



Broadview Heights

Master Plan Update 2002

Cuyahoga County Planning Commission

**Broadview Heights
Master Plan Update 2002**

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Mayor
Leo Bender

Broadview Heights Planning Commission

James Butler, Chairman
Robert Banjac
Pat Grimm
Wayne Karberg
William Rowe

Prepared by:
Cuyahoga County Planning Commission
323 Lakeside Avenue, Suite 400
Cleveland, Ohio 44113
(216) 443-3700
Website: planning.co.cuyahoga.oh.us

Paul A. Alsenas, Director

Contributing Staff:
James Kastelic, Assistant Director
Carol G. Thaler, AICP, Principal Planner
Lindy Burt, Planner
Judith L. Bohanek, Production Specialist
Dan Meany, GIS Manager
Robin Dunn, GIS Specialist
Robert Kane, Planning Intern

If you have any questions or comments, please call (440) 526-6259.

Chapter One



Overview

Overview

A 1996 study by the Broadview Heights Chamber of Commerce, “What Residents Think About Broadview Heights As A Place To Live”, found that the two most desirable features of Broadview Heights are the rural atmosphere and the City’s central location.

In 1988, the *Downtown Master Plan Study* mapped out the future land use plan for both the downtown area at Broadview and Royalton Roads and the area surrounding the Royalton Road interchange with I-77. Further, in June of 1998, the *Downtown Plan & Architectural Design Standards* were adopted. This Plan made recommendations for building codes and design standards, right-of-way design, streetscape details and greenspace requirements in Downtown.

In March 2001, the Cuyahoga County Planning Commission was retained by the City of Broadview Heights to prepare a Master Plan Update. This report considers the entire community through the study of existing land use, natural features, the potential locations for specific land uses and the preparation of a Master Street Plan. Further, detailed steps needed to implement the ideas of the Master Plan Update are outlined.

History

Broadview Heights is a community which has grown significantly in population since 1960. The largest change occurred between 1960 and 1970 when Broadview’s population grew by almost 85% from 6,209 to 11,463 people, see Table 1.1.

While the community experienced a minor decrease in population of 5% between 1970 and 1980, population growth in Broadview quickly gained momentum. Between 1990 and 2000, Broadview Heights experienced one of the largest increases in population of all incorporated cities in Cuyahoga County, growing from 12,219 people in 1990 to 15,967 people in 2000 – an increase of just over 30%.

Year	Population
1960	6,209
1970	11,463
1980	10,920
1990	12,219
2000	15,967

Source: U.S. Census Bureau

As shown in Table 1.2, the 35-54 year age group is currently the largest age group of population in the City, with over 30% of the population. The second largest age

Age Range	Percent of Population
Under 5	6.2%
5 to 19	20.3%
20 to 34	16.7%
35 to 54	32.8%
55 to 74	16.7%
75 and Over	7.3%

Source: U.S. Census Bureau, 2000

group is the 5-19 year age group, with just over 20% of the population. Almost 25% of the City's population is over the age of 55, with the majority of this percentage falling in the age range of 55 to 74. The age composition of Broadview Heights' population is very similar to that of the neighboring communities of Parma, Seven Hills, North Royalton, Independence, Brecksville, and Hinckley Township.

Year	Average Number of Persons per Household
1980	2.78
1990	2.52
2000	2.46

Source: U.S. Census Bureau

The 2000 Census showed Broadview Heights' racial composition to be 95% white, 3% Asian, and .8% African American, with other racial groups accounting for very small percentages of the total population. The gender breakdown of Broadview's population is similar to that of other communities, with 48% of the population comprised of males and 52% of the population comprised of females. The average number of persons per household in Broadview Heights is declining, see Table 1.3.

Geographic Area	Median Household Income
Broadview Heights	\$56,989
Cuyahoga County	\$39,168
Ohio	\$40,956
United States	\$41,994

Source: U.S. Census Bureau, 2000 (1999)

Finally, median household income for Broadview Heights (1999), as demonstrated in Table 1.4, shows the community to be well above that for Cuyahoga County, the State of Ohio, and the United States.

Experian, headquartered in Orange, California and Nottingham, United Kingdom, is a global information services company that supplies consumer and business credit, direct marketing and real estate information. Experian has classified neighborhoods across the world into distinct types based on their demographic and socio-economic composition. The basic premise is that people tend to gravitate toward communities with other people of similar backgrounds, interests and income. This analysis is used for identifying, understanding and targeting customers. Experian describes the two most predominant groups in Broadview Heights as:

Upscale City Singles

The Upscale City Singles highlight the urban affluent within America's largest cities. The types within this category total 12.91% of 1997 U.S. households and represent a young to middle age set of singles and couples who are well educated and well employed in professional and other white collar occupations. They tend to be renters and live in large, multi-unit dwellings. They are predominantly of White and Asian races.

Second City Leaders

Second City Leaders make up 10.67% of 1997 U.S. households collecting the small, satellite cities' success stories. These types are middle-aged, married couples with children who live in owned, single family homes and are distinctly White in race. They are well educated with moderately high incomes and tend to be employed in professional, managerial or other white collar occupations.

Summary

General trends indicate that residents of Broadview Heights have above average incomes and that the household size, or number of people living in each home, is getting smaller. The largest population group in the community are those people aged 35-54 years — usually those people in their high earning years and generally with families. Broadview Heights' significant population increase over the last several decades has had an impact on the quality of life and the administrative operations of the community. The population is projected to continue to increase until land available for development is exhausted.

Chapter Two

Land Use

Land Use

A community's land use composition serves as an indicator of how that community has developed over time and how it may continue to develop into the future.

Broadview Heights encompasses 8,346 acres or approximately 13 square miles. As shown in Table 2.1, in 1962 Broadview Heights was 30% developed. Residential use, predominantly single-family, occupied 14.8% of the total area or almost half of the City's developed area. Recreational uses comprised 4.6% of the City, while the amount of land for streets and rights-of-way accounted for 4.5% of the City. Institutional and other urban uses made up 2.2% and 3.49% respectively. Retail business activity accounted for a very small portion of the community's total land mass, only 11 acres or less than 1%.

Land Use Category	Acres	Percentage
Residential	1,242	14.8%
Retail Business	11	.01%
Institutional	182	2.2%
Recreation	387	4.6%
Streets and Right-of-Ways	377	4.5%
Other Urban Uses	273	3.49%
Vacant Land	5,874	70.4%
Total	8,346	100.0%

Source: Regional Planning Commission field survey, November 1962, "Broadview Heights 1975: A Guide for Community Action." Prepared by the Regional Planning Commission, November 1964.

Map 2.1 shows the results of the land use survey conducted by the Cuyahoga County Planning Commission in August 2001. As shown on Table 2.2, since 1962 the amount of developed land in Broadview Heights has increased significantly, from approximately 30% to just over 70% of the City's total land mass in 2001, with a corresponding decrease in vacant land. Single-family residential land use is found throughout the community, comprising 3,517 acres or just over 42% of the City's total land mass. Multi-family uses can be found off Tollis Parkway and near the intersection of Royalton Road and Broadview Road. All residential uses combined, single-family, two-family and multi-family, comprise 45% of the community.

Vacant land comprises just over 28% percent, or 2,370 acres of the City's total land area. An additional fifty-seven acres of vacant land, owned by the City of Broadview Heights, "Institutional Vacant", is listed separately. Combining the "Vacant" and "Institutional Vacant" categories yields a total of 2,427 acres, accounting for 29% percent of Broadview Heights' total land mass. While some of these vacant areas are comprised of parcels of land with street frontage, approximately 1,100 acres or 50%

Map 2.1. Land Use, 2001

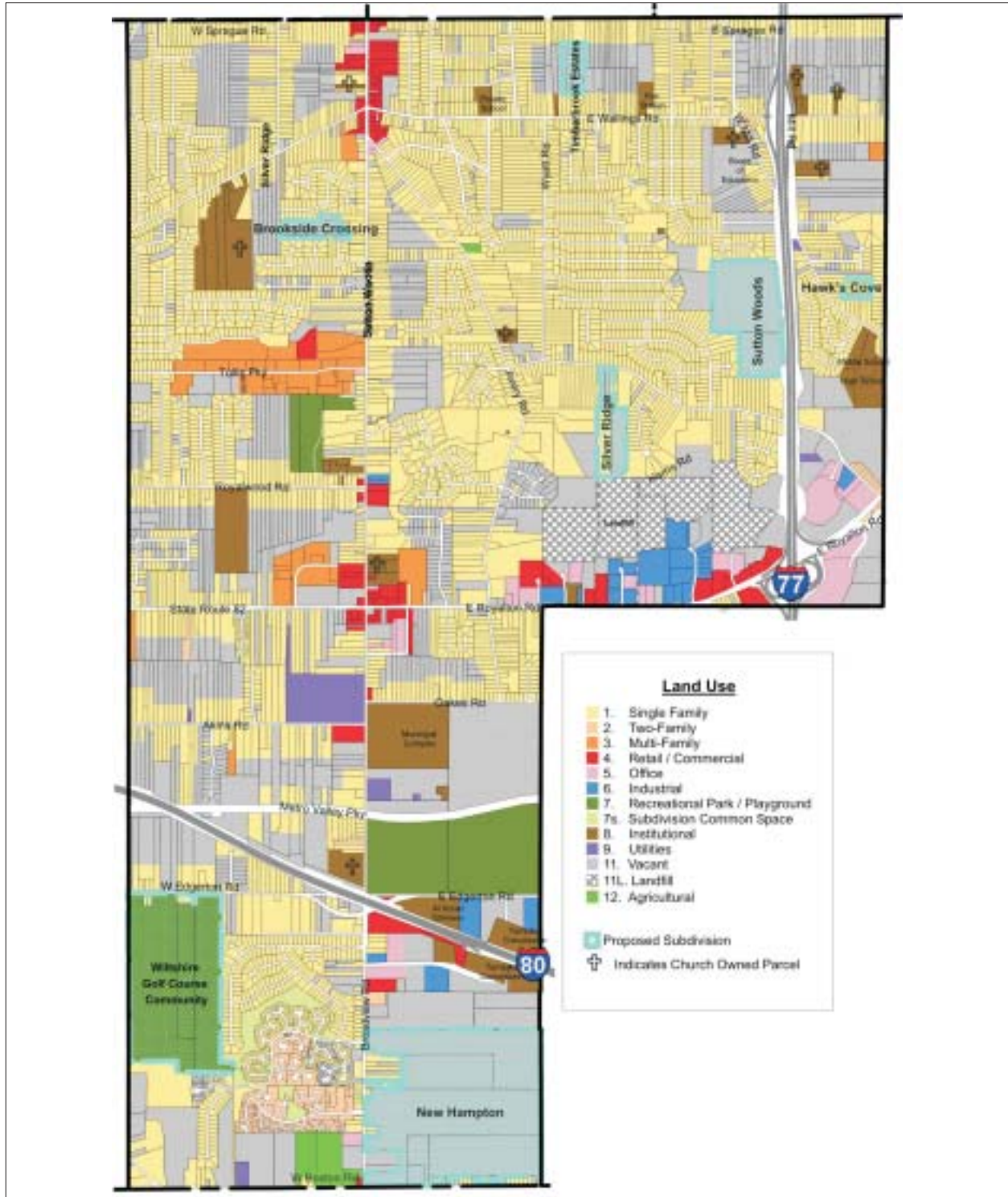


Table 2.2, Broadview Heights Land Use, 2001		
Land Use Category	Acres	Percentage*
Single-Family	3,517	42.1%
Two-Family	79	.9%
Multi-Family	163	2.0%
Retail	147	1.8%
Office	110	1.3%
Industrial	94	1.1%
Recreation	396	4.7%
Subdivision Common Open Space	36	.4%
Institutional	260	3.1%
Institutional Vacant	57	.7%
Agricultural	35	.4%
Utilities	64	.8%
Streets and Rights-of-Way	848	10.2%
Landfill	170	2.1%
Vacant	2,370	28.4%
Total	8,346	100.0%
<i>Sources:</i> Cuyahoga County Auditor's Office; Cuyahoga County Planning Commission Field Survey, August 2001.		

of the total vacant land is made up of the rear portions of contiguous, residential “bowling-alley” lots.

Streets and rights-of-way account for 848 acres, or 10.2% of all land in the community. Recreational uses - parks, playgrounds, and golf courses - comprise 4.7% of the City. A majority of the recreational land, including play fields associated with the Municipal Complex, is located in the southern part of the City.

Institutional land comprises 3.1% of the City and includes churches, schools, the Sokol Camp, turnpike concessions and the Municipal Complex. Commercial activity - retail, office and industrial uses - account for 4.1% of the City's total land mass and are generally located along Royalton Road to take advantage of access to the regional transportation network that the interchange with I-77 provides. Another commercial/retail area can be found on Broadview Road, near Wallings Road. Further, industrial uses can be found near the Ohio Turnpike and Broadview Road. The Royalton Road landfill comprises 2% of the City's area.

Each of the remaining land use categories, including utilities, agricultural and open space that is a part of a subdivision, account for less than 1% percent of the City.

Subdivision Development Plans

Between 1990 and 2000, Broadview Heights was among the fastest growing communities in Cuyahoga County, increasing by over 30% in population during this ten-year period. Indeed, development of the City's vacant land continues at a brisk pace. During the time of the 2001 land use survey, six different vacant areas of the City were under consideration for development of residential subdivisions. Two of those projects, “New Hampton” in the City's south east corner, and “Sutton Woods” adjacent to I-77 in the north east portion of the City, would result in the development of large areas of vacant land. New Hampton is approximately 290 acres, while Sutton Woods is approximately 79 acres – a total of 369 acres, or 15% of all vacant land. The other four subdivision projects, “Hawk's Cove,” “Timberbrook Estates,” “Brookside Crossing,” and “Silver Ridge,” will develop a total of 447 acres of vacant land. In addi-

tion, land currently considered recreational within the confines of the Briarwood Golf Course will become residential with the construction of the Wiltshire Golf Course Community.

Land Use Progression

The progression of land use changes in Broadview Heights is shown on the following graphs. First, 1962 land use is shown in Graph 2.1. Land use in 2001 is shown in Graph 2.2, while Graph 2.3 forecasts land use in Broadview Heights with the construction of the above mentioned new residential subdivisions.

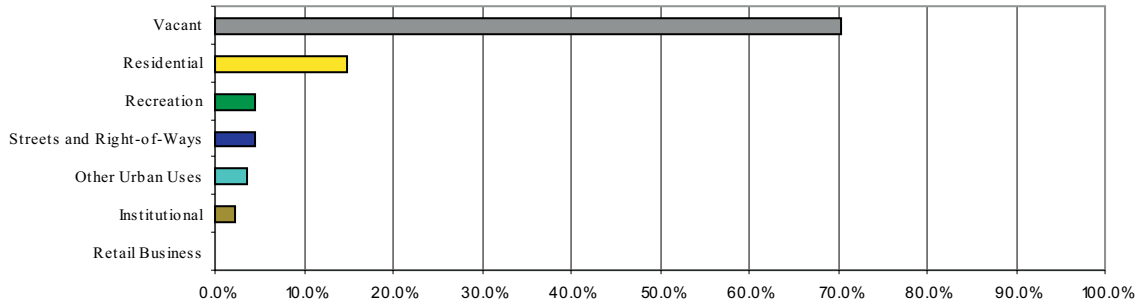
Summary

Since 1962, the large increase in residential uses and the small increase in office and industrial land uses indicates that a majority of the tax burden lies with homeowners. Increasing the amount of revenue-producing office and industrial uses will help to reduce the tax burden on the homeowner.

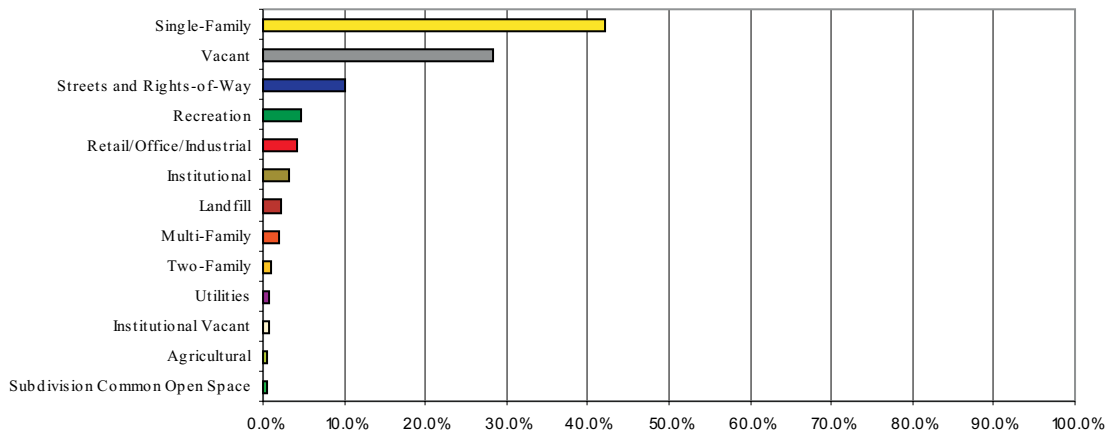
In many developing communities, residents take for granted that the vacant land within the City, owned by private citizens or corporations, is a part of the scenic open space of the City. Thus, when a development proposal is submitted to develop vacant land, residents are surprised, disappointed and even angry that their community is slipping away. Current development trends indicate that the amount of vacant land in Broadview Heights will continue to decrease and with that decrease in vacant land, the rural image of the community will dissipate.

As noted at the beginning of this report, many residents find the rural character of the community very important. In order to preserve the open, rural character of the City, any future development should preserve as much open space as possible, focusing on critical natural areas — floodplains, wetland and steep slopes. As the Master Street Plan Chapter will show, under current zoning regulations, the rear portions of bowling alley lots can be assembled and developed at a higher density. Changes to zoning requirements to increase minimum lot size would help to reduce the density of new developments. However, it is critical to emphasize the use of Residential Conservation Subdivisions to preserve the character of the land. In addition, mature tree cover should be preserved, as the large trees within the City provide much of the rural character of the City. Further, key pieces of land that reflect the character of the community could be acquired for outright preservation and/or recreational use.

