

# TURTLE 2038

COMPREHENSIVE PLAN



**TURTLE CREEK**  
INDIANA  
est. 1812

# TURTLE 2038

COMPREHENSIVE PLAN  
for



**TURTLE CREEK**  
— INDIANA —

prepared by

S&W Smith & Wesson  
planning consultants

May 2018

# ACKNOWLEDGEMENTS

We would like to thank all those who helped and participated during the Comprehensive Plan's design process. This document is the result of strong community participation and stakeholder engagement. Our approach involved roundtables, meetings, and outreach with more than 400 members of the community, together with representatives of different stakeholders.

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## **City Administration**

Mayor Raymond Remington

## **Comprehensive Plan Advisory Committee**

IMA (Indiana Manufacturers Association)

Indiana Farm Bureau

Indiana Historical Bureau

Small Business Services Wabash County

Indiana Economic Development Corporation

Workers Labor Union

Fort Wayne Business Coalition

Indiana Evangelical Church

Turtle Creek School District Board

Wabash County Real Estate Agents Coalition

# PLANNING TEAM



Smith & Wesson Planning Consultants is an industry-leading, interdisciplinary consulting firm that provides services in economic development, real estate, environmental planning, and more. We are based in Washington, DC and have offices in New York, Chicago, Indianapolis, and Los Angeles, which allow us to serve different clients all over the world.

Our methodology is to provide strategic advisory services through a multi-scale and interdisciplinary approach in which every project is analyzed through every possible lens. So far, we have provided professional advice to complex projects: comprehensive plans, downtown revitalizations, mixed-use developments, transportation planning, landscape design, and economic development. Our clients range from private developers and real estate agencies to city officials and governmental agencies.

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Director of Participatory Planning

# LETTER from our mayor



## Dear Turtlers,

The City of Turtle Creek is facing tremendous challenges in the coming decades. We must balance projected industrial development and the controlled growth of our City. This is an unprecedented opportunity to face these challenges through sustainable measures and programs. The following *Turtle 2038 Comprehensive Plan* has been developed through a three-year effort with the interests and values of the citizens of Turtle Creek and its surrounding rural community. A comprehensive plan contains a community's vision for itself and a roadmap for getting there. This Plan is based on a thorough and inclusive visioning process including Turtlers from all neighborhoods and integrates their concern for long-term sustainability, preserving treasured historic landmarks, and promoting economic development.

Turtle Creek is a vibrant community with strong ties to our past. There are challenges in preserving its historic character together with its rural, small town feel, while at the same time keeping the city vibrant, attractive, and renewed. This plan recognizes the need for controlled growth and change to maintain its

character and heritage, while recognizing areas for future development to house the increasing manufacturing industry that provides a great number of jobs for our Turtlers.

This document has been developed to help guide the future of Turtle Creek through the use of a set of public policies and successful community involvement. The Plan is intended to be a navigation chart that will guide city government officials as well as business owners, landowners, and residents of Turtle Creek to keep our city a safe and livable place. It has been a long and complicated process, but because of our strong sense of community and determination, I am confident we will overcome the obstacles that are ahead of us together with the action plan proposed by this Comprehensive Plan.

A handwritten signature in black ink, appearing to read "D. R. Brumington". The signature is fluid and cursive, with a large, stylized initial "D" and "R".

Mayor of Turtle Creek



Birdseye view of Turtle Creek  
Courtesy of: Indiana Farm Bureau

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- I.1 Location
- I.2 Settlement & Development History
- I.3 Existing Conditions
- I.4 Trends and Projected Needs

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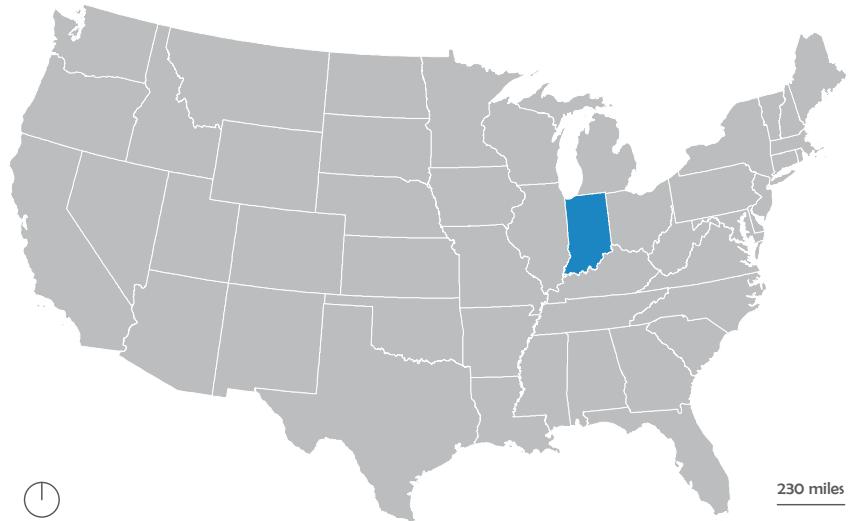
# INTRODUCTION

# LOCATION & context

1.1 LOCATION

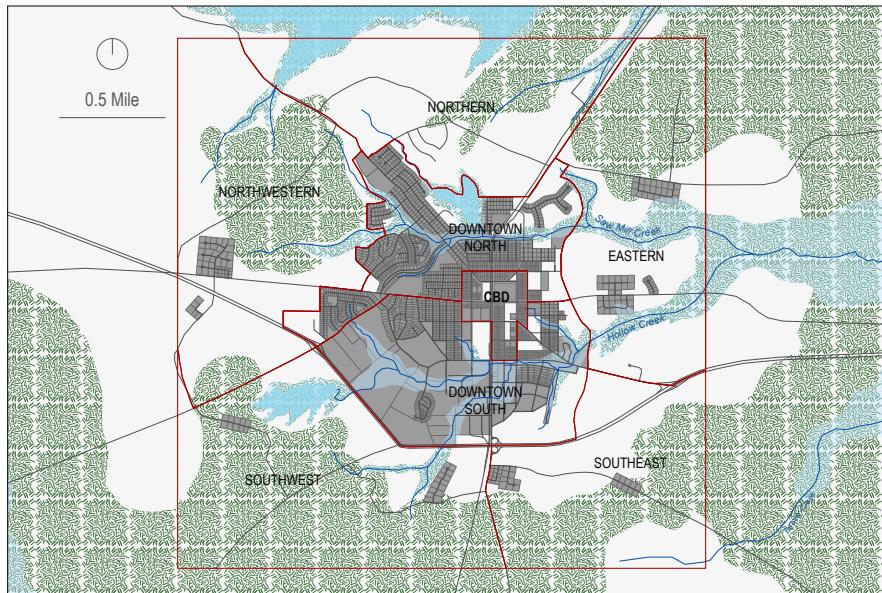
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▼ Map 1. Location of Indiana State



▼ Map 2. Location of Turtle Creek within the region





◀ Map 3. Turtle Creek Central City



The first step when planning for a long-term vision is to understand the community in the present and to project its future given current conditions. This chapter provides a brief background overview, which includes Turtle Creek's regional and local history, current demographics, existing land use, and a review of community outreach. The creation of this profile shaped the development of TURTLE2038.

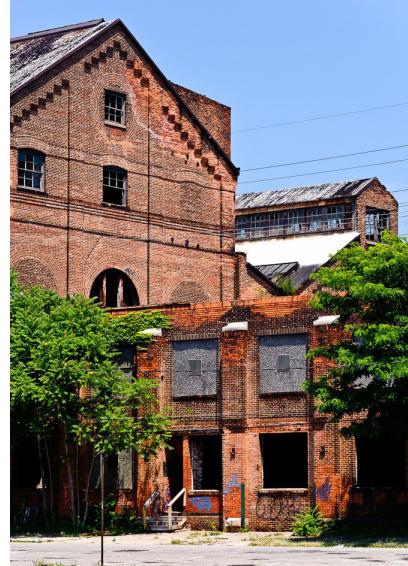
## Location

Turtle Creek is situated in the northeast region of Indiana State, 30 miles to the west of Fort Wayne and 50 miles south of Elkhart along the Wabash River. The township contains 80 square miles, and its natural borders are: the Mihšihkinaahkwa Park to the east, Kentner Creek to the west, the Miami Reservoir and Uplands to the north, and the Teepahki Forest to the south.

Turtle Creek is easily accessible by US Highway 24 and by freight rail, which allows Turtle Creek to connect to other regions and localities. Its closest airport is Indianapolis International Airport, which provides international connections to larger metropolitan areas across the United States and the globe.

## Township and City

The city was incorporated in 1912 with approximately 2.5 square miles. Today, Turtle Creek Township is approximately 12.3 square miles in size with a current population of 11,000 residents. The population is projected to grow to 22,000 by 2038.



# SETTLEMENT

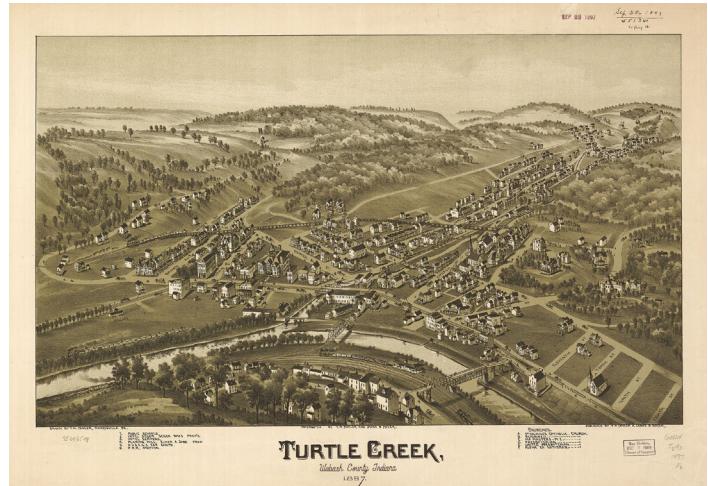
## *historic timeline*

▼ Little Turtle Chief, Source:  
Encyclopedia Britannica



Founding of Turtle Creek following the death of Chief Little Turtle. First American settlers developed rudimentary agriculture with crops of corn. This led to an rise in population and proliferation of small towns and villages.

▼ Aerial map of Turtle Creek, circa 1887, courtesy of Indiana Public Library.



1.1 LOCATION

**1794**

**1812**

**1850**

**1880**

**1920**

4

Battle of Fallen Timbers: final and decisive defeat for the Northwest Indian Conference. Chief Little Turtle ceded Indian territories and signed the Treaty of Fort Greenville.



Incipient industrial development with the railroad system becoming popular in Indiana. This brought great improvements in agriculture with the introduction of new technologies.

Illustration of the Battle of Fallen Timbers.  
Source: Encyclopedia Britannica.

Turtle Creek is incorporated in 1912  
**SHIFT FROM AGRICULTURE TO INCIPENT DEFENSE MANUFACTURING IN THE REGION.**

Big Four Railroad merged all the different companies in the midwestern states. Its strategic location within Indiana, helped grow new industries related with trade and manufacturing.

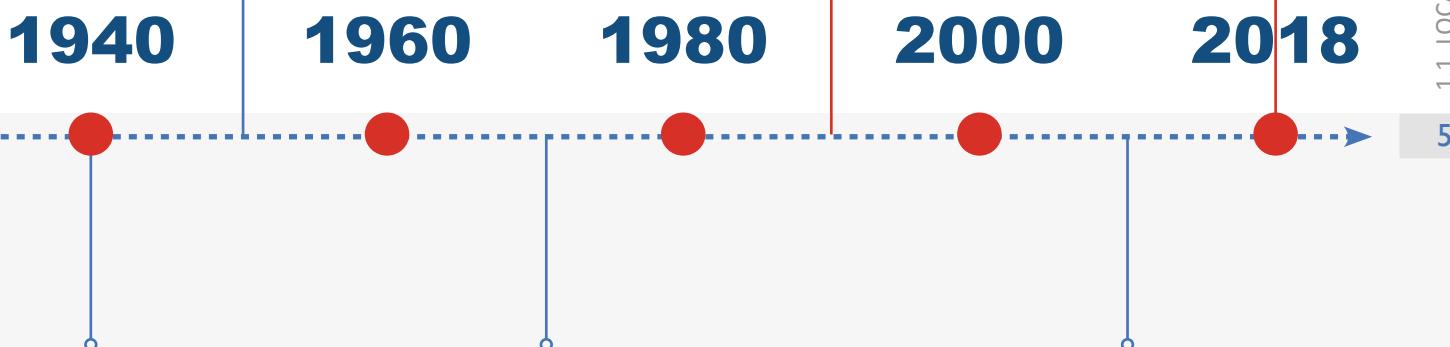
Aerial view of Turtle Creek's surrounding communities, around the 1960's. Courtesy of Indiana Public Library.



The Post-war period saw an expansion of the manufacturing industry. Turtle Creek becomes a booming industrial town. Its population followed the national sprawl trend by locating farther from the city's center to places with more open space, less traffic and safer neighborhoods.

THE REGION'S ECONOMY SUFFERS AN OVERALL STAGNATION. THIS HALTS INDUSTRIAL MANUFACTURING AND ABANDONMENT OF ITS INFRASTRUCTURE.

COMPREHENSIVE PLAN



The period between wars helped expand Turtle Creek's industries. This brought an increase in its population and urban growth.

The period between wars helped expand Turtle Creek's industries. This brought an increase in its population and urban growth.

A wave of new technologies applied to manufacturing arrive at Turtle Creek during the turn of the century. New tech industries locate in town due to its existing infrastructure, which produces a new increase in its population.



Industrial warehouse typology that still remains in Turtle Creek. Postcard Illustration from the Collection at Turtle Creek Public Library.

US Navy electronics technician works on radar systems for Hawkeye aircrafts. Courtesy of Defense Imagery Management Corp.



# SETTLEMENT & development history



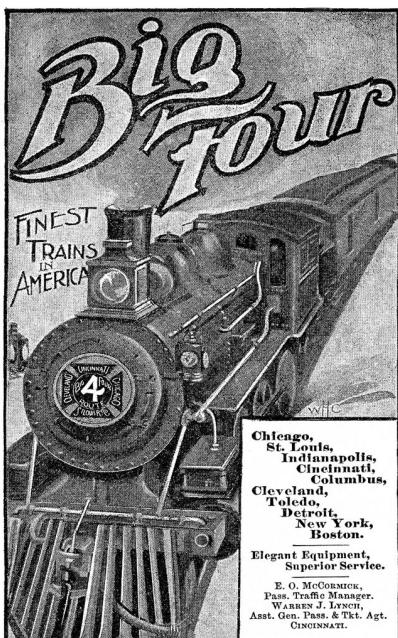
Chief Little Turtle  
▲ Source: Encyclopedia Britannica

## *Founding of Turtle Creek and the fall of Miami Indians*

Turtle Creek was founded in 1812, following the death of legendary Miami American Indian, Chief Little Turtle, who gained recognition during the second half of the 18th Century resisting against American settlers in two decisive battles during the Northwest Indian War. The Battle of Fallen Timbers in 1794 was the final and decisive defeat for the Northwest Indian Conference against the US Army, which secured the area for the Americans. Chief Little Turtle, representing the Confederation, ceded territories located in most of Ohio and parts of Indiana and signed the Treaty of Fort Greenville in 1795. This document encouraged westward migration and settlement in these areas.

## *First settlers and growth of the agriculture industry*

Indiana State had been primarily rural for much of its history, but the area surrounding Turtle Creek was covered with dense and old-grown forests. Once the land was clear, rural settlements, villages, and small towns started to proliferate around larger metropolitan areas such as Fort Wayne and started producing corn and other products. By 1816, Indiana's population was around 65,000 living in widespread townships and villages.



## *Big Four Railroad and the rise of manufacturing*

By the 1850s, the railroad system became popular in Indiana with smaller companies developing from and around larger cities. The spirit behind this industrial development was that of progress and enterprise that motivated entrepreneurs to transform the agricultural landscape into a rich manufacturing and commercial area. This brought great changes in terms of opportunity for business development and economic growth, since it incorporated new connections with eastern and northern cities. The agricultural industry saw substantial changes as new technologies were introduced to expand and promote efficiency in production.

By the end of the 19th Century, the strategic location of the Big Four Railroad helped the area grow other industries associated with trade

◀ Big Four Railroad advertising  
Published in the March 1898 issue of Woman's Home Companion magazine



Indiana National Laboratories testing a vibration machine.  
Courtesy of Aerospace & Defense Technology, Inc.

and manufacturing. Around the 1880's, Turtle Creek developed small-scale manufactured products and trading with other larger townships in the area through its close location to the Wabash Railroad Station.

### ***20th Century: shift towards defense manufacturing***

The beginning of the 20th century shifted Turtle Creek's economic landscape. Once an agricultural center, Turtle Creek replaced much maize production with defense manufacturing influenced by the rise of this industry in Fort Wayne. During the First and Second World Wars, defense manufacturing expanded in the region, and Turtle Creek became a booming industrial town. This industrial growth dramatically changed Turtle Creek's demographics and boundaries. People relocated farther from the city's center to places with more open space, less traffic, affordable land, and safer neighborhoods. During the final decades of the 20th century, the economic climate in the region suffered an overall stagnation, which halted industrial manufacturing, with many large companies deciding to leave the region and abandoning large warehouses and industrial areas in the city center.

### ***21st Century: high-tech manufacturing dominates the region***

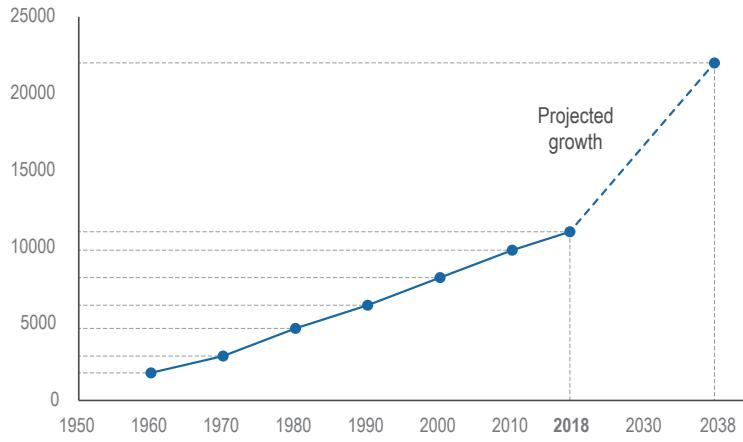
The turn of the century brought a new wave of technologies applied to manufacturing after the economic crisis. During the 2010's, new tech industries started to dominate the region, producing high-tech defense products. Turtle Creek promoted its existing infrastructure and connectivity so that similar companies could locate in the town and promote further economic development.



Indiana Farm near Turtle Creek  
Courtesy of: Indiana Farm Bureau

# EXISTING CONDITIONS

Fig. 1 Turtle Creek Population from 1960 to 2038 (projected)



## Demographics

Turtle Creek Township is home to approximately 11,000 residents constituting 3,800 households, 90 percent of which are located within the Turtle Creek Planning Area.

▲ Turtle Creek families. Courtesy of Turtle Creek Community Board.

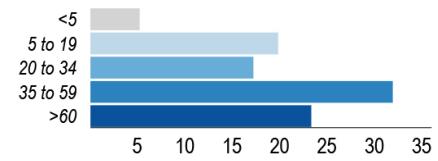
### Age & Race

The population's demographic composition generally follows that of Wabash County as a whole. Age is roughly evenly-distributed across cohorts, with school-aged children constituting about 20 percent of the overall population and working-aged adults about 50 percent. Nearly 97 percent of residents over the age of five years speak English at home; the vast majority of residents identify racially as white (nearly 90 percent), though a sizable and well-organized Native American minority (just over six percent) also calls Turtle Creek home.

### Income & Educational Attainment

The Township's median household income is slightly over \$47,000.00 per year, with 12.5 percent of households living below the federal poverty line. Educational attainment is comparable to national averages, with over half the population over age 25 years possessing a high school diploma (or equivalent) or less. The community's labor force participation rate is approximately 60 percent, and unemployment is about six percent.

