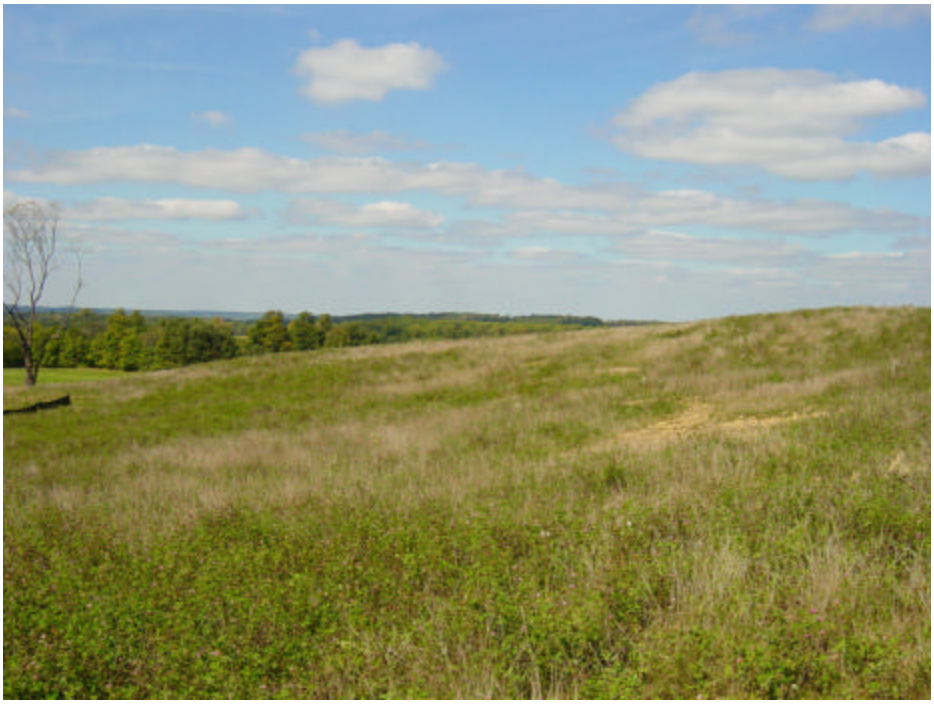
# Preserving Rural Character: Planning for the Future of Licking Township



Capstone Seminar
Environmental Studies Program
Denison University

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# Preserving Rural Character:
# Planning for the Future of Licking Township

Presented by the Denison University Environmental Studies Capstone Class
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Under the Advisement of Dr. Abram Kaplan

## Executive Summary:

In this report, Denison University's Environmental Studies Capstone Seminar presents foundational elements of a green infrastructure plan for Licking Township in Licking County, OH. This plan includes smart growth options and recommendations for future development in the Township, which emerged from research conducted by the members of the class from January – April 2005. In the plan, we address four specific areas including zoning, residential development, property owner options, and greenways. If applied to current planning and development strategies that already include some basic elements of smart growth, it is our hope that the suggestions made in this report will help guide Licking Township into a green and sustainable future, while simultaneously preserving the rural character and integrity of the community.

## Acknowledgements

The members of the Capstone class would like to thank those residents of Licking Township who have volunteered their time with us, providing insight and suggestions to us as we worked on this project. We would also like to thank the Steering Team -- Joe Cooper, Rae Johnson, Lisa Bowers, and Barbara Evans – for posing the question of green infrastructure in Licking Township and committing their time to us for these four months. Many thanks also, to Mr. Jurgen Pape, Dr. John Hohmann and Dr. Spieles for patiently sharing their experiences, knowledge and resources while improving our understanding of the matter.


## Capstone 2004-2005


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# Section One: Introduction

The senior members of the Environmental Studies Program at Denison University have spent their final semester investigating green infrastructure in their Capstone Seminar. The Capstone course offers students the opportunity to culminate their environmental studies careers by pulling together their skills, talents, and knowledge as they work together on a real-world environmental project. This Capstone has focused on developing a green infrastructure plan for rural Licking Township, Ohio.

Green infrastructure refers to "an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations" (Benedict & McMahon, 2002, p.12). In many communities, green infrastructure tends to be sacrificed at the expense of built infrastructure – roads, sewers, utility lines. However, the two types of infrastructure should not and cannot be mutually exclusive for the health of our communities; natural systems are fundamental to the survival of our environmental, economic, and social systems, and development and growth of our towns and cities is necessary to accommodate a growing population. Green infrastructure plans are smart growth options that aim to preserve ecologically significant regions of the community in order to prevent fragmentation of these essential environments. At the same time, efficient land use strategies and development patterns are developed to support social and economic needs of the community (Benedict & McMahon, 2002).

This project originated when Joe Cooper decided that green infrastructure could be used to preserve the rural character of Licking Township. Through contacts within the steering team, Joe brought Capstone advisor, Dr. Abram Kaplan to the table to discuss the idea. Since early February, the Capstone group has functioned as a consultant for Licking Township. For the trustees we have been asked to consider preservation and conservation practices and apply them to the township, to preserve rural character and the ecological integrity of the township through a green infrastructure plan. Along the way, this group of women, with the aid of Dr. Kaplan, has researched examples of green infrastructure around the country and especially in Ohio, studied sites of ecological, cultural, and historical importance in Licking Township, attended community meetings to gain perspective on issues in the township, and has interviewed and surveyed residents to understand how green infrastructure can benefit community. Our direction has been

guided by feedback from the Township Trustees and residents who attended the first community forum on preserving rural character in Licking Township.

The report that follows offers a summation of the research conducted over the last four months, during which, the Capstone students established four focused subject areas in which the implements of green infrastructure could be applied to the township. They include Zoning, Subdivision Options, Property Owner Rights, and Greenways. While Licking Township is making progress toward responsible, sustainable development and land use, it is our hope that this report offers some additional information and helpful suggestions toward this goal.

# Section Two: Development & Zoning in Licking Township

## Introduction

The rapid growth experienced in Central Ohio is reflective of a greater national trend. New land areas are being developed across the nation in order to accommodate the growing population. Urban centers no longer have clear boundaries, instead, tracts of houses spread out around them in the form of suburbs. This sprawl is often poorly planned, characteristically inefficient, and harmful to the natural environment. Though in some ways growth and the consequential development may be inevitable, there are tools which enable community members to direct and mold this growth, making it fundamentally more sustainable.

Zoning is one important mechanism used to serve this purpose. When armed with a comprehensive plan and explicit zoning regulations, villages, townships, and other municipalities are better prepared to bargain. The goals and standards set forth in these planning documents, give a community leverage in negotiations with potential developers. Furthermore, zoning can be used to stipulate requirements which help ensure the preservation of community and the natural environment in spite of, or in accordance with, growth and development (LCPC, 2005).

The zoning section of this report offers a summation of current growth trends, recommendations on how we believe Licking Township can further incorporate the principles of green infrastructure into their planning documents and finally, local case studies that illustrate the importance of zoning and community planning. After considerable research, we are happy to report that Licking Township is well on its way, possessing many of the tools necessary to promote responsible development.

## Growth Trends in Central Ohio

According to reports produced by the Licking County Planning Commission, Central Ohio is currently the fastest growing region in the state. Close to 570,000 new residents are expected to settle in the area by 2030. Licking County is by no means immune to regional trends, having added close to 17,000 inhabitants over the past decade, a growth of 13.4%. The county is expected to see an additional increase of some 58,347 residents by 2030 (Licking County Planning Commission presentation, 2004).

The rapid, outward expansion experienced by the city of Columbus is characteristic of the "urban sprawl" phenomenon plaguing communities in close proximity to metropolitan areas across the country. Residents of these neighborhoods often fear that development will change the defining features and qualities of their communities.

In regions, like Central Ohio, development is already increasing rapidly, but there are ways in which municipalities can prepare for growth. Authorities within a given area can lay out a vision for the future of the community in a comprehensive plan and adopt complementary zoning regulations. These documents can empower localities, helping citizens direct and shape future development.

| **Cost of Community Services** | | | | |
|---|---|---|---|---|
| | Return/$1.00 | **Residential** | **Comm./Indust.** | **Farmland** |
| **Counties** | | | | |
| Knox | | **$0.05** | **$0.62** | **$0.71** |
| Clark | | **$0.11** | **$0.62** | **$0.70** |
| **Townships** | | | | |
| Hocking (Fairfield) | | **$0.10** | **$0.73** | **$0.83** |
| Liberty (Fairfield) | | **$0.15** | **$0.49** | **$0.95** |
| | | | | |
| Average | | **$0.10** | **$0.62** | **$0.80** |

**Table 1**: Cost of Community Services in Central Ohio by District: calculated in net revenue generated from every $1.00 in fiscal costs. (source: Mid-Ohio Regional Planning Commission , 2004)

In addition to planning documents, there are two major issues that frequently surface in discussions of growth control and development in rural communities. One is the provision of centralized services, and the other is annexation (Licking County Planning Commission). Water and sewer lines can help direct growth and allow for a more diverse and energy efficient array of land uses. On the other hand, without adequate planning and zoning regulations, costly centralized services may only serve to attract developers to a community. Similarly, the power of annexation resides in the hands of local authorities, and when combined with available centralized services, annexation options give local authorities leverage to negotiate with potential developers. If used without careful deliberation and appropriate planning, development can create an economic drain. This is a particular concern with

residential development which is expensive and generates only limited tax revenue (see Table 1 above).

**Zoning as a Tool for Planning**

By definition, zoning involves the use of legislation at the local level, to regulate area land use. It also serves to divide the land, placing restrictions and standards on the activities permitted in certain zones or districts. The type of land use regulations that serve a rural community like Licking Township are often referred to more broadly as unincorporated zoning (OSU CDFS-302). Rural zoning frequently delineates four separate areas or districts: Agriculture, Residential, Business or Commercial, and Industrial (OSU CDFS-302).

Zoning laws can be used to control the density of development through lot size, manage structure height and placement, as well as mitigate incompatible land uses on neighboring properties. From a legal standpoint, zoning resolutions should be reasonable, consistent, respect property ownership, and serve the interests of the community (OSU CDFS-300). If principles of green infrastructure are incorporated, zoning can also foster more environmentally sound and community friendly development.

