



SUSTAINABLE COMMUNITIES ASSESSMENT FOR EAST GOSHEN TOWNSHIP, CHESTER COUNTY

2nd DRAFT—5/24/12/2013

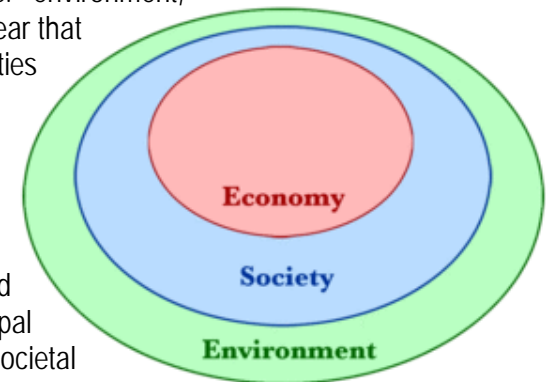
Overview

Between February and April of 2013, staff from the Brandywine Conservancy's Environmental Management Center (EMC) conducted a focused assessment of East Goshen Township's ordinances, plans, and policies (collectively, the "framework") as these pertain to community sustainability. Using the focused assessment approach allowed EMC staff to investigate East Goshen's broad and complex framework given limited time and resources, laying the groundwork for clear recommendations for future action during the comprehensive planning process.

"A healthy environment, one that is supported by sound land-use policies, is essential for healthy communities and strong local economies."

It may be helpful to define the term "sustainability". Sustainability is widely accepted to refer to: *an approach that meets the needs of the existing generation while not compromising the needs of future generations, and while protecting the rights of both.* It is also commonly understood to mean *the responsible use of natural resources such that renewable ones are not drawn down beyond their ability to regenerate, and non-renewable ones are used to the minimum possible extent.* For example, applying this definition to the land-use component of East Goshen's environmental framework would mean an approach which *promotes the redevelopment of underused commercial centers to have a mix of uses, which would conserve vital natural resources and promote a strong local economy.*

Sustainability is often represented by the graphic shown here, at the center of the three nested circles: "environment," "society," and "economy." While this assessment looks principally at the outer, environmental, circle, it is clear that a healthy environment, one that is supported by sound land-use policies, is essential for healthy communities and strong local economies.



Specifically, we evaluated the following facets of sustainability: (1) Natural Resource Protection; (2) Water Quality & Quantity; (3) Land Use & Community Character; (4) Global Warming & Climate Change; (5) Renewable Energy & Energy Conservation; (6) Mobility & Transportation; (7) Community Health & Safety; and (8) Food Production & Security. Given the assessment's focus on ordinances, plans, and policies, we did not evaluate any of the Township's *operations* as they relate to sustainability (e.g., municipal vehicle types and fuels used; procurement of supplies). Nor did we address the major components of the societal and economic circles (e.g., local economies), since we believe these issues may better be addressed through the comprehensive planning process per se. However, that being said, it would be impossible to entirely disentangle so-called "environmental impacts" from the social and economic dimensions.



Methodology

EMC staff attended two meetings in support of the focused assessment, held at the start of the process to gather information and perspective, on February 25th; and another on April 22nd to discuss this draft assessment. Present at both meetings were staff from the Township. In addition, written comments regarding the draft were provided by the Township's civil, sewer, and traffic engineers. This revision incorporates many of the comments received, and once accepted by the Task Force, will be forwarded to the Board of Supervisors for review and comment. The final SCA will be made part of the Township's comprehensive plan update, and its findings will be addressed through various recommendations for plan implementation. ~~and consultants from the Township. The final report will be made public May 27th, at the monthly meeting of the Comprehensive Plan Task Force, in support of comprehensive planning efforts.~~ The intent is that this be an iterative process involving the interplay of multiple knowledgeable stakeholders. Extensive research and analysis was conducted to perform the actual assessment, using either the electronic or paper versions of the following documents:

Plans, Studies, and Reports	East Goshen Township Code
✓ Comprehensive Plan (2005)	✓ Ch. 106. Burning, Outdoor
✓ Open Space, Recreation, and Environmental Resources Plan (1993)	✓ Ch. 129. Energy Conservation
✓ Act 537 Plan (1994)	✓ Ch. 131. Erosion and Sediment Control
✓ Act 209 Study (1997)	✓ Ch. 156. Noise
	✓ Ch. 188. Sewers
	✓ Ch. 194. Solid Waste
	✓ Ch. 195. Stormwater Management
	✓ Ch. 205. Subdivision and Land Development
	✓ Ch. 218. Trees
	✓ Ch. 240. Zoning

Results and Recommendations

The results of the focused assessment of East Goshen's efforts are provided in the charts that start on this page. These charts are organized according to the issues evaluated, while the symbols "+" and "x" are used to indicate the strengths and weaknesses, respectively, of the Township's current regulations, plans, and policies as they relate to environmental sustainability. For the same criteria, the letter "n" is used to note a neutral, or adequate, evaluation; i.e., the Township's efforts are neither significantly strong nor notably weak.

Eventually, as the comprehensive planning process continues and as East Goshen's priorities are better understood, recommendations will be developed that will address the most important deficiencies, and build on the greatest strengths, of the township. To do so now, without a clear understanding of the township's vision for a sustainable future, would be premature.

+++++

Key Documents & Abbreviations	Zoning Districts		
<i>Comp Plan: East Goshen Township Comprehensive Plan</i>	<i>§240-8: R-1 Low Density Open Space Residential</i>	<i>§240-14: C-1 Community Commercial</i>	<i>§240-19: I-1 Light Industrial</i>
<i>OSRER: Open Space, Recreation, and Environmental Resources Plan</i>	<i>§240-9: R-2 Low Density Residential</i>	<i>§240-15: C-2 Local Convenience Commercial</i>	<i>§240-20: I-2 Planned Business, Research and Limited Industrial Park</i>
<i><u>Act 537 Plan (Wastewater Plan)</u></i>	<i>§240-10: R-3 Medium Density Residential</i>	<i>§240-16: C-4 Planned Highway Commercial</i>	<i>§240-21: BP Business Park</i>
<i><u>Act 209 Study (Traffic Impact Study)</u><u>537 Plan (Wastewater Plan)</u></i>	<i>§240-11: R-4 High Density Suburban Residential</i>	<i>§240-17: C-5 Government, Finance and Office</i>	<i>HR Historic Resource Overlay</i>
<i><u>Act 209 Study (Traffic Impact Study)</u></i>	<i>§240-12: R-5 Urban Residential</i>		



