

CHAPTER 5

PLANNING PROJECTIONS AND GROWTH SCENARIOS 2020

A. PROJECTIONS

Projecting a community's population is a challenging procedure. No matter how scientific the process, there is not a methodology that exists that can guarantee flawless accounting. For example, there is a greater risk for error when examining a smaller population data set compared to a larger population data set. Additionally, the construction of a large subdivision in a sparsely populated area could completely nullify all prior population projections and require a new population projection with the new subdivision information incorporated into the model.

1. Population Growth and Projections

The population projection for the Village is more complicated to determine than the Township. The Village has a reported year 2000 resident population of 1,242 persons (see **Table 8** *Historic Population Growth Hiram Village*). The population is comprised of students living in Hiram College's dormitories and individuals residing in a variety of residential dwellings. The reported 2000 resident population of the Township is 2,296 (see **Table 11** *Historic Population Growth Hiram Township*). Unlike the Village, the number of people residing within group-quarter residences does not influence the Township's population. Nonetheless, both the Township and Village have sparse populations and any substantial development that may occur in the future will considerably impact the population projection totals and require a re-evaluation.

The Portage County Regional Planning Commission established a methodology for population projections in 1998. The model uses residential building permit trends over a 17-year period. The building permit data represents the total number of residential building permits issued each year from January 1984 to December 2000 by the Portage County Building Department. Computations are performed to determine the average number of residential building permits that are issued annually per community.

Once the annual number of issued building permits is determined, then this number is multiplied by the estimated household size of the corresponding year. This total is then added to the estimated population base of the previous year to determine the projected population for the following year. In the case of the Village, the estimated student enrollment projections for Hiram College also had to be taken into consideration for the purposes of establishing projections for the Village.

a. Hiram Village

Historically, the student population of Hiram College has greatly influenced the population figures reported by the Census for Hiram Village. Since 1950, on average, the college has represented nearly 70% of the total population of the Village. Since 1970, the number of students enrolled at the College has declined. Consequently, the

Village's total population has been in decline (see Table 8 *Historic Population Growth Hiram Village*). Therefore, because the College's student population has such a tremendous impact on the population figures for the Village, we can assume that changes in the student enrollment at the College will have an immediate impact on the Village.

Recently, the College has instituted a program to boost annual enrollment up to 1,100 students by 2009. The College expects steady enrollment growth between now and then. According to Hiram College officials, the current plan is to achieve enrollment of 1,100 students and then stabilize in the vicinity of that number. Currently, Fall 2002 enrollment is about 880 students. To get to 1,100 students by 2009, the college plans to increase its student body by about 31 a year. Thus, about 31 additional residents were added to the Hiram Village population projections over the next 7 years. Beyond this date the College would have to increase its dormitory size in order to accommodate additional students living on campus. Presently, the College has no plans to do so.

In addition to the College's proposed student enrollment figures, the formula to determine the Village's projected population will need to account for the expected number of residents, including students, not expected to reside in the College's dormitories. In order to accomplish this, both residential building permit data and the historic average household sizes for the Village needed to be computed.

Building permit data from January 1984 to December 2000, indicates that 14 residential dwellings were constructed in the Village in the past 17 years. Over the 17-year period, a mean average of 0.82 new homes per year was constructed.

The 2000 Census reported that the average household size for the Village is 2.44, which is slightly below the average reported for Portage County. The Census information for 1980 and 1990 indicates that the corresponding average household size for those years were higher. These findings indicate that the average household size for the Village is expected to decline in future years - reflecting national trends for future household sizes. The average rate of household size decline is then calculated for the corresponding population projection year.

The population base for the projections is the 2000 Census. The number of expected building permits issued for a particular year is multiplied by the estimated household size for that year and added to the estimated population base of the proceeding year. The population projection model indicates that the Village should grow by an average of 2 residents per year. These residents are assumed not to be living in the College's dormitories. The expected number of students that will reside in campus dormitories are added to this figure in order to arrive at the total population for the Village. Based on our analysis, the Village of Hiram can expect its overall population to increase to 1,511 by the year 2020 (see Table 32 *Population Projections Hiram Village*).

**TABLE 32
POPULATION PROJECTIONS
HIRAM VILLAGE**

Year	Projected Pop.	Percent Growth
2000	1,242	-
2005	1,356	9.18%
2010	1,491	9.96%
2015	1,501	0.67%
2020	1,511	0.67%

Source: Portage County Regional Planning Commission, August 2002

**TABLE 33
POPULATION PROJECTIONS
HIRAM TOWNSHIP**

Year	Projected Pop.	Percent Growth
2000	2,296	-
2005	2,500	8.9%
2010	2,705	8.2%
2015	2,909	7.6%
2020	3,114	7.0%

Source: Portage County Regional Planning Commission, August 2002

The same methodology is used to determine the population projections for Hiram Township. The population projections for Hiram Township are based on residential building permit trends for the past 17 years and the expected household sizes. From January 1984 to December 2000, 243 building permits were issued for new homes. Therefore, we can expect 14.3 new residential homes to be constructed annually. According to the 2000 Census the Township's average household size is 2.86. The 1980 and 1990 Census information indicates, like the Village, the Township's average household size is declining.

The population projection model indicates that the Township should grow by an average of 41 residents per year. Based on our analysis, the Township can expect its

overall population to increase to 3,114 by the year 2020 (see **Table 33** *Population Projections Hiram Township*).

B. SCENARIO INTRODUCTION

Many of the Township's residents and public officials have expressed deep concerns about the loss of farmland, coupled with the loss of scenic rural character in the community because of increased residential development taking place within the Township. Alternatively, the residents and public officials of the Village are worried about the consequential affects of a stagnating economy that has little or no growth. The far-reaching affects that this situation has on the generation of tax revenues are a primary concern. Presently, funding for public services is badly needed. Although, the Village would like to experience an increase in growth, it recognizes the need to preserve and protect its rich historical charm.

A review of some of the possible ways in which both of these communities may develop between now and the year 2020 is an effective means to measure and analyze some of the significant affects that are associated with various forms and patterns of development. The purpose for examining the alternative growth scenarios is to compare both the physical and fiscal affects that different land use development patterns may have on a community in the approaching years. By utilizing this method for analysis, local leaders will have a better understanding of the implications associated with various land use policies. They also will be able to make more informed decisions to establish proper land use controls and growth management strategies that will achieve their desired expectations.

Two alternative development scenarios for the communities were selected. The types of development patterns analyzed were the *Continued Growth Trend Scenario*, and the *Sustainable Development Scenario*. Each of these growth scenarios portrays different potential affects that a growing population and economy (commercial and industrial) may have by the year 2020 based on the objectives of each scenario.

The maps and the fiscal impact analysis associated with the growth scenarios represent probable locations and outcomes for various land uses. The maps graphically show potential locations for residential, commercial and industrial developments and how the implementation of different growth management policies and techniques can change the development patterns within each of the communities over time.

The maps show what each community may resemble within 20 years so that the respective residents and officials of each community can easily see long-term results. The maps provide an illustration of how the implementation of different types of land use regulations can address the concerns of the communities, such as the loss of rural character and productive agricultural land and the physical impacts of development upon the landscape.

The fiscal impact analysis provides insight into the additional services needed to sustain the hypothetical community of 2020, as well as, the cost to provide such services. Additionally, the impact analysis also provides a clearer understanding on the amount of land, in acres,

required by the various types of land uses permitted in accordance with the proposed build out assumptions for each scenario. Ultimately, the figures of each scenario can be compared to determine which approach best addresses the community's concerns to counter any negative impacts associated with growth.

C. GENERAL GROWTH ASSUMPTIONS

Both of the growth scenarios are based on projected levels of future growth that may occur in Hiram between 2000 and 2020. The residential projections for Scenarios 1 and 2 are based on the findings of the Planning Commission (see Section A of this Chapter). The population figures for the Village are representative of the expected residents to move into the community who are not expected to live in the college dormitories.

Scenario 2 utilizes the Planning Commission's population projections as its base, but incorporates various programs to manage residential development that alters the projections slightly. For example, Scenario 2 introduces the concept of transferring residential development from the Township to the Village in order to preserve and protect agricultural lands and its rural character from development. Additionally, in this same scenario, the Township initiates another program that allows the residential density of a development to be increased if the developer preserves roadway frontage viewsheds from development by placing the land in a conservation easement.

