix the wash out and clay problem with drainage	Roadway washes out due to drainage issues and clay soil	Flooding	\$60,000	This project was updated and placed on a new mitigation opportunity form 6/1/2014. See the 2014 opportunities for information.
Armenia Township	1-6	6/15/2009	Various	Improvement of township buildings	New Mtg. Office, Upgrade Maintenance building, Commercial grade cinder protection, New cinder spreader, New stone rake, Widen Dewey Hollow Road		\$58,000.00	Completed. The new municipal building was built
Asylum Township	None	6/26/2009		There are narrow roadways with steep banks. Chute Road must be closed in the winter, Tiptop Road needs guide rails, Moody Road needs raised due to flooding.	Dangerous roadways, and flooding issues			This project is still valid and not completed. Funding is needed to complete the project.
Athens Township	None	4/27/2009 and 12/22/2011	Wildwood Road Elevation	Raise roadway to allow passage during times of flooding	When this road floods (which is when the Susquehanna reaches approximately 17' at the Waverly river gauge), there is no outlet. Approximately 65 person are unprotected from fire and/or other emergency. Raising the roadway would eliminate the danger of inaccessibility.	Flooding	\$550,000	Keeping, this project is engineered and awaiting funding.
Athens Township	None	7/6/2009	Thomas Avenue Bridge Replacement	Replacement of T-105 Thomas Avenue one-lane steel bridge.	T-105 Thomas Avenue has an old one-lane steel bridge over Cayuta Creek. The bridge is posted with a 10-ton weight limit. There is a potential for this bridge to be closed.		\$1,500,000	Keeping. This project is on the TIP and is in the initial stages of engineering
Athens Township	None	4/28/2009	Meadowlark Bridge Replacement	Replace existing culvert that currently handles a 5-year flood frequency with an adequately sized culvert that can handle the 50-year flood frequency flow.	An undersized culvert will be replaced with a properly sized culvert that can handle the 50-year flood frequency flow. This will eliminate damage to public and private facilities	Flooding	\$500,000.00	Completed
Athens Township	None	4/28/2009	Tom Taylor Bridge Replacement	Replace existing culvert with a 50-year flood frequency flow culvert		Flooding		This project remains valid.

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Burlington Borough	None		Educating Municipalities in Flood Plain Management	Training for the municipality and its residents in flood plain management.	Reduce losses through proper use of flood plain management.			This is an action and should be changed to an action.
Burlington Township	None	6/1/2009	McNeal Road Pipe	Replace/repair headwalls and replace pipe.			\$12,147.50	Completed
Canton Borough	None	7/1/2009	Springbrook Buyout	The Borough would like to do a complete buyout of the properties that are affected by the Springbrook flooding area.	The Springbrook area is a wetland area that floods when there is a large amount of rain. This affects the backyards of the parcels of property in this area.	Flooding	\$1,000,000.00	Keeping this project. Not started. Funding is required.
Canton Township	None	4/28/2009	Preston Road T-307	Place riprap on the creek banks to protect the township roadway.			\$100,000.00	Complete
Columbia Township	None	6/26/2009		Need a shed for cinders.				Keeping this project.
Franklin Township	None	6/30/2009	Creek bed dredge and repair roadways	Dredge and clean out creek beds, repair roadways damaged from repeated flooding	Make a path for water to flow during flooding and decrease flooding due to blockages in the creek. Make roadways safer to drive due to erosion and washouts due to flooding	Flooding	\$1,000,000.00	Keeping this project. Not started. Requires grant funding to complete.
Granville Township	None	4/22/2009 and 01/30/2012	Generate Granville	Purchase generators for the two emergency shelters and one for the municipal building.	This will supply power for lights and open doors at the municipal building and power to cook food and lights at the shelter.		\$20,000.00	Keeping. This project is the same as a 2012 submission. Not started and requires grant funding.
Granville Township	None	1/16/2012	Tube Drive	Replace the "Tubes" to make road over the creek more stable for emergency vehicles because of handicap resident.		Flooding	\$250,000.00	Keeping the project. Not started. Grant funding is required.
Herrick Township	None		Improve roads and ditches	Improve roads and ditches to withstand heavy downpours and other flooding issues.		Flooding		Ongoing project and funded with local funding when available.
LeRaysville Borough	None		Educating municipality in Flood Plain Management	Training for the municipality and its residents in correct flood plain management.				This is an action and should be changed to an action.