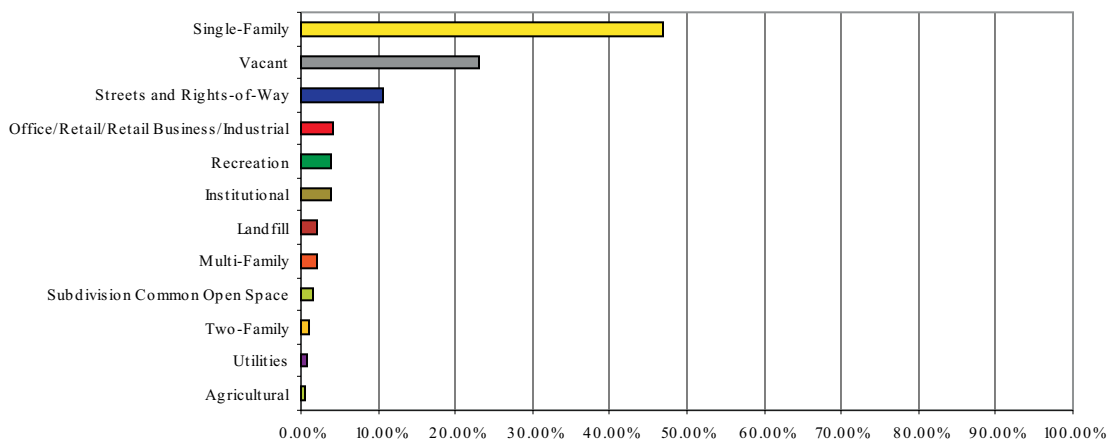
Graph 2.1, 1962 Land Use



Graph 2.2, 2001 Land Use



Graph 2.3, Land Use Short-Term Forecast Including Proposed Residential Development



Chapter 3

Natural Features

Natural Features

Natural features play a prominent role in defining the character of Broadview Heights. The mature tree cover, sloping topography, streams and 56 small ponds scattered throughout the City create the rural character so many residents find desirable. Other less prominent natural features, such as floodplains, hydric soils and wetlands, also exist and play an important role in sustaining the ecological balance of the community's natural environment.

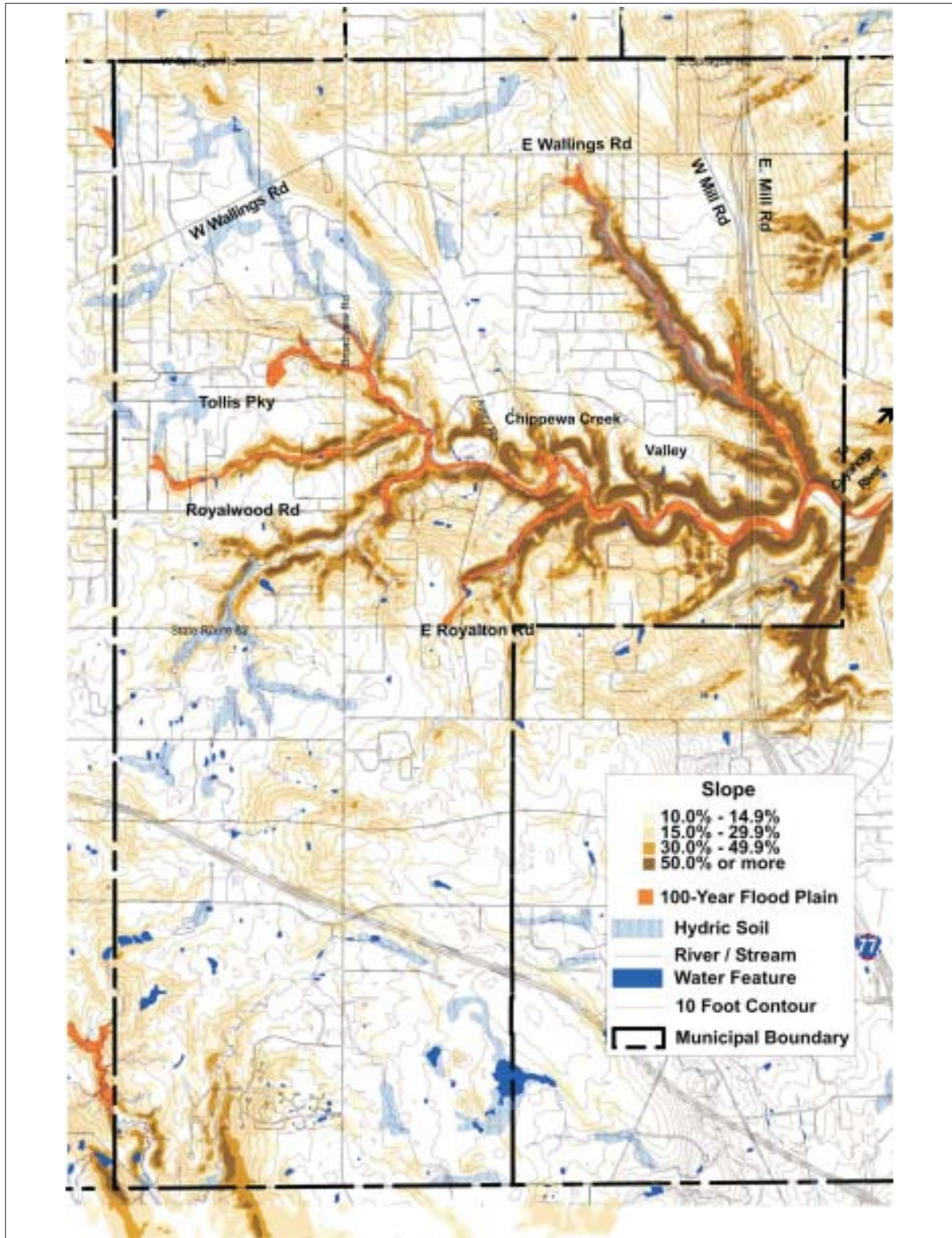
As shown in Map 3.1, the largest and most dominant natural feature of the community is Chippewa Creek and its valley which traverses the central portion of the community in an east-west direction. Chippewa Creek is a tributary of the Cuyahoga River, and joins the Cuyahoga River in the City of Brecksville, see Map 3.2. The Creek is 8.2 miles long in its entirety, with a drainage area of 16.55 square miles that extends into the neighboring communities of Brecksville, Seven Hills and North Royalton. Approximately 4.7 miles of the Creek are located within Broadview Heights, with about one mile routed through the Royalton Road Landfill located off of Royalton Road.

According to a study of water quality of the Cuyahoga River and selected tributaries conducted Ohio Environmental Protection Agency in 1996, "the Norton Landfill had no discernable impact on the water quality of Chippewa Creek...[F]ailing septic systems may have the most significant impact on the water quality of the creek."¹ While Chippewa Creek is reported as being in compliance with Ohio EPA chemical water quality standards throughout its entire length, the upper watershed portion of the Creek was given the status of "nonattainment" as a warm water habitat. Contributing factors to the nonattainment status cited in the report were: failing septic systems, nonpoint sources, and upstream migration barriers posed by waterfalls which may hamper recruitment from downstream fish populations². A more recent study conducted in 2000 noted an improvement in the water quality at the mouth of the Creek, and this portion of the Creek was upgraded to attainment status as a warm water habitat.

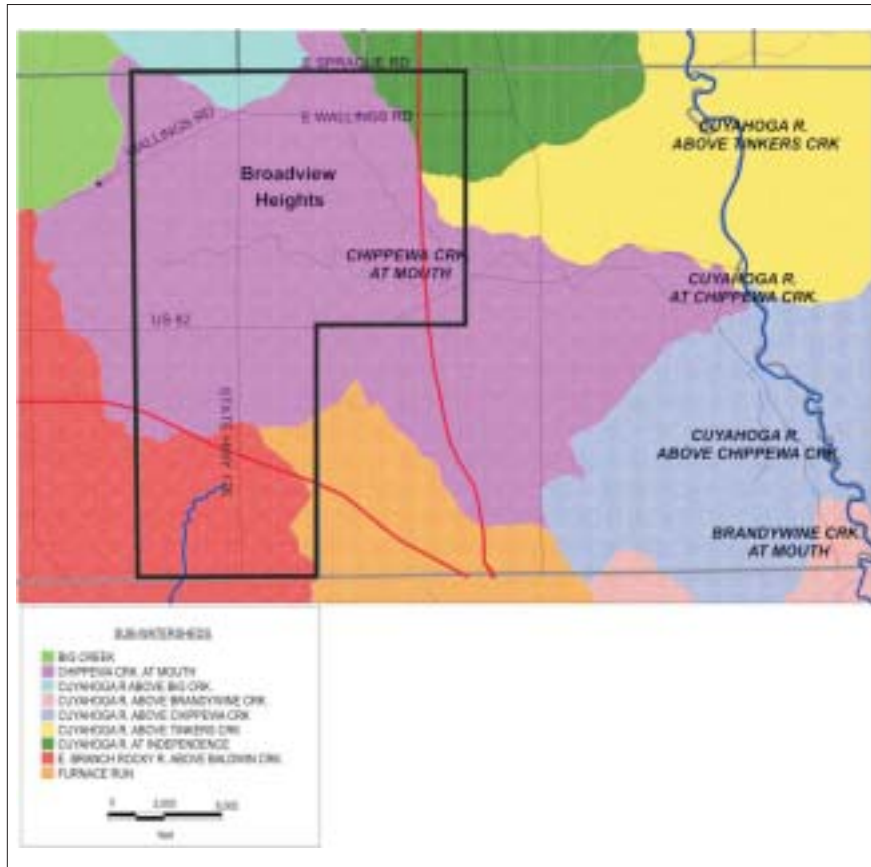
1 Ohio Environmental Protection Agency. Biological and Water Quality Study of the Cuyahoga River and Selected Tributaries, Volume I. August 15, 1999, p. 111.

2 Ibid., p. 18.

Map 3.1, Broadview Heights Natural Features



Map 3.2, Cuyahoga County Watersheds



In addition to Chippewa Creek, Map 3.1 shows several areas of floodplains, hydric soils and ponds which are also located throughout Broadview Heights. Hydric soils are often indicative of the presence of wetlands, which are considered sensitive natural areas. Not surprisingly, the presence of large areas of hydric soil appears to be related to the existence of the Chippewa Creek and its tributaries.

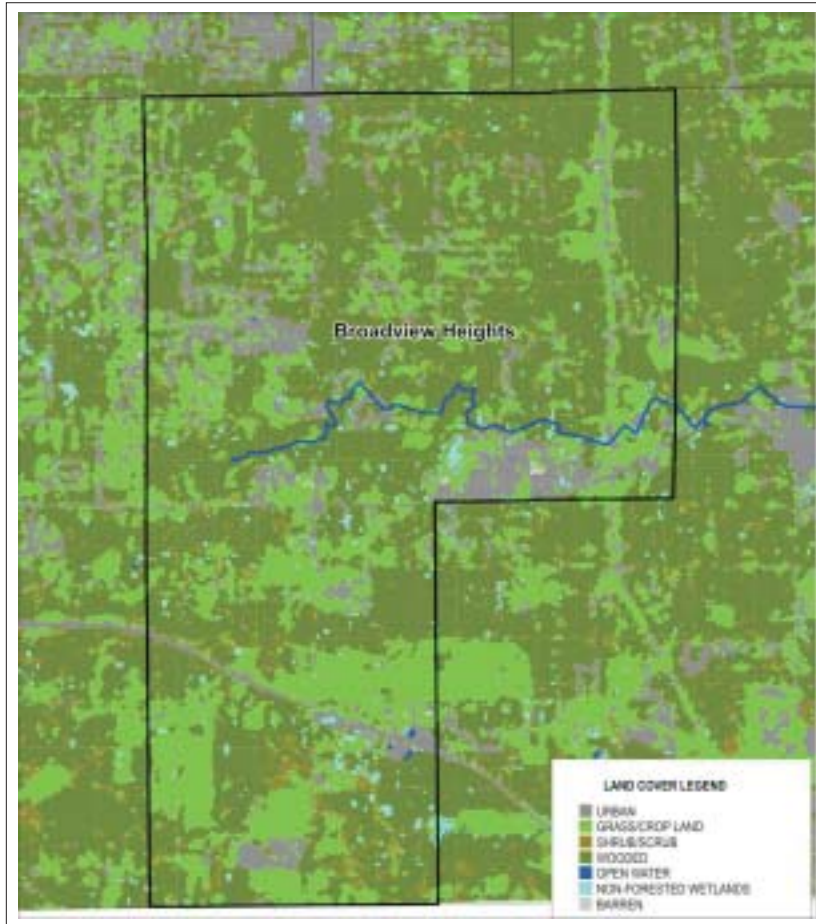
The areas shown in orange indicate the presence of a “100-year flood plain.” By definition, a 100-year flood plain is an area that has a 1% chance of being flooded in any given year. Most of the 100-year flood plain areas in

Broadview Heights are located along Chippewa Creek and its drainage area. According to the Ohio EPA, the Royalton Road Landfill has completed a required location restriction demonstration to show that the limits of waste are not in the 100-year flood plain. Small 100-year flood plain areas are also present in the City’s southwest and northwest corners.

Certain areas of Broadview Heights are characterized by steep slopes. Portions of the area adjacent to Chippewa Creek and its tributaries exhibit extremely steep slopes of 50% or more. There are also isolated areas within the City’s northeast and southwest corners which also exhibit slopes of 50% or more. More moderately sloped areas of between 10% and greater are scattered throughout the community.

A generalized indication of the mature tree cover in Broadview Heights is found on Map 3.3. This map is based on a satellite view of the community in 1994. As shown,

Map 3-3, Broadview Heights Land Cover



mature trees are ubiquitous throughout the community and play a prominent role in the quality of life.

The presence of Chippewa Creek has a significant impact on the landscape of the community of Broadview Heights. The extremely steep slopes and hydric soil areas are most prominent in the vicinity of the Creek. The closure of the landfill presents a valuable opportunity for the City of Broadview Heights to emphasize the importance of the Chippewa Creek and surrounding valley as both a visual and recreational amenity within the community.

Chapter Four

Sites for Specific Land Uses

Introduction

In order to plan for the future, the City has determined that an analysis to locate certain specific land uses within the City be conducted. These land uses are Planned Business Parks, Community Parks, Senior Citizen Housing and Cemeteries. It is hoped that by studying the characteristics of these land uses, together with the thoughtful placement of these uses within the community, the quality of life in the City will be raised through the preservation of community character, the increase of tax revenue and the provision of needed housing opportunities and services.

Planned Office Parks

As defined by the Urban Land Institute in its publication *Business and Industrial Park Development Handbook*, an office park is defined as:

A development on a tract of land that contains a number of separate office buildings, supporting uses and open space that is planned, designed, built and managed on an integrated and coordinated basis.

An office park can offer a range of potential benefits to the firms and businesses located within the development, and to the community in which it is located. To the firms, it offers a convenient location which fosters efficiency through a high-quality level of building and site development design, and complementarity of activity between tenants. For the host community, an office park is a means to carefully plan land development which generates employment and expands the local government's property and income tax bases. Further, in addition to tax base benefits, a well designed office park that preserves natural open spaces can enhance the reputation of a community and reduce the impact a development may have on nearby residential properties.

Although the majority of space within an office park is devoted to office use, more recent trends have demonstrated the advantages of setting aside a portion of space for ancillary uses which are supportive of office activities. Such uses can include retail, services, hotels, restaurants, and public facilities such as post offices or other government offices. Amenities such as indoor and outdoor recreational facilities, public gathering places, and day care centers are also often included in office parks.

The construction of substantial suburban office parks followed the construction of the interstate freeway system, with the highest density developments located near the intersection of two freeways. Locations near freeway interchanges are particularly popular for developers and tenants of office buildings and office parks. Manufacturing, distribution and wholesale companies have traditionally preferred site locations adjacent to freeways in order to facilitate the transportation of goods. Office building developers and tenants, on the other hand, value locations adjacent to a freeway not only for the quick accessibility it provides to labor, clients and contacts, but for the prestige it affords these firms through visibility to thousands of passing motorists each day.

Site Selection Criteria / Guidelines

An ideal site for an office park is established by a set of criteria which meet the needs of both the developer and the host community. The preferred location for an office park tends to have the following characteristics:

- ✓ The area is within close proximity to an interstate freeway and interchange.
- ✓ The site is highly visible from an interstate freeway, arterial roads and/or public transit route.
- ✓ The area can be served by infrastructure—including sewer and water lines, telecommunication lines, and gas and electricity— at competitive rates with appropriate capacity.
- ✓ The site is within close proximity to residential and commercial development appropriate for proposed tenants.
- ✓ The area has availability of nearby recreational and cultural amenities to satisfy tenant and employee requirements.
- ✓ The site can be served by public transportation.
- ✓ The area is within close proximity to services such as shopping malls, hotels, restaurants, daycare, and health clubs.

- ✓ The proposed development location will not negatively impact sensitive natural areas.

Potential Sites Within Broadview Heights

Given the need for Planned Business Parks to be located near access to the regional transportation network, the areas surrounding interchanges with I-77 have been considered.

Royalton Road and I-77

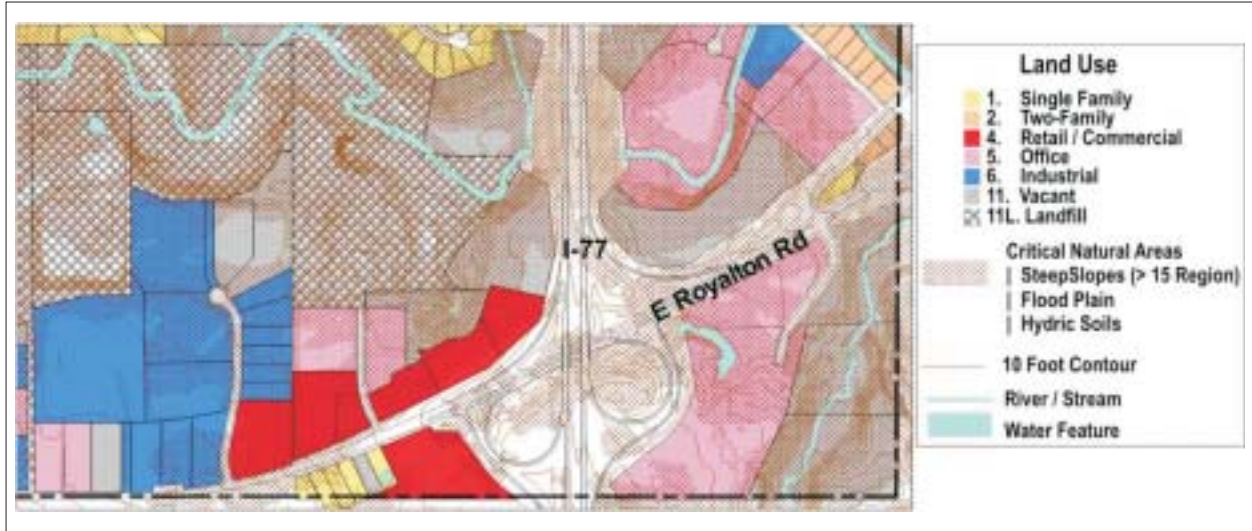
Map 4.1 shows that the area surrounding the Royalton Road and I-77 interchange is currently developed with a mixture of retail, light industrial and office uses together with a hotel. Further, the Royalton Road Landfill is located in the area. It is appropriate that redevelopment plans for this area include consideration of more office development. This interchange affords a centralized location between Cleveland and Akron and has the potential to draw companies interested in doing business in both metropolitan areas.

As noted in the Natural Features Chapter, the Chippewa Creek Valley is a major defining feature of the community. This natural feature can be capitalized on in order to make the Royalton Road and I-77 area more attractive to redevelopment. The closure plan for the Royalton Road Landfill should include efforts to assist in reorienting this area to become known as the “Chippewa Valley” area instead of the “landfill” area. This means paying attention to how the final topography of the land fill is designed, where methane gas release vents are placed, and how the site is landscaped. Further, highlighting the creek valley rather than putting the back of buildings towards the valley is important with the design of each property and how each property is managed. In addition, it will be important to study the potential for locating a bike trail along the Chippewa Valley to tie Broadview Heights directly to the Cuyahoga Valley National Park trail.