In addition, commercial and industrial projections were included for the Village in each of the scenarios. The Township did not want to permit any land area to be used for either type of land use. The commercial and industrial floor space information used in Scenario 1 for the Village was obtained from AMATS (Akron Metropolitan Area Transportation Study). With respect to Scenario 2, the commercial and industrial floor space data and trends were derived from a study prepared by the Portage County Regional Planning Commission, conducted in 1999, entitled GIS Development Simulation Program and Sustainability Indicators Study. This Study used computer-simulated modeling to analyze the impacts of development on the municipalities and rural areas of Portage County.

The following assumptions are used to evaluate future land use needs and fiscal impacts in each of the growth scenarios:

Scenario 1, Continued Trend (See Maps 35 & 36)

Hiram Village

- ❖ Projected population increase of 40 people.
- ❖ Projected residential growth of 18 dwelling units.
- ❖ Projected commercial growth of 20,000 square feet of building space.
- ❖ Projected light industrial growth of 136,706 square feet of building space.

Hiram Township

- ❖ Projected population increase of 824 people.
- ❖ Projected residential growth of 285 dwelling units.
- ❖ Projected commercial growth of 0 square feet of building space.
- ❖ Projected light industrial growth of 0 square feet of building space.

Scenario 2, Sustainable Development (See Maps 37, 38, and 39)**Hiram Village**

- ❖ Projected population increase of 229 people.
- ❖ Projected residential growth of 104 dwelling units.
- ❖ Projected commercial growth of 10,400 square feet of building space.
- ❖ Projected light industrial growth of 15,000 square feet of building space.

Hiram Township

- ❖ Projected population increase of 725 people.
- ❖ Projected residential growth of 221 dwelling units.
- ❖ Projected commercial growth of 0 square feet of building space.
- ❖ Projected light industrial growth of 0 square feet of building space.

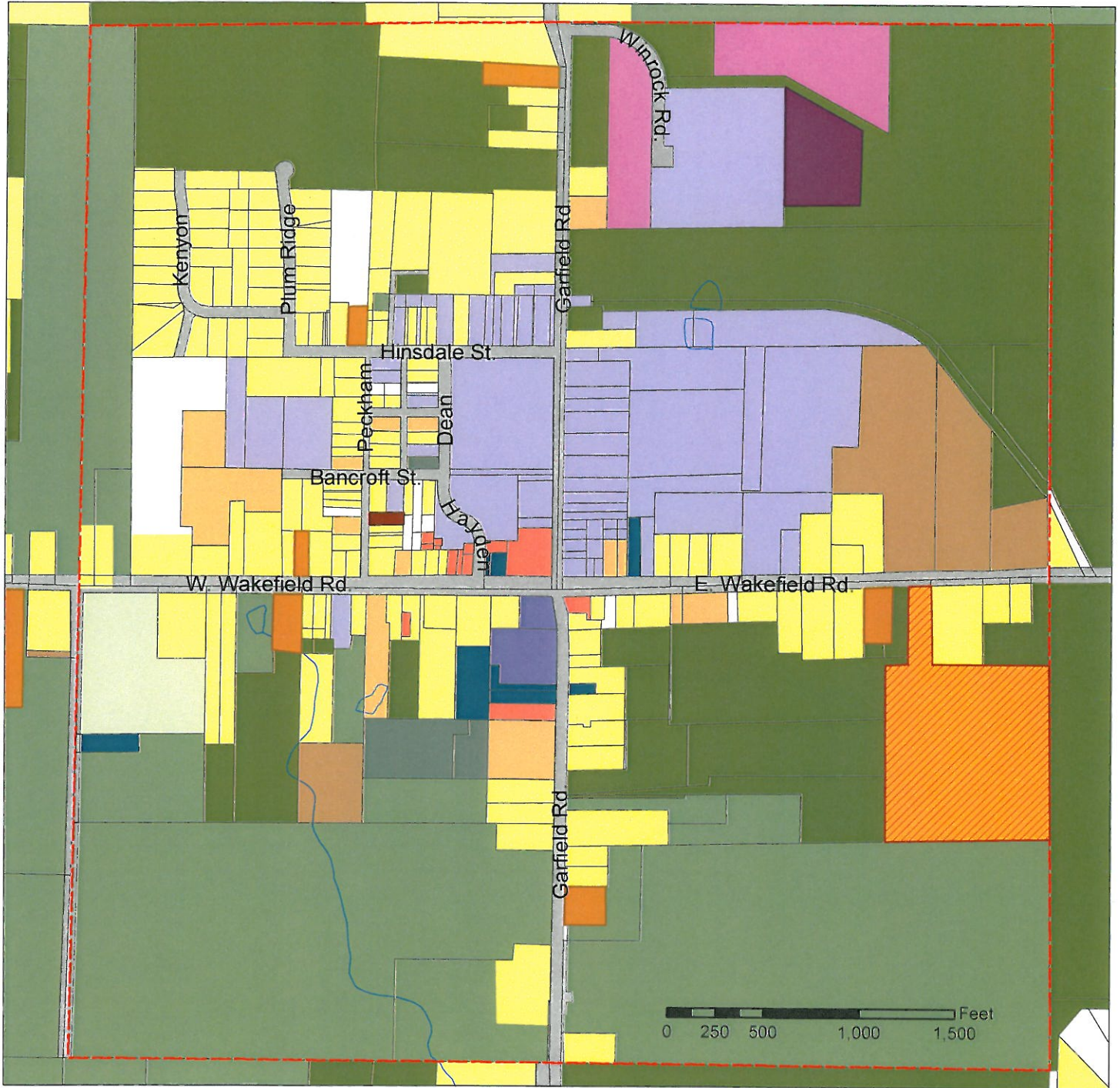
D. CONTINUED TREND SCENARIO (SCENARIO #1)

This baseline scenario utilizes the current Zoning Map and the current zoning requirements of each community to project build out patterns and densities. This scenario also assumes that the current residential, commercial and industrial development patterns and trends of each community will continue until the year 2020.

The *Continued Trend Scenario* assumes the Village can expect 40 additional residents during this time period. These expected residents are not expected to live in the college dormitories. By the year 2020 a total of 18 new homes will be constructed. The Continued Trend Scenario Map (**Map 35 Village Growth Continued Trend**) shows that six (6) of the expected homes will be constructed on already existing lots within the Village. These homes will be on lots averaging between 20,000 square feet and one (1) acre in size. The majority of the new residential development is expected to be located in a residential subdivision. According to this model, 66% or 12 dwelling units are expected to be located on lots averaging 1.5 acres in size.

According to the commercial growth projections computed by AMATS, one (1) new commercial establishment will be created in the central portion of the Village. This new business is expected to employ four (4) employees.

Village Growth - Continued Trend



Current Land Use

- | | | |
|---------------|-------------|-------------|
| Single-family | Government | Park |
| Multi-family | Religious | Cemetery |
| Commercial | Educational | Forest |
| Industrial | Campground | Agriculture |
| Utility | Vacant | |

Projected growth

- | |
|----------------------|
| Frontage residential |
| Subdivision |
| Commercial |
| Industrial |



Produced 2002.

Source: RPC Development Impact Analysis, 2002.