LeRoy Township	None	6/11/2009	LeRoy Mt. Road Stabilization	Widen and resurface	Improve safety, lower long term maintenance costs, reduce erosion into Towanda Creek watershed			Keeping this project. The project has not been started. Requires grant funding to complete.
Litchfield Township	None	6/17/2009 and 01/03/2012	Park Hollow Road	Increase stream culvert to larger diameter and length. Install concrete block headwall and end wall protection. Install rock rip-rap inlet and outlet protection. Raise road profile over the pipe with suitable base material and additional driving surface aggregate to stabilize road surface.	Undersized culvert continues to be a maintenance problem during storm flows; thus causing damage to personal property and municipal roads. The undersized culvert also affects a stream culvert and bank protection just downstream on Park hollow road.	Flooding	\$23,896.00	This project is still valid and is not started. Grant funding is required.
Monroe Borough	None	5/4/2009	Monroe Borough Dike	Build a levy/dike between the borough and the creek	There was a levy/dike that was destroyed in the 1996 flood.	Flooding		The project is in progress. The completed percentage is unknown.
Monroe Township	None	6/26/2009	Schrader Creek	Clean and dredge creek, road repair from creek flooding damage				This project is still valid and not completed. Funding is needed to complete the project.
North Towanda Township	None	7/6/2009	Sugar Creek Stream Bank Stabilization	Stabilize the Sugar Creek stream bank using rip-rap, stone, vegetation, and other construction techniques deemed appropriate and necessary.	Protect the residents at Box 281 and the township road from being washed out due to water from the creek. Keep the stream bank from eroding further towards the road and residents.	Flooding	\$500,000	This project has been rewritten and is now a 2014 mitigation opportunity, North Sugar Creek Rd #1

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Orwell Township	None	5/1/2009	Orshal Road/South Creek	Remove existing culvert pipe and install a 16'x8'3"x50' structural arch pipe on footers. Repair washed out banks with rip-rap.	To increase the volume of water flow to pass through the arch pipe diverting flood waters.	Flooding	\$99,628	Completed
Overton Township	None	4/29/2009	Road and Stream bank Stabilization	Install riprap along roadway and stream to prevent road washouts along areas on Deep Hollow Road and Millstone Road, plus road width improvement.		Flooding	\$89,000	Completed
Pike Township	None	5/18/2009		Replace driving aggregate on all roads.	Aggregate was washed away with large storms over the last 20 years.		\$500,000.00	Completed after Tropical Storm Lee Flooding.
Ridgebury Township	None	04/30/2009	Bentley Creek Flood Control	Flood Warning system designed and installation of rain and stream gauges with telemetry and Reverse 911 type system. Tributary stabilization for Bentley Creek with design and installation of approximately 19,000 feet of stream stabilization in four (4) tributaries. [Colwell Hill Creek, Terwilliger Creek, Justice Run, and Bucks Creek] Voluntary nonstructural measures of house acquisition/demolition, mobile home elevation and house basement utility protection.	Control flooding, loss of property, and provide public safety	Flooding	\$2,267,000	This project is still valid and will remain. The project has not been started. Grant funding is required. This project opportunity can be replaced with the May 7, 2014 updated project opportunity form that was submitted.
Ridgebury Township	None	4/30/2009	Miller Pond Dam Repair	Miller Pond Dam is a 22' high, 230' long earth embankment which impounds water from a 2.66 square mile drainage area. This dam has been classified as "High Hazard" through the PA Dept. of Environmental Protection. The project will stabilize the toe area of the dam where seepage occurs, by designing and installing a water collection system for seepage.	Completion of this project would solve the possibility of a sudden failure of the dam embankment due to seepage. It is the intent to remove this dam from the High Hazard status.		\$510,000	This project is still valid and will remain. The project has not been started. Grant funding is required.
