



# Big Darby Town Center Master Plan

FRANKLIN COUNTY, OHIO | DECEMBER 2011

*Prepared by Urban Design Associates*







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**Adopted December, 2011**



**Commissioners**  
Marilyn Brown  
Paula Brooks  
John O'Grady



**City of Columbus**  
Mayor Michael B. Coleman

**Columbus City Council**  
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Hearcel F. Craig  
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A. Troy Miller  
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Gary Dever  
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Ron Ball





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# Big Darby Town Center Master Plan

## PREPARED FOR

Franklin County  
City of Columbus  
Brown Township  
Prairie Township

## CONSULTANT TEAM

Urban Design Associates  
Applied Ecological Services  
RCLCO  
DesignWorkshop  
STV, Inc.  
Walter Kulash  
Bricker & Eckler

## ADVISORY COMMITTEE

Jim Hilz  
*BIA of Central Ohio*  
Ron Sabatino  
*Landowner*  
John Bain  
*Homewood*  
George Sicaras  
*Sicaras Properties*  
Ashley Hoyer  
*Darby Dan Farm Manager*  
Dianne Bradford  
*Landowner*  
Sandy Fry  
*Landowner*  
Nancy Reger  
*MORPC*  
John O'Meara  
*Metro Parks*  
Anthony Sasson  
*The Nature Conservancy*  
Emily Weber  
*Franklin Soil & Water Conservation District*  
Dale McVey  
*Hilliard City School Superintendent*  
Dr. Bill Wise  
*South Western City Schools*  
John Tetzloff  
*Darby Creek Association*  
Dwight McCabe  
*Central Ohio NAIOP*  
Bob Gable  
*Ohio Department of Natural Resources*  
Michael Galloway  
*Ohio EPA*  
Dan Dudley  
*Ohio EPA*  
Erin Miller  
*Environmental Steward, Mayor's Office*  
Erik Janas  
*Deputy County Administrator*

## STAKEHOLDERS & TECHNICAL RESOURCES

Michael Meeks  
*Franklin County Engineer's Office*  
Fritz Crosier  
*Franklin County Engineer's Office*  
James Ramsey  
*Franklin County Drainage Engineer's Office*  
Emily Weber  
*Franklin Soil & Water Conservation District*  
Stephen Renner  
*Franklin County Sanitary Engineer*  
Paul Rosile  
*Franklin County Board of Health*  
Nick Soulas  
*Franklin County Prosecutor's Office*  
Major Alan Mann  
*Franklin County Sheriff's Office*  
David Lowell  
*GIS Manager, Franklin County Economic Development & Planning Department*  
David Hughes  
*Madison County Planning Director*  
Keith Goldhardt  
*Pleasant Township Trustee*  
David Long  
*Norwich Township Fire Chief*

## JURISDICTION

R. Lee Brown, AICP  
*Franklin County*  
James Schimmer  
*Franklin County*  
Vince Papsidero, AICP  
*City of Columbus*  
Beth Clark, AICP  
*Brown Township*  
Tracy Hatmaker, AICP  
*Prairie Township*

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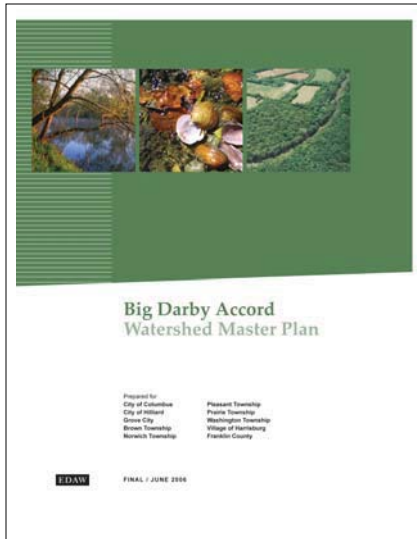
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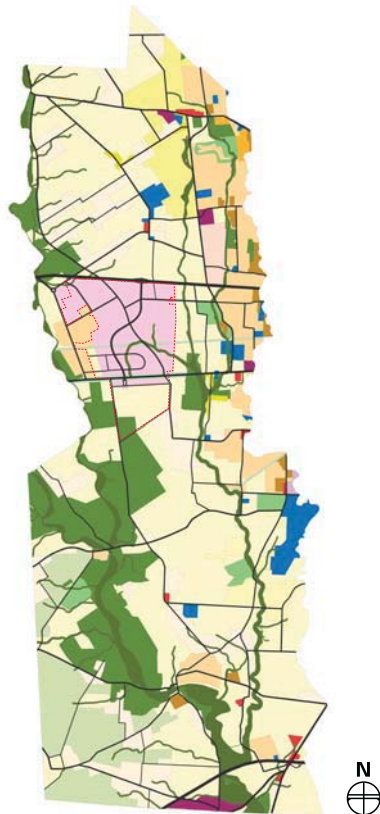
## EXECUTIVE SUMMARY