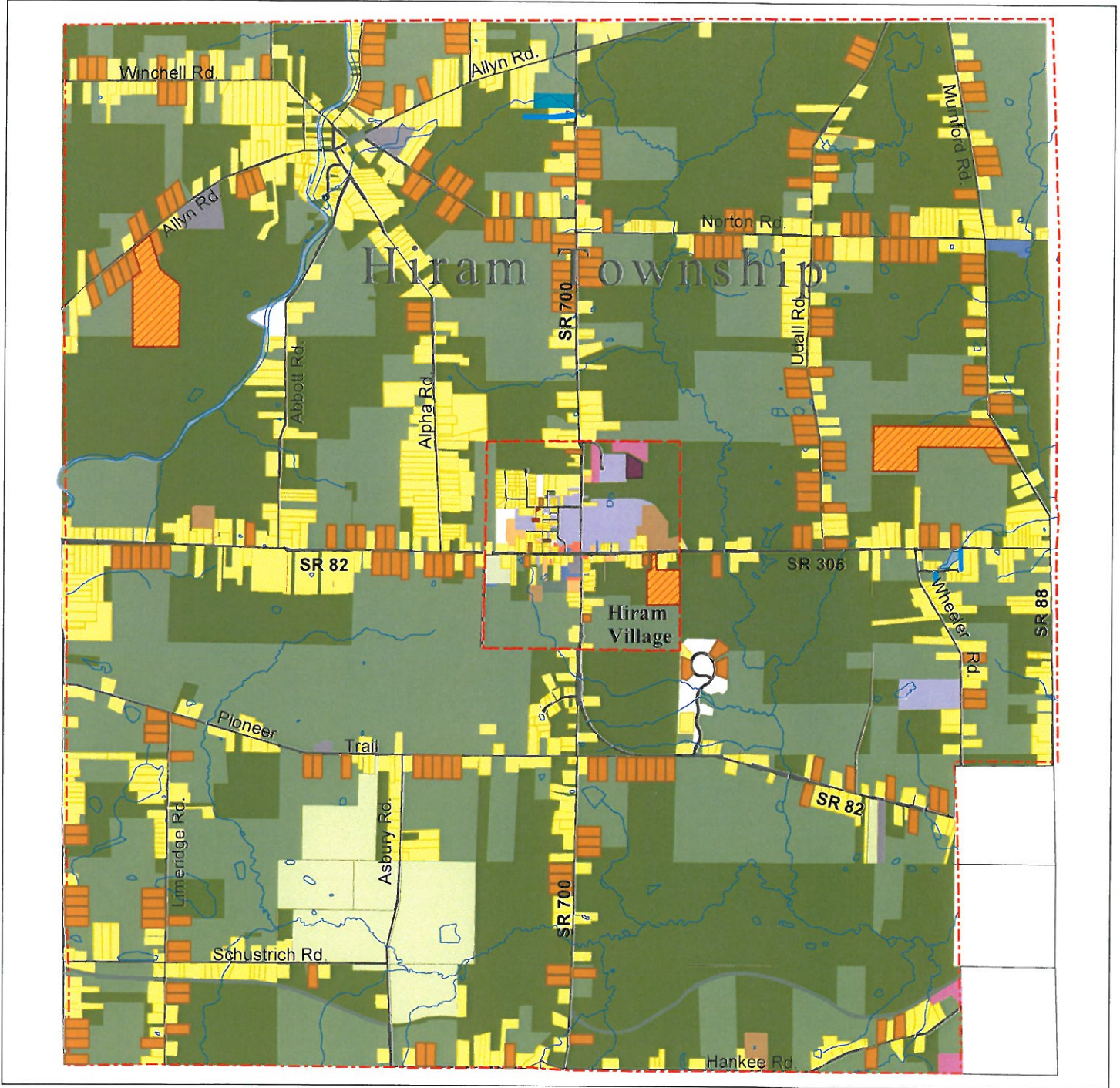
The predictions derived from the industrial growth indicators used by AMATS envision a single new industrial business to be located in the industrial zoning district on a 4.8-acre site. This new industrial business is expected to employ 295 workers.

The *Continued Trend Scenario* assumes the Township can expect 824 additional residents during this time period. By the year 2020 an additional 248 new homes will be constructed. The Continued Trend Scenario Map (**Map 36 Township Growth Continued Trend**) shows the majority of all new residential development will occur along the frontage of existing roadways within the Township. This represents 284 dwelling units or 87% of the new homes to be constructed within the Township. It is further assumed that if the current trends continue into the future, these new homes will be on lots that average 3.5 acres in size and front on existing roads. According to this model, only 13% or 37 new dwelling units are expected to be located on smaller lots, averaging 1.5 acres in size. These dwelling units are to be constructed in open space conservation style residential subdivisions.

Presently, the Township's Zoning Map does not indicate any land area that is set-aside for either commercial or industrial uses. Subsequently, there will not be any businesses established for analysis in this model.

The areas within the community already zoned for residential uses as identified on the current Zoning District Map can easily accommodate the anticipated growth.

Township Growth - Continued Trend



Current Land Use

Projected growth

Single-family	Utility	Campground	Frontage residential
Multi-family	Government	Park	Subdivision
Commercial	Historic	Cemetery	Commercial
Industrial	Religious	Forest	Industrial
Educational	Agriculture		

Source: RPC Development Impact Analysis, 2002.



Produced 2002.

E. SUSTAINABLE DEVELOPMENT (SCENARIO #2)

The concept of this scenario has both communities working together to establish land use initiatives that complement each other while achieving their own respective outcomes. According to the survey information provided through community survey methods employed as part of this Study and the overall concerns expressed by the Hiram Comprehensive Plan Committee, there is a strong desire to manage growth. The Village desires to develop and redevelop in a manner that will maintain its “New England” style appearance and present development pattern, while the Township desires to preserve and protect its agricultural industry and maintain its rural character.

Both Hiram Village and Hiram Township realize that development will occur. The focus of this Scenario is to develop a growth management planning strategy that is comprised of a variety of techniques that each of the communities can implement through zoning, as well as, other local initiatives. The growth management strategies of this scenario are intended to protect the natural environment, preserve open space areas, facilitate continued farming activities, and concentrate development in order to eliminate the negative impacts associated with sprawling development. Under this scenario, future residential development is limited in the countryside of the Township by permitting residential and commercial development to concentrate in mixed-use growth areas located in the Village, via a Transfer of Development Program.

The *Sustainable Development Scenario* describes a probable build out of development within each of the communities by the year 2020 if the following policies and strategies are followed:

Hiram Township

- ❖ Adoption of zoning requirements to increase the minimum frontage requirements of lots along existing roadways to 400 feet.
- ❖ Adoption of zoning requirements to increase the minimum area requirements of lots along existing roadways to 5 acres.
- ❖ Adoption of minor lane conservation subdivision requirements to reduce the amount of development along the existing roadway frontage. A minor lane subdivision assumes for every 400 feet of frontage a property owner is entitled to two (2) building lots. The minimum amount of uninterrupted roadway frontage required for a property owner to participate is 800 feet. The frontage property used in the calculations to determine the number of building lots is placed in a conservation easement and remains part of the original tract of land, except for the amount needed to gain access to the Minor Lane Subdivision. Additionally, each participant is provided with a density bonus of 3 additional building units, per subdivision.

- ❖ Encourage the use of open space conservation subdivisions in order to decrease the amount of frontage lot development and to preserve rural character in the Township.
- ❖ Encourage participation in the Purchase of Development Rights Program and other programs that preserve farmland and open space areas from being developed.
- ❖ Establishment of a Transfer of Development Rights (TDR) Program within the Township to aid in the preservation of farmland and open space areas. The farmlands and open space areas of the Township are established as a “sending zone”. Within the “sending zone” the development rights of the property can be bought to prevent the future development of these lands, while providing the landowner with income for these development rights. The Village is designated as the "receiving zone".
- ❖ Adoption of strict regulations to prevent any development from occurring within areas considered environmentally sensitive or areas that contain endangered plants and/or species.
- ❖ Adoption of regulations that preserves rural landscapes and scenic views.

Hiram Village

- ❖ Adoption of regulations that ensure the continuation of the existing development patterns, including the grid system style of roads to ensure adequate connections.
- ❖ Regulations are adopted which create a mixed-use commercial/ residential growth area in the east-central portion of the Village. This area is comprised of the vacant lands south of East Wakefield Road and east of Garfield Road.
- ❖ Regulations are adopted for the mixed-use commercial/residential growth area that encourage residential and commercial use of buildings, open space conservation subdivisions, and unified commercial developments.
- ❖ The Village is designated as the "receiving zone" for the TDR Program. Within the “receiving zone,” new residential development or commercial development will be permitted at an increased density through reduced lot size requirements or through the allowance of increased floor area for non-residential uses.
- ❖ Programs are established to encourage the development of existing vacant parcels of land.
- ❖ Adoption of regulations that limit the scale of development.

The results of this scenario indicate that the expected residential growth of the Township will decrease as the population of the Village increases, compared with the findings of Scenario 1. The findings of this scenario indicate that the Village's population will increase by 229

additional residents. This increase of 189 people is primarily the result of the Township's TDR Program.

