

Municipality	Recommendations Stemming from Municipal Comprehensive Plan
<b>Lancaster County</b>	1. Preserve, conserve, and improve surface and groundwater resources for human and non-human use.
<b>City of Lancaster</b>	Adopted 1993- 1. Direct storm water runoff into ground water recharge facilities and not into the sanitary sewer system.
<b>East Hempfield Township</b>	Adopted January 1994- 1. Prohibit use of on-lot utilities to accommodate growth areas, as Township will ultimately be asked to extend utilities or retrofit package system when on-lot systems fail; 2. Promote the use of clustering to provide more usable open space within each development; 3. Protect sensitive, unique and/or valuable environmental features throughout the Township; 4. Seek to protect remaining concentrations of woodland; 5. Identify means to assure that adequate water quality and quantity is provided for domestic use and firefighting purposes; and 6. Require adequate storm water management measures that prevent adverse impact to surrounding properties and watercourses.
<b>East Petersburg Borough</b>	None
<b>Lancaster Township</b>	Adopted September 16, 2002- 1. Following up on the success of the award winning Little Conestoga Creek restoration project in Maple Grove Park by identifying opportunities and seeking grant funding for additional, similar projects in the Township; 2. Using modifications sparing when they deal with the impacts to natural resources; 3. Develop a series of education articles for publication on the Township web site and in the newsletter detailing the importance of riparian buffers, wetlands, etc.; 4. Encouraging and supporting the formation of citizen preservation groups.
<b>Lititz Borough</b>	Adopted December 8, 1999- 1. Discussion of developing conservation corridors that protect natural and cultural features (such as creeks, 100-year floodplains, wetlands, steep slopes > 25% from negative impacts associated with development); 2. Consider requiring a 35 feet riparian or forested buffers along streams, creeks, and wetlands; 3. Consider specialized preservation techniques for well head and aquifer recharge areas, particularly the primary zones of influence; 4. Develop a riparian corridor preservation and streambank restoration; 5. As part of the Stormwater Management Ordinance establish riparian buffer and easement regulations under Best Management Practices; 6. Utilize a four-step process for the subdivision and land development of tracts containing primary or secondary conservation corridors; 7. Develop specific zoning regulations for parcels affected by the conservation corridors by allowing flexibility of lot sizes based on maximizing open space; and 8. Develop natural resource compensation re



<b>Manheim Township</b>	Adopted April 1995- 1. Protect environmentally sensitive land, water and wildlife resources that present development hazards or serve highly valuable ecological functions by requiring mitigation of adverse impacts or by regulating development in these areas; 2. Ensure that proposed development complies with State and Federal wetland regulations; 3. Minimum lot size requirements should be adequate to assure dilution of effluent for on-lot sewage disposal; 4. Protect groundwater recharge areas from land uses that generate harmful pollutants; 5. Promote land use patterns and practices that will protect water quality while allowing for the accommodation of development; and 6. Protect surface water from point-source pollution through sewage facilities planning that limits private on-site package treatment plants.
<b>Manor Township</b>	Adopted February 1999- 1. Encourage implementation of clustering and livable communities concepts in Township Zoning Ordinance in an effort to protect natural areas of the Township; 2. Encourage preservation of prime agricultural areas, floodplains, woodlands, stream valleys, historic areas, and areas of natural resource extraction; 3. Encourage the formation and/or continuation of watershed associations to address the problems of water quality at the local level and to maintain high quality streams; 4. Work to obtain open space easements to protect selected stream valleys and scenic areas of the Township; 5. Enforce regulations restricting development in the Township's designated floodplain areas; 6. Enforce zoning, subdivision and land development, and storm drainage ordinance provisions and enact new provisions, as needed, to minimize the adverse effects of stormwater runoff, soil erosion, and sedimentation from construction and/or agricultural activities; 7. Support the implementation of Lancaster Inter-municipal Committee Plans.
<b>Millersville Borough</b>	1. To conserve and protect important natural resources from degradation; 2. Revise Storm Water Management Ordinance to actively promote Best Management Practices; 3. Conserve the natural quality of the Conestoga Riverfront and "The Bush"; 4. Revise Subdivision and Land Development Ordinance to include standards to disperse storm water away from sinkholes, closed depressions and other karst topography; 5. Work with the LIMC and other appropriate parties to create resource conservation greenways along the Conestoga and Little Conestoga Creek.
<b>Mountville Borough</b>	None
<b>Penn Township</b>	Adopted June 1993 and Updated in September 2000- 1. Develop a special subdivision and land development process to identify presence or absence of primary or secondary conservation areas at the time of subdivision or land development; 2. Develop a 35 foot riparian or forested buffer along the streams, creeks, and wetlands; 3. Utilize a four-step process for the subdivision and/or development of tracts containing primarily or secondary conservation areas; 4. Develop specific regulations for parcels affected by the conservation corridors; 5. Utilize Best Management Practices for the protection of the conservation areas; 6. Provide developers not affected by primary or secondary conservation areas but with the desire to integrate open space into the development, to utilize the same subdivision and land development



	<p>process and zoning provision by right; 5. Consider the adoption of a local Subdivision and Land Development Ordinance; and 6. Monitor and update where needed On-lot Sewage Disposal Management Programs.</p>
<p><b>Warwick Township</b></p>	<p>Adopted December 8, 1999- 1. Discussion of developing conservation corridors that protect natural and cultural features (such as creeks, 100-year floodplains, wetlands, steep slopes &gt; 25% from negative impacts associated with development); 2. Consider requiring a 35 feet riparian or forested buffers along streams, creeks, and wetlands; 3. Consider specialized preservation techniques for well head and aquifer recharge areas, particularly the primary zones of influence; 4. Develop a riparian corridor preservation and streambank restoration; 5. As part of the Stormwater Management Ordinance establish riparian buffer and easement regulations under Best Management Practices; 6. Utilize a four-step process for the subdivision and land development of tracts containing primary or secondary conservation corridors; 7. Develop specific zoning regulations for parcels affected by the conservation corridors by allowing flexibility of lot sizes based on maximizing open space; and 8. Develop natural resource compensation re</p>
<p><b>West Hempfield Township</b></p>	<p>Adopted 2001- 1. Consider necessary amendments to the Zoning Ordinance and Subdivision and Land Development Ordinance to allow for more innovative features of conservation design developments, and neo-traditional developments. Sections that may need updating include street design, to allow for pavement width reductions for traffic calming in addition to stormwater benefits from reduced impervious coverage, to encourage looping streets over single-ended cul-de-sacs, and to permit alternative single-ended street designs storm water management, to allow for the use of non-structural Best Management Practices, and to require groundwater recharge of the "first flush" of storm water runoff, and to give credit for use of porous pavement and landscaping; 2. Encourage the use of the Township's Open Space Design Option to protect critical and sensitive land and water resources; 3. Continue to administers the Township's Zoning and Subdivision and Land Development Ordinances provisions intended to protect the Township's natural and cultural resources, including those provisions related to the use of floodplains, wetlands, steep slopes, and other resources; 4. Consider enhancements to the Township's wetland provisions to require that the Township undertake review of wetland permit applications filed with the Department of Environmental Protection (DEP) (which is not currently done), and that this review be accomplished concurrently with DEP review. This will promote better coordination between DEP and the Township for this resource's protection; 5.</p>