Rome Borough	None	5/8/2009	Creek Stabilization	Place riprap on the south bank of Bear Creek, place flow deflections in North bank above the riprap. Fill the area that has eroded from the field upstream of Hart Trailer Park.	Bear Creek has shifted south and now threatens a trailer park. The creek is pointed towards the park and if it crests its banks could destroy some of the mobile homes.	Flooding	\$50,000	Completed
Rome Borough	None	5/8/2009	Wysox Creek Gravel Bar Removal	A gravel bar developed after Tropical Storm Lee and obstructs waterflow	Remove the gravel bar	Flooding	\$10,000	This project has not been started or completed. Grant funding is required
Sayre Borough	None	2009	North East Street Sewer Pump Station Replacement	Renovation and upgrade of North East Street Pump Station to include new controls, electrical equipment, backup power, and flood protection.	Renovation and upgrade of North East Street Pump Station		\$203,726	Complete
Sayre Borough	None	2003	Sayer Flood Protection	Demolish and removal of existing pumping station.	Update levee pump station	Flooding	\$1,500,000	Complete

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Sayre Borough	None	2009	Sayre Borough Emergency Operations Center and support equipment	Construct an emergency operations center that will serve the borough and neighboring municipalities. Purchase an emergency generator, satellite system, telemetry unit and multi-line phone system for the emergency operations center			\$84,000	Complete

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Sayre Borough	None	2008	Cayuta Creek Bank Stabilization	Stabilization of Cayuta Creek banks.	Reduce erosion of creek banks during high water events.	Flooding		Updated 2014 Cayuta Creek Sewer Force Main Project Replaces this project.
Sayre Borough	None	2001/2002	Cayuta Creek Bank Stabilization	2,025 feet of channel improvement and stabilization in Cayuta Creek upstream and downstream of Thomas Avenue bridge				Complete
Sheshequin Township	None	12/12/2011	Collins Road	60 feet prior to inlet, west side severe erosion of bank and wing walls. This condition presents the bridge in dangerous conditions of complete loss with the impact of any flooding condition.	Reinforce the wing walls and stream bank	Flooding	Unknown	This project is in progress. Unknown time to completion.
Smithfield Township	None	4/28/2009	T645 Kelly Road	Increase culvert size by replacement of existing pipe	Prevent roadway washing away during heavy rains	Flooding	\$2,400.00	Complete
Smithfield Township	None	4/28/2009	T657 Wilcox Road	Replace culvert, put in two 400 feet apart	Prevent washout of roadway	Flooding	\$20,000	In Progress and should be completed by summer.
Smithfield Township	None	4/28/2009	T-561 Kendall Hill Road	Raise roadway, resurface, stabilize ditches	Prevent ponding of water which will stop flooding of the roadway	Flooding	\$1,200	Complete
South Creek Township	None	12/26/2011	Community Building	OJ Gillett School purchased from Troy Area Schools in 1983 needs torn down	Refurb and serve as an evacuation center.	Flooding	\$300,000	This project is still valid and not completed. Funding is needed to complete the project.
Standing Stone Township	None	5/1/2009	Newman Home Buyout	Buy-out of the Newman home due to frequent flood damage	Home is subjected to frequent first floor flooding by Vought Creek. This is a repetitive flooding issue, with flooding occurring on Jan. 19, 1996 and Sept. 18, 2004, along with other	Flooding	\$87,650	Remove. This house is no longer there. Removed after recent flooding.
Standing Stone Township	None	6/26/2009		Landslides, road edge stabilization				Complete
Stevens Township	None	1/3/2012	Storm Water Management Project (Level I)	Elevating parts of Waterman Road and installing several pipes under the road to drain the water	Water flows over the roadway	Flooding	\$54,500	This project was updated and resubmitted again on 03/27/2014
Stevens Township	None	5/29/2009 and 01/03/2012	Zeigler Road Creek Bank Stabilization	Fix the erosion on Wyalusing Creek bank.	Erosion on Wyalusing Creek	Flooding	\$11,000.00	This project was updated and resubmitted again on 03/27/2014
Sylvania Borough	None	6/30/2009	Creek Cleanout	Clean out creek along RT 6 near old motel.	Will decrease the chance of flooding during a storm or heavy rains	Flooding	\$500,000.00	This project is an on going project and will remain in the plan.
Terry Township	None	7/16/2009 and 12/27/2011	Flood Prevention on SR 187	Increase elevation of bridge on SR 187 near the intersection of SR 2010 to prevent roadway flooding	Road closure caused by flooding prevents emergency response vehicles from responding to a major portion of Terry Township.	Flooding	\$750,000	This project is still valid and will remain. The project has not been started. Grant funding is required.

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Towanda Borough	4	8/24/2009	Towanda Wastewater Treatment Facility Flood Protection	Towanda WWTP is vulnerable to floods of over 27" above low water. Even lower levels cause slow down/shut down in gravity discharge of disinfected wastewater to the river. Construction of an earthen dike about 1900 feet in length from the river bridge to below Towanda Iron & Metal, Inc. would protect the facility, Williams Propane, and the scrap yard. Installation of a discharge pump to overcome the back pressure of river floodwaters.	Curtailment of/or potential loss of the sewer plant would be mitigated. The current value of the facility is about \$13.5 m.	Flooding	\$500,000	This project is still valid and will remain. The project has not been started. Grant funding is required.
