

ERIE COUNTY NATURAL AND HISTORIC RESOURCES PLAN



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ERIE COUNTY COUNCIL
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and the
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**This Plan was prepared
as a supporting element to the
Erie County Comprehensive Plan,
per Article III, Section 301(a)(6) and (7) of the Pennsylvania
Municipalities Planning Code,
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PRIME AGRICULTURAL LANDS PRESERVATION GUIDELINES

Introduction:

One of the most important resources for any region is agricultural land. As a mainstay of a region's economy, the removal of land from agricultural production increases the dependence on imported food, generally increases the extent of the constructed environment, might have severe impacts on natural occurrences such as flooding and air quality, and may involve a significant shift in the economic balance of the region. In rural areas where agriculture is an important and long-term segment of the economy and a significant factor in how residents identify with their community, the preservation of agricultural lands, especially prime agricultural lands, is and should be a top priority.

As the population of Pennsylvania, and Erie County, increases, the amount of developed land will increase. Between 1969 and 1997, farmland in Pennsylvania decreased from 8,900,767 acres to 7,167,906 acres while the population increased from 11,766,412 to 12,281,054 over a comparable period (1970 to 2000). In Erie County, farmland decreased from 217,866 acres to 167,634 acres while the population increased from 263,654 to 280,843. This means that while the population of Erie County increased 6.5%, the County's area in agricultural production decreased 23%, and this includes a significant broadening of the definition of "farmland" during that period. It is well documented that the central cities of the Northeastern United States, including the City of Erie, are generally growing very slowly or experiencing a decrease in population, and while not every acre of farmland that left agricultural production was converted to residential use, if fewer people are living in the central cities while the population as a whole is rising, it is not incorrect to assume that some of this increased population is residing in areas that were formerly farmland.

It is neither possible nor desirable to prevent all new development from occurring, nor can it be restricted from locating on agricultural lands by mere decree. Unfortunately, land that is considered "prime agricultural land" is also among the most desirable for new development. Prime agricultural land is often the most level and has the best drainage, making it extremely attractive for residential development, especially in areas not served by public utilities. Farming, while an important sector of the economy, involves hard work in a capital-intensive business, with a narrow profit margin and no set benefits package. When a commercial developer offers an active farmer a large sum of money for his land, the temptation to "cash in" and sell all or part of the farm can be strong, no matter how much the farmer might desire to continue his operation. This is especially

true in the case of older farmers who do not have children or other farmers ready and willing to assume the farming operation.

So if some amount of development is inevitable and the incentives for farmers to sell their land are great, how can prime agricultural lands be preserved? There are several tools available in Pennsylvania to preserve and protect prime farmlands, while at the same time allowing for growth and development to occur. Used in concert by a determined municipality, these tools can preserve the agricultural lands and economy and maintain the rural nature of the community that is held in such high regard, all while accommodating an amount of growth and development that is both appropriate and desirable.

Agriculture in Erie County:

Agriculture has been and remains an important sector of the economy of Erie County. The agricultural sector in Erie County generated nearly \$69 million in revenues in 1997, which ranked twelfth among all Pennsylvania counties. Erie County is a top-five producer of many berries and fruits, including cherries, blueberries, and strawberries, and is the Commonwealth's leading producer of both grapes and potatoes.

Agriculture in Erie County can be divided into two distinct regions: the Lake Plain and the Uplands. The Lake Plain stretches the length of Erie County along Lake Erie, and is characterized by flatter topography and milder temperatures than the Uplands. This microclimate, caused by the moderating effect of the lake, allows fruits and vegetables to be grown in this region, particularly grapes. Although grapes are grown all along the Lake Plain, they are especially concentrated in North East and Harborcreek Townships, in the northeastern corner of the County. Here, topography and soil quality combine to allow a robust viniculture industry, raising wine, juice, and table grapes and producing wines and juices. The Uplands comprise the remainder of Erie County, and are characterized by hillier terrain and less moderate weather, particularly during the winter. More standard crop farms, such as those that grow corn and grains, are located here, as are the remaining Erie County dairy and beef cattle farms. Potatoes are another significant crop, particularly in the Le Boeuf Creek bottomlands in Le Boeuf and Waterford Townships, in the south-central areas of the County.

Agricultural Preservation Techniques:

There are five tools for the preservation of agricultural lands that are available in Pennsylvania. They are implementation of Act 43 of 1981 (the Agricultural Security Area Act) and Act 319 of 1974 (the Clean and Green Act), the purchase or donation of development rights, comprehensive planning, agricultural preservation zoning, and the

transfer of development rights (as permitted in the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended). These tools have been implemented to varying degrees in Erie County.

Agricultural Security Areas and Clean and Green: Pennsylvania Acts 43 of 1981 and 319 of 1974 (the Agricultural Security Area Act and the Clean and Green Act, respectively) have been passed specifically to relieve certain burdens from the agricultural community. The Agricultural Security Area Act allows landowners to establish an Agricultural Security Area (ASA) within one or more municipalities, within which normal agricultural activities are exempt from local nuisance ordinances (such as those that involve noise, dust, or odors), limitations are placed on land condemnation and eminent domain, and hazardous waste treatment or storage facilities are not permitted. An ASA must consist of 250 acres or more, owned by one or more persons, and participating properties must be engaged in the production of crops, livestock, or livestock products. Landowners can enroll their properties in an ASA at any time, and the municipality must review its ASA every seven years, removing parcels which have shifted out of agricultural use. A property owner may remove his property at any time. Location in an approved ASA is one requirement for the sale of development rights.

The Clean and Green Act provides for property tax relief for agricultural and agricultural and forest reserve lands by assessing enrolled property on the basis of its current use value, not at its market value. The market value is based on the “highest and best use” of the land. Often, this highest and best use is single-family residential development, and the difference between the agricultural and non-agricultural assessments can be substantial; this tax relief may help the farmer remain in business.

Over 4,000 Erie County parcels, comprising almost 150,000 acres, have been enrolled in the Clean and Green program, representing active farms, forested land, and other open space. Seventeen municipalities, including 16 rural townships and one rural borough, have established ASAs containing more than 66,500 acres (See Map 1).

Purchase or Donation of Development Rights: In Pennsylvania, a landowner may separate the development rights to a parcel of land from the land itself, making it possible for those development rights to be sold, transferred, or donated to another party. The Pennsylvania Purchase of Agricultural Conservation Easements (PACE) Program has been designed to encourage landowners to make a long-term commitment to agriculture by offering them financial incentives and security of land use; to protect normal farming operations in agricultural security areas from non-farmland uses that may render farming impractical; to protect farming operations from complaints of public nuisance against normal farming operations; to assure conservation of viable agricultural lands in order to protect the agricultural economy; to provide compensation to landowners in exchange for

their relinquishment of the right to develop their property; and to maximize agricultural easement purchase funds and protect the investment of taxpayers in agricultural conservation easements.

In the sale or donation of development rights, the landowner permanently relinquishes the right to develop his property in exchange for a cash payment or a receipt of charitable contribution, which can then be used as a tax deduction. The amount of the payment or deduction is based on the difference between the value of the land as agricultural land and the market value of the land. An agricultural conservation easement is then placed over the entire property, preventing development from occurring. Generally, only private land trusts receive donated easements while governmental agencies (and some private trusts) pay.

The Erie County Agricultural Land Preservation Board participates in the PACE Program, using State, County, Federal and private funds to purchase the development rights to Erie County farms. As of December 31, 2002, the Board has acquired agricultural conservation easements on 25 farms totaling almost 2,900 acres and is working to purchase the development rights to five others (See Map 2). Currently, there are no private efforts to acquire development rights.

Comprehensive Planning: The basic purpose of comprehensive planning is to designate and separate areas most appropriate for varying types of development, be it residential, commercial, industrial, or agricultural. Typically, any new development would be targeted to areas that are currently served by public utilities, or areas to which public utility extensions are projected. Areas that are to remain rural and agricultural are generally not targeted for the extension of public utilities, nor are they targeted for development. The Municipalities Planning Code then allows a municipality to adopt the appropriate ordinances (such as zoning, subdivision and land development, and official map ordinances) for implementing the comprehensive plan.

In Erie County, all but one municipality have adopted comprehensive plans, and have designated areas to receive development. All of the rural townships, some rural boroughs, and some townships that could be considered suburban have also used their comprehensive plans to designate areas suitable for agriculture and rural development. Furthermore, all but three municipalities (Conneaut and Elk Creek Townships, and Platea Borough) have adopted municipal zoning ordinances to implement their comprehensive plans. In those zoning districts designated as agricultural, whether they are designated "Agricultural," "Agrarian," "Rural," or something similar, not only are the permitted uses generally restricted to those compatible with agriculture but lot sizes are generally set so that the creation of large, dense residential subdivisions is discouraged.