Consider establishing a Riparian Buffer Area Overlay District that establishes a minimum setback from the Township's streams, river, and ponds in which riparian vegetation can flourish, so that their aesthetic and environmental values are conserved. This setback should be the minimum necessary to support a viable riparian habitat, such as 75 feet, and measured from the streambank, from the normal watermark of ponds, or from the wetland edge; 6. Develop and implement a voluntary pollution prevention program directed to residential land uses. This would address the importance of regular on-lot sewage disposal (OLDS) inspection and maintenance, as well as the elimination of OLDS discharges that can result in groundwater pollution (e.g. home hobby chemicals); 7. Develop and implement a voluntary pollution prevention geared toward agricultural sources of ground and surface water contaminants; 8. Amend the Township's Storm Water Management Ordinance to require that all stormwater be treated with the methods that are now commonly used throughout Lancaster County or at a minimum the Commonwealth's Best Management Practices; 9. Better manage erosion and soils exposed during construction, and the resulting downgradient and downstream sedimentation that adversely impacts water quality, watersheds, and wetlands; and 10. Develop voluntary restoration programs with landowners of critical fisheries and wildlife habitat areas contributing resources in the form of planting and/or working with volunteer organizations such as Boy/Girl Scouts.



Little Conestoga Watershed

Municipality	Comprehensive Plan		Zoning Ordinance		Subdivision and Land Development Ordinance		Stormwater Management Ordinance	
	Date	Current	Date	Current	Date	Current	Date	Current
City of Lancaster	1993	1992	1996	1996	1997	1997	12/11/01	1997
East Hempfield Township	Jan-94	1994	01/94-a3/15/01	1996	12/8/88-a10/19/89	1998	7/7/86	1989
East Petersburg Borough	None	1991	1990	1990	None	County	12/22/98	County
Lancaster Township	1996	1996	Void 1988	1989	Void	1982	Void	1982
Lititz Borough	Aug-89	1999	None	1994	3/30/93	1993	6/30/93	1993
Manheim Township	Apr-95	1995	1989-R10-01	1994	None	1998	None	1989
Manor Township	Oct-86	1999	3/6/00	2000	None	County	Use Lanc. Co. SWM	1999
Millersville Borough	None	2000	1/16/02 draft	1995	1975-A7/1992	1992	7/14/88	1988
Mountville Borough	1970	1975	7/75-A3/8/99	1991	None	County	2/8/99	County
Penn Township	2/24/92	1993	6/28/93-A1/5/98	1993	1999	1999	1995	1995
Warwick Township	None	1999	None	1993	1997	1993	2-Apr	1991
West Hempfield Township	None	1992	12/5/00	1994	Sep-90	1990	1987	1987



MUNICIPALITY	COMP PLAN	SLDO	SWM	ZONING	PARK PLAN
<u>East Hempfield Township</u> -29	1994	1988	1989	1996	1993 <u>18</u> 1994
<u>East Petersburg Borough</u> -22	1991	<u>County</u>		1990	1993 <u>18</u>
<u>Lancaster City</u> -33	1992	1997		1996	1993 <u>18</u> 1998
<u>Lancaster Township</u> -34	1996	1982		<u>1989</u>	1993 <u>18</u> 1988
<u>Lititz Borough</u> -37	1999 <u>4</u>	1993	1993	<u>1994</u>	1995
<u>Manheim Township</u> -39	<u>1995</u>	1989		1994	1993 <u>18</u> 1998
<u>Manor Township</u> -41	1999	<u>County</u>	1999	2000	1990, 1993 <u>18</u> 2000
<u>Millersville Borough</u> -44	<u>2000</u>	1992	1988	<u>1995</u>	1993 <u>18</u>
Mountville Borough (47)	1975	<u>County</u>		1991	none
Penn Township (50)	1993 <u>8</u>	1999	1995	1993	none
<u>Warwick Township</u> -60	<u>1999</u> <u>4</u>	1993	1991	<u>1993</u>	none
<u>West Hempfield Township</u> -30	1992 <u>1</u>	1990	1987	<u>1994</u>	1989



## SALDO Ordinance Summary

Those municipalities within the LCCW provide some criteria for showing stormwater facilities bordering and within those sites to be developed. The majority of these municipalities require that floodplains and significant features to be shown also.

Except for the Millersville Borough, provisions are provided for development and alteration within the floodplain. However, this isn't the case for Wetland areas. Only those municipalities covered by the Lancaster County SALDO, the City of Lancaster, Lancaster Township, and the Lititz Borough have provisions for determination and alteration of wetlands.

The majority of the municipalities require some sort of open space/recreation areas for all subdivision or land development projects. The City of Lancaster, Lancaster Township, and Manheim Township additionally promote the development of greenways within their respective lands.



MUNICIPALITY	PLAN REQUIREMENTS	FLOODPLAIN	ALLOWABLE FLOODPLAIN STRUCTURES	WETLANDS	OPEN SPACE AND RECREATION AREAS
Lancaster County	Bodies of water, floodplains, existing/proposed SWM controls, and highly erosive soils within 200' of site	Surface drainage easements to be provided; 100-year floodplain delineated for all watercourses	SWM management facilities; stream improvements solely to improve aquatic life and are approved by the PA Fish Commission; farm ponds; flood-proofing/flood reduction structures to protect existing buildings, public&private utility facilities, except buildings, water-oriented uses (except buildings) - docks, piers, boat launching ramps, hatcheries; water-monitoring devices; culverts, bridges, an their approaches for floodplain crossings by streets, access drives, and driveways	No encroachment into, the regrading of, or the placement of fill in wetlands shall be permitted. Developers must submit evidence that the PA DEP (Burea of Dams and Waterway Safety) and the USACOE have been contacted to determine the ability of state and federal wetland regulations	All land development and subdivision plans to provide open space/recreation areas.
City of Lancaster	Stormwater conveyance systems, floodplains, wetlands, watercourses, and possible hazardous materials area immediately adjacent or on site	Drainage Right-of-way to be provided; 100-year floodplain delineated in all floodprone areas; 500-year floodplain where production/storage of dangerous materials/substances is proposed;	No development or encroachment shall occur in the 100-year floodplain or approximate floodplain that will result in any increase in flood levels during the base flood discharge or the one hundred year flood. Those dwellings or development in floodprone areas shall have an evacuation plan on file with the appropriate Disaster Preparedness Authority. All new water, sanitary, storm, gas, oil and petroleum supply and storage systems shall be designed to preclude the infiltration of floodwaters into systems and discharges into flood waters	Floodplains & floodprone areas to be evaluated for wetlands; any impacts to wetlands shall require the appropriate permits	Open space areas required for subdivisions that will accommodate more than 100 people; encourage developers to preserve the Conestoga River Greenway