By the year 2020, the Village can expect 104 new dwelling units to be constructed. The *Sustainable Development Scenario* Map (**Map 37**) shows that a mix of single-family homes and multi-family homes will be constructed on already existing lots within the Village. In addition, 13 new dwelling units are expected to be constructed in a traditional style subdivision in the southwestern portion of the Village. Approximately, 80 residential dwelling units and 5 commercial establishments will be constructed in the newly established mixed-use commercial/residential growth area, termed the Traditional Neighborhood on **Map 38**, in the east-central portion of the Village. This site is comprised of 37 acres. Although, the entire Village was designated a "receiving zone" for the Township's TDR Program, the model assumed all of the transferable development rights were used within the mixed-use growth area.

The five (5) new commercial establishments are expected to employ 19 employees. In addition, these commercial establishments will be located on 2.1 acres of land. The model also assumes one new industrial business to be located in the industrial zoning district on a 3-acre site. This new industrial business is expected to employ 32 workers.

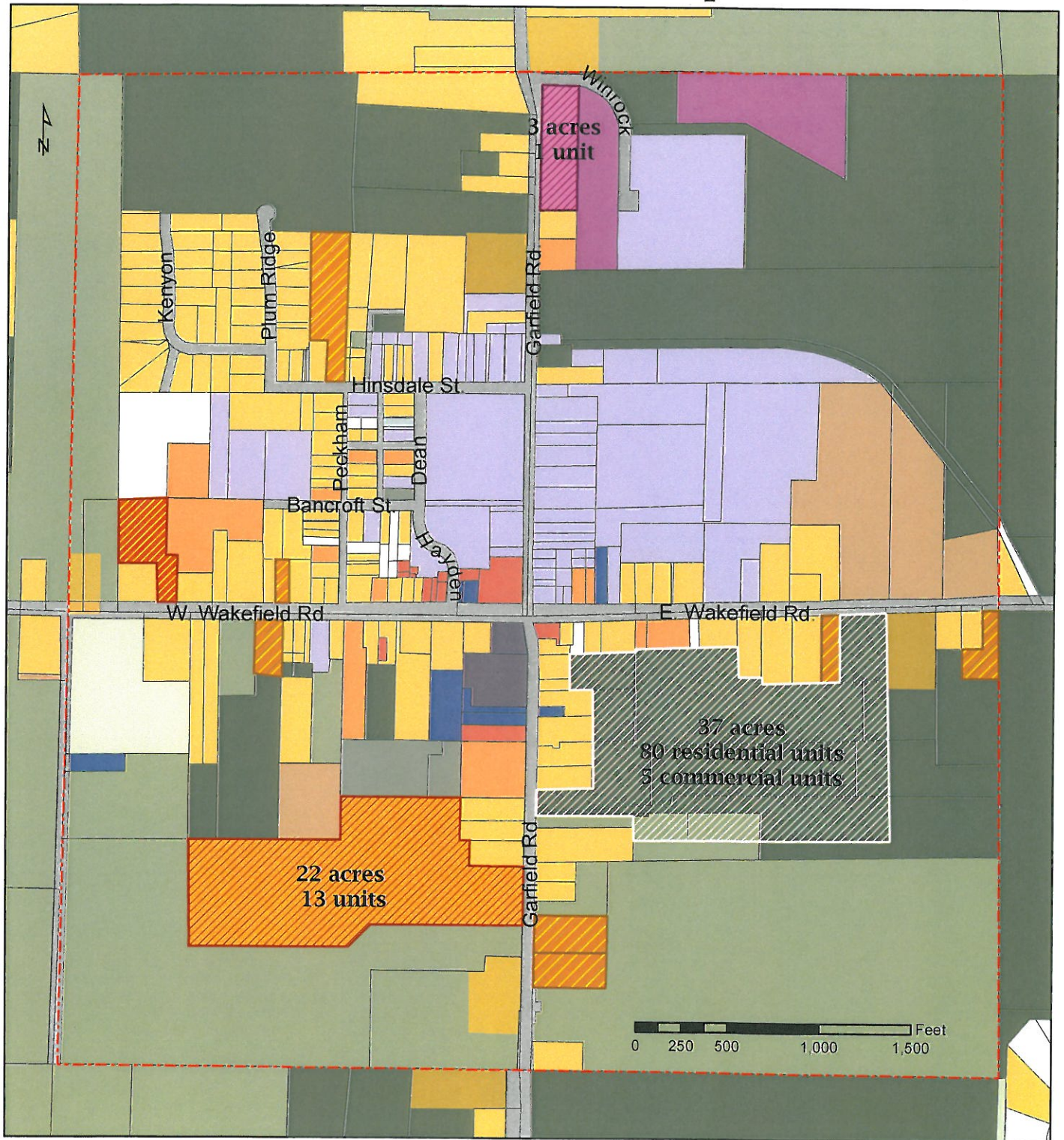
The Township on the other hand will experience less residential growth due to the growth management strategies of this scenario. The TDR Program and the encouragement for the use of minor lane subdivisions will result in an increase of only 725 additional residents. This represents a 12% decrease when compared to the findings of Scenario 1.

By the year 2020, the Township can expect 221 new dwelling units to be constructed. The Sustainable Development Scenario Map (**Map 39**) shows that the number of lots to be created along the frontage of existing roadways decreased from 248 (Scenario 1) to 57. This represents a 77% decrease when compared to the findings of Scenario 1.

In addition, 15 new dwelling units are expected to be constructed in a traditional style subdivision. While 99 new dwelling units are expected to be constructed in open space conservation style subdivisions. Additionally, 50 new dwelling units will be constructed within minor lane style subdivisions. Of these new homes, 29 represent homes that would have been built along existing roadways and 21 of these new homes represent the bonus incentive offered by the Township for creating this style of development. Also, since the Township incorporated a TDR Program in this model, the equivalent of 86 dwelling units was transferred to the Village.

The Township did not want to commit any land area to be set-aside for either commercial or industrial uses. Subsequently, there are not any businesses established for analysis in this model.

Village Growth - Sustainable Development Scenario



Existing Land Use 2002

Undeveloped	Government	Forest
Single-family	Religious	Agriculture
Multi-family	Educational	Park
Commercial	Utility	Cemetery
Industrial		

Projected Growth

Residential infill (7 units)
Multi-family (4 units)
Trad. neighborhood
Trad. subdivision
Industrial