Natural Resource Protection

<p>General comments</p> <p>These apply to all items below.</p>	<p>+ Comp Plan. Objective to prohibit development in highly sensitive environmental areas, and the use of best management practices in design and land development to protect natural resources.</p> <p>+ OSRER. Resource priorities have been mapped.</p> <p>x OSRER. Has not been updated since 1993.</p> <p>+ §205-14. The township has established a Conservancy Board that reviews all sketch, preliminary and final plans and makes recommendations for the purpose of preserving the township's natural features.</p> <p>+ §§205-30 and -31. Preliminary and final plans to include Conservation Plan.</p> <p>+ §240-25. Requires all uses to be "developed in a manner consistent with the preservation of the quality of the existing environment and of any natural amenities present on the site."</p> <p>+ §240-28. Single-family cluster development provides for opportunities to protect natural and cultural features.</p>
<p>Protect: floodplains</p> <p>Floodplain protection serves both to protect private property and conserve valuable ecological resources, and should consider downstream users.</p>	<p>+ Zoning Map. Floodplains depicted on Zoning Map.</p> <p>+ §205-8. Basements, cellars and slab foundations prohibited.</p> <p>+ §240-26. Alluvial soils included within floodplains.</p> <p>n §240-26. Existing non-conforming uses and structures shall not be expanded or enlarged, except under certain conditions.</p> <p>x §240-26. Floodplain regulations largely focus on avoiding property damage <u>and don't ensure protection of floodplain vegetation or prevent impervious surfaces therein. Protection of the floodplain's ecology also ensures the health, safety, and welfare of township residents, rather than maintaining ecological function (e.g., there is no requirement to keep the floodplain vegetated).</u></p>
<p>Protect: riparian buffers</p> <p>Riparian buffers provide multiple benefits, from stormwater mitigation to wildlife habitat to aesthetics and more. Research has shown that benefits grow as the width of the buffer grows.</p>	<p>+ Ch. 195, §401.C. Stormwater management hierarchy prioritizes riparian buffers.</p> <p>+ Ch. 195, §404.A(2). Riparian buffers to be maintained with appropriate native vegetation.</p> <p>n Ch. 195, §404.A(2). <u>Riparian buffers to be minimum of 50'. Ridley Creek is a state-designated HQ waterway, and so carries a mandatory 150' buffer (when subject to an NPDES permit).</u></p> <p>+ Ch. 195, Appendix C. Stormwater management ordinance includes "Riparian Buffer Technical Reference Guide."</p> <p>n Ch. 195, §404.A(2). <u>Riparian buffers to be minimum of 50'. A better standard would include two zones, each 50' wide. Furthermore, Ridley Creek is a state-designated HQ waterway, and so carries a mandatory 150' buffer.</u></p>



<p>Protect: woodlands & hedgerows</p> <p>It is hard to overstate the value of mature woodlands, which include wildlife habitat, stormwater mitigation, soil conservation, carbon sequestration, mitigation of temperature extremes, improved property values, and much more.</p>	<ul style="list-style-type: none"> + Comp Plan. Woodlands mapped. + §218-2. Ordinance prohibits damage to trees on township streets and property. + §218-3. Requires the removal of diseased trees. n §205-7. Definition of Tree Protection Zone extends to the drip line. Tree roots typically extend twice that distance, however, and soil compaction over the roots can damage a tree. + §§205-30 and -31. Preliminary and final plans to include location of all trees 6" dbh or greater, and specifications for protecting existing trees that are to remain through construction. + §205-59. Existing trees to be preserved whenever possible. + §205-61. 80% of trees on wooded lots to be retained; up to 50% of trees may be removed if they are replaced on an inch-for-inch basis (among other conditions) on the same site or elsewhere in the township. + §205-63. Extensive requirements for protection of trees during construction activities. n §205-63.A(6). Damaged tree limbs to be pruned immediately. Should note that limbs should be pruned under the supervision of an arborist. x §240-6. "Forest" defined as a community of trees covering at least 10 acres. Interior woodlands may cover an area as small as ~3,600 sq. ft., or 0.08 acres. n §240-31.1. Detailed regulations for timber harvesting, but these regulations contain no recognition of the ecological value of the woodlands.
<p>Protect: prime agricultural soils</p> <p>Prime agricultural soils, essentially a non-renewable resource, produce an extensive array of crops with minimal energy input, and provide other significant benefits, such as infiltration, when left undisturbed.</p>	<ul style="list-style-type: none"> n Comp Plan. Prime ag soils have been mapped. x Ch. 240. Aside from definition of "prime agricultural land" and ability to protect open space through clustering, no specific provision for protection of remaining prime farmland soils or farms. x Ch. 240. There is no Agricultural district. While the majority of East Goshen is mapped as a "suburban landscape" by Chester County, portions in the east are considered to be "rural landscapes." n Ch. 240, Article II. Farming permitted by right in R-1 and R-2 districts. n Ch. 240, Article IV. Farming permitted by right in I-1, I-2, and BP districts.
<p>Protect: wetlands & hydric soils</p> <p>Wetlands have been called "the kidneys of the Earth" for their ability to filter pollutants and maintain water quality. They also provide important wildlife habitat and can be a source of beauty.</p>	<ul style="list-style-type: none"> + Comp Plan OSRER. Wetlands and hydric soils mapped. x §205-7. Definition of Wetland Margin/Freeboard provides only a limited buffer, or possibly none at all in some cases. n x §240-25. Requires delineation of all wetlands on a site; and requires a 20' <u>setback for all structures</u> buffer from identified wetland boundaries. <u>Setback</u> However, this buffer is not a protected buffer however only intended to permit movement of construction vehicles.