<b>East Hempfield Township</b>	Storm sewers and stormwater management facilities within 200' of site and on site; and information required by the East Hempfield Township SWMO (watercourses, drainage facilities, floodplains and other significant features within the property)	Surface drainage easements to be provided; See East Hempfield Township Zoning Ordinance	See East Hempfield Township Zoning Ordinance	N/A	N/A
<b>East Petersburg Township</b>	See Lancaster County	See Lancaster County	See Lancaster County	See Lancaster County	See Lancaster County
<b>Lancaster Township</b>	Floodplains, watercourses, wetlands, significant environmental areas, and existing/proposed SWM facilities within 200' of site and on site	Easement for 100-year design rainfall event for watercourses; see Lancaster Township Zoning Ordinance	See Lancaster Township Zoning Ordinance	A wetland study shall be performed for all sites. Any fill into wetlands requires permits. Wetland mitigation areas to be shown on plans.	All land development and subdivision plans to provide open space/recreation areas; four greenways identified
<b>Lititz Borough</b>	Floodplains, wetlands, existing/proposed SWM controls, and highly erosive soils within 200' of site and on site	Easement for 100 year design rainfall for watercourse, drainageway, channel or streams; Floodplain/floodway shall be established and preserved per the Zoning ordinance	Floodway shall be free of all structures, fill and other encroachments	A wetland study shall be performed for all sites. Any fill into wetlands requires permits. Wetland mitigation areas to be shown on plans.	Encouraged to provide park and recreation land; comply zoning ordinance
<b>Manheim Township</b>	Watercourses, floodplains, significant features, and storm sewers within 200' of site and on site	Easements provided for all watercourses; 100-year floodplain delineated for all watercourses	Agricultural uses, recreational areas (without structures), preservation areas, blinds for hunting/observing, E&S and SWM management facilities; stream improvements solely to improve aquatic life and are approved by the PA Fish Commission; farm ponds; public utility facilities, except buildings; township projects	N/A	All land development and subdivision plans to provide open space/recreation areas; greenways to be provided (see Comprehensive Plan)
<b>Manor Township</b>	See Lancaster County	See Lancaster County	See Lancaster County	See Lancaster County	See Lancaster County

<b>Millersville Borough</b>	Watercourses, floodplains, significant features, and storm sewers within 200' of site and on site	N/A	N/A	N/A	N/A
<b>Mountville Borough</b>	See Lancaster County	See Lancaster County	See Lancaster County	See Lancaster County	See Lancaster County
<b>Warwick Township</b>	Watercourses, aqueducts, and existing SWM controls within 200' of site; watercourses, floodplains, storm drains/sewers, wetland and other environmentally sensitive areas on site	Easements to be provided for surface water facilities; Floodplain/floodway shall be identified on plan. Also, refer to Zoning ordinance	Floodway shall be free of all structures, all structures located within the floodplain fringe shall be floodproofed to the floodplain corridor, development within the floodplain fringe shall have an evacuation plan	N/A	All land development and subdivision plans to provide open space/recreation areas
<b>West Hempfield Township</b>	SWM controls within 200' of site and on site	Surface drainage easements to be provided; 100-year floodplain delineated for all watercourses	SWM management facilities; stream improvements solely to improve aquatic life and are approved by the PA Fish Commission; farm ponds; flood-proofing/flood reduction structures to protect existing buildings, public&private utility facilities, except buildings, water-oriented uses (except buildings) - docks, piers, boat launching ramps, hatcheries; water-monitoring devices; culverts, bridges, an their approaches for floodplain crossings by streets, access drives, and driveways	N/A	Provide open space/recreation areas for subdivision that provide for ten or more dwellings



Municipality	Water Quality	Water Quantity
ACT 167	Recommendations - Infiltration/Retention in areas of Hydrologic Group A& B soils, disconnected roof drains, permeable parking and sidewalks, wetlands	Reduce all post-development peak stormwater runoff to 50% of the pre-development peak stormwater runoff for the 2, 5, 10, 25, 50, and 100-year storms
Lancaster County	Innovative SWM and recharge facilities may be proposed: rooftop storage, drywells, cisterns, diversion structures, aeration of lawns, holding tanks, infiltration structures, stream channel storage, in line storage in storm sewers, and grading patterns.	Post-development peak stormwater runoff shall not exceed the pre-development peak stormwater runoff for the 2, 10, 25, 50, and 100-year storms
City of Lancaster	Innovative SWM and recharge facilities may be proposed: detention/retention basin, roop-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reservoirs, routed flow over grass, decreased impervious surface coverage. First Flush (the first one inch of a ny 24 hour storm) standards in areas served solely by combined sewers.	Within the LCCW, comply with ACT 167, reduce all post-development peak stormwater runoff to 50% of the pre-development peak stormwater runoff for the 2, 5, 10, 25, 50, and 100-year storms unless the pre-existing hydrograph is not exceed at all points, within the Conestoga River and Mill Creek watersheds the post-development peak stormwater runoff shall not exceed the pre-development peak stormwater runoff for the 2, 25, and 100-year storms
East Hempfield Township*	Innovative SWM and recharge facilities may be proposed: rooftop storage, drywells, cisterns, diversion structures, aeration of lawns, holding tanks, infiltration structures, stream channel storage, in line storage in storm sewers, and grading patterns.	Reduce the post-development peak stormwater runoff to 100% or less of the pre-development peak stormwater runoff for the 10 and 100-year storms
East Petersburg Township	Innovative SWM and recharge facilities may be proposed: detention/retention basin, roop-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reservoirs, routed flow over grass, decreased impervious surface coverage	Reduce all post-development peak stormwater runoff to 50% of the pre-development peak stormwater runoff for the 2, 5, 10, 25, 50, and 100-year storms

<p><b>Lancaster Township</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roop-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reserviors, routed flow over grass, decreased impervious surface coverage</p>	<p>Comply with ACT 167, reduce all post development peak stormwater runoff to 50% of the pre-development peak stormwater runoff for the 2, 5, 10, 25, 50, and 100-year storms</p>
<p><b>Lititz Borough</b></p>	<p>Innovative SWM and recharge facilities shall be used whenever and wherever feasible to protect adjoining properties; to control the volume of water leaving the site; to remove pollutants from leaving the site; or to provide for recharge of ground water supplies</p>	<p>Reduce the post-development peak stormwater runoff to 100% or less of the pre-development peak stormwater runoff for the 2 and 10-year storms and to 50% of the pre-development peak stormwater runoff for the 25, 50, and 100-year storms</p>
<p><b>Manheim Township</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roop-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reserviors, routed flow over grass, decreased impervious surface coverage, constructed wetlands, best management practices</p>	<p>Reduce all post-development peak stormwater runoff to 50% of the pre-development peak stormwater runoff for the 2, 5, 10, 25, 50, and 100-year storms</p>
<p><b>Manor Township</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roop-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reserviors, routed flow over grass, decreased impervious surface coverage</p>	<p>Comply with ACT 167, reduce all post development peak stormwater runoff to 50% of the pre-development peak stormwater runoff for the 2, 5, 10, 25, 50, and 100-year storms unless the pre-existing hydrograph is not exceed at all points</p>
<p><b>Millersville Borough</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roop-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reserviors, routed flow over grass, decreased impervious surface coverage</p>	<p>Post-development peak stormwater runoff shall not exceed the pre-development peak stormwater runoff for the 2, 10, 25, and 100-year storms</p>