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# OVERVIEW



*The Big Darby Accord Watershed Master Plan*



*Big Darby Accord Land Use Plan with Town Center Area shown in lavender.*

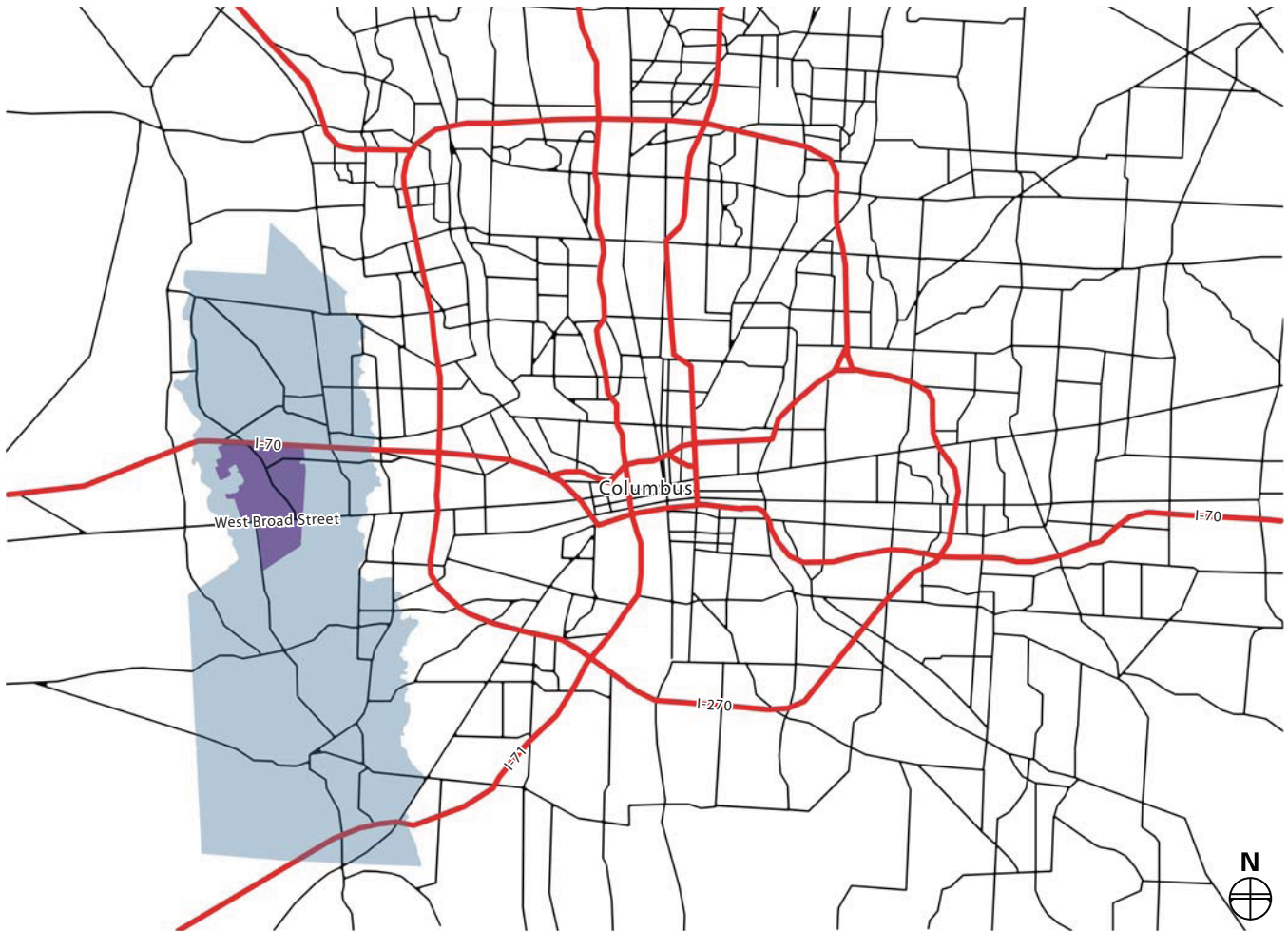
The Big Darby Accord Watershed Master Plan (the Accord) prepared by EDAW was completed in June 2006. The Accord represents an unprecedented agreement among multiple different jurisdictions and countless participants and stakeholders to achieve a common goal of protecting, restoring, and conserving the Big Darby and its watershed within Franklin County.