Fig. 2 Age Distribution (%)

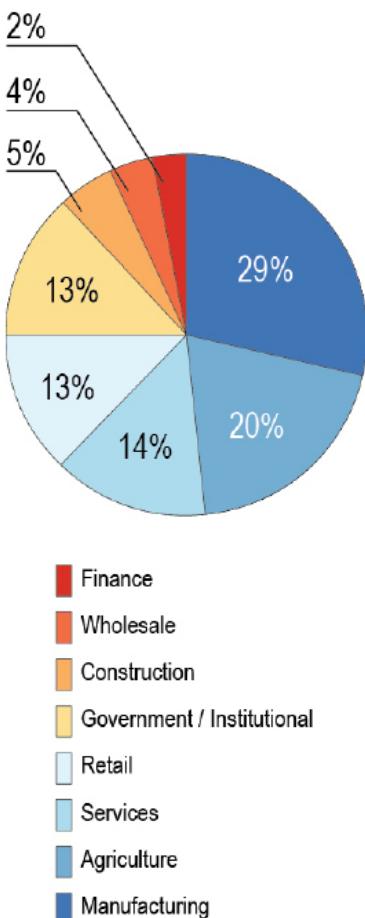


\$47,000  
Median Household Income

12.5%  
Living below poverty line

## Economy

**Fig. 3 Employment in Turtle Creek by Sector (2018)**



**Table 1. Current and Future Employment Trends**

Industry	Year 2018	Growth	Year 2038	% Change
<b>Agriculture</b>	1060	-200	860	-19%
<b>Construction</b>	250	645	895	258%
<b>Manufacturing</b>	1500	1850	3350	123%
<b>Wholesale/Distribution</b>	200	200	400	100%
<b>Retail</b>	700	1000	1700	143%
<b>Services</b>	750	1000	1750	133%
<b>Professional Services</b>	100	345	445	345%
<b>Government/Institutional</b>	700	700	1400	100%
<b>Total</b>	5260	5540	10800	

Turtle Creek currently supports 5,260 jobs. The most prominent industries are agriculture (20 percent of all jobs) and manufacturing/industrial (29 percent).

The majority of agricultural activity involves dairy, bovine livestock, and seed and cereals production. At this time, agricultural operations are evenly split between privately-owned, moderate-scale farms and corporatized, large-scale industrial farms. These jobs tend to be located in the township's outer extents, where open space and optimal soil conditions are abundant.

Most manufacturing/industrial activity is in support of the defense industry. Turtle Creek's manufacturers produce arms, ammunition, and some heavy military equipment. These jobs tend to be low-skilled and performed by individuals with relatively low educational attainment, though they generally provide comfortable middle-class incomes comparable to that observed in Wabash County and throughout Indiana. Manufacturing jobs are heavily concentrated in Turtle Creek's CBD.

## Housing

**Table 2. Central City Housing Characteristics by planning district (2018)**

Planning District	Single-Family Detached	Row / Townhouses	Garden Apartments	Multi-Story Apartments	Total
1	120	0	10	40	170
2	105	25	25	100	255
3	135	200	250	75	660
4	420	300	225	0	945
5	675	0	0	0	675
6	345	0	0	0	345
7	215	100	50	0	365
<b>Totals</b>	<b>2015</b>	<b>625</b>	<b>560</b>	<b>215</b>	<b>3415</b>



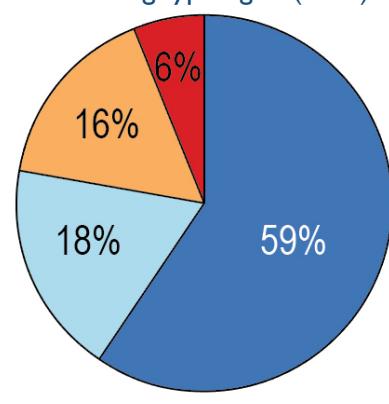
▲ Current view of Maple Street in the City center. Courtesy of DCP.

There are currently 3,700 residential dwelling units in the Turtle Creek Planning Area. 92 percent of dwelling units are situated within Planning Districts 1 through 7 (3,415 in total), with the remainder located in fringe areas. Existing dwelling units presently consume 828 acres of land within the planning area, approximately 11 percent of the total land area.

Single-family homes are the predominant residential form, accounting for 60 percent of dwelling units in the central city and 100 percent of dwelling units in fringe areas. Row/townhouses, garden apartments, and multistory apartments account for 18, 16, and six percent of the housing stock in the central city, respectively.

Turtle Creek's average household size is currently 2.9 persons per dwelling unit, and the vacancy rate is approximately 5.4 percent.

**Fig. 4 Turtle Creek's Housing Typologies (2018)**



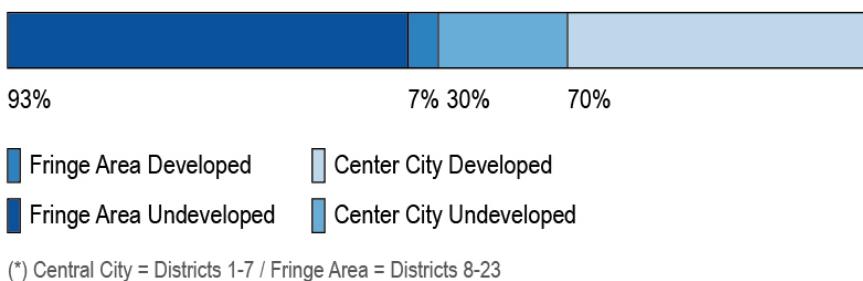
- Multi-Story Apartments
- Garden Apartments
- Row/Townhouse
- Single-Family Detached

## Land Use and Zoning

The Turtle Creek Planning Area encompasses just over 7,800 acres. Over three-quarters (76 percent) of this total acreage is currently undeveloped; the township's unincorporated territory also remains largely undeveloped. Within the planning area, 74 percent of development is contained within the central city planning districts (Districts One through Seven). However, 428 acres of development have occurred in the fringe area districts that are not spatially contiguous with the more-compact development in the city center. 277 acres of dedicated open space lie east of the central business district (CBD) in Planning Districts Two and Ten.

Residential density varies greatly across the planning area. The mean residential density by planning district within the central city is 4.7 dwelling units per acre, with the highest densities achieved in Planning Districts Two and Three. In the fringe areas, the mean residential density by planning district is considerably lower, at 0.86 dwelling units per acre.

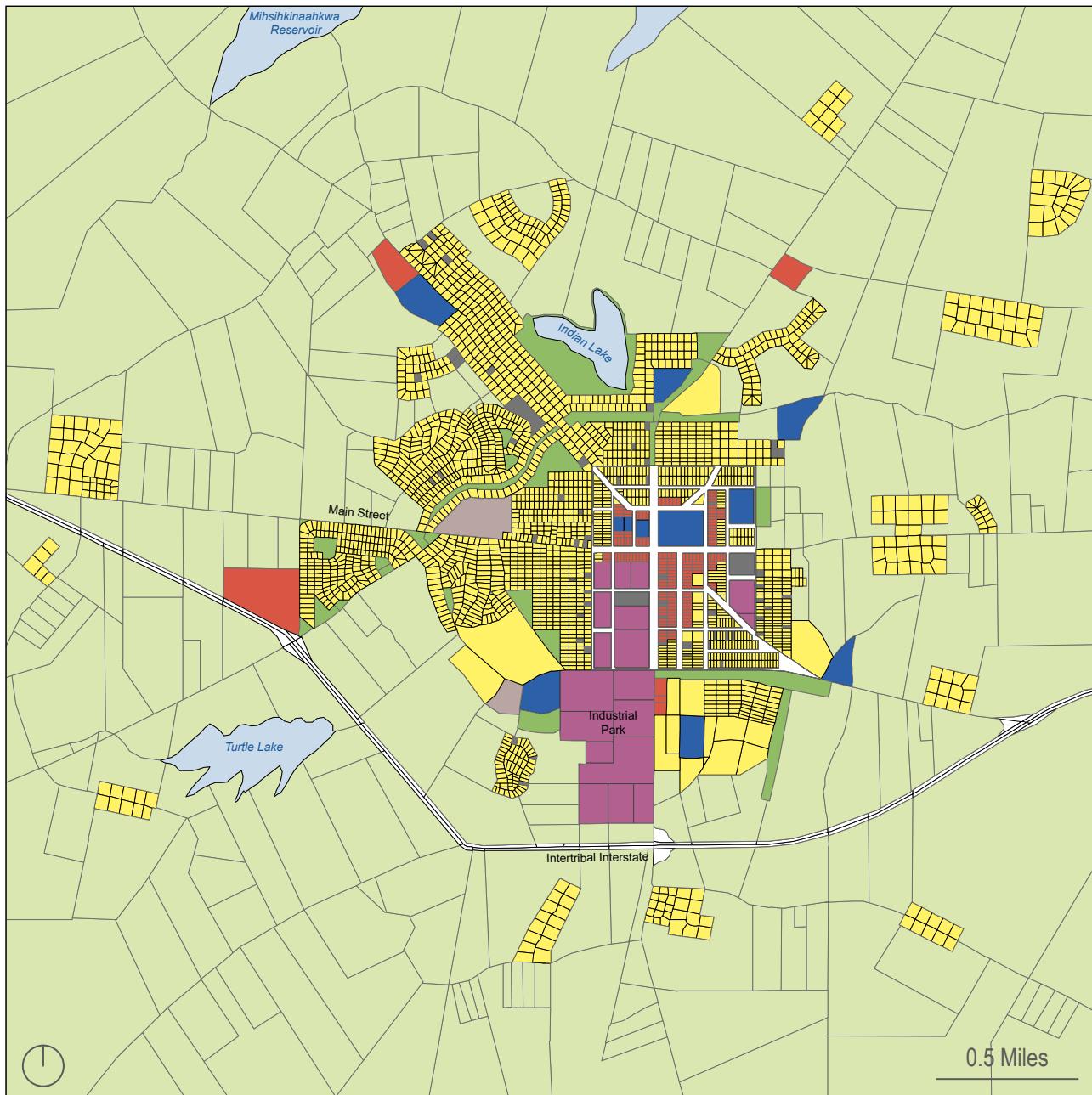
Commercial activity in Turtle Creek is concentrated in the CBD, with 31 acres of commercial development; however, numerous tax parcels designated for commercial use remain undeveloped. An eight-acre commercial development is located northwest of the CBD in Planning District Five. This planning district also has a 32-acre, undeveloped commercial tract in its southwest extreme, and Planning District Seven possess a 5.5-acre undeveloped commercial tract in its northern extreme. Approximately 129 acres of industrial/manufacturing uses are compactly distributed throughout Planning Districts One, Two, and Four, 19 percent of which remains undeveloped.

**Fig. 5 Turtle Creek Land Development 2018****Table 3. Turtle Creek Existing Zoning Schema (2018)**

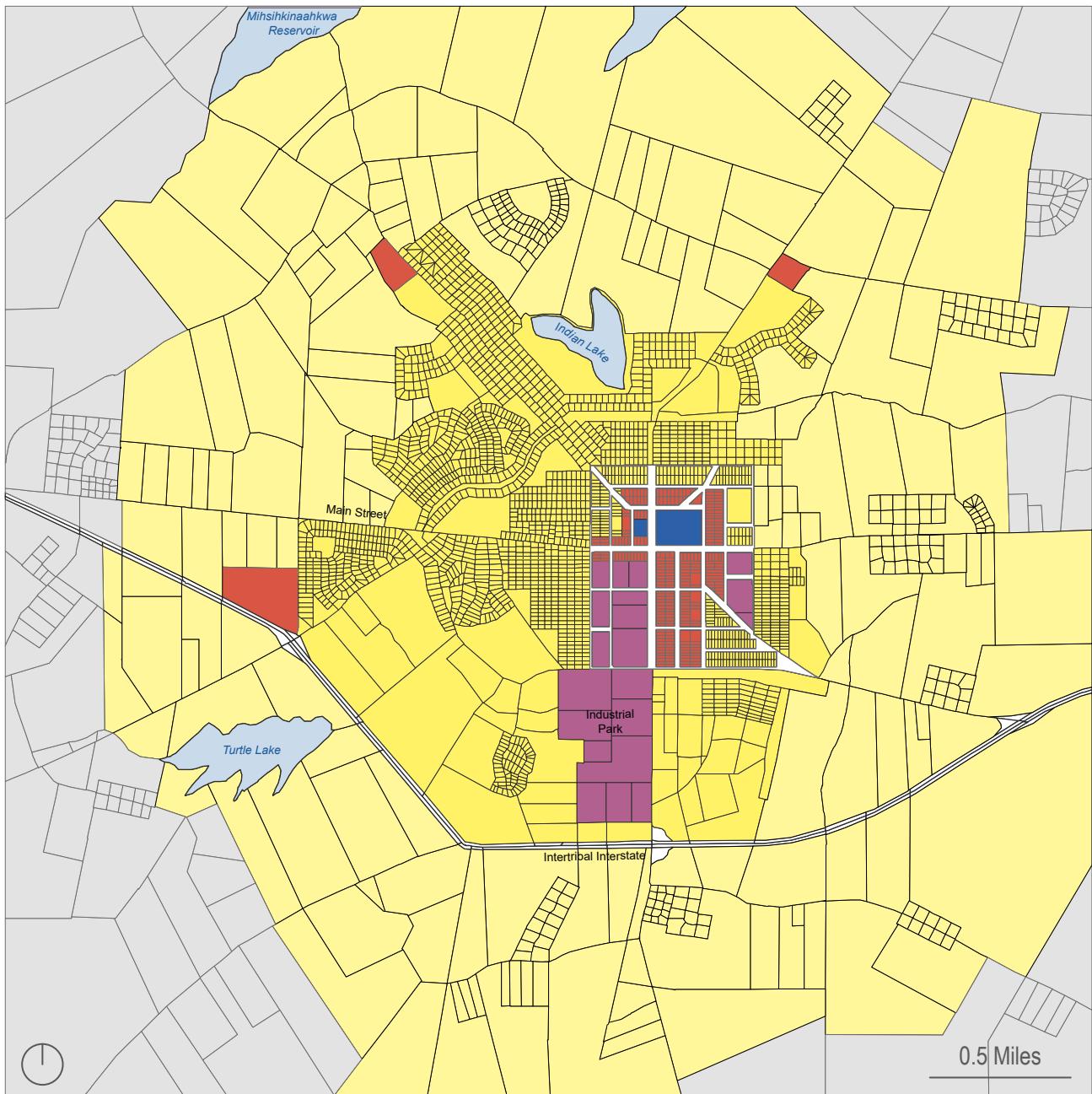
Zoning District	Total Acreage Affected	Percent of Planning Area
Low-Density Residential (R1)	4259	54.5%
High-Density Residential (R2)	1181	15.1%
Commercial (C)	93	1.2%
Industrial/Manufacturing (M)	129	1.6%
Institutional (I)	12	0.2%
Transportation (T)	125	1.6%
Unrestricted (U)	1884	24%

The incorporated municipality deploys a rudimentary zoning system within the planning area but currently lacks land use regulation jurisdiction over the remainder of the township. The zoning consists of seven categories: low-density residential, high-density residential, commercial, industrial/manufacturing, institutional, transportation, and unrestricted. The low-density residential districts constitute the majority of territory within the planning area at nearly 55 percent of the total. Meanwhile, commercial and industrial/manufacturing zones together account for only 2.8 percent of all land in the planning area, and nearly one-quarter is unrestricted by zoning.

Map 4. Turtle Creek Land Use Map (2018)

**KEY**

<span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Residential	<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Institutional	<span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Agriculture & Open Space
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Commercial	<span style="background-color: white; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Transportation	<span style="background-color: lightblue; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Water
<span style="background-color: purple; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Industrial & Manufacturing	<span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Parks & Recreation	<span style="background-color: grey; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Vacant/Undeveloped
				<span style="background-color: brown; border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	Utilities

**Map 5. Turtle Creek Zoning Map (2018)****KEY**

[Yellow Box] Low-Density Residential	[Purple Box] Industrial & Manufacturing	[Grey Box] No Zoning
[Light Yellow Box] High-Density Residential	[Blue Box] Institutional	[Light Blue Box] Water
[Red Box] Commercial	[White Box] Transportation	

## Transportation

Turtle Creek Township is served by United States Highway 24, which runs east-west across the Township just south of the city center. The primary thoroughfares are Main Street which runs east-west through the planning area and Center Street, which runs north-south through the planning area; these two thoroughfares intersect perpendicularly within the CBD, forming what is locally referred to as Godfroy Square. While the street network within the city center roughly conforms to a tight grid pattern, the network becomes increasingly irregular and disconnected with distance from the CBD, with isolated cul-de-sacs dominating the fringe areas.

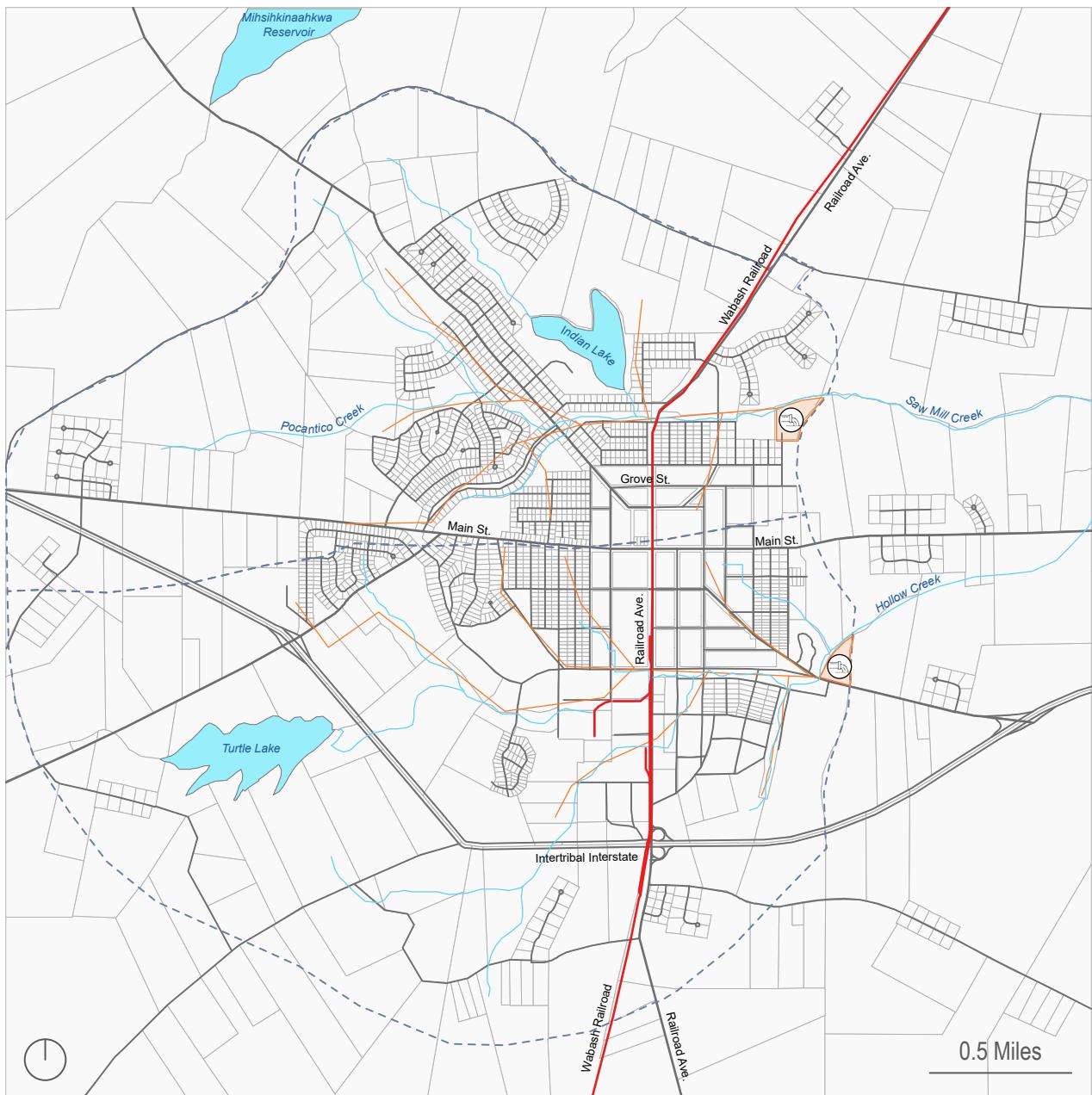
A freight rail right-of-way runs parallel to Center Street, connecting Turtle Creek along the Indianapolis-South Bend corridor. It bisects the CBD and directly serves industrial/manufacturing uses on its west side within the CBD. The railroad's operation is limited primarily to evenings and nights, and passenger service has been suspended for several decades.