<p><b>Mountville Borough</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roof-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reservoirs, routed flow over grass, decreased impervious surface coverage</p>	<p>Comply with ACT 167, reduce all post development peak stormwater runoff to 50% of the pre-development peak stormwater runoff for the 2, 10, 25, and 100-year storms unless the pre-existing hydrograph is not exceed at all points</p>
<p><b>Penn Township</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roof-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reservoirs, routed flow over grass, decreased impervious surface coverage</p>	<p>Post-development peak stormwater runoff shall not exceed the pre-development peak stormwater runoff for the 2, 5, 10, 25, 50, and 100-year storms. Comply with ACT 167 once it is adopted.</p>
<p><b>Warwick Township</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roof-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reservoirs, routed flow over grass, decreased impervious surface coverage</p>	<p>If detention/retention basins are used, reduce the post-development peak stormwater runoff to 75% or less of the pre-development peak stormwater runoff for the 2 and 10-year storms and to less than 100% of the pre-development peak stormwater runoff for the 25, 50, and 100-year storms. If stormwater is just conveyed through the site, the post-development peak runoff shall not exceed the pre-development peak runoff for the 2, 10, 25, 50, and 100-year storms</p>
<p><b>West Hempfield Township</b></p>	<p>Innovative SWM and recharge facilities may be proposed: detention/retention basin, roof-top storage, parking lot ponding, seepage/infiltration structures, concrete lattice block surfaces, grassed swales, underground reservoirs, routed flow over grass, decreased impervious surface coverage</p>	<p>Comply with the ACT 167 within the LCCW, otherwise the Post-development peak stormwater runoff shall not exceed the pre-development peak stormwater runoff for the 2, 10, and 100-year storms</p>

\* currently revising swm ordinance



Municipality	Recommendations Stemming from Zoning Ordinances
Lancaster County	N/A
City of Lancaster	Adopted 1996- 1. Contains a Park and Open Space District, which protects and preserves public park lands, greenways, riparian areas, and natural environments; and 2. An Overlay Floodplain District is applicable to all zones in the City with specific listing of permitted and special exceptions and variances for the 100 and 500 year floodplain as well as the approximate floodplain area.
East Hempfield Township	As amended February 28, 1998- 1. An overlay floodplain zone is applied to all zones in the Township listing permitted, special exception, and prohibited uses- the zone encompasses the one hundred year flood as identified in the flood insurance study prepared for East Hempfield Township by the Federal Insurance Administration, dated March 29, 1979; 2. An Open Space Design Option requiring no less than thirty percent of the total tract devoted to open space uses; and 3. Cluster Developments are permitted by conditional use in the R-1 and R-2 Districts to blend residential development in areas with substantial natural sensitivity.
East Petersburg Borough	February 6, 1990- 1. An Overlay Floodplain Zone is applicable to all zones in the Borough listing permitted and prohibited uses- the zone encompasses the 100 and 500 year floodplain as well as all alluvial soils as listed under the Lancaster County Soil Survey; and 2. Cluster Development is a conditional use on minimum lot sizes of two acres or greater in both the R-2 and R-3 district allowing 20% open space for the former and 30% for the latter of which the floodplain cannot be included in the required open space.
Lancaster Township	Adopted February 8, 1999 as amended October 11, 1999- 1. A floodplain overlay district is applied to all water courses with the boundaries of the district extending to the 500 year floodplain and shall be established by a study of watershed conditions-permitted, special exception and prohibited uses are provided; 2. A filter strip is required between any watercourse and any tilled land. Such strip shall be a minimum of fifteen feet; 3. A riparian forest buffer shall extend inland one hundred feet from the top of the bank of any water course or one hundred and twenty-five feet from the centerline of the watercourse; 4. Performance standards are provided for agricultural, home occupations, industrial uses that affect quality of groundwater; 5. Open Space Design Option is a permitted use in the R-S, R-1, R-2, and R-3 Districts provided minimum restricted open space ranging from sixty to twenty-five percent; and 6. Designated greenways shall extend in one hundred feet from the top of the water course bank or one hundred and twenty-five feet from the centerline of the watercourse to facilitate the preservation of areas and provide linkages of inter-municipal trails in adjacent municipalities (bodies of water included- Little Conestoga Creek, Conestoga River, Unnamed tributary to Conestoga River southwest of Millersville Road and adjacent to Millersville Borough, and unnamed tributary to the Conestoga River on the northeast side of Millersville Road.



<b>Lititz Borough</b>	Revised November 1994- 1. A floodplain overlay district shall be applied to all zoning districts in the Borough listing of all permitted, prohibited, conditional and by special exception uses within the district- the overlay district encompasses that defined by the 100 year flood in the Flood Insurance Study for the Borough.
<b>Manheim Township</b>	Adopted 1989 as amended April 8, 2002- 1. Cluster Developments are permitted as a conditional use in the R-1, R-2 , R-3 and R-4 Zone on lots with a ten acre minimum with thirty percent of the total tract devoted to common open space depending on the district; 2. Transfer of Development Rights is provided as an option with sending areas located in the Agricultural District and receiving areas are located in R-1 and R-2 districts- the purpose for this concept is to protect the prime agricultural soils and agricultural character of the lands in the Agricultural District by shifting development from that area to the receiving areas of the Township; 3. A floodplain overlay district shall be applied to all zoning districts in the Township- a listing of all permitted, prohibited, or by specific permission within the district- the overlay district encompasses that defined by the 100 year flood as determined by a study performed by a licensed professional registered with the Commonwealth or the latest revisions of the Department of Housing and Urban Development, FEMA Flood Insurance study for Manheim Township dated 1979, revised January 1, 1982.
<b>Manor Township</b>	Adopted March 6, 2000- 1. A Conservation Zone is provided to protect and facilitate preservation of the natural forest areas, steep slopes, stream and creek valleys, lakes, and floodplains in the Township; 2. A floodplain overlay district is applied to all water courses with the boundaries of the district extending to the 500 year floodplain as defined by the Flood Insurance Study prepared for Manor Township by the Federal Insurance Administration dated 1979-and shall be established by a study of watershed conditions-permitted, special exception and prohibited uses are provided; and 3. Cluster Developments are permitted by special exception in the RL, RM, RH, and MHC Zone on lots with a two acre minimum with a range of twenty to thirty percent of the total tract devoted to common open space depending on the district.
<b>Millersville Borough</b>	Adopted July 25, 1995- 1. Overlay district protecting the 100-Year Floodplain and any soils possessing alluvial or floodplain soils with a listing of Permitted and Prohibited Uses and 2. Cluster development is provided for in the R-1, R-2, and R-1A districts as a conditional use on tracts 10 acres or greater requiring not less than thirty percent of the entire tract to set aside as open space.
<b>Mountville Borough</b>	Adopted July 14, 1975 as amended through May 14, 2002- 1. A floodplain area is established as the low, flat area adjoining and including any water or drainage course, or body of water subject to periodic flooding or overflow and shall include soils delineated as alluvial soils in the Lancaster County Soil Survey and include those area delineated as flood prone area in the FIA Flood Hazard Boundary Map dated July 19, 1974;