Wallings Road and I-77

As shown on Map 4.2, the land use characteristics of the area surrounding the Wallings Road/I-77 interchange make it a more immediate candidate for rezoning to an office type use. Currently, this general area is occupied by single-family homes

Map 4.1, Roylton Road and I-77 Area



Map 4.2, Wallings Road and I-77 Area



which front on Wallings, Sprague and Mill Roads, with the rear of these bowling alley type lots largely vacant. The Wallings Road interchange provides access to the regional transportation network. The area is well positioned in the regional marketplace, between Cleveland and Akron, located south of the congested Rockside Road area, and just minutes from the I-77 and I-480 interchange and the Turnpike Interchange with I-77. City Engineer Dennis Siefert has indicated that the area is served with water and sanitary sewer service of sufficient capacity to handle new office park development.

Impact Analysis

In order to determine the fiscal and environmental impacts that would result from the development of the vacant land surrounding the intersection of Wallings Road and I-77, an Impact Analysis has been conducted. Map 4.2 highlights the location and boundaries of each of the four sites under consideration. Areas shown in yellow indicate the location of single-family homes while areas of gray show the vacant rear portions of the deep bowling alley lots. For purposes of analysis, each parcel was split and only the vacant “back land” portion of property lots was considered for Planned Business Park Development. These four general areas are occupied by single family homes which front on Wallings, Sprague and Mill Roads. The land itself is characterized by gently rolling to steeply sloped land with streams and heavy forest cover.

The Impact Analyses explore the fiscal and environmental impacts of five development alternatives for each of the sites:

1. Existing conditions;
2. Single-family development;
3. Low-density office park development - consisting of 2-story office buildings which cover 20% of the site;
4. High-density office park development - consisting of 6-story office buildings which cover 15% of the site; and,
5. Mixed-use office park development - consisting of 4-story office buildings with convenience retail on the first floor which cover 12% of the site, and residential townhouse units on 20% of the site.

Tables 4.1 through 4.4 present the results of the Impact Analysis. As shown, separate but identical analyses were conducted for each quadrant. The four study areas range in size from 29 to 60 acres and as would be expected, the size of the site greatly influences the amount of development that can occur. (See Appendix A for a detailed methodology describing the Impact Analysis process and the multipliers and data used).

Development Characteristics

The first portion of the Impact Analysis table, “Development Characteristics,” presents the potential development characteristics of each development site. Items inventoried include the size of the first floor of a projected office building or “office building footprint.” Next, the size of the office building, a 2-, 4- or 6-stories, is noted. Finally, the total size of the office building and the potential number of employees is calculated based on the size of the building footprint and height of the proposed office building.

Development Alternative 1, “Existing Conditions,” and those alternatives with a residential component list the number of dwelling units and number of residents.

Next, the potential value of the site if it were developed is estimated. Further, the potential value of buildings to be located on the site is estimated. Finally, these two figures are combined to offer the total estimated value of the developed site.

Environmental Impact

The second section of the Impact Analysis table, “Environmental Impacts,” presents the estimated environmental impact of development for each of the five development alternatives. Potential sewage flow, water consumption, solid waste production, and traffic generation were estimated.

Revenues

The third section of the Impact Analysis table, “Revenues,” presents the municipal tax revenues that each development alternative is projected to generate. The figure for total city revenues is comprised of income tax revenues and property tax revenues. Property tax revenues were calculated using estimated building and land values. Income tax revenues resulting from commercial development were calculated based on average annual salaries for office and retail employment obtained from the Ohio

Map 4.3, Wallings Road and I-77, Northwest Quadrant

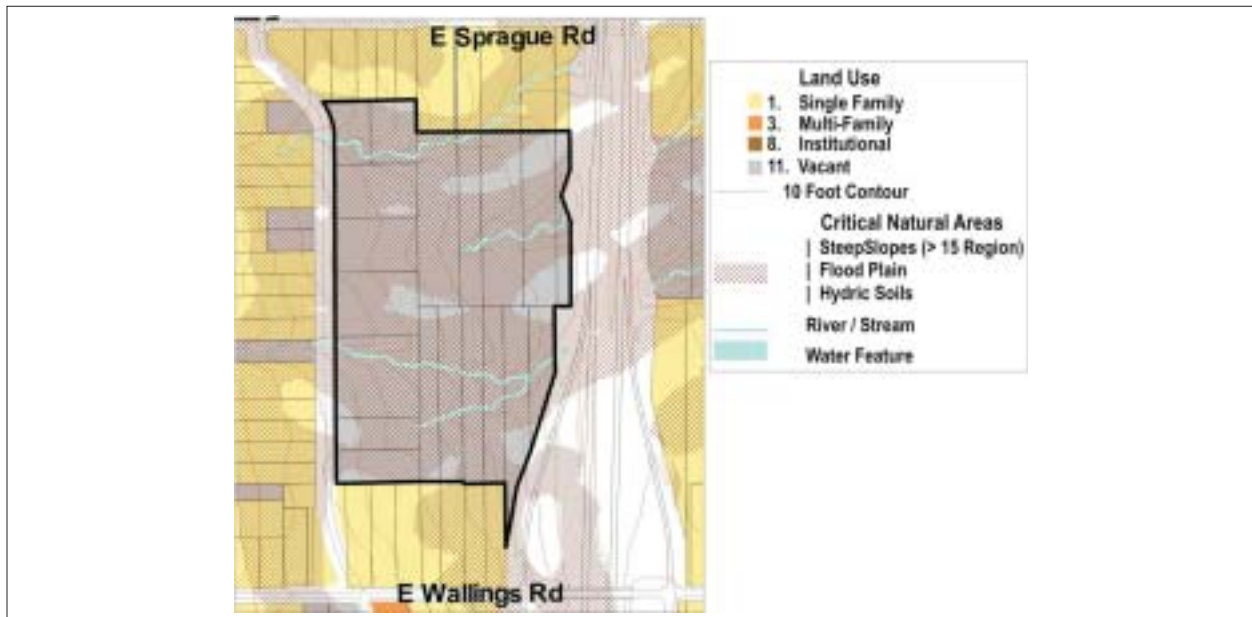


Table 4.1, Vacant Land Surrounding Intersection of I-77 & Wallings Road, Northwest Quadrant

NORTHWEST QUADRANT	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Acreage: 29.04	Existing Conditions	Single-Family Residential	Office Park (low density)	Office Park (high density)	Mixed-Use Office Park (Office, retail, residential)
DEVELOPMENT CHARACTERISTICS					
Office building height	0	n/a	2	6	4
Office building footprint (sq ft)	0	n/a	252,996	189,747	151,798
Total office building floor area	0	n/a	505,993	1,138,484	455,394
Potential vacant office space (sq ft)	0	n/a	80,959	182,157	72,863
Total number of employees	0	n/a	1,518	3,415	1,746
Number of dwelling units	0	25	0	0	34
Total number of residents	0	64	0	0	73
Potential land value of site	\$201,931	n/a	\$9,236,375	\$9,236,375	\$7,827,844
Potential building value of site	\$0	\$300,000	\$38,683,162	\$91,431,663	\$49,565,520
Total value of site	\$201,931	\$7,500,000	\$47,919,537	\$100,668,038	\$57,393,364
ENVIRONMENTAL IMPACTS					
Sewage Flow (gallons/day)	0	4,176	40,469	91,056	55,153
Water Consumption (gallons/day)	0	6,425	47,057	105,879	65,969
Solid Waste Production (tons/day)	0	0.000	1.518	3.415	1.877
Total trips generated per day: weekday	*14,428	239	5,778	13,001	7,049
REVENUES					
Estimated avg annual employee income	\$0	n/a	\$47,060	\$47,060	refer to data sources
Median household income	\$56,989	\$56,989	n/a	n/a	\$56,989
Income tax revenues - City	\$0	\$9,261	\$1,428,722	\$3,214,624	\$1,405,510
Income tax revenues w/ office vacancy	\$0	n/a	\$1,200,126	\$2,700,284	\$1,199,774
Property Tax Revenues - City	\$454	\$16,880	\$117,815	\$247,502	\$140,104
Total City Revenues office full occupancy	\$454	\$26,141	\$1,546,537	\$3,462,126	\$1,545,614
Total City Revenues w/ 16% vacancy	\$454	\$26,141	\$1,317,941	\$2,947,786	\$1,339,878
EXPENDITURES					
Cost to provide services**	\$0	\$68,584	\$789,107	\$1,775,232	\$986,329
NET FISCAL IMPACT (full occupancy)	\$454	-\$42,443	\$757,430	\$1,686,895	\$559,285
NET FISCAL IMPACT (w/ vacancy)	\$454	-\$42,443	\$528,834	\$1,172,555	\$353,549
*Traffic count for existing conditions alternative is for that section of Wallings Rd., west of I-77 ramp				(Cuyahoga Co. Engineer's Office, 6/30/99)	
**Municipal service expenditure categories include: general govt., public safety, public health and welfare, public works, community development, recreation, & debt service.					

Map 4.4, Wallings Road and I-77, Southwest Quadrant

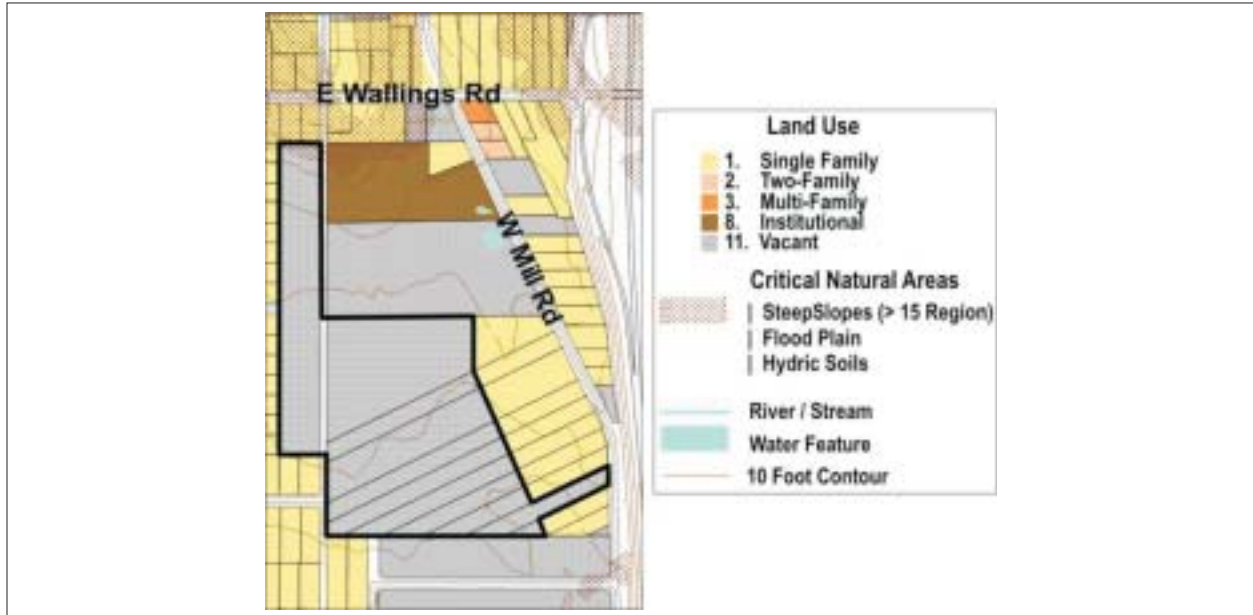


Table 4.2, Vacant Land Surrounding Intersection of I-77 & Wallings Road, Southwest Quadrant

SOUTHWEST QUADRANT	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Acreage: 40.05	Existing Conditions	Single-Family Residential	Office Park (low density)	Office Park (high density)	Mixed-Use Office Park (Office, retail, residential)
DEVELOPMENT CHARACTERISTICS					
Office building height	0	n/a	2	6	4
Office building footprint (sq ft)	0	n/a	348,916	261,687	209,349
Total office building floor area	0	n/a	697,831	1,570,120	628,048
Potential vacant office space (sq ft)	0	n/a	111,653	251,219	100,488
Total number of employees	0	n/a	2,093	4,710	2,408
Total number of dwelling units	0	22	0	0	48
Total number of residents	0	57	0	0	104
Potential land value of site	\$1,221,761	n/a	\$12,738,183	\$12,738,183	\$10,795,631
Potential building value of site	\$0	\$300,000	\$53,349,195	\$126,096,353	\$68,357,407
Total potential value of site	\$1,221,761	\$6,600,000	\$66,087,378	\$138,834,536	\$79,153,038
ENVIRONMENTAL IMPACTS					
Sewage Flow (gallons/day)	0	3675	55,813	125,578	76,063
Water Consumption (gallons/day)	0	5654	64,898	146,021	90,980
Solid Waste Production (tons/day)	0.000	0.099	2.093	4.710	2.589
Total trips generated per day: weekday	*14,428	211	7,969	17,931	9,721
REVENUES					
Estimated avg annual employee income	\$0	n/a	\$47,060	\$47,060	refer to data sources
Median household income	\$56,989	\$56,989	n/a	n/a	\$56,989
Income Tax revenues - City	\$0	\$8,149	\$1,970,396	\$4,433,391	\$1,938,384
Income tax revenues w/ office vacancy	\$0	n/a	\$1,655,133	\$3,724,049	\$1,654,647
Property Tax revenues - City	\$2,750	\$14,855	\$162,482	\$341,339	\$193,222
Total City Revenues office full occupancy	\$2,750	\$23,004	\$2,132,879	\$4,774,730	\$2,131,606
Total City Revenues w/ 16% vacancy	\$2,750	\$23,004	\$1,817,615	\$4,065,387	\$1,847,869
EXPENDITURES					
Cost to provide services**	\$0	\$61,083	\$1,088,012	\$2,448,416	\$1,362,865
NET FISCAL IMPACT (full occupancy)	\$2,750	-\$38,079	\$1,044,867	\$2,326,314	\$768,741
NET FISCAL IMPACT (w/ vacancy)	\$2,750	-\$38,079	\$729,603	\$1,616,971	\$485,004
*Traffic count for existing conditions alternative is for that section of Wallings Rd., west of I-77 ramp			(Cuyahoga Co. Engineer's Office, 6/30/99)		
**Municipal service expenditure categories include: general govt., public safety, public health and welfare, public works, community development, recreation, and debt service.					

Map 4.5, Wallings Road and I-77, Northeast Quadrant



Table 4.3, Vacant Land Surrounding Intersection of I-77 & Wallings Road, Northeast Quadrant

NORTHEAST QUADRANT	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Acreage: 65.2	Existing Conditions	Single-Family Residential	Office Park (low density)	Office Park (high density)	Mixed-Use Office Park (Office, retail, residential)
DEVELOPMENT CHARACTERISTICS					
Office building height	0	n/a	2	6	4
Office building footprint (sq ft)	0	n/a	568,022	426,017	340,813
Total office building floor area	0	n/a	1,136,045	2,556,101	1,022,440
Potential vacant office space (sq ft)	0	n/a	181,767	408,976	163,590
Total number of employees	0	n/a	3,408	7,668	3,919
Total number of dwelling units	0	50	0	0	78
Total number of residents	0	129	0	0	168
Potential land value of site	\$694,430	n/a	\$20,737,316	\$20,737,316	\$17,574,910
Potential building value of site	\$0	\$300,000	\$86,850,625	\$205,280,455	\$111,283,468
Total potential value of site	\$694,430	\$15,000,000	\$107,587,941	\$226,017,772	\$128,858,378
ENVIRONMENTAL IMPACTS					
Sewage Flow (gallons/day)	0	8,353	90,861	204,437	123,828
Water Consumption (gallons/day)	0	12,850	105,652	237,717	148,113
Solid Waste Production (tons/day)	0.000	0.225	3.408	7.668	4.215
Total trips generated per day: weekday	*7,153	479	12,974	29,191	15,826
REVENUES					
Estimated avg annual employee income	\$0	n/a	\$47,060	\$47,060	refer to data sources
Median household income	\$56,989	\$56,989	n/a	n/a	\$56,989
Income tax revenues - City	\$0	\$18,521	\$3,207,736	\$7,217,406	\$3,155,622
Income tax revenues w/ office vacancy	\$0	n/a	\$2,694,498	\$6,062,621	\$2,693,708
Property tax revenues - City	\$1,563	\$33,761	\$264,516	\$555,687	\$314,559
Total City Revenues office full occupancy	\$1,563	\$52,282	\$3,472,252	\$7,773,093	\$3,470,181
Total City Revenues w/ 16% vacancy	\$1,563	\$52,282	\$2,959,014	\$6,618,308	\$3,008,267
EXPENDITURES					
Cost to provide services**	\$0	\$138,240	\$1,771,593	\$3,986,084	\$2,217,776
NET FISCAL IMPACT (full occupancy)	\$1,563	-\$85,958	\$1,700,659	\$3,787,009	\$1,252,405
NET FISCAL IMPACT (w/ vacancy)	\$1,563	-\$85,958	\$1,187,421	\$2,632,224	\$790,491
*Traffic count for existing conditions alternative is for that section of Wallings Road, east of Mill Rd.				(Cuyahoga Co. Engineer's Office, 6/30/99)	
**Municipal service expenditure categories include: general gov., public safety, public health and welfare, public works, community development, recreation, and debt service.					

Map 4.6, Wallings Road and I-77, Southeast Quadrant



Table 4.4, Vacant Land Surrounding Intersection of I-77 & Wallings Road, Southeast Quadrant

SOUTHEAST QUADRANT	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Acreage: 50.35	Existing Conditions	Single-Family Residential	Office Park (low density)	Office Park (high density)	Mixed-Use Office Park (Office, retail, residential)
DEVELOPMENT CHARACTERISTICS					
Office building height	0	n/a	2	6	4
Office building footprint (sq ft)	0	n/a	438,649	328,987	263,190
Total office building floor area	0	n/a	877,298	1,973,921	789,569
Potential vacant office space (sq ft)	0	n/a	140,368	315,827	126,331
Total number of employees	0	n/a	2,632	5,922	3,027
Number of dwelling units	0	20	0	0	60
Total number of residents	0	51	0	0	130
Potential land value of site	\$737,974	n/a	\$16,014,170	\$16,014,170	\$13,572,036
Potential building value of site	0	\$300,000	\$67,069,463	\$158,525,628	\$85,937,464
Total potential value of site	\$737,974	\$6,000,000	\$83,083,633	\$174,539,798	\$99,509,500
ENVIRONMENTAL IMPACTS					
Sewage Flow (gallons/day)	0	3,341	70,166	157,874	95,625
Water Consumption (gallons/day)	0	5,140	81,589	183,575	114,379
Solid Waste Production (tons/day)	0.000	0.090	2.632	5.922	3.255
Total trips generated per day: weekday	*3,034	191	10,019	22,542	12,221
REVENUES					
Estimated avg annual employee income	\$0	n/a	\$47,060	\$47,060	\$47,060
Median household income	\$56,989	\$56,989	n/a	n/a	\$56,989
Income tax revenues - City	\$0	\$7,409	\$2,477,140	\$5,573,564	\$2,436,895
Income tax revenues w/ office vacancy	\$0	n/a	\$2,080,797	\$4,681,794	\$2,080,187
Property tax revenues - City	\$1,661	\$13,504	\$204,269	\$429,123	\$242,915
Total City Revenues office full occupancy	\$1,661	\$20,913	\$2,681,409	\$6,002,688	\$2,679,810
Total City Revenues w/ 16% vacancy	\$1,661	\$20,913	\$2,285,067	\$5,110,918	\$2,323,102
EXPENDITURES					
Cost to provide services**	\$0	\$54,653	\$1,368,202	\$3,078,454	\$1,712,419
NET FISCAL IMPACT (full occupancy)	\$1,661	-\$33,740	\$1,313,207	\$2,924,234	\$967,391
NET FISCAL IMPACT (w/ vacancy)	\$1,661	-\$33,740	\$916,865	\$2,032,464	\$610,683
*Traffic count for existing conditions alternative is for that section of Mill Rd., south of I-77 ramp. (Cuyahoga Co. Engineer, 6/14/94)					
**Municipal service expenditure categories include: general govt., public safety, public health and welfare, public works, community development, recreation, and debt service.					

Bureau of Employment Services. Income taxes resulting from residential development were calculated using the median household income for the City of Broadview Heights as reported in the 1990 U.S. Census, adjusted for inflation to the year 2000. In calculating the income tax revenues generated from residential development, it was also taken into account that only 10% of households have residents that live and work in the City. Finally, two figures were calculated for total city revenues: one which assumes full occupancy of the office buildings, and one which assumes the 16% vacancy rate. The vacancy rates impact only level of office employment and, therefore, the potential income tax revenues.

Expenditures

Using a methodology developed by Rutgers University's Urban Policy Research Center, the municipal expenditures to provide general government, public safety, public health and welfare, public works, community development, recreation and debt service is estimated for each development type. Expenditures for office development were calculated using a method which is based upon the number of employees and corresponding increase in demand for city services resulting from this increase in employment level. The expenditures for residential development were calculated based on per capita expenditures, as derived from Broadview Heights' annual financial report for the year 2000.

Net Fiscal Impact

The final section of the Impact analysis table, "Net Fiscal Impact," compares the potential revenues to be received by the City from the different development alternatives with the estimated expenditures to provide municipal services to the developed areas. As shown, two figures were calculated for the net fiscal impact – one which assumes full occupancy and a 16% office space vacancy rate.

General Findings

Environmental Impacts

The results of the environmental impact analysis were similar for each of the environmental categories - Alternative 4, High Density Office Park, is projected to have the greatest environmental impact of the five alternatives examined. This is due to the fact that this type of development is projected to attract the most employees to the area on a daily basis. Alternative 4 would bring almost double the number of employees projected for Alternatives 3 and 5, and greatly exceeds the impact of single-family

residential development as noted in Alternative 2. For each quadrant, Alternative 5, Mixed-Use Office Park, is projected to have the second highest environmental impact, followed by Alternative 3, Low-Density Office Park, and Alternative 2, Single-Family Residential, in descending order.

Revenues

As shown in Tables 4.3 through 4.6, while Alternative 4, High Density Office will generate the greatest environmental impact, this development alternative will also generate the highest municipal tax revenues. Alternative 3, Low-Density Office Park development is projected to generate the second-highest amount of revenues, followed very closely by Alternative 5, Mixed-Use Office Park development. Even though Alternative 3, Low-Density Office Development, is estimated to have fewer employees than Alternative 5, Mixed-Use Development, Alternative 3 is projected to generate greater revenues. This is because in Alternative 5, Mixed -Use Development, just over 20% of the employees are retail employees. The average annual salary of a retail employee (\$14,065) is only one-third of that of an office employee (\$47,060), thus reducing the potential amount of income tax revenues. The single-family residential development alternative is projected to generate the least amount of municipal tax revenues of the four development alternatives.

Expenditures

As shown, for each quadrant, Alternative 4, High Density Office Park development is projected to generate the greatest expenditures, followed in descending order by Alternative 5, Mixed-Use Office Park, Alternative 3, Low-Density Office Park and Alternative 2, Single-Family Residential.

Table 4.5, Projected Impact on Safety Services and Projected Full Scenario Development	
EMS calls per year	118
EMS vehicles	.06
EMS full-time employees	.44
Police personnel	6.4
Police vehicles	1.9
Police facilities (sq ft)	645
Fire personnel	5.3
Fire vehicles	.64
Fire facilities (sq ft)	806

Table 4.5 highlights the estimated increase in demand for and impact on certain services – safety services, emergency medical services, and police and fire – generated by an increase in employment. The example here calculates the estimated increase in demand for these services resulting from the development of the four vacant areas surrounding the I-77 and Wallings Road interchange. For purposes of this general analysis, a potential development scenario was created. In this potential scenario, the northwest quadrant is assumed to be developed as an Alternative 5, Mixed-Use Office Park, the

southwest quadrant as Alternative 4 , High Density Office Park, the north east quadrant as Alternative 3, Low-Density Office Park, and the south east as Alternative 5, Mixed-Use Office Park. Table 4.5 shows the total increase in public safety services that could result from the full development, as just described, of all four quadrants.

Net Fiscal Impact

For each quadrant, Alternative 4, High Density Office Park development is projected to result in the highest net fiscal gain to the City. Alternative 3, Low-Density Office Park development is projected to result the next-highest fiscal gain, followed closely by Alternative 5, Mixed-Use Office Park development. Finally, in each case, Alternative 2, Single-Family Residential is projected to result in a net fiscal loss to the City. This is due to two factors: residential development typically generates lower income tax revenues and property tax revenues—due to the fact that residential property is assessed at a lower tax rate than commercial property—while demanding a relatively high level of city services. In other words, residential development does not pay for itself in terms of municipal revenues and costs.

Conclusions

The potential fiscal benefits to the City of developing the Wallings Road / I77 area, as indicated in this impact analysis, are compelling and indicate that development of Planned Business Parks should be pursued. However, to many residents, the characteristics of the land in I-77 and Wallings Road area - mature tree cover, slopes and streams - help to define the community identity of Broadview Heights as a semi-rural area. Therefore, this area should be developed in a way to preserve as much as possible of the natural characteristics of the land while gaining needed revenue from office park development.

The previous analysis led to the determination by the Planning Commission that the southwest quadrant should be withdrawn from consideration for development of a planned office park. Planning Commission members agreed that, given the configuration of the properties in that area, office development would be highly incompatible with the existing residential neighborhoods.

Further, given the potential environmental and land use impacts that development of Planned Business Parks could have on area residents, the Planning Commission determined that it would be appropriate to consider rezoning the entire area, not just

the rear of the deep bowling alley lots. The belief being that the close proximity of homes to any future office development could prove uncomfortable and troublesome. Transitioning the entire area to Planned Business Park use would eventually reduce impacts of office development encroaching upon existing residential properties in the area. Additionally, rezoning the residential areas to planned business park districts will improve the land value and therefore increase the price that homeowners are able to obtain should they choose to sell their property. According to a commercial appraiser at the Cuyahoga County Auditor's office, one of the key factors in determining land value is zoning.

Area to be considered for Planned Business Park Development are shown on Maps 4.7 to 4.9. Impact analyses that study the fiscal and environmental impacts of development alternatives for the recommended area to be rezoned can be found on Tables 4.6 to 4.8.

Community Parks

A well planned and located community park can meet a community's recreation needs as well as preserve unique landscapes and open spaces. Community parks should meet the needs of several neighborhoods or large sections of the community and should be developed for both active and passive recreation activities. As shown in Table 4.9, when compared to other types of parks, community parks serve a unique role in the provision of recreational services.

Site Selection Criteria / Guidelines

The area's natural character should play a very significant role in site selection, with an emphasis on sites that preserve unique landscapes and provide recreational opportunities not otherwise available in the community. Ease of access, a geographically centered location, the relationship to other park areas and regional trail connections are also key concerns. Potential linkages to the regional parks and greenway network is desirable and will expand residents' recreational opportunities.

A potential site should have physical features that support both active and passive recreation use. These physical features include suitable soils, positive drainage, varying topography and a variety of vegetation. When possible, a community park should be located to preserve or abut critical natural resource areas. Ideally, land within a

Map 4.7, Wallings Road and I-77, Northwest Quadrant, Revised

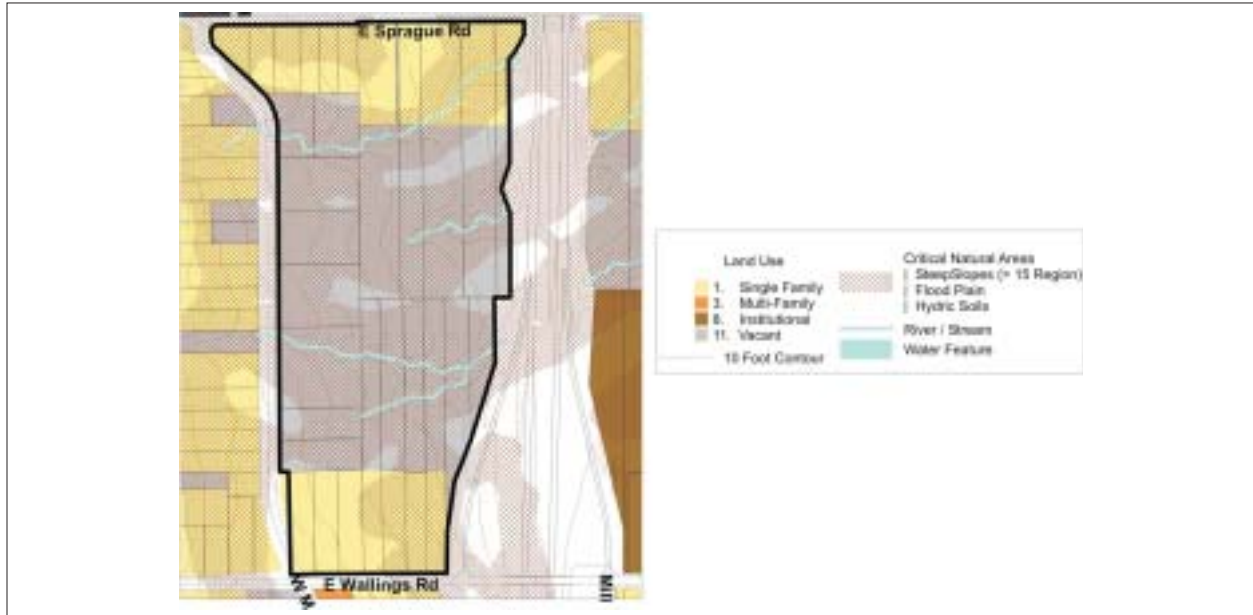


Table 4.6, Vacant Land Surrounding Intersection of I-77 & Wallings Road, Northwest Quadrant, Revised

NORTHWEST QUADRANT	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Acreage: 44	Existing Conditions	Single-Family Residential (vacant area only - 29 acres)	Office Park (low density)	Office Park (high density)	Planned Business Park
DEVELOPMENT CHARACTERISTICS					
Office building height	0	n/a	2	6	3-story and 6-story
Office building footprint (sq ft)	0	0	383,328	287,496	15% building coverage
Total office building floor area	0	n/a	766,656	1,724,976	1,293,732
Potential vacant office space (sq ft)	0	n/a	122,665	275,996	206,997
Total number of employees	0	n/a	2,300	5,175	3,881
Number of dwelling units	19	25	0	0	0
Total number of residents	49	64	0	0	0
Potential land value of site	\$717,143	n/a	\$13,994,508	\$13,994,508	\$13,994,508
Potential building value of site	\$1,909,000	\$300,000	\$58,610,851	\$138,532,823	\$103,899,617
Total value of site	\$2,626,143	\$7,500,000	\$72,605,359	\$152,527,331	\$117,894,125
ENVIRONMENTAL IMPACTS					
Sewage Flow (gallons/day)	3,174	4160	61,317	137,964	103,473
Water Consumption (gallons/day)	4,883	6400	71,299	160,423	120,317
Solid Waste Production (tons/day)	0.085	0.112	2.300	5.175	3.881
Total trips generated per day: weekday	*14,428	239	8,755	19,699	14,774
REVENUES					
Estimated avg annual employee income	n/a	n/a	\$47,060	\$47,060	\$47,060
Median household income	\$56,989	\$56,989	n/a	n/a	n/a
Income tax revenues - City	\$7,038	\$9,261	\$2,164,730	\$4,870,642	\$3,652,982
Income tax revenues w/ office vacancy	n/a	n/a	\$1,818,373	\$4,091,339	\$3,068,505
Property Tax Revenues - City	\$5,911	\$16,880	\$178,507	\$375,004	\$289,854
Total City Revenues office full occupancy	\$12,949	\$26,141	\$2,343,237	\$5,245,646	\$3,942,836
Total City Revenues w/ 16% vacancy	\$12,949	\$26,141	\$1,996,881	\$4,466,343	\$3,358,359
EXPENDITURES					
Cost to provide services**	\$52,510	\$68,584	\$1,195,617	\$2,690,139	\$2,017,474
NET FISCAL IMPACT (full occupancy)	-\$39,561	-\$42,443	\$1,147,620	\$2,555,507	\$1,925,362
NET FISCAL IMPACT (w/ vacancy)	-\$39,561	-\$42,443	\$801,263	\$1,776,204	\$1,340,885
*Traffic count for existing conditions alternative is for that section of Wallings Rd., west of I-77 ramp					
**Municipal service expenditure categories include: general govt., public safety, public health and welfare, public works, community development, recreation, and debt service.					

Map 4.8, Wallings Road and I-77, Northeast Quadrant, Revised

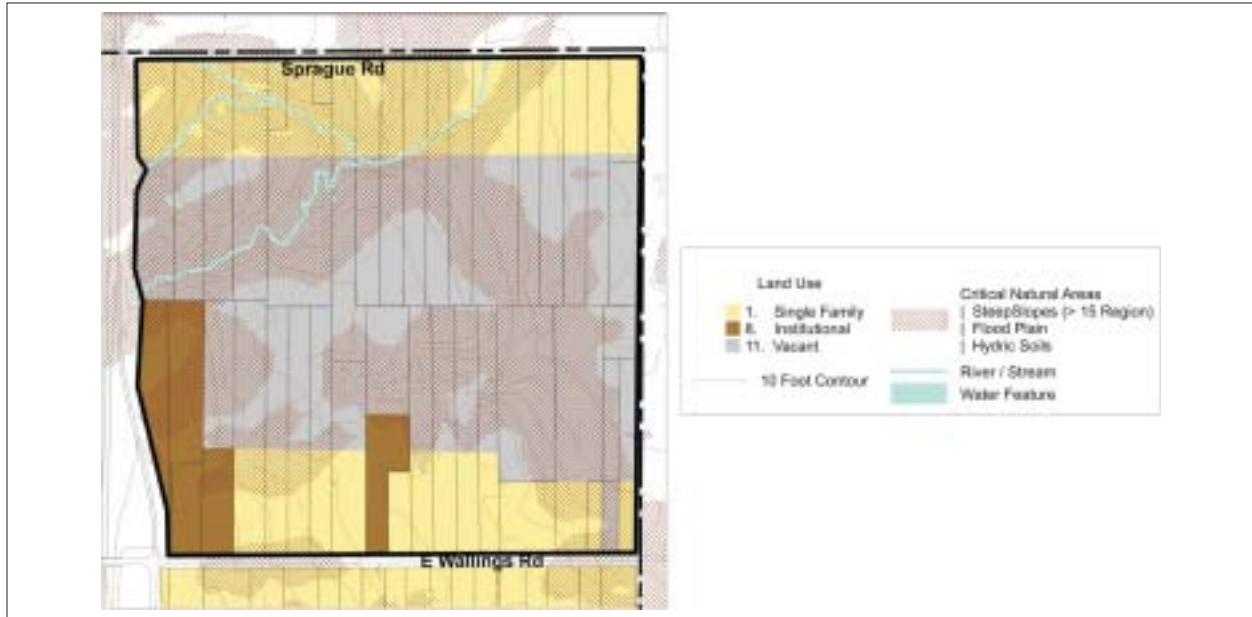


Table 4.7, Vacant Land Surrounding Intersection of I-77 & Wallings Road, Northeast Quadrant, Revised

NORTHEAST QUADRANT	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Acreage: 113	Existing Conditions	Single-Family Residential (vacant area only - 65 acres)	Office Park (low density)	Office Park (high density)	Planned Business Park
Property Data					
Office building height	0	n/a	2	6	3-story and 6-story
Office building footprint (sq ft)	0	n/a	984,456	738,342	15% building coverage
Total building square footage	0	n/a	1,968,912	4,430,052	3,322,539
Potential vacant office space (sq ft)	0	n/a	315,026	708,808	531,606
Total number of employees	0	n/a	5,907	13,290	9,968
Total number of dwelling units	32	50	0	0	0
Total number of residents	81	129	0	0	0
Potential land value of site	\$2,383,886	n/a	\$35,940,441	\$35,940,441	\$35,940,441
Potential building value of site	\$6,769,200	\$300,000	\$150,523,322	\$355,777,476	\$266,833,107
Total potential value of site	\$9,153,086	\$15,000,000	\$186,463,763	\$391,717,917	\$302,773,548
Environmental Impacts					
Sewage Flow (gallons/day)	5,265	8,353	157,474	354,316	265,737
Water Consumption (gallons/day)	8,100	12,850	183,109	411,995	308,996
Solid Waste Production (tons/day)	0.142	0.225	5.907	13.290	9.968
Total trips generated per day: weekday	*7,153	479	22,485	50,591	37,943
Revenues					
Estimated avg annual employee income	n/a	n/a	\$47,060	\$47,060	\$47,060
Median household income	\$56,989	\$56,989	n/a	n/a	n/a
Income tax revenues - City	\$11,854	\$18,521	\$5,559,420	\$12,508,695	\$9,381,521
Income tax revenues w/ office vacancy	n/a	n/a	\$4,669,913	\$10,507,304	\$7,880,478
Property tax revenues - City	\$20,601	\$33,761	\$458,440	\$963,077	\$744,399
Total City Revenues office full occupancy	\$32,455	\$52,282	\$6,017,860	\$13,471,772	\$10,125,920
Total City Revenues w/ 16% vacancy	\$32,455	\$52,282	\$5,128,352	\$11,470,381	\$8,624,877
Expenditures					
Cost to provide services**	\$86,802	\$138,240	\$3,070,657	\$6,908,588	\$5,181,701
NET FISCAL IMPACT (full occupancy)	-\$54,347	-\$85,958	\$2,947,203	\$6,563,184	\$4,944,219
NET FISCAL IMPACT (w/ vacancy)	-\$54,347	-\$85,958	\$2,057,696	\$4,561,793	\$3,443,176
*Traffic count for existing conditions alternative is for that section of Wallings Road, east of Mill Rd.					
**Municipal service expenditure categories include: general govt., public safety, public health and welfare, public works, community development, recreation, and debt service.					

Map 4.9, Wallings Road and I-77, Southeast Quadrant, Revised



Table 4.8, Vacant Land Surrounding Intersection of I-77 & Wallings Road, Southeast Quadrant, Revised

SOUTHEAST QUADRANT	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Acreage 44	Existing Conditions	Single-Family Residential (vacant area only - 50 acres)	Office Park (low density)	Office Park (high density)	Planned Business Park
Property Data					
Office building height	0	n/a	2	6	3-story and 6-story
Office building footprint (sq ft)	0	n/a	383,328	287,496	15% building coverage
Total building square footage	0	n/a	766,656	1,724,976	1,293,732
Potential vacant office space (sq ft)	0	n/a	122,665	275,996	206,997
Total number of employees	0	n/a	2,300	5,175	3,881
Number of dwelling units	17	19	0	0	0
Total number of residents	44	49	0	0	0
Potential land value of site	\$788,914	n/a	\$13,994,508	\$13,994,508	\$13,994,508
Potential building value of site	\$1,932,314	\$300,000	\$58,610,851	\$138,532,823	\$103,899,617
Total potential value of site	\$2,721,229	\$5,700,000	\$72,605,359	\$152,527,331	\$117,894,125
Environmental Impacts					
Sewage Flow (gallons/day)	2,840	3,174	61,317	137,964	103,473
Water Consumption (gallons/day)	4,369	4,883	71,299	160,423	120,317
Solid Waste Production (tons/day)	0.076	0.085	2.300	5.175	3.881
Total trips generated per day: weekday	*3,034	191	8,755	19,699	14,774
Revenues					
Estimated avg annual employee income	n/a	n/a	\$47,060	\$47,060	\$47,060
Median household income	\$56,989	\$56,989	n/a	n/a	n/a
Income tax revenues - City	\$6,297	\$7,038	\$2,164,730	\$4,870,642	\$3,652,982
Income tax revenues w/ office vacancy	n/a	n/a	\$1,818,373	\$4,091,339	\$3,068,505
Property tax revenues - City	\$6,125	\$12,829	\$178,507	\$375,004	\$289,854
Total City Revenues office full occupancy	\$12,422	\$19,867	\$2,343,237	\$5,245,646	\$3,942,836
Total City Revenues w/ 16% vacancy	\$12,422	\$19,867	\$1,996,881	\$4,466,343	\$3,358,359
Expenditures					
Cost to provide services**	\$47,152	\$52,510	\$1,195,617	\$2,690,139	\$2,017,474
NET FISCAL IMPACT (full occupancy)	-\$34,730	-\$32,643	\$1,147,620	\$2,555,507	\$1,925,362
NET FISCAL IMPACT (w/ vacancy)	-\$34,730	-\$32,643	\$801,263	\$1,776,204	\$1,340,885
*Traffic for existing conditions is for that section of Mill Rd., south of I-77 ramp.					
**Municipal service expenditure categories include: general govt., public safety, public health and welfare, public works, community development, recreation, and debt service.					

floodplain should only be considered if the potential recreational facilities are located above the 100 year flood elevation.

Table 4.9, Parks, Open Space and Pathways Classifications

Classification	General Description	Location Criteria	Size Criteria	Recreational Facilities
Mini-Park	Used to address limited, isolated or unique recreational needs	Less than a 1/4 mile distance in residential setting	Between 2500 sq. ft. and one acre in size	<i>Active</i> Not big enough for programmed activities, but similar to the neighborhood park for active recreation uses
				<i>Passive</i> Picnic/sitting areas, general open space, and “people watching” areas
Neighborhood Park	Neighborhood parks remain the basic unit of the park system and serves as the recreational and social focus of the neighborhood. Focus is on informal active and passive recreation	1/4 to 1/2 mile distance and uninterrupted by non-residential roads and other physical barriers	5 acres is considered minimum size; 5 to 10 acres is optimal	<i>Active</i> Play structures, court games, “informal” playfield or open space, tennis courts, volleyball courts, shuffleboard courts, horseshoe area, ice skating area, wading pool, and activity room
				<i>Passive</i> Internal trails, picnic/sitting areas, general open space, and “people watching” areas
School Park	Depending on circumstances, combining parks with school sites can fulfill the space requirements for other classes of parks, such as neighborhood, community, sports complex, and special use	Determined by location of school district property	Variable-depends on function	<i>Active</i> Play structures, court games, “informal” playfield or open space, tennis courts, volleyball courts, shuffleboard courts, horseshoe area, ice skating area, wading pool, and activity room
				<i>Passive</i> Internal trails, picnic/sitting areas, general open space, and “people watching” areas

Table 4.9, Parks, Open Space and Pathways Classifications

Classification	General Description	Location Criteria	Size Criteria	Recreational Facilities
Community Park	Serves broader purpose than neighborhood park; focus is on meeting community-based recreation needs, as well as preserving unique landscapes and open spaces	Determined by the quality and suitability of the site; usually serves two or more neighborhoods and ½ to 3 mile distance	As needed to accommodate desired uses; usually between 30 and 50 acres	<i>Active</i> Large play structures and /or creative play attractions, game courts, informal ballfields for youth play, tennis courts, volleyball courts, shuffleboard courts, horseshoe areas, ice skating areas, swimming pools, swimming beaches, archery ranges, and disc golf areas
				<i>Passive</i> Extensive internal trails, individual and group picnic/sitting areas, general open space and unique landscapes/features, nature study areas, and ornament gardens
Large Urban Park	Large urban parks serve a broader purpose than community parks and are used when community and neighborhood parks are not adequate to serve the needs of the community; focus is on meeting community-based recreational needs, as well as preserving unique landscapes and open spaces	Determined by the quality and suitability of the site; usually serves the entire community	As needed to accommodate desired uses; usually a minimum of 50 acres, with 75 or more acres being optimal	<i>Active</i> Large play structures and /or creative play attractions, game courts, informal ballfields for youth play, tennis courts, volleyball courts, shuffleboard courts, horseshoe areas, ice skating areas, swimming pools, swimming beaches, archery ranges, and disc golf areas
				<i>Passive</i> Extensive internal trails, individual and group picnic/sitting areas, general open space and unique landscapes/features, nature study areas, and ornamental gardens.
Natural Resources Areas	Lands set aside for preservation of significant natural resources, remnant landscapes, open space, and visual aesthetics/buffering	Resources availability and opportunity	Variable	<i>Active</i> Not user based
				<i>Passive</i> Nature viewing and studying

Table 4.9, Parks, Open Space and Pathways Classifications				
Classification	General Description	Location Criteria	Size Criteria	Recreational Facilities
Greenways	Effectively tie park system components together to form a continuous park environment	Resource availability and opportunity	Variable	<i>Active</i> Hiking, walking, jogging, bicycling, and in-line skating
				<i>Passive</i> Nature viewing and studying
Sports Complex	Consolidates heavily programmed athletic fields and associated facilities to larger and fewer sites strategically located throughout the community	Strategically located community-wide facilities	Determined by projected demand. Usually a minimum of 25 acres, with 40 to 80 acres being optimal	<i>Active</i> Ballfields, soccer fields, football fields, outdoor and indoor skating rinks, tennis courts, play structures, hardcourts, and volleyball courts
				<i>Passive</i> Group picnic areas, shelters, multipurpose buildings, restrooms, and common space
SOURCE: Park, Recreation, Open space and Greenway Guidelines, National Recreation and Park Association				

Potential Sites

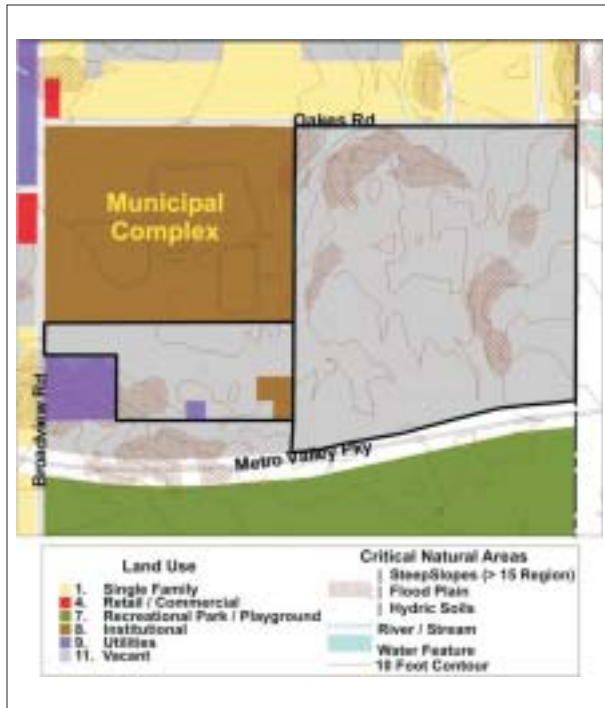
In consideration of the above site selection criteria in relation to the current Land Use Map and Cleveland Metroparks and the Cuyahoga Valley National Park, recommended sites for Community Parks are the “Cleveland Tree Farm Property” just east of the Municipal Complex, the property just south of Municipal Complex and the vacant area, east of Broadview, south of Beaver Ridge Trail and north of Homestead Creek Drive, see Maps 4.10 to 4.12.

Establishing a Community Park on the Cleveland Tree Farm property and the land just south of Municipal Complex could allow for an expansion of the grounds of the Municipal Complex. The Tree Farm Property is 111 acres while the land south of the Municipal Complex is 26 acres. These areas could provide for ballfields as well as the outright preservation of trees and natural areas.

The area near Homestead / Beaver Ridge Trail is wooded with steep slopes. The area, which encompasses 41 acres, is made up of the rear portions of lots that front on Broadview Road and some back land that has little access. Preservation of this area as a Community Park would conserve land with characteristics unique to

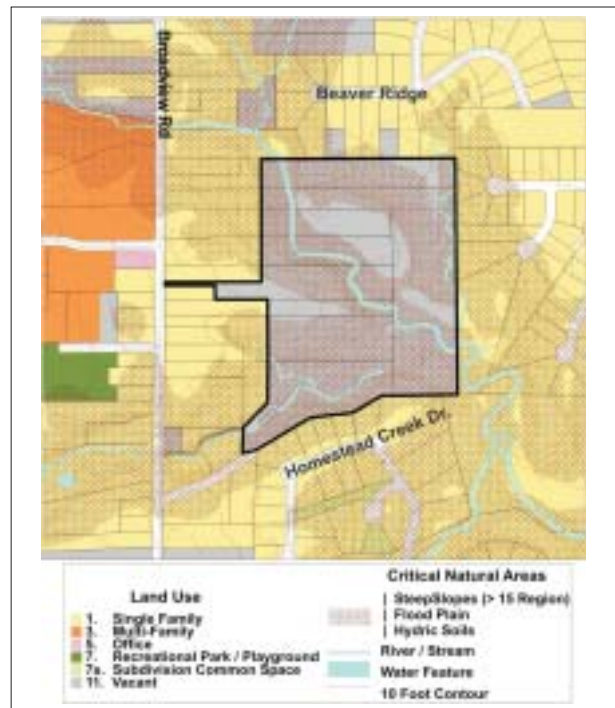
Map 4.10

Potential Site for Community Park



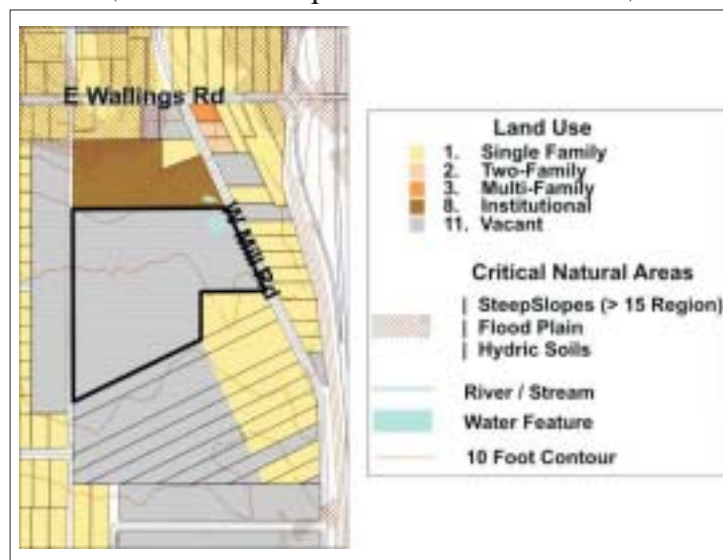
Map 4.11

Potential Site for Community Park



Map 4.12

Potential Site for Community Park
(In Partnership with School District)



Broadview Heights. While ballfields would not be appropriate, the area could provide walking paths. With sensitive property management on the properties towards the Chippewa Valley, wildlife habitat would be connected to the Chippewa Creek. Further benefits of this site are that it is located in the northern part of the City, near the area of multi-family housing off of Tollis Parkway.

Another potential Community Park site is the property owned by the Brecksville/Broadview Heights School District. This area was first considered as a potential site for the location of a Planned Business Park. However, the Planning Commission felt that the area was not appropriate for this type of development. The property is approximately 30 acres, located in the northern part of the City, where it has been noted all parkland is lacking, with good roadway and the potential for pedestrian access from nearby neighborhoods.

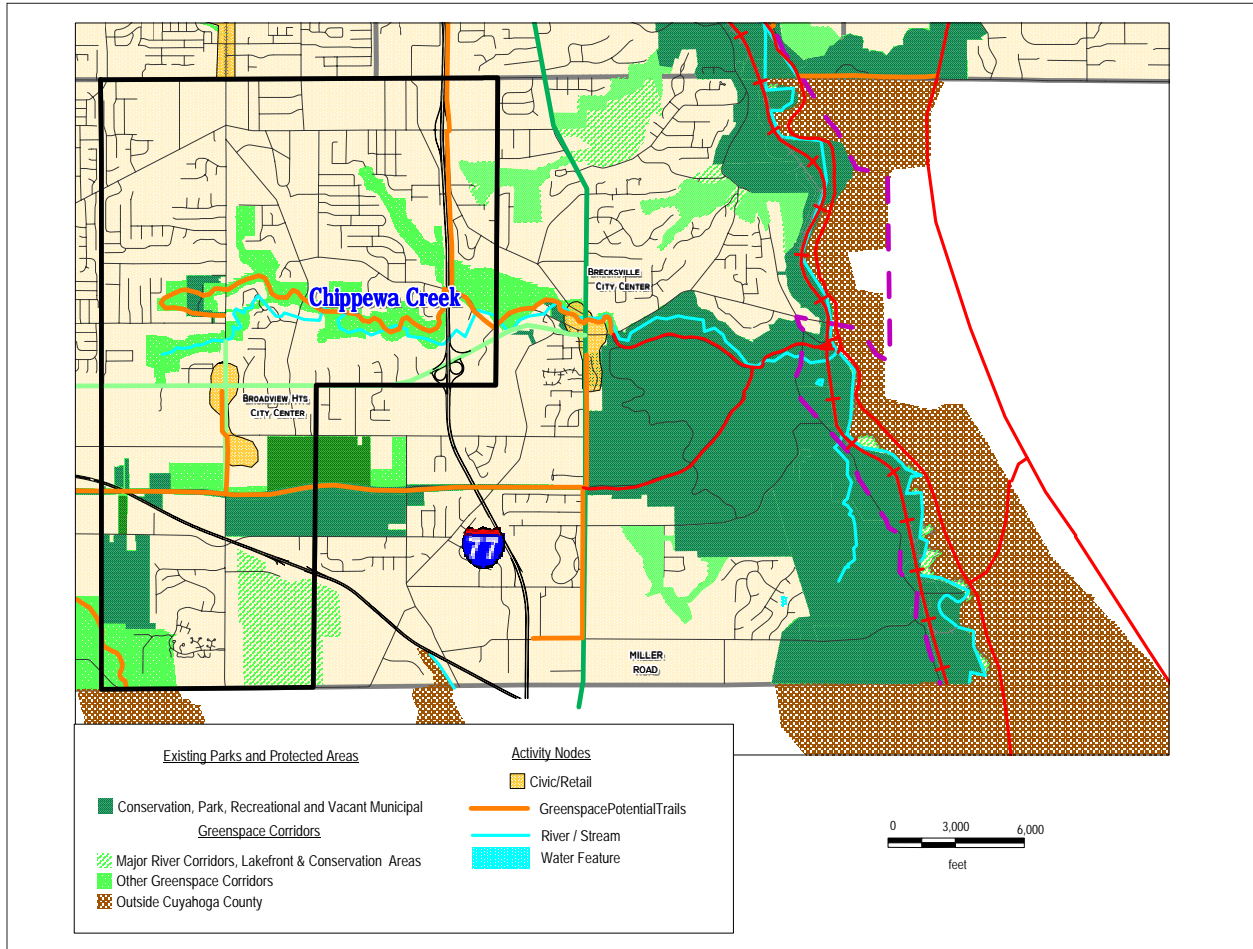
Relationship to Cuyahoga County Greenspace Plan

For the last two years, the Cuyahoga County Planning Commission and the Greenspace Working Group, comprised of over 40 people representing communities, environmental and business groups, colleges, Metroparks, the National Park Service, and other state and regional boards, have been working to prepare a Greenspace Plan for Cuyahoga County. The Greenspace Plan envisions a future for Cuyahoga County as a place where nature is an integral part of daily life; natural processes are visible and instructional and Lake Erie, our rivers and streams are cared for and our waterfronts are accessible.

The Greenspace Plan proposes a framework of ideas and strategies for Greenspace enhancement in the County. It is hoped these ideas will be carried out by many communities, environmental groups and private residential, commercial and industrial landowners. The Greenspace Plan recommends that within Cuyahoga County existing greenspace be properly managed and impaired landscapes be restored. Further, the connection of people to land, water and history, the balancing of man-made and natural environments, and the beautification of neighborhoods and streets are recommendations of the County Greenspace Plan.

Currently, the Greenspace Plan is still in draft form and is in the process of being finalized. However, it is important to note that each of these potential locations for Community Parks has benefits for Broadview Heights residents and is supported by the draft Cuyahoga County Greenspace Plan.

Map 4.13, Cuyahoga County Greenspace Plan (Part)



Map 4.13 shows the Greenspace Plan’s draft Greenprint and the map of the County delineating the long term goals for Greenspace in the County. This map proposes the following:

1. Chippewa Creek Valley and other major creek valleys are being targeted for preservation and or restoration as greenway corridors. Included in this goal is the location of a potential trail in the Chippewa Creek Valley (shown in orange).
2. The Cleveland Tree Farm Property being preserved as greenspace.

3. The bikeway along Metropark's parkway be extended (shown in orange) to connect from its current end point in North Royalton to the existing trail system (shown in red) within the Cuyahoga Valley National Park.
4. A trail is proposed to connect Broadview Heights City Center (shown in orange) down to the extended Metropark's bikeway.
5. A conservation area south of the Ohio Turnpike where greenspace is preserved within development.

Senior Citizen Housing Developments

Our population is aging and the ability of a community to respond to the needs of older residents will be an important measure of quality of life in the community. As the number of older adults increases, preparing for the housing and care options is important. There are many types of Senior Citizen Housing Developments. Table 4.10 lists the types of Senior Citizen housing and the characteristics of residents generally found in each housing type.

Senior Citizen housing developments typically generate less traffic than other land uses. They are a "lower-cost" form of residential development because they do not result in an increase in school enrollment and are viewed by some municipalities as a potential source of estate tax revenues. Further, the existence of Senior Housing will allow elderly people that currently live in Broadview Heights to remain in the community.

Site Selection Criteria/ Guidelines

Two of the most valued elements of being able to age gracefully is being able to have a sense of privacy balanced with a sense of belonging to the larger community. Locations which provide for seniors' needs for contact, communication and interaction with others are valuable; seniors should be a visible part of the community. Allowing active seniors easy access to community gathering places and shopping districts is encouraged. Proximity to schools can encourage inter-generational contact, yet schools can be noisy and interaction with older children can be seen as threatening rather than friendly by older residents.

**Table 4.7, Characteristics of Senior Citizen
Housing Development Residents**

Independent Living - Senior Apartments

- Can live “independently”
- Wants additional security (physical, emotional)
- Would prefer to live with other seniors

Independent Living - Congregate Senior Housing

- Can live “independently” or with minimal assistance
- Would like to participate in social activities with others
- Would appreciate help with housekeeping and laundry
- Would like someone to prepare meals
- Desires transportation services
- Wants additional security (physical, emotional)
- May have minor health concerns
- Would like better access to community services (service coordinator)

Assisted Living or Residential Care

- Needs assistance with Activities of Daily Living (ADLs) - bathing, dressing, eating.
- Requires medication reminders
- Would like the security of 24-hour staffing
- May have difficulty walking without assistance
- Has special medical considerations
- Has incontinence problems
- Is sometimes confused or forgetful (Alzheimer’s or Dementia)
- Wanders (Alzheimer’s or Dementia)

Nursing Home

- Requires 24-hour nursing care
- Is unable to ambulate without the assistance of a wheelchair, walker, or another person
- Cannot perform Activities of Daily Living on his or her own
- Late stages of Alzheimer’s (combative)
- Needs therapeutic or rehabilitative services (speech, occupational, physical, respiration, etc.)
- Is afflicted with a long-term or chronic illness

Continuing Care Retirement Community

- Is currently in good health
- Can presently live independently
- Would like to enter a phase of living that allows “aging in place”
- Wants the security of being cared for, when needed, throughout the aging process
- Can pay a one-time entry fee that some communities require, along with monthly service charges

Alzheimer’s or Dementia Care (may be provided in an assisted living facility or a nursing home)

- Exhibits chronic confusion or forgetfulness
- Has difficulty recognizing others (e.g., family members, friends)
- Has a tendency to wander
- Is agitated, combative, or abusive to others

The need for nearby neighborhood services clearly depends on the level of independence of the residents. The location of senior apartments or congregate senior housing should consider the distance to grocery stores, drug stores, restaurants and other personal service needs. If possible, access to these stores either on foot or through public transportation systems provides a great deal of personal autonomy and control of their environment for senior residents. Sidewalk maintenance is important for seniors due to changes in vision. Sidewalks should be shaded, well marked and even with variations gradual. Crosswalks should ensure adequate time for elderly persons to cross streets. Benches are important along sidewalks and within commercial areas frequented by seniors. Wheelchair ramps should be available and are, in fact, used by more people than those in wheelchairs.

The location of and access to neighborhood services is much less relevant to assisted living, residential care facilities and nursing homes. Many of these types of housing projects include on-site services or a mini-bus for residents’ transport-

tation needs. Facilities serving patients with Alzheimer’s or Dementia should be located away from heavy traffic since wandering is a common behavior. Interior outdoor courtyards are important at this level of care to provide for access to the outside.

Potential Sites

Based on the above site selection criteria and the range of senior citizen needs, several sites within the City may be appropriate for Senior Citizen developments.

For active seniors citizens, locations near the Broadview Road and Wallings Road intersection, and the potential for integrating senior citizen housing into the development of the southwest corner of Route 82 and Broadview Road is appropriate, see Maps 4-14 and 4-15. These areas would afford senior residents the ability to shop at nearby stores without the need to drive. Although, attention to creating a continuous sidewalk system is critical to senior citizens’ pedestrian mobility.

The existing land zoned B-5, just north of the “Mitchell” shopping center, along Broadview Road has some potential to become a senior housing development, although the site is very steep. It may be difficult to walk to the shops and services located in the Broadview and Royalton Road retail areas because of the slope. Therefore, although this area is extremely close to shops and services, some sort of transportation may need to be provided for some residents.

Vacant land just south of the Municipal Complex, and land near East Wallings Road and East Mill Road could be appropriate for senior care for those housing options where residents need 24-hour care and/or resident’s needs are all provided on-site, see Maps 4.16 and 4.17.

Potential sites for Senior Citizen Housing were considered near the Broadview Road and Boston Road intersection. These sites aren’t recommended as potential locations at this time because of their distance from the nearest hospital.

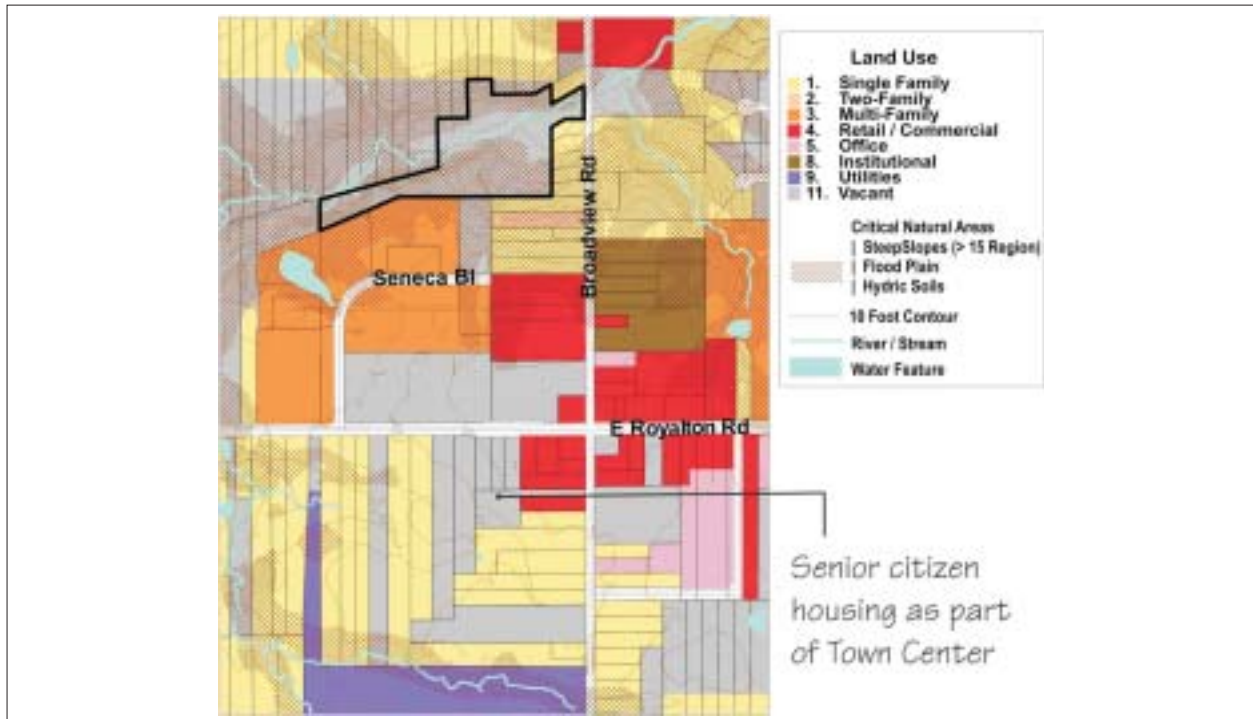
Cemetery

A cemetery is a parcel of land intended for the burial of humans or pets. A marker or memorial is erected at each gravesite for permanent remembrance of the deceased. Historically, cemeteries have been established by religious organizations, benevolent

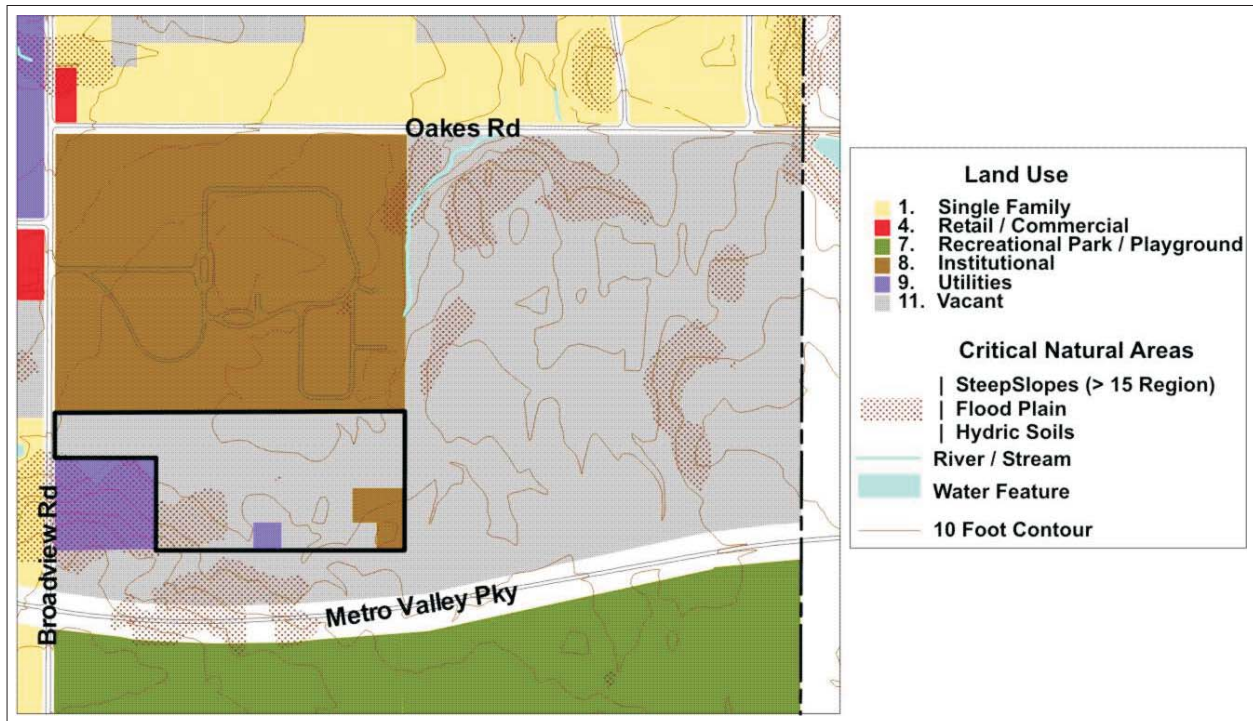
Map 4.14, Potential Sites for Senior Citizen Development
Wallings and Broadview Intersection



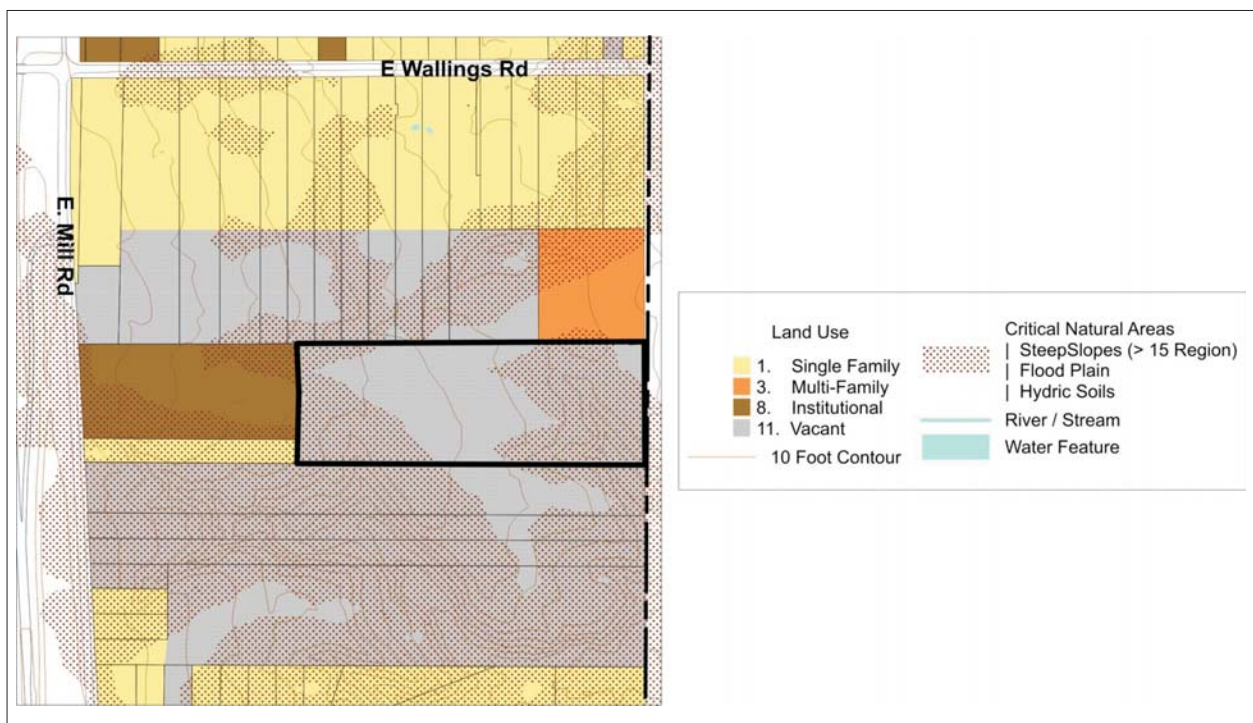
Map 4.15, Potential Sites for Senior Citizen Development
Mitchell and Broadview Town Center



Map 4.16, Potential Sites for Senior Citizen Development
South of Municipal Complex



Map 4.17, Potential Sites for Senior Citizen Development
East Wallings Road and East Mill Road



societies, communities or for-profit enterprises. Cemeteries can be designed as memorial parks, where all gravestones must be of standard dimensions with each gravestone buried so the top of the stone is flush with ground level. This provides a pastoral setting and a sense of open space. Some people are willing to use memorial parks for open space uses such as bicycling, walking, or picnicking. In addition, pet cemeteries are growing in popularity as families choose to memorialize the loss of a family pet. There are several types of mortuarial uses.

- ✓ Columbarium. A building or a structure designed with niches for the location of urns that hold the ashes of cremated persons.
- ✓ Mausoleum. A building or structure designed with vaults to hold many caskets or crematory urns. A mausoleum could be an elaborate grave marker for a single burial. Or, one could be erected to house entire families as an alternative to family grave plots.
- ✓ Other Mortuarial Uses. Funeral Home, Crematorium

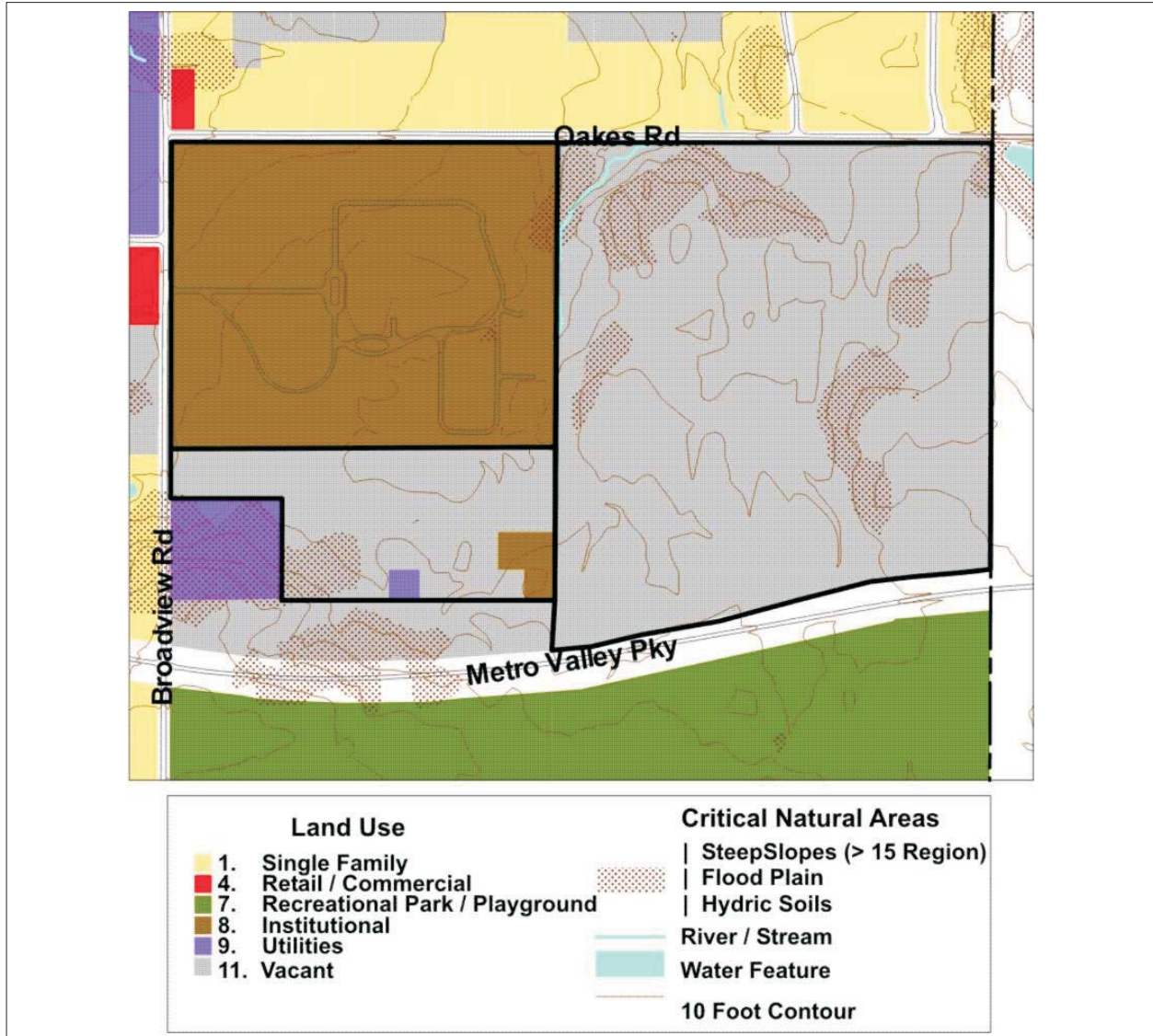
Site Selection Criteria / Guidelines

Gently sloping land or rolling hills is best for the location of a cemetery. A flat site will cause drainage problems, and cemeteries should not be allowed in any flood hazard areas. Ideally, cemeteries should be located convenient to religious facilities. Certain ethnic groups may look to establish a common burial area for their deceased, so a cemetery could be located convenient to a density of population of an ethnic group.

Arterial road access is preferred to allow for funeral procession access and restrict funeral processions from traveling through neighborhoods. Parking for funeral processions must also be accommodated within the road system of the cemetery. Recommended minimum acreage for cemeteries is between 5 and 40 acres.

Columbariums and mausoleums are almost always allowed in the same zones as cemeteries, usually being listed as permitted uses within the cemetery. Grave sites are typically required to be set back 50-100 feet while mausoleums and columbariums require special yard setbacks (up to 300 feet). Another issue to be considered is the density of the graves. Typically, cemeteries are allowed by right in urban-fringe / agricultural zones and in low-density residential zones.

Map 4.18, Potential Cemetery Sites



Potential Sites

Potential sites for a municipal cemetery are centered around and include the Municipal Complex, see Map 4.18. A portion of the municipal complex site could be set aside for a community cemetery. Further, the purchase of the “Tree Farm Property” or the property south of the Municipal Complex could provide sites for a community cemetery.

Chapter 5

Master Street Plan

Master Street Plan

The creation of a continuous street pattern is a critical component of the long-range development plan for the City. The development of an interconnecting street system is difficult within the incremental subdivision approval process. Therefore, a Master Street Plan has been developed. The proposed roadway locations shown on the Master Street Plan attempt to guide the roads so as not to promote development in areas where critical natural features such as flood plains, wetlands and steep slopes are present. However, it must be understood that the street locations shown are guided by the development criteria found in the City's zoning code and subdivision regulations.

Most important to note is that property owners are in control of whether or not their land becomes available for further development. This plan in no way indicates the City's interest in acquiring the property necessary to build the street layout as proposed.

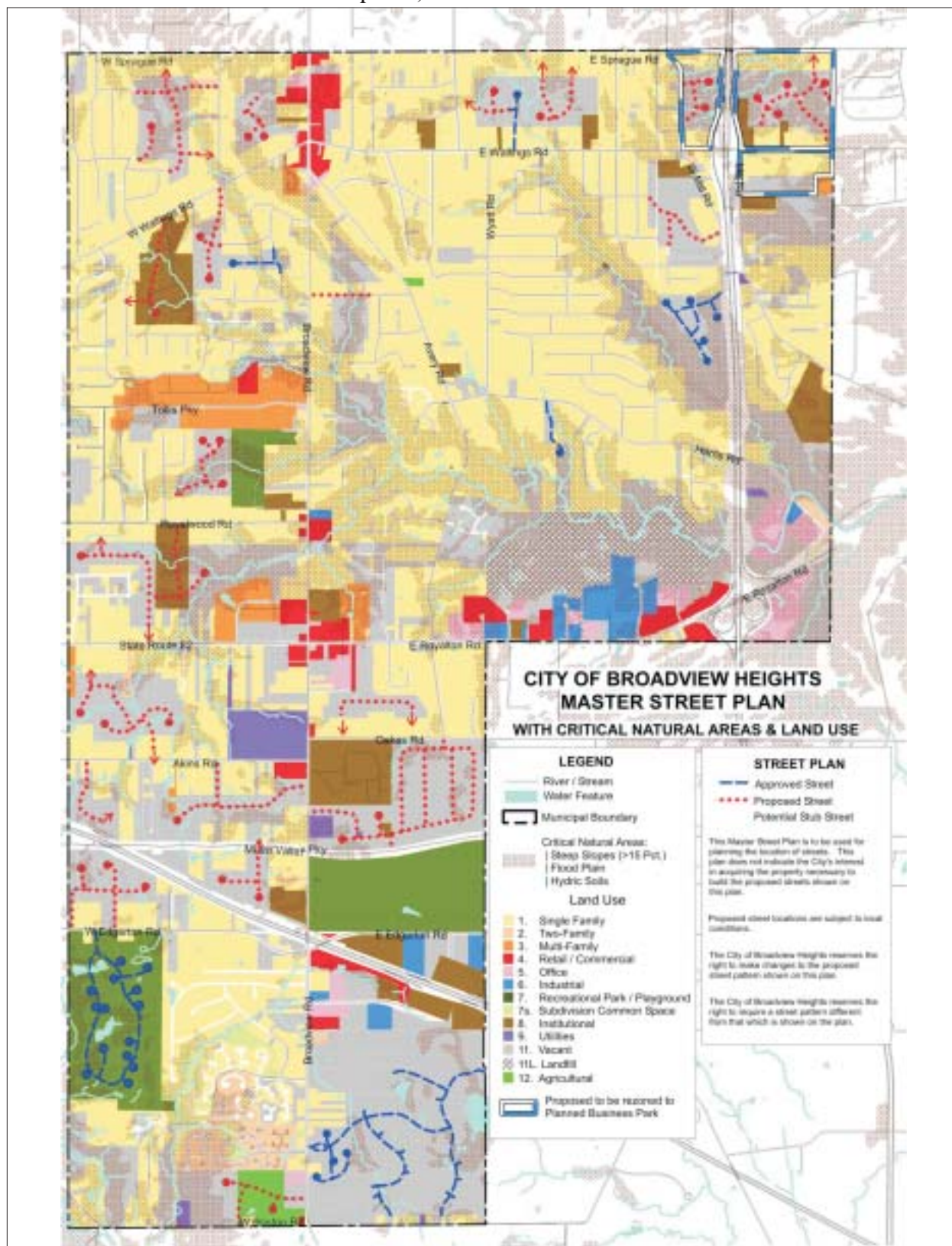
Planning Process

The data compiled in the Land Use and Natural Resource Inventories was used to determine the locations of existing development, existing stub streets, vacant land and natural development constraints such as major drainage ways, flood plains, wetlands and steep slopes. Another source used was plats that have received final approval from the City but are not yet constructed. Further, subdivision plans that, although may not have final plat approval but have been reviewed by the Planning Commission, were also used as an indication of the land owners' desire for street locations.

The process of designing the street pattern began with delineating vacant areas of land. Vacant land includes the rear portion of a bowling alley type lot where a home fronts on an arterial street with an excessively large rear yard. As often happens, the landowners in an area may choose to sell the rear portion of their lot for assembly with other parcels for development.

Next street patterns were developed for land zoned Class A-1. As seen on Map 5.1, there are cases where the land is currently occupied by an institutional use or owned by another City, but the land is zoned A-1 and therefore has the potential to become

Map 5.1, Master Street Plan



a housing development. Under A-1 zoning, 30,000 square foot lots with 125 feet of lot frontage was used for design purposes.

Every attempt was made to adhere to the City's current guidelines for street design found in Chapter 1246, Planning Principles. These guidelines are:

- ✓ 125 feet minimum centerline off-set for intersections of two streets along an arterial street;
- ✓ 1,500 feet average block length (not to exceed 1,800 feet or be less than 800 feet);
- ✓ 500 feet maximum cul-de-sac maximum length unless pavement width is increased when 1,000 feet is allowed.

Where a street would be required according to the above guidelines, but a building currently blocks a street location out to an arterial road, a large arrow indicates that a street is necessary in the general area. Further, the street pattern proposed is designed to minimize intersections along arterial roads to decrease disruptions in traffic flow.

Metroparks Parkway

There is considerable vacant land which is zoned single-family near the Metroparks Parkway in Broadview Heights. In order to design a potential street pattern in that area, it was necessary to determine which parcels could access the Parkway. In general, the land for Metroparks Parkway was acquired in the 1940's and 1950's. Each acquisition agreement delineates the number of access points to the Parkway. Table 5.1 summarizes the status of access of each parcel as reported by Cleveland Metroparks staff in October 2001.

Use of the Plan

Map 5.1 shows a reduced version of the Master Street Plan. A full-size plan has been provided to the Building and Engineering Departments. The Master Street Plan should be consulted at the beginning of the process to approve the layout of a proposed subdivision. Many times, subdivisions are proposed on a few vacant parcels that are among many other vacant parcels in an area. The Master Street Plan will

Table 5.1, Metroparks Parkway Access Status		
Parcel	Owner	Access Status
584-16-003	Eugene Bazzo	No additional access rights
584-16-005	Thomas Pinta	No additional access rights
584-16-006	Steele S. Nowlin, AJ Christine	No additional access rights
584-16-007	Ralph and Mary Emig	No additional access rights
584-16-008	Not available	No additional access rights
584-16-022	Not available	No additional access rights
584-16-027	Michael Hicho	No additional access rights
584-17-014	Cleveland Metroparks	Not applicable
584-18-001	Robert & Coles Hughes	No additional access rights
584-18-005	Donald and Rosemary Nawrocki	No additional access rights
584-19-005	Rodolfo & Malaya Lontoc	No additional access rights
584-19-014	Kevin and Lorna Short	No additional access rights
584-21-003	Cleveland Metroparks	Not applicable
584-22-016	Gerald M. Mastellone	No driveways allowed
584-23-001	James & Joseph Behal	Possibly one more driveway allowed - more research required
584-24-001	City of Cleveland	Four driveways allowed; two exist
584-26-001	City of Cleveland	

draw attention to the necessity for stub streets to create a continuous street pattern throughout the entire vacant area. Also, the Master Street Plan will highlight those areas where a developer should acquire any property necessary to provide for access from back lands to an arterial street.

The street designs shown on the Master Street Plan are just some of many acceptable designs. If the street design on the Master Street Plan differs from that proposed by a developer, it will be necessary to examine the developer’s proposal for compatibility. The characteristics of the proposed street pattern should:

1. Adhere to the City’s subdivision regulations.
2. Provide stub streets, where necessary, to provide for a continuous street pattern.
3. Extend any existing stub streets.
4. Provide adequate access to arterial roads - striving for adherence to the 1,800-foot maximum block length.
5. Work to provide internal street access (away from arterial roads) to schools and parks.

During the subdivision approval process, information may come to light that dictates that the location of a street as proposed on the Master Street Plan is not appropriate. Also, the complicated nature of this decision making process requires certain disclaimers be noted on the face of the Master Street Plan. These notes are:

1. The Master Street Plan is to be used for planning the location of streets. The Plan does not indicate the City's interest in acquiring the property necessary to build the proposed streets shown on this plan.
2. Proposed street locations are subject to local conditions.
3. The City of Broadview Heights reserves the right to make changes to the proposed street pattern shown on this plan.
4. The City of Broadview Heights reserves the right to require a street pattern different from that which is shown on this plan.

Updating

A record of development approvals that affect the Master Street Plan should be kept. This could be accomplished by requiring the Planning Commission secretary to keep a file of Planning Commission and Council decisions that affect the street plan and to keep a visual record on a map in the Building or Engineering department. It is recommended that a new base map that records the changes in the Master Street Plan be created every two years.

Chapter 6

Implementation

Introduction

This section of the Master Plan Update discusses implementation strategies necessary to carry out the recommendations of the Plan. It is important to realize that a diligent, coordinated effort will be required if the City is to realize the recommendations of the Master Plan Update. In order to direct these efforts, it is necessary to identify specific steps, strategies or actions that the City should undertake.

Adoption

The formal adoption of the Master Plan Update by City Council is paramount to the successful implementation of the Plan's recommendations. This formal acceptance of the Plan enables Council, Planning Commission and the Board of Zoning Appeals to make decisions based on the research and findings of the Plan.

Report Distribution

Distribution of the Master Plan Update to a wide audience is critical. The Plan's effectiveness depends on the extent to which it is seen, read, understood, used and respected.

Periodic Review

Although the Master Plan Update should be the basis for decision making and the aim for programs and long range investment planning, the Plan should not be viewed as an infallible predictor of any City action. The Plan should become a part of a continuing planning process. Changing economic, technological and social conditions are valid reasons for amending the Master Plan Update. Proposed changes to the Plan should be considered whenever elements of the Plan become unworkable due to unanticipated changes in the community.

Implementation Strategies

Planned Business Parks

In order to establish Planned Business Park areas the City should:

1. Create zoning regulations for Planned Business Parks;

2. Rezone land recommended within this report to Planned Business Park;
3. Begin discussions regarding road improvements and widening the Wallings Road Bridge over I-77;
4. Begin discussions with the Greater Cleveland Regional Transit Authority regarding service to the area and what site development characteristics are necessary to support transit use.

It is important to note that while the City can establish Planned Business Park zoning and apply it to certain areas of the City, this does not ensure that the land will become a Planned Business Park. Property owners are still in control of their land and must agree to sell their land to a developer in order to establish an office development. Further, regional office market forces, vacancy rates, and overall demand will affect when a proposal for a Planned Business Park development will be made and how long it will take for this area to become fully developed as a Planned Business Park.

Planned Business Park Zoning

The Planning Commission has expressed a desire to create a type of office park development that will protect the character of the land in the Wallings Road area through preservation of the steep slopes, wooded areas and streams. Therefore, it will be critical to develop zoning criteria that creates a new type of office development, different from the type of development seen in many communities. Traditionally, many office parks have been designed to accommodate automobile travel and have neglected pedestrian access in their layout. Large amounts of space between buildings, an abundance of surface parking, and lack of sidewalks are examples of design characteristics common to many office parks which serve as deterrents to preservation of the character of the land and discourage other modes of travel.

In addition to the internal layout of the office park, accessibility between the development and the surrounding community should also be considered. Ensuring that the development is accessible by public transportation and that pedestrians can easily walk through the development will reduce potential traffic impacts. Limiting access to and from the office park through a single entryway is discouraged. An office park, or any larger-scale development, which enables external access through more than

one entryway promotes more efficient travel both in the immediate area and across the community.

Building Design

Working with developers to establish design guidelines for construction within the office park is important. While current trends in office park development emphasize high standards in building design and construction, many communities identify design themes which they desire in order to create a development that is compatible with the design characteristics of the surrounding community. Design guidelines can provide recommendations on and can regulate architectural characteristics of buildings, such as exterior material, roof style, window style and coverage, and signage.

Another growing trend in building design for office park buildings is that of “green building.” According to the Green Building Alliance, a “green building” is designed to minimize the impact of its materials, construction, operation and deconstruction on the surrounding natural environment, resulting in a high performance structure which also supports the well-being of its occupants. Examples of green building design principles include installing photovoltaic cells which generate electricity, using geothermal wells to store and provide internal heat, and designing the different components of the building to enable natural climate control and enhance internal lighting.

Area Roadway Improvements

Traffic generated from development of office buildings will impact the Wallings Road, Sprague Road and Mill Road traffic circulation. Traffic congestion will center around the Wallings Road interchange with I-77. In order to manage future traffic, it may be necessary to make improvements to the Wallings / Mill area in conjunction with improvements to the Wallings Road bridge over I-77. Detailed traffic studies will be needed to forecast traffic flow, turning movements and potential signal timing which will then affect what areas should be widened. Planning now for the provision of bus service to the area is also important to reduce future traffic impacts on the City.

Widening the Wallings Road bridge will be considered a “capacity” project and will most likely require that federal funding be obtained. The need for federal funding means that the project will have to go through the Northeast Ohio Areawide Coordinating Agency (NOACA) funding process. Current NOACA policies state that the most a new capacity project can receive is 50% funding. The process for obtaining

Table 6.1, Infrastructure Assistance Programs		
County Funded Programs		
County Engineer's Funds	Various Road Improvements	Contact: Cuyahoga County Engineer, Robert Klaiber, 216/ 348-3800
State Funded Programs		
State Capital Improvements Program, (Issue 2 Program)	Eligible projects: bridges and culverts, roads, solid waste disposal facilities, stormwater collection/storage and treatment facilities, water supply systems and wastewater treatment systems	Contact: Cuyahoga County Planning Commission, Claire Kilbane, 216/443-3700
State Capital Improvements Revolving Loan Fund	Eligible projects: bridges and culverts, roads, solid waste disposal facilities, stormwater collection/storage and treatment facilities, water supply systems and wastewater treatment systems	Contact: Cuyahoga County Planning Commission, Claire Kilbane, 216/443-3700
Local Transportation Improvement Program (LTIP)	Eligible projects: roads, bridges and culverts	Contact: Cuyahoga County Planning Commission, Claire Kilbane, 216/443-3700
Federally Funded Programs		
TEA-21, ODOT, STP	Funding for highways, highway safety and transit through fiscal year 2003. Expanded highway programs include interstate, bridges, congestion and air quality improvements.	Contact: NOACA, John Hosek, 216/241-2414

funds from NOACA begins with a proposal of the work that needs to be done, together with a cost estimate. This information is submitted to NOACA along with a resolution from City Council. The project then enters its planning stage. NOACA staff reviews the proposal and requests information as needed. The project will also be reviewed by several NOACA subcommittees. With input from staff and subcommittees received, the project sponsor is asked to develop detailed plans. The project is then submitted to be “programmed” for funding. Obtaining funding for a capacity project could take 4-6 years.

Wallings Road is a County Road. The County Engineer’s Office has other funding programs and is available to discuss any road improvement project. A generalized listing of funding for the widening of the Wallings Road bridge and other roadway improvements can be found in Table 6.1.

Senior Citizen Developments

In order to ensure that a range of Senior Citizen Developments are established the City should:

- ✓ Work with senior citizen health care professionals and developers to prioritize the sites recommended for zoning;;
- ✓ Ensure that Senior Citizen housing is programmed into development plans for the southwest corner of Broadview and Royalton Roads;

- ✓ Consider amendments to the B-5 district zoning code requirements which encourage Senior Citizen Developments, including eliminating or reducing the requirement of a ten-acre minimum project size, reducing required front building setbacks to allow active seniors closer access to sidewalks, and exploring the possibility of simplifying the code requirements for distances between buildings and design regulations.

Community Parks

Establishing a new Community Park in the City will involve purchasing property. However, in the case of the West Mill Board of Education Property, the City could approach the School Board to see if a management agreement could be reached allowing the City to use the site for recreational purposes until it is needed for a school.

The “Tree Farm” property is still owned by the City of Cleveland. Mayor Bender has noted that he had several discussions about sale of the property with Mayor White, and at that time the City of Cleveland did not intend to sell the property. Both Mayor Bender and Mayor Jerry Hruby of Brecksville have asked the City of Cleveland to give the cities of Broadview Heights and Brecksville first consideration if they ever decide to put the property on the market.

Clean Ohio Fund

Potential funding for the acquisition of land for a new Community Park is available from the State of Ohio Clean Ohio Fund. In 2001, the State of Ohio voters approved a constitutional amendment authorizing the state to sell bonds and other obligations for the Clean Ohio Program. The Clean Ohio Program provides \$400 million over four (4) years for brownfields clean-up, open space and watershed conservation, farmland preservation and recreational trails. The state has allocated \$3.6 million to Cuyahoga County for each of the four (4) program years (2001-2004), for a total of \$14.4 million.

Projects eligible for funding and other Clean Ohio program details are noted below.

✓ **Open Space Projects***

- Eligible Projects
 - ◆ Acquisition of open space
 - ◆ Acquisition of easements

- ◆ Acquisition of land or rights in land for parks, forests, wetlands or natural areas that protect an endangered plant or animal population
 - ◆ Other natural areas
 - ◆ Connecting corridors for natural areas
 - ◆ Construction or enhancement of facilities to make open space accessible and useable by the general public
- Open space projects should emphasize
 - ◆ Comprehensive open space planning
 - ◆ Aesthetically pleasing and ecologically informed design
 - ◆ Economic development that promotes a priority local economic development and/or community development initiative in high unemployment and/or low-income areas
 - ◆ Protection of rare, threatened and endangered species habitats
 - ◆ Protection of high quality, viable habitats for plant and animal species
 - ◆ Preservation of wetlands or other scarce natural resources
 - ◆ Pedestrian or bicycle linkages
 - ◆ Educational opportunities
 - ◆ Quality of life and the natural heritage of the state
 - ◆ Reduction or elimination of non-native, invasive species of plants or animals
 - ◆ Balancing the natural ecosystem

Not Eligible - Acquiring open space for “active recreation” such as baseball diamonds or tennis courts.

*Projects which are eligible for Clean Ohio Trails Program funding are not eligible under the Clean Ohio Conservation Program; however, trails which provide access to or public use of lands acquired through the Clean Ohio Conservation Program are eligible project elements.

✓ **Riparian Corridor Projects**

- Eligible Projects
 - ◆ Reforestation of land or the planting of vegetation for filtration purposes
 - ◆ Fee simple acquisition of lands to provide access to riparian corridors or watersheds

- ◆ Acquisition of easements for the purpose of protecting and enhancing riparian corridors or watersheds
- Riparian corridors projects should emphasize
 - ◆ Habitat protections
 - ◆ Stream corridor-wide or watershed-wide plans
 - ◆ Recreational, economic and aesthetic preservation benefits
 - ◆ Floodplain and streamside forest functions
 - ◆ Headwater stream preservation
 - ◆ Restoration and preservation of aquatic biological communities

Not Eligible - Riparian corridor projects that initiate or perpetuate hydromodification such as dams, ditch development or channelization.

✓ **Clean Ohio Program Eligible Project Activities**

- Acquisition
- Fee Simple Purchase
- Easement Purchase
- Planning and Implementation
- Appraisal
- Closing Costs
- Title Search
- Environmental Assessments
- Design
- Construction or Enhancement of Facilities
- Permit, Advertising and Legal Documents

✓ **Clean Ohio Program Funding**

- \$3.6 million available annually
- Grants only - up to 75% of the estimated project cost
- Sources of 25% local match must be
 - ◆ Contributions of money by any person, local political subdivision, or the federal government
 - ◆ In-kind contributions through the purchase or donation of equipment, land, easements, interest in land, labor and materials necessary to complete the project
 - ◆ Grants cannot be used by an applicant to pay for any administrative services incurred by the applicant

Clean Ohio Fund Distribution

For purposes of allocating the Clean Ohio Funds, each of the State's nineteen District Integrating Committees, established through the State Issue 2 Program, were assigned the task of appointing a Natural Resources Assistance Council (NRAC) to administer the Conservation Program in that district.

The Cuyahoga County Natural Resources Assistance Council (NRAC) has been appointed according to state guidelines and is responsible for:

Members of the Cuyahoga County Natural Resources Assistance Council
<u>Mr. Thomas Denbow</u>, NRAC Chair , Executive Director, Chagrin Watershed Partners, Inc.
<u>Mr. Jeffrey Lennartz</u>, NRAC Vice-chair, Secretary, Cuyahoga Soil & Water Conservation District
<u>Mr. David Beach</u>, Executive Director, EcoCity Cleveland
<u>Mr. Steven Sims</u>, Director, Cuyahoga County Development Department
<u>Mr. Tim Donovan</u>, Executive Director, Ohio Canal Corridor
<u>Mr. Mark Fallon</u>, Commissioner, Cleveland Department of Parks
<u>Mr. David Goss</u>, Senior Director, Greater Cleveland Growth Association
<u>Ms. Carol Thaler</u>, Principal Planner, Cuyahoga County Planning Commission, Western Reserve Resource, Conservation and Development District Representative
<u>Mr. Vern Hartenburg</u>, Executive Director, Cleveland Metroparks
<u>Honorable Randall Westfall</u> , Mayor, Village of Valley View
<u>Mr. Robert C. Klaiber</u>, P.E., P.S., Cuyahoga County Engineer

1. Promoting the development and improvement of Cuyahoga County open space and the protection and enhancement of riparian corridors and watersheds; and
2. Evaluating and selecting applications from local jurisdictions within Cuyahoga County for financial assistance from the Clean Ohio Conservation Program.

The NRAC has developed an evaluation process and an application supplement for use in selecting projects for Program Year One funding consideration. The overview, instructions and evaluation methodology should be carefully reviewed before the application materials are completed. If you have any questions, please visit the Cuyahoga County Planning Commission's website, planning.co.cuyahoga.oh.us, or contact Claire Kilbane at (216) 443-3700.

Cemeteries

In order to locate a municipal cemetery, it will be necessary to purchase land or to incorporate a cemetery into the grounds of the Municipal Complex. In Ohio, cemeter-

ies are regulated by the Ohio Commerce Department, Division of Real Estate. The Ohio Revised Code allows for cities to establish cemeteries.

Ohio Revised Code 759.01 Cemeteries and crematories

Any municipal corporation may provide public cemeteries and crematories for the burial or incineration of the dead and regulate public and private cemeteries or crematories. Any cemetery established by a municipal corporation shall register with the Division of Real Estate in the Department of Commerce pursuant to section 4767.03 of the Revised Code.

Ohio Revised Code 759.03 Powers of legislative authority as to cemeteries

The legislative authority of a municipal corporation owning a public burial ground or cemetery, whether within or without the municipal corporation, may pass and provide for the enforcement of ordinances necessary to carry into effect sections 759.02 and 759.48, inclusive, of the Revised Code, and may regulate such public burial grounds and cemeteries, the improvement thereof, the burial of the dead therein, define the tenure and conditions on which lots therein shall be held, and protect such burial grounds and cemeteries and all fixtures thereon.

Within all the regulations of the State of Ohio and with the advice of legal council, the City will need to address certain cemetery management issues such as:

1. The designation of a City Official or Department to be in charge of the cemetery.
2. Determining how the cemetery will be funded.
3. Determining if a cemetery trustee committee should be established.
4. Defining what records should be kept relating to the regulation and maintenance of the cemetery. These could include maps with a list of cemetery lots and a list of the names of the persons buried therein, deeds for cemetery lots, records of ownership, location and interments and copies of rules and regulations.

The City allows cemeteries as a main use in the D-1 Zone however, additional regulations should be added to the Zoning Code and the D-1 Zone to guide the development of a cemetery.

1. A definition of a cemetery should be added to Section 1260. *Cemetery: Land used or intended to be used for the burial of the human or animal dead and dedicated for cemetery purposes, including crematories, mausoleums, and mortuaries if operated in connection with and within the boundaries of such cemetery.*
2. Section 1278.03 states that “*the parcel of land to be developed for a Class D-1 Community District shall be sufficiently large in area so as to provide a proper setting... so that the main and accessory buildings shall not occupy more than twenty-percent of the parcel.*” Since the recommended minimum acreage for cemeteries is 5 acres, this requirement should be added to the D-1 Chapter.
3. Special yard standards for cemeteries should be added to the D-1 Chapter. Mausoleums and columbariums often are required to have much larger yards (up to 300 feet) than yards otherwise typically required for institutional uses. Further, the distance from the property line for actual grave sites should be defined. These setbacks are usually between 50 -100 feet.

Master Street Plan

In order to ensure that the Master Street Plan is considered when approving the design of new subdivisions, the Master Street Plan should be adopted as part of the overall Master Plan Update.

Subdivision Regulations

As adopted in 1963, Chapter 1246, Planning Principles, is written to be used as “*principles and not specific regulations*” although the word “shall” is used extensively throughout the section. This paradox can result in some confusion about what is actually required by the City, what the City’s priorities are, and may provide an open door to disregard the regulations altogether.

Traffic circulation management begins with street design. Maximum block lengths have been prescribed to ensure that cross streets are reasonably placed so that travelers are not required to journey out of their way and burden other neighborhoods with extra traffic. Minimum block lengths work to manage the number of intersections

along arterial streets. Managing the number of intersections will manage future traffic turning movements, thus assisting in the flow of through traffic.

Requiring more than one access point to a neighborhood, which can result from enforcement of maximum block length regulations, also provides certain advantages for traffic circulation in an area. These advantages include reduced congestion and internal travel volumes as a consequence of alternative routes; diffusion of the development's traffic impact to the external road system; and continuity in the internal street system for emergency services and for general services such as snow plowing, mail routes and school bus routing.

Given the benefits of minimum and maximum block lengths to provide for the efficient delivery of City services and to manage traffic flow, it may be time to amend Chapter 1246 to allow for the regulations stated in the chapter to hold more weight, while still allowing the Planning Commission discretion and the ability to plan safe streets with professional skill. Therefore, the following amendment to Section 1246.01 is suggested:

“1246.01 INTENT

The planning principles established in this chapter are intended to be fundamental principles to be applied with professional skill in the planning of land so as to produce attractive and harmonious neighborhoods, convenient and safe street and economical layouts of residential and other land development.

~~Since these provisions are principles instead of specific regulations as set forth in other chapters it,~~ It may not be possible to incorporate all the principles in each subdivision, especially in small developments. However, the Planning Commission shall determine if certain principles are not applicable. Alternate designs should be thoroughly studied to obtain the best plan to assure stable and high value neighborhoods.

If a Comprehensive Plan, Thoroughfare Plan, or plan for the parks and other open areas has been adopted, the streets, school sites, public parks and all other land uses shown thereon shall be incorporated in the subdivision plan.”

Appendix A

Impact Analysis Methodology and Sources

Appendix A - Impact Analysis Methodology and Sources

The methodology and data sources used in conducting the impact analysis of development alternatives for the areas surrounding the intersection of Wallings Road and I-77 is found below. Information is arranged in the same fashion as that contained in Tables 4.1 to 4.4 and Tables 4.7 to 4.9 of this report.

Property Data

Office building height: The height of proposed office buildings is delineated as either 2, 4 or 6 stories.

Office building footprint (sq ft): Because Broadview Heights does not have a specific provision in its zoning code for maximum lot coverage in office districts, the office building footprints in this analysis were calculated based on the standards applied to office park districts in similar communities in the region. The standards used were 20% maximum lot coverage for Alternative 3, Low Density Office Park and 15% for Alternative 4, High Density Office Park and Alternative 5 Mixed Use Office Park.

Total office building square footage: Total office building floor area = office building footprint x number of building stories

Potential vacant office space (sq ft): The vacancy rate (16%) was determined by averaging the vacancy rates for southern suburbs of Cuyahoga County as reported by Grubb & Ellis, CB Richard Ellis, and Colliers for the fourth quarter of 2000 through the first quarter of 2001.

Total number of employees:

Office employee density per 1,000 sq ft: 3.00

Retail employee density per 1,000 sq ft: 2.50

Source: Development Impact Assessment Handbook, Urban Land Institute, 1994.

Total Number of Dwelling Units:

6 dwelling units/acres

Source: City of Broadview Heights Planning and Zoning Code, Section 1270.01(a)

Total Number of Residents:

Average household size, owner-occupied units: 2.57

Average household size of renter-occupied housing: 2.16

Average household size, City of Broadview Heights: 2.46

Source: U.S. Bureau of the Census, 2000.

Potential Land Value of Site:

\$318,057/acre

Source: CPC research into average value of office park land in Cuyahoga County with similar characteristics

Potential Building Value of Site:

Office median square foot cost (1-4 story): \$76.45

Office median square foot cost (5-10 story): \$80.31

Retail in office bldg median sq ft cost: \$68.27

Source: RS Means Building Construction Cost Data, 2001.

Condominium square foot cost: \$89.93

Sources: Cuyahoga County Auditor's Office; Marshall & Swift Residential Cost Construction Handbook, 2001.

Environmental Impacts

Sewage production: Office per 1,000 sq ft: 79.98 gal/day

Sewage production: Retail per 1,000 sq ft: 91.16 gal/day

Sewage production: SF and condo residential per capita: 65 gal/day

Water Consumption: Office per 1,000 sq ft: 93 gal/day

Water Consumption: Retail per 1,000 sq ft: 106 gal/day

Water Consumption: SF and Condo residential per capita: 100 gal/day

Solid Waste Production: Office per employee: 0.001 tons/day

Solid Waste Production: Retail per employee: 0.001 tons/day

Solid Waste Production: SF and condo residential/ capita: 0.00175 tons/day

Source: Development Impact Assessment Handbook, Urban Land Institute, 1994.

Traffic: office park vehicle trips, weekday: 11.42 trips per 1,000 sq. ft.

Traffic: retail (drug store/pharmacy) vehicle trips, weekday:

7-9 a.m.: 3.2 trips per 1,000 sq. ft.

4-6 p.m. 7.63 trips per 1,000 sq. ft.

Traffic: residential condo/townhouse vehicle trips weekday 5.86 per dwelling unit

Traffic: residential single family vehicle trips weekday 9.57 per dwelling unit

Source: Trip Generation, Institute of Transportation Engineers, 1997.

Revenues

Estimate Average Annual Employee Income:

Average annual salary/capita, office employment	\$45,530
Percent Change in CPI, 1999-2000	3.36%
Average annual/capita office salary, adjusted for inflation	\$47,060

Source: U.S. Bureau of Labor Statistics, 1999, Cleveland-Lorain-Elyria PMSA

Average annual wages/capita, retail employment	\$14,065
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Source: State of Ohio, Bureau of Labor Market Information, 2000, Cleveland-Lorain-Elyria PMSA

Median Household Income:

Median Household Income, Broadview Heights, 1999	\$56,989
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Source: U.S. Bureau of the Census, 2000.

Income Tax Revenues:

Office or Retail Income Tax Revenues = number of employees x average annual salary

Residential Income Tax Revenues =

$$\{[(\text{number of households} \times \text{median household income}) \times 10\%^a] \times 2\%^b\} + \\ \{[(\text{number of households} \times \text{median household income}) \times 90\%^c] \times 2\%^b\} \times 75\%^d$$

Notes on Residential Income Tax Revenue Calculation:

^aPercentage of Broadview Heights resident wage earners working in the City, as estimated from "Place of Work" data contained in the 1980 and 1990 U.S. Census (2000 data not yet available).

^bCity income tax rate

^cPercentage of Broadview Heights resident wage earners working outside the City.

^dBroadview Heights income tax credit granted to residents working outside of the City.

Property Tax Revenues:

Commercial property tax revenues =

$$\{[(\text{property market value} \times 35\%) / \$1,000] \times 59.03\} \times 11.9\%^f$$

^eBroadview Heights commercial property tax rate, year 2000.

^fPercentage of commercial property tax revenues allocated to the City of Broadview Heights

Residential property tax revenues =

$$\{[(\text{property market value} \times 35\%) / \$1,000] \times 51.86\} \times 12.4\%^h$$

^a Broadview Heights residential property tax rate, year 2000.

^b Percentage of residential property tax revenues allocated to the City of Broadview Heights.

Cost to Provide Services

Commercial Expenditures: Commercial expenditures were estimated based upon a methodology presented in *The Fiscal Impact Handbook*, published by Rutgers University’s Urban Policy Research Center (1980). This method captures the increase in costs to a city resulting from an increase in employees. The methodology assumes that an increase in employees triggers an increase in demand for city services.

Step one in the process requires that per capita city expenditures be estimated from the community’s most recent annual financial report. Per capita expenditures are calculated by simply dividing each expenditure category by Broadview Heights’ total population for the year 2000 (15,967).

2000 Municipal Expenditures by Category	2000 Amount	Per Capita Expenditures
General Government	\$4,030,075	\$252
Public Safety (Security of Persons and Property)	\$4,737,850	\$297
Public Health and Welfare	\$38,511	\$2
Public Works (Transp., Basic Utility, Capital Outlay)	\$5,157,265	\$323
Community Development	\$592,046	\$37
Recreation and Culture (Leisure Time Activities)	\$805,045	\$50
Debt Service	\$2,217,256	\$139

Source: City of Broadview Heights, *2000 Comprehensive Annual Financial Report*

The next step in the process assumes that each additional employee resulting from development generates a certain percentage increase in per capita municipal expenditures within each of the budget categories listed above. The percentage increase in per capita expenditures resulting from an increase in employment is quantified by the use of a “multiplier.” The multipliers used in this process are presented in the following table:

In order to calculate the increase in expenditures resulting from office or retail development, the formula is as follows:

$$\text{Projected increase in expenditures} = \text{total number of employees} \times \text{expenditure multiplier}^i \times \text{per capita expenditures}^i \times \text{total population}$$

ⁱ Expenditure category

The above calculation is first completed for each separate expenditure category. Total expenditures are calculated by simply summing the results for each separate category.

Residential Expenditures:

The methodology for calculating municipal expenditures generated by residential development was also obtained from The Fiscal Impact Handbook. This methodology assumes that the market value of land serves as an indicator of the intensity of its use and, therefore, the associated demand for services resulting from that particular use.

Expenditure Category	Expenditure Multiplier
General Government	0.0000048
Public Safety (Security of Persons and Property)	0.0000453
Public Health and Welfare	0.0000120
Public Works (Transp., Basic Utility, Capital Outlay)	0.0000103
Community Development	0.0000880
Recreation and Culture (Leisure Time Activities)	0.0000817
Debt Service	0.0000516

Source: *The Fiscal Impact Handbook*, published by Rutgers University's Urban Policy Research Center (1980)

The first step in estimating residential expenditures requires an examination of the number of parcels devoted to commercial (industrial, office and retail) use that exist in the community, along with the total market value of those commercial parcels. The average market value of a commercial parcel is then calculated by dividing the total commercial property market value by the total number of commercial parcels. Next the average market value per parcel is calculated by dividing the total property market value by the total number of parcels. The ratio of these averages (average commercial market value/average total market value) is then calculated, and adjusted through the application of a “multiplier” which further refines the relationship between commercial property value and the amount of municipal costs generated by commercial use.

$$\text{Average market value of commercial parcel} = \frac{\text{total commercial property market value}}{\text{total number of commercial parcels}}$$

$$\text{Average market value of parcel} = \frac{\text{total property market value}}{\text{total number of parcels}}$$

Finally, the community's total annual expenditures are multiplied by the above adjusted ratio in order to calculate that portion of expenditures attributable to commercial development. Subtracting this amount from total expenditures yields the amount of expenditures generated by residential development. Per capita residential expenditures are calculated by simply dividing total residential expenditures by total population.

$$\text{Total municipal expenditures generated by commercial development} = \frac{\text{total municipal expenditures} \times \text{average market value of commercial parcel} \times \text{“multiplier”}}{\text{average market value of parcel}}$$

*Total municipal expenditures generated by residential development =
total municipal expenditures - municipal expenditures generated by commercial development*

*Per capita residential expenditures =
municipal expenditures generated by residential development / total population*

In order to project the amount of residential expenditures generated by the development alternatives studied for the areas surrounding Wallings Road and I-77, the figure for per capita residential expenditures calculated above is multiplied by the total number of residents generated by each development alternative.

*Estimated expenditures generated by Wallings/I-77 residential development =
projected number of residents x per capita residential expenditures*

Net Fiscal Impact

The net fiscal impact is calculated by subtracting the “cost to provide services” from “total city revenues.”