Agricultural Preservation Zoning: The basic purpose of agricultural preservation zoning (APZ) is to prohibit uses incompatible with agriculture and to place strict limitations on the amount of residential development that may occur in these areas. Such restrictions are usually in the form of area-based allowances, which limit the number of allowable new dwellings depending on the size of the parent tract. This number may be based on a fixed ratio (i.e. one dwelling per 25 acres), a sliding scale (i.e. smaller parcels that are less amenable to large-scale farming are allowed a greater density of new lots), or a fixed percentage of the parent tract. Further provisions for APZ may include requiring new dwellings to be on the least agriculturally productive land, maximum lot sizes for new residential lots, bonus densities for clustering new lots, minimum parent tract size, and subdivision restrictions if the parent tract consists entirely of prime agricultural soils. Each method has both advantages and disadvantages; each method works to protect agriculture and agricultural land but also tends to restrict the speculative value of the land.

To date in Erie County, APZ has been considered by only one municipality (North East Township), which did not adopt the provisions.

Transferable Development Rights: In a transfer of development rights (TDR), it is possible to sever the rights to develop a tract from the tract itself, then sell these rights to a second party, who may then in turn apply these development rights to another parcel. However, this procedure requires a certain structure. As provided by the Municipalities Planning Code, in order to allow TDR a municipality must designate transferring and receiving districts, where only parcels in former districts may transfer their development rights, and only parcels in the latter districts may have them applied.

Usually, TDR involves dwelling units and residential zones. In a municipality that has established a procedure for the transfer of development rights, the transferring districts are normally agricultural or rural districts, or other districts in which the municipality wishes to limit the density of residential development. In the same way, receiving districts are normally higher-density districts in which the municipality wishes to increase the density or encourage infill development. When the transfer is completed, the transferring property has its development potential permanently reduced, since the landowner has transferred the right to develop his property to another parcel.

No Erie County municipalities have yet considered instituting TDR.

Agricultural Preservation Plan:

Erie County is fortunate to contain not only one of Pennsylvania's largest cities but also a substantial rural and agricultural population. And just as the urban core provides products, services, and resources that enhance the lives of rural residents, the rural area

does the same to enhance the lives of city and suburban dwellers. Therefore it is in everyone's best interest – urban, suburban, and rural residents alike – to help preserve agricultural lands and maintain the rural economy. Erie County itself, acting as a facilitator, consultant, and resource clearinghouse, can implement policies of its own, as well as assist the local municipalities in utilizing the tools available to achieve the preservation of agricultural lands.

Agricultural Security Areas: One of the simplest actions a municipality can take to encourage the preservation of agricultural land is to establish an Agricultural Security Area. By doing so, a municipality states that it places importance on the continued existence of agriculture within the community, and is willing to take steps to help maintain it. *The County should encourage the expansion of Agricultural Security Areas within the municipalities that have created them, and encourage their establishment in those rural municipalities without them.* Although being in an ASA places no subdivision or development restrictions upon a parcel, it may be the first step towards the sale of development rights and the permanent preservation of farmland.

A well-done ASA will be more than just a random collection of farm parcels scattered throughout the municipality, however. Agriculture can be most productive and effective in contiguous blocks, without interruption by non-agricultural uses. *The County should encourage municipalities to consider the long-range impacts of entering parcels in an ASA, and should discourage municipalities from entering parcels located within areas targeted for growth or public utilities expansion.* If a municipality allows parcels that are located in areas either already served by public utilities or in areas targeted for future development to be enrolled in its ASA, it does a disservice to the agricultural community. Farms located in current or future development areas are, by definition, expected to eventually become surrounded by development. When surrounded by residential, commercial, or industrial development, such farms will most likely find it difficult to continue operation. If they shut down, it defeats the purpose of enrolling them in the ASA in the first place. The most effective Agricultural Security Areas will be the ones that take into account any existing or targeted development areas and take the opportunity to minimize conflict between agricultural and non-agricultural uses.

Purchase of Development Rights: The acquisition of an Agricultural Conservation Easement by an organization (whether public or private) can, in effect, assure that the eased parcel has its development potential permanently removed. In Pennsylvania, a property owner must wait a minimum of 25 years before requesting a status review for a parcel that has had its development rights sold through the PACE program, and any change in the easement requires evidence that the parcel is “incapable of further agricultural production.” Agricultural Conservation Easements acquired by private organizations may be permanent. The sale of development rights, therefore, is perhaps

the most powerful tool available for the preservation of prime agricultural land. As previously mentioned, the agricultural economy remains most viable when agricultural land exists in blocks. *The County should focus its easement purchases in such a manner that it establishes large, contiguous areas of permanently preserved farmland.*

The County should continue to budget fiscal and staff resources to support these efforts. The PACE program can be an intensive project, requiring hours and dollars that a municipality, especially a rural municipality, cannot easily afford. Although a Pennsylvania municipality is permitted to establish its own PACE program independent of a county's program, it is recognized that few Erie County municipalities have the desire or resources to do so. As such, it is important that the County continue to serve as the agent for the PACE program.

Comprehensive Planning: Comprehensive planning is the only way a community – whether it is a single municipality, a multi-municipal region, or a county as a whole – can articulate its vision of itself and establish a method for implementing and achieving that vision. If such a vision includes maintaining a rural character and viable agricultural economy, either throughout the community or just in a limited area, the comprehensive plan should reflect this. A considered and coherent comprehensive plan should be the foundation upon which a municipality's ordinances and policies are based, in a deliberate attempt to implement the plan.

Although nearly every municipality in Erie County has an adopted comprehensive plan, many are over fifteen years old, and a few were completed nearly thirty years ago. Many of the urban or “urban fringe” municipalities have recent comprehensive plan updates or are developing updates, but many rural municipalities, especially in the southern and southwestern portions of the county, are among those that have the oldest plans. These plans are based upon thirty-year-old assumptions and attitudes, assumptions and attitudes that might not only have changed since the plan was adopted, but now might be largely discredited. The Pennsylvania Municipalities Planning Code, amended by Acts 67, 68, and 127 in 2000, now requires that comprehensive plans be reviewed (in the case of cities, boroughs, and townships) and updated (in the case of counties) every ten years. *The County should encourage and assist all municipalities to update their comprehensive plans in a thoughtful and coherent manner. In particular, those rural municipalities with higher-quality soils and an intact agricultural economy should be encouraged to adopt comprehensive plans which promote the preservation of farmland.*

The County should also encourage any municipality that adopts a new comprehensive plan to update the municipal ordinances. The only sure way for a municipality to implement a comprehensive plan, which presumably reflects the desires and vision of the citizens, is with municipal ordinances. Zoning, subdivision, and land development

ordinances all affect how development occurs in a municipality and they should be revised, updated, or adopted to implement the provisions of the comprehensive plan.

Ordinances can be written in such a way as to allow for both the continuation of agriculture and the introduction of a moderate amount of development. Conservation Subdivision Design is a technique in which, rather than permitting traditional subdivision design where a parcel is completely subdivided according to the allowable density (i.e., at a density of one dwelling per acre a twenty-acre parcel would be subdivided into twenty lots), the maximum number of lots (twenty) is only allowed if a certain amount of the original parcel remains permanently undeveloped. Therefore, lots will be smaller but will also abut permanently preserved open space. In the case of a farm, this open space may have a permanent conservation easement placed upon it and then be leased or sold to an active farmer. Conservation Subdivision Design has become a prominent part of Pennsylvania's "Growing Smarter" initiative, an effort to preserve agricultural land and open space and to restrain the negative effects of costly over-development. *The County should encourage municipalities to examine the Conservation Subdivision Design techniques, especially those municipalities that are revising or adopting their zoning or subdivision and land development ordinances. Since Conservation Subdivision Design can be an information-intensive program, the County should also work towards developing a County-wide data library that is accessible to municipalities and developers to help them in the Conservation Design process.*

Such Conservation Subdivisions are generally located in agriculturally zoned regions. As such, they would most likely not be served by public sewer and water lines, and it is important that they not be served by such infrastructure. Once public sewer and water service is extended to an area it is extremely difficult to prevent further development, since the presence of these facilities allows much denser development on a much greater scale. *The County should discourage the extension of public sewer and water lines into those areas designated important to agriculture and the local agricultural industry, and encourage municipalities to reject or eliminate any provisions in their zoning ordinances that would allow for lot-size reduction in agricultural areas with the extension of public utilities.* If lot-size reduction with the extension of public utilities is permitted in agricultural areas, then those regions are, in effect, suburban areas and will eventually be developed as such.

Agricultural Preservation Zoning: By adopting a zoning ordinance a municipality takes a role in actively determining how and where various land uses will locate. Although a comprehensive plan may designate which areas are best suited for various types of development, it is the zoning ordinance that implements the plan. As previously noted, many Erie County municipalities have designated areas as "Agricultural" or something similar. These ordinances do not, however, truly limit the amount of development that

may occur in these districts. For example, there are no limits on how many lots might be subdivided out of a farm, nor on where they might locate (a particular problem in areas with prime soils), nor are there delineated boundaries beyond which public utilities will not be extended. No municipality in Erie County has yet adopted APZ.

Although APZ can be a useful tool, it is recognized that it is not for every municipality; it will be most effective in municipalities that have a strong desire to maintain the agricultural nature of their community and are willing to adopt powerful measures in order to do so. The adoption of APZ by a municipality may be a controversial subject, since by its very nature it reduces the speculative value of farmland. APZ should not be considered for adoption by any municipality that will not have the wherewithal to enforce the ordinance. APZ should also not be considered by any municipality in which farming and agricultural activities are not a significant part of the economy or character.