<p><b>Penn Township</b></p>	<p>Adopted 1993 as amended November 26, 2001- 1. Cluster Developments are permitted by conditional use in the R-2 and R-3 Districts to blend residential development in areas with substantial natural sensitivity; 2. An overlay floodplain zone is applied to all zones in the Township listing permitted, special exception, and prohibited uses- the zone encompasses the one hundred year flood as identified in the flood insurance study prepared for Penn Township by the Federal Insurance Administration, dated March 2, 1981; 3. A Conservation Zone is provided to protect and facilitate preservation of the natural forests, wetlands, aquifers, and floodplains in the Township. 4. All agricultural uses shall comply with the Pennsylvania "Nutrient Management Act" of 1993, as may be amended; 5 Conservation Cluster Development is also provided where a minimum sixty percent of the development shall be devoted to open space.</p>
<p><b>Warwick Township</b></p>	<p>Adopted August 30, 1993 as amended through April 4, 2001- 1. An overlay floodplain zone is applied to all zones in the Township listing permitted, special exception, and prohibited uses- the zone encompasses the one hundred year flood as identified in the flood insurance study prepared for Warwick Township by the Federal Insurance Administration, dated May 19, 1980; 2. Transfer of Development Rights is provided as an option with sending areas located in the A district to approved receiving areas within the Township- the purpose for this concept stems from permanently protecting prime farmland, sensitive natural areas, and rural community character and place development where higher density is appropriate; 3. Cluster developments are permitted by conditional use in the R-1 and R-2 Districts with at least thirty percent of the tract shall be devoted to common open space; 4. Conservation cluster developments are permitted by conditional use in the C district with at least seventy-five of the tract shall be devoted to common open space;</p>
<p><b>West Hempfield Township</b></p>	<p>Adopted 1988 as amended December 5, 2000- 1. A floodplain overlay district is applied to all areas in the Township based on the 100 and 500 year floodplains as defined by the Flood Insurance Study for the Township as well as those area identified by the Army Corps of Engineers or the United States Geological Survey- all permitted and special exception uses are provided; 2. Wetlands shall comply with the applicable rules and regulations of the United States Army Corps of Engineers and the Department of Environmental Resources for the Commonwealth; 3. Performance Standards have been established in districts where agriculture is permitted as well as landscaping and screening which aid in the protection of the waters of the Commonwealth; 4. An Open Space Design Option is allowed as a conditional use under the R, RR, R-1, R-2, and R-3 Districts which provides for a minimum restriction of open space ranging from 60% to 25%; and 5. Transfer of Development Rights is provided as an option with sending areas located in the R and RR districts with a minimum lot size of 25 acres and receiving areas are located in R-1, R-2, and R-3 districts- the purpose for this concept stems from permanently protecting prime farmland, sensitive natural areas, and rural community character and place development where higher density is appropriate.</p>



## COMPLETED RESTORATION PROJECTS

Several stream restoration projects have been completed or are in the midst of design and construction within the Little Conestoga Creek Watershed.

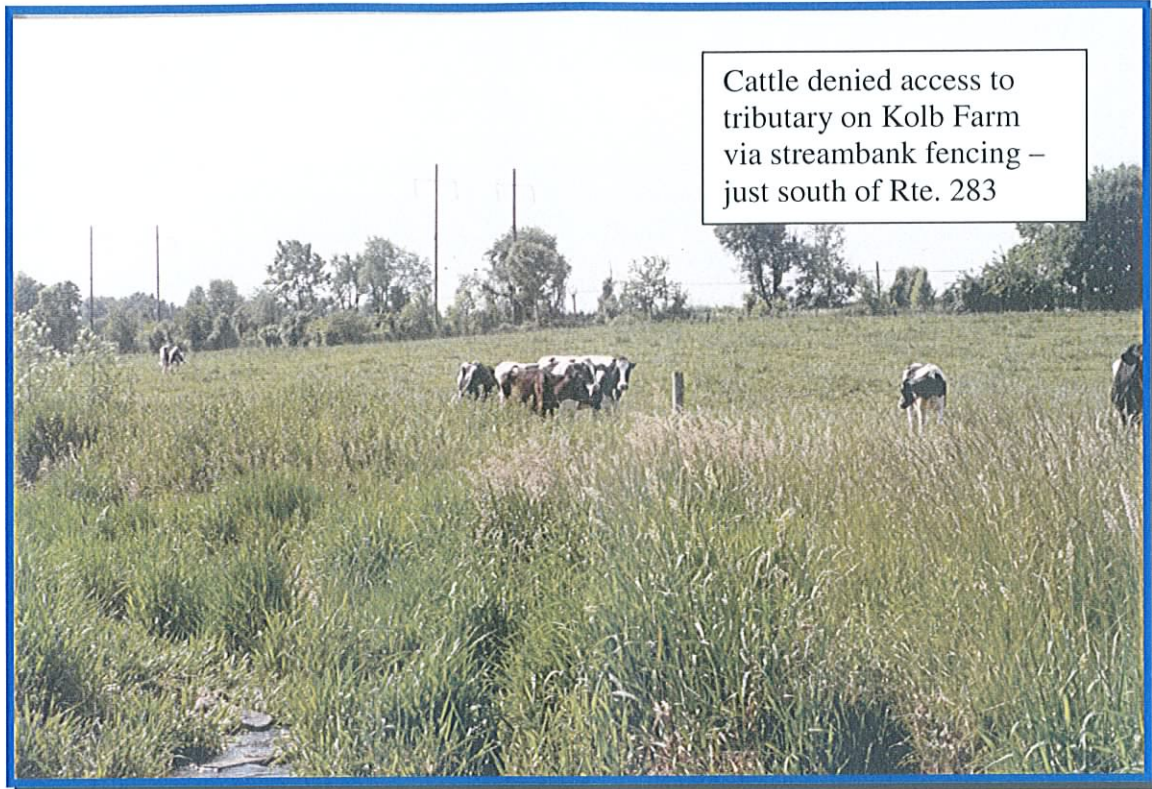
The earliest of these completed projects includes a 1997 streambank stabilization, fish habitat improvement and forest buffer planting and establishment on the Main Stem just upstream of Route 72 “Manheim Pike” on property owned by PPL. The project was design by Mark Gutshall of LandStudies, Lititz, Pennsylvania. The project is a fine example of some of the earliest “natural stream design” work completed in Lancaster County. Years later, this project is performing well and certainly can be deemed a success. PPL continues to do an excellent job maintaining the planted forest buffer and has established a “no mow” zone along the riparian corridor. Every spring, PPL sponsors a trout fishing derby that is a big hit with local youth anglers. PPL would make a great partner in the Little Conestoga Creek Alliance’s pursuit of stream restoration.