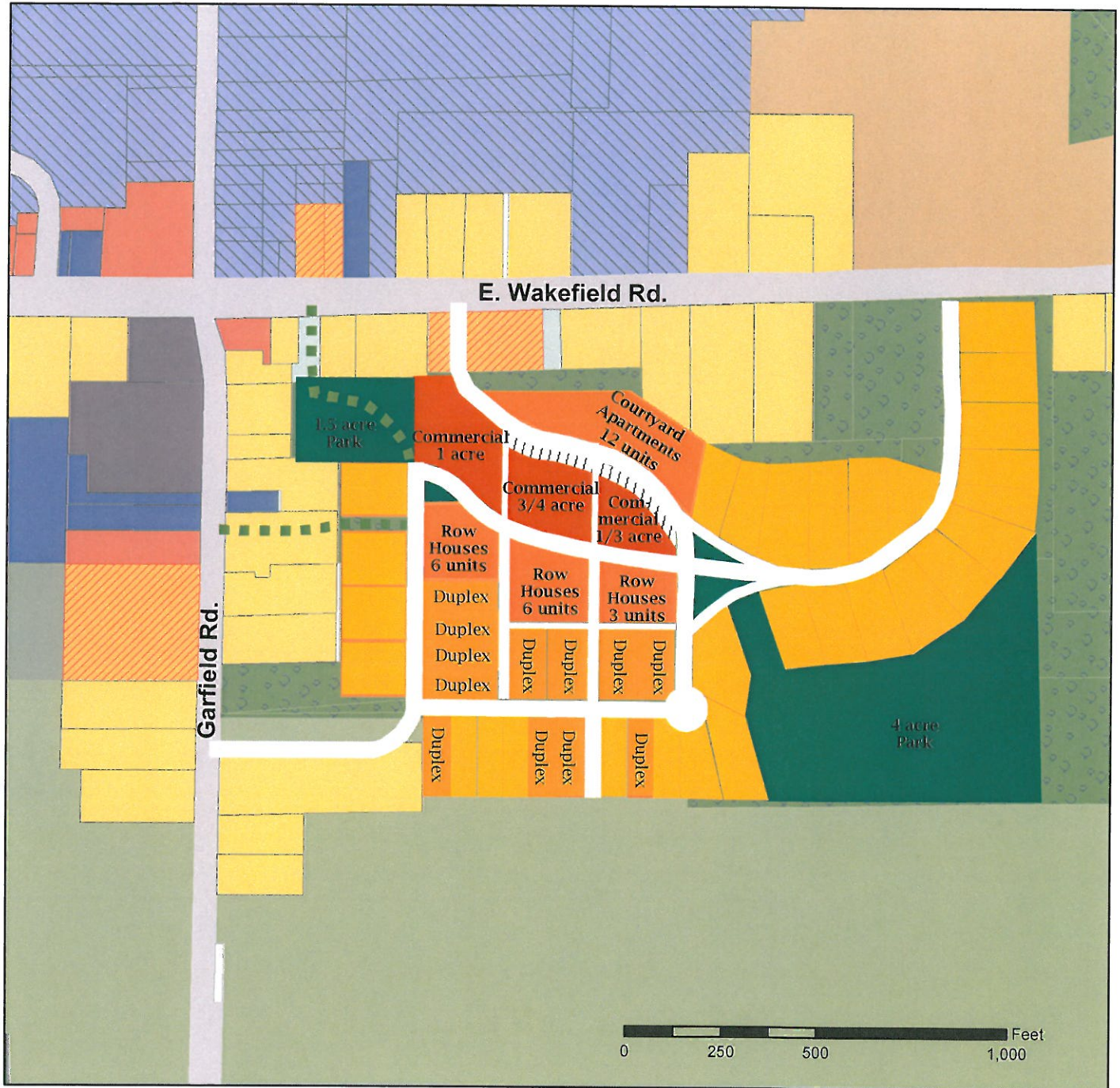
Source: Growth Scenario 2, RPC, 2002.



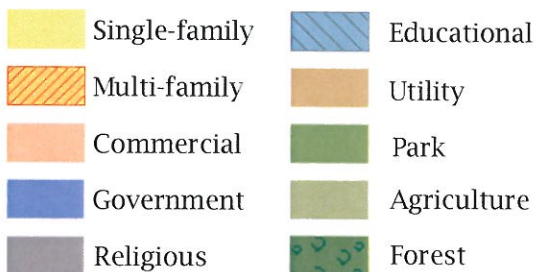
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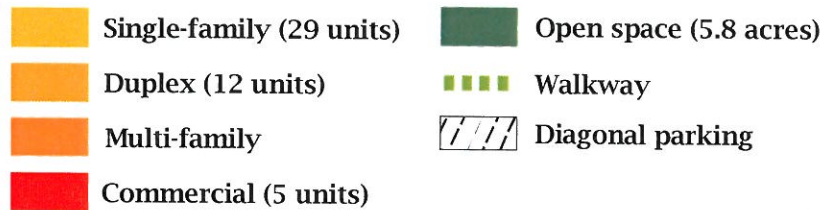
Hiram Village Traditional Neighborhood



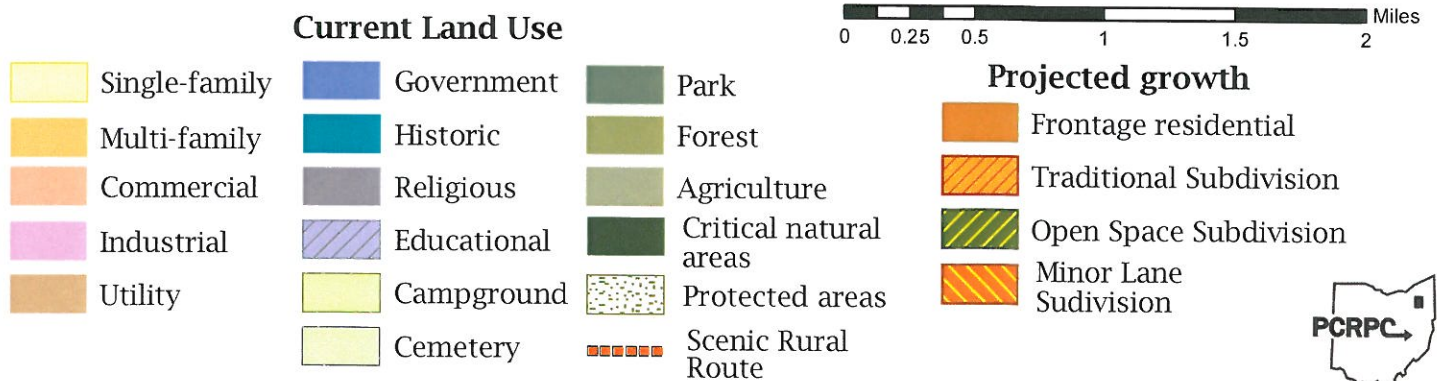
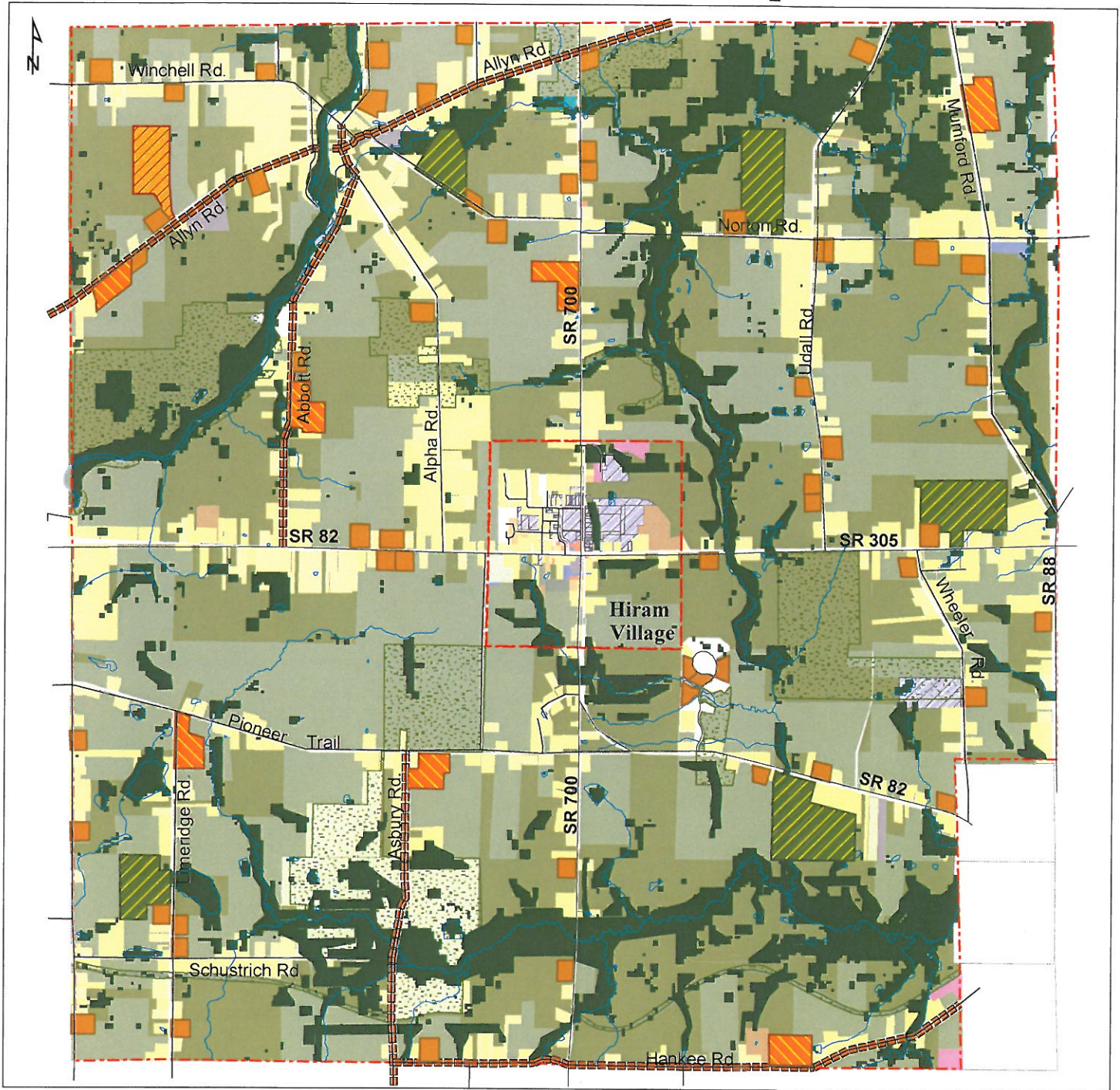
Current Land Use



Projected Growth - Traditional Neighborhood



Township Growth - Sustainable Development Scenario



Source: RPC Growth Scenario 2, Nov. 2002.