There are many important ways in which zoning can benefit a community like Licking Township. The zoning of districts can ensure land is used in an appropriate manner. Prime farmland, for instance, can be zoned to support agriculture by restricting land use options. Zoning can also promote the safety of residents. Restricting development in the hundred year floodplain is one way in which zoning can protect public health. Zoning laws can also preserve the integrity of the natural environment. By enforcing zoning restrictions, the Township can maintain important vegetative buffer zones and safeguard greenspace. The aesthetic qualities of a given community often reflect the local zoning regulations. Zoning laws can also be used to help sustain property values by preventing undesirable development nearby, while supporting positive land use activities. Attracting particular businesses or industries is another goal that is achievable through zoning. This can help create a viable commercial district, allowing the Township to become more self-sufficient and provide room for specified industry in order to foster a sufficient tax base to support the local schools.

## Recommendations based on proposed Licking Township Zoning Resolution

In this section our recommendations are based on a review of the most current Zoning Resolution draft, current as of April 2005 (LCPC Draft, 2005). Our comments are made in the context of establishing a green infrastructure within the township; however, we recognize that change is gradual, and the incorporation of zoning regulations that support the preservation and conservation of natural resources in Licking Township is an important step in the right direction. The section that follows is organized in terms of general recommendations which highlight where the fundamentals of green infrastructure could be incorporated consistently throughout the Zoning Resolution. Overall we find that the proposed Zoning Resolution offers a number of effective stipulations and mechanisms that support more responsible, sustainable land use in Licking Township.

## General Recommendations

### Lawn space does not count toward green space

One of the main goals of green infrastructure is to preserve the ecology and integrity of the natural systems within an environment (Benedict and McMahon, 2002). To achieve this goal, large pieces of land must be conserved, where native plants and organisms can coexist in their natural ecosystems. While large front and back yards may appear to contribute to the volume of green space, manicured lawns do not provide support for the plant and animal species that a preserve comprised of natural woods, brush, and grasslands, would provide. Lawns may actually contribute negatively to the ecological wellness of an area because of few species lawns attract and support and because runoff from lawns may contain fertilizers which are harmful to aquatic ecosystems. Additionally, large open spaces of grass cannot absorb as much water as an area with trees, tall grasses, and shrubbery, increasing the amount of rainwater runoff and decreasing natural pollution filtration and flood control systems (Benedict and McMahon, 2002).

It should be noted that large-lot zoning schemes are one way to slow development by restricting the space available for housing developments, but this is not inherently consistent with the goals of green infrastructure. Large-lot zoning does not necessarily insure the preservation of open spaces in their natural state.

Consider placement of buildings within lots

Central placement is neither the best use of space nor the most aesthetically pleasing option, with respect to how a structure is situated on a lot. With building requirements that stipulate a 50-40 foot setback to the front and back of a structure and a 20-30 foot side yard, buildings are likely to be centrally located. There are circumstances that necessitate setbacks and side yards with specific dimensions, requiring the house or building be located in a particular area. However, where possible and appropriate, buildings should be placed at distances that permit easy access to walking paths and other buildings, and provide more space at the front, back, or side of a property, allowing for part of the lot to be left in its natural state. Specifically, in commercial developments, side yard requirements keep the buildings far from each other, reducing the number of businesses a space can support and inhibiting the walkability of the community. In areas where walkable commercial areas are desirable (e.g. in a revitalized Jacksontown), lot size and placement restrictions should be considered.

The use of native vegetation should be encouraged

Native vegetation is well suited to its natural habitat and therefore requires fewer resources (e.g. water and fertilizer) to grow. Native species have become adapted to the abiotic conditions of the area and are thus better suited for living in the area than introduced species. Additionally, native species serve as biological controls against unwanted insects, while also attracting vital pollinators for native flora. Wildlife also rely on these native plants for food and shelter (Quistgaard, 2005).

The use of native vegetation should be encouraged wherever possible. Some examples include parking lots, for the purpose of aesthetics, improved drainage, and water pollution filtration; in road-side planters, as tree-lines or hedgerows; in natural vegetation screens, dividing property lines or providing privacy from parking lots or adjacent buildings; and in all buffers uses in riparian habitats.

Extend requirements proposed in Conservation Residential Development Districts (Section 1000) to other zoned districts where feasible

As stated in the purpose of Conservation Residential Development, the objective is to "promote the health and safety of the community" by "[maximizing] the conservation of open

space and [maintaining] water quality and supply" while honoring the development rights of property owners (LCPC Draft, 2005, p.98). We believe this mission statement to be more widely applicable. In order, to promote a green infrastructure, this language should be added to all zoned areas, especially commercial districts and non-conservation residential districts.

Additional regulations that should be extrapolated from Section 1000 and added to other sections of the Zoning Resolution include the following:

- *Avoid converting natural areas to landscaped areas, for lawns, and the use of invasive vegetation*
- *Avoid developing on or near 100-year floodplain*
- *Encourage efficient use of land and public services*
- *Emphasize need for community open spaces, for the protection of natural, historical, and cultural sites*
- *Encourage the use of buffer zones along significant riparian zones where possible*
- *Encourage connectivity of natural and man-made corridors throughout the community*

**Examples of Effective and Ineffective Zoning Techniques**

In this section, three case studies illustrate the importance of preparedness, of communities in Central Ohio, with respect to zoning and development regulations.

Case Study: Pataskala

In 1990, Pataskala had roughly 3,346 residents. Easy access to Interstate 70 and Route 16, left the Village a mere 25 minute commute from downtown Columbus, and consequently susceptible to development from the sprawling urban center. A decision was made in 1994 to merge the Village of Pataskala with neighboring Lima Township, with a population of about 4,398 (City of Pataskala, 2002). The resulting municipality, deemed simply Pataskala, was officially established in 1996. In 1997, the mayor, Bruce Baird called for a committee to draft a Comprehensive Plan which would serve as a guide for future growth of the city (White, 1999).

The rapid spread of nearby Columbus has had a dramatic effect on development in the area. The unification of the Village of Pataskala and Lima Township involved the acquisition of

new land. Providing services like sewer and water to regions recently incorporated into city limits quickly posed a problem for the community. One major issue was the City's failure to account for income tax in initial planning. The limited revenue of the City combined with high central service demand created by expansion, left the City with severe and growing debt (White, 1999).

In the absence of sufficient planning, residential growth skyrocketed, while commercial and industrial development remained virtually stagnant. This phenomenon provided for a general imbalance and, more importantly, an inadequate tax base to meet the needs for infrastructure repairs and school funding. These problems were only exacerbated by continued growth, as a rising fear mounted among residents that they had lost the integrity of their once beloved rural community (Lane, 2005). The historic town center of the former Village of Pataskala has fallen into a state of disrepair. Infrastructure within this downtown area is generally acknowledged as fair to poor (White, 1999).

While efforts are underway to address a number of these problems, the lesson of Pataskala is clear. It is important to plan for future development. It is not too bold a statement to say that the City may have been able to avoid at least some of these issues had they been prepared to face development, armed with a completed Comprehensive Plan and stringent zoning regulations, prior to the merger.

Case Study: Alexandria

The Village of Alexandria is located along Ohio route 37 in St. Albans Township. In recent years, communities on the western edge of Licking County have been subject to particularly fierce development pressures. The rapid growth of Columbus and nearby Johnstown has put the small Village of Alexandria, with roughly 500 residents, in a vulnerable position (Mallett, 2005). With developers knocking at their door, concerned residents scrambled to draft and amend documents which would provide them leverage for the seemingly imminent forces of development. The Village has been required to expedite the planning process as developers seek the annexation of areas outside the Village boundaries (Gilligan, 2003). In addition, the Village has struggled with issues pertaining to centralized services. Alexandria currently purchases their water service from Granville. More recently the Village Council proposed the construction of a

costly wastewater treatment plant to replace the frequently failing septic systems (Gilligan, 2003).

Alexandria is working towards developing an arsenal with which to combat the pressures of "suburban sprawl". These armaments include planning documents that help shape growth and development in a manner beneficial to residents without being harmful to the environment. Residents have also proposed a renewal of the village center. Improvements in infrastructure might assist the struggling commercial area and make success viable for local business owners. Unfortunately, encroaching development has forced the Village to work quickly and perhaps more divisively than if the community had already been prepared (Greene, 2005).

Case Study: Granville

Granville Township and the Village of Granville worked in cooperation to draft a Comprehensive Plan which was adopted in 1990. The plan was then revised and updated in 1998. Granville is known for adopting stringent zoning laws and acquiring property so as to actively control and direct future growth. In many ways, the Granville Community is at the forefront of planning to avoid urban sprawl by employing legislative tactics such as passing an open space levy and advocating a right to farm statute. The township still struggles to maintain a tax base to assist the growing school district (Granville Township Trustees, 2005).

Furthermore, many outsiders contend that Granville's success at keeping out chain establishments and other undesirable commerce has been at the expense of neighboring Newark and Heath. Property values in Granville are among the highest in Licking County, limiting the socioeconomic diversity of the community. Overall, Granville provides an excellent example of how zoning may be used to help residents guide the progression of development. It should be noted, however, that Granville is an extreme example and that such rigid zoning inevitably has trade offs for the local community.

# Section Three: Residential Development in Licking Township

## Introduction

As we can extrapolate from growth trends, continued residential development in Licking Township is inevitable, and the goal of this section is to provide various options for subdivision development that meet the standards of green infrastructure. Ideally, residential development would satisfy the developer, incoming residents, and also the community at large by protecting farmlands, natural resources, and/or green space. At this point, our research shows that most of the developments in Licking Township are traditional subdivisions with high density housing and little to no quality green space. Fortunately there are many options for developing land for residential use with a range of environmentally friendly designs.