Turtle Creek's very low residential density cannot currently support any form of public transit, so residents are heavily automobile-dependent.

## Infrastructure

Turtle Creek presently operates two wastewater treatment facilities. The North Creek Plant services Planning Districts One, Five, Six, and Seven. It has a maximum daily processing capacity of 1.2 million gallons, and it serves 3,800 residents or 40 percent of its estimated total capacity. The South Creek Plant serves Planning Districts One, Two, Three, and Four. It has a maximum daily processing capacity of one million gallons, and it services 5,500 residents or 69 percent of its estimated total capacity. Combined, the two systems cover a present service area of 1,736 acres. Residents outside the city center rely on private septic systems. The City's policy has been to extend the sewage system to new developments as they occur.

**Map 6. Turtle Creek Infrastructure Map (2018)**



#### KEY

<span style="background-color: #00AEEF; border: 1px solid black; width: 15px; height: 15px;"></span>	Water bodies	<span style="color: orange;">—</span> Sewers	<span style="color: red;">—</span> Railroad
<span style="border: 1px dashed blue; width: 15px; height: 15px;"></span>	Sewersheds	<span style="color: cyan;">—</span> Streams	<span style="border: 1px solid black; width: 15px; height: 15px;"></span> Train station
<span style="border: 1px solid black; width: 15px; height: 15px;"></span>	Parcel boundaries	<span style="color: black;">—</span> Inter-tribal Interstate	<span style="border: 1px solid black; width: 15px; height: 15px;"></span> Wastewater
		<span style="color: black;">—</span> Roads	

Source: Turtle Creek Office for Community Planning (2018)

## Public Facilities

The Turtle Creek School District operates three elementary schools, one middle school, and one high school to serve the Township's approximately 2,178 school-aged children. The elementary and middle schools are generally considered near or at optimal capacity.

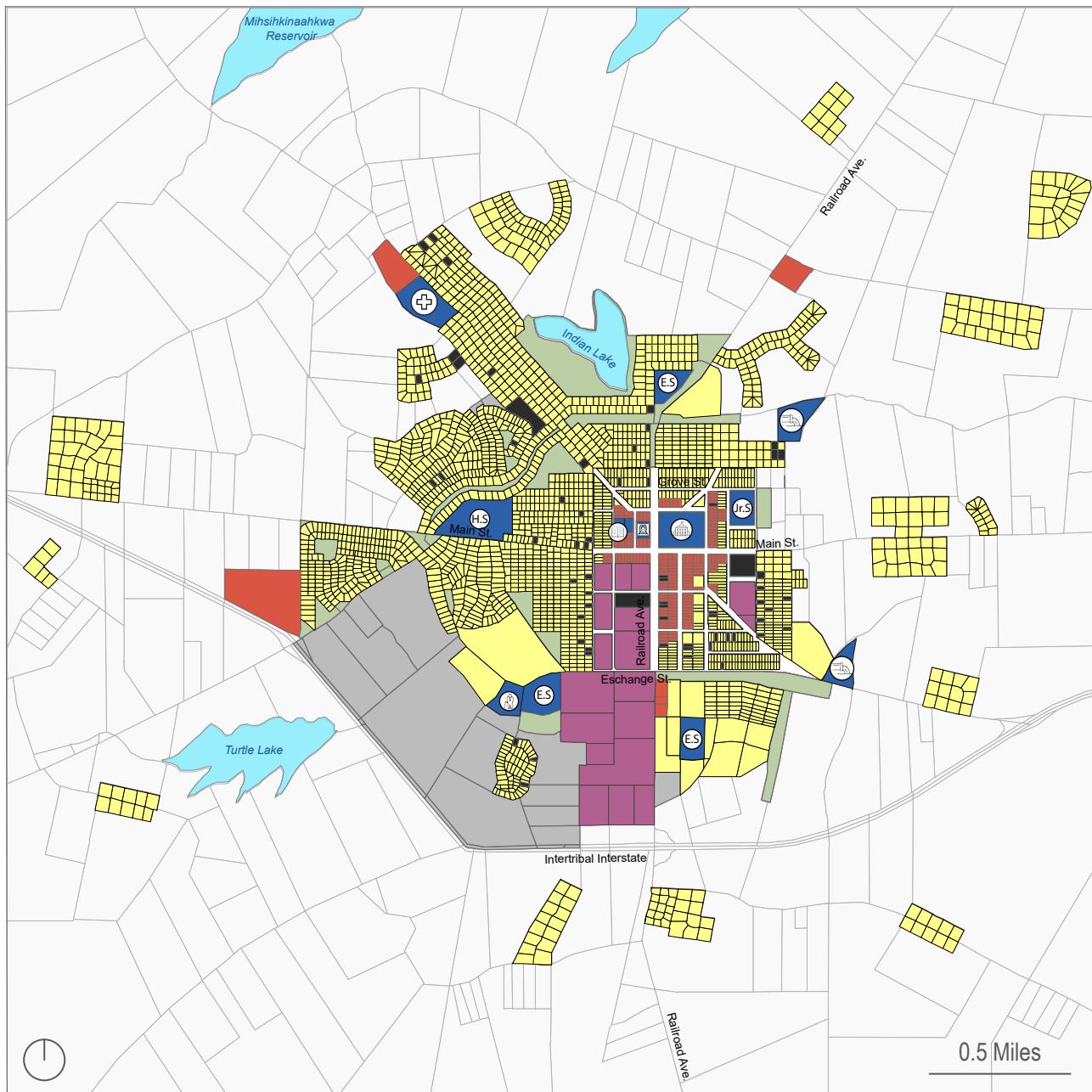
Additional community facilities include a publicly-operated city hall, courthouse, and library, as well as a privately-operated nursing home and hospital. All of these facilities are variously distributed throughout Planning Districts One through Seven.

**Table 4. Turtle Creek Wastewater Treatment System (2018)**

		North Creek Plant	South Creek Plant
<b>Planning Districts Served</b>		1, 5, 6, 7	1, 2, 3, 4
<b>Present Capacity</b>	Processing Rate (million gallons per day)	1.2	1.0
	Population Capacity	9,600	8,000
<b>Present Service District</b>	Acreage	773	963
	Current Population Served	3,800	5,500
<b>Potential Service District</b>	Acreage	1,660	2,126
	Build-Out Population	12,800	16,400

*Source: Turtle Creek Department of Public Works*

Map 7. Turtle Creek Public Facilities Map (2018)

**KEY**

[Yellow square]	Residential	[Green square]	Parks & Recreation	[Square with train icon]	Train station	[Circle with Jr.S. icon]	Junior High School	[Cross inside circle]	Hospital
[Red square]	Commercial	[Black square]	Vacant	[Wavy line icon]	Wastewater	[Circle with H.S. icon]	High School	[Book icon]	Library
[Blue square]	Institutional	[Grey square]	Developed	[E.S. icon]	Elementary School	[Nursing Home icon]	Nursing Home	[Building icon]	City Hall
[Purple square]	Industrial & Manufacturing	[White square]	Undeveloped						

Source: Turtle Creek Office for Community Planning (2018)

## Environment

Hiking along the Mihšihkinaahkwa Park. Courtesy of Indiana Trails Inc.

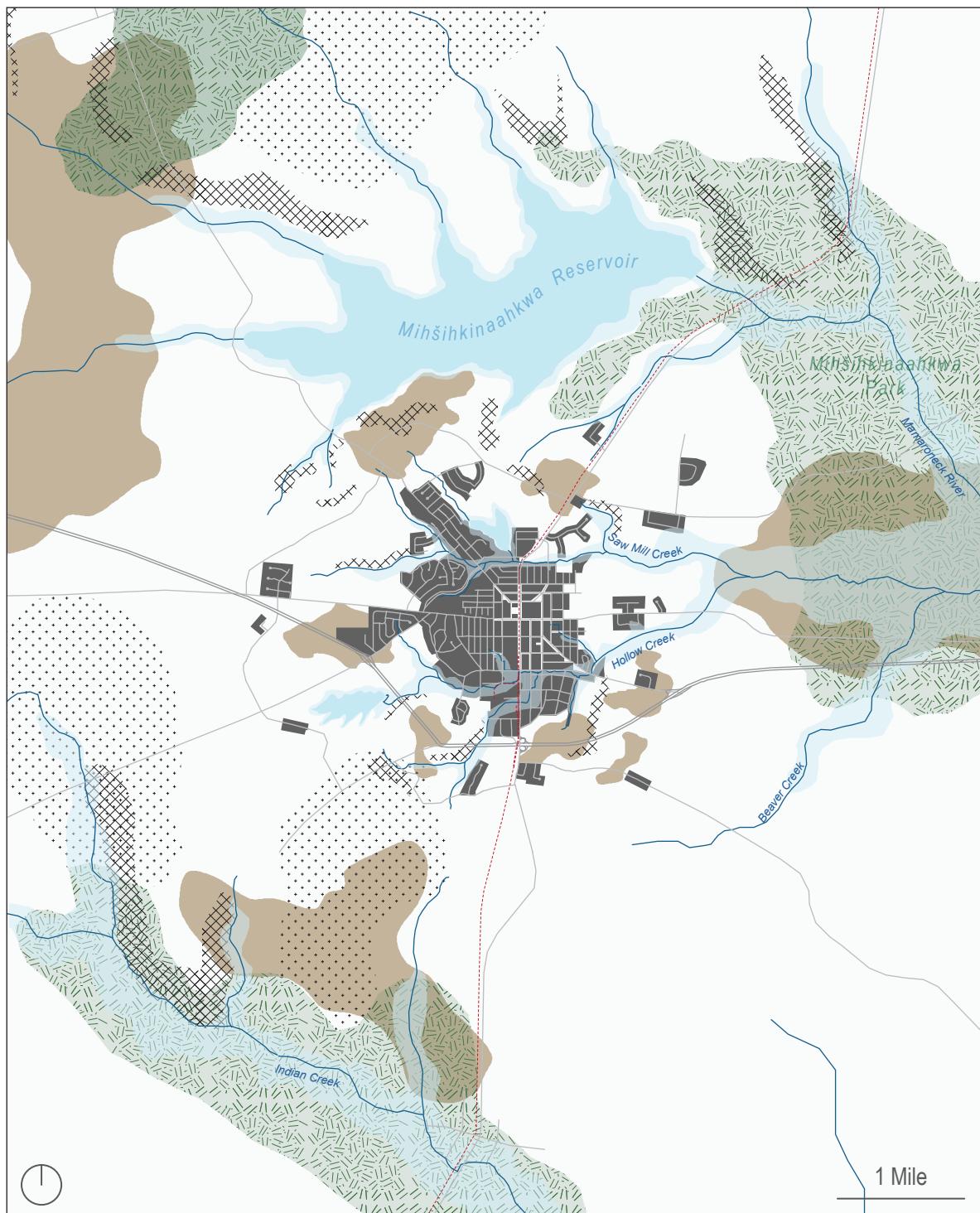


Turtle Creek's water supply originates in the Miami Reservoir (located due north of the planning area) and its tributaries. There are also small lakes located in Planning Districts Six and 14, as well as minor streams permeating the landscape throughout the Township. Periodic flooding, therefore is a very real risk throughout Turtle Creek. Considerable residential development has already been built in the City's projected floodplains.

In addition to a complex hydrology, Turtle Creek possesses a varied topography. There are several areas surrounding the center city--especially north and south of the CBD--where slopes exceed 15 percent. Such topography can be hazardous for development, but development has been encroaching on these areas. The City currently lacks subdivision ordinances that restrict development in areas of steep slope.

Nearly half of Turtle Creek Township's total land area has been identified as prime for agricultural uses. Agriculture is an important segment of local economic activity, yet development has begun to encroach on such lands within the planning area.

## Map 8.Turtle Creek's Environmental Context (2018)



### KEY

Developed	Floodplains	Lowland-Hardwood Forest	Streams
Undeveloped	Poor Soils	Upland-Hardwood Forest	Roads
Water bodies	Slopes >15%	Pine Forest	Rail

Source: Turtle Creek Office for Community Planning (2018)

# TRENDS & projected needs

## POPULATION GROWTH

The Turtle Creek Office for Community Planning projects that within the next 20 years, the Township's population will double from 11,000 residents to 22,000 residents due to anticipated economic development attracting new residents to the Township (which is discussed in further detail below). This rapid growth will have considerable impacts on Turtle Creek and its ability to effectively serve its residents.

### I. Housing

Assuming a continued average household size of 2.9 residents per dwelling unit and a vacancy rate of five percent, Turtle Creek's housing stock will need to more than double over the next 20 years, from 3,700 dwelling units today to approximately 7,700 in 2038. Over the past decade, nearly 60 percent of new dwelling units have taken the form of single-family detached homes at an average residential density of 3.2 dwelling units per acre, with considerably smaller proportions of higher-density residential forms. If these trends in residential development are permitted to continue, the Municipality can conservatively anticipate the consumption of over 1,000 acres of land for housing over the next twenty years (a 120 percent increase in developed residential acreage over current levels) eventually outstripping the supply of available land in the city center.

Table 5. Projected Need in Dwelling Units (2018 - 2038)

New Residents by 2038	11,000
Average Household Size	2.9
Additional Dwelling Units Needed by 2038	3,793
Desired Vacancy Rate	5%
Needed Units + Vacancy Rate	3,983

Source: Turtle Creek Office for Community Planning

Residential development over the last ten years has tended to move west and southwest from the CBD. In the city center, this development has concentrated primarily in Planning Districts Four and Five, accounting for 32 and 25 percent of all new dwelling units between 2008 and 2018, respectively; 50 percent of the new dwelling units in these two planning districts have been single-family detached homes with residential densities of less than three dwelling units per acre. In the fringe areas, Planning District 8 accounts for the most residential development since 2008 (30 units).

Given these residential development patterns, the municipality will likely need to implement a combination of land use policies which restricts low-density residential development in the city center and identifies locations in the fringe area suitable for future residential development.

**Table 6.Trends and Projections in Housing Stock & Land Consumption (2018 - 2038)**

Housing Form	% of New Housing Stock (2008-2018)	Mean Residential Density of New Housing Stock (Dwelling Units/Acre) (2008-2018)	Projected # Dwelling Units under Current Trends (2018-2038)	Projected Acreage Consumed under Current Trends (2018-2038)
Single Family Detached	59.3%	3.2	2,372	741
Rowhouse / Townhouse/Attached	9.3%	12.5	372	30
Garden Apartment	21.1%	15.6	844	54
Multistory Apartment	7.4%	19.5	296	15
<b>Total Projected Acreage Consumed: 840</b>				
<b>Total Projected Acreage Needed with 20% Margin=1,008</b>				

*Source: Turtle Creek Office for Community Planning*

## 2. Infrastructure and Community Facilities

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*Wastewater Treatment.* The Turtle Creek Public Works Department estimates that the municipality's two wastewater treatment plants have a maximum service capacity of 19,900 residents. While the system serves the city center well today, the municipality will need to consider adding a new treatment plant and extending sewage lines in order to accommodate projected population growth.

*Schools.* As the municipality's elementary and middle schools are at or near optimal capacity, the Turtle Creek School Department will need to consider establishing new schools in order to accommodate projected population growth. Assuming the proportion of school-aged children will remain at approximately 20 percent, the School Department should anticipate a doubling of the student population over the next 20 years, from approximately 2,200 students currently to 4,400 students by 2038.

## 3. Land Use Policy and Environmental Considerations

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Rapid population growth and the corresponding increase in demand for housing will apply new pressures to Turtle Creek's environmental systems. The value of prime agricultural land will increase with housing demand, so the municipality should anticipate the sell-off of agricultural property for residential development. Land within floodplains or containing steep slopes could also be subject to real estate speculation, presenting a risk to human safety and private property. Indeed, the westward and south-westward expansion of residential development from the CBD at relatively low densities has already begun to encroach on these natural features, especially the non-contiguous residential subdivisions within the planning area's fringe. Additionally, the increase in impervious surfaces throughout the township could compromise watershed health, which is of particular concern given the Township's reliance on the Miami Reservoir for potable water. Turtle Creek will need to identify its priorities for conservation and watershed management if future development is to be ecologically-conscious and sustainable.

## ECONOMIC DEVELOPMENT

**Table 7. Projected Employment Growth by sector (2018 - 2038)**

Sector	2018 Jobs Total	Projected Growth in Jobs (2018-2038)	Projected 2038 Totals	% Change
<b>Agriculture</b>	1060	-200	860	-19%
<b>Construction</b>	250	645	895	258%
<b>Manufacturing</b>	1500	1850	3350	123%
<b>Wholesale/Distribution</b>	200	200	400	100%
<b>Retail</b>	700	1000	1700	143%
<b>Services</b>	750	1000	1750	133%
<b>Professional Services</b>	100	345	445	345%
<b>Government/Institutional</b>	700	700	1400	100%
<b>Totals</b>	5260	5540	10800	105%

Turtle Creek authorities are anticipating considerable economic development over the next two decades. An increase in federal defense spending has encouraged firms in the Fort Wayne metropolitan area--where the defense industry has historically played an important economic role--to expand their operations and build new facilities, especially in the area of advanced and specialized manufacturing. An increased presence of technology firms and start-ups in the metro area has accompanied this structural shift in the defense industry from arms and heavy equipment manufacturing to more technology-oriented commodities. Turtle Creek is an attractive location for this economic development, given its proximity to other population centers and its existing industrial facilities. Authorities seek to actively encourage such development and project that the local workforce will more than double in the next twenty years. Industrial/manufacturing jobs, which already account for approximately one-third of the total jobs in Turtle Creek, will increase by 123% by 2038. Impressive employment increases in the retail, services, and finance/insurance sectors are also projected to support this manufacturing base and the residential development described above. Construction employment will increase by nearly threefold with the demand for new housing and manufacturing and commercial facilities. However, agricultural employment is projected to decrease over time, due to the development of agricultural land for residential uses and the increased industrialization of the agricultural sector in Wabash County in general.



**123%**

**Job increase in  
Industry &  
Manufacturing**

## 4. Transportation

Increased commercial and manufacturing activity in Turtle Creek over the next twenty years will put increased demand on the Township's transportation system, especially its main thoroughfares. The City will need to evaluate its road network and identify opportunities for increasing capacity while decreasing conflicts between various uses and users.

## 5. Manufacturing and Commercial Spaces



▲ Vacant manufacturing warehouse space. Courtesy of: Indiana EDC.

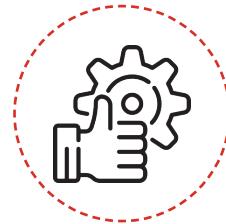
The projected arrival of new defense manufacturing and associated technology firms--and increased retail and services activity to support population growth--will demand more manufacturing and commercial space than Turtle Creek's current zoning and land use schema can provide. If current land use conditions were to remain constant, the City can expect employment densities for every sector to at least double by 2038, potentially to levels that are unrealistic or unattractive to investment. In order to remain competitive with its regional peers and attract the economic development it seeks, the Municipality will need to identify areas for new manufacturing and commercial development, potentially outside of the traditional CBD.