F. DEVELOPMENT IMPACT ANALYSIS OF ALTERNATIVE GROWTH SCENARIOS

Development impact analysis is a method used to evaluate future land use alternatives. The methodology is used to evaluate both fiscal (the public costs and revenues associated with development) and the physical impacts (the substantial concerns to the community associated with the location of varying land uses) of implementing a land use scenario. It involves estimating and reporting the influences of residential and nonresidential development on the community and the school district.

Development impact analysis measures the cost and revenue derived from a changing population and economy at a specific point in time. The analysis assumes that the future growth takes place under current fiscal year conditions (no factors for inflation are built in). This is why the community should not focus on the specific results of the analysis. Rather, impact analysis should be used to analyze trends and patterns.

Development impact analysis involves four basic procedures as follows:

- ❖ Determine the population generated by growth – people, school-age children, and employees;
- ❖ Translate this population into consequent public service costs and physical impacts (miles of new roads, traffic etc.);
- ❖ Project the revenue induced by growth; and
- ❖ Compare development-induced costs to revenues to determine the net fiscal impact².

Community residents and officials should remember that fiscal impacts are just one element in the list of comprehensive planning concerns. Future land use policies should be based on comprehensive evaluations of a variety of general quality of life considerations, not just narrowly defined monetary issues. Fiscal impacts should not be the sole basis of land use decisions. Land uses, such as agriculture and open spaces, for example, provide more property tax revenues than they cost to serve. Commercial and industrial uses may increase traffic and other demands on the public infrastructure, but provide services and employment opportunities for residents, as well as support the community with property tax revenues. The Hiram communities should consider the economic consequences of land use alternatives in association with other social and environmental impacts.

A concise analysis was prepared to compare certain fiscal and physical impacts between the two scenarios (see **Tables 34, 35** and **36**). There are many formulas used to evaluate the effects of a growing, declining or a stagnating economy and population base for each of the communities. Tax revenues received by communities are formulated from the assumed

² Robert W. Burchell and David Listokin et al., *Development Impact Assessment Handbook* (Washington D.C.: ULI-the Urban Land Institute, 1994), 127. The per capita projection method is utilized in this Plan.

value of land and buildings. Forecasts indicating a need to increase certain types of community services are derived from changes in the populations.

The analysis conducted by the Portage County Regional Planning Commission indicates that the Village can expect an increase of 40 new residents by 2020¹ and the Township can expect 824 new residents during this same period. The Development Impact Analysis of Scenario 1 measures the influences of these population increases for both the Village and the Township.

The population projections of Scenario 1 served as a starting point for Scenario 2. However, in Scenario 2, the Township employed numerous techniques in order to shift some of its projected population to the Village. In turn, the Village established incentives designed to increase its population by 2020. As a result of these community efforts, the Township only gained 725 new residents or a 12% decrease in population when compared to Scenario 1. The population growth for the Village increased 473% (229 new residents) compared to the results of Scenario 1.

These changes in the population influence the demand and need for various community services with each of the communities, such as staffing requirements for fire and police protection. In addition, the changing population has an impact on the community's ability to afford the required services. This is accomplished by formulating values for new construction and land appreciation to derive tax revenues. Also, the manner in which development is regulated has a profound visual and environmental impact on the community.

The total number of people moving into the Hiram communities is almost the same for each of the scenarios. The exception is that Scenario 2 has 90 additional people. These 86 additional people are the result of the Township providing a residential density bonus for developments that do not create home sites along existing roadway frontages. The other four (4) people are found in the Village as a result of additional migration due to increased living opportunities.

The results of the analysis indicate that 12 additional volunteer firefighter/EMT employees will be needed to protect and safeguard the Hiram communities. In addition, our analysis indicates the school system can expect between 287 new school age children in Scenario 1 and 335 new school age children in Scenario 2. With the annual average cost per pupil at \$6,456.00, the costs associated with an increase in new school age children will be higher in Scenario 2 when the build out is fully achieved.

Our model also examines the fiscal impacts associated for the communities to provide such services (**See Tables 34 and 35**). In our model, funding to pay for these community services is provided through property tax revenues and income tax revenues. Only the Village has the authority to require an income tax of its residents and payroll tax of the business employees within its borders.

¹ These residents are assumed not to be living in the College's dormitories.

In both of our scenarios, Hiram Township does not have any commercial or industrial growth within its borders. Therefore, property tax revenues are generated from residential development only. However, within the Village the property tax revenues and income tax revenues are calculated from both the proposed residential and nonresidential developments. The fiscal information contained in **Tables 34 and 35** indicate that the tax revenues generated in each scenario for both communities would adequately provide the necessary funding to provide such services, except for the costs associated with the education of the additional school age children².

The roadway mileage figures derived from this analysis are estimated, and therefore they may be reduced or increased as actual development occurs. The impact analysis suggests that as the number of homes being located along existing roadways decreases, then the number of newly created road miles will increase. This is primarily due to the creation of subdivisions to accommodate the additional residential population. Additionally, each of the scenarios differ with respect to anticipated commercial and industrial floor area needs, therefore the amount of newly created roads for nonresidential uses will also differ. However, the fiscal impact analysis indicates that the revenues necessary to fund the costs of all roadway maintenance would be available in each of the scenarios.

Another area of interest identified in each of the scenarios is the manner in which the projected population is dispersed throughout the community. The types of permitted residential developments and densities associated with each type of development will result in different distribution patterns within each community. For example, in the *Continued Trend Scenario*, 87% of the projected population will live in homes constructed along the frontages of existing roadways on building lots averaging 3.5 acres in size, within the Township. In Scenario 2, the *Sustainable Development Scenario*, the percentage of the projected population living in homes constructed along the frontage of existing roadways is reduced to 25.8%.

A method to measure the impacts associated with development is to compare the amount of vacant or agricultural land that would be converted to residential or nonresidential development over the next 20 years. For example, a comparison of the two scenarios supports the assumption that rural character preservation of the countryside can be accomplished by reducing the amount of residential development along the frontage of already existing roadway. According to the findings of the *Continued Trend Scenario* the total amount of land consumed by frontage development in the *Continued Trend Scenario* within the Township is 868 acres. However, this amount of land is reduced to 285 acres in the *Sustainable Development Scenario* by promoting various types of development and allowable densities. A careful examination of the development impact analysis clearly demonstrates that the physical impacts to the landscape will differ significantly between the types of residential development permitted in each of the scenarios (**See Table 36**).

² Property tax revenue is one of many funding sources for schools. This model does not take into account any other revenue generation funding sources associated with education.

As a result, comparisons of the scenarios verify that the anticipated residential development can be accommodated in a more efficient manner by utilizing open space subdivisions, a Transfer of Development Rights Program, and mixed-use growth center districts. Consequently, the communities of Hiram realize greater opportunities, as well as, the protection and preservation of the historic, scenic, and rural character and agricultural viability are achieved through the implementation of the land use strategies proposed in Scenario 2.

G. PREFERRED SCENARIO

After reviewing and discussing the two alternative growth scenarios, the communities determined that the assumptions of Scenario 2 most closely represents their preferences to guide future development. Thus, Scenario 2 will serve as the foundation for the land use policy and strategy recommendations, as well as the Future Land Use Map that are contained in the next section.