The Accord's combination of strategic recommendations for development and conservation, along with specific agreements about protected lands and revenue sharing, marked a thoughtful approach to eliminating the disastrous effects of unchecked growth and sprawl in the region. A key contribution to this effort was the deliberate policy change by the City of Columbus to offer sewer and water access for the Big Darby Town Center (The Town Center) development in the absence of annexation. Furthermore, five jurisdictions agreed in 2009 to a program that identified how they would generate development-based revenue and allocate a significant portion of it to Darby Accord purposes such as acquiring sensitive lands and improving the health of the waterways.

A key to realizing the vision of the Accord was a mixed-use urban core that would serve to concentrate development, draw commercial and office users, and generate a substantial portion of the revenue goals. This catalytic development would respond to 12 years of growth pressure and serve to transform the image and character of West Broad Street and the adjacent communities. Detailed planning for this development was to be one of the early action items for putting the Accord into action.

In 2009, Urban Design Associates along with a team of experts from Applied Ecological Services, RCLCO, Design Workshop, STV, Inc., Walter Kulash, and Bricker and Eckler, embarked upon the process of figuring out the Town Center component. The following plan documents the process, the Town Center Master Plan recommendations, and the strategy for implementing the development.



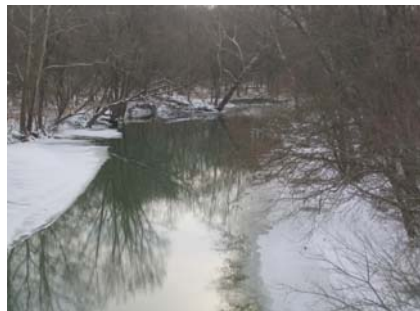


BIG DARBY ACCORD WATERSHED BOUNDARY

TOWN CENTER PROJECT BOUNDARY



*Town Center Context*



*Big Darby Creek*



*West Broad Street - Today*

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# OVERVIEW

## CASE STUDY: BAXTER, SOUTH CAROLINA

- » Adjacent to 2300 acres of nature preserve
- » Based on historic Upcountry South Carolina towns, with streets, blocks, and civic spaces
- » 100,000 sf of office and commercial space
- » 1,400 Residential units, with a mix of apartments, small garden houses, and single-family houses



*Images showing a 35,000 sf mixed-use building on Baxter's main street as designed and built*

In order to understand the Town Center policies set forth in this plan, it is important to distinguish between the general findings of the 2006 Accord and the details, including the implications on implementation, of this Master Plan in 2010/11. Accordingly, the text will clearly reference either the “Accord” or the “Town Center Plan.” When not specified, readers can assume the reference is to this Town Center Master Plan.

The development world has drastically changed in the past four years. Strategies for growth and development across the continent, as well as in central Ohio, are beginning to respond. It is critical to the success of the Big Darby Town Center (Town Center), that this plan balances the current market realities with the principal goals and vision of the Accord. As it relates to the aspirations of this development, the Accord states “The intention of the Town Center zone is to create a sustainable and highly-desirable mixed-use area that includes a full range of residential, retail, office and public uses....[it] is envisioned as a walkable village that includes retail uses facing key streets to create a lively and visually appealing community” (Accord, Executive Summary, p. iv).

In 2006, the vision translated into 5,000 units of housing and 1.5 million square feet of commercial and office space with an anticipated build-out of about 20 years. Currently, there is no market justification for this amount of development. That does not mean, however, that the original vision cannot be met. In fact, the ability to achieve the initial vision of a sustainable and walkable community is very much alive and possible just with a revised residential unit and commercial space configuration.

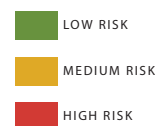
The Town Center is currently designed to accommodate a full mix of housing types from single-family detached to multi-family; commercial uses both in ground floor, street-facing retail to professional office and hospitality uses; and public amenities such as schools and a location for a new fire station. These are all the components of successful villages and mixed-use neighborhoods throughout the region. The goal is to price these components competitively to take full advantage of pent-up demand in western Franklin County and to create a significant shift in the image and character of development along the West Broad Street corridor.





SITE REQUIRES PHASED DEVELOPMENT APPROACH TABLE				
DEVELOPMENT TYPE	NEAR TERM (1 – 5 YEARS)	MEDIUM TERM (5 – 10 YEARS)	LONG TERM (10 – 15 YEARS)	CONSIDERATIONS
Conservation Lots 0.15 du/acre				Desire for open space is a demand driver. Large lots could command a premium.
Small-Lot SFD 5 du/acre				Existing Lake Darby development proves demand for single-family homes. Schools will determine prices.
Townhouses 12 – 14 du/acre				Low market price of single-family detached homes limits need for dense product. As sense of “place” develops, demand should improve.
Multi-Family For-Sale 30 – 50 du/acre				See above. Higher construction costs vs. townhouses limit feasibility further.
Multi-Family For-Rent 30 – 50 du/acre				Low market price of single-family homes limits demand for luxury apartments. New construction at prevailing rents is not feasible.
Office 1.0 – 1.5 FAR				The market is currently oversupplied. There is some potential for a “lightning strike” in later years. Competition for tenants will be intense.
Retail 0.3 – 0.8 FAR				Site area is underserved but there is stiff competition from new regional centers. Local- serving retail would be the best option.
Hotel 15 Rooms/Acre				Limited competitive supply may offer the opportunity for boutique hotel.