APZ should nevertheless be considered as a viable tool for the preservation of agricultural land by those municipalities that value their rural nature and agricultural economy. For a municipality truly dedicated to the preservation of its agricultural sector, APZ is one of the most powerful methods available to achieve that end.

Transferable Development Rights: By establishing a TDR procedure, a municipality makes a statement that not only does it have areas in which it wishes to restrict the density of development, but that it also has areas that it is going to allow, and also encourage, to develop in a more dense pattern. This tool might be especially useful for a municipality that wishes to protect its rural and agricultural areas while not rejecting all development.

Unfortunately for a small or financially disadvantaged municipality, the TDR program can be records-intensive. A record must be kept of which parcels are in the transferring districts, which are in the receiving districts, which parcels have previously transferred their development rights and deed restrictions to those parcels, which parcels have previously received and built, and which have received and not built. Much of this information, especially the deed restrictions, will be on record in the County Recorder of Deeds office, but for a single municipality it would be more efficient and useful to have it all collected at a single location, such as the municipal building. A rural municipality may not have the space, the manpower, or both in sufficient amounts to keep effective records of this program.

Like agricultural protection zoning, TDR can be an effective tool for maintaining the rural character of a municipality but it is not a tool to be adopted in a casual manner. Without a firm determination on the part of the municipality to administer it consistently and keep

accurate records, a TDR program adopted with the best of intentions will not and cannot function properly.

Conclusion

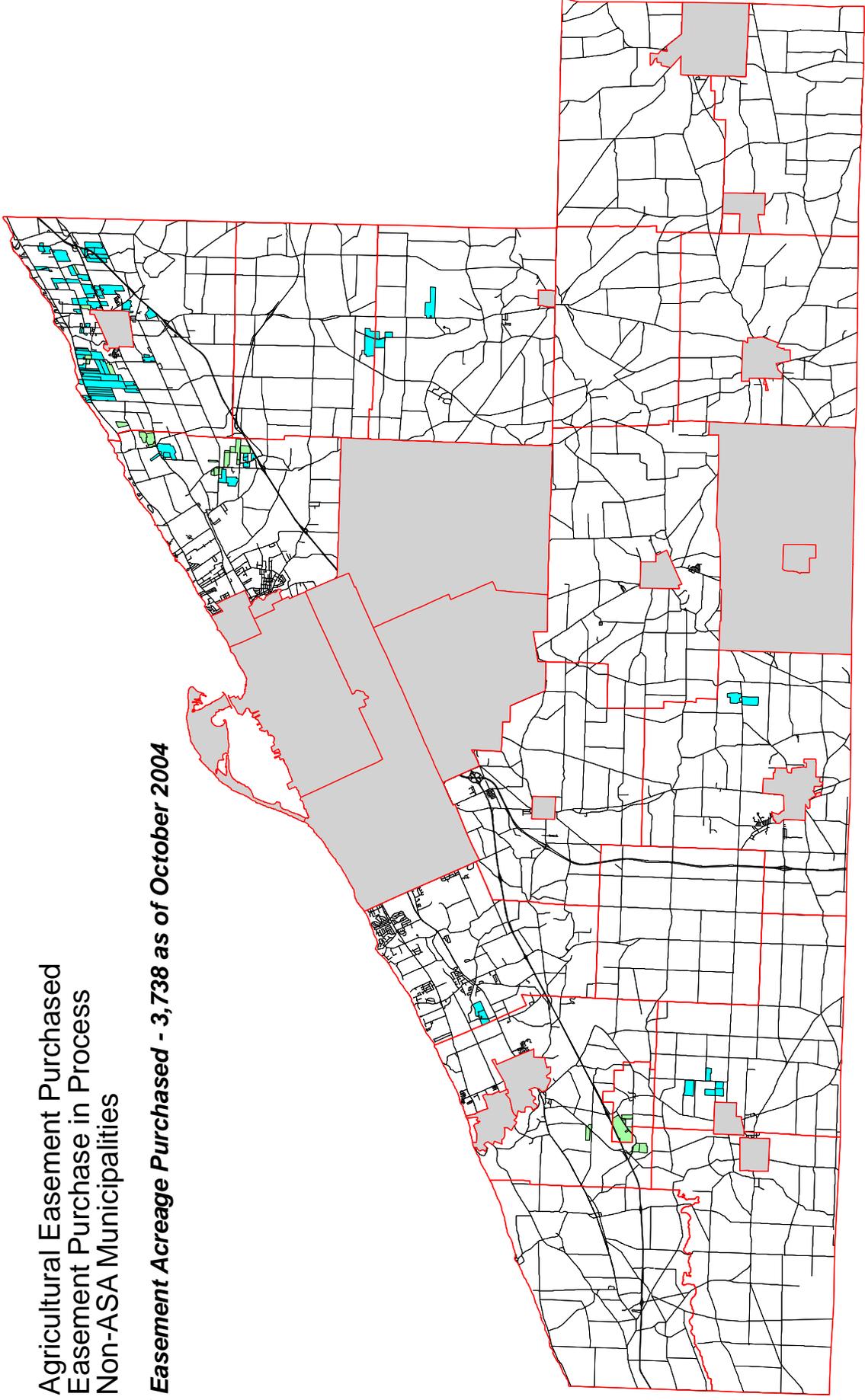
A number of tools are available in Pennsylvania for the preservation of agricultural land, some of which are more effective than others. By the nature of municipal organization in the Commonwealth, Erie County is limited in what actions it can take within individual municipalities. The County can, however, present techniques to the municipalities for their review and consideration and can encourage the municipalities to take certain courses of action or adopt certain techniques and policies. It should be recognized that not every municipality approached will want to adopt all or any of the techniques presented, and that not every acre of land currently used for farming can or should be preserved. The most effective municipal farmland preservation programs will be the ones into which the municipality has entered voluntarily because it sees the value of the program. Erie County's role should be that of information clearinghouse, technical advisor, funding source, and facilitator in this process.

MAP 2

AGRICULTURAL EASEMENTS PURCHASED

-  Agricultural Easement Purchased
-  Easement Purchase in Process
-  Non-ASA Municipalities

Total Easement Acreage Purchased - 3,738 as of October 2004



NATURAL RESOURCES PRESERVATION GUIDELINES

Introduction

Every Erie County community contains environmentally sensitive areas, areas of natural resources that are beneficial aesthetically and ecologically, areas that not only help to define a community's character but that also help to maintain that character. It is important that each community is aware of these areas, and acknowledges the positive effects they might have on its well-being. The natural environment and the manner in which it fits together – the floodplains and wetlands of stream valleys, the woodlands and escarpments of the hillsides, and the aquifers that receive and distribute groundwater – was in place and in effect long before human settlement arrived to alter it. Each community should become aware that the best way to avoid conflict between the natural and the constructed environment is to develop planning techniques that best integrate the two. They are not polar opposites, and the constructed environment can, and should, contain and protect the natural features present on the site.



The pressures and demands upon Erie County's natural resources will only increase in the coming years. As development spreads beyond the traditional urban center into areas previously thought of as rural, sites that were never before considered viable for development are being considered for new residential, commercial, or industrial development. Without a plan to preserve and protect natural resources in these areas, a community that prides itself on its natural environment may find itself bereft of these assets in relatively short order, and experiencing problems never before encountered.

This section draws heavily upon and incorporates, by reference, the *Erie County Environmental Protection Plan*, prepared by the Erie County Metropolitan Planning Commission in 1977.

Environmentally Sensitive Areas

There are five common environmentally sensitive areas, all of which are associated in some manner with water resources. They include watersheds, wetlands, aquifers, escarpments and steep slopes, and woodlands. Land use controls are important in the management of these natural areas: poorly regulated development of steep slopes, woodlands, and wetlands can result in the removal of hillside



vegetation and the filling of adjacent marshes; streams become choked with sediment due to increased runoff from the loss of protective vegetative cover and the growing number of impervious surfaces; and increased runoff can result in flooding of streams that are already high due to the increased sediment in their beds. Moreover, local streams become health hazards because the natural filtering system of the surface waters is destroyed by fill and sedimentation and increased pollution from landfill sites, lawn fertilizers, and faulty sewage systems. The polluted runoff decreases and degrades the amount of water that the stream adds to groundwater supplies, which in turn can cause some wells to run dry and others to be threatened with pollution.

Few communities experience such disasters simultaneously, but many have or will have similar problems. A community having such problems must then obtain funds and assistance to protect itself from floods and replenish and clean its water supply. The treatment is almost always expensive and will not prevent future problems. Careful land use planning within a watershed in the first place could make remedial measures unnecessary and could save a community from considerable economic and environmental damage. Preventive land use controls can maintain the quality of existing pristine areas. Remedial action, if accomplished by preventative land use controls, cannot only clean up polluted streams and afford flood protection, but can also assure that such problems, as they are solved by remedial efforts, will not be repeated.