**Table 8. Current and Projected Employment and Land Use Patterns (2018 - 2038)**

Employment Sector	Zoned Acreage	Current Jobs	Current Employment Density (Employees/Acre)	Projected Jobs	Projected Employment Density under Current Conditions (Employees/Acre)	Percent Increase in Employment Density
Commercial (Retail and Service)	93	1450	16	3450	37	131%
Commercial (Office and Professional)	93	100	1	445	5	500%
Industrial, Manufacturing, and Wholesale	129	1700	13	3750	29	123%
Government and Institutional	12	700	58	1400	116	100%

## 6. Equity Considerations

While Turtle Creek's socioeconomic landscape has historically conformed to patterns in Wabash County in general, community leaders must be prepared to face the socioeconomic change that will come as a result of economic development. Local employment has traditionally consisted of low-skill jobs which require only limited educational attainment. However, the labor market will increasingly demand a higher-skilled, better-educated workforce with its shifting focus to advanced manufacturing and technology. Turtle Creek will need to ensure the socioeconomic equity of its current residents through various strategies such as workforce development and educational initiatives. Additionally, as increased pressures are put on the housing market, the municipality must be conscious of fostering development that is inclusive of an increasingly-diverse workforce.



### Workforce Development Programs

**Table 9. Summary of Trends and Projected Needs**

TREND 1: POPULATION GROWTH			TREND 2: ECONOMIC DEVELOPMENT		
<u>Need 1:</u> Double the housing stock.	<u>Need 2:</u> Increase the capacity of infrastructure and community facilities	<u>Need 3:</u> Reevaluate land use policy according to development and environmental priorities.	<u>Need 4:</u> Identify opportunities for commercial and manufacturing growth.	<u>Need 5:</u> Develop a strategy for equity among a changing population.	<u>Need 6:</u> Consider improvements to transportation system.

**2.1 Vision**

**2.2 Community Participation**

**2.3 Needs and Opportunities**

**2.4 Goals**

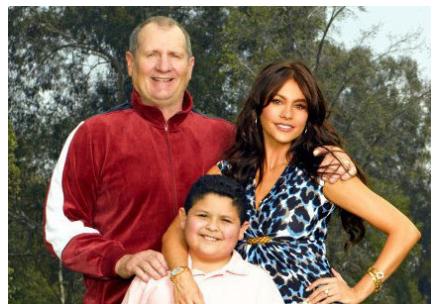
2

# VISION & GOALS

# VISION FOR TURTLE CREEK

## COMMUNITY VISION STATEMENT

*“The People of Turtle Creek—like our patron, Chief Little Turtle, and like our forebears—resolve to confront society’s shifting winds with courage, armed with our values and our hope in the American Dream.”*



The residents of Turtle Creek are a people of pride: pride in our heritage, pride in feeding the American people, and pride in our role in defending our country. Indeed for over two centuries, our pioneering spirit has sustained us through battle and peace, drought and plentitude, and has instilled in us a profound gratitude for the gifts we enjoy. Today, our community is faced with challenges not unlike those we have weathered before, such as population growth, fluctuating economic patterns, and the ever-present need to ensure equity among our fellow citizens. Yet we believe these challenges are also opportunities to unlock Turtle Creek's truest potential as a place of ceaseless industriousness and enviable livability.

The People of Turtle Creek--like our patron, Chief Little Turtle, and like our forebears--resolve to confront society's shifting winds with courage, armed with our values and our hope in the American Dream. Over the next two decades, we will, in solidarity with one another:

- *Welcome the prospect of new industry and commerce while harnessing its energy to improve every Turtler's quality of life.*
- *Secure a respectable home for all Turtlers, both long-established and newly-transplanted, while continuing our tradition of neighborly courtesy to all.*
- *Provide the community facilities and social opportunities for Turtlers of all ages to live in dignity.*
- *Preserve our agricultural and natural resources, which are our most cherished and irreplaceable assets.*

Turtlers have never feared the frontier. On the contrary, it has brought to the fore those qualities that have made us great throughout our storied history: our fortitude in the face of adversity, our ability to provide for our loved ones, and our generosity of spirit. This present frontier shall be no different. By planning for our future and remaining true to our bequeathal, we will continue--as a community and as we always have--to revel in the fruit of the Earth and the work of our hands.

# COMMUNITY *participation*



▲ One of the charrettes organized by the multidisciplinary team.

A truly comprehensive plan requires the input from the community; hence, our planning efforts reflect the needs and wants of all Turtlers on issues from land use to economic development. S&W Planning Consultants believe public participation is key to successful planning. Our team has dedicated many hours of hard work while engaging with the community through a variety of methods. The residents of Turtle Creek gathered to envision common goals that represent their own unique traits, interests, skills, and economic resources.

This section is organized according to the following stages:

- 1. PRELIMINARY ASSESSMENT**
- 2. COMMUNITY ENGAGEMENT**
- 3. CONCERTED VISION**



## I. PRELIMINARY ASSESSMENT



S&W Interdisciplinary team performing exhaustive data analysis

This stage began with data collection conducted by an interdisciplinary team of experts. This process involved secondary data review (such as census data, quantitative and georeferenced data, and federal and state documents), as well as a fifteen-day site visit for a better understanding of Turtle Creek's physical conditions.

Following this process, the interdisciplinary team embarked on several exhaustive data analysis and visualization sessions which, informed by the community's input, resulted in a state of community report highlighting trends and challenges for the future of Turtle Creek.

The tools employed during these sessions included:

- *Geographic Information Systems (GIS) software*
- *Global Positioning System (GPS) devices*
- *Census data from American Community Survey*
- *Satellite images acquired from federal and state archives and Google Earth software*
- *Photographs taken by the plan team and acquired from federal and state archives*
- *Direct and telephone interviews with important local authorities and other stakeholders.*

## 2. COMMUNITY ENGAGEMENT

Community engagement was an iterative process in which different Turtle Creek stakeholders - ranging from local authorities, local and statewide firms, agricultural and historic preservation organizations, and other community-based organizations- actively contributed toward validating and informing the interdisciplinary team's analyses of the city's existing conditions. Through several participatory workshops and charrettes, participants were able to express their needs and expectations and to identify opportunities for Turtle Creek's development. The community's input and participation was recorded in a 'needs and opportunities table'.

*"Turtlers have never feared the frontier. On the contrary, it has brought to the fore those qualities that have made us great throughout our storied history: our fortitude in the face of adversity, our ability to provide for our loved ones, and our generosity of spirit."*

## 3. CONCERTED VISION

Finally, the interdisciplinary team developed final drafts including a "Goals and Policies Table by Theme" and proposed an alternative areawide land use scenarios. Community stakeholders met one last time to discuss and select agreed-upon goals and policies and a preferred scenario for the future development of Turtle Creek. The community's input and participation was recorded in a final document -Turtle Creek Concerted Vision- which expresses participants shared concerns and priorities voted by majority.

*"I want to be able to pass my farm on to my children..."*



*Over 400 Turtlers participated in town meetings and other events.*

*...  
Three charrettes were organized.*

*...  
Three alternatives were presented to the community.*

*"I want my children to have better job opportunities than the ones I had..."*

*"Defense manufacturing is a tradition in our region, we must work on preserving it..."*



*"If I wanted to live in Fort Wayne, I'd move there!"*

# **COMMUNITY VISION**

## ***needs and opportunities***

### **NEEDS**

1. Improve overall quality of education system.
2. Improve youth's access to new job opportunities.
3. Adapt residents' skills to the ongoing technological shift.
4. Protect agricultural land from urban sprawl.
5. Protect city's character and identity from unchecked development.
6. Create more recreational spaces .

### **OPPORTUNITIES**

1. Strong tradition in manufacturing for defense
2. Strategically located with convenient access to Fort Wayne, strong trade relationships, increase in the demand for defense manufacturing
3. Growing high-tech manufacturing industry in the region could bring wealth to Turtle Creek.
4. Population growth will require new commercial and services-based enterprises.
5. A growing construction sector will provide new job opportunities.



TURTLE2038 Charrette, organized by S&W Planning  
Consultants during January 2018.  
Courtesy of: Turtle Creek City Council.

# GOALS

## 01 ECONOMIC DEVELOPMENT



Support growing industrial economy and promote business diversification to increase job opportunities for Turtle Creek residents.

## 02 CONSERVATION OF NATURAL & CULTURAL ASSETS



Protect, preserve and enhance the environmental, cultural, and historical attributes of Turtle Creek.

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## 03 HOUSING QUALITY AND AFFORDABILITY



Provide quality housing at a range of price points and in a variety of forms for current and future Turtle Creek residents.

## 04 EQUITY



Improve access to job opportunities for the different skill and educational levels of Turtle Creek residents.

## 05 CAPITAL INVESTMENTS



Improve capital investment decisions to build infrastructure and enhance service delivery to all Turtle Creek citizens and businesses.

# OBJECTIVES and policies

## 01 - ECONOMIC DEVELOPMENT

Objective 1.1: Accommodate the projected manufacturing jobs increase (120%) by 2038.

*Policy 1.1.1: Support and expand existing local firms through incentives programs.*

*Policy 1.1.2: Recommend the creation of a manufacturing technological park which provides appropriate conditions for new enterprises.*

Objective 1.2: Reverse the decreasing trend in agricultural jobs by 2023.

*Policy 1.2.1: Recommend the creation of an agricultural reinforcement program.*

Objective 1.3: Accommodate the projected services jobs increase (133%) by 2038.

*Policy 1.3.1: Attract new business and the relocation of existing ones in Turtle Creek.*

*Policy 1.3.2: Recommend the creation of small business and innovation assistance centers.*

## 02 - CONSERVATION OF NATURAL & CULTURAL ASSETS

Objective 2.1: Increase access to Turtle Creek's historic and cultural assets in the central city.

*Policy 2.1.1: Recommend the establishment of a Downtown Historic District*

*Policy 2.2.2: Promote Downtown housing through mixed-use zoning and adaptive reuse developments (industrial warehouse conversion).*

*Policy 2.2.3: Establish the Turtle Creek Museum which will showcase its unique Native history and the demographic, economic, and social changes throughout time.*

Objective 2.2: Identify an appropriate amount of open space for long-term conservation.

*Policy 2.2.1: Encourage the preservation of existing green areas that surround the city.*

*Policy 2.2.2: Recommend the dedication of the Mihšihkinaahkwa State Park to preserve existing natural hardwood forests and its unique environment.*

*Policy 2.2.3: Adopt mechanisms to protect prime agricultural land and contain urban growth.*

## 03 - HOUSING QUALITY & AFFORDABILITY

Objective 3.1: Double the housing stock of Turtle Creek by 2038.

- Policy 3.1.1. Deploy more robust zoning and subdivision ordinances to discourage suburban sprawl and fragmented development patterns.*
- Policy 3.1.2. Upzone Planning Districts One through Seven to accommodate denser residential development on remaining undeveloped lands.*
- Policy 3.1.3. Encourage the even, east-west growth of residential development around the CBD by identifying planning districts most suitable for accommodating substantial residential growth.*

Objective 3.2: Increase the overall density of the Turtle Creek planning area by 50% over the course of the planning period.

- Policy 3.2.1. Permit mixed-use, adaptive reuse, and infill development in the CBD and immediate environs.*
- Policy 3.2.2. Disincentivize the construction of single-family detached houses through fees and/or other land use management mechanisms, especially in target planning districts.*
- Policy 3.2.3. Where lower density development is desirable, incentivize cluster subdivisions. practices.*

## 04 - EQUITY

Objective 4.1: Eradicate unemployment (6%) and connect residents to higher-wage jobs by 2038.

- Policy 4.1.1. Connect Turtlers to jobs through the expansion of transportation infrastructure towards existing and future industrial clusters.*
- Policy 4.1.2. Recommend the creation of job training programs and workforce development for long-term unemployed or underemployed people.*

Objective 4.2: Establish a solid education-employment network by 202. 8

- Policy 4.2.1. Recommend the creation of a coordination office to promote alliances among labor, firms, and academic institutions in order to allow Turtlers' adaptation to the ongoing economic shift from a heavy manufacturing-base to high-tech industry.*
- Policy 4.2.2. Recommend the creation of a master education plan, to adjust school programs to prepare the youth for new job opportunities.*



## 05 - CAPITAL INVESTMENTS

**Objective 5.1:** Double educational and research institutions from five to ten for the needs of population growth and industry development by 2038.

- Policy 5.1.1: Create new elementary schools, junior high schools, and senior high schools in underserved areas.*
- Policy 5.1.2: Recommend the establishment of new community college to improve local education attainment.*
- Policy 5.1.3: Establish industrial research institutions to provide technical talents and attract capital investment.*

**Objective 5.2:** Improve railway carrying capacity for freight transportation by 2038.

- Policy 5.2.1: Connect existing railways with regional railway systems to promote industrial development.*
- Policy 5.2.2: Integrate railways into urban traffic network for wholesale distribution.*

**Objective 5.3:** Double recreational areas from the current 4.5 percent to 10 percent by 2038.

- Policy 5.3.1: Construct new museums to enhance public attention to city history, local history, and national identity.*
- Policy 5.3.2: Build new public space (parks, plazas, and libraries) and improve existing recreational facilities and services.*

**Objective 5.4:** Improve sewer network in the developed and underdeveloped areas by 2038.

- Policy 5.4.1: Redistribute sewer network based on the residential, commercial, and industrial reallocation in the developed areas.*
- Policy 5.4.2: In order to reduce water and soil pollution, design sewer routes based on terrain and water sources for new settlements in the new areas.*



3

# LAND POLICY

# BUSINESS-AS-USUAL

As discussed above, residential development over the last decade in Turtle Creek has tended to spread outward from the CBD in a westerly and southwesterly direction, at a mean residential density of 3.2 dwelling units per acre; the predominant residential form has been single-family detached homes. The City has also mapped decentralized commercial districts west of the CBD, perhaps accounting in part for this direction of sprawl.

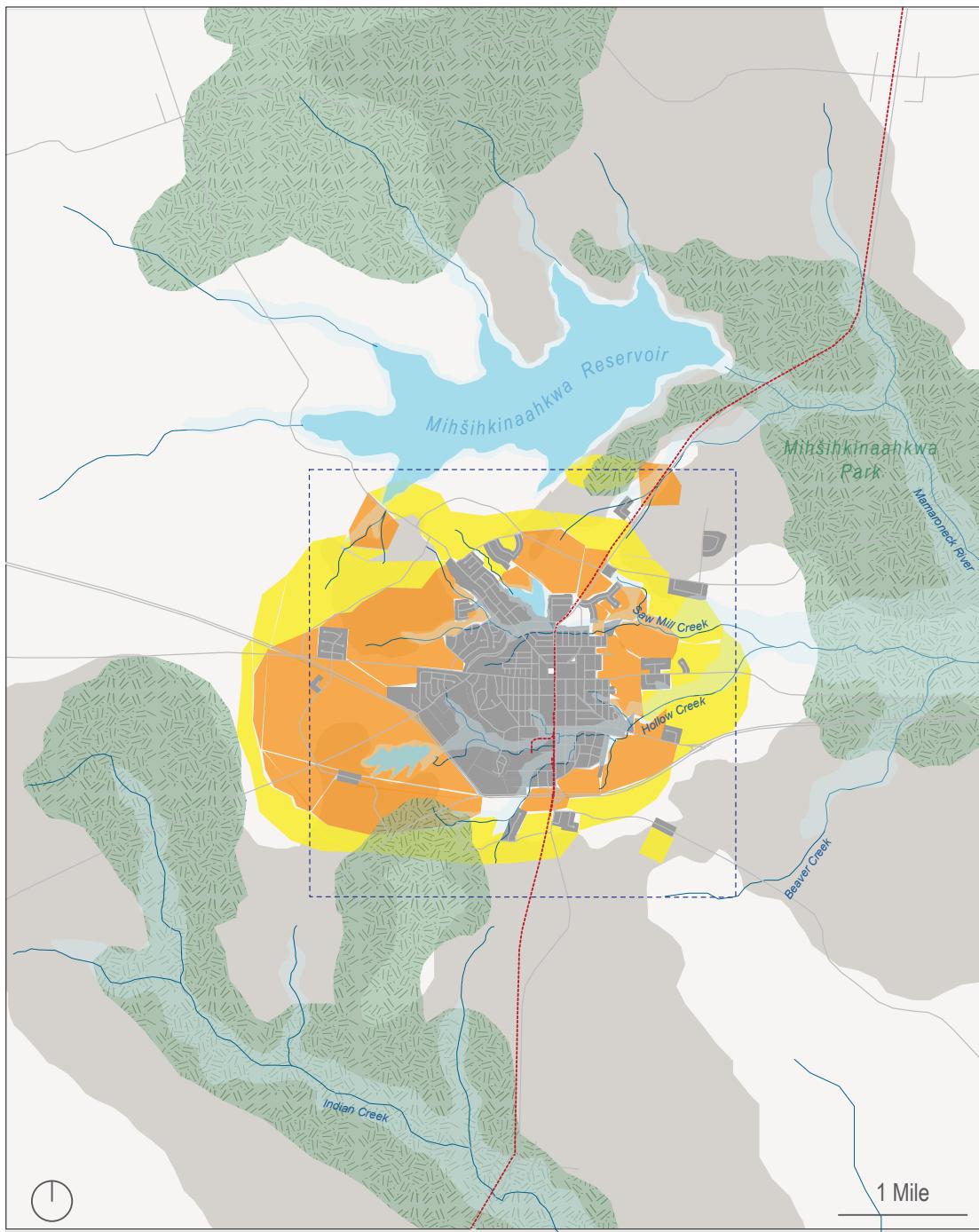
If these trends continue, the municipality can conservatively anticipate the consumption of over 1,000 acres of land for residential development in the next twenty years, which could be even higher depending on residential density and urban form. These trends will most certainly outstrip the supply of undeveloped land in the city center, resulting in development in fringe areas, perhaps even spilling into the unincorporated parts of the Township. Numerous non-contiguous subdivisions west of the CBD will likely remain isolated from Turtle Creek's urban fabric.

Additionally, the Township can expect development to encroach on prime agricultural land, resulting in market pressures on agricultural property owners. It will also approach ever closer to the Miami Reservoir and its tributaries if it is not controlled.

Map 8 shows how this scenario might unfold in the next 20 years.