Conventional subdivisions are typically not environmentally friendly. These subdivisions consist of large individual lots and lawns and no common open space. The land in these developments is usually divided up into lots, streets, and sidewalks, leaving only open space that is unfit for development (i.e. steep slopes, floodplains, wetlands, etc.). These types of subdivisions tend to have negative impacts on the environment and are not community oriented. Conservation subdivisions, on the other hand, fall on the opposite end of the spectrum. These subdivisions are characterized by permanent, common open space and clustered, compact lots. Conservation subdivisions allow the maximum number of residents under existing zoning laws to move into an area, while also preserving open space for recreational use and conservation purposes. In between traditional and conservation subdivisions fall mid-spectrum subdivisions. These developments preserve some green space but do not have as many strict guidelines as conservation subdivisions.

As part of our green infrastructure plan for Licking Township, and in order for the community to maintain its rural character, we recommend that the Township take responsibility for encouraging residential developments to move away from traditional models of development and move towards conservation-based models.

## Traditional Subdivisions Versus Conservation Subdivisions

### Traditional Subdivisions

In a traditional subdivision, an entire parcel of land is divided up between individual owners, leaving no common open space for the residents to use and disregarding the parcel's landscape and natural resources. This type of subdivision does not include any public lands or parks unless a developer specifically chooses to incorporate them, in which case land for potential homes is usually lost. The lots in this type of subdivision are usually two acres or more, and sometimes extend into areas where houses cannot be built (i.e. steep slopes, rivers, wetlands, etc.). Only the owners with property backing up to these areas have access to them while none of the other subdivision residents are able to enjoy them. Figure 1 is an example of a traditional subdivision.

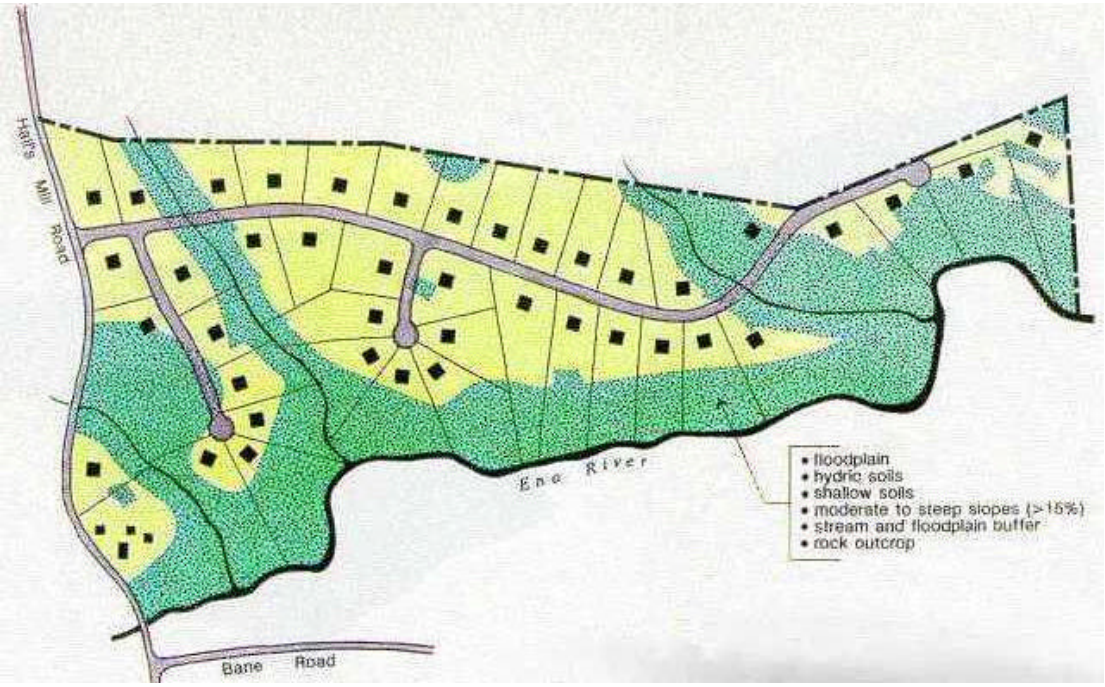


**Figure 1**: A traditional subdivision. (Source: Town of Cary)

### Conservation Subdivisions

Conservation subdivisions are usually located on plots of land totaling 40 acres or more. The number of houses is the same as in traditional subdivisions, however the lots are smaller. The smaller lots are clustered together so that at least 40% of the land is open space. Though lot

sizes are smaller in conservation subdivisions (less than one acre) than traditional subdivision lots (two acres or more), land owners in conservation subdivisions have unrestricted access to beautiful open spaces. Table 2 includes recommended standards for the open space in conservation subdivisions.

| | |
|---|---|
| Open space percentage | 40% open space: > 2 units per acre<br>50% open space: 0.66 - 2 units per acre<br>60% open space: < 0.66 per acre |
| Minimum dimension of open space | 100 ft |
| Maximum percentage of open space used for recreation | 5% |
| Excluded from open space calculation | Road rows, parking/access/driveways, required building setbacks, required building spacing, private yards, 15' envelope around buildings, and fragments/isolated areas > 100' wide |

**Table 2**: Recommended standards for open space. (Source: The Countryside Program)

The open space within a conservation subdivision can be owned in a variety of ways. The public land is most commonly owned by the residents of the subdivision through a homeowners association. If the land is owned by a homeowners association, the residents that belong to the association are in charge of its upkeep. The land can also be owned by a land trust or by the original landowner. If the original landowner continues to use the open space, there are limitations as to what it may be used for (i.e. a vegetable crop would be an appropriate use of the land while a livestock yard would not). Open space is protected through the use of deed restrictions, conservation easements or dedication of land to the municipality. Figure 2 is an example of a conservation subdivision on the same parcel of land in Figure 1.

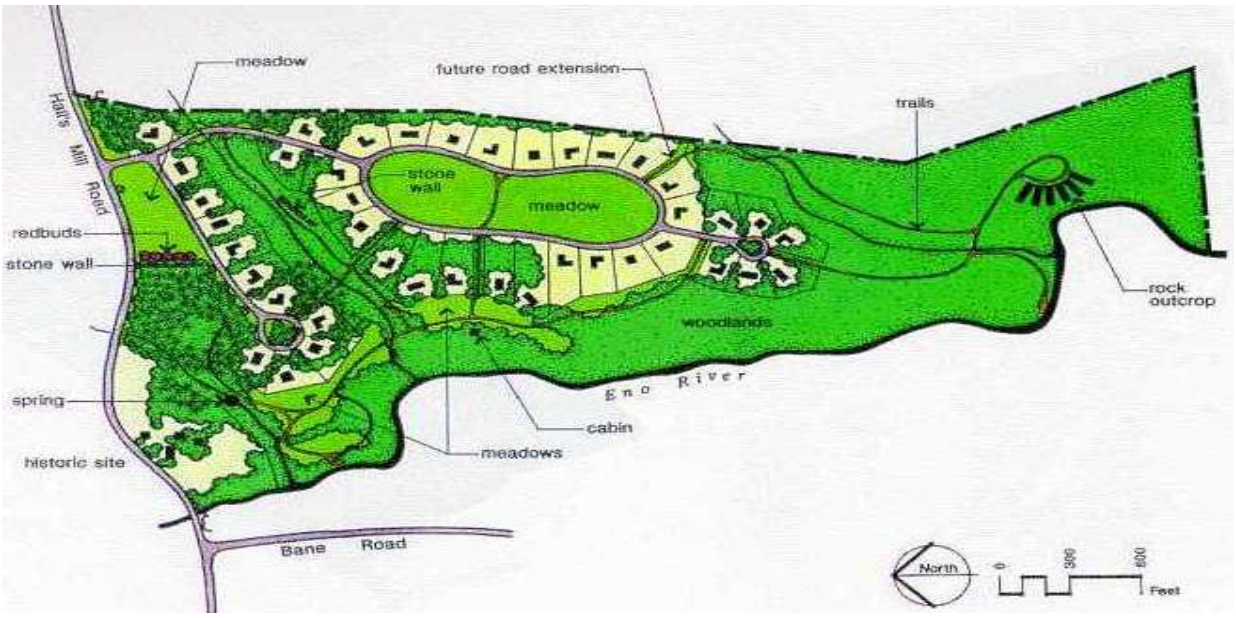


**Figure 2**: A conservation subdivision. (Source: Town of Cary)

**Mid-spectrum Development**

The development of conservation subdivisions may not be entirely feasible in all areas of Licking Township or for every developer. However, there are some other development options that are more environmentally and community friendly than traditional development. One option is to develop houses on slightly smaller lots so that some open space is maintained. Although, conservation subdivisions require that a minimum of 40% of the land be left undeveloped, if developers can set aside some amount of land to be left as open space (i.e. 25%), the development benefits.

If it is not feasible to decrease lot sizes (i.e. due to water and sewer issues – see Addressing Potential Problems), there are still options for creating green infrastructure and maintaining the rural character of the area. According to the current regulations, a house must have 50' in front and back and 20' on either side. This places the house in the center of the lot and creates the "bowling alley" look that, for environmental purposes, should be avoided. By placing the house at one side or in one corner of the property, a large open space would remain. Part of the character of a "bowling alley lot" is that the area surrounding the house is all lawn. In order to avoid this, native trees, shrubs, and other flora could be planted around the house and property. Trees not only provide environmental and aesthetic benefits, but also give privacy and cut down on heating costs in the winter and cooling costs in the summer.

**Benefits of Conservation Subdivisions**

The conservation subdivision method of residential development would benefit both developers and residents in Licking Township on multiple levels. Residential developers often choose to build traditional subdivisions because they assume that conservation subdivisions allow for fewer lots to be built and will therefore be less cost effective. However, this assumption is false and there are actually various economic reasons for choosing to build conservation subdivisions instead of traditional subdivisions. Because conservation subdivisions have less infrastructure (i.e. roads, long driveways, etc.) than regular subdivisions, it is more cost effective to construct and maintain them. Therefore, the overall development of these subdivisions is less costly (Haines, 2002). Also, density bonuses are sometimes awarded for conservation development, allowing developers to build extra lots (Foth and Van Dyke).