In 1997, students from the Lancaster County Academy with assistance from the Lancaster County Conservation District and the Chesapeake Bay Foundation installed streambank fencing and planted a forest buffer on the Melvin Kolb Farm located just south of Route 283. For years, the main pasture on the farm, which contains an un-named tributary, was overgrazed. Dairy cattle had free access to the stream; trampling the streambanks and often defecating



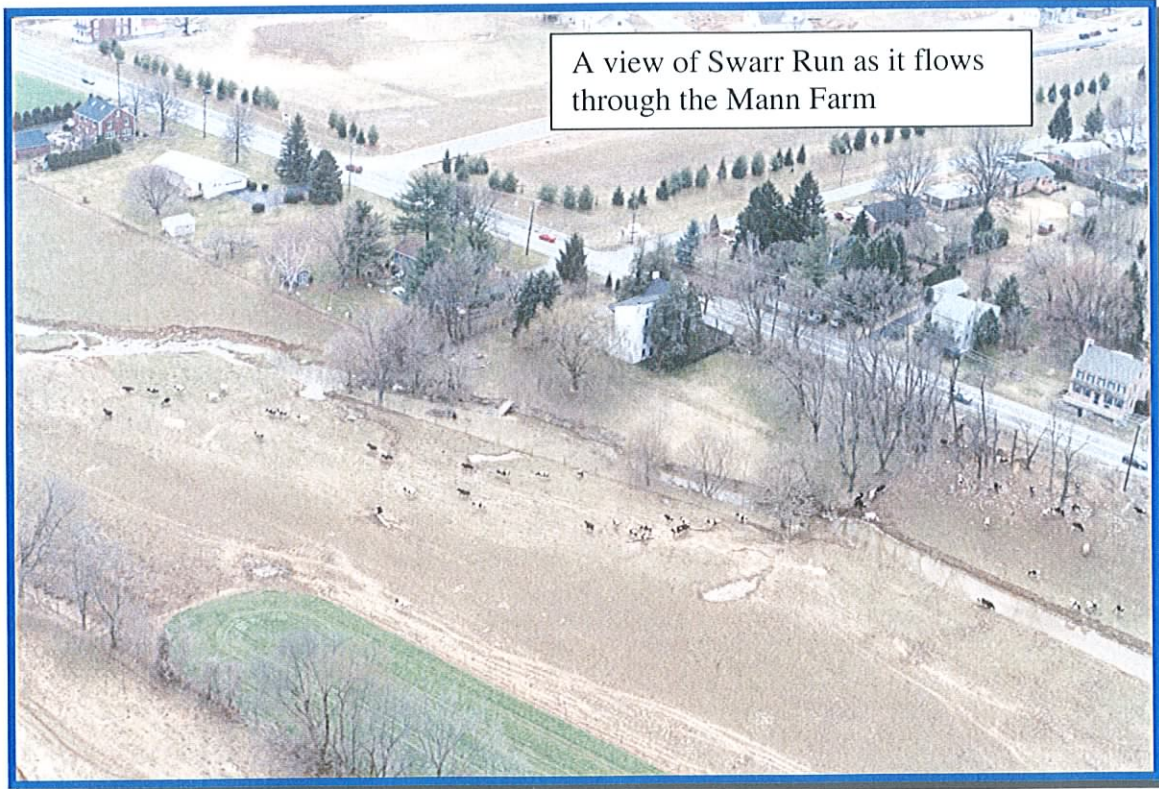
directly into the water while wading. The stream channel was degraded to the point it was more appropriate to refer to it as a muddy ditch rather than a stream. But all that change due to the Academy's "Stream Team". Now the stream is in the process of repairing itself – riding itself of its sediment load and shoring up its banks with grasses, shrubs and trees. Cattle only have access to the stream at stabilized stone ford crossings. The project is easily viewed heading eastbound on Route 283.



Beginning in 1999, "The Goldenberg Group" (owners of Red Rose Commons) began to implement an invasive plant removal and spraying program within the Dillerville Swamp as a condition of their issued "Joint Permit" between the United States Army Corps of Engineers and the Pennsylvania Department of Environmental Protection. The Joint Permit was necessary because of some unavoidable stream and wetland encroachments during the construction of Red Rose Commons. As a condition of the permit, The Goldenberg Group agreed to eradicate Purple loosestrife (*Lythrum salicaria*) which had successfully taken over huge areas within the swamp, displacing native wetland plant species in the process. Dillerville Swamp was at one time the largest naturally existing wetland within Lancaster County. The swamp included all of what is now Red Rose Commons, much of K-Mart and the portion of Route 30 between the two shopping centers. With the successful removal of loosestrife, perhaps native species will once again re-vegetate and bring biodiversity back to this once outstanding wetland habitat.



In 1999, the Lancaster County Conservation District began discussions with A.K. Mann and family regarding the state of their farm at the intersection of Old Harrisburg Pike and State Road in East Hempfield Township. The District managed to secure a federal Section 319 grant (Section 319 of the Clean Water Act) through the Pennsylvania Department of Environmental Protection for the installation of streambank fencing, streambank stabilization and forest buffer plantings. The farm is rented to a local dairy farmer who uses the pastureland for grazing dairy heifers – a lot of dairy heifers! Swarr Run is severely degraded as it flows through the pastureland. The manure pit on the farm is too small for the number of livestock and isn't properly maintained nor cleaned out as necessary to prevent overflowing. The streambanks are severely trampled and bare of vegetation. The substrate is smothered in sediment and blooms of algae due to excessive nitrogen introduced to the water. To date, no physical improvements have yet been made and farming practices remain the same. However restoration plans have been prepared and encroachment permits have been issued to allow the improvement work. Hopefully restoration work will begin in the summer of 2003.