Watersheds, Wetlands, and Aquifers: Clean water is the single most important item necessary for life. No life on Earth can exist without it, and life is not absent where water is present. Cities are founded on riverbanks, and nations develop in river valleys. Clean water is of prime importance in maintaining a healthy and vibrant environment, and a healthy environment is important for the availability of clean water. All drinking water in the United States is taken either from an aquifer via public or private wells, or from a body of surface water (usually a stream or lake) via a public intake system. Moreover, streams, wetlands, and aquifers are interconnected within the surface- and groundwater systems. Streams and wetlands – surface water bodies – both replenish the aquifers in rainy seasons and draw from the aquifers during dry seasons.

Watersheds: Development in a watershed can alter the relationship between streams and groundwater by affecting the peak and base flows of streams, which mark the high and low volumes of flow. An increase in impervious surfaces, such as roads and buildings, accelerates runoff by releasing precipitation that would otherwise be absorbed by the soil, and the heat from these surfaces makes snow and ice melt faster. Similarly, destruction of vegetation and wetlands increases the rate of runoff since they can absorb some precipitation or, in the case of woodlands, shade snow and ice, moderating the rate of melting. As a result, precipitation passes too quickly through groundwater channels, increasing the rate of stream flow and making it irregular and causing groundwater reservoirs to fluctuate, depriving a community of a stable water supply.

In a natural state, a stream can handle the rate of runoff from any average rainfall. This does not mean that flooding is an unnatural phenomenon; it occurs regularly to some extent in all streams during periods of heavy precipitation and melting. However, the flooding is seldom catastrophic, thanks to the moderating effects of vegetation, organic litter, and wetlands. Disturbance of these moderators of runoff can produce unnaturally high and occasionally catastrophic flooding. Thus, an important part of a community's flood control program includes regulation of development in sensitive environmental areas such as hillsides, woodlands, and wetlands.

Development of upstream areas can increase runoff and erosion by removing vegetation whose roots, leaves, and litter retard erosion, or by massive construction practices which grade hillsides, remove topsoil, and leave large areas of land bare and vulnerable to erosion during construction. The sediment yield from areas undergoing development may be from three to one hundred times as great as that from predominantly rural or natural areas. The most critical problem of sedimentation occurs during the early construction stages when topsoil is stripped and subjected to erosion from running water. The severity of the problem depends upon previous land use, the grade of the slope, the length of the slope, and the type of impervious and pervious cover. For example, forested cover once removed may release far more sediment than a disturbed agricultural area. As the degree of slope and its length increases, so does the sediment production potential. Also, certain soil types are more sensitive to erosion than others.

Along with the loss of shading vegetation as a result of stream bank erosion, impervious surfaces themselves can also increase the thermal pollution of a stream. Natural soil and vegetative cover moderate the temperature fluctuations of solar radiation while roads, buildings, parking lots, and other impervious surfaces do not, thus increasing temperature extremes. This phenomenon also increases the rapidity and amount of runoff from melting snow and ice, which occurs more gradually under vegetative cover and on natural soils.

Another harmful result of poorly planned land use on streams and waterways is chemical and organic pollution. Impervious surfaces not only accelerate the amount of runoff, they may also produce polluted runoff. Parking lots, streets, and airports can add petroleum products to runoff water, as well as significant amounts of salts and chemicals used to melt snow and ice. Storage areas for fertilizers and chemicals raise the dangers of spills and leaks, and illegal dumping and landfill sites can contribute even further to polluted runoff. Sewage plants and septic tanks, if they are improperly constructed or placed in highly permeable soils, can overflow or leak polluted water directly into runoff channels or indirectly through groundwater channels that may feed a small creek. Heavy applications of plant fertilizers may find their way rapidly into streams as precipitation runs off these areas into gutters or storm sewers.

Wetlands: Unlike permanent streams and lakes, wetlands are transitional areas between dry land and open water, distinguished by areas of low topography, poor drainage, and standing water. Due to seasonal and yearly variations in the borders of wetlands, they are sometimes hard to spot. Waterlogged land in the spring may be dry throughout most of the summer and fall, while during years of extensive rainfall, wetlands are more extensive than in years of drought.

Wetlands influence the quality and quantity of water by slowing and filtering runoff and surface water as it flows. The stems, leaves, and roots of the plants in a wetland slow the flow of water through it, allowing silt to settle out and catching some of it themselves. They retain water during dry periods and hold it back during floods. Wetlands also provide essential breeding, nesting, resting, and feeding grounds and predator-escape cover for many species of fish and wildlife, and the presence of water is attractive to many birds and animals.

As moderators of extremes in water supply, wetlands retain water during dry periods and hold it back during floods, thus keeping the water table high and relatively stable. Peat, the organic material deposited at the bottom of a wetland as plants die, can hold and maintain large quantities of water, and makes wetlands natural sponges that reduce the risks of flooding and drought. The removal of wetlands causes faster runoff of dirtier water, and exposes the downstream water resources to increased siltation and pollution. Though overland runoff is a natural process that, in itself, is not harmful to wetlands, if the speed of runoff or the erodibility of the upland is increased, then sediments and nutrients from upland development can overload and damage the natural system, turning the wetland into a settling basin of polluted and unpleasant-smelling water.

To a large extent, if wetlands are performing their various water-related functions properly, species diversity and environmental health will follow as a matter of course. The more varied an environment is in terms of habitat, flora, and fauna, the more stable it

is and the fewer large fluctuations due to inside or outside disturbances. Species diversity ensures more channels for diverting and dispersing the results of disturbance and the lesser the likelihood that there will be abrupt population changes.

Wetland ecosystems are more complex in terms of this species diversity than some other systems. One explanation is that they have a number of edges or boundaries between different types of vegetation, and at such edges the greatest diversity occurs. Along their immediate uplands, wetlands may be surrounded by trees or shrubs; as the gradient declines there may be sedge meadows or shallow marshes; finally, there is a change to deep marshes and open water. Each of these areas provides niches for different plants and animals.

Aquifers: Groundwater is contained in underground formations called aquifers, composed of consolidated rocks, such as limestone or basalt, or unconsolidated gravels and sands. This stored water is released to the surface through wells and springs or by seepage into lakes, rivers, and wetlands. Just as groundwater ultimately returns to the surface, it is also replenished from the surface. Water from streams and lakes seeps down into an aquifer and, where an aquifer or a transmitting formation is exposed to the surface, precipitation percolates directly into the aquifer. Consequently, the groundwater reservoirs moderate surface flow, absorbing water during rains or periods of high flow and then gradually releasing it during periods of low flow.



Although groundwater is directly related to surface water, it is also an important resource in its own right. Much of the country's population is dependent upon this resource for its drinking water, and a significant portion of Erie County's population is served by either a central water system supplied by wells or by individual on-lot wells. Large agricultural enterprises utilize groundwater for irrigation, and commercial and industrial processes are similarly dependent. Yet in order to meet the needs of users, the water must be available on location at a certain quality and quantity. To insure availability, groundwater should be treated as a limited and sensitive renewable resource.

Groundwater differs in some important ways from other renewable resources, in that it is essentially a public good with few private economic incentives for its preservation, unlike agricultural or forested areas. The pollution or depletion of local groundwater can make a community instantly aware of the importance of this resource. Thus, the role for local agencies is to establish an incentive for the protection of this renewable resource.

In many parts of Erie County, groundwater is pumped out of aquifers for use as drinking water or for irrigation, yet there are natural limits upon the amount of water that may be extracted from a given aquifer. Although many aquifers are replenished or recharged by seepage from adjacent underground formations, all aquifers depend, directly or indirectly, upon the infiltration of surface water for recharging the groundwater supply. The amount of water which enters the aquifers yearly, whether directly from percolation and surface water seepage or indirectly from adjacent formations, determines the amount of water that can be withdrawn annually without severely depleting the reservoir. Annual average recharge is determined in large part by climate and annual precipitation, but there are other factors as well. The soil must be permeable in order to allow surface water percolation in to the aquifer, or there must be many bodies of surface water with permeable formations connecting them with aquifers. Vegetation on slopes can aid in the process of aquifer recharge by retarding runoff and allowing rain to percolate into the ground.

Failing to consider natural limits on recharge can result in the overuse and a waste of the resource. Since the perennial yield of an aquifer is dependent upon the amount of water recharged into that aquifer, if more water is pumped out than is recharged, the level of the groundwater reservoir begins to fall. This practice, called mining, can create serious problems when a small annual recharge is greatly exceeded by water demands of communities and agriculture. In areas where pumping exceeds aquifer recharge rates, water conservation is important. If the water withdrawn from the aquifer were purified and then returned to the groundwater after it was used, the perennial yield could be maintained and, in some cases, increased. But instead, much of the water withdrawn from the groundwater reservoir is sent down streams, creeks, and rivers. Mining can also cause the land surface to sink or subside. As water is withdrawn from the aquifer, water from surrounding clay or silt layers is drawn into the more permeable aquifer, causing the clay to shrink as it dries out. The clay shrinkage may be substantial enough to cause subsidence at the surface.