*Given this scenario, a Land Suitability Analysis was performed to determine which areas are desirable for future development. This analysis provides a strong basis for planning and guiding future growth.*

**SCENARIO A**  
**Map 9. Business-as-usual Development**



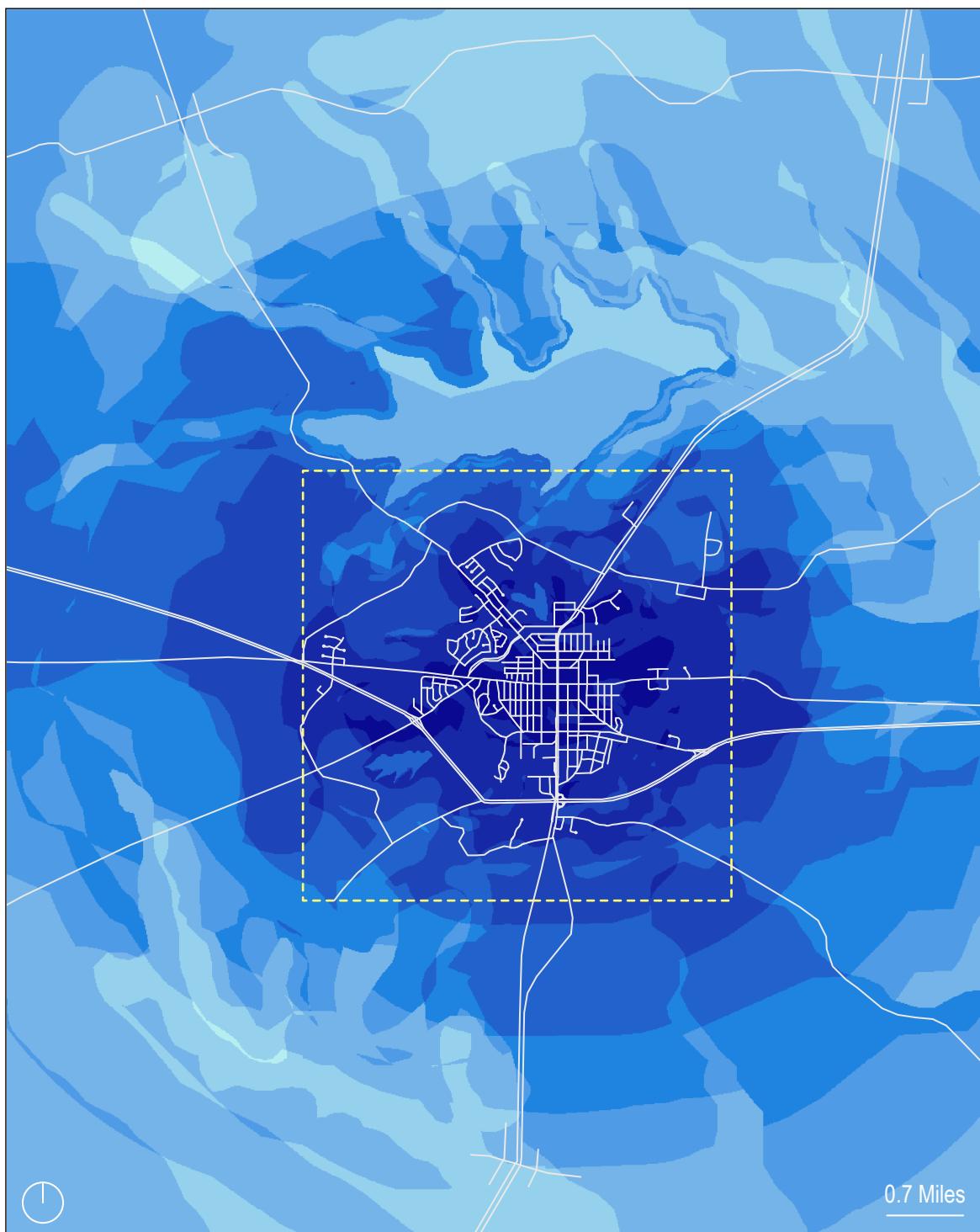
**KEY**

Urban Developed	Conservation	Streams
Urban Transition Near-Term (2018-2038)	Agriculture	Roads
Urban Transition Long-Term (2038-2058)	Rural	Rail
	Floodplain	

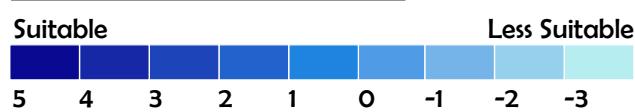
Source: Turtle Creek Office for Community Planning (2018)

# LAND SUITABILITY ANALYSIS

Map 10. Turtle Creek Land Suitability Raster (2018)



## VALUES



To perform our land suitability analysis, we used multicriteria decision raster analysis. We determined which environmental and human factors will most affect future development following the community participation process, and we assigned them a suitability value between -5 to 5; the higher the number, the more suitable the land is for development. Finally, we determined a weight for each feature and lastly, we weighed environmental and human factors in a 50-50 ratio. A summary of the categories we used and how much land was allocated can be found in Table 11.

In terms of environmental factors (Table 10a), we looked at the areas that will be preserved, such as prime agricultural land, a buffer around the reservoir, and hardwood forests. All of these were assigned a low value, representing a desire to maintain their natural

conditions. Other features that affect development included poor soils and existing floodplains; these were also assigned low values to model discouraged development there.

Human factors were also considered, especially those that have a direct impact on development. Closer proximities to the sewage service area, the CBD, and other development were assigned higher values, while those areas underserved received a lower one due to the higher costs associated with developing in the fringe.

Our land suitability map, shown at left, describes how ideal development should continue towards the east in the near term, and then grow outwards in a East-West direction. The following section will describe our Area Wide Land Policy which takes into account the findings from this analysis.

**Table 10a. Land Suitability Criteria - Environmental Factors**

Environmental Factors			
Feature	Typology	Suitability Value	Weight
<b>Forest</b>	Others	5	20
	Pine	-2	
	Upland-Hardwood	-5	
	Lowland-Hardwood	-5	
<b>Floodplain</b>	Others	5	12
	Floodplain	-5	
	Reservoir, Lake	-5	
<b>Agriculture</b>	Others	5	20
	Reservoir, Lake	-5	
	Agriculture	-5	
<b>Slopes</b>	0-5%	5	20
	6-15%	0	
	>15%	-5	
<b>Water Buffer</b>	>1320 Feet	5	16
	500-1320	0	
	0-500 Feet	-5	
<b>Soils</b>	Poor	-5	12
	Good	5	

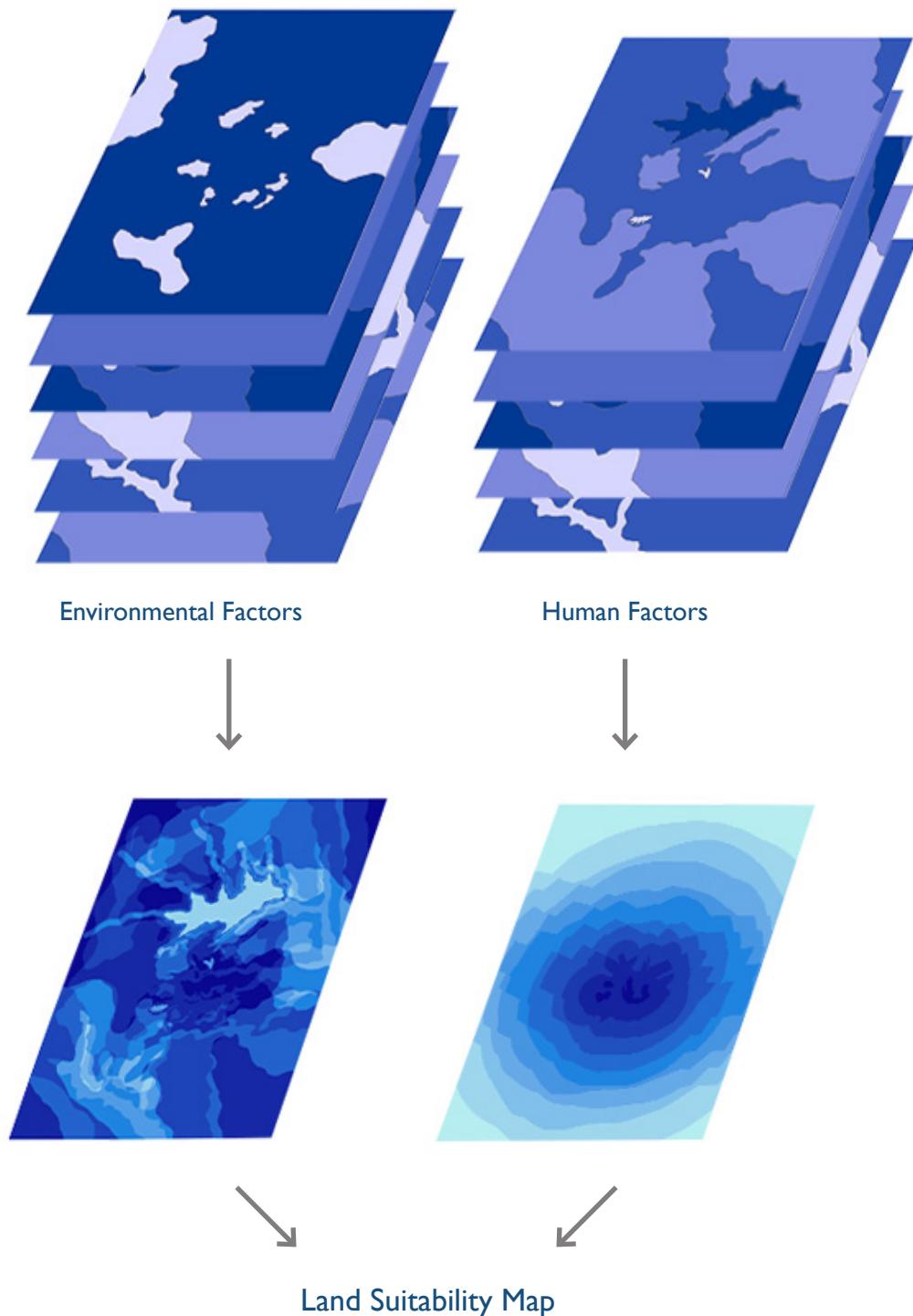
**Table 10b. Land Suitability Criteria - Human Factors**

Human Factors			
Feature	Distance	Suitability Value	Weight
Highway	<0.5 miles	5	20
	0.5-1.0 miles	3	
	1.0-1.5 miles	1	
	1.5-2.0 miles	-1	
	2.0-2.5 miles	-3	
	>2.5 miles	-5	
Developed Area Buffer	<0.5 miles	5	20
	0.5-1.0 miles	4	
	1.0-1.5	3	
	1.5-2.0	2	
	2.0-2.5	1	
	2.5-3.0	0	
	3.0-3.5	-1	
	3.5-4.0	-2	
	4.0-4.5	-3	
	4.5-5.0	-4	
	>5.0	-5	
Commercial Area Buffer	0-0.5 miles	5	20
	0.5-1.0 mile	3	
	1.0-2.0 miles	1	
	2.0-3.0 miles	-1	
	3.0-4.0 miles	-3	
	>4.0 miles	-5	
CBD Area Buffer	<0.5 miles	5	20
	0.5-1.0 miles	4	
	1.0-1.5	3	
	1.5-2.0	2	
	2.0-2.5	1	
	2.5-3.0	0	
	3.0-3.5	-1	
	3.5-4.0	-2	
	4.0-4.5	-3	
	4.5-5.0	-4	
	>5.0	-5	
Sewage Area Buffer	0-500 feet	5	20
	500-2640 feet	3	
	0.5-1.0 miles	1	
	1.0-2.0 miles	-1	
	2.0-3.0 miles	-3	
	>3 miles	-5	

**Table 11. Land Suitability Classification Ranking System**

Value	Suitability Classification	Percentage of Area	Area (Acres)
5	More than 90% Suitable	2%	914
4	90% Suitable	6%	3,290
3	80% Suitable	9%	4,616
2	70% Suitable	13%	6,669
1	60% Suitable	16%	8,089
0	50% Suitable	14%	7,103
-1	40% Suitable	28%	14,573
-2	30% Suitable	11%	5,841
-3	Less than 20%	0%	105
<b>Total</b>		100%	<b>51,200</b>

Fig. 6 Land Suitability Analysis Work Flow



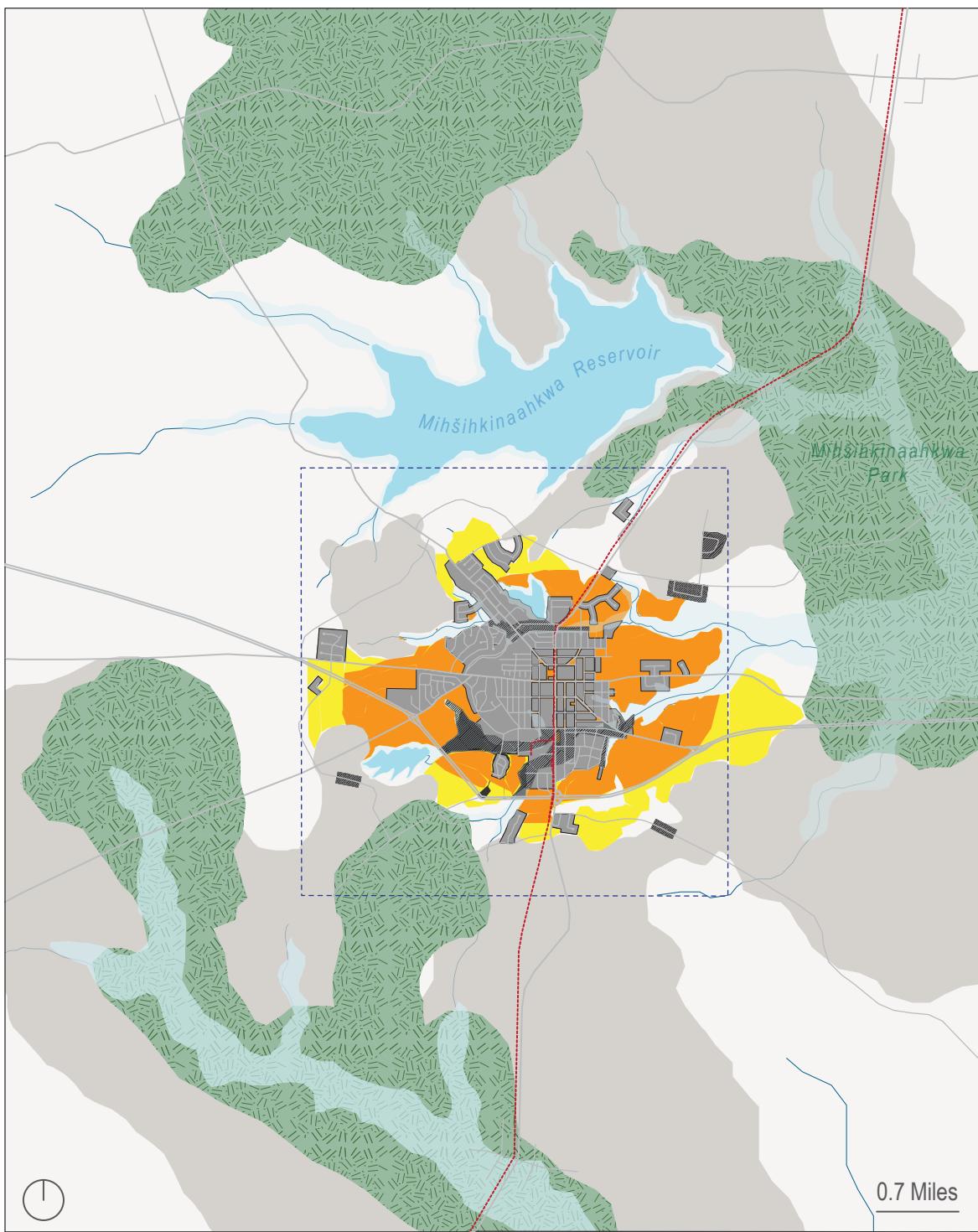
# LAND POLICY

Turtle Creek's preferred areawide land use plan counters current development trends by intentionally preserving the natural assets which citizens have identified as most important to them: prime agricultural land, hardwood forests, and the integrity of the Miami Reservoir. It also seeks to direct development toward manmade features--such as wastewater infrastructure, major roadways, commercial areas, and employment centers--where systems which support development already exist and can be efficiently expanded to meet the increasing capacity needs brought about by population growth, economic development, and a considerable increase in housing stock. Rather than expanding uninhibited in a westerly and southerly direction from the CBD, urban growth occurs evenly along the east-west axis defined by Main Street and US Highway 24; the CBD remains truly central within the urban fabric. Undeveloped land within the central city is targeted for growth first, and only after that supply has been exhausted does growth continue into the planning area's fringe districts. Suburban sprawl can be further prevented and a more stewardly approach to land resources can be taken by encouraging less-consumptive residential forms, while discouraging the disconnected pockets of development that have occurred in recent years. By purposefully planning for growth and deploying a network of land use management tools, Turtle Creek will have more than enough space to meet anticipated demand over the coming decades without compromising its priorities and values.

Table 12. Land Policy Summary

Land Class	Residential Population Density	Acres	Percentage of Total Acres
Urban Developed	Existing, moderate to high density	1,301	2.5%
Urban Transition Near-Term (2018-2038)	Moderate to high density	999	2.0%
Urban Transition Long-Term (2038-2058)	Moderate to high density	1,782	3.5%
Conservation	No development allowed	18,300	35.7%
Agriculture	Low density and restricted development	27,439	53.6%
Gradual Retreat	Existing population density (low to moderate)	271	0.5%
Other	-	16,335	31.9%

**SCENARIO B**  
**Map II. Turtle Creek Land Policy Classification**



**KEY**

[Grey square]	Urban Developed	[Green square]	Conservation	[Hatched square]	Retreat	[Blue line]	Streams
[Orange square]	Urban Transition Near-Term (2018-2038)	[Light grey square]	Agriculture	[Light blue square]	Floodplain	[Grey line]	Roads
[Yellow square]	Urban Transition Long-Term (2038-2058)	[Light grey square]	Rural			[Red dashed line]	Rail

Source: Turtle Creek Office for Community Planning (2018)

**Table 13. Description of Land Use Policy Classification**

Land Class	Purpose	Characteristics
<b>Urban Developed</b>	Existing urban land to provide infill to accommodate higher densities in the city center.	Fully serviced by public utilities and community facilities.
<b>Urban Transition Near-Term (2018-2038)</b>	Undeveloped land designated for development over the next 20 years.	Within close proximity to Turtle Creek's sewer service area but with limited infrastructure nearby. Good environmental conditions for future development.
<b>Urban Transition Long-Term (2038-2058)</b>	Undeveloped land designated for future growth beyond the 2030 vision plan.	Undeveloped land with no services and not in close proximity to existing sewer shed or other utilities. These lands are suitable areas for development and contiguous to near-term transition land.
<b>Conservation</b>	Land areas with valuable natural resources that should be preserved.	Conservation areas that have natural beauty or cultural heritage to Turtle Creek's residents, such as the reservoir and forests, ripe for preservation.
<b>Agriculture</b>	Agricultural land is to be preserved in order to maintain the farming industry in Turtle Creek.	Agricultural land with high quality soils and suitable conditions for crops.
<b>Gradual Retreat</b>	Existing developed land that will phase out over time as building lifespans end.	Urban land with existing development located within floodplains or in prime agricultural land. This land should be converted to conservation over time.
<b>Other</b>	Remain unincorporated township territory.	May be suitable environmentally suitable for future development, but is distant and isolated from projected long-term development.
<b>Total</b>		

Residential Population Density	General Policies	Acres	Percentage of Total Acres
Existing, moderate to high density.	Implement more nuanced zoning ordinance to allow higher densities. Discourage single-family detached dwellings. Evaluate commercial and industrial uses.	1,442	2.8%
Moderate to high density	Implement more nuanced zoning ordinance. Identify planning districts best suitable to accommodate growth. Expand infrastructure capacity to meet new demand.	1,269	2.5%
Moderate to high density	Restrict development until planning area holding capacity has been reached. Implement more nuanced zoning ordinance. Evaluate infrastructure capacity and improvement feasibility.	783	1.5%
No development allowed	Establish state park and recreational areas to protect hardwood forests and reservoir integrity. Implement wetland protection ordinances.	18,301	35.7%
Low density and restricted development.	Implement programs to support agricultural industry. Consider agricultural zoning or transfer/purchase of development rights schema to prevent development on prime agricultural land. Allow cluster subdivision practices.	14,516	28.4%
Existing population density (low to moderate)	Implement wetland protection ordinances. Restrict expansion of municipal services. Establish housing assistance programs.	271	0.5%
Undeveloped	-	15,160	29.6%
		51,200	100%