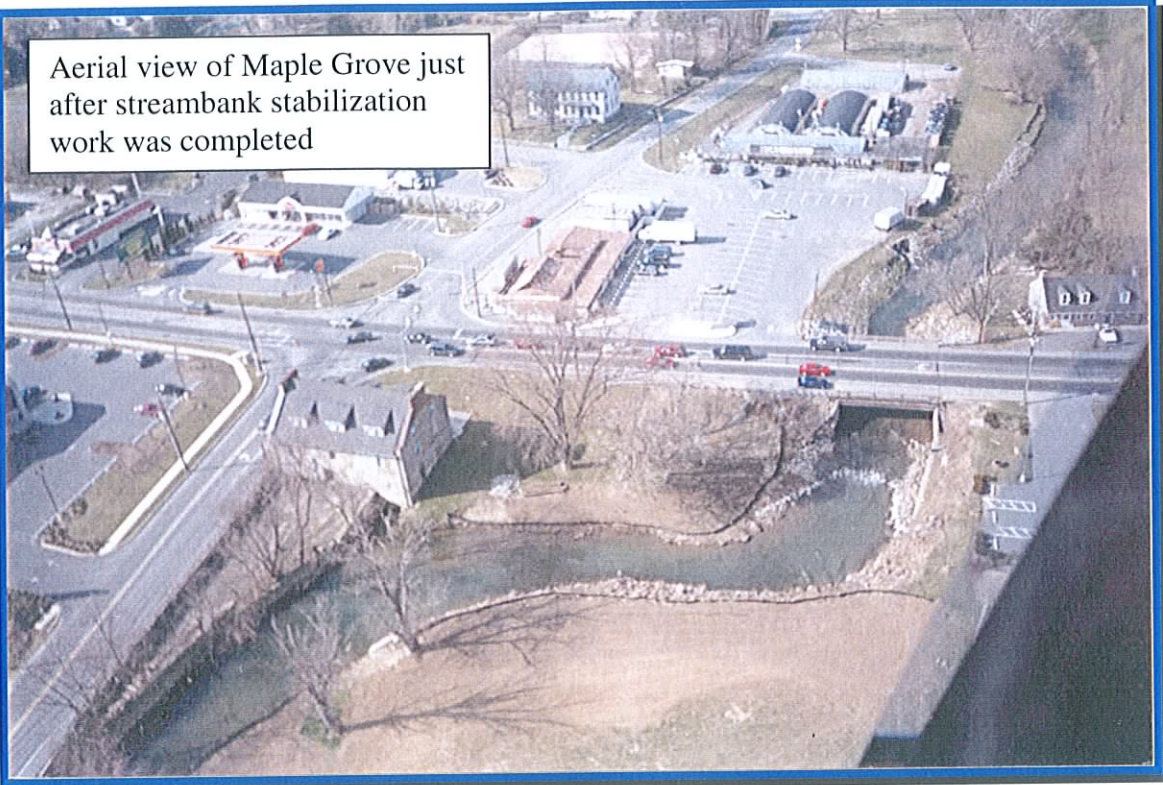


A view of Swarr Run as it flows through the Mann Farm

In 2001, Lancaster Township with help from the Little Conestoga Watershed Alliance, The Girls Scouts of America, The Boy Scouts of America and design assistance from RETTEW Associates, Inc. completed a restoration project along the Main Stem at Maple Grove Park just south of Route 462 “Columbia Avenue”. Natural stream design restoration work included fish habitat improvements, streambank stabilization, bioengineering and forest buffer establishment. The project was successful and received the “Governor’s Award for Watershed Stewardship” in April of 2002.



Aerial view of Maple Grove just after streambank stabilization work was completed



Rock cross-vane at Maple Grove







Fascine installation at Maple Grove – A “bioengineering” technique

# RETTEW

ASSOCIATES INC.

## 2002 GOVERNOR'S AWARD FOR Watershed Stewardship

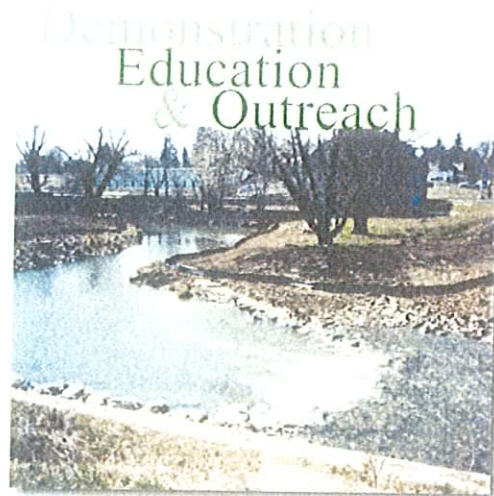
"It's your stream, it's your river, it's your bay — help do something about it." This was Lancaster Township's call-to-arms to preserve local waterways and its slogan for the Maple Grove Park Riparian Restoration Project.

Armed with a \$31,000 Chesapeake Bay Small Projects Grant awarded by the National Fish and Wildlife Foundation and the U.S. Environmental Protection Agency, Lancaster County residents, local businesses, students and scouting groups joined forces to restore a section of the Little Conestoga Creek flowing through Maple Grove Park.

The volunteers worked to address storm water runoff, soil erosion and sedimentation — problems that have increased because of recent land development. Repairing this section of the stream involved excavating floodway fills and depositions to increase floodwater storage capacity, re-grading and creating a buffer along eroded streambanks and installing rock vane and channel deflector structures for erosion prevention.

The township engaged the public by offering hands-on volunteer workshops and field trips. Project kick-off meetings featured slide and video presentations regarding stream restoration techniques. Colorful directory signs erected at the project site and flyers, letters and workshop schedules distributed throughout the community helped generate significant media coverage for the restoration project. Lancaster Township disseminated public service announcements through local newspapers and television stations, WGAL and FOX, and promoted activities on its website [www.twp.lancaster.pa.us](http://www.twp.lancaster.pa.us). More than 5,000 households received invitation letters, schedules and flyers publicizing project events.

By the time the project was completed, Lancaster Township not only had made great strides in restoring its watershed, but also sparked environmental awareness in the community that will continue beyond the lifespan of the Maple Grove Park Riparian Restoration Project itself. In the future, Lancaster Township and the Little Conestoga Watershed Alliance will use Growing Greener grant funds to perform a comprehensive watershed assessment.



### ENVIRONMENTAL RESULTS:

- 1,050 feet of stream ecosystem restored
- 1.2 acres of forested riparian buffer created
- 148 cubic yards of stabilized soils conserved

LANCASTER TOWNSHIP  
1240 Maple Avenue  
Lancaster, PA 17603

### CONTACT:

William Adams  
(717) 291-1213  
(717) 291-6818 (fax)  
[wadams@twp.lancaster.pa.us](mailto:wadams@twp.lancaster.pa.us)  
[www.twp.lancaster.pa.us](http://www.twp.lancaster.pa.us)



MARK SCHWEIKER  
GOVERNOR  
COMMONWEALTH OF  
PENNSYLVANIA

DAVID E. HESS  
SECRETARY  
DEPARTMENT OF  
ENVIRONMENTAL  
PROTECTION

*"Caring people made the difference in Lancaster Township's riparian restoration project. The volunteers did indeed take to heart the theme of the project: 'It's your stream, it's your river, it's your bay!' They were the difference!"*