Conservation subdivision development is not only economically beneficial to developers. For residents, living in a conservation subdivision is no less cost effective than living in a traditional subdivision because the property taxes are equivalent (Foth and Van Dyke). Also, even though the lots are smaller, home values in these subdivisions tend to appreciate at faster rates, meaning it is more economically beneficial in the long term for residents to live in conservation subdivisions (Town of Cary).

In addition to these economic gains, residents of conservation subdivisions also benefit on a community level. Conservation subdivisions provide residents access to a network of open space for various kinds of recreation. This access increases the opportunity for residents to meet one another and to cultivate relationships, creating a unique feeling of community within these subdivisions (Foth and Van Dyke). Also, conservation subdivisions focus on preserving the character of the community. In Licking Township, this kind of residential development would help to maintain and promote the rural character of the area.

Finally, there are many significant environmental benefits to conservation subdivision development. The preservation of open space in these subdivisions allows for less ecological impact and habitat fragmentation as it reduces the disturbance of the natural landscape. Open space in conservation subdivisions is designed to protect natural resources, including water sources and plant and animal habitats. Also, conservation subdivisions promote environmental awareness and increase people's connection to the environment (Foth and Van Dyke; Arendt,

1997). This can improve the overall environmental mentality of the community, leading to greater consideration for and increased efforts to protect the environment.

## Dispelling the Myths

When it comes to conservation subdivisions, everyone has their own ideas and thoughts about the concept. While some of these notions are true, others are absolutely false. Requirements for consideration of open space, house appreciation rates, housing density, and ownership of open space are just a few areas where myths about conservation subdivisions arise. Our hope is to dispel these myths so that residents of Licking Township can make informed decisions about conservation-based development in their community.

### Myth #1: Property values are lower in conservation subdivisions

Developers often believe that houses built in conservation subdivisions will be less valuable than houses in traditional subdivisions. At many sites around the country, houses in conservation subdivisions actually sell for slightly more than a similar house in a conventional subdivision. The reason behind this increase in price is the desirability of property that is associated with open space. While prices may be slightly higher in these subdivisions, in no way are they unaffordable. In our research, we found that homes in existing conservation subdivisions fall within any price range. Houses in these subdivisions are built based on market demand and are usually similar in price to houses in surrounding areas. There are many examples of conservation subdivisions aimed at moderate to low income families (e.g. in Dekalb County, Georgia).

### Myth #2: Owners of conservation subdivision homes receive no economic benefits

On the contrary, several studies have shown that houses in conservation subdivisions appreciate in value at a rate quicker than homes in conventional subdivisions. At one site in Amherst, Massachusetts, houses in the conservation subdivision sold for $600 more than homes in conventional development nearby. Twenty-one years later they sold for an average of $17,100 more, even though the houses on site were on lots half the size. Similarly, homes in a conservation subdivision in Concord, Massachusetts appreciated at an average annual rate of 21%, compared to an 18.4% appreciation rate in a conventional subdivision with lots five times

are large as those in the conservation subdivision. In either case, the homeowner may pay more up front but receives a financial return in the end (Wenger and Fowler).

Myth #3: It is more expensive to develop conservation subdivisions

This myth is easily dispelled when considering the cost of infrastructure. In conservation subdivisions, houses are clustered together and require fewer miles of road, water lines, and other utility lines. Fewer and lower infrastructure costs are now thought to be one of the primary reasons developers choose to build conservation subdivisions. At a site in Georgia, where a large portion of the open space was preserved, the cost of infrastructure was estimated to be 60% lower than those of a conventional subdivision supporting the same number of people (Wenger and Fowler). Site preparation can also save the developer money because a smaller portion of the land is used for development. Randall Arendt, the forerunner in conservation subdivision development, estimated that one Texas subdivision saved $250,000 in grading costs compared to what it would have cost to build a conventional development on the same site (Wenger and Fowler).

Myth # 4: Conservation subdivisions have lower density housing

One of the greater myths surrounding conservation subdivisions is that the density of housing on a given plot is lower than the density on the same plot if developed traditionally. People tend to assume that there are fewer houses because there is more open space in a conservation subdivision. However, conservation subdivisions actually have the same number of dwellings as traditional subdivisions and can have even more lots if the developer is given a density bonus for using conservation-based development.

Myth #5: Open space includes roads, lawns and other infrastructure areas

Open space in conservation subdivisions does not include roads, parking, private yards, golf courses, required setbacks and building spacing and fragmented and isolated areas less than 100ft wide. Areas that count as open space for the subdivision include wetlands, floodplains, habitats of endangered species, wooded areas, agricultural land and other green spaces. At least some portion of the open space must be left for recreation as well.

**Addressing Potential Problems**

Zoning regulations and water resources/capabilities are often roadblocks for developers or communities wanting to develop conservation subdivisions. For many areas, residential zoning does not allow for high density developments needed in conservation subdivisions. Townships must take the initiative to change their own zoning regulations for subdivisions to allow for conservation development. In Licking County, subdivision regulations virtually prohibit high density residential developments. Individual lots must be at least 1.6 acres if a septic system is needed, but can be 10,000$ft^2$ if central water and sewer is provided. Conservation subdivision lot sizes are almost always less than one acre, but because of Licking Township's rural nature, sewer lines are not run throughout the area. For lot sizes to be less than an acre, central sewer and water must be provided under county zoning regulations.

In order to deal with the lack of central sewer, a developer has a few options. The first option is to allow multiple houses (usually two) to share a septic system, thus increasing the land available for the tank and drainage field. Combining multiple houses onto one larger septic tank has some potential problems associated with it, but has proven to be successful in some conservation subdivisions. The second option is to construct a small onsite wastewater treatment facility. This option may be the most expensive but leaves the least room for problems to arise. Onsite wastewater treatment facilities include aerobic tanks, sand filters, and constructed wetlands. All houses in the subdivision would be connected to this treatment facility. These systems typically provide a pretreatment to septic tank effluents before being released into a drain field. However, these alternative systems require more maintenance and monitoring than traditional septic tanks and drainage fields. But, from both a surface and groundwater perspective, soil-based treatment systems (if properly sited, installed, and maintained) can offer a high degree of protection and reliability (Mega et al.). One type of treatment may not work for another area, so things like site characteristics, volume of flow, and system maintenance must be taken into account.

The final option is to have a municipal sewer system. This would eliminate the minimum lot size of over one acre and more easily allow for conservation subdivisions to be established. There is a concern that with a sewer system, anyone could "tap" into it, but if there are regulations on the types of development allowed, such as conservation subdivisions, then it

would not be such a problem. Many tend to view the installation of a sewer system as inviting developers in, but zoning regulations could limit this.

**Recommendations for Licking Township**

Licking Township has already begun to take some of the preliminary steps necessary to promote conservation-based residential development throughout the community (i.e. adopting a Comprehensive Plan, making zoning revisions with consideration for green space and natural resources). However, there is still much to be done. Although there is no "How to" manual with which we can present Licking Township at this time, we can make one specific recommendation to help get the ball rolling.

For any community that desires to conserve open space in spite of development pressures, creating a map of potential conservation lands is imperative. The first step in creating this map is to identify Primary Conservation Areas (PCAs). These areas would include the "most severely constrained lands" in Licking Township from which development may already be restricted. Some examples of PCAs include floodplains, wetlands, and steep slopes. Once the township has identified the PCAs, it must define Secondary Conservation Areas (SCAs) for the map. SCAs would include all other cultural, historic, scenic, and natural features that are valuable and significant to the community (i.e. primary agricultural lands, greenways, trails, historic buildings/landmarks, wildlife habitats, etc.). It is important to involve local residents of Licking Township in this process of SCA identification because they are the ones who best understand their community. PCAs and SCAs are then put into map form and this map is added to the township's Comprehensive Plan. Once this Map of Potential Conservation Lands is created, Licking Township can require developers to use the map to guide their plans for open space when designing residential developments (Arendt, 1997).

# Section Four: Property Owner Options

## Introduction

The large tracts of productive land have made farmland and agricultural industry a major asset in Licking Township, which is now threatened by the aggressive development in the area. In order to preserve the open space and farmland characteristic of Central Ohio, it is important to enact appropriate zoning regulations to ensure "smart development" in residential and commercial districts. Farmland is not only important for open space, but it also provides jobs, and other economic benefits as it contributes to state and local taxes more so than it requires in public services. Farmland also provides wildlife habitats.

The main idea proposed in this section is the preservation of open space and farmland, and concentration of new development in areas where residential development and infrastructure are already in place. This section offers options landowners have to preserve their land as a farm, wildlife habitat, or open space. We do not argue against development, but rather give options to find balance between growth and agricultural preservation that would not harm the township or the residents. The different options reviewed below are:

1) **Conservation Easements**
    - Purchase of Development Rights (PDR)
    - Transfer of Development Rights (TDR)
    - Donation of Development Rights (DDR)
2) **Land Donations**

## Conservation Easements

### What is a Conservation Easement?

A conservation easement is a legal agreement made between a property owner with the qualified conservation organization or government agency in which use of the land is restricted in the type and the amount of development that takes place on his land to farming, open space or wildlife habitat.

What are different types of conservation easements?

A landowner might sell, transfer or donate his development rights to a government agency or private land trust. These different types include Transfer of Development Rights, Purchase of Development Rights and Donation of Development Rights.

What is an Agricultural Conservation Easement?

Agricultural conservation easements are similar to an ordinary conservation easement, but it aims to protect farmland. This is a voluntary conservation easement restricting development on the farmland. Land subjected to this kind of easement is generally restricted to farming and open space. This kind of easement would be especially appropriate for Licking Township since there are large areas or farmland and open space that are threatened by the development. Agricultural easements will not be focused on for the purpose of this report, but it is important to note that there are specific easements aimed at the conservation of farmland.

Advantages of Conservation Easements

- They leave the property in the ownership of the landowner, who may continue to live on it, sell it, or pass it on to heirs
- They can significantly lower estate taxes – sometimes making the difference between heirs being able to keep land in the family and their needing to sell it. In addition, easements can provide the landowner with the income tax, and in many cases, property tax benefits.
- They are flexible, and can be written to meet the particular needs of the landowner while protecting the property's resources.
- They are permanent, remaining in force when the land changes hands. A land trust or government agency ensures the restrictions are followed.