In addition to overuse and waste of groundwater resources, human activities can also impede the process of groundwater recharge. Although many aquifers are recharged indirectly from streams or subterranean waters over a large area of land, an aquifer may receive a substantial portion of its water from a relatively identifiable recharge area. Development in the recharge area and accompanying coverage with impervious surfaces will impair recharge to the underlying aquifer by physically sealing the recharge area to percolation, thereby decreasing recharge as well as increasing surface runoff. In the process of aquifer recharge, whether directly from the surface or indirectly through surrounding formations, some degree of purification occurs. Silt-laden runoff or organically rich effluents from septic tanks are filtered by the soil mantle through which the water percolates. Different soil types have different filtering properties; a coarse

gravel will allow water to pass through rapidly and relatively unchanged, whereas a clay soil slows the flow and filters out some contaminants. Of course, a thick layer of any soil has a greater filtering capacity than a thin layer of the same material. However, even the most effective filtering action of the soil will not remove all contaminants.

In general, the filtering ability of most aquifers and the process by which they are recharged insures that under natural conditions groundwater is relatively pure, especially in comparison to surface water supplies. Although there are aquifers that naturally contain brackish, highly mineralized, or saline waters, much groundwater can be pumped untreated from a well and used for human consumption. Yet improper land use is a threat to these reserves of pure water. Poorly planned waste disposal, urban runoff, heavy use of fertilizers, and other land use practices can allow toxic chemicals, harmful bacteria, and other damaging substances to enter the groundwater reservoir. The most crucial factor in determining the susceptibility of the aquifer to pollution from these sources is the location of the water table. The water table is the upper surface of soils, bedrock, or other minerals saturated by water. It marks the top line of groundwater, but not necessarily the presence of an aquifer, which may be hundreds of feet beneath water-saturated soil. However, the water table does mark the occurrence of the water that eventually enters the aquifer. Thus, an area where the water table is just beneath the surface, or where there is only a thin soil mantle, or where the soil is highly permeable, must be treated with care in terms of pollutants.

Escarments and Steep Slopes: Compared to development in other sensitive areas, escarpments and steep slopes have long been regulated in some areas and the consequent regulations are quite sophisticated. A major reason for this sophistication is the number of disasters resulting from poorly designed slope development. As with floodplain regulations, the willingness to develop land use regulations for these areas seems tied to the frequency or magnitude of the “natural” disasters. However, there is nothing natural about hillside disasters that damage homes, degrade water supplies, or increase flood hazards. In almost every case, such disasters are the result of insufficient predevelopment investigation, poor development design, or inappropriate construction practices. Unlike groundwater, escarpments and steep slopes are not a renewable resource, nor do they have clearly defined benefits for the public good, like woodlands or wetlands. Slopes are geological features on the landscape whose percentage of angle and soil type are in a balance with vegetation, underlying geology, and the amount of precipitation. Maintaining this equilibrium reduces the danger to public health and safety posed by unstable slopes.

Though the angle and soil type of a slope are generally balanced with the amount of precipitation, vegetative cover, and the underlying geology, escarpments are constantly in motion. This perpetual downward movement of hills is the result of the almost

imperceptible and gradual effects of weathering and erosion. Alternate freezing and thawing of rocks and the chemical action of water gradually disintegrates them into soil particles. The downward pull of gravity, aided by the force of running water or ice, moves these materials down the slopes. Slope movement of this type is part of the hydrogeologic cycle that creates new soil by weathering and carries it via streams into valleys and plains.

Rock formations and soils are held in place by friction. Thus, any increase in the load can cause a landslide. Since water between the rocks and particles acts as a lubricant, rocks and soils saturated by spring thaws or heavy precipitation can overcome this friction and cause a slide. Moreover, since saturated materials are heavier than drier ones, heavy rains or melting water can overload a slope's retaining capacity. In addition to the retaining power of friction, many slopes are held in place by accumulated debris or other formations at the bottom or foot of the hill. Loss of this support through erosion or development can also cause a landslide.

Vegetative cover plays an important role in moderating erosion. Leaves and organic litter cushion the impact of precipitation and increase the soil's permeability. While dried hay may be scattered over a disturbed slope or vegetation may be replaced, some soils will support only specialized vegetation. In regions where the soil mantle is very thin, even a short period of no cover, especially during periods of heavy precipitation or melting, can erode enough of the soil to make replacing lost vegetation difficult, if not impossible.



Rapid erosion of escarpments causes many other problems, too. Since the effects of hillside erosion as a result of disturbance are felt throughout the entire drainage basin, what happens on the hillside will eventually be reflected in the larger watershed. The impact of increased runoff may thus be far greater in downstream areas than on the hillside itself. The increased sediment load can choke streams, fill up wetlands, and increase turbidity, thereby making these water systems unsuitable for drinking water and for supporting many species of plants and animals.

The mechanical alteration of escarpments by grading or leveling not only destroys the vegetative cover, but also alters the character of a slope. The degree of slope may be increased, thereby increasing erosion, and more easily eroded soils or rocks may be uncovered. The most extreme alteration of a hillside is to level it. This and similar radical changes to hillsides can have far-reaching consequences, including rapid erosion, disturbance of groundwater hydrology, and alteration in stream flow and drainage patterns.

Escarpments and steep slopes are distinctive features of a local landscape, providing a community with an attractive setting. Often they are natural boundaries that establish the political identity of a community. One index of the aesthetic value of escarpments is the premium of real estate sites with a “view.” However, it is relatively difficult to quantify the aesthetic resources of steep slopes in providing a varied landscape and community identity. Scattered projects that retain most of the vegetation and distinctive features, such as hilltops and outcroppings, and follow the natural terrain are not only attractive, but also safe and ecologically sound.

Woodlands: Human impact on Erie County’s forests has been extensive. While there are still large areas of woodlands within the County, much of today’s forests consist of second- or third-growth timber. Though markedly different from the original woodlands, today’s forests are nevertheless of incalculable value for timber, wildlife habitat, recreation, and aesthetic enjoyment. While large acreages are protected as State game preserves and State and municipal parks, significant parts of our woodlands are once again under potential threat, this time chiefly from haphazard housing and suburban development, rather than lumber and agricultural development.

Not only do the recreational, aesthetic, and economic benefits of woodlands suffer from poorly planned use, but other, less familiar benefits of forests are also harmed. Woodlands are important moderators of climatic phenomena, such as flooding and high winds, and thus protect watersheds from the siltation and erosion that could result. The forest floor acts as a filter to water percolating into groundwater reservoirs, and the forest itself can improve air quality by absorbing some air pollutants. Moreover, woodlands moderate local climatic changes, most significantly by providing more moderate temperatures in contrast to the fluctuation between hot days and chilly nights in open areas such as fields, suburbs, and cities.

The question is not whether woodlands will be developed; it is rather how that development will occur. One look at a community that allowed the careless development of its woodlands shows that the public interest in woodland protection extends far beyond aesthetics. Increased erosion and siltation, decreased water quality, loss of landscape diversity, increased dangers from flooding, and decreased land values are all possible results of poorly planned woodland development. Cutting the forest can also change the surrounding ecology of wildlife and associated herbs and shrubs completely.

Due to their small size and the proximity of housing and commercial development, most forests in suburban areas are unsuited for the economic uses of tree forestry, yet they have values that cannot be measured in board feet. Maintaining overall environmental health, protecting watersheds and soils, improving water and air quality, buffering the noises and sights of civilization, and modifying the climate of the urban environment and providing

habitat areas for many species of plants and animals are some of the woodland's greatest benefits.

Woodlands are particularly important protectors and conservers of watersheds and soils in certain critical areas. Destruction of woodlands in hilly or mountainous regions, where the soil is especially thin, can result in erosion of the valuable soil. With no soil or vegetation to moderate runoff from precipitation, flooding may result, as well as loss of precipitation ordinarily retained and recharged into groundwater reserves by the forest.

Not only do forests improve soil and water quality, they also improve air quality. Leaves moist with dew or rainwater can reduce suspended particles in the air, which are later washed off by rainwater. Furthermore, plants can serve to moderate the effect of chemical pollutants in the air by absorbing some ozone, carbon dioxide, and sulfur dioxide. Though plants can absorb such pollutants and thus moderate their effects, they can be severely damaged by them.

The resilience of forests in adapting to environmental change is aided by the creation of a microclimate around the forest itself. The forest canopy functions much like cloud cover, keeping warmth from the ground in at night and dispelling heat from the sun during the day. Part of the dispersal of daytime heat is accomplished by absorption of solar radiation. Moreover, the vegetation of the forest produces "summer haze," a cover of water vapor from transpiration and evaporation that can absorb up to 20 percent of incoming solar radiation. The forest thus acts as an air conditioner for surrounding areas by absorbing large quantities of radiation and moderating large amounts of air within its shade.

The benefits of this microclimatic effect to surrounding urban and suburban areas can be significant. An urban environment devoid of vegetation is the exact opposite of the forest microclimate, increasing the range of temperature fluctuations, much like the climatic effects of a desert. The sun's energy striking streets and buildings is changed into heat, further increasing the temperature on a hot day; at night the buildings lose this heat and offer no protective cover from night chill or winter winds. Thus, if forests are interspersed among built-up areas, the effects of their microclimates can be felt in adjacent urban areas, moderating fluctuations in temperature by keeping the surrounding air cooler in the summer and daytime and warmer in the winter and evening.