Helen S. Adams  
Chair, Board of Supervisors  
Lancaster Township

### RETTEW Associates Inc.

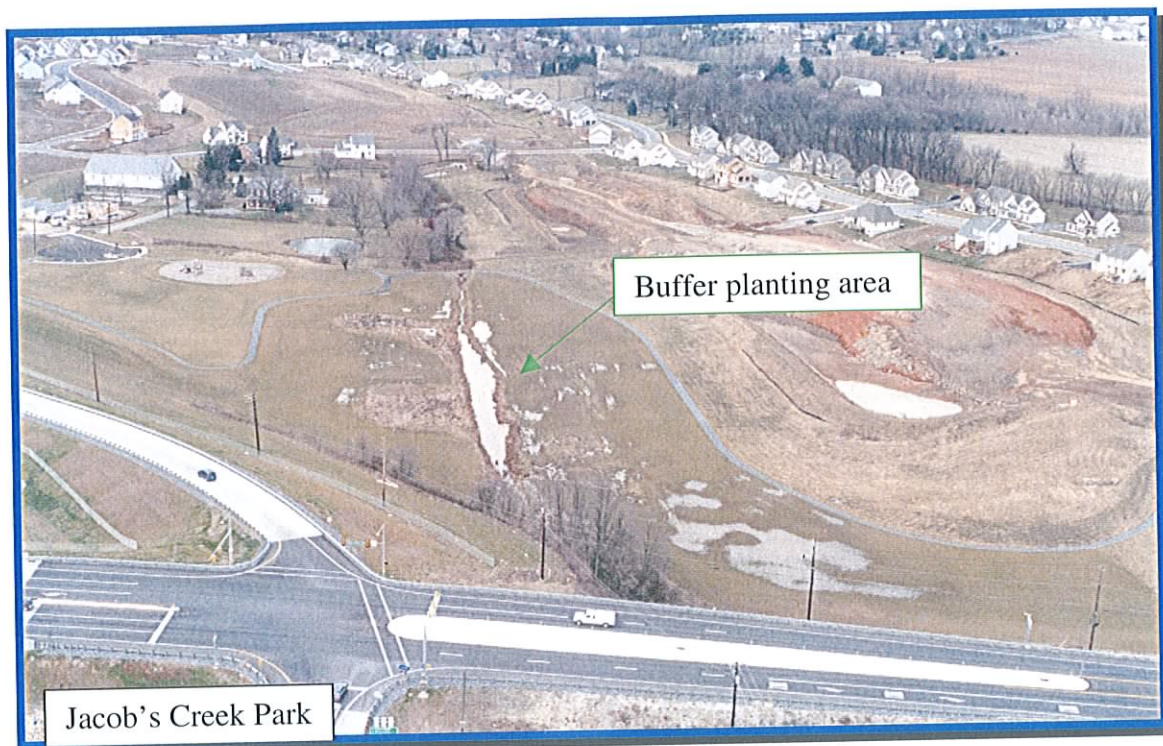
3020 Columbia Avenue, Lancaster, PA 17603

(717) 394-3721 Fax (717) 394-1063 E-mail: [rettew@rettew.com](mailto:rettew@rettew.com) Web site: [www.rettew.com](http://www.rettew.com)

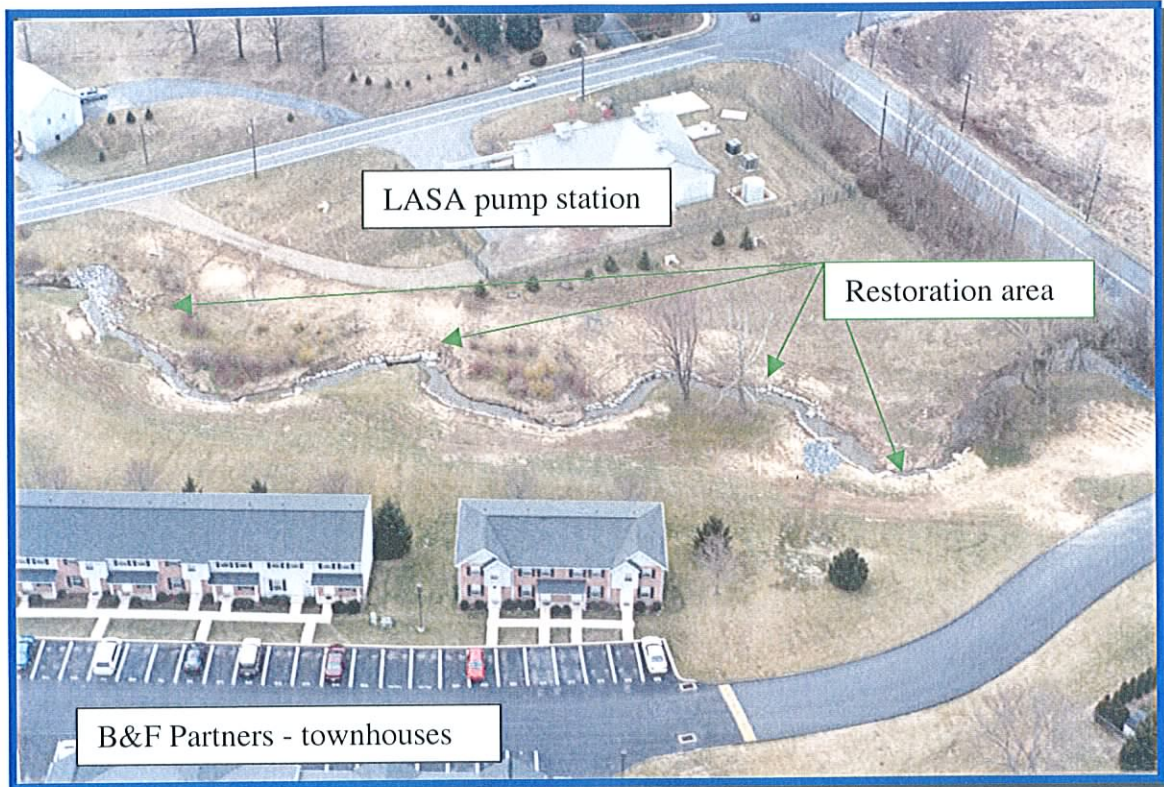
Bethlehem, PA Camp Hill, PA Pottsville, PA York, PA Margaretville, NY as RETTEW Engineering & Surveying, P.C.



In the spring of 2002, members from the Little Conestoga Watershed Alliance planted 675 native trees and shrubs at Jacobs Creek Park (located just north of Route 30) along an unnamed tributary to the Little Conestoga Creek Main Stem. East Hempfield Township donated \$6,000.00 in support of the riparian forest buffer project for the purchase of trees, shrubs and related planting materials.



In fall of 2001 and spring of 2002, the Little Conestoga Watershed Alliance completed their first official "Growing Greener" sponsored stream restoration project on a small un-named tributary located on property owned by the Lancaster Area Sewer Authority and B&F Partners. The project is located on the north side of Charlestown Road near the intersection with Fairway Drive. The \$24,500.00 grant funded streambank stabilization, fish habitat improvements, forest buffer establishment and the assessment of the remaining upstream reaches outside the immediate restoration area.





In August of 2002, the Little Conestoga Watershed Alliance received notice that two Section 319 grant proposals (Section 319 of the Clean Water Act) had been approved for funding. The first grant (\$159,233.00) involves streambank stabilization/channel restoration work to be performed on Millers Run where ill-managed stormwater is causing extreme erosion problems. The second grant (\$52,125.00) is for establishing a forest buffer, removing a log jam and fixing several sections of eroded streambank along Bachman Run within a residential neighborhood.