<p>Protect: steep slopes</p> <p>Steep slopes require protection primarily to prevent soil erosion and to protect downslope areas from flooding, but also provide valuable habitat.</p>	<p>+ Comp Plan & OSRER. Steep and very steep slopes have been mapped.</p> <p>+ §205-7. Definition of Steep Slopes includes slopes of 15% grade or higher.</p> <p>n- §§205-7 and 240-6. "Very steep slopes" never explicitly defined (but can be inferred).</p> <p>+ §§205-30 and -31. Preliminary and final plans to include location of all steep (>15%) and very steep (>25%) slopes.</p> <p>+ §240-6. Definition of Steep Slopes includes slopes of 15% grade or higher.</p> <p>+ §240-25. Provides for extensive regulations of development on steep (>15%) and very steep (>25%) slopes.</p>
<p>Protect: rare species</p> <p>No one wants to be a party to extinction, which famed wildlife biologist E.O. Wilson refers to as "the death of birth."</p>	<p>+ Comp Plan & OSRER. Serpentine formations have been mapped.</p> <p>+ OSRER. PNDI sites mapped.</p> <p>+ §240-25. Requires delineation of all Serpentine rock formations, as well as the identification of all rare or endangered plants present.</p>
<p>Protect: air quality</p> <p>From the municipal perspective, the primary means of protecting air quality are, (1) to provide for dense, mixed-use development that promotes human-scale transportation choices; and (2) to provide for green infrastructure, which cleanses the air of pollutants.</p>	<p>+ Ch. 106. Burning of municipal waste, brush, grass, and leaves is prohibited.</p>
<p>Identify, map and protect greenways</p> <p>Greenways represent a unique opportunity to connect disparate areas into one single whole, while also providing a showcase of a place's ecological wealth. They provide opportunities for recreation and non-vehicular mobility, and also provide wildlife with vital connections between natural areas.</p>	<p>+ OSRER. Open space areas and greenway corridors have been mapped. Unclear if up-to-date.</p>

+++++



Water Quality and Quantity

Water Conservation

<p>Ordinance prevents depletion of groundwater and surface water supplies</p> <p>It is important to ensure that water resources are not used at an unsustainable rate, both to protect ecological integrity and to ensure a sustainable water supply for human use.</p>	<p>+ OSRER. Aquifers and headwater areas mapped.</p> <p>+ §131-6.C(1). Post-construction runoff to roughly equal pre-construction and maximize infiltration.</p> <p>+ §188-8. Ordinance prohibits pumping of ground and surface water, by means of a sump pump or floor drain, into sewer system.</p> <p>+ §240-25.D. Prohibits activities which may result in pollution of groundwater.</p>
<p>Permit/promote harvested/recycled water (e.g., greywater systems, rain barrels) use</p> <p>Such measures reduce water consumption and save money and energy.</p>	<p>n No provisions.</p>
<p>Identify native and drought-tolerant plants for use in required landscaping plans</p> <p>Native plants are already adapted to the existing hydrologic conditions, and so do not require the extensive watering typical of introduced species.</p>	<p>+ <u>Board Resolution 2011-20 added a recommended list of approved Township tree and street tree species, nearly all of which are native.</u> No general requirement for native plant use.</p>

Water and Sewer Infrastructure

<p>Utilize existing public water/sewer lines before expanding or increasing capacity</p> <p>Controlling expansion of sewage capacity & water supply is a key element in growth management.</p>	<p>n Ch. 205. New buildings placed within certain distance of public sewer line must hook into system.</p>
<p>Has a maintenance program for on-lot disposal systems (OLDS)</p> <p>Ongoing maintenance of OLDS is essential for protecting water quality and ensuring the long-term viability of such systems.</p>	<p>+ Ch. 188, Article II. Routine maintenance and regular pumping of on-lot sewage disposal systems mandated by ordinance. with regular inspections by the township.</p>



<p>Ensure the future land-use plan directs any expansion of water, sewer, stormwater capacities</p> <p>Proper growth management links the expansion of public utilities to community-created plans.</p>	<p><u>+ Comp Plan. Recommends Act 537 Plan be updated, as needed, to be consistent with Comp. Plan.</u> n Comp Plan. All of East Goshen is planned for development, and this development is required to connect to public infrastructure.</p>
<p>Update the community's Act 537 plan based on the future land-use plan</p> <p>Since the future land-use plan represents the community's vision, the sewage plan (Act 537 Plan) should be consistent with it.</p>	<p><u>n Act 537 Plan. Act 537 Plan has been updated/amended as development plans are approved for specific properties. However, this ad hoc approach could be much improved.</u> x Act 537 Plan. Dated 1995. The Plan itself notes that its timeframe is 1993–2002.</p>
<p>Encourage spray/drip irrigation where use of existing treatment is not an option</p> <p>Spray/drip irrigation ensures the integrity of the local hydrologic cycle better than stream discharge plants, which send water and nutrients downstream, often requiring costly system design, operation, and upgrades.</p>	<p>Act 537 Plan: + East Goshen has <u>one remaining</u>two spray irrigation <u>system -- systems</u>—Lockwood Chase (103 EDUs) and Hershey's Mill (2,032 EDUs). n <u>Public</u>However, the majority of sewage is treated at the Ridley Creek Sewage Treatment Plant (0.754 MGD) and the West Goshen (Chester Creek) Wastewater Treatment Facility (1.000.975 MGD). n East Goshen has one community onlot treatment plant at Willow Pond (28 EDUs).</p>

Stormwater Management

<p>Implement stormwater BMPs / green infrastructure</p> <p>BMPs, aka "green infrastructure," represent low-cost, environmentally-integrated techniques for stormwater management, and can also create community amenities.</p>	<p>n Ch. 195, Stormwater Management: <u>The township's stormwater management ordinance will soon be greatly revised, pending the completion of the county's Act 167 process. Those portions that will not be revised are largely the result of state mandates.</u> n §302.B. For new impervious coverage that is exempted from quantity controls, infiltration only required to deal with 1" of runoff; if site conditions preclude infiltration, then detention of 1" is acceptable. + Ch. 195, §401.C. Stormwater management hierarchy prioritizes riparian buffers and infiltration. n Ch. 195, §401.D. Applicants "highly encouraged" to use BMPs and to minimize new impervious surface. x Ch. 195, §403. Broadly speaking, the focus on peak discharge has led to poor water-quality <u>quantity</u> outcomes, <u>and is inconsistent with the new emphasis on volume control.</u> (i.e.,</p>
---	--