# 4

# COMMUNITY LAND USE DESIGN

# EXISTING CONDITIONS

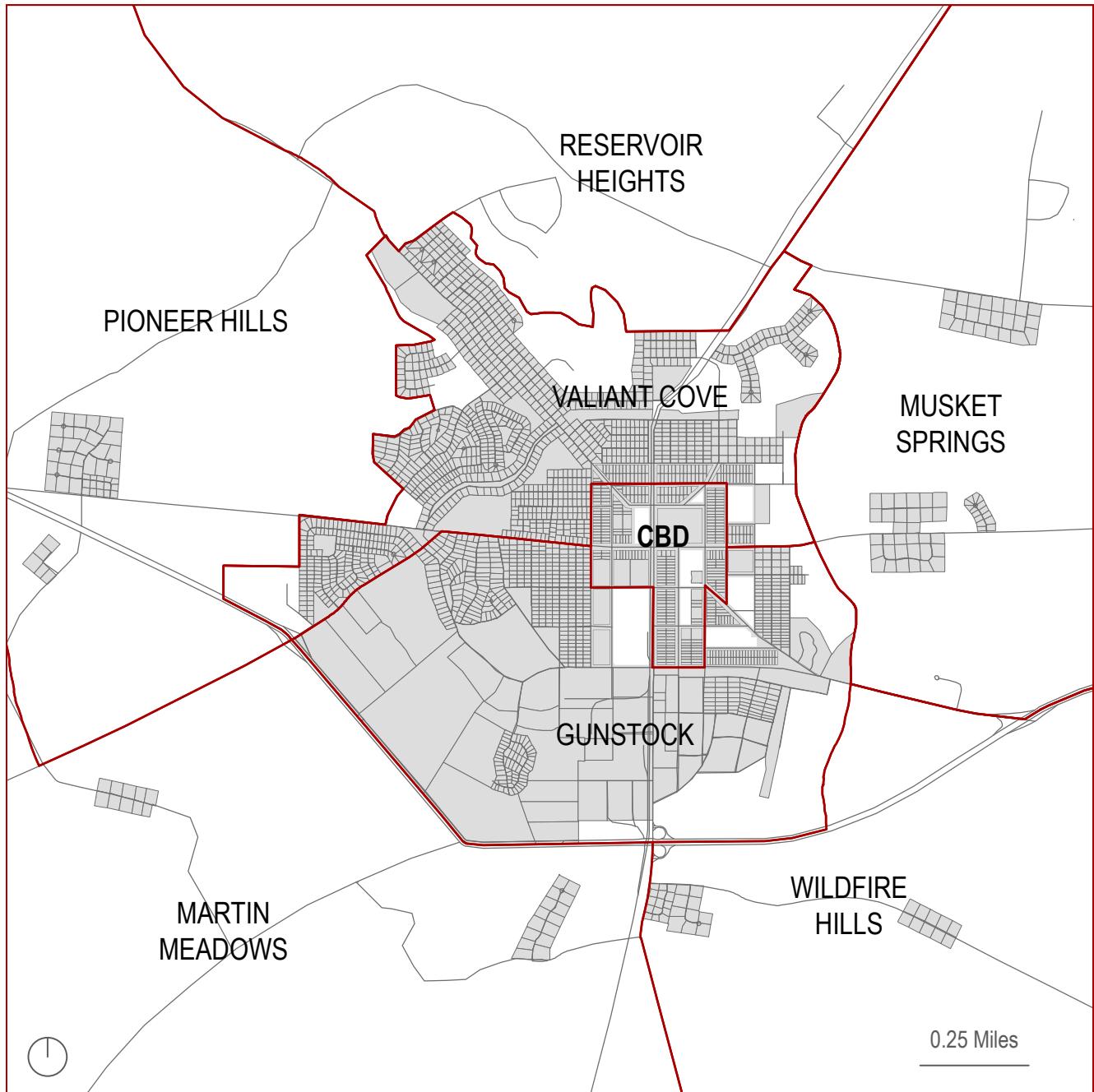


The Turtle Creek Planning Area is composed of over 7,800 acres, about three-quarters of which are undeveloped and within which approximately 91 percent of the Township's population resides. As the Township experiences significant population growth and economic development over the coming decade, this area is expected to bear the brunt of future development.

The Planning Area is anchored by the Central Business District, a heterogenous mixture of single- and multi-family homes, small-scale commercial properties, civic facilities, and industrial areas of varying intensities. The Township's two major thoroughfares, Main Street and Railroad Avenue, perpendicularly intersect at Godfrey Square, forming the heart of the downtown's historic district. The CBD is the Township's primary commercial and employment center, though neighborhood-scale commercial centers have developed in the Planning Area's periphery to serve outlying residential areas.

Turtle Creek residents generally identify seven major neighborhoods radiating out from the CBD, as detailed by the accompanying map: Valiant Cove, Gunstock, Musket Springs, Pioneer Hills, Reservoir Heights, Wildfire Hills and Martin Meadows. Currently, CBD, Valiant Cove, and Gunstock account for over 90 percent of the Planning Area's existing housing stock, the majority of which is single-family detached homes. These three neighborhoods are well-served by the municipal wastewater system, though this system is rapidly approaching maximum capacity. Residential density generally decreases with distance from the CBD, and the City's lax land use regulation has allowed for isolated, non-contiguous residential development.

Map 12. Turtle Creek Township Neighborhoods



# LOCATIONAL PRINCIPLES

In keeping with the direction-setting framework established in the Areawide Land Use Plan, the Turtle Creek community developed the following principles for guiding the community-wide land use design and the locations of future land uses.

## RESIDENTIAL USE

- Central Business District, Valiant Cove, Gunstock, Musket Springs, and Pioneer Hills should be the target areas for future residential growth, where undeveloped land remains plentiful and sewer capacity currently exists.
- The highest residential densities should be directed toward the target neighborhoods and gradually decrease outward from the CBD. Future residential development should follow an east-west axis, with medium and high densities generally contained by the proposed greenbelt.
- Future residential uses should be separated from high-intensity industrial activity and away from floodplains.
- Neighborhood-scale commercial uses should be included in low residential areas, preferably making use of existing vacant land on street intersections.

## CENTRAL BUSINESS DISTRICT

The CBD's density should be gradually increased in order to meet the heightening demand for housing and commercial services. This will entail a transition toward multi-family housing and mixed-use redevelopment.

Nevertheless, this new development should be contextual with Turtle Creek's character and sensitive to downtown's historic significance.

The CBD should be the primary commercial, civic, and entertainment center for Turtle Creek, with smaller, neighborhood-scale



The effects of unplanned growth in the city of Turtle Creek  
Source: The Context of Things

commercial supporting outer neighborhoods and industrial centers.

Sufficient land should be allocated as soon as possible to readily accommodate the increased demand for manufacturing, industrial, and research and development uses in Turtle Creek.

These manufacturing uses must be located near major thoroughfares, regional highways, and railways to facilitate easy movement of goods and workers.

In keeping with Turtle Creek's manufacturing heritage, light and specialized industrial uses should be permitted within mixed-use areas.

Parks and recreational facilities should be evenly distributed across the city so as to maximize the number of households within a quarter-mile of such assets.

Educational facilities should be equitably distributed throughout the planning area, with an emphasis on supporting projected new residential community.

A new wastewater treatment facility should be located within Turtle Creek's natural drainage shed, ideally to west of the CBD in order to accommodate projected future residential growth.

Transportation infrastructure should efficiently connect residential areas to the CBD and employment centers. Turtle Creek residents support a multi-modal approach to transportation in the city center that allows for public transit options in the future.

Major traffic generators should be located along major thoroughfares, preferably at intersections, to provide optimal access from the township

## INDUSTRIAL AND MANUFACTURING

## COMMUNITY FACILITIES AND OPEN SPACE

## TRANSPORTATION AND ACCESSIBILITY

# CONCEPT DESIGN

Through a series of community meetings and charrettes, Turtle Creek stakeholders debated how these location principles could be incorporated into the community-wide land use design.

The resulting Concept Design illustrates the allocation of future land uses according to these principles and community goals. The preferred growth scenario determined by the land suitability analysis in the Areawide Land Use Policy is the foundation of the design. Future development is directed along the City's east-west axis (defined by Main Street and the Inter-Tribal Highway) and is pushed away from valued natural resources such as the Mihsihkinaahkwa Reservoir, prime agricultural land, and hardwood forests.

Next, the concept design proposes incorporating the City's floodplains into a system of interconnected parks and bikeways, thereby creating a green belt that will help contain near-term. In the long-term, developed areas in floodplains should retreat.

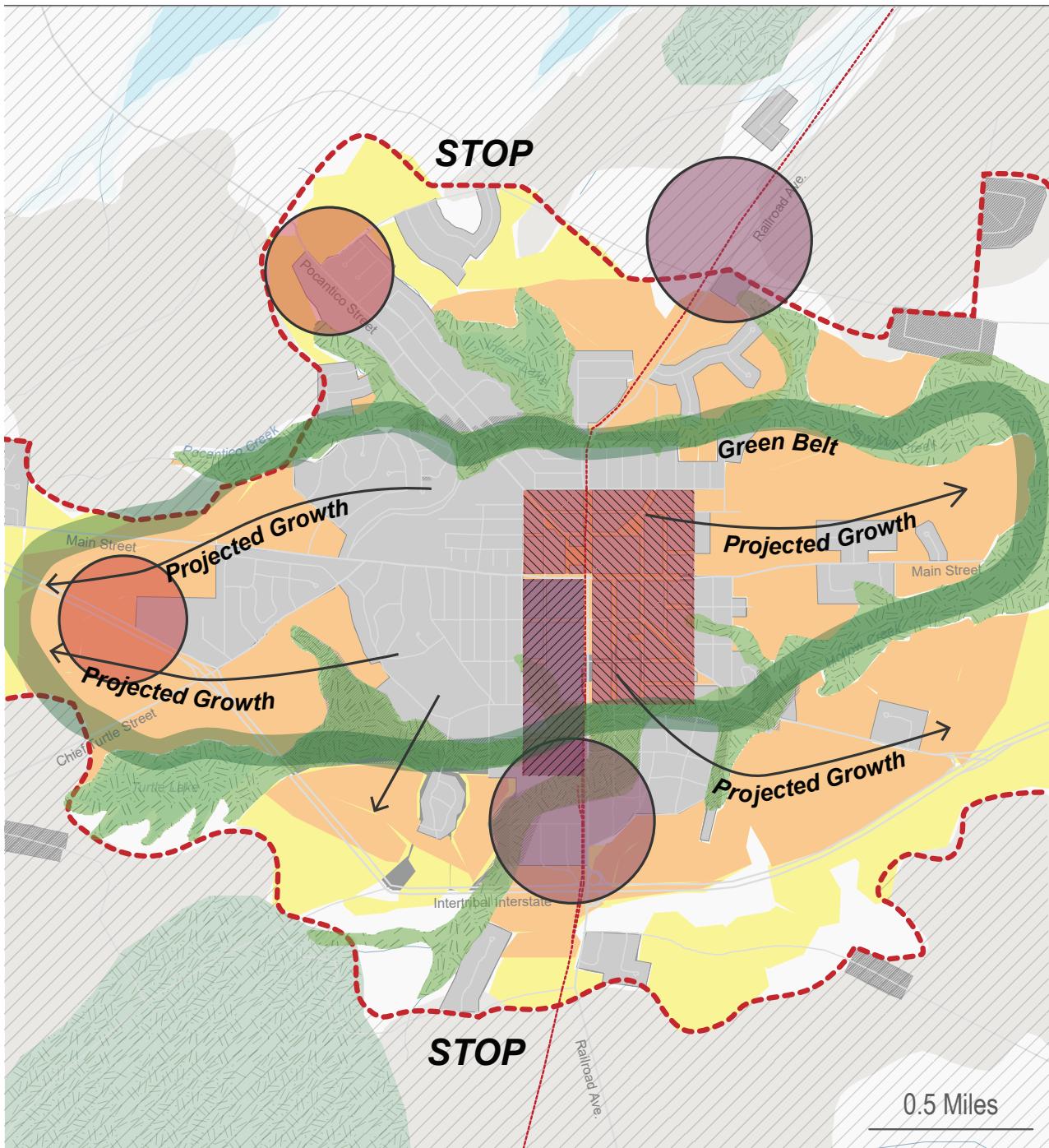
The allocation of future industrial, manufacturing, and research and development use was of particular importance to the community, which seeks to take advantage of regional economic growth. The conceptual design suggests industrial activity be aggregated toward two poles (north and south of the city center) which are further away from the CBD and high-density residential environments but still connected to major thoroughfares and the rail system. This redistribution of industrial districts will open opportunities for mixed-use redevelopment and retrofitting in the CBD.



▲ Sketching possible directions during brainstorming sessions.

Community members believe the CBD should remain as the City's primary commercial center. However, the Concept Design does recommend neighborhood-scale commercial developments and new community facilities which act as anchors for the projected new residential habitats east and west of the CBD. Commercial uses should also be proximate to the new business parks so as to conveniently support the needs of future employees.

Map 13. Turtle Creek Concept Design



# LAND ALLOCATION

The anticipated doubling of both Turtle Creek's residential and employee populations from 2018 to 2038 will require the incorporated city to identify new acreage for residential, commercial, manufacturing, institutional, and community uses.

As discussed in the preceding Areawide Land Use Plan, Turtle Creek's lax land use regulation has resulted in a sprawling, non-contiguous residential pattern which achieves a density of 4.8 dwelling units per acre across the planning area as a whole but which is substantially lower in the fringe areas. Based on trends in demographics and the housing market over the last decade, Turtle Creek could expect the construction of 4,000 new dwelling units—consuming over 1,000 acres of land—over the next ten years under current conditions. In accordance with the direction-setting framework discussed previously, the City proposes implementing a more nuanced zoning ordinance that encourages overall residential density to increase by at least 50 percent. Residential space requirements were calculated with this goal in mind and are summarized in the accompanying table. By encouraging these denser residential patterns, Turtle Creek can decrease the physical footprint of necessary residential development by approximately 27 percent compared to projections from current trends. This will assist in achieving community goals of protecting prime agricultural land and the hydrologic system's integrity. Illustrative examples of proposed densities are included here.

The provision of open space is a priority for Turtle Creek. The City's current allocation of dedicated public open space is considerably high at over 11 acres per 1000 residents. Given the incidence of private yards and the considerable conservation efforts envisioned by the township, Turtle Creek can likely afford to slightly reduce this ratio while still fostering the pastoral environment which residents value. In doing so, the City can expect to increase its stock of public open space by approximately 87 percent as its population grows.

The employment density of Turtle Creek's existing industrial/manufacturing properties is moderate compared to that of typical industrial parks in the United States. By increasing this employment density to approximately 25 employees per acre, the City could more efficiently utilize existing industrial land and decrease the footprint of future industrial land use allocations called for in the Concept Design.

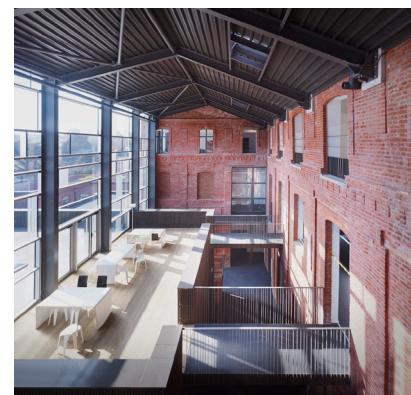
Commercial facilities in Turtle Creek are fairly limited, accounting for just over one percent of the Township's total land area. Given the increase in commercial activity and employment over the next decade, however, the City should anticipate increasing commercial acreage by 40 percent. Additionally, the community recommends siting necessary new school facilities proximate to neighborhood-scale commercial centers. The anticipated doubling of the school-aged population through 2038 will warrant the approximate doubling of acreage dedicated to educational and institutional uses.

Finally, approximately seven acres of land within the City's drainage shed should be identified as the site for a new wastewater treatment facility.

**Table 14. Calculations for required Housing Units by 2038**

<b>Derivation of Total New Housing Units Required by 2038</b>	
<b>1. Planning Area Population Forecast (2038)</b>	20,000 people
<b>2. Average Household Size (2018)</b>	2.9 people/household
<b>3. Households by End of Planning Period (2038)</b>	6897 households
<b>4. Vacancy Rate</b>	5%
<b>5. Adjusted Estimate of Required Housing Stock (by 2038)</b>	7,242 dwelling units
<b>6. Existing Housing Stock (2018)</b>	3,700 dwelling units
<b>7. Estimated Housing Losses (2018-2038)</b>	350 dwelling units
<b>Fire, Disasters, et cetera</b>	
	100 units
<b>Neighborhood Renewal</b>	
	50 units
<b>Conversion to Nonresidential Use</b>	
	125 units
<b>Abandoned</b>	
	50 units
<b>Other</b>	
	25 units
<b>8. Existing Housing Stock Retained by 2038</b>	3,350 dwelling units
<b>9. Adjusted Estimate of Required Additional Housing Stock</b>	3,892 dwelling units
<b>10. Total Future Housing Stock Required in Land Use Design</b>	7,242 dwelling units

*Source: Turtle Creek Office for Community Planning*



▲ Reference for Industrial building retrofits.  
Source: Archdaily



▲ Low Density Residential  
Density: 2.5 DU/acre  
Units: 500



▲ Medium Density Residential  
Density: 5 DU/acre  
Units: 1,500



▲ High Density Residential  
Density: 8 DU/acre  
Units: 1,500

**Table 15. Residential Uses Allocation in Target Neighborhoods**

Allocation of Future Residential Uses (Target Neighborhoods) *					
Neighborhood	Dwelling Units Retained (Through 2038)	New Dwelling Units (through 2038)	Total Dwelling Units (in 2038)	Total Residential Acreage Required (by 2038)	Resulting Gross Densities (dwelling units/acre)
Central Business District (Planning District 1)	154	155	309	28.5	10.9
Gunstock (Planning Districts 2-4)	1254	572	1826	268.9	6.8
Valiant Cove (Planning Districts 5-7)	1684	572	2256	389.1	5.8
Musket Springs (Planning Districts 9, 10, and 20)	95	975	1070	212.1	5.0
Pioneer Hills (Planning Districts 15-17)	45	975	1020	167.1	6.1
<b>Totals</b>	<b>3092</b>	<b>1299</b>	<b>6481</b>	<b>1065.7</b>	<b>6.1</b>

\*See Appendix X for detailed allocation principles.

*Source: Turtle Creek Office for Community Planning*

**Table 16. Residential Uses Allocation in Fringe Neighborhoods**

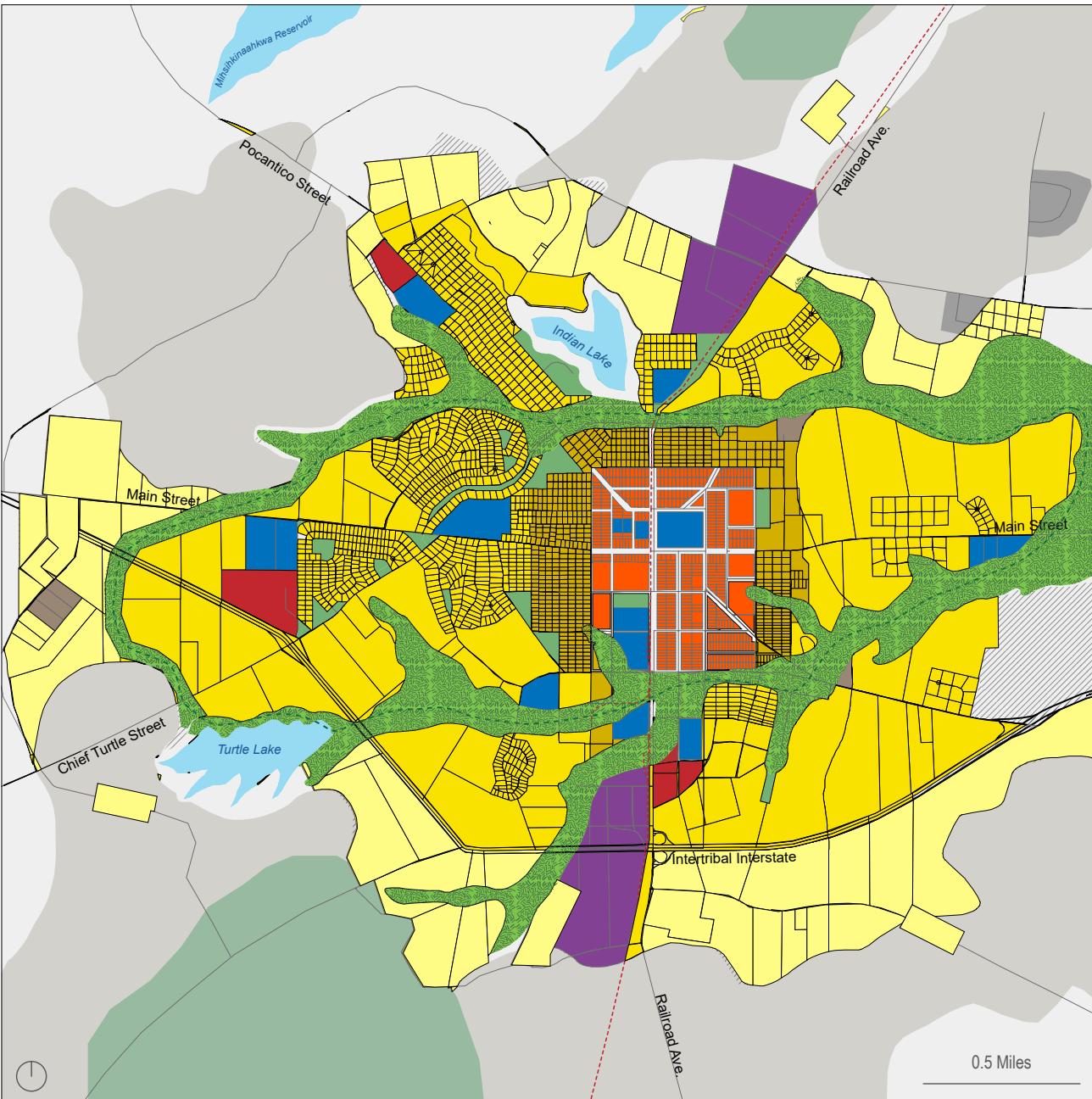
Allocation of Future Residential Uses (Fringe Neighborhoods) *					
Neighborhood	Dwelling Units Retained (Through 2038)	New Dwelling Units (through 2038)	Total Dwelling Units (in 2038)	Total Residential Acreage Required (by 2038)	Resulting Gross Densities (dwelling units/acre)
Reservoir Heights (Planning Districts 8, 18, and 19)	63	217	280	146.2	1.9
Wildfire Hills (Planning Districts 11, 12, and 21)	32	217	249	118.2	2.1
Martin Meadows (Planning Districts 13, 14, 22, and 23)	23	217	240	119.2	2.0
<b>Totals</b>	<b>118</b>	<b>651</b>	<b>769</b>	<b>119.2</b>	<b>2.0</b>

\*See Appendix X for detailed allocation principles.