Source: Land Trust Alliance

Potential Tax Savings

- **Income tax** – can be avoided entirely in case the land or development rights on the land are donated rather than sold
- **Estate or inheritance tax** – tax imposed on the transfer of property from the deceased person to the heirs. This tax depends on the value of the property; lower property value means lower taxes. If the land does not have development rights value is significantly decreased resulting in lower estate taxes.
- **Property tax** – land without development rights is lower in value resulting in lower property tax while in case of farmlands owner keep the right to farm keeping his income constant.
- **Appraisals** – estimation of the property value. Landowner engaging in easements can be reimbursed for the cost of hiring the appraiser.

## Approaches to Conservation Easements

### Purchase of Development Rights (PDR)

The voluntary sale of rights to develop property by the landowner to a government agency or a land trust. The sale price is determined by an appraiser and the land use is restricted to farming or open space. Landowners retain full ownership and use of their land for agricultural purposes. Development rights are extinguished in exchange for compensation. PDR are also known as PACE (Purchase of Agricultural Conservation Easements).

Source: Ohio State

Goals and Objectives of PDR

- Preserve farmland and support farmland operations
- Maintain rural character and quality of life in the community
- Protect environmentally sensitive areas and scenic vistas
- Create buffer zones around agricultural lands and environmentally sensitive areas
- Protect the town and privately owned based shops from the impending industrial and commercial markets

In case the landowner does not development on his land and is in need of money, he can chose to sell or donate his/her development rights. Basically, the state pays half of the amount that his rights are worth and the other half can be donated, or paid with another, non-state source. For instance, a neighbor could pay part of the value because it is in their interest that the land stays rural. The value of neighbor's land increases if his neighboring land does not have undesirable development on it. As a result, the value of landowner's property decreases, but his taxes drastically decrease as well. The owner can choose to stay on the land and hunt, use it for agriculture or build a golf course, but they are not allowed to have any infrastructure on the land. This process is very similar to selling mineral rights.

Numerical Example:

If a person owns a 100 acre plot of land with a value of $5,000 per acre and decides to sell the development rights, the new value of land will be $2,000 per acre.

Value of land with rights -> 100 acres with rights at $5,000/acre = $500,000
Value of land without rights -> 100 acres without rights at $2,000/acre = $200,000

Therefore development rights are worth $300,000 for the whole 100 acres.
Landowner would be compensated for the loss of $300,000 in the value of his land by state money (½ of value = $150,000), while the other half could be sold to local government, etc.

Benefits of PDR to Landowners

- Voluntary (landowner is free to turn down the offer or try to negotiate a higher price).
- Keep property in private ownership.
- Compensate the landowner for the development value of the property, making it financially feasible to continue farming.
- Preserve land for farming while providing cash assets for estate planning, retiring debt and farm improvements.
- Keep farmland affordable for new farmers.

Benefits to Residents

- Provides permanent protection of vulnerable lands and important resources from encroaching development.
- Retains scenic views of open space and farmland.
- Preserves rural character and quality of life.
- Keep property taxes low as compared to new residential development in the area.

**Transfer of Development Rights (TDR)**

TDR allows landowners to transfer the right to develop one parcel of land (sending area) to a different parcel of land (receiving area). It is designed to shift development from agricultural areas to areas that have the infrastructure to support increased development. After the right to develop has been shifted from the sending to the receiving area, the original parcel is protected with a permanent conservation easement. The benefits of this type of program are that it offers permanent protection, it is a voluntary, market driven process, it promotes orderly growth in areas with the capacity to provide necessary services, and farmers can retain equity without developing their land. It is complicated to set up and requires a bit of study before implementing a TDR. A market must exist for increased density in the receiving areas. Currently it is questionable whether townships and villages have the authority to transfer development rights. It is believed that townships do not. TDR legislation may be introduced during this year's legislative session.

Source: Center for Farmland Preservation

Types of TDR Programs

The most common TDR program allows the landowner to sell his development rights to a developer who then uses those development rights to increase the density of houses on another piece of property at another location. The higher density that developers are able to realize is that incentive for them to buy development rights.

The second method allows a local government to establish a TDR Bank to transfer development rights. In this method, developers, who wish to develop at a higher density than current zoning allows, would purchase development rights from the local government.

Numerical Example

Consider a case where two landowners with the same sized plot of land, where zoning laws allow development of 50 household units on each plot. Landowner 1 is a farmer and wishes to continue farming and not develop on his land, while Landowner 2 is an investor who has just purchased the land to build a residential housing development. Landowner 1 can transfer his development rights to Landowner 2, and as a result, the property of the Landowner 1 will remain as a farm and will not have any development on it, while the property of the Landowner 2 will now have the right to build 100 houses on his land. This is beneficial for communities because it keeps infrastructure out of rural areas. Development is clustered while there are large areas of farmland and open space.

Advantages and Strengths of TDR

- Free exchange (buying and selling) of development rights without having to buy or sell the land.
- Regulatory tool designed to facilitate land-use planning.
- Used in other areas of the country for the preservation or protection of open space, natural resources, farmland, and urban areas of historical importance.
- Used to secure land for solid waste facilities and for the protection of golf courses.
- Transaction performed in a controlled setting where areas are predetermined as community areas.
- It does not involve any state money, as opposed to PDR, but is basically a monetary transaction of development rights between two parties.
- It results in housing cluster in areas where infrastructure already exists with a lot more open space in other parts that will never be developed. This is a great setting for mass transit. It also increases residential density which is a base for stronger community and is also valuable for its viability.

Unfortunately, TDR does not exist as a law in Ohio yet but is being discussed in legislature.

**Donations of Development Rights (DDR)**

DDR has very similar assets as TDR. The main difference, however, is that the development rights are *donated* rather than sold. Even though the landowner does not receive direct monetary compensation for the deed, he or she does receive greater tax deductions due to the charitable contribution, and avoids capital gains taxes that would result from selling the property. In a section following, there is a case study demonstrating the benefits of completing a DDR.

**Procedure for applying for a conservation easement**

Who may grant the easement and to whom can they grant it?

The landowner can grant a conservation easement for all or a portion of his property. In case the easement donor wishes to claim tax benefits for the gift, the landowner must donate or sell it for less than the fair market value to a public agency, conservation organization, or historic preservation organization that qualifies as a public charity under Internal Revenue Code Section 501(c)(3). However, most land trusts meet this criterion.

The steps in the transition:

1) Initial contact between the property owner and the conservation organization -
2) Consult with legal and tax advisors. While conservation organizations can assist landowners they cannot offer professional advice regarding legal and tax issues.
3) Conduct a tour of the property with the landowner to confirm that the potential easement meets the program goals. Also discuss the resources on the property and identify potential uses and restrictions on the property.
4) Obtain title information, identify the legal property owner, property description and identify any resources on the property that may need to be subordinated to the conservation easement (e.g. mineral right, etc.)
5) Compile baseline data inventory of property. Study various types and location of resources and property conditions.
6) Negotiate the restrictions and draft the document. Complete on a case-by-case basis, depending on the existing appearance of the land and the type of the ecosystem

inhabiting the property. Establish the landowner's desires for the property in the future; this usually includes any kind of development, soil and water use, etc.

7) Obtain a qualified appraisal. This is only necessary if the owner wishes to claim a tax deduction for the value of the easement.
8) Sign and record the easement

Source: Northern California Regional Land Trust

**Land Donations**

Land can be donated to a government agency or a land trust for conservation purposes. The major difference between donations and easements is the land owner retains certain property rights with easements and looses all property rights as well as the ownership of the land when the land is donated. Donations are a valuable option for landowners whose land has significant conservation value but do not have someone who will inherit and preserve it; for owners who do not have the ability to pay taxes for the land high in value, or for those who would like to be relieved of the responsibility of preserving the land.

Land donation is a far simpler transaction than the conservation easements and provides substantial tax deductions, as well as estate tax benefits (while avoiding any capital gains taxes that would result from selling the property). Most importantly, if the land is donated for conservation purposes, the landowner is ensured that the land will always be protected.

Source: Land Trust Alliance

Donation of Land by Will (Bequest)

The charitable giving of property in a will is a time-honored way to leave a legacy and reduce estate taxes. For landowners who prefer to own and control their land during their lifetimes, and who do not need the income tax benefits of outright donation, a bequest may be the answer. As with other land donation methods, it is important, the land trust or other conservation organization is willing and able to receive the gift.

Remainder Interest or Reserved Life Estate

A remainder interest, or reserved life estate, allows the landowner, or another named person, to enjoy and/or live on donated land. Though such transactions can be complicated, (resulting in some estate tax liability if the life tenant is someone other than the donor) charitable deductions are allowed. A remainder interest qualifies for federal income tax deduction with or without restrictions on future use. Only remainder interest given for conservation purposes to a qualified conservation organization guarantees protection of the land's value. The amount of the income tax deduction for a remainder interest is calculated by reducing the fair-market value of the donated property by the value of the reserved life estate of the landowner or his or her designees. The more life tenants and the younger they are, the lower the value of the remainder interest and the lower the tax deduction.

Leaseback

This land donation method often is used by older landowners interested in protecting their land's conservation values, but wanting to continue using a portion of the land during their lifetime. Under a "leaseback" the landowner donates the property to a land trust and leases the small parcel he or she wants for farming, hunting, fishing, timber cutting, or other uses. The burden of managing the land's conservation value reverts to the land trust and the landowner receives the usual donation tax benefits.

Source: Gathering Water Conservancy

**Example**

Dr. John Hohmann, Pataskala has donated his development rights to the Ohio Department of Agriculture in 2000, and the following is the example of the incentives that have driven him to do so and the benefits that he is now enjoying. The information was obtained from an informal interview.