Towanda Borough	3	8/24/2009	Borough-wide Stormwater Improvement	Develop a comprehensive Borough Stormwater Management Plan and construct a Borough-wide storm water drainage system. Although built on a hill, the borough has a minimal stormwater collection system in place to convey storm run off to it's four main drainage ways.	Large storms and flash floods periodically cause varying degrees of damage, maintenance and long-term corrosive damage to Borough properties. Periodic maintenance and property loss will be eliminated by this project	Flooding	\$7,000,000.00	Keep this project. The cost has been updated.
Towanda Borough	2	8/24/2009	College Run Stormwater Replacement	Engineer and replace the proper culvert and pipe.	Cave-ins, plugs and overloading have caused property damage and continued maintenance problems of the open stream and enclosed box culvert.	Flooding	\$3,600,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Towanda Borough	1	8/24/2009	Cash Creek Stormwater Replacement	Approximately 3000 lineal feet of adequately sized pipe and related appeneces are needed to be engineered and replaced/relocated.	Potential property loss, periodic maintenance and damage will be eliminated. Approximately 100 homes, 40 commercial/ governmental (including Bradford Co. History Center) and other buildings along or in the path of this drainage system, should it fail.	Flooding	\$5,000,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Towanda Borough	8	8/24/2009	River Access Fire Lane Stabilization- River Bridge	Rough grade, install base material, pave to the low water mark and armor with 24" or larger rock rip rap.	Access to the river from the John B. Merrill Parkway provides access for fire apparatus to pump river water into a fitting in the riverbank that is connected to a dry hydrant on the west side of the Parkway near the Progress Building for fire protection in this part of the Towanda downtown.		\$13,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Towanda Borough	7	8/24/2009	River Access Fire Lane Stabilization - Court House	Rough grade, install base material, pave to the low water mark and armor with 24" or larger rock rip rap to provide.	Provide safe, ready access to the river for fire response vehicles, and reduce continued maintenance.		\$10,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Towanda Borough	6	8/24/2009	River Access Fire Lane Stabilization - Telephone Company	Approximately 100 feet of 8' wide asphalt lane is required to stabilize the access to the river which is now continually washed away by high water.	Safe access to the river for citizens and emergency vehicles will be provided. Continued maintenance to repair flood damage will be drastically reduce.		\$20,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.

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Towanda Borough	5	8/24/2009	Towanda Borough Hall Flood Proofing	Engineering evaluation to determine the most effective means to flood proof the Towanda Borough hall, which contains the Police Department and headquarters of the Borough's Emergency Coordinator.	Elimination of potential property damage and loss of police and emergency facilities in the Borough.	Flooding	\$50,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Towanda Township	None	9/21/2009	Property Acquisition	To purchase the residence near the Bradford County Airport that are flooded during a flood event	The residents refuse to move and have had to be rescued from flood waters in the past.	Flooding		Complete. The property was purchased by the airport.
Troy Borough	1	5/1/2009	High Street Reconstruction	Replace the sewer line, storm sewer line, and rebuild High Street from 2 level to a wider 1 level street	reduce 1 & 1 to borough's waste water treatment plant	Flooding	\$400,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Troy Township	None	6/2/2009	Ditch washout and sediment control	Repair and rebuild ditches	To stop road washout and sediment from the streams.	Flooding	\$100,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Troy Township	None	2/1/2012	Gulf Road Creek	Dredge the tributary and stabilize banks	Decrease flooding risks	Flooding	\$10,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Tuscanora Township	None	4/30/2009	Ace's Sluice Pipe	Replace sluice pipe with concrete bridge box.	Current sluice pipe on property is an old railroad tank car.	Flooding	\$35,000.00	This project is in progress. Unknown time to completion.
Tuscanora Township	None	4/30/2009	Shatinsky Creek Clean-up	Creek clean-up and ric rac creek bank to keep from washing out a yard.	Every year with flooding creek banks along Tuscarora Creek yards are washed away.	Flooding	\$3,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Tuscanora Township	None	4/30/2009	Generator for Township Building	Purchase a generator for the township building to provide power in the event of a power outage.		All Hazards		Completed. The generator was purchased by the municipality.