*Source: Turtle Creek Office for Community Planning*

# LAND USE DESIGN

Map 14. Turtle Creek Future Land Use

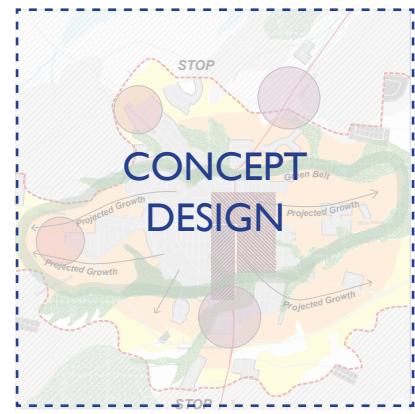


## KEY

Low Density Residential	Commercial	Utilities	Bikeway
Medium Density Residential	Light Industrial	Green Belt / Parkway	Rail
High Density Residential	Industrial/Manufacturing	Conservation	Roads
High Density Mixed-Use	Community Facilities	Agriculture	Interstate
Long-term development		Rural	

Source: Turtle Creek Office for Community Planning

# LAND USE DESIGN



Taken together, the Concept Design and projected future space requirements form the Community-wide Land Use Plan.

## PROJECTED FUTURE SPACE REQUIREMENTS



The CBD is envisioned as a dynamic mixed-use downtown which incorporates historical design, quality housing options, and the modern amenities that will attract new residents and economic opportunities. The CBD's southwest corner, currently dominated by under-utilized industrial spaces, has been identified as a priority area for future redevelopment. This designated redevelopment area is addressed in-depth in the Railroad Corridor Plan.

The CBD is surrounded by high density residential environments, consisting primarily of multi-story and garden apartments. Residential density gradually decreases with distance from the CBD. The proposed higher densities allow for future development to occur in the target neighborhoods first, before expanding in an east-west direction. The lowest density residential forms are reserved to the fringe areas, serving as a transition from the City's main population center toward agricultural land and other natural assets. Based on this design, there is ample space to accommodate a doubling of Turtle Creek's housing stock within the preferred growth boundaries outlined in the Areawide Land Use Policy.



**+710**

**Acres of  
Open Space**

**+30**

**Acres in High  
Performance  
Industrial**

**+40%**

**Increase in  
Commercial  
Space**

The proposed greenbelt, which generally follows the floodplain, creates an ellipse with an east-west axis around the CBD. It serves as a natural boundary to direct growth toward the city center while preserving the City's pastoral character in spite of the recommended density increases. The greenbelt connects existing parks, provides recreational facilities such as bicycle paths, and adds 710 acres of public green space to the City's inventory.

Two future manufacturing and technology parks--together measuring 180 acres--are sited along Railroad Street and the railroad tracks north and south of the CBD, according to the pole schema recommended in the concept design. These employment centers are separated from residential neighborhoods by major rights-of-way or the proposed greenbelt but are still provided with nearby commercial services. An additional 48 acres of commercial space are also distributed among future neighborhoods to support local needs, and where possible, future educational facilities are proximate to these commercial areas, too, so as to encourage walkable, active neighborhood hubs.



5

# SUBAREA PLAN RAILROAD AVE. CORRIDOR

# INTRODUCTION



▲ Abandoned Industrial warehouses along Railroad Ave.

## EXECUTIVE SUMMARY

Turtle Creek is among the fastest growing cities in Indiana, with a projected doubling of population over the next two decades. This substantial growth is driven primarily by significant economic development in the Fort Wayne Metropolitan area, which Turtle Creek officials and residents hope to actively harness to improve the quality of life in their historic township. The City's existing industrial building stock and high connectivity to regional transportation systems make it an attractive location for specialized manufacturing and research and development (RND) firms related to the defense industry, which has historically played a significant economic role in the area.

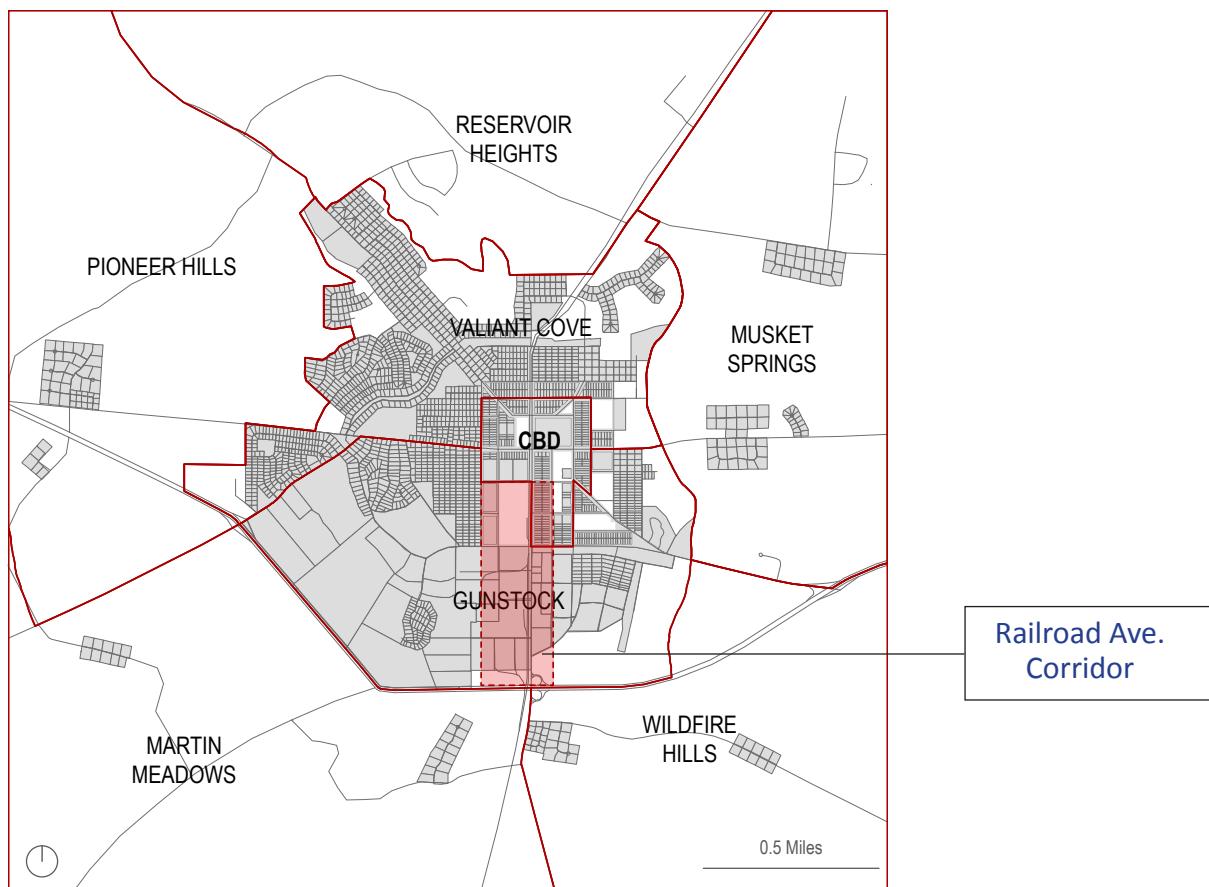
Turtle Creek's Central Business District (CBD) is the heart of the Township, accounting for the majority of commercial activity and employment. Defense manufacturing firms began locating there in the mid-19th century so as to be proximate to Wabash Railroad, which provided connections to South Bend and Indianapolis. While freight trains still utilize the right-of-way and some traditional manufacturing firms still call Turtle Creek home, the contemporary shift in defense manufacturing towards more advanced and specialized methods with an emphasis on research and development (RND) has left numerous industrial properties vacant and in disrepair, many of these historic and meaningful to Turtle Creek residents.

Recognizing the cultural significance of these sites, as well as their potential for fostering future economic growth, Turtle Creek residents have identified the industrial corridor in the southwest corner of the CBD—running south from Godfrey Square to Inter-Tribal Highway along Railroad Avenue—as a priority area requiring special planning. This sub-area plan, heretofore referred to as the Railroad Corridor Plan (RCP), represents a concerted effort by Turtle Creek officials and residents to attract modern industry to the Township while preserving its historic character and reinvigorating the CBD. It outlines the vision, goals, and design of the corridor and provides a framework for implementation over the next decade.

## VISION STATEMENT

The Railroad Corridor Plan (RCP) envisions to improve the area's walkability, ensure pedestrian safety, encourage mixed-use development, and stimulate local economic development.

Map 15. Turtle Creek Subarea Plan Key Map



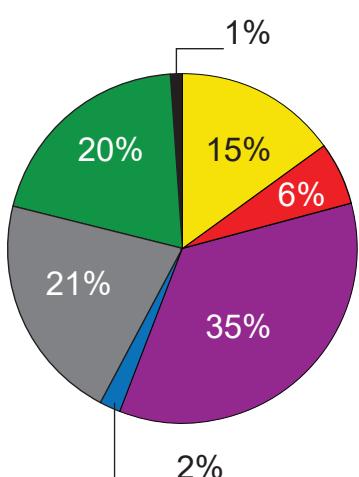
Source: Turtle Creek Office for Community Planning

# EXISTING CONDITIONS

Turtle Creek Train Station circa  
1910. Courtesy of Indiana  
Historical Bureau



**1,500**  
**Manufacturing  
Jobs**



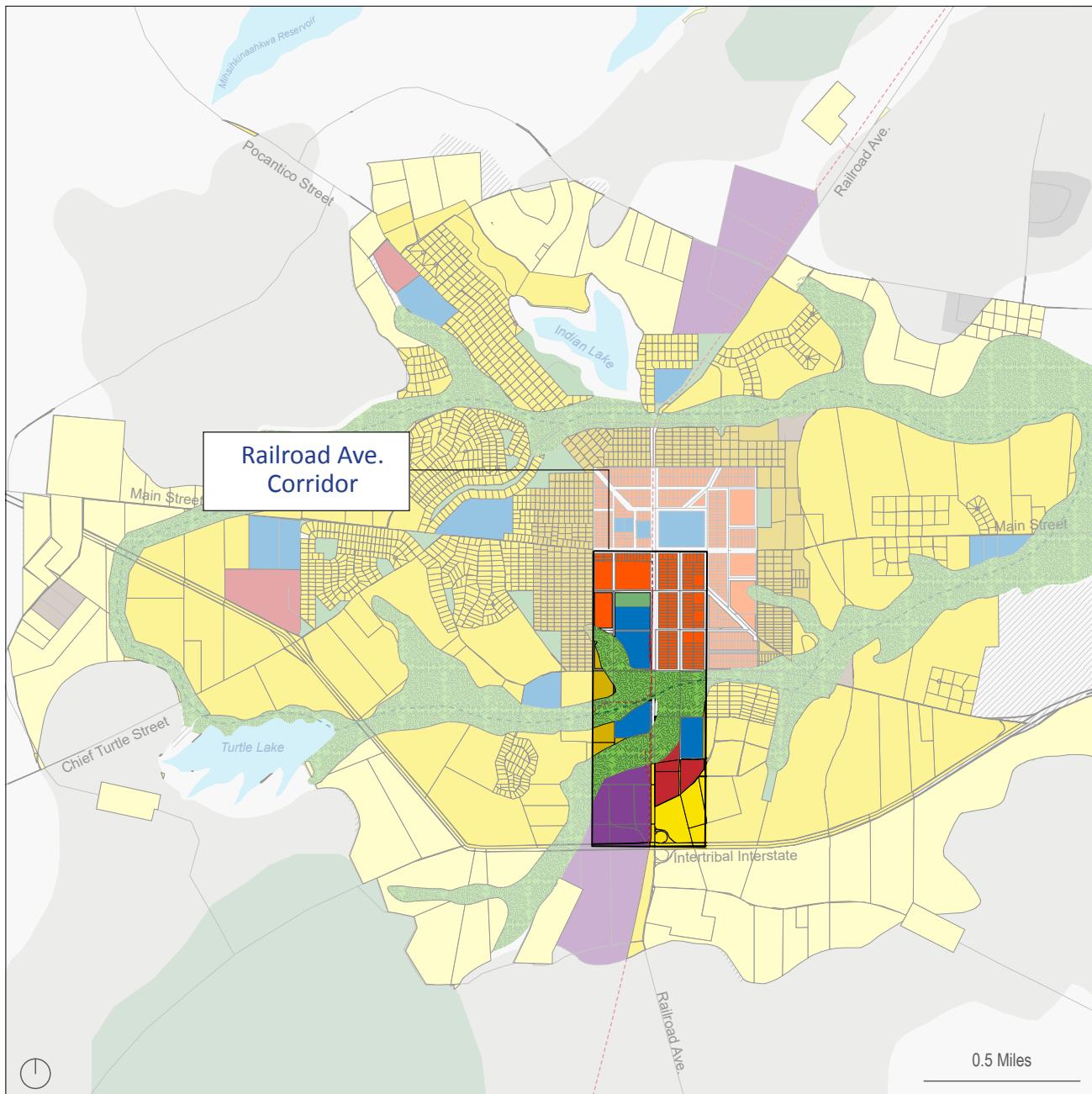
▲ Existing Land Uses along the  
Railroad Corridor Plan.

The Railroad Corridor Planning Area encompasses 340 acres along Railroad Avenue between Main Street and the Inter-Tribal Highway. Railroad Avenue and a freight rail right-of-way bisect the area on a north-south axis. The area is variably zoned for commercial, industrial, and high density residential use. Approximately 35 percent of the area is occupied by industrial structures (mostly on the west side of Railroad Avenue), many of which are in poor condition or underutilized. Despite the industrial character of the corridor, there is also considerable residential development, with an estimated 325 dwelling units housing 900 residents. These residents are generally classified as low- to middle-income.

The corridor is an important employment center for Turtle Creek. An estimated 1,500 industrial/manufacturing jobs and 400 retail/service jobs exist within the study area. There is considerable demand for private vehicle parking, especially on weekdays, as Turtle Creek's low density built environment cannot support public transportation. The area's industrial legacy contributes to poor streetscapes, rendering walking or cycling unrealistic and dangerous, despite the proximity to the historic downtown.

Environmental constraints are also considerable in the corridor. A floodplain cuts across the center of the study area, and flooding during winter and summer storm events is fairly common. This is particularly concerning, given the area's economic impact and low-income residents.

Map 16. Turtle Creek Subarea Land Use Plan - Key Map



**KEY**

Low Density Residential	Commercial	Utilities	Bikeway
Medium Density Residential	Light Industrial	Green Belt / Parkway	Rail
High Density Residential	Industrial/Manufacturing	Conservation	Roads
High Density Mixed-Use	Community Facilities	Agriculture	Interstate
Long-term development		Rural	

Source: Turtle Creek Office for Community Planning

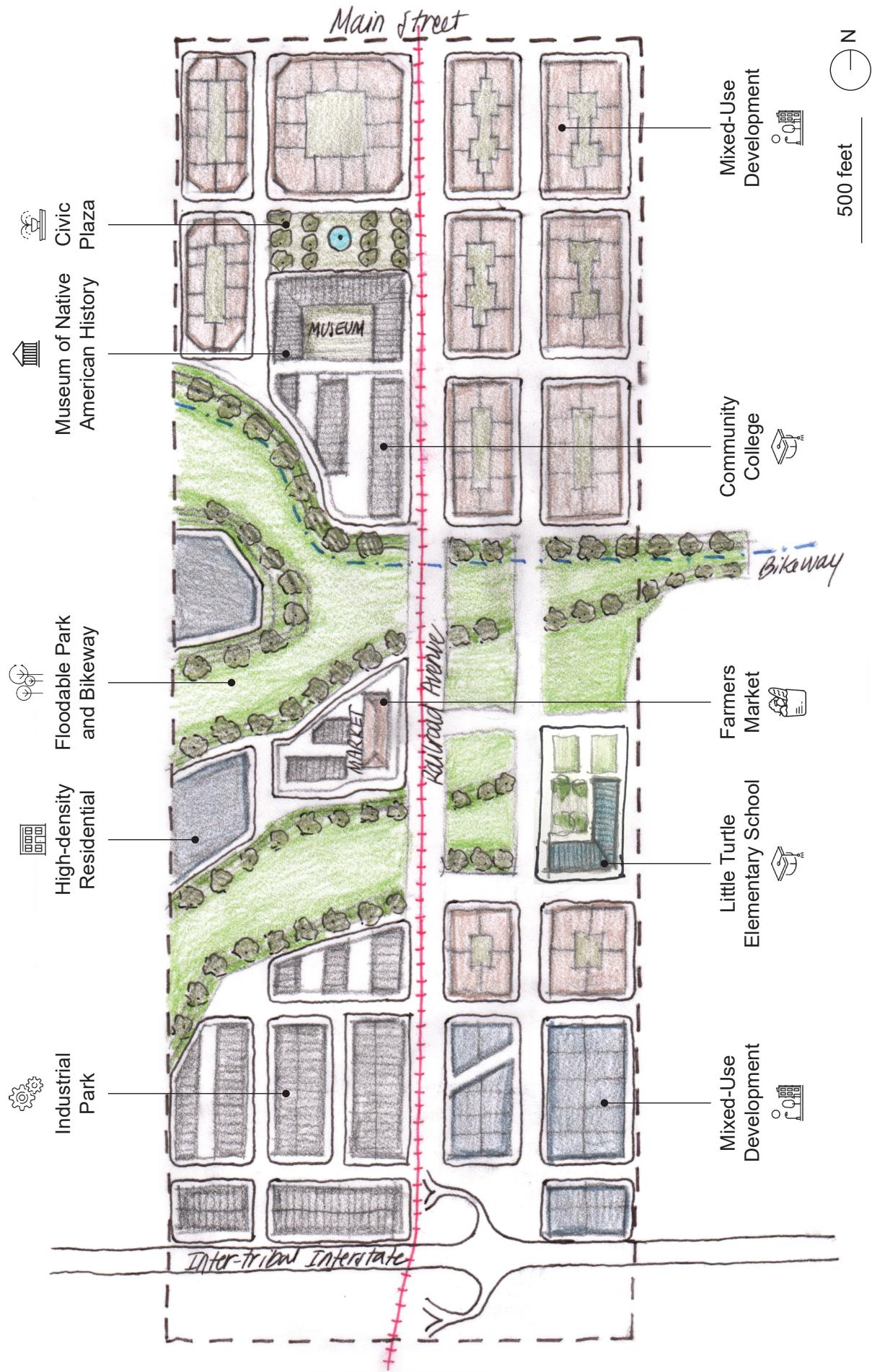
# FUTURE DEVELOPMENT PLAN

## DIRECTION SETTING FRAMEWORK

The Turtle Creek community has chosen to focus on the Railroad Corridor, because its future is representative of the goals and priorities as described in the direction-setting framework of the Areawide Land Use Policy. Namely, the RCP will assist the City in:

1. Pursuing economic development opportunities by identifying sites suitable for modern industrial and R&D operations, thereby expanding the City's economic base and providing new employment opportunities for all Turtlers.
2. Implementing conservation and preservation programs, which will help to retain Turtle Creek's high per capita open space standards, protect private property from natural forces, and enhance the CBD's historic character.
3. Modeling the mixed-use yet contextual built environment that is possible in the CBD and which will allow for a greater range of housing types to meet market demand while protecting prime agricultural land and other environmental resources.
4. Providing resources needed for the social programming necessary to guarantee Turtle Creek's equitable future, such as career training to assist Turtlers in coping with demographic change.
5. Prioritizing capital investments, such as wastewater system expansions, enhanced open space, and cultural resources.