*Chart illustrating the types of development and their feasibility under the current 2010 market across the phased build-out of the Town Center*



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# OVERVIEW



*Darby Dan Farm*



*Town Center Site*



*Metro Parks Multi-Use Path*

The Accord designated an area of approximately 2,500 acres of land for the targeted site of the Town Center development. Therefore, a key step in this current detailed Town Center planning process was to look at the entirety of the site and the surrounding areas to understand not only the impact of development proposed in the Accord, but also to identify (given the changes of the past four years) the most successful strategy for development.

There are many existing natural features within the Town Center site including jurisdictional wetlands and stream corridors, significant stands of mesic forest, and hydric soils. When the designated Tier 1, 2, and 3 lands from the Accord are added to these features, a significant portion of the 2,500 acres is dedicated to conservation and restoration goals. The residual lands are identified as "developable" on the adjacent image.

Additionally, the railroad right-of-way and the subwatershed divide provide constraints for infrastructure expansion (specifically sewer, water, and road access) to the north and west of the Town Center site. While road access, sewer connections, and water piping are physically possible, they carry additional costs that outweigh the financial and environmental benefits of intense development in these areas. For this reason, and for the purpose of this master plan effort, the Town Center boundary now extends to Kuhlwein Road in the south, also providing a key linkage to Batelle Darby Park.

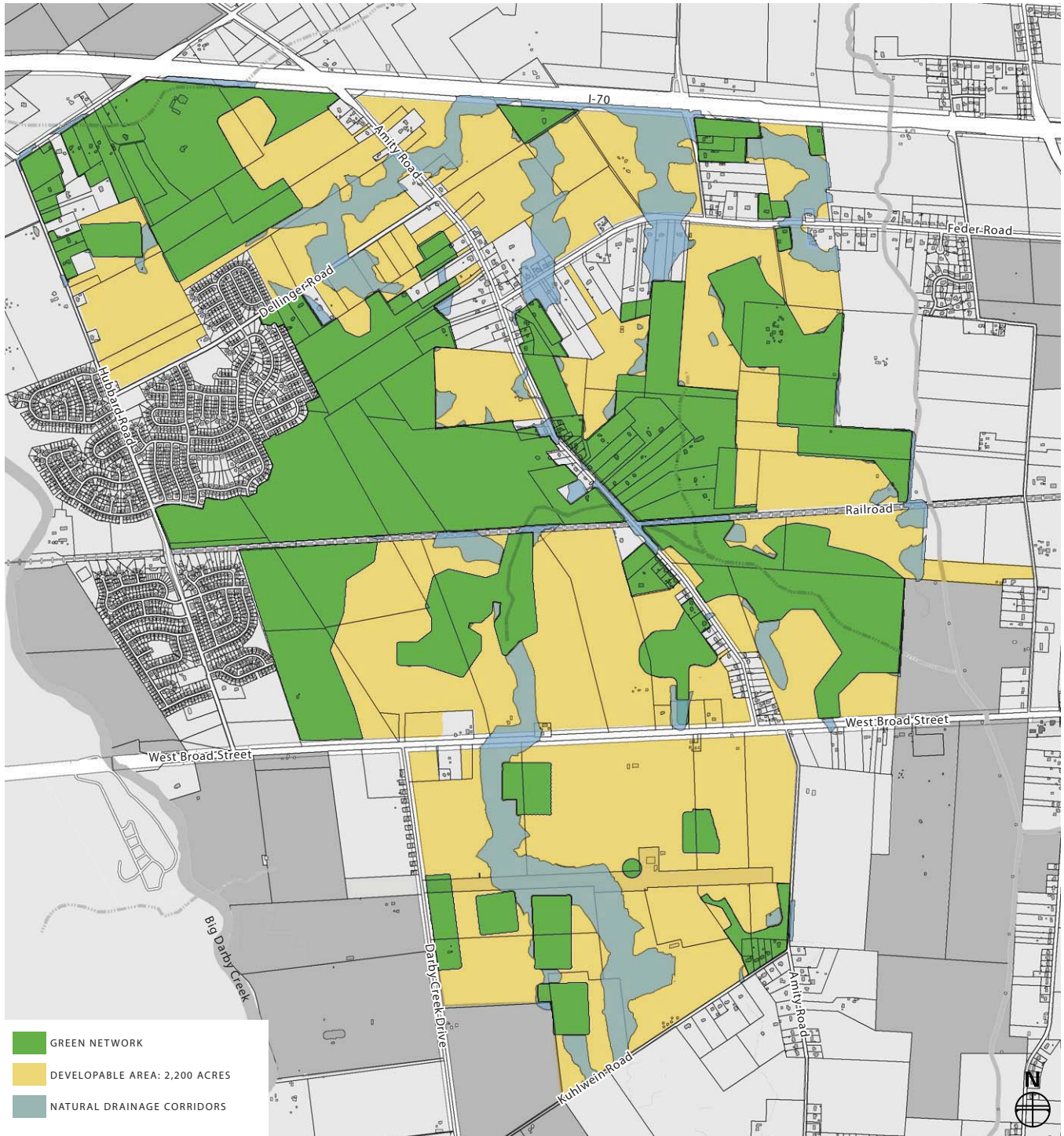
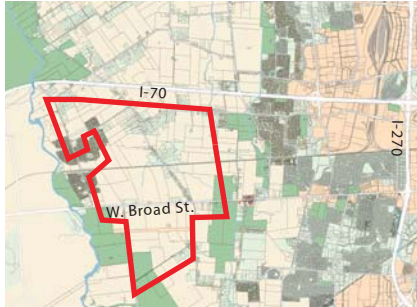