Ulster Township	None	4/20/2009	Lake Road	Moving ditches, raising roadway, change flow of water from swamp which was higher than the road.	To stop water from flooding the roadway	Flooding	\$2,500.00	This project has been completed.
Ulster Township	None	4/20/2009	Cash Creek Road	Make the ditches deeper to handle water flow and repair existing headwalls	Stop water from eroding the roadway	Flooding	\$3,000.00	This project has not been completed and should remain as an opportunity.
Ulster Township	None	4/20/2009	Cash Creek Road	Put in headwalls made of rip rap in two places approximately 1/4 mile apart to stop road washout and flooding.	Contain creek in its natural flow of water and stop road wash out	Flooding	\$8,000.00	This project has been completed.
Ulster Township	None	4/20/2009	Cash Creek Road	Install a sluice pipe	Distance between pipes is too great. Correction of water flow is needed to stop water from laying on the roadway/flooding.	Flooding	\$700.00	This project has been completed.
Ulster Township	None	4/20/2009	Lake Hill Road	Install seven (7) larger sluice pipes. Of these 4 pipes were replacements and three were added.	Water washed out the roadway	Flooding	\$5,000.00	Completed
Warren Township	None	5/21/2009	Improvement of Wappasini Creek	Clean out creek bed to improve flow.	Currently there are tree roots, large rocks, and gravel that restrict the flow and cause flooding	Flooding	\$1,000,000.00	This project was updated and resubmitted again on 03/27/2014. The project will now be part of the new project.
Wells Township	None	5/6/2009	Updating of radios and tower at the EOC	Purchase of radios and tower to improve communications for emergency responses and safety.	Communications in most area of the township and with areas outside of the township.		\$15,000.00	Completed
West Burlington Township	None	6/1/2009	Lampman Road	Widen road, improve road base, install cross pipes prevent future erosion to ditch and roadway.	Erosion to ditch and roadway.		\$91,350.00	Completed
Wilmot Township	None	6/30/2009	Fire hall Access Road	Connect the fire station to the nearest township road		Flooding		This project has not been completed and should remain as an opportunity.
Wilmot Township	None	6/30/2009	Robinson Road	Move road 50 feet		Flooding		In Progress. Unknown when the project will be completed.

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Wilmot Township	None	6/30/2009	Resurface Roads	Resurface township roads	Approximately one inch of road topping is lost a year, causing air and pollution problems.	All Hazards	\$400,000.00	This project has not been completed and should remain as an opportunity.
Windham Township	None	5/14/2009	Osborne Hill road landslide	Install self drilling super nails to stabilize Osborne Hill Road for a length of 152 LF.	This will stabilize the road from future land slides and eliminate the hazard of sink holes.		\$213,200.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Wyalusing Borough	None	7/16/2009	Storm Water Drainage	Install larger drainage pipes. Modify diversion ditch.	Current system has the potential to clog or collapse resulting in flooded basements and property damage to residents in that area.	Flooding	\$1,000,000.00	This is an ongoing project. As funds are available, certain portions are completed.
Wyalusing Borough	None	12/20/2011	Storm Water Upgrade	Installation of larger drain pipes to update the system that no longer works properly.	Reduce residential damage.	Flooding	\$800,000.00	This is an ongoing project. As funds are available, certain portions are completed.
Wyalusing Township	None	6/29/2009	County Bridge Road stone arch replacement	Replace stone arch with a concrete box culvert.	There is history of a complete washout of the stone arch on County Bridge Road.	Flooding	\$400,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Wyalusing Township	None	6/29/2009	Church Street Sluice Replacement	Installation of a box culvert	The street has been closed on both sides of the stream. Replacement will allow this roadway to be re-opened to emergency and general traffic.	Flooding	\$200,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Wysox Township	6	8/24/2009	River Access Stabilization - Eastside Riverfront Park	An area, approximately 80' x 250' x 1' deep, is proposed to be removed and replaced with a geotextile grid and concrete to stabilize the area.	Stabilize the area and protect from future flooding and replacement.	Flooding	\$160,000.00	This project is still valid and will remain. The project has not been started. Grant funding is required.
Wysox Township			Educating Municipalities in Flood Plain Management (Level III)	Training for the municipality and its residents in correct flood plain management.	This will help to reduce losses through the proper use and understanding of flood plain management.			This is a valid action in the HMP. Remove this opportunity