Table 34
Development Impact Analysis of Alternative Growth Scenarios
Hiram Village
2000 to 2020

	Continued Growth SCENARIO 1	Managed Growth SCENARIO 2	% change between Scenario 1 and Scenario 2
# of New Dwelling Units ⁱ	18	104	478%
# of New Residents ⁱⁱ	40	229	473%
# of New School Age Children ⁱⁱⁱ	17	98	476%
# of New P/T Volunteer EMTs/Firefighters ^{iv}	0	3	
# of New P/T Village Police Officers/Dispatchers ^v	2	13	85%
New Commercial Development (sq.ft.)	2,200 ^{vi}	10,400 ^{vii}	373%
New Industrial Development (sq.ft.)	136,706 ^{viii}	15,000 ^{ix}	-89%
# of New Commercial Jobs	4	19	375%
# of New Industrial Jobs	295	32	-89%
Types of Residential Development			
Frontage Acreage Development			
1. Number of Dwelling Units	2 ^x	1	-50%
Acreage in 20,000 sq.ft. Lots	.92	.5	-45%
2. Number of Dwelling Units	4 ^{xi}	3	-25%
Acreage in 1 acre lots	4	3	-25%
3. Number of Dwelling Units		3	
Acreage in 1.5 acre Lots		4.5	
Total Acreage	4.92	8	63%
Multi-Family Dwellings			
Number of Dwelling Units		4	
Acreage		2	
Traditional Subdivisions			
Number of Dwelling Units	12	13	8%
Acreage in 1.5 Acre Lots (R-2 District)	18	19.5	8%
New Road Miles	.28 miles (2 acres)	.32 miles (2.3 acres)	15%
Acreage in Open Space	1	2.7	170%
Total Acreage	21	22.5	7%
Traditional Neighborhood Development			
Number of Dwelling Units		80	
Acreage in Lots		17.5	
New Road Miles		1.9 miles (6.6 acres)	
Acreage in Open Space		5.8	
Total Acreage		29.9	

	Continued Growth SCENARIO 1	Managed Growth SCENARIO 2	% change between Scenario 1 and Scenario 2
Commercial Development			
Number of Sites	1	3	200%
Acreage in Lots	.16 acres (6,970 sq.ft.)	2.1 acres Located within the Traditional Neighborhood Development	121%
New Road Miles	0	0	
Acreage in Open Space	0	0	
Total Acreage	.16	2.1	121%
Industrial Development			
Number of Sites	1	1	
Acreage in Lots	4.81	3	-38%
New Road Miles	0	0	
Acreage in Open Space	0	0	
Total Acreage	4.81	3	-38%
Total Acreage Developed			
	30.89	61	97%
Total Open Space Acreage Created			
	0	8.5	
Existing Roads Miles (Village)			
	5	5	
Total New Road Miles (Village)			
	.28	2.2	686%
New Traffic Generated Daily (wkdy)			
Residential (9.55 trips per wkdy)	172	993	477%
Commercial (40.67 trips per wkdy)	163	773	374%
Industrial (6.97 trips per wkdy)	2,056	223	-89%
Fiscal Impacts (2001 base)			
Revenues:			
Income Tax Revenues: ^{xii}	\$114,206.96 (2%)	\$ 64,551.76 (2%)	-43%
Property Tax Revenues Generated for Village: ^{xiii}	14,832.29	36,376.94	145%
Property Tax Revenues Generated for Fire/EMS	6,012.39	17,521.69	191%
Property Tax Revenues Generated for Schools	\$ 107,566.82	\$ 265,013.84	146%
Costs:			
Total Village Costs:			
New Road and Bridge Maintenance (\$1,500.00 estimated cost per mile)	\$ 420.00	\$ 3,300.00	686%
Fire/EMS (Cost per P/T employee not provided)			
Police (Cost per P/T employee not provided)			
Other Operating Costs			
Local School District Costs: ^{xiv}	\$ 109,752.00	\$ 632,688.00	476%

New Fiscal Impact to Village			
Village	\$ 128,619.25	\$ 100,928.70	-22%
Fire/EMS			
Police			
School ^{xv}	(\$ 2,185.18)	(\$ 367,674.16)	16,726%

Assumptions:

- ⁱ Average household size by 2020 is expected to be 2.20
- ⁱⁱ 2 new residents are expected to move into the Village annually, over the next 20 years. This figure does not include new residents who are expected to live in college dormitories
- ⁱⁱⁱ School age population determined by using National (all region average) demographic multiplier of .947 for common configuration of a single-family 3-bedroom house. Practitioner's Guide to Fiscal Impact Analysis, Exhibit 13, page 65, 1980 Rutgers, the State University of New Jersey.
- ^{iv} 1 new EMT/Firefighter is expected to be hired for every new 68 residents.
- ^v 1 new Police Officer/Dispatcher is expected to be hired for every new 17 residents. This figure does not include new residents who are expected to live in college dormitories.
- ^{vi} Commercial floor area projections for the year 2020 based on conclusions in the Compact Growth Scenario of the GIS Development Simulation Program and Sustainability Indicators Study.
- ^{vii} The commercial floor area estimates are based on AMATS projections for the year 2020. (5 sites 2080 sq.ft. each on a 3/4 acre site). However, in Scenario 2, a developer is permitted to utilize TDR's obtained from Hiram Township to reduce the total required acreage.
- ^{viii} Industrial floor area projections for the year 2020 based on current trend analysis of industries established in the Village.
- ^{ix} Industrial floor area projections for the year 2020 based on conclusions in the Compact Growth Scenario of the GIS Development Simulation Program and Sustainability Indicators Study supporting concept of 1 additional industry moving into the community (1 establishment on a 3 acre site).
- ^x On average, 1 new home is constructed in the Village every 3 years. A major subdivision was created in the past 30 years, therefore over a 20-year period of time, we shall assume 6 new homes, 2 homes should be infill development and 4 homes are constructed along existing road frontage and 1 traditional subdivision for the other 12 homes.

^{xi} On average, 1 new home is constructed in the Village every 3 years. A major subdivision was created in the past 30 years, therefore over a 20-year period of time, we shall assume 6 new homes, 2 homes should be infill development and 4 homes are constructed along existing road frontage and 1 traditional subdivision for the other 12 homes.

^{xii} For income tax analysis assume all new adult residents and each employee are earning \$17,734.00 annually. This figure, \$17,734.00, represents the 1999 per capita income.

^{xiii} Estimated value of a newly constructed home in Hiram Village \$ 150,000.00 based on estimated valuation of new home construction (See New Construction page 24).

Vacant residential land costs:

- | | |
|-----------------------|---------------------------------|
| 1. 20,000 square feet | \$ 22,400.00 central utilities. |
| 2. 1.0 acre | \$ 30,000.00 central utilities. |
| 3. 1.5 acres | \$ 37,740.00 central utilities. |

New construction costs:

- | | |
|-----------------|--------------------------------------|
| 1. Residential | \$ 75.00 per square foot. |
| 2. Multi-Family | \$ 50.00 per square foot. |
| | (1,100 square feet - 2 bedroom unit) |
| 3. Commercial | \$ 100.00 per square foot |
| 4. Industrial | \$ 50.00 per square foot |

^{xiv} Crestwood Local School District annual cost per pupil \$ 6,456.00.

^{xv} This figure does not include appropriations from the State of Ohio's School Foundation funds or other contributions from other sources to defray the overall costs for education. The figure presented here, only shows the fiscal impacts associated with the local community's tax revenues contributions to defray the education costs.