Diagram illustrating the green network and resulting developable areas within the Town Center



# KEY RECOMMENDATIONS



*Portrait of the Town Center area in Context*

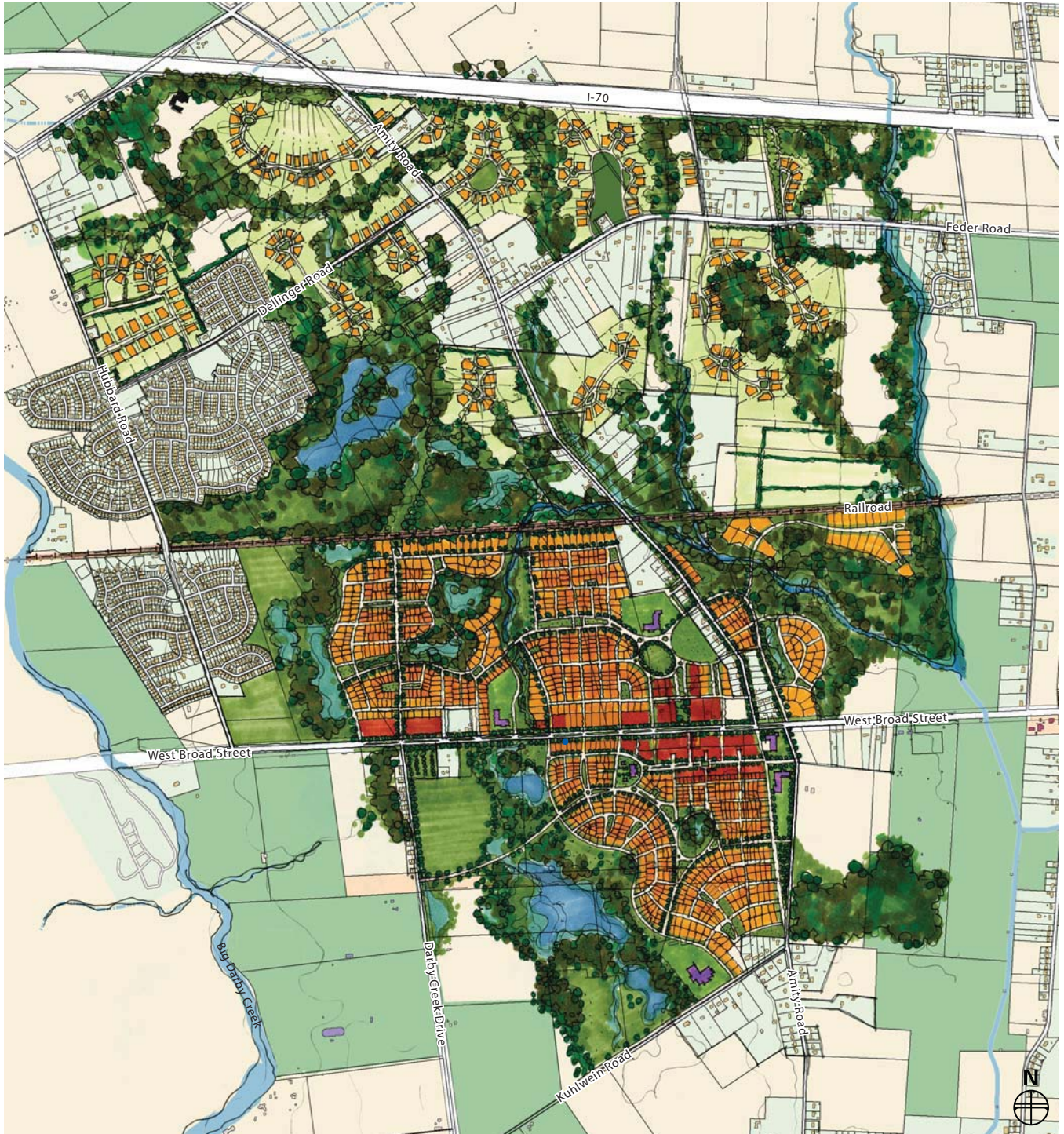
## MASTER PLAN

The Big Darby Town Center Master Plan represents a program for development that will unfold over three to four decades through a variety of market, stylistic, and technological climates. For this reason, the plan proposes a framework approach to the Town Center's development. The armature of the village is established up front, but the development components are determined by a series of design and character guidelines. This way, the plan will remain responsive to changing forces and can evolve over time in response to changing needs.

Some fundamental components of the design remain fixed. These include the strategy for mixed-use and mixed-income development; a strong relationship to West Broad Street and a resulting interconnected network of neighborhood streets; an extensive open space system linking neighborhoods and connecting the Town Center directly to Battelle Darby Creek Park through trails, paths, and habitat corridors; and finally, integrated stormwater management and a village design that limit the impact of development without compromising the walkability, density, and feel of the village.







*Illustrative Town Center Master Plan*



# KEY RECOMMENDATIONS

## FRAMEWORK OF OPEN SPACE



To develop within the Big Darby Watershed requires a certain level of ecological stewardship and environmental sensitivity. To achieve this in the Town Center, the densest area of development within the Accord area, will be an excellent example of what’s possible for communities across the U.S. The Town Center proposes an interconnected network of open space that begins with the environmentally sensitive lands identified in the Accord (These lands were ranked in level of importance to the ecosystem: Tier 1 lands are most sensitive, followed by Teir 2 and Tier 3 lands). This plan takes it one step further, by analyzing