Natural Resources Preservation Techniques

There are two basic tools for the preservation of natural resources available in Pennsylvania. They are the use of comprehensive planning, including the adoption and

revision of ordinances for implementing the plan, and land acquisition. These tools have been implemented to varying degrees in Erie County.

Comprehensive Planning: The basic purpose of comprehensive planning is to designate and separate areas most appropriate for varying types of development, be it residential, commercial, industrial, or agricultural. By extension, then, it is also the purpose of the comprehensive plan to designate those areas that are inappropriate for development. Typically, any new development would be targeted to areas that are currently served by public utilities, or areas to which public utility extensions are projected. Areas that are to remain rural or undeveloped are generally not targeted for the extension of public utilities, nor are they designated appropriate for a higher-density land use. The Municipalities Planning Code then allows a municipality to adopt the appropriate ordinances (such as zoning, subdivision and land development, and official map ordinances) for implementing the comprehensive plan.

In Erie County, all but one municipality have adopted comprehensive plans, and have designated areas to receive development. Many have used these comprehensive plans to designate areas suitable for rural development and/or conservation. Furthermore, all but three municipalities (Conneaut and Elk Creek Townships, and Platea Borough) have adopted municipal zoning ordinances to implement their comprehensive plans.

Land Acquisition: The surest way to affect the development of a particular piece of property is to actually own it. In the preservation and protection of natural resources and environmentally sensitive areas, this is a legitimate option. Public entities, such as municipalities, and private organizations, such as land trusts or conservation organizations, can work toward acquiring land that contains environmentally sensitive areas and other natural features, either in fee simple or through the acquisition of a parcel's development rights. Erie County currently works to preserve agricultural land through the purchase of Agricultural Conservation Easements. The Lake Erie Regional Conservancy and the Western Pennsylvania Conservancy are two conservancy organizations that are active within Erie County, although neither of them is currently acquiring properties that they themselves own and maintain.

Natural Resources Preservation Plan

If there is any single idea that can be gained by this examination of natural resources, it is that the natural environment is not a collection of discrete, unrelated phenomena. Wetlands, groundwater, woodlands, and escarpments are all woven together in a complex fabric, and to affect one will, to some extent, affect them all. And human civilization is not exempt. We are every bit as much a product and a member of the environment as a stand of pine trees, a herd of deer, or a trout stream.

Where humans differ is that we can take conscious actions to alter our environment. It is not wrong that we do so, for we have made our lives far more productive and comfortable than they would have been otherwise, but we must recognize that our actions will have consequences. It is our responsibility to minimize the negative consequences of our actions so that the environment and the natural resources it contains remain as something that people will be able to enjoy into the future. This is especially important in Erie County, which, despite having one of the largest cities in Pennsylvania, also has a significant rural area and, in the Presque Isle Peninsula and Lake Erie shoreline, one of Pennsylvania's most unique natural features.

Comprehensive Planning: Perhaps the most effective manner in which natural resources can be preserved is through comprehensive planning. Comprehensive planning is the only way a community can articulate its vision of itself and establish a method for implementing and achieving that vision. A considered and coherent comprehensive plan should be the basis of a municipality's ordinances and policies, in a deliberate attempt to implement the plan.

Any community's comprehensive plan should enumerate those natural resources that the community values, and should set forth policies aimed at preserving them to the level that the community deems desirable. *The County should encourage all municipalities to undertake an examination of the natural resources within their borders.* A community can plan to protect and preserve its natural resources only after it is aware of what and where they are. This process may be as simple and straightforward as compiling a list of significant natural features, or as complex and extensive as developing maps showing woodlands, watersheds, topography, wetlands, and aquifers and groundwater recharge areas and their relation to the built environment.

Most municipalities in Erie County have adopted comprehensive plans, but many are over fifteen years old, and a few were completed nearly thirty years ago. Many of the urban or "urban fringe" municipalities have recent comprehensive plan updates or are developing updates, but many rural municipalities, especially in the southern and southwestern portions of the county, are among those that have the oldest plans. The Pennsylvania Municipalities Planning Code, amended by Acts 67, 68, and 127 in 2000, now requires that comprehensive plans be reviewed (cities, boroughs, and townships) and updated (counties) every ten years. *The County should encourage and assist all municipalities in updating their comprehensive plans in a thoughtful and coherent manner. In particular, care should be taken to plan for the preservation of natural resources to the extent that the municipality deems it desirable.* Future land use, the extension of the road network, and the extension of water and sewer lines will all have an impact on the natural environment and its interrelationships. If a community decides that it is important for a

stretch of forest, or a stream valley, or a section of the lake bluff to remain undeveloped into the future, then it is important that the community's comprehensive plan reflect this.

Pursuant to this end, a community may use the official map provisions of the Pennsylvania Municipalities Planning Code to establish specific goals. Section 401 of the MPC states, in part, that a municipality may adopt an Official Map "which may show appropriate elements... of the comprehensive plan... with regard to public lands and facilities..." These may include "proposed public parks, playgrounds, and open space reservations." The adoption of an official map allows a municipality to specify areas that, in the future, will or could be put to public use and to give public notice that those areas are under such consideration. *The County should encourage any municipality that adopts a new comprehensive plan to also adopt an Official Map Ordinance, as well. This Ordinance may, among other items, specify any parcels or portions of parcels that the municipality is willing to work to acquire to maintain as open space. It should also take care to not extend certain improvements, such as roads, through areas that the municipality desires to remain open and undeveloped.* Such official maps must, of course, be consistent with the comprehensive plan.

It must be noted that once a parcel or portion of a parcel has been designated on a municipality's Official Map, if action is taken by the current owner to subdivide, build, or otherwise develop in the designated portion, the municipality has one year to begin the acquisition process. Consequently, a municipality should take care to designate only those parcels or portions of parcels that it is willing to make a definite commitment to acquire.

Other ordinances can be written so as to protect environmentally sensitive areas. Zoning and subdivision and land development ordinances, for example, can restrict development on steep slopes and in floodplains. Federal and State policies currently restrict the amount of development permissible in wetlands.

Conservation Subdivision Design may be adopted, a technique in which, rather than permitting traditional subdivision design where a parcel is completely subdivided according to the allowable density (i.e., at a density of one dwelling per acre a twenty-acre parcel would be subdivided into twenty lots), the maximum number of lots (twenty) is only allowed if a certain amount of the original parcel remains permanently undeveloped. Therefore, lots will be smaller but will also abut permanently preserved open space. In the case of a farm, this open space may have a permanent conservation easement placed upon it and then leased or sold to an active farmer. Conservation Subdivision Design has become a prominent part of Pennsylvania's "Growing Smarter" initiative, an effort to preserve agricultural land and open space and to restrain the negative effects of costly over-development. Such new techniques are specifically

designed to allow a subdivision to protect the most sensitive and aesthetically pleasing features in their natural state. *The County should encourage any municipality that adopts a new comprehensive plan to update the municipal ordinances, paying particular attention to the ways in which natural resources might be preserved, including development restrictions in environmentally sensitive areas and Conservation Subdivision Design techniques.*

Land Conservation: One sure way to protect natural resources is to acquire the land on which the resources reside. In many areas of Pennsylvania and the United States this is being done by private land trusts, non-profit organizations that acquire either the development rights to a parcel, or the parcel itself, and subsequently prevent development of the land. Erie County currently purchases the development rights to agricultural land through its Agricultural Conservation Easement program, but is not working towards preserving other sensitive lands. The Lake Erie Regional Conservancy (LERC) is a fairly new organization in Erie County that appears to be working in this direction. The Western Pennsylvania Conservancy (WPC) is currently active in Erie County acquiring woodlands and transferring these lands to the Pennsylvania Game Commission for inclusion in existing State Game Lands. *The County should support the creation and activities of a land trust that will acquire, own, and maintain environmentally sensitive lands in Erie County, or the development rights thereto.*



Conclusion:

Planning for the preservation of a community's natural resources should be seen as being just as important as planning for residential, commercial, or industrial development. One of the most frequent complaints about many new developments is "there aren't any trees." Broad expanses of concrete and asphalt, even those broken up by carefully manicured lawns, are not an adequate replacement for the original landscape. But the value of a community's natural resources really extends beyond any aesthetic value of "the view," into mitigation and control of other natural phenomena. Woodlands, hillsides, streams and wetlands, and groundwater all effect and are affected by one another. When a development disturbs one of these it will, in the long term, disturb them all and will ultimately affect development, either itself or another one downstream.

Growth and development are not and should not be seen as incompatible with the preservation of a community's natural resources; development does not require widespread harm to natural resources, and natural resources preservation does not necessitate the halt of development. The challenge, however, is to integrate the two. When this occurs, and it can, a community can achieve something much more desirable than either of them individually.