Table 35
Development Impact Analysis of Alternative Growth Scenarios
Hiram Township
2000 to 2020

	Continued Growth SCENARIO 1	Managed Growth SCENARIO 2	% change between Scenario 1 and Scenario 2
# of New Dwelling Units ⁱ	285	221	-22%
# of New Residents ⁱⁱ	824	725	-12%
# of New School Age Children ⁱⁱⁱ	270	237	-12%
# of New P/T Volunteer EMTs/Firefighters ^{iv}	12	9	-25%
# of New P/T Sheriff's Deputies ^v	0	0	
New Commercial Development (sq.ft.)	0	0	
New Industrial Development (sq.ft.)	0	0	
# of New Jobs	0	0	
Types of Development			
Frontage Acreage Development			
Number of Dwelling Units	248 (87%)	57 (25.8%)	-77%
Acreage in 3.5 Acre Lots	868		
Acreage in 5 Acre Lots		285	
Traditional Subdivisions			
Number of Dwelling Units		15 (6.8%)	
Acreage in 2.5 Acre Lots		37.5	
New Road Miles		.61 (4.4 acres)	
Acreage in Open Space		2.2 (5%)	
Total Acreage		44.1	
Open Space Subdivision			
Number of Dwelling Units	37 (13%)	99 (44.8%)	167%
Acreage in 1.5 Acre Lots	55.5	148.5	
New Road Miles	1.52 (11.1 acres)	4.1 (29.7 acres)	
Acreage in Open Space	44.4 (40%)	118.8 (40%)	
Total Acreage	111	297	
Minor Lane Subdivision^{vi}			
Number of Dwelling Units (Existing Frontage)		29	
Number of Dwelling Units (Density Bonus)		21	
Total Number of Dwelling Units		50 (22.6%)	
Acreage in 1.0 Acre Lots		50	
New Road Miles		0.96 (7 acres)	
Acreage in Open Space (Minor Lane)		13 (18.5%)	
Total Acreage in Minor Lane Subdivisions		70	
Acreage in Conservation Easement		70	
Total Acreage Preserved from Development		83 (59%)	
	Continued Growth	Managed Growth	

	SCENARIO 1	SCENARIO 2	% change between Scenario 1 and Scenario 2
Transfer of Development Rights			
Number of Dwelling Units		86	
Acreage Saved (5 Acre Lots)		430	
Commercial Development			
Number of Sites			
Acreage in Lots			
New Road Miles			
Acreage in Open Space			
Total Acreage			
Industrial Development			
Number of Sites			
Acreage in Lots			
New Road Miles			
Acreage in Open Space			
Total Acreage			
Total Acreage Developed (includes roads)	934.6	562.1	-40%
Acreage Preserved			
Open Space created (within subdivisions)	44.4	134	202%
Farmland preserved PDR Program ^{vii}		1,450	
Farmland preserved TDR Program ^{viii}		430	
Farmland preserved Minor Lane		70	
Total Farmland Preserved		1,950	
Total Open Space Acreage Created	44.4	2,084	4,594%
Existing Roads Miles (Township)	18.54	18.54	
Total New Road Miles (Township)	1.52	5.67	273%
New Traffic Generated Daily (wkdy)			
Residential (9.55 trips per wkdy)	2,722	2,111	-22%
Commercial (40.67 trips per wkdy)	0	0	
Industrial (6.97 trips per wkdy)	0	0	
Fiscal Impacts (2001 base)			
Revenues:			
Tax Revenues Generated for Township: ^{ix}	\$ 128,726.20	\$ 97,946.24	-24%
Tax Revenues Generated for Fire/EMS	62,674.69	47,688.42	-24%
Tax Revenues Generated for Schools	\$ 531,565.16	\$ 404,461.62	-24%
Costs:			
Total Township Costs:			
New Road and Bridge Maintenance (\$1,200.00 estimated cost per mile)	\$ 1,824.00	\$ 6,804.00	273%
Fire/EMS (Cost per P/T employee not provided)			
Other Operating Costs			
Local School District Costs: ^x	\$ 1,743,120.00	\$ 1,530,072.00	-12%

New Fiscal Impact to Community			
Township	\$ 126,902.20	\$ 91,142.24	-28%
Fire/EMS			
School ^{xi}	(\$ 1,211,554.29)	(\$ 1,125,610.40)	7%

Assumptions:

ⁱ Average household size by 2020 is expected to be 2.89

- a. Scenario 1 new dwelling units represent total new dwellings needed for the new residents based on the average household size of 2.89.
- b. Scenario 2 redistributes the new dwelling units represented in Scenario 1 based on the outcomes of the assumptions for this scenario (e.g. decrease in dwellings from Transfer of Development Rights Program, plus an increase in dwellings from density bonuses from Minor Lane Subdivision Program)

ⁱⁱ Total projected population in 2020 is 3,120 (See Table 7). This figure represents the new residents expected to reside in the Township between 2000 and 2020.

- a. Scenario 1 represents total new residents derived from 2020 population projections (See Table 7).
- b. Scenario 2 redistributes the 2020 population projections represented in Scenario 1 based on the outcomes of the assumptions for this scenario (e.g. decrease in dwellings from Transfer of Rights Program, plus an increase in dwellings from density bonuses from Minor Lane Subdivision Program)

ⁱⁱⁱ School age population determined by using National (all region average) demographic multiplier of .947 for common configuration of a single-family 3-bedroom house. Practitioner's Guide to Fiscal Impact Analysis, Exhibit 13, page 65, 1980 Rutgers, the State University of New Jersey.

^{iv} 1 new EMT/Firefighter is expected to be hired for every new 68 residents.

^v 1 new Sheriff's Deputy is expected to be hired for every new 2,982 residents. This ratio is based on Portage County's total population.

^{vi} Minor Lane Subdivision (MLS) Program assumes that for every 400 feet of frontage a property owner is entitled to 2 building lots in a Minor Lane Subdivision. The minimum amount of uninterrupted frontage that is required for a property owner to participate in the MLS Program is 800 feet. The frontage property used in the calculations to determine number of building lots is placed in a conservation easement and remains part of the original tract of land, except for the amount needed to gain access to the Minor Lane Subdivision. In this Scenario, assume 200 feet of the required 800 feet is incorporated into the Minor Lane Subdivision (buffering and screening from the existing roadway is required). In addition, each participant is provided with a density bonus of 3 additional building units.

^{vii} PDR Program preserves 50 acres of farmland annually from 2000 to 2005, then from 2006 to 2020 the PDR Program preserves 80 acres of farmland annually.

^{viii} TDR Program allows for the transfer of development (1 residential dwelling or commercial equivalent) to the Village of Hiram. One TDR is equal to 5 acres of farmland.

^{ix} Estimated value of a newly constructed home in Hiram Township \$ 153,433.00 (See New Construction page 23).

Vacant land costs used:

- | | |
|-------------------|---------------------------------------|
| 1. 1.5 acres | \$ 50,500.00 (open space subdivision) |
| 2. 2.5 acres | \$ 40,500.00 |
| 3. 3.5 acres | \$ 50,500.00 |
| 4. 5.0 acres | \$ 65,500.00 |
| 5. Minor lane lot | \$ 45,500.00 |

^x Crestwood Local School District annual cost per pupil \$ 6,456.00.

^{xi} This figure does not include appropriations from the State of Ohio's School Foundation funds or other contributions from other sources to defray the overall costs for education. The figure presented here, only shows the fiscal impacts associated with the local community's tax revenues contributions to defray the education costs.

Table 36
Growth Scenarios – Physical Impacts

	Hiram Village					Hiram Township		
	Frontage Dev.	Multi-Family Subdivision	Commercial/Industrial	Traditional Neighborhood	Frontage Dev.	Subdivision (open space)	Minor Lane	Traditional subdivision
Growth Scenario 1* (Continued Growth)								
Loss of agricultural land	1.0	NA	0.0	NA	600.0	56.0	NA	NA
Loss of forested land	3.0	NA	20.0	4.7	268.0	11.0	NA	NA
Loss of critical natural areas	0.5	NA	0.5	3.0	35.0	0.0	NA	NA
Vacant land developed	0.4	NA	0.0	0.3	NA	NA	NA	NA
Open space	0.0	NA	1.0	0.0	0.0	44.0	NA	NA
Total developed land	4.90	NA	21.00	5.00	868.00	111.00	NA	NA
Growth Scenario 1 total acres	31 acres							
Growth Scenario 2*								
Loss of agricultural land	3.5	0.0	20.0	0.0	180.0	119.0	41.0	0.0
Loss of forested land	3.0	0.0	0.0	3.0	105.0	60.0	16.0	42.0
Vacant land developed	3.5	2.6	0.0	0.0	NA	NA	NA	NA
Loss of critical natural areas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Open space	0.0	0.0	1.0	0.0	0.0	118.0	83.0	2.0
Total developed land	10.0	2.6	21.0	3.0**	285.0	297.0	140.0	44.0
Growth Scenario 2 total acres	74.6 acres							

*Measured in acres

**Industrial

***Includes 3.75 ac. Commercial