not only areas where there is evidence of historic drainage patterns, but also identifying the best locations in which to incorporate passive stormwater treatment facilities and wetlands. These areas are incorporated into a comprehensive open space framework that creates a beautiful, thriving, and functional system throughout the planning area.



*Open Space Typologies and Management Entities Diagram*



The key to making this work in perpetuity, however, is to identify the different functions and types of open space and link these to management and maintenance structures. While native landscapes require minimal upkeep, a fair amount of restoration will need to be done to the damaged systems within the watershed generally, and within the Town Center area specifically. Again, the approach of linking these strategies directly to the design and development of infrastructure diversifies the options for supporting their creation and maintenance. Larger structures and systems can be easily linked into and coordinated with MetroParks, Franklin Soil and Water, and other civic conservation and park services. Smaller green spaces and corridors can be managed and maintained by Homeowner Associates (HOA's) or master developers as amenities within the plan.

OPEN SPACE CATEGORIES AND POTENTIAL FUNDING SOURCES

PROTECTED		RESTORED		DEVELOPED	
TYPES OF LAND	POTENTIAL SPONSOR	TYPES OF LAND	POTENTIAL SPONSOR	TYPES OF LAND	POTENTIAL SPONSOR
» Agricultural Lands	» Private operator » CSA/Local Market	» Accord-designated Tier 3 Lands	» Real Estate Transaction Fund	» Stormwater BMPs and Treatment Train Facilities that directly support Development	» Development Authority/HOA
» Accord-designated Tier 1 and Tier 2 Lands	» MetroParks/Public Funding	» Native Landscapes	» Annual HOA Assessed Fees and Land Management » Science-Based Stewardship » MetroParks/ Stewardship Fee	» Visual and Cultural Resources	» County/State
		» Stormwater Treatment Wetlands	» Community Sustainability Organization	» Parks and Recreational Lands	» Tax Assessment Fees » Joint Park District