HISTORIC PRESERVATION GUIDELINES

Introduction:

*“We have met the enemy, and they are ours, two ships, two brigs,
one schooner and one sloop.”*



Oliver Hazard Perry, September 10, 1813

Nearly every school child in Erie County recognizes that famous quote by Perry at the conclusion of his battle with the British near Sandusky, Ohio during the War of 1812. They also know the story of the construction of Perry’s brigs, the Lawrence and the Niagara in the Bay at Erie. That history is made even more real by the physical presence of the Niagara at the foot of Holland Street in Erie. This replica ship is a living reminder of an event which occurred nearly two centuries ago.

The Niagara symbolizes the importance of historic places and structures. They serve as a connection to the past. Sometimes, these connections are to events as critical as the War of 1812; others are links to events, lifestyles, or architecture from the past.



This important connection is reflected in the Pennsylvania Municipalities Planning Code. Both Section 301(a)(6) and (7) require comprehensive plans and especially county plans to contain sections on historic preservation. This task is not a difficult one for Erie County, which possesses a rich history.

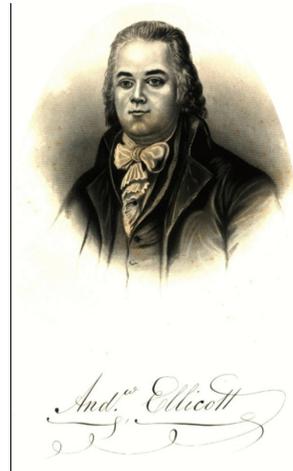
Erie’s first known inhabitants were the Indians of the Eriez Nation, who were exterminated by the Seneca around 1654. For decades thereafter, the region remained under control of the Iroquois Confederacy. Then, in the summer of 1753, a French force established a fort at Presque Isle. The word Eriez, according to the French, meant either “wild cat” or “raccoon” in the Indian dialects. The earliest reference to the name is on a French map of 1651, on which Lake Erie is named Lac du Chat or “Lake of the Cat.” By 1760, the French claims to the rich Ohio Valley had been shattered, and Fort Presque Isle was abandoned to the conquering English. After the Revolution, Erie became part of the new republic.

No history of Erie County can be recounted without the story of “The Triangle.” Roughly, the Triangle is some 200,000-plus acres north of the forty-second degree of

latitude and west of the current New York-Pennsylvania border. Due to their original charters, at least three states laid claim to this area: New York, Connecticut, and Massachusetts. Pennsylvania lacked a port on Lake Erie and at the urging of Andrew Ellicott, began a campaign to acquire the Triangle. This involved prolonged negotiations and, one by one, the three other states signed grants of cession relinquishing their interests to the national government. Then by action of Congress on September 4, 1788, the sale of the Triangle to Pennsylvania was ratified with the patent signed by President Washington on March 3, 1792. The consideration for the sale was \$0.75 an acre, amounting to \$151,640.25.

However, there were other claimants to the land, the Indians. On January 9, 1789, Pennsylvania paid the Six Nations \$2,000.00 for their claims. Evidently, that settlement did not satisfy all Indian leaders, and on February 3, 1791, an additional \$800.00 was paid to Chiefs Cornplanter, Half-Town, and Big Tree.

In 1792, the General Assembly of Pennsylvania passed an act for laying out the town of Presque Isle, otherwise known as Erie. In June 1795, Generals William Irvine and Andrew Ellicott arrived to lay out the town, accompanied by surveyors and a company of state militia. Originally part of Millcreek Township, Erie City was incorporated initially as a borough in 1805 and has been the only county seat.



Erie County, Pennsylvania was created by an act of the legislature dated March 12, 1800. This same act also created Butler, Crawford, Mercer, Venango, and Warren Counties. As the northwestern portion of the state was, at that time, sparsely populated, a single governing body was established at Meadville, Crawford County. Erie, Crawford, Mercer, Venango, and Warren Counties were all governed by this seat until 1803, when the first county officers were elected in Erie County. Prior to the Act of 1800, the land contained within Erie County was defined in turn as part of Lancaster, Cumberland, Bedford, Westmoreland, and Allegheny Counties. In 1798, while still part of Allegheny County, Erie Township was erected and its boundaries established in the same configuration as the present County borders.

Transportation: Road construction in Erie County had its beginning in 1753 with the road built by the French, connecting forts at Presque Isle and Le Boeuf. It was 34 years; however, before another road was surveyed in the County, after the Revolutionary War. The Pennsylvania Population Company's agent, Judah Colt, opened a road in 1797 from the mouth of Sixteenmile Creek (present day Freeport) to his agency station (present day Colt Station) in Greenfield Township. It was extended the next year to the forks of

French Creek (present day Wattsburg). In 1800, a road from North East to Wattsburg was opened paralleling, but running east of, the one from Freeport.

Construction quickened during the early 1800s, with roads being built connecting Erie to Buffalo and Cleveland (US Route 20) in 1805; North East to Waterford in 1804; Erie to the Ohio and New York borders (SR Route 5) in 1806; and Wesleyville to Colt Station (SR Route 430) in 1813. Several toll roads were constructed by private companies. One of the earliest, the Erie and Waterford Turnpike Company with Judah Colt as treasurer, built the Erie and Waterford Turnpike (US Route 19) in 1805. Objections to turnpike fees prompted one stage company to build the Shunpike Road, connecting Erie and Waterford in 1828.

Stage routes were established between Erie and Pittsburgh in 1826; Erie and Buffalo in 1820; and Erie and Cleveland in the 1820s. The Village of West Girard in Girard Township thrived during this period, as it housed one of the stage company's stables on the Erie to Cleveland route.

Roads were not, however, Erie County's only transportation mode. During the early 1800s, canals were viewed as important transportation and commercial resources. In 1824, New York had completed construction of the Erie Canal which connected the Hudson River to Lake Erie. In 1838, Pennsylvania began the construction of the Erie Extension Canal which would connect Erie and Pittsburgh. The State shortly thereafter ceded the project to the newly formed Erie Canal Company, which completed this connection in 1844.

The canal entered Erie County in Conneaut Township, passing through Albion to Lockport (present-day Platea Borough) in Girard Township, and then to Girard on Elk Creek. The placement of the canal on the east side of Elk Creek prompted the demise of West Girard, which had profited from the stagecoach stop. From Girard, the canal turned east and entered Erie on West 18th Street. The canal, at this point, ran through Erie City from southwest to northeast, ending at the foot of Sassafras Street. According to a HISTORY OF ERIE COUNTY, published in 1884 by Warren Beers & Co. of Chicago, the canal flourished and was still successfully operating in 1860.



Then a series of railroads found their way to Erie. These include the Lakeshore Railroad, New York and Erie Railroad, the Erie and North East Company, and the Franklin Canal Railway. These connections were completed around 1850. However, the successful operation of the Erie Canal Company continued until the Erie and Pittsburgh Railroad was completed about 1864. This modal competition along

with the small size of barges created problems for the canal. Another factor was the fact that some of the directors of the Erie Canal Company were also in the Erie and Pittsburgh Railroad management. The official demise of the canal is given at 1871, with the collapse of the Elk Creek viaduct. Though most of the canal soon fell into disrepair and abandonment, a portion of it was incorporated into Erie City's sewer system, an early example of adaptive reuse.

The canal era proved short lived. Along with the rest of America, Erie County leaders had turned to railroads. In 1852, the Erie and Northeast Railroad Company constructed a line to the New York border, where it was to meet the Dunkirk and State Line Railroad. This issue was complicated when the Dunkirk line made an agreement with the Buffalo-Fredonia and State Railroad relative to track gauge, contrary to its original agreement with the Erie and North East line.

The issue of railroad gauges was important in early Erie, as the gauge was to change in Erie County. In fact, at one time, Pennsylvania law required one set of gauges from trains entering Erie County from the east and another one for those from the west. Freight and passengers had to be transferred between the different gauges within the County, a benefit to local interests, but not to the growing rail industry. Obviously, railroad interests were looking to set up a single gauge (4' 9" wide), and this led to the "Railroad War," resulting in riots in 1853 and 1855 in Erie County. Bridges were destroyed and tracks were uprooted. A few years later, the Supreme Court intervened, and a uniform gauge became standard.



The early 1900s saw increased use of trolley service. At this time, the Erie Electric Motor Company had expanded its trolley trackage to serve the expanding city. In 1906, the Erie Electric Motor Company was purchased by the Lake Erie Traction Company, which produced larger street cars called inter-urban trolleys.

ERIE CITY IRON WORKS.
LIDDELL, MARSH & CO.,
MANUFACTURERS OF
CARS, STEAM ENGINES,
Mill Gearing and Machinery!
AGRICULTURAL MACHINES,
Punching and Shearing Machines, Building Front Castings, &c. Also,
LUMBER DEALERS.
South-east Corner of State and Eleventh Streets.

Trolley service began to lead out to North East, Conneaut, Meadville, and eventually adjoined lines to Utica, New York to the east and Louisville, Kentucky to the southwest. Although trolley service was becoming more expansive, most individuals still traveled long distances on steam engines.

Industry: Industry has always played an important part in the development of Erie County. The industrial period of the 1800s was highlighted by iron and steel factories.