The farmland that Dr. Hohmann resides on has been in his family since 1929. His grandparents stated in their wills that they would like the farm to be offered to him before any

other potential customers. Since he had interests in keeping his grandparents' farm in the family, in 1972, Dr. Hohmann moved to the farm with his wife and three children and started farm restoration. In that time, Dr. Hohmann planted 500 trees, raised cattle and chicken, and cultivated a garden. Even though his grandparents owned a large piece of land, when Dr. Hohmann became an owner it was only 15 acres in size. With the hard work, he and his wife were able to purchase surrounding land and regain much of his grandfather's property; the property is now 217 acres. After retirement, Dr. Hohmann and his wife devoted most of their time and energy into improving the farm.

Due to the urban sprawl that has been taking place in Licking County, farmland value has inflated causing estate and inheritance taxes* to rise drastically. Dr. Hohmann and his wife have witnessed their next-door neighbors' children being forced to sell their parents' land in order to pay inheritance taxes. The value of farmland per acre is now as high as $20,000 and taxes are also high. In order not to put their children in the same situation and to prevent development on their land, which might take place if their children were forced to sell, the Hohmanns considered donating the development rights of their property for two reasons: 1) to ensure that there will be no development on their land in future and 2) to lower the value of their property so their children are not forced to sell the land in order to pay taxes

Even though they had the option of donating their land to Licking Land Trust, their church, or the local government, they chose to donate their development rights to the Ohio Department of Agriculture because they believed that this would be the best way to ensure that the land would be preserved as a farm. By donating their development rights the value of their land has dropped from $ 20,000 to $2,500 per acre. This way they are ensured that the inheritance taxes will be significantly lower. The $1.3 million that they donated counts as a charitable contribution and has provided huge tax deductions over the past 5 years.

The only downside in the whole process, he said, was that he had to pay for legal fees and appraisal, but he actually benefited from a tax reappraisal down the road because taxes have rolled back. As to why he chose to donate and not sell his development rights, Dr. Hohmann replied that he needed quick results due to he and his wife's illness, and the donation provided a less complicated and faster easement process.

Dr. Hohmann is very pleased with the decision he made because his property remains in the family and will always remain committed to agriculture. His act was both personally and socially

beneficial as it prevents development in the community. At the end of our conversation he reminded us, "We do not inherit the Earth from our ancestors; we borrow it from our Children."

* Inheritance or estate taxes - when a person dies all their property is accounted and is not directly inherited by family members but is a subject to taxation. The higher the property value, the higher the taxes.

## Conclusion

We have accumulated different possibilities for the property owners who are interested in preservation of the farmland for the economic, cultural, historical, environmental and aesthetic benefits that it brings to the community. These various options provide different scenarios depending on factors that influence property owner's demands for land use in future. Along with effective zoning regulations, donations and conservation easements can create a well-functioning community with residential cluster while still preserving the rural character of the area by preserving large areas of farmland and open space.

# Section Five: Greenways

## Introduction

As the network of trails continues to grow throughout Ohio, many townships are beginning to realize the difference they make in a community. Funding from state and local agencies and case studies are available to aid Ohio townships in joining the linkage of trail systems statewide. There are several ways in which recreational trails benefit a township. Communities, personal well being and the environment can all be aided by a well planned trail. Several studies have shown the success of trails in relation to the social and economic impacts and benefits of adding a trail and/or greenspace corridor to a community.

## Trail Benefits

### Community Benefits

One of the great benefits of a trail system is that it encourages community interactions by increasing the opportunities to encounter and socialize with other members of the neighborhood. The increased interaction between community members helps promulgate a more friendly community environment, increases the feelings of ownership and responsibility, and creates a greater sense of belonging. Trails are often used by people of all ages and can be an outlet for family activities such as picnics, walks, and biking.

As a community becomes more urbanized and populated, the amount of automobile traffic increases. This can be reduced by adding a trail to the expanding community because a trail will potentially decrease automobile traffic. This makes it easier for children to get around because there is a lower traffic flow on the streets (so it is less dangerous for them to walk), but also it allows for a pathway through the community that anyone can use to get from one place to another that doesn't require driving.

Economic Benefits

In addition to social, community and cultural benefits, there are also economic benefits to the community. The first is an increase in value of the properties adjacent and near to the trail. The National Park Service notes that property values can increase 5-32% when adjacent to trails and greenways. Additionally, realtors and landowners have noted that a trail is a selling feature of a property or home. The other major economic benefit of a trail in a community is the overall increase in the economic activity of the area. In a 1992 study, the National Park Service found that the estimated economic activity stimulated by three multipurpose trails in three different communities was approximately $1.5 million annually (Ohio Greenways).

Health Benefits

Despite the importance of maintaining a healthy lifestyle at all stages of life, recent studies have shown that many people are not regularly active. A primary cause for inactivity is the lack of access to outdoor recreational areas. According to the Trails and Greenways Organization, "trails and greenways provide a safe, inexpensive avenue for regular exercise for people living in rural, urban and suburban areas" (Better Commute Organization). Some of the health benefits of physical activity include, but are not limited to, reduced risk of chronic disease, weight and blood pressure control, reduced symptoms of depression and anxiety, and reduced arthritis pain and disability. Understanding the importance of physical fitness is essential to every community. One way of promoting healthy habits in a community is the establishment of a greenway. Greenways and communities make good neighbors, and "greenways can provide `close-to-home' opportunities for residents to engage in physical activity" (Pennsylvania Department of Conservation and Natural Resources). The presence of a greenway in a community emphasizes the importance of healthy citizens.

Environmental Benefits

In addition to benefiting our communities and physical well being, greenways can provide many benefits to the environment. Corridors and connections between natural areas created by greenways can expand a species' habitat range. Agricultural lands are offered protection by greenways through vegetative buffers and soil conservation. Greenways also protect floodplains as they absorb and filter storm water. According to the Federal Emergency Management Agency, flooding causes over $1 billion in property damages every year (Mid-Ohio Regional Planning Commission). By restoring developed floodplains to their natural state, many riverside communities are preventing potential flood damage. This protection to water resources is accomplished by providing a buffer against non-point sources of pollution. Greenways also protect and manage wildlife, forests and ecological systems. Trails and greenways help improve air and water quality. They provide enjoyable and safe options for transportation, which help reduce air pollution. Finally, trails and greenways are hands-on environmental classrooms. People of all ages can see for themselves the precious and intriguing natural world from which they may often feel so far removed. Greenways can effectively serve these functions while also providing recreational, economic, and social benefits to the community.

**Trail Myths**

There are many myths about the dangers of bringing a recreational trail into a community. Residents worry about a number of issues thought to be related to trails, including increased crime rates, decreased property values, increased liability, maintenance and management. As the development of a trail opens the corridor to the general public, adjacent landowners view this as an invitation for "undesirable outsiders" which threaten their sense of safety. It is important however, to note that trails not only benefit the community as a whole but also benefit the adjacent landowner. What was once an unmanaged and dangerous quasi-public space becomes a managed and maintained amenity. Studies have concluded that trails are safe places for local residents and visitors to enjoy.

Crime

Crime, including vandalism, trespassing, burglary, and littering has been shown to be much less prevalent along trails than many believe. In the United States, only 3% of responding trail

managers reported any major crimes in 1995 and 1996 (Tracy & Morris). A 1980 study by the Minnesota Department of Natural Resources compared adjacent landowner attitudes on a pair of proposed trails with the attitudes of landowners along two established trails. On the proposed trails 75% of landowners thought that if a trail was constructed it would mean more vandalism and other crimes. By contrast, virtually no landowners (0% and 6% respectively) along the established trails agreed with the statement "trail users steal." In response to the statement "summer users trespass," only 5% of the landowners along the two established trails agreed (Tracy & Morris).

Eight years after the Minnesota DNR study, a graduate student interviewed the same adjacent landowners along the trails. According to this study, 73% of all landowners viewed the trails as a desirable feature (Tracy & Morris). According to the author, "the increase in the desirability rating on the Root River is due to a change in the attitude of farmland residents who owned property prior to trail development." The majority of all landowners (85%) did not experience major problems with the trails and 80% of the landowners believed the trails did not increase the rate of violent crimes (Mazour, 1988 as cited in Tracy & Morris).

Studies have concluded that concerns about increased crime due to construction of a multi-use trail are unfounded. Homes immediately adjacent to trails do not experience any increase in burglaries and/or vandalism as a result of the trail. The results showed that in the eight years of the existence of the trail there was an average of less than 1 incident of vandalism per year where a trail user may have been involved. This was well below the neighborhood average which, given the number of homes along the trail, would expect about five incidents per year. A majority of the landowners reported that since the opening of the trial there had been no increase in problems, living near the trail was better than expected and better than living adjacent to the unused rail corridor before construction of the trail (National Park Service, 1992 as cited in Tracy and Morris).

Property Values Along Trails

Along with the other major concerns, a recurring concern expressed by landowners living along proposed multi-use trails is that the development of a trail corridor along their property will decrease their property values and will affect their ability to sell their homes. There are numerous case studies which have determined what effect trails have on the property values of

adjacent landowners. These studies have concluded that trails have no adverse effects on the value of property adjacent to trails and in most instances result in enhanced value and increased salability. They have also concluded that trails positively stimulate local economies.

The impact of a recreation corridor on adjacent and nearby property values has been the primary subject of a multitude of studies and surveys throughout the United States. These studies have revealed that trails have no adverse effects on adjacent property values, and in most instances result in increased value and salability. According to a study of property values near greenways in Boulder, Colorado, housing prices decline an average of $4.20 for each foot of distance from a greenway, up to 3,200 feet. This average was $10.20 for each foot of distance in one specific neighborhood. It was determined, other variables being equal, the average value of property adjacent to the greenway would be 32 percent higher than those 3,200 feet away (Correll, et.al., 1978). Also, in 1992 the National Park Service and Pennsylvania State University released a report entitled *Impacts of Rail Trails*. According to this study of landowners and users along three rail-trails, (the rural Heritage Trail in Iowa, the St. Marks Trail in Florida which runs through small communities and forested areas and the suburban Lafayette/ Moraga Trail in California) both landowners near or adjacent to the study trails and real estate agents felt the trails had no adverse effect on the desirability or values of the properties. Those who felt the trails increased property values outnumbered those who reported decreased values. A majority of the post-trail development homebuyers reported the trail either had no effect or added to the properties appeal and along the Lafayette/Moraga Trail a majority of owners felt the trail would increase the value of their home (National Park Services, 1995).