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# KEY RECOMMENDATIONS

## TRANSPORTATION

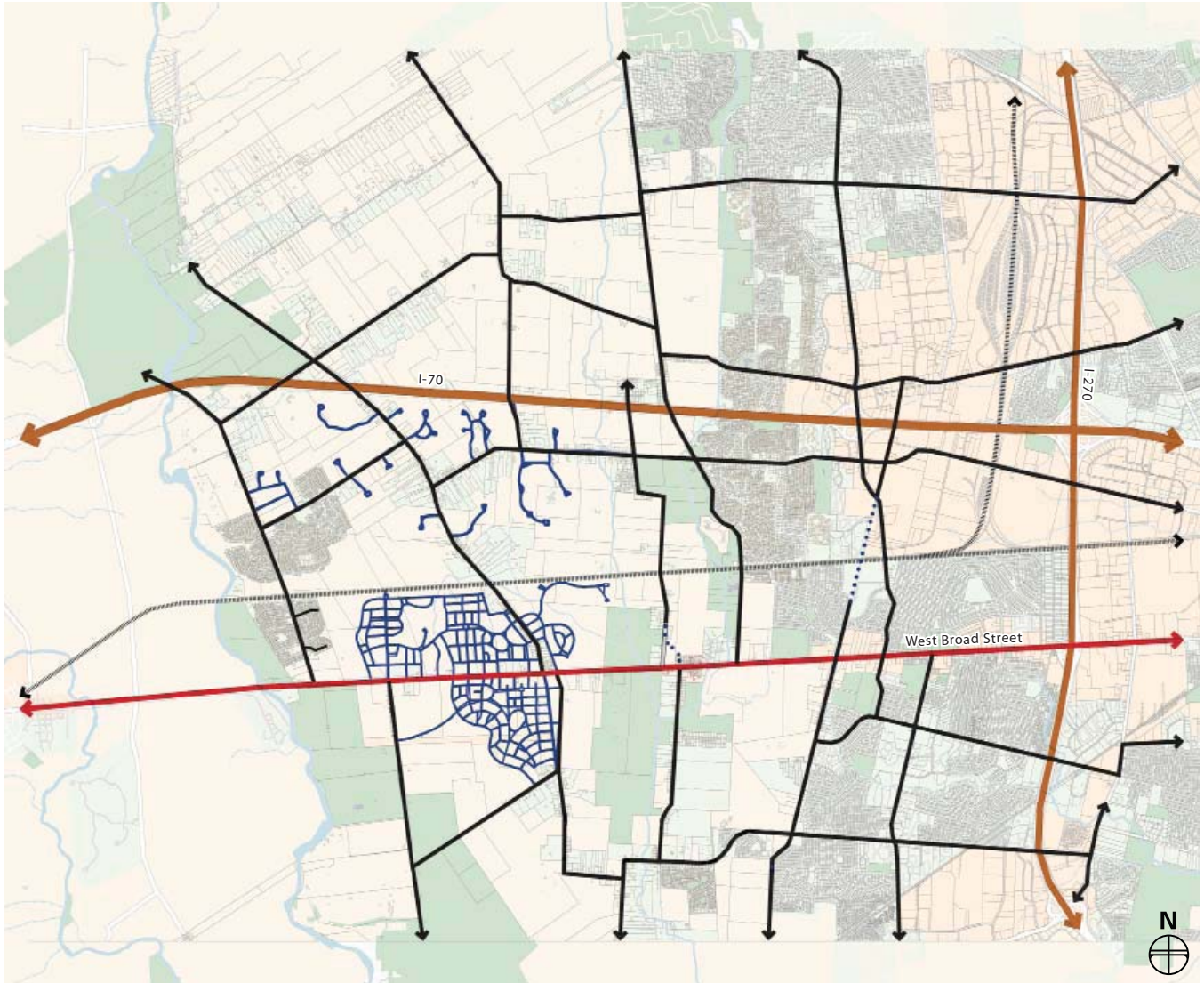
The Accord of 2006 looked broadly at transportation and connections, providing some general goals and guidelines without actually conducting a traffic analysis. One of the goals was for the Big Darby Town Center detail design efforts to take a closer look at traffic and transportation needs for the area of the Town Center and its immediate surrounds. In the absence of a comprehensive thoroughfare analysis for this area (which was not part of the consultant scope), the plan has identified some basic strategies for how to handle the expanding population over the next 20 to 30 years. These strategies include three scales of intervention: the highways, surface connections, and access management within the village framework.

Based on the analysis a new interchange at I-70 is neither justified nor needed to support the Town Center as conceived. ODOT is not currently evaluating this alternative and no design investigation has begun, meaning that even if such an investment were recommended, it is at least 15 years away from happening.

In the absence of an interchange at I-70, the consultants evaluated the other arterial and potential connections for linking the Town Center with other parts of the City. Opportunities were identified for new connections to the south, providing access to I-270 at Exit #5. The consultants also identified a potential benefit to previous plans for a grade-separated extension linking Galloway Road to Hilliard Rome Road, providing an additional crossing over the railroad tracks.

Finally, West Broad Street will function as a central spine to the Town Center development. Initial meetings with ODOT were supportive of strategies to not only beautify this stretch of West Broad Street by incorporating a greenway on each side of the road, but also to eliminate driveway access in favor of more frequent intersections with local streets and a limited number of signalized intersections that will calm traffic and provide safe pedestrian and bicycle crossings.