	<p>flooding). + Ch. 195, §406.O. Roof drains must discharge into a BMP providing infiltration. n Ch. 195, §404.D. Design of stormwater management systems “should” consider protection of aquatic and wildlife habitat, streambank erosion, and volume control. n x Ch. 195, Appendix B. Storm frequency table, from 1986, outdated. Storm intensities now much greater and more frequent.</p>
<p>Require Low Impact Development techniques Low Impact Development (LID) is a design approach that focuses on conservation and use of natural features to protect water quality on-site.</p>	<p>n Ch. 195, §401.D. Applicants “highly encouraged” to use innovative site design techniques that minimize new impervious surface. + Ch. 195, §406.N. Minimization of impervious surfaces and infiltration are required. + x §205-44.E(2). Board may reduce right-of-way and cartway widths. No provision is made for minor narrowing streets. in appropriate circumstances (to reduce impervious coverage).</p>
<p>Require routine maintenance of stormwater management facilities Like all infrastructure, stormwater management facilities are subject to degradation over time, and therefore benefit from ongoing maintenance.</p>	<p>+ Ch. 195, §702. Drainage plan shall contain an operations and maintenance plan. + Ch. 195, §702.C. If the township accepts dedication of any stormwater management facilities, the developer is required to post financial security up to 15% of the cost of construction of that facility. + Ch. 195, §704. The Township Engineer shall conduct routine <u>inspection</u>maintenance of all stormwater management facilities. + Ch. 195, §705. East Goshen Township has a stormwater management fund, which developers are required to pay into when facilities are accepted by the township for dedication.</p>

+++++

Land Use and Community Character

Land-Use Planning

<p>Steer growth and new development to the most appropriate places within community/region</p> <p>Steering growth to existing population centers, such as villages, towns and cities preserves open space and helps to ensure more efficient use of existing infrastructure, while also promoting a sustainable local economy.</p>	<p>n Comp Plan. The Future Land-Use Map shows <u>nearly</u> all of East Goshen <u>to be</u> developed.</p> <p>n Zoning Map. All of East Goshen is zoned for development.</p>
<p>Participate in multi-municipal/regional land use planning</p> <p>Many issues are best dealt with on a regional rather than municipal basis, and efficiencies of scale can reduce burden on local budgets.</p>	<p>+ Comp Plan. Objective 2E supports regional planning.</p> <p>+ East Goshen participates in the West Chester Regional Planning Commission, established in 1959; and the West Chester Area Council of Governments.</p>
<p>Ensure planning policies and regulations are consistent with regional growth management plans</p> <p>A municipality's policies and regulations are the tools which implement the local plan, and it only makes sense for them all to work in concert.</p>	<p>n Comp Plan and Landscapes2. Most of East Goshen lies within the "Suburban Landscape," as identified in Landscapes2. This is largely <u>consistent</u> consonant with East Goshen's development pattern.</p>
<p>Increase density/intensity in urban and village areas where appropriate</p> <p>Greater intensity of use and density of population can reduce the per capita cost of infrastructure, helping a municipality's dollars to go farther, while also promoting a sustainable local economy.</p>	<p>+n Comp Plan. <u>Township's southwest corner planned for urban and high density residential (3-14 du's/ac).</u></p> <p>n Small-areas <u>Ch. 240. Areas</u> in the southwest of the township have been zoned R-5 Urban Residential, <u>and C-4 Planned Highway Commercial that allows two-story apartments and townhouses by conditional use approval.</u></p> <p>+ Ch. 240, Article II. <u>The R-4 and R-5 districts permit apartments at a density of 14.5 DUs/ac.</u></p>
<p>Encourage and/or incentivize infill development and redevelopment of previously-disturbed</p>	<p>+ Comp Plan. Several objectives in the Land-Use chapter support redevelopment at higher intensities, along with preservation of the remaining open space in the township.</p>



<p>lands</p> <p>Open space is a resource with limited capacity for regeneration, so it makes sense to encourage infill development and redevelopment of previously-disturbed lands.</p>	
<p>Adopt and implement Smart Growth principles</p> <p>Smart growth principles encourage the concentration of development in existing walkable & bikeable communities; transit-oriented development; mixing of uses; a range of housing & transportation options; a sense of place; distinct community boundaries; the preservation of open space and critical environmental resources; and community involvement in land-use decisions.</p>	<p>n Comp Plan. Recommends the development of a Town Center, which may, unfortunately, has not have been implemented born fruit.</p> <p>+ Ch. 205, Article V. The township highly encourages the submittal of sketch plans, which often lead to better developments, as well as less cost to the developer.</p> <p>+ §205-58. Developers required to consider reserving space within their developments to accommodate community facilities such as schools.</p> <p>x Ch. 240. Requires a generally suburban development pattern, which segregates uses and requires residents to be auto-reliant.</p> <p>+ Ch. 240. Generally promotes the preservation of sensitive environmental features and open space.</p>
<p>Allow for Traditional Neighborhood Development</p> <p>TNDs aim to be complete neighborhoods, with a mix of housing types, a network of well-connected streets and blocks, humane public spaces, and have amenities such as stores, schools, and places of worship within walking distance of residences.</p>	<p>x Ch. 240. n Ch. 240. <u>No such provisions, although little vacant land remains in the township to warrant adding this tool. How redevelopment is someday managed to produce more sustainable developments needs to be considered.</u> No such provisions.</p>
<p>Adopt Transferable Development Rights ordinance</p> <p>TDRs are a market-based tool, often used for the preservation of farmland and natural areas, by transferring the “development rights” from these areas to areas with the infrastructure to support more intense/dense development.</p>	<p>x No provisions.</p>
<p>Update municipal comprehensive plan to promote sustainability</p>	<p>n Comp Plan. The Comprehensive Plan reflects East Goshen’s intentions to preserve remaining historic resources, open space, and particularly its commitment to protecting woodlands.</p>



<p>Municipal sustainability begins with the comprehensive plan, which can help to set the vision and subsequent priorities for sustainability.</p>	<p>Nevertheless, much could be done to better promote sustainability, such as the creation of mixed-use zones and higher-density, more walkable neighborhoods. n The Town Center concept could potentially promote economic and social sustainability goals, yet <u>the Plan's recommendations have not been pursued to date, has not yet taken off.</u></p>
--	--