Liability

Adjacent landowners fear a trail user will wander onto their property, injure themselves and hold the landowner liable. While state law provides a measure of protection for property owners via recreational use statutes (RUS), adjacent landowners are still fearful of potential litigation. While these statutes cannot prevent landowners from being sued, it does grant them certain protections. The RUS does not grant immunity but it does offer limitations on a landowner's liability when they allow recreational use on their property.

Trail Management

Adjacent landowners are especially sensitive and aware of the management issues and happen to be major stakeholders in the overall quality of management of the proposed trail. Therefore, they often have grave concerns about the threats a trail will have to their traditional enjoyment of their property and to the aesthetic quality of the neighborhood. Most homeowners do not want neighboring public lands to become eyesores or junk heaps via careless maintenance. Some of these major concerns are going to be related to trash pickup, trash deterrents, tree pruning, drainage control, weed control, adequate sanitary facilities and screening. One reoccurring problem along trails is irresponsible dog owners not picking up after their pets. However, these problems can be dealt with if proper maintenance and management practices are used

Landowners must be an integral part of a regular maintenance and management plan for the new trail. The plan should use their knowledge of the existing conditions, their property and the surrounding landscape to better manage the trail. By including landowners in the management and monitoring of the trail, trail managers can keep in touch with landowners and the landowners develop a sense of ownership of their stretch of trail. This communication and sense of ownership creates a few hundred managers who can spot maintenance and management problems as they occur (Illinois Department of Conservation as cited in Tracy & Morris).

**Trail Materials**

There are several options when determining what type of material would be best fitted for certain trails. The most important things to consider when deciding on the material to be used for the trail is that the trail must be functional, safe, and fit in with the tone of the landscape.

The options range from gravel or soil to concrete or asphalt. In the case of the proposed trail along the Buckeye Central Railroad corridor, there are a few options that are easy to dismiss. Soil, gravel, and mulch would not be appropriate for this projected trail because they do not last very long, potentially erode and are not suited for heavy bike, pedestrian and skating traffic. Instead, there are several other options that are better suited for this project.

The main options are asphalt and concrete. Concrete generally lasts longer than asphalt, but there are several setbacks to concrete use. The first is that joggers and walkers often prefer the softer surface of asphalt to the harder concrete surface. Concrete is generally more expensive

than asphalt ($35/ ft and $20/ft respectively with a 10 foot wide trail) or 30%-60% more expensive (American Trails). In terms of maintenance, when concrete required maintenance, there often must be slabs replaced instead of just paving over cracks or problem areas. This makes the maintenance of a concrete path much more expensive too. There are often more injuries associated with concrete trails as opposed to asphalt trails (Runners World).

The remaining debate is between a new material, rubberized asphalt, and the traditional hot-mix asphalt. There are advantages and disadvantages to both types of asphalt. First of all, rubberized asphalt uses recycled tires, which is beneficial to the environment by helping deal with used-tire waste that would usually end up in a landfill. Rubberized asphalt has also been found to be smoother, quieter, and provides more cushioning than regular hot mix asphalt (R&A Productions). The problems with rubberized asphalt are that it generally costs more to purchase and install and the actual life expectancy is unknown because it is a generally new medium. Regular hot-mix asphalt supports the same type of use as rubberized asphalt and requires relatively low maintenance. This also incurs quite a large overhead cost to install, but it is known that hot mix asphalt has a long life expectancy (Capstone, 2004).

Most of the resources that were consulted suggested that asphalt or concrete be used for multi-purpose trails. In Licking Township, it would be most cost-effective to use asphalt for paving the trail. There is the possibility of using a mix of recycled tires with the asphalt, called rubberized asphalt, but it has not been around long enough to know the effectiveness and longevity of that sort of pavement. However, it would definitely be beneficial to look into the option of using the recycled tire asphalt as more research is available as it is more environmentally friendly.

**Funding Recommendations**

Funding a trail or greenway is quite a daunting task. There are many funding sources available, ranging from state, federal and local governments and also non-profit organizations. There are many resources on the internet that offer summaries and descriptions of different organizations and the types of grants they provide. It is a tedious process to determine which grant might be right for your community but when one is discovered it has the potential to help your community develop in ways that were never thought possible.

Federal funding is available for transportation programs as well as park programs, community development and the arts. Funding at the state and local levels can be found in health, parks and transportation departments. In the non-profit realm, "many foundations and companies provide grants for trail and greenway projects, open space preservation, community development and community health" (Rails to Trails Conservancy).

For the long term sustainability of a greenway project there is potential to create partnerships which will help with the initial process of planning and building greenways and also assist with the maintenance of greenways. Building partnerships not only benefits the partners involved but helps increase community pride by involving larger populations of the community. All funding information is taken from the Ohio Greenways CD entitled "Maximizing Ecological and Community Benefits of Open Space Projects. A copy of this CD may be obtained by contacting Elaine Marsh at ohgreenway@aol.com.

Clean Ohio Fund

The Clean Ohio Fund is a $400 million program created to "preserve green space and farmland, improve outdoor recreation, and revitalize blighted neighborhoods by cleaning up and redeveloping polluted properties" (Clean Ohio Fund). This initiative passed in November 2000 and has been providing funding for areas throughout Ohio for the development of recreational trails, conservation of greenspace, preservation of farmland and revitalization of brownfields. There is approximately $6.25 million available each year for the development and construction of recreational trails in addition to funding for land acquisition. According to the Department of Natural Resources website priority is given to projects which link regional or statewide trail systems, link population centers with outdoor recreation areas, preserve natural corridors and assist with commuter access.

National Scenic Byway Program

The National Scenic Byway Program is a federal program that works with the Department of Transportation to provide reimbursement for scenic byway projects under the National Scenic Byways Program Discretionary Grants. In 2004 it was expected that there would be $25-30 million available at the national level. These grants are not available to individuals or non-profit organizations however they are to local governments. The local

sponsor is required to match the grant at a 20% minimum. The funding provided through this grant offers assistance in the areas of planning, designing and developing state scenic byways.

Nature Works Local Recreation Grants

The Nature Works Local Recreation Grants are state issued grants available through the Ohio Department of Transportation- Division of Real Estate and Land Management. These grants provide reimbursement for local governments (county, municipal, townships, park districts, etc) who participate in the acquisition, construction or reconstruction of local parks and recreation areas. There is also funding available to assist with the development of new recreational areas including bicycle and hiking trails. The funding provided through the Nature Works Grant program will assist with construction, development, and planning but will not provide funding maintenance. In 2004, approximately $1.5 million was available through this grant program. There is a 25% local sponsor match requirement.

Recreational Trail Program

The Recreational Trail Program is federal issues grants through the U.S. Department of Transportation- Federal Highway Administration with the Ohio Department of Natural Resources acting as the regulatory agency. Through this program, grants are available to assist government agencies and trail groups in rehabilitation, development, maintenance and acquisition of recreational trails and related facilities. The grants are divided into three sub-categories of motorized, non-motorized and multi-use trails. There is also funding available for educational programs that promote trail use, safety and environmental protection. In 2004, $1.3 million was available at the state level. There is a 20% minimum local sponsor match requirement. One of the primary goals of this grant program is to further the purpose of Ohio's Statewide Comprehensive Outdoor Recreation Plan (SCORP). SCORP was created in 2003 by the Ohio Department of Natural Resources; its intention was to create a plan addressing the issues affecting outdoor recreation in Ohio (Ohio Department of Natural Resources).

Transportation Enhancement Funding

Grants from Transportation Enhancement Funding are available through the Federal government, in particular, the U.S. Department of Transportation- Federal Highway

Administration. The Ohio Department of Transportation acts as the administrator in these projects. Funding through this program assists with the development of transportation related activities designed to strengthen the cultural, aesthetic, and environmental aspects of transportation. It includes bicycle and pedestrian projects. There is $11 million available annually at the national level. A 20% local sponsor match is required in order to be eligible for this grant program. There are three qualifying groupings listed under requirements- Historic & Archaeological, Scenic & Environmental, and Bicycle & Pedestrian. Funding provided through this program may assist with the acquisition of property, rails-trail programs, educational activities, preservation of historic sites, amongst other areas of concern.

Rails-to-Trails Conservancy

The Rails-to-Trails Conservancy is a non-profit organization that works at the national level to help protect funding available for trail development. They assist citizens at the local level to action to create trails in their communities by providing information, technical assistance and training. While Rails-to-Trails Conservancy does not offer funding directly, it does possess a variety of resource which can be helpful when it comes to the planning, development and funding of a trail. Most of this information is available at the Trails and Greenways Clearinghouse website (Rails to Trails Conservancy).

As you can see there are many sources available to assist with the planning and development of a trail, it just takes initiative to discover which program would best suit the goals of your community. Throughout the process of creating a trail it is important to consider who will maintain the trail once it has been completed. There are a few funding sources available to assist in this process, but is in large part it is the responsibility of the community to think of creative ways to provide maintenance for trails.

## Maintenance Recommendations

One possibility for maintaining the integrity of a trail is through the creation of an Adopt-A-Trail Program. Community members, organizations, school groups, social groups, etc could purchase part of the trail for a one year time period in which they would be responsible for picking up trash, monitoring for flaws and general upkeep of their section. In exchange the group will be able to post their name on a sign at the beginning of their section.

Another option is using fundraising techniques for raising money in order to maintain the trail. One possibility is creating trail markers which companies can buy and have their name displayed at one point along the trail. The money raised through these fundraisers will go towards buying supplies to maintain the trail. There is also funding available through some of the grants listed in the funding section and their may be other federal, state, or non-profit organizations that offer funding for maintenance.

Involving the community is an essential component to the success of creating and maintaining trail networks. Think of ways to involve local school groups through the creation of a Trail Club at the High School which would become involved with their local natural environment through hiking the trails, picking up trash, and learning more about their surroundings. The more interested and active community members are in the all phases of trail development, the more likely they are to take ownership and have a desire to maintain the integrity of their greenways.

In Licking Township, a prime corridor exists that would serve well as a trail; the Buckeye Central Scenic Railroad. Many trails have been created along railroad corridors because of the grade and clear path that they offer. Often these trails are created at the expense of the railroad, removing the rails and putting a trail in its place. Though this may be a feasible option in Licking Township, there are others to consider. The Buckeye Central Scenic Railroad offers the community a great historic feature and interesting educational amenity. Its removals would be a great loss to the community. Some communities have been able to preserve their historic and functional railroads by building a recreational trail along the side of it. This option should be explored before decisions are made to remove the Buckeye Central Scenic Railroad.

# Works Cited


Arendt, Randall G. "Growing Greener: Putting Conservation into Local Codes." Natural Lands Trust: Media, PA. November 1997.

American Trails. "Home page: American Trails." Accessed 16 April 2005. <http://www.americantrails.org>

Benedict, Mark A., and Edward T. McMahon. "Green Infrastructure: Smart Conservation for the 21st Century." *Renewable Resources Journal.* Fall 2002.

Better Commute Organization. "Why establish trails and greenways?" Accessed 16 April 2005. <http://www.bettercommute.org/orangebiketrails/why.html>

Capstone Seminar. "Off the Beaten Path: Striding Towards a More Walkable Granville." Denison University Environmental Studies Program: Granville, OH. 2004.

Center for Farmland Preservation. "Farmland Protection Toolbox…." Accessed 20 April 2005. <http://www.centerfo rfarmlandpreservation.org/toolbox-possible.html>

City of Pataskala. "City of Pataskala Comprehensive Master Plan- Draft." 6 Nov 2002. http://www.ci.pataskala.oh.us/docs/PataskalaComprehensiveMasterPlan_20021106.pdf

Clean Ohio Fund. Homepage. Accessed 16 April 2005. <http://clean.ohio.gov>

Correll, Lillydahl and Singell. "The Effects of Greenbelts on Residential Property Values: Some findings on the Political Economy of Space" Land Economics. 1978.

The Countryside Program (Kirby Date, Countryside Program Coordinator). Western Reserve Resource Conservation and Development Council. Lyndhurst, OH

Foth and Van Dyke. "Conservation Design/Clustering To Preserve Environmental Features." Accessed 24 March 2005. <http://www.foth.com/client/nasewaupee/default.asp>

Gathering Water Conservancy. "Donating Land to a Land Trust." 28 February 2002. Accessed 20 March 2005. <http://www.gatheringwaters.org/For%20Land%20Owners/donating_land.htm>

Gilligan, David. "Alexandria to Build New Sewer Plant Story." *The Advocate.* Newark, OH. 22 April 2003.

Granville Township Trustees. "The Record." Published for the residents of Granville Township. March 2005.

Greene, David. Personal Interview. March 2005.

Haines, A. "An Innovative Tool for Managing Rural Residential Development: A Look at Conservation Subdivisions." The Land Use Tracker 2:1. 2002. Accessed 20 March 2005. <http://www.uwsp.edu/cnr/landcenter/tracker/Summer2002/conssubdiv.html>

Land Trust Alliance. "How to Protect Your Land for Future Generations." *Conservation Options: A Landowner's Guide*. Washington, DC. 1999.

Lane, Mary Beth. "Lots of Contention: Rural residents strive to control spread of housing." *The Columbus Dispatch*. 17 April 2005.

Licking County Planning Commission. Licking Township Zoning Resolution. "Draft." 2005.

Licking County Planning Commission. Licking Township Planning Presentation. October 2004. <http://www.lcounty.com/planning/presentations/>

Mallett, Kent. "Annexation could quadruple Alexandria size." *The Advocate.* Newark, OH. 17 April 2005.

Mega, M., B. Lukermann, and R. Sykes. Residential Cluster Development. University of Minnesota: Extension Service. 1998. Accessed 24 April 2005. <http://www.extension.umn.edu/distribution/naturalresources/DD7059.html#toc>

Mid-Ohio Regional Planning Commission. "Green Infrastructure." Accessed 16 April 2005. <http://www.morpc.org/web/greenways/GreenInfrustructure.htm.>

National Park Service. "The impacts of Rail-Trails, a study of users and nearby property owners from 3 trails." *Rivers, Trail, and Conservation Assistance Program*. 1992.

National Park Service. Economic Impacts of Protecting Rivers, Trails and Greenway Corridors: A Resource Book. 1995.

Northern California Regional Land Trust. Accessed 15 April 2005. <http://www.landconservation.org/faqs_easement_def.html>

Ohio Department of Natural Resources. "ODNR Trails Plan." Accessed 16 April 2005. <http://www.dnr.state.oh.us/trailsplan/>

Ohio Greenways. Homepage. 9 Feb 2001. Accessed 16 April 2005. <www.ohiogreenways.org>

Ohio State. "Definitions." Accessed 20 April 2005. <http://extension.osu.edu/~port/ag/definitions.pdf>

Ohio State University. Community Development – Rural Zoning Purpose and Definitions CDFS – 300. Accessed 12 April 2005. <http://ohioline.osu.edu/cd-fact/0300.html>

Ohio State University. Community Development – Zoning Types CDFS – 302. Accessed 12 April 2005. <http://ohioline.osu.edu/cd-fact/0302.html>

Pennsylvania Department of Conservation and Natural Resources. "Pennsylvania Wellness." 16 April 2005. <http://www.dcnr.state.pa.us/brc/greenways/GrnwysChpt5-4.aspx>

Quistgaard, Kaitlin. "Go Native" *Natural Health*. May 2005: 88-90.

R & A Productions. Home page: Rubber Pavement Association. Accessed 16 April 2005. http://www.rubberpavement.org/

Rails to Trails Conservancy. Trails and Greenways Clearing House: Funding Database. Accessed 11 April 2005. <http://www.trailsandgreenways.org/resources/highlights/Funddb/default.asp>

Runner's World. "Mind and Body." Accessed 17 April 2005. <http://www.runnersworld.com>

Town of Cary. "Town of Cary Open Space and Historic Resources Plan: Conservation Subdivision Design." Accessed 26 March 2005. <http://www.townofcary.org/depts/dsdept/CSD.pdf>

Tracy, T. and H. Morris. Rails-Trails and Safe Communities: The Experience on 372 Trails. Rails to Trails Conservancy: Washington, DC. 1998.

Wenger S., and L. Fowler. "Community Choices Quality Growth Toolkit: Conservation Subdivisions." Atlanta Regional Commission. Accessed 29 March 2005. <http://www.atlantaregional.com/qualitygrowth/planning/Toolkits/CONSERVATION_SUBDIVISION_TOOL.pdf>

White, Melinda M. "Outside the Outerbelt." Columbus Alive wired News. 15 July 1999.

# Appendix A: Licking Twp. Capstone Community Survey, 3/3/05

**Please Note:** None of your responses to this survey will be released to anyone outside the Capstone Research Group or Licking Township. We are very interested in your feedback as a resident of the Licking Township Community. Please give us your thoughts so we better understand your wants and needs as a member of the community.

Any additional comments are welcome. Future inquiries may be directed to Kaplan@denison.edu.

**Demographic Information**

1. Are you a resident of Licking Township? If so, how many years have your lived there?

Yes____& Yrs. ____ No_____

2. Do you farm in the township, or own agricultural land?

Yes _____(Farm or Own land)

3. Could you indicate you age group

12-18 19-29 30-44 45-65 over 65

4. Do you have children under 18 at home?

Yes ____ No____

**Presentation Feedback – Please give your opinion**

5. How important is the preservation of historical sites in Licking Township?

Not very …….Very
1 2 3 4 5

Comments _____
_____
_____

2. Are there any additional historical, geographic, or other important features of Licking Township we have overlooked this evening? Please specify.

Comments _____
_____
_____

5. How likely would you be to use recreational, multi-purpose trails in Licking Township if they
were available to you?

Not very …… . . …….Very
1 2 3 4 5

Comments _____
_____
_____

4. How important is it to preserve the "rural character" of your community?

Not very …… . . ……..Very
1 2 3 4 5

Comments _____
_____
_____

5. What do you enjoy most about living in Licking Township?

| | Not important . . . . . Very important | | | | |
|---|---|---|---|---|---|
| Rural environment | 1 | 2 | 3 | 4 | 5 |
| Quiet community atmosphere | 1 | 2 | 3 | 4 | 5 |
| Lack of Congestion | 1 | 2 | 3 | 4 | 5 |
| Friendliness | 1 | 2 | 3 | 4 | 5 |

Other: _____

Additional Comments:

May we contact you for further information? If so, please provide your name and best way of contacting you (email or phone or other).

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# Appendix B: Capstone Community Meeting Mini Questionnaire

## *History*

1. What do you think are the most significant historical points in Licking Township?

2. How would you like to see those recognized?
   For example: signs marking the sites, a map that lists all sites, access via a website, or a trail system that could link the sites.

3. What do you see as potential threats to the preservation of the historical sites in the township?

Commercial Development
Greater residential population
Urban Sprawl

4. Is it in the township's best interest to preserve these historical areas?

5. Are there any specific places of historical importance that you feel have been ignored?

6. Do you have any additional information on any of the aforementioned historical sites?

Additional Comments:

## *Greenways*

1. Do you enjoy being active outdoors?

2. How familiar are you with the large network of multi-purpose trails and greenways throughout Central and Greater Ohio?

3. Have you ever used a multi-purpose trail (bike trails) around Licking County (or anywhere else)?
   If so, what did you like or dislike about your experience?

4. Would you like more accessible walking paths or bike paths in your community?

5. Do you have any concerns regarding multi-purpose trails being located in your community?

Additional Comments

## *Mapping*

1. Do you own a home or property in Licking Township? Location in Twp.

2. Do you know where your property is located relative to:
   a) the floodplain?

   b) important historical and archaeological features?

   c) proposed future development sites?

3. Do you have concerns regarding land use around your home/property in the township or around the township in general?

4. What sort of development would you like to see in your community and Licking Township broadly? (Commercial, Residential, Preservation of Open Space and Recreational Space)

Additional Comments