*Proposed Street Network Diagram*



# KEY RECOMMENDATIONS

## FINANCIAL AND IMPLEMENTATION STRATEGY

The Town Center development program proposed in this Master Plan represents a phased approach to construction that balances a variety of concerns. The desire of the jurisdictions and stakeholders for a Town Center environment was subjected to a test of market and financial feasibility. While the total program envisions fewer residential units and less commercial square feet over a longer timeframe than originally conceived under the Accord, it still represents an significant development project of over 3,500 units and nearly 700,000 square feet of commercial space. Since the primary directive was to create an implementable plan, it is important to emphasize that this program responds to that directive to design and build an authentic Town Center that reflects market realities and presents an attractive opportunity for private developers.

Additionally, a main goal for the development of the Town Center is to generate additional revenue for land conservation and other Accord purposes. Utilizing a revenue model developed for the Accord that relies on tax-increment financing (TIF), developer contributions, and additional fees imposed by a New Community Authority (NCA), it is estimated that the Town Center will indeed generate significant amounts of additional revenue, but it is unlikely to cover the costs of conserving all of the land designated for conservation under the Accord.

BIG DARBY TOWN CENTER	75% TIF	100% NCA	75% DEV. CONTRIB.	JEDD	
REVENUE FOR ACCORD PURPOSES	30YR NON-SCHOOL, NON-FIRE	5 MILLS	\$2500/RES UNIT	2.5% INC. TAX	TOTAL
Amount	\$284,683,000.00	\$25,525,000.00	\$8,700,000.00	n/a	\$318,908,000.00
Amount in 2010 \$	\$45,546,000.00	\$8,082,000.00	\$3,192,000.00	n/a	\$56,820,000.00
	25% TIF	0% NCA	25% DEV. CONTRIB.	JEDD	
FUNDS NOT ALLOCATED FOR ACCORD PURPOSES	30YR NON-SCHOOL, NON-FIRE	5 MILLS	\$2500/RES UNIT	2.5% INC. TAX	TOTAL
Amount	\$94,894,333.33	n/a	\$2,900,000.00	TBD	\$97,794,333.33**
Amount in 2010 \$	\$15,182,000.00	n/a	\$1,064,000.00	\$1,750,000.00*	\$17,996,000.00

\* Amount provided by the City of Columbus Planning Division

\*\* Does not include JEDD income.



In order to realize the maximum financial benefit of the Town Center development and to ensure the best possible execution of the plan recommendations, implementation strategies are not only complicated, but fairly critical. There are existing property owners to consider, multi-jurisdictional leadership, and substantial infrastructure costs to get the ball rolling.

Several development trajectories were explored, but in the end, the plan outlines one way forward. To realize this vision, a development entity must be established that can negotiate with individual property owners, partner with them, and utilize land as equity in the project. This entity would then solicit a master developer to take on the Town Center development in its entirety with the specific intent of realizing the Master Plan as conceived herein. The development entity would be structured so as to be able to contract, acquire, hold, manage, and convey real property as well as issue debt for development, public infrastructure construction, and land preservation purposes. A more detailed description of this preferred option is described in the implementation section of this document.

TIMELINE OF EVENTS RELATED TO PUBLIC/ PRIVATE PARTNERSHIP SCENARIO	Authority created and designated sole executor of Big Darby Town Center and Accord Purposes. Also is receiver for TIF, NCA, and developer proceeds.		Authority organizes NCA with landowners and negotiates equity participation contract with land owners	Authority sells land to developer post-RFP. Distributes profits to land owners, less capitalized funds necessary to manage process		Upon completion of land purchases from bond issue, Authority winds down transaction business and remains in operation to coordinate and oversee construction/development.
		Authority granted operating funds to execute Town Center.		RFP for developer to execute town center. Value is determined at market rates for potential development – likely determined by residual land value.	Authority stewards town center through horizontal development. Issues bonds against TIF. Uses bond sales to fund land acquisition.	
TOTAL	STEP 1	STEP 2	STEP 3	STEP 4	Step 5	STEP 6
	Creation of authority	Operating funds allocated – pending budget availability	Landowner outreach and contract negotiation	RFP issued	Physical build-out of the Town Center	Oversight
53 YRS	2 WEEKS TO 6 MONTHS		1 TO 2 YEARS	6 MONTHS	30 YEARS	UP TO 20 YEARS



# KEY RECOMMENDATIONS

## UTILITIES

One of the key outcomes of the Accord was the agreement by the City of Columbus to provide 5,000 residential equivalent units of sewer and water capacity to the Town Center without annexation. This unprecedented policy change will certainly make the denser development of the Town Center Master Plan possible, but brings forth some practical questions about how this is managed, maintained, and installed.

Water and sewer service to the Town Center should be achieved with an offsite gravity sewer extension, offsite water line extension