Character and Aesthetics

<p>Preserve, through zoning and other means, the community's significant historical resources</p> <p>A community's historical resources are its connection to its past and help to define it as a unique place, worthy of respect and stewardship.</p>	<p>+ Comp Plan. Several objectives calling for the protection of the township's historic resources. + OSRER. Scenic and historic resources mapped. + §205-14. The township has established a Historical Commission that reviews all sketch, preliminary and final plans (when applicable) and makes recommendations for the purpose of preserving and promoting the township's historic and cultural amenities. + §240-20. Provides for protection of National Register of Historic Places-eligible buildings. + §240-38.2. East Goshen Township maintains a historic resources inventory. + §240-38.9. All requests for a demolition permit for historic resources must be forwarded to both the Historical Commission and the Board of Supervisors. An impact study is also required.</p>
<p>Encourage and promote, through zoning, the adaptive reuse of historic buildings</p> <p>A key element in historic preservation is the preservation of the usefulness of the historic structure, which often relies on creative reuse opportunities.</p>	<p>+ §240-38.5. A variety of uses are permitted in historic structures, in addition to the uses permitted in the underlying zoning district.</p>
<p>Preserve through ordinance incentives significant cultural and scenic resources</p> <p>In some cases, historic preservation is best achieved through other parts of the Code.</p>	<p>+ Comp Plan. Objective to protect scenic vistas. + §240-38.6. The Board may modify area and bulk requirements to facilitate re-use of historic resources.</p>
<p>Enact ordinances limiting both noise and light pollution</p> <p>The livability of a place can be dramatically affected, for good or ill, by noise and lighting.</p>	<p>+ Ch. 156. Township has adopted a thorough noise ordinance. n §240-24. Township repeats noise provisions, but in a different format, which may cause confusion. + §240-8.E(7). In PRDs, lighting shall not be located so as to shine into habitable rooms or yards. n §§240-24.G(2) and .H, and 240-27.C(7). Glare to be minimized. <u>n §240-24.H. Light and glare controls.</u> <u>n §§240-24.H(2) and 240-27.C(7)(b). Allows use of translucent covers of Full cut-off luminaires.</u></p>

	which reduces glare but still permits some not required. x §240-27.E(7). Required lighting could be designed so as to generate avoidable light pollution.
--	---

+++++

Global Warming & Climate Change

Greenhouse Gas Pollution Reduction

<p>Enact ordinances to encourage mixed use/Transit-Oriented Developments (TODs)</p> <p>Mixed-use and transit-oriented development is the hallmark of strong, well-planned communities. By reducing reliance on fossil fuels, they also have a positive impact on climate change.</p>	<p>+ §240-16. Single-family detached dwellings and townhouses are permitted in the C-5 Highway Commercial district.</p> <p>+ §240-20. Single-family detached dwellings in various configurations are permitted in the I-2 district.</p> <p>n+ §240-29.D. "Convenience commercial" permitted within planned apartment developments. <u>However, the density of the surrounding population is not sufficient to support such commercial areas.</u></p>
<p>Enact ordinances to allow live-work units and home-based businesses in residential zoning districts</p> <p>In existing residential districts, a certain degree of "mixed-ness" may be achieved by permitting and encouraging live-work units and home-based businesses. In an economy struggling to provide full employment, opportunities to work at home may allow a person to remain in his/her home.</p>	<p>+ §§240-9.E, -10.E, -11.E, and -12.E. R-2, R-3, R-4, and R-5 districts permits home occupations, home-related businesses and no-impact home-based businesses as accessory uses.</p>
<p>Incentivize green building techniques for new developments and redevelopment projects</p> <p>"Green" buildings have been shown to have greater value, be more affordable to maintain, be more attractive to certain demographics, and to have a high return-on-investment in terms of local employment.</p>	<p>x No such provisions have been made. Examples include density bonuses for LEED-certified construction; and the adoption of the Green Building Code (with state approval).</p>
<p>Promote and incentivize reforestation on open</p>	<p>x No provisions <u>within ordinances that require reforestation with new or re-development.</u></p>



<p>space</p> <p>Reforestation provides greater habitat, variety of landscape, stormwater mitigation, and a sink for atmospheric carbon dioxide, the primary greenhouse gas pollutant.</p>	<p><u>+ Conservancy Board actively pursues reforestation of Township-owned properties.</u></p>
<p>Encourage use of human-scale transportation (public transit, biking, walking)</p> <p>Studies have shown that communities which provide opportunities for non-motorized transport are healthier, happier, and have more disposable income. Such communities also emit fewer greenhouse gas pollutants through their reduced reliance on fossil fuels.</p>	<p>x §205-56. Sidewalks not required. <u>The Federal Highway Administration recommends that, in single-family developments of about ¼ DU/ac, that sidewalks be placed on one side of the street.</u></p>
<p>Develop, adopt and implement a Climate Action Plan to reduce greenhouse gas emissions</p> <p>A Climate Action Plan (CAP) is one way a community can consciously reduce its negative impact on the global climate, while also saving energy, reducing per capita infrastructure costs, and saving money.</p>	<p>x The township has not adopted a CAP. However, as part of the Philadelphia metropolitan region, a greenhouse gas emissions and energy consumption inventory for the township has already been completed by DVRPC. This is a critical step in the development of a CAP.</p>

Climate Change Adaptation

<p>Build resilience by developing, adopting and implementing an adaptation component to Climate Action Plan in the face of present, and projected future, impacts of climate change</p> <p>By many measures, climate change has already occurred and is already intensifying local weather patterns; this may be expected to continue.</p>	<p>x The township has not adopted a CAP.</p>
<p>Adapt: heat</p>	<p>x No specific provisions. + Nevertheless, the township has a clear commitment to woodland protection, which can mitigate</p>

<p>Steadily increasing temperatures, with increasing incidence of extreme temperatures, can be expected with very high scientific confidence. Local governments can take steps to adapt to this. Examples include green infrastructure installation, modifying any acceptable plants lists to include heat- and drought-tolerant plants, etc.</p>	<p>high temperatures. See notes elsewhere; particularly the <i>Natural Resources Protection</i> section.</p>
<p>Adapt: water</p> <p>Climate scientists also have high confidence that one consequence of climate change is an intensifying hydrologic cycle: generally, precipitation will occur less frequently but, when it does occur, there will be more of it. Local governments need to prepare for increasing incidence of flash flooding interspersed with drought.</p>	<p>x No specific provisions. x Ch. 195, Appendix B. Storm frequency table, from 1986, outdated. Storm intensities now much greater and more frequent. n The township's commitment to riparian and wetland buffers helps to mitigate against flooding, but these buffers could be much stronger. See the <i>Natural Resources Protection</i> section.</p>

+++++

Renewable Energy and Energy Conservation

Renewable Energy

<p>Allow solar panels by-right when accessory to a principal use</p> <p>As the most accessible distributed, renewable energy technology for private property owners, it is important to reduce barriers to their installation whenever possible.</p>	<p>+ §240-9.E(10), -10.E(10), -11.E(10), and -12.E(10). In R-2, R-3, R-4, and R-5 districts, solar energy systems are explicitly permitted as accessory uses. n §240-8.E. Solar energy systems not listed explicitly as a permitted accessory use in R-1 district (nevertheless, §240-32.O permits accessory systems in all districts). + Ch. 240, Article III. Solar energy systems permitted accessory uses in all commercial districts. + Ch. 240, Article IV. Solar energy systems permitted accessory uses in all industrial and business park districts. + §240-32.O. Solar energy systems permitted by right as accessory uses in all districts.</p>
<p>Establish a minimum percentage of solar-oriented lots or buildings in new developments</p>	<p>x Ch. 205. No such provisions. x Ch. 240, Article II. No such provisions.</p>



<p>One major barrier to installation of solar systems on roofs is the orientation of the building. In the northern hemisphere, solar works best on south-facing slopes.</p>	
<p>Permit small wind energy conversion systems (WECS) in all zoning districts</p> <p>Small wind energy systems have minimal impacts, and are an important part of the overall energy mix.</p>	<p>+ §240-11.E(11) and -12.E.(11). In R-3 and R-4 districts, wind energy systems are permitted accessory uses. x Ch. 240, Article II. Wind energy systems not permitted in the R-1 and R-2 residential districts. x Ch. 240, Article III. Wind energy systems not permitted in any commercial district. + §240-19. Wind energy systems permitted accessory uses in I-1. x Ch. 240, Article IV. Wind energy systems not permitted in any other industrial or business park districts. <u>n §240-32.T Supplemental regulations for windmills.</u> <u>x §240-32.T(4) and (5). Restrictions on height and setback makes development of wind energy in East Goshen nearly impossible.</u></p>

Energy Efficiency and Conservation

<p>Encourage new & renovated residential/commercial buildings to achieve LEED, Energy Star, or comparable standards</p> <p>In the U.S., buildings are responsible nearly half of all energy consumed. Any effort to reduce total energy consumption, therefore, must include building energy efficiency as a crucial element. Energy-efficient buildings also tend to be more attractive investments and therefore have more stable real estate value.</p>	<p>n Ch. 129. The Township has official adopted the International Energy Conservation Code, 2003 Edition (the use of an updated version of this is already mandated by the state legislature through the UCC).</p>
<p>Add an energy element to the comprehensive plan</p> <p>Energy is the most crucial input to the economy, and it is arguable that comprehensive plans which do not consider energy are not truly comprehensive.</p>	<p>n Comp Plan. There is no energy conservation element in the present plan. However, one will be incorporated into the update.</p>

+++++

Mobility and Transportation

Non-vehicular Transportation

<p>Encourage Transit-Oriented Development (TOD) Mixed-use and transit-oriented development is the hallmark of strong, well-planned communities. By reducing reliance on fossil fuels, they also have a positive impact on climate change.</p>	<p>+ §§240-11.A & -12.A. Specific intent of R-4 and R-5 districts to locate higher density in areas near public transit. x Ch. 240. While the R-4 and R-5 districts are specifically intended to offer higher densities in areas located near public transit, they are still single-use districts and could be more “TOD-like” by permitting some commercial and other uses by-right.</p>
<p>Establish sidewalks in residential, village, downtown areas Sidewalks are the key element in safe, walkable, livable neighborhoods.</p>	<p>x §205-56. Sidewalks not required.</p>
<p>Require bike racks at appropriate locations in new/infill developments Appropriately-located bike racks can make cycling significantly easier and more attractive, while also protecting landscaping and infrastructure, which otherwise becomes the default bike “rack.”</p>	<p>x No such provisions.</p>
<p>Establish maximum block widths- that encourage, rather than discourage, walking and bicycling; and help to disperse traffic, reducing congestion. Block width is a strong determinant in the friendliness of an area for pedestrian and cycling activity.</p>	<p>x §205-54. Minimum block width set at 600’, with no consideration for the needs of pedestrians except for blocks exceeding 1,000’ in length. Blocks in walkable areas are typically on the order of 250–500’ in width. If that is not deemed feasible in a suburban context, however, then a mid-block path system could be required to improve pedestrian access. <u>Paths should be clearly indicated and probably paved.</u> n §205-54. Crosswalks required for blocks exceeding 1,000’ in length.</p>



Roads and Streets

<p>Codify “complete streets” principles in the SALDO and embrace PennDOT’s new Smart Transportation design standards which emphasize context-sensitive design</p> <p>Complete streets designed and maintained to ensure accessibility to all users, including motorized and non-motorized traffic and public transit. Such streets would include sidewalks, crosswalks, medians and raised crosswalks where necessary, pedestrian signals, bulb-outs, staggered parking, street trees, pervious paving and other green infrastructure measures, etc.</p>	<p>x Comp Plan. Goal to optimize mobility and minimize congestion at odds with objective to minimize cut-through traffic in neighborhoods. A well-connected street network disperses traffic and is of benefit to both motorists and non-motorists.</p> <p>x Ch. 205, Article IX. Complete Streets principles (particularly the needs of non-motorized users) not explicitly considered.</p> <p>x §205-56. Sidewalks not required.</p> <p>n §205-62. Street trees at 3” dbh to be provided as determined by the Board of Supervisors or Planning Commission.</p>
<p>Eliminate the creation of new cul-de-sacs</p> <p>Cul-de-sacs discourage connectivity, thus fostering more driving (and fossil fuel consumption) than otherwise would be necessary. Traditional neighborhoods only rarely incorporate these elements.</p>	<p>x §205-42-D and -F. New minor/local public streets to be designed to discourage through traffic; and use of cul-de-sacs not discouraged. Each provision concentrates traffic and reduces mobility.</p>
<p>Use future land-use plan to direct expansion of road capacities</p> <p>A well-planned community is one in which the land-use plan and the street plan are coordinated to create the community’s vision for itself.</p>	<p>+ Comp Plan. Recognizes connection between land-use and transportation.</p> <p>x The township has no Official Map.</p> <p>+ Act 209 Study. East Goshen has adopted a traffic impact fee based on a land-use assumptions report.</p>
<p>Maximize existing road capacity (e.g., traffic calming, travel demand management [TDM], etc.) before constructing new roads</p> <p>Often, much can be done to use existing road capacity more efficiently, reducing or eliminating the need for new roads. This reduces capital</p>	<p>+ Comp Plan. Objective to use travel demand management and improve public transit to better utilize existing road capacity.</p>

<p>construction costs and ongoing maintenance costs, which can be considerable.</p>	
<p>Plan road improvements to prioritize safety and pedestrian/bike uses</p> <p>A road that has been designed with pedestrians and cyclists in mind is one which attracts such users, which promotes public health, a sense of community, saves energy and money, and can promote and support a human-scale business district.</p>	<p>n §205-54. Crosswalks required for blocks exceeding 1,000' in length.</p>

Parking

<p>Establish a range of parking standards for commercial uses</p> <p>Appropriate parking standards can have far-reaching impacts on a community's development pattern. Often, maximum parking standards are warranted, rather than minimum (which unnecessarily increases the cost of development).</p>	<p>x 240-33. Relies on minimum parking standards only; no provision for maximum limits.</p>
<p>Ordinances should require porous pavement, shade trees, landscape buffers in parking lots</p> <p>Such "green infrastructure" elements can result in a vastly superior built environment, from an aesthetic as well as a functional point-of-view.</p>	<p>+ §240-27.C(1). 5% of interior of parking areas to be landscaped.</p>
<p>Permit on-street parking wherever possible and appropriate</p> <p>The benefits of on-street parking are many: it provides a natural buffer between traffic and pedestrians, it reduces impervious surface, it reduces the cost of development, it reduces the urban heat island effect, it results in a more pleasing</p>	<p>x 240-30.D. On-street parking explicitly not permitted to count towards parking requirements in Townhouse developments. n On-street parking not otherwise addressed, <u>although on-street parking is permitted on all streets within developments.</u></p>

<p>built environment, etc.</p>	
<p>Permit shared parking in non-residential zoning districts</p> <p>Shared parking, like on-street parking, has multiple benefits, such as the reduction of impervious surface, the reduced cost of development, and the reduced consumption of land.</p>	<p>x 240-33. No provision made for shared parking, <u>although 240-33.B.(6) allows a single parking lot to be used for more than one use provided each use's required parking is fully accommodated.</u></p>
<p>Promote parking demand management techniques</p> <p>Parking Demand Management involves the efficient use of parking facilities through motorist information and enforcement. There are two major components to parking management: pricing and supply management. Benefits may include increased throughput, efficient use of the system, reduced demand and increased roadway capacity.</p>	<p>n While the Township Code has no specific provisions, some local employers are known to make use of this technique. x No such provisions.</p>

Trails

<p>Require the establishment and maintenance of pedestrian/bike trails that connect to public facilities, parks, open space, schools, business/shopping</p> <p>Multi-use trails are a crucial element in a region's transportation network, and encourage walking and cycling for work, play and shopping. Trails have also been shown to significantly increase adjacent real estate values.</p>	<p>+ Comp Plan. Objective to develop trail segments to connect residential communities to parks, open space, and area merchants.</p> <p>+ Comp Plan. Objective to explore use of pedestrian and bike paths as alternative transportation network.</p> <p>+ §240-8. R-1 district requires 15% of tract (1/3 of total common open space) to be devoted to uses that include paths and trails.</p> <p>n §205-56. The Board of Supervisors may require sidewalks and/or paths at their discretion.</p>
--	--

+++++



Community Health and Safety

Public Health and Safety

<p>Require street trees and sidewalks in residential areas and village/downtown areas</p> <p>In addition to making for a more inviting environment for pedestrians, such amenities have been shown to improve public health.</p>	<p>x §205-56. Sidewalks not required. <u>+ Board Resolution 2011-20 added a list of approved Township tree and street tree species nearly all of which are native.</u> n §205-62. Street trees at 3" dbh to be provided as determined by the Board of Supervisors or Planning Commission.</p>
<p>Provide adequate active and passive recreational opportunities</p> <p>Exercise is a key element in an individual's health, and it has been shown that people exercise more regularly when given opportunity's to do so close to home and work.</p>	<p>+ Comp Plan. Regional coordination of recreation programs. + §205-14. The township has established a Park and Recreation Board that reviews all sketch, preliminary and final plans (when applicable) and makes recommendations for the purpose of preserving and promoting the township's park and recreation facilities. + §205-58. Developers required to make available open space for passive and active recreation. + §205-64. Requires provision of common open space at 20% of total lot area in mobile home parks.</p>

Solid Waste and Recycling

<p>Require recycling centers/stations in new developments over a certain size</p> <p>In our modern society, the production of waste is nearly unavoidable, but there are many ways in which it can be minimized and, in some instances, eliminated. Recycling permits the more efficient use of natural resources, while also encouraging a more beautiful, livable environment.</p>	<p>+ §194-3. Source-separation of recyclable materials mandated throughout the township; and leaf-waste pickup provided in spring and fall. <u>n §194-8. Recycling centers permissible for multi-family residential complexes.</u> + §194-9. Commercial, institutional, and municipal establishments required to recycle. n §194-8. Recycling centers permissible for multi-family residential complexes.</p>
<p>Adopt a construction debris demolition ordinance or require construction waste management plan</p> <p>A great deal of the waste generated by our modern society comes from development and</p>	<p>+ §194-6.D. Curbside disposal of building materials and hazardous materials prohibited.</p>



<p>redevelopment. A municipality can significantly reduce this waste stream by requiring construction waste to be reused or recycled.</p>	
<p>Require salvage/material recycling in demolition permit or land development approval</p> <p>Much of the waste generated from development and redevelopment isn't waste at all, and can be recycled back into productive use. <u>Furthermore, a great deal of the waste reaching landfills is from development projects; builders have a responsibility to reduce this flow, which is a burden on us all.</u></p>	<p>x No such provisions.</p>
<p><i>Housing Diversity and Accessibility</i></p>	
<p>Create incentives to promote a diverse housing supply that includes affordable housing</p> <p>A diverse community is a much more robust community, both economically and socially.</p>	<p>+ Comp Plan. Supports housing diversity. + §240-12. R-4 district permits apartments and townhouses. + §240-29. Planned apartment developments permitted in R-4, R-5, and C-4 districts. + §240-30. Townhouse developments permitted in R-4, R-5, and C-4 districts.</p>
<p>Locate housing within walking distance of businesses, services, employment centers, public transportation</p> <p>Such a development pattern encourages walking and cycling, which can greatly improve the public's health, rather than driving, which reduces it.</p>	<p>+ §§240-11.A & -12.A. Specific intent of R-4 and R-5 districts to locate higher density in areas near public transit and shopping.</p>
<p>Permit smaller lot sizes in appropriate residential zoning districts</p> <p>Smaller lot sizes can promote greater diversity of uses, which a complete neighborhood must have and which promotes walking and cycling.</p>	<p>+ §240-10 and -11. R-3 and R-4 district permits 12,000-ac and 10,000-ac lots (respectively) for semi-detached dwellings.</p>
<p>Permit accessory dwelling units (in addition to primary residence) on residential lots</p>	<p><u>n §240-32.C. Provision for apartment for care of a relative that must be converted once vacated.</u> No such provisions.</p>

<p>One way to provide affordable housing is to permit accessory dwelling units. Often called “in-law quarters,” they may also allow extended families to live close together, which has numerous public and private benefits.</p>	
<p>Permit second-story (and greater) residential uses in commercial and mixed-use zoning districts</p> <p>Perhaps the one element which most simply distinguishes towns and villages from residential areas is the existence of vertical mixing of uses, with retail/offices/etc. on the ground floor and homes above. Such patterns also promote walking and cycling, which improves the public health.</p>	<p>x No such provisions. <u>n There is a laundry on West Chester Pike in a building that also contains two apartments.</u></p>

+++++

Food Production and Security

<p>Incentivize through ordinances the permanent preservation of agricultural lands</p> <p>Agricultural lands are a non-renewable resource that, in a world of ever-increasing population, warrant protection.</p>	<p>x No <u>ordinance-TDR or other</u> provisions, <u>other than cluster, that protect, or incentivize the preservation.</u> East Goshen itself, of <u>remaining course,</u> has no agricultural <u>lands uses left.</u> However, there may be potential for a regional program.</p>
<p>Permit a broad range of agricultural uses by right in rural and semi-rural areas</p> <p>One way to steward the agricultural economy is to permit it to diversify by allowing complementary uses.</p>	<p><u>n Comp Plan. Contains an agricultural land-use category but no specific agricultural zoning.</u> x Ch. 240. There is no Agricultural district. n Ch. 240, Article II. Farming permitted by right in R-1 and R-2 districts. n Ch. 240, Article IV. Farming permitted by right in I-1, I-2, and BP districts.</p>
<p>Permit farmers’ markets, farm stands, community gardens in public/open spaces,</p>	<p>+ §240-10.E(17). Seasonal sale of farm products permitted in R-3 district, as an accessory use. + §240-34.B. Seasonal sale of farm products permitted in C-1 district.</p>



<p>residential vegetable gardens</p> <p>These are all key elements in the agricultural economy, and in particular help to promote the <i>culture</i> of agriculture.</p>	
<p>Permit small-scale farming uses (e.g., egg production) w/ complementary structures in all residential or mixed-residential zoning districts</p> <p>Small plots and micro-animal operations are capable of producing a great deal of food for families and their neighbors, thus representing an important element of food security.</p>	<p>x §240-32.A. Keeping of chickens limited to lots of two acres or more. n No specific provisions.</p>
<p>Permit small-scale manufacture of food products within appropriate zoning districts</p> <p>Such operations help to promote local foods and support a local economy, while also providing food security.</p>	<p>n No specific provisions.</p>
<p>Allow composting as part of gardening and small-scale farming uses</p> <p>Composting is a way to divert one of the primary sources of municipal waste away from the waste stream and back into productive use: soil. All sustainable agricultural operations, as well as home gardens, much incorporate composting.</p>	<p>n No specific provisions, <u>but accessory composting on residential lots implicitly permitted.</u> -</p>
<p>Require or encourage fruit and nut trees as part of landscaping requirements</p> <p>Another important piece of the food security puzzle is “edible landscaping.” Native fruit and nut trees can provide a food source for humans as well as birds and other wildlife.</p>	<p>x No specific provisions.</p>



Conclusions and Summary

East Goshen has taken steps towards sustainability at the municipal level, within the framework of its policies, plans, and regulations as they relate to environmental, social, and economic issues. Specifically, the township has adopted strong policies into its code to protect natural resources within the context of a suburban landscape: East Goshen has good policies for woodland protection, steep slope protection, and riparian buffer protection. The Conservancy Board's efforts to reforest Township-owned properties benefit several sustainability aspects, and encouraging the use of native plants for on-site landscaping and street trees is a positive step. The township also has a clear commitment to the preservation of its cultural heritage. Since a community's natural environment and cultural history are two of its most fundamentally defining aspects, these commitments are laudable—and should be built upon.

Still, there is room for improvement on East Goshen's path to sustainability. Within the *Natural Resources Protection* section, floodplain protection could be enhanced by protecting natural vegetation and pervious soils within, better recognizing its ecological value. In *Water Quality and Quantity*, East Goshen should consider a more comprehensive requiring native or non-invasive plants in landscaping plans, and should also update to its Act 537 Plan rather than piece-meal as development proposals are accepted. For *Land-Use and Community Character*, adopting special standards for parcels with underused commercial space, for example by permitting their reuse as a mixed residential/commercial community, could greatly promote sustainability and the local economy. In *Global Warming & Climate Change*, East Goshen should strongly consider developing a Climate Action Plan that focuses on both mitigation (carbon pollution reduction) and adaptation (to existing and future unavoidable climate change). In the *Renewable Energy & Energy Conservation* section, the single most important step would be to develop anand energy conservation element into its comprehensive plan update—and implement it. Within the *Mobility & Transportation* section, it would be very useful to develop an Official Map, adopt a “complete streets” ordinance, and revisit parking standards. For *Community Health & Safety*, East Goshen should revise its SALDO to require sidewalks in all zoning districts, and should consider allowing commercial and residential uses to mix within a single building (commercial below, residential above). Finally, in *Food Production & Security*, East Goshen has permitted most of its agricultural lands to be developed; those that remain ought to be provided with incentives for preservation and used for growing products protected. If that could be offered locally. The proves infeasible, then the township should also consider adopting provisions to permit and support small-scale farming operations, or the keeping of chickens on smaller lots, in appropriate districts.

Seeking sustainability requires both continued vigilance and extensive patience. Accordingly, the recommendations described briefly above are intended to *broadly* guide efforts to achieve sustainability, above and beyond the Township's existing efforts. It is notable that many actions can be taken that promote sustainability within a variety of areas. Such actions ought to be prioritized. For example, expanding resource protection regulations can reduce greenhouse gas emissions while also providing protection from flooding, as well as having wildlife habitat, community health, and economic benefits. Decisions regarding which of the recommendations to implement, or which are even feasible, should be considered first by the Planning Commission in consultation with Township staff and consultants, appointed and advisory officials, and the public, with recommendations provided to the Board of Supervisors. EMC staff is ready to answer questions, provide additional information, and otherwise assist as the Township proceeds with its comprehensive plan update, and with implementation of this report.