These factories included the Erie City Iron Works (1830), Jarecki Manufacturing

Company (1850), Lovell Manufacturing Company (1869), Erie Forge and Steel (1872), Erie Malleable Iron Company (1880), Hammermill Paper (1897), and General Electric (1907).

But, not all of Erie's major employers were in heavy manufacturing. For example, Erie Insurance is a major service company in the County and remains one of its largest employers.

This report could give many additional examples of business, cultural, and educational resources that link today's Erie with its rich fabric of history. Also, the physical historic resources in Erie County are plentiful. In June of 1976, the Erie County Metropolitan Planning Commission published the ERIE COUNTY HISTORIC AND ARCHITECTURAL PRESERVATION PLAN with 110 sites and landmarks inventoried. A more contemporary list can be obtained from the Pennsylvania Historical and Museum Commission. They list some 39 places in Erie that are on the National Register, and an additional 80 that are deemed eligible for inclusion but have not been formally presented.

What should be done to preserve these links to our past? Some might argue for a "hands off" policy in an attempt to keep such places in a bell-jar environment of no change, and limited use. On the opposite side, the ultimate "free marketer" might argue that once a site has lost its economic "raison d'être," it is time to remove it and construct something appropriate to the current marketplace.

This Plan does not hold to either extreme. It recognizes that the historic resources in Erie County outnumber the capacity of governmental and nonprofit agencies to maintain them all. But, it also does not embrace a laissez faire approach that would ignore historic treasures, perhaps losing them forever.

Regardless of the final Historic Plan, what tools are available for local governments, the County, or nonprofit agencies to use in any historic setting?

Tools for Historic Preservation: To steward Erie County's historic resources, the tools used for various circumstances may differ widely. One purpose of this chapter of the Comprehensive Plan is to give communities the knowledge to choose which tools may fit their needs. Key tools include:

- The National Register of Historic Places
- The Related Tax Credit Program
- The Historic District Act of 1961
- Zoning and Codes for Preservation



National Register: The key tool of historic preservation policy in the United States is the National Register of Historic Places. The Register was established as a part of the Historic Preservation Act of 1966. Properties listed on the Register may be listed for architectural or historic significance. That significance may be local, statewide, or national. Significance may be related to a famous person, an event, or keyed to broad patterns in the past (such as the Westward movement or Industrial Revolution). The National Register listings in Pennsylvania are administered by the Pennsylvania Historical and Museum Commission (PHMC), which is designated by the Federal government as the official State Historical Preservation Office. The Museum Commission's policies have been to encourage the listing of districts in which a number of related structures can be honored and interpreted in their connection with one another. Generally, sites not connected to districts are discouraged unless they are part of a tax credit effort (see the Tax Credit entry).

Once listed, the Register has three main benefits. First, the National Register is an honor. Inclusion increases interest in local and national history, thereby increasing love of place. The listed property also receives a higher degree of protection from any project utilizing Federal funds which would create an adverse impact upon it. It is important to note that this protection does not apply to any private activity. The property owner remains completely free to alter, expand, or even to demolish the structure. However, government-funded projects, such as road-building activities or the use of Community Development Block Grant funds, must determine the impact on the resource and, if significant, take corrective action. At the very least, an extensive documentation process is required before demolition or significant alteration. Thus, the Register can protect private property from destruction by a public body. However, it must also be noted that eligibility for inclusion on the Register is regarded as the same as formal listing. For example, if a highway project discovered a historic site in its way through a mandatory environmental review process, the site, though not listed on the Register, may be identified by the State Historic Preservation Office (SHPO) as eligible for listing and thus receives the same statutory protection. As was noted earlier in this report, there are some 80 such "eligible" listings in Erie County on the Museum Commission's Register. The third benefit, tax credit, is important enough to warrant its own section.

Tax Credit: Owners of income-producing property, who conduct restoration activities which meet the Secretary of the Interior's Standards for Historic Preservation, can receive a significant 20 percent tax credit on their Federal income tax. For business owners, the tax credit, if pursued carefully, can result in significant profitability, as this is a credit against the income tax owed, not an income deduction. The difficulty tends to be in working with a design and construction team that understands the appropriate standards and also in completing the necessary paper work. A local example of such a tax credit

project is the Modern Tool complex at 4th and State Street. It must be noted that the determination of historic listing or eligibility must precede application for the tax credit.

The Historic District Act: For communities which really value their historic resources, land use regulations can actively protect resources. There are two options for this in Pennsylvania. The first is the creation of a historic district under the provision of the Historic District Act of 1961. Not to be confused with a National Register Historic District, the State law is significantly more comprehensive. This power is implemented through a municipal ordinance. A proposed historic district must be carefully researched and documented as part of this process, with the results submitted to the PHMC. The local historic district ordinance must then be certified by the PHMC before it can become effective. Upon passage of the ordinance, the local government is empowered to create a Historic Architectural Review Board (HARB). The composition of the five-member HARB is defined by the law and must include in its membership an architect, code officer, and realtor. Subsequent to passing the ordinance and creating the HARB, new construction, exterior renovations, and demolitions must be reviewed and approved, upon which they are granted a certificate of appropriateness. The HARB approach is used in a number of Pennsylvania communities. Western Pennsylvania examples are Franklin in Venango County and Harmony in Butler County.

However, there have been some who complain of the Historic District approach. They argue that it can be time-consuming. Another alleged shortcoming has been a perception by some property owners that the actions of the HARB can be arbitrary or unrealistic. However, these problems can be largely overcome by the original framing of the Historic District Ordinance, close administrative coordination between the code office and the HARB; and common sense. In spite of its supposed drawbacks, this approach has one clear advantage over the zoning approach described later. That is, at least three members of this Board must have some type of expertise. And, that expertise is balanced between three separate disciplines.

Zoning: For some years, communities have been empowered to create zoning for the purposes of “regulating, restricting, or prohibiting uses or structures at, along, or near places having unique historical, architectural, or patriotic interest or value.” Yet, with the passage of Acts 67 and 68 in the year 2000, zoning now “shall provide for protection of natural and historic features and resources.” However, the Planning Code is silent on how this mandate might be accomplished.

For most communities, Historic Zones are treated as Overlay Zones. That is, they add additional regulations to the underlying zone, be it commercial, residential, or industrial. Typically, the criteria in such zones are based upon the regulations that are typical under the Historic District Act. In the case of the City of Erie, in lieu of a HARB, a special urban design committee has been constituted to advise the Planning Commission on such matters.

Historic Preservation Plan: The County of Erie recognizes that the Erie County Historical Society and Museums (ECHS&M) as the lead agency for historic preservation within Erie County. In that statement, the County also recognizes that there are several local and specialized organizations dedicated to the preservation of Erie County's rich past.

The County Historical Society's mission is one of education, archiving, the maintenance of a resource library, as well as the operation and maintenance of a series of museums and historic structures. The County recognizes this role and emphasizes the importance of the primary function of the ECHS&M.

Specific County Policies:

1. As a conduit for federal and state funds, Erie County recognizes that it has a special obligation to preserve historic structures and spaces within the County. Of particular concern is the ECHS&M's list of endangered structures, but any structure which is either on the National Register or is eligible for listing on the National Register represents a valued historic site. It will be the County's policy to not fund projects which will destroy or significantly alter historic structures, unless it can be proven objectively (with engineering, architectural, or code enforcement data) that the structures in question cannot be salvaged in their historic state. In that instance, however, the County will require full documentation, per the guidelines of the Pennsylvania Historic and Museum Commission.
2. In its plans for recommended public improvements, including roads, water, sewer, and other public facilities, the County will seek to avoid areas with structures which have historic importance for Erie County.
3. In Erie County, land use controls are essentially a function of local government. As such, the County will lend technical support, depending upon its staff capacity, to local municipalities who seek to either enact a Historic District ordinance or create a Historic Overlay District within their zoning ordinance. In doing this function, it will ask for the participation of the ECHS&M as well as any formally local organized historical society. Where the County does have sufficient personnel to render such technical assistance, it will, in concert with the County Historical Society, acquaint individual municipalities with the resources available from the Pennsylvania Historical and Museum Commission, or consultants who specialize in such work.
4. Though Erie County has a rich history and contains numerous historic resources, the average citizen is not aware of these. Therefore, the County will, in concert with the ECHS&M, will sponsor educational programs and workshops that will act

both to educate the public relative to known historic resources in the County, and provide information on the benefits and process of historic preservation.

5. Where groups or organizations wish to nominate historic structures, places, or areas to the National Register, the County will encourage this action by cooperative work with the ECHS&M and the Pennsylvania Historical and Museum Commission. The County's involvement will be based upon available staff resources but, in any event, it will make the interested parties or municipalities knowledgeable of the procedures and requirements of such actions. They will also provide the contacts where individuals or organizations may receive further information for such endeavors.

Conclusion: It is not the intention of these policies for the Erie County Department of Planning to replace or supplant the ECHS&M. In fact, it views the Erie County Historical Society and Museum Commission as the lead agency for preservation activities in the County. It looks upon its role as assisting and providing technical expertise so that agencies and other interested municipalities of Erie County can properly preserve their historic resources.