**Map 17. Turtle Creek Subarea Plan**



# FUTURE DEVELOPMENT PLAN

Park and bikeway along the floodplain. ➤



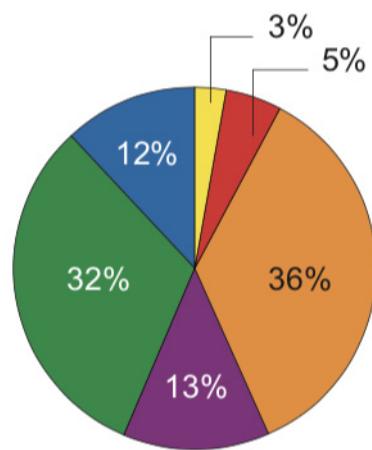
## PROPOSED LAND USE DESIGN

76

The proposed sub-area land use design seeks to assist Turtle Creek's Railroad Corridor in reclaiming its role as a place of productive economic activity and an integral portion of the City's CBD. Turtle Creek residents envision a revitalized district that will be attractive to modern industry while also incorporating the community amenities needed to make it a commons for Turtlers of all backgrounds.

The heart of the RCP will be the portion of the future greenbelt which runs across its center. It will create new green space in a section of the City where it is lacking and contribute to the City's resiliency by directing development away from flood-prone areas. Furthermore, it will function as the design element which knits together a brand new civic space for Turtle Creek, consisting of a museum, community college campus, and permanent farmers' market pavilion housed in rehabilitated, historic warehouses. These civic initiatives are integral to residents' commitment to inclusive economic development that reflects the Township's rural heritage. At the same time, these public investments should encourage private investment to improve the housing stock in the neighborhood which has suffered from neglect despite its proximity to the CBD.

## Map 18. Turtle Creek Subarea Plan - Land Use Map



▲ Land Use composition for the Railroad Corridor Area Plan.



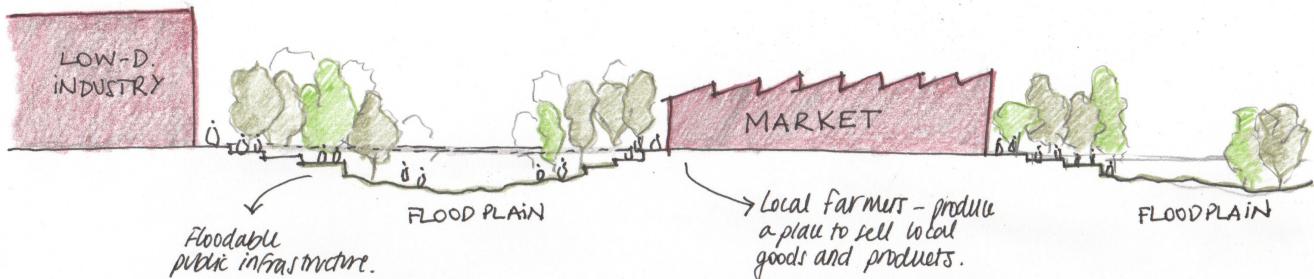
Industrial Park reference.  
Source: Unified Industrial

# FUTURE DEVELOPMENT PLAN

The southeastern corner of the study area will be occupied by portion of the south industry and technology park proposed in the community-wide land use design. It will incorporate both new construction and restored warehouses, creating a state-of-the-art but contextual business campus for the defense, specialized manufacturing, and technology firms that will increase the City's employment opportunities and economic base. The park enjoys unparalleled access to the region's freight and highway network and will be less impactful on residential development than industrial activities currently are. Nearby commercial and mixed-use development will provide ancillary support to the park's activities and provide quality live-work arrangements currently not available in Turtle Creek.

Public realm improvements are also a significant component of the RCP. The right-of-way will be redesigned to accommodate multiple modes of transportation and make it safer for all users, thereby improving connectivity between the Railroad Corridor, CBD, and Township as a whole. The southeastern corner of the study area will be occupied by portion of the south industry and technology park proposed in the community-wide land use design. It will incorporate both new construction and restored warehouses, creating a state-of-the-art but contextual business campus for the defense, specialized manufacturing, and technology firms that will increase the City's employment opportunities and economic base.

Conceptual diagram - Cross-section through the floodplain East-West direction





▲ Vision for Civic Plaza and Native American History Museum

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### Proposed Railroad Ave. Cross-section





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# IMPLEMENTATION

# EXISTING CONDITIONS

Turtle Creek's land use regulation is markedly rudimentary. Within the planning area, residential uses are regulated by high-density and low-density zones; substantial portions of fringe areas are entirely unrestricted. Non-residential zones include commercial, industrial/manufacturing, and institutional, the majority of which are mapped within the central city. Subdivision ordinances and environmental controls are absent, and it has been the City's policy to extend sewer lines whenever new developments occur. Outside of the incorporated territory, the City has no authority to impose land use regulations.

This lax stance on land use regulation has had considerable impacts on the built environment. Generally speaking, uses are highly segregated from one another. The City's overall residential density is approximately 4.8 dwelling units per acre but can be as low as 0.8 dwelling units per acre in fringe planning districts. Numerous subdivisions have been built on the City's periphery, distant from the CBD and other commercial centers, non-contiguous with other developed areas, and outside the municipal sewer shed. Unhindered by environmental controls, many of these subdivisions are built on floodplains and steep slopes or encroach on prime agricultural land and the reservoir which provides the entirety of the City's water needs.

Over the last decade, the majority of residential development has taken the form of single-family homes, even in the CBD, where 100 percent of dwelling units constructed in the last ten years were single-family homes.

## COMMUNITY ENGAGEMENT

This implementation plan describes the recommended strategic actions and tools to achieve the goals that were prioritized in the Comprehensive Plan. As in every other phase of the process, the implementation plan involved the participation of several stakeholders - ranging from local authorities, local and statewide firms, agricultural and historic preservation organizations, and other community-based organizations. S&W Planning Consultants believe public participation at this stage of the process is key to both inform and validate strategies, but also to ensure the proper use of them along the implementation program.

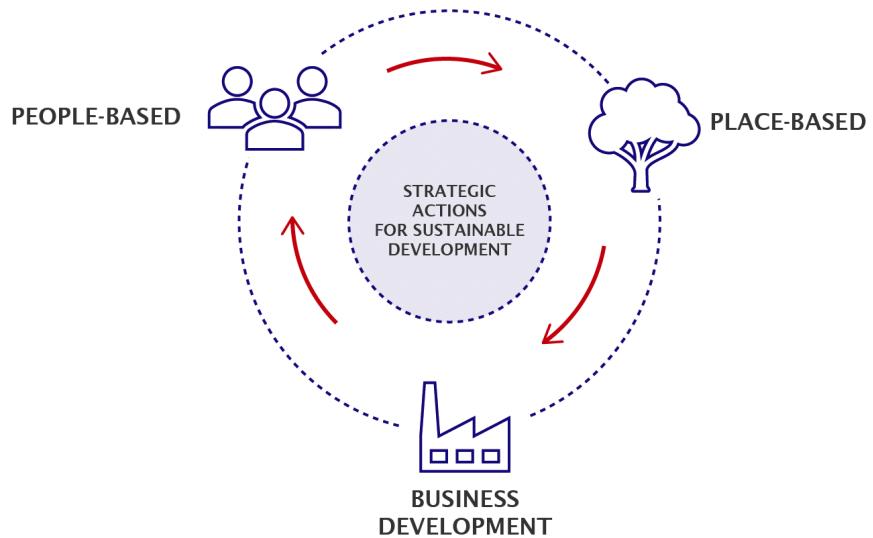
Through several community meetings, participants were presented with potential strategic actions, which were intensively discussed and democratically selected as the community priorities towards the accomplishments of previously envisioned goals. An active engagement of the community has allowed them with a strong understanding of their territory from many different perspectives and approaches and to build consensus on the priorities for the City's development in the next years.

The implementation plan also provides Turtlers with the right tools to keep track of the progress. Each action is assigned to at least one specific organization accountable for each of the tasks required within a suggested time-frame.



◀ Last community meeting for the implementation Plan.

# STRATEGIC ACTIONS



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Turtle Creek will rely on a wide range of strategic actions to accomplish the goals prioritized in the community vision. These actions will respond to one or more of our goals and will be distributed in three categories: people-based actions, place-based actions and business development actions.

## PEOPLE-BASED ACTIONS

Turtle Creek community is aware of the strong upcoming changes and economic growth it will experience in the next years. Anticipating that scenario, Turtlers have prioritized strategies to ensure all the residents share in the potential benefits and opportunities of that growth, by relying on its most important asset; themselves. People-based strategic actions will be focused on two critical aspects of Turtle Creek's human resources: education and workforce development. These strategies aim to connect unemployed and underemployed people and the new labor force to current and upcoming job opportunities, by securing the types of jobs needed by the residents and given the resources available.

## PLACE-BASED ACTIONS

Place-based strategic actions will be deployed within the framework of sustainability and livability principles. These actions will be focused on improving the way Turtle Creel manages its land in order to promote economic growth, while preserving valuable natural resources and ensuring equal access to opportunities for every Turtler. Minimizing environmental impacts of land development and building construction is one of the priorities for Turtle Creek, as well as responding to growing threats from climate change. Land is one of the most important resources in the development of Turtle Creek, and must be managed carefully. To achieve this form an important component of Turtle Creek.

## BUSINESS DEVELOPMENT ACTIONS

Business development is an essential component for the economic development of Turtle Creek. These strategic actions will be focused on the attraction, retention and expansion of business activities with the purpose to create more and better jobs for all the residents of Turtle Creek. Turtle Creek will prioritize the deployment of sectors that have proven to provide well-paying jobs for those residents who have not received professional education, such as manufacturing. However, there is large consensus between residents and authorities that Turtle Creek should progressively adapt to the new economy and the growing importance of new technologies.

# STRATEGIC ACTIONS

## IMPLEMENTATION TOOLS

**Land use regulations**

Zoning code

Special area protection

**Taxing policies /Incentive program**

Enterprise zones

Tax credits

**Table 17. People-based actions**

People-based actions			
Action	Implementation tool	Responsible	Time-frame
<b>Economic Development</b>			
Recommend the creation of small business and innovation assistance centers.	Incubation program	Small Business Services Wabash County / Indiana Economic Development Corporation	Medium-term
<b>Equity</b>			
Connect Turtlers to jobs through the expansion of transportation infrastructure towards existing and future industrial clusters.	Adequate public facilities	Indiana Economic Development Corporation	Medium-term
Recommend the creation of job training programs and workforce development for long-term unemployed or underemployed people.	Job training program	Indiana Economic Development Corporation	Short-Term
Establish a solid education-employment network	Skills bank	Fort Wayne Business Coalition / Indiana Economic Development Corporation / Workers Labor Union	Short-Term
Recommend the creation of a coordination office to promote alliances among labor, firms, and academic institutions in order to allow Turtlers' adaptation to the ongoing economic shift from a heavy manufacturing-base to high-tech industry.	Customized training	Turtle Creek School District Board / Indiana Economic Development Corporation / Fort Wayne Business Coalition	Long-term
Recommend the creation of a master education plan, to adjust school programs to prepare the youth for new job opportunities.	Customized training	Indiana Economic Development Corporation	Long-term
<b>Capital Investments</b>			
Establish industrial research institutions to provide technical talents and attract capital investment.	R&D program	Indiana Economic Development Corporation / IMA (Indiana Manufacturers Association)	Short-Term

**Table 18. Business Development Actions**

Business development actions			
Action	Implementation tool	Responsible	Time-frame
<b>Economic Development</b>			
Support and expand existing local firms	Incentives program	Indiana Economic Development Corporation	Long-term
Recommend the creation of a manufacturing technological park which provides appropriate conditions for new enterprises.	Enterprise zone	Indiana Economic Development Corporation	Short-Term
Accommodate the projected manufacturing jobs increase (120%) by 2038.	Land acquisition program	Turtle Creek DCP/Planning Commission	Long-term
Recommend the creation of an agricultural reinforcement program.	Mandatory Dedicated Land	Indiana Agricultural Partnership	Short-Term
Accommodate the projected services jobs increase (133%) by 2038.	Special area protection	Turtle Creek DCP/Planning Commission	Long-term
Attract new business and the relocation of existing ones in Turtle Creek.	Incentives program	Indiana Economic Development Corporation	Medium-term

## Infrastructure and public investment

Adequate public facilities program

Land acquisition program

## Workforce development and education

Skills bank

Job training program

**Table 19. Place-based actions**

Place-based actions			
Action	Implementation tool	Responsible	Time-frame
<b>General strategy</b>			
Elaboration of the new zoning code	Zoning regulations	Turtle Creek DCP/Planning Comission	Short-Term
<b>Conservation of natural and cultural assets</b>			
Recommend the establishment of a Downtown Historic District	Zoning for conservation, infill and redevelopment (adaptive reuse)	Turtle Creek DCP/Planning Comission	Short-Term
Promote Downtown housing through mixed-use zoning and adaptive reuse developments (industrial warehouse conversion).	up-zoning	Turtle Creek DCP/Planning Comission	Medium-term
Establish the Turtle Creek Museum which will showcase its unique Native history and the demographic, economic, and social changes throughout time.	Land acquisition program	Indiana Historical Bureau / Indiana Economic Development Corporation	Short-Term
Encourage the preservation of existing green areas that surround the city.	special area protection	Turtle Creek Department of Environmental Protection	Short-Term
Recommend the dedication of the Mihšihkinaahkwa State Park to preserve existing natural hardwood forests and its unique environment.	special area protection	Turtle Creek Department of Environmental Protection	Medium-term
Adopt mechanisms to protect prime agricultural land and contain urban growth	special area protection	Indiana Agricultural Partnership	Medium-term
Recommend the creation of a flood management program		Turtle Creek Department of Environmental Protection	Short-Term
<b>Housing quality and affordability</b>			
Deploy more robust zoning and subdivision ordinances to discourage suburban sprawl and fragmented development patterns.	Minimum density zoning	Turtle Creek DCP/Planning Comission	Long-term
Upzone Planning Districts One through Seven to accommodate denser residential development on remaining undeveloped lands.	Upzoning	Turtle Creek DCP/Planning Comission	Medium-term
Encourage the even, east-west growth of residential development around the CBD by identifying planning districts most suitable for accommodating substantial residential growth.	jobs-housing balance	Turtle Creek DCP/Planning Comission	Short-Term
Permit mixed-use, adaptive reuse, and infill development in the CBD and immediate environs.	zoning , infill and adaptive reuse	Turtle Creek DCP/Planning Comission	Medium-term
Disincentivize the construction of single-family detached houses through fees and/or other land use management mechanisms, especially in target planning districts.		Indiana Economic Development Corporation	Long-term
Where lower density development is desirable, incentivize cluster subdivisions.	Cluster development	Turtle Creek DCP/Planning Comission	Long-term
<b>Capital Investments</b>			
Create new elementary schools, junior high schools, and senior high schools in underserved areas.	Land acquisition program	Turtle Creek School District Board	Medium-term
Recommend the establishment of new community college to improve local education attainment.	Land acquisition program	Turtle Creek School District Board	Short-Term
Construct new museums to enhance public attention to city history, local history, and national identity.	Land acquisition program	Indiana Historical Bureau	Short-Term
Build new public space (parks, plazas, and libraries) and improve existing recreational facilities and services.	Adequate public facilities	Turtle Creek DCP	Medium-term
Recommend the construction of the wastewater system expansion	Adequate public facilities	Indiana Economic Development Corporation	Short-Term
Recommend the creation of a Farmland management program	Land acquisition program	Indiana Farm Bureau	Short-Term

# APPENDIX

**Appendix Table I. Allocations of Future New Dwellings and Acres to Proposed Residential Habitats**

Allocations of Future New Dwellings					
		Existing Residential Acres	Retained Residential Acres	Total Required Residential Acreage	Mixed Use
<b>Target Neighborhoods</b>	Central Business District (Planning District 1)	24	22	28.5	96.1
	Gunstock (Planning Districts 2-4)	250	226	268.9	25.7
	Valiant Cove (Planning Districts 5-7)	337	305	389.1	31.0
	Musket Springs (Planning Districts 9, 10, and 20)	91	82	212.1	
	Pioneer Hills (Planning Districts 15-17)	41	37	167.1	
<b>Target Neighborhoods Totals</b>		<b>743</b>	<b>672</b>	<b>1065.7</b>	<b>152.8</b>
<b>Fringe Neighborhoods</b>	Reservoir Heights (Planning Districts 8, 18, and 19)	34	31	146.2	
	Wildfire Hills (Planning Districts 11, 12, and 21)	25	23	118.2	
	Martin Meadows (Planning Districts 13, 14, 22, and 23)	26	24	119.2	
<b>Fringe Neighborhoods Totals</b>		<b>85</b>	<b>78</b>	<b>383.6</b>	<b>0.0</b>
<b>Planning Area Totals</b>		<b>828</b>	<b>750</b>	<b>1449.3</b>	<b>152.8</b>

and Acres to Proposed Residential Habitats					
<b>Holding Capacity</b>					<b>Resulting Densities</b>
High-density Available Acres from Land Use Design	Medium-density Available Acres from Land Use Design	Low-density Available Acres from Land Use Design	Total Available Residential Acres from Land Use Design	Difference Between Design and total Required	
-	-	-	-	-	10.9
64.7	464.1	-	528.7	259.8	6.8
101.3	324.57	-	425.9	36.8	5.8
-	389.2	67.8	457	244.9	5
-	148.9	197	345.9	178.8	6.1
<b>166</b>	<b>1326.8</b>	<b>264.8</b>	<b>1757.6</b>	<b>720.4</b>	<b>6.1</b>
-	231.6	39.6	271.2	125	1.9
-	100.1	282.9	383	264.8	2.1
-	47.8	150.8	198.5	79.3	2
0	379.4	473.2	852.7	469.1	2
<b>166</b>	<b>1706.2</b>	<b>738</b>	<b>2610.2</b>	<b>1189.4</b>	<b>5</b>

# TURTLE 2038

COMPREHENSIVE PLAN  
for



**TURTLE CREEK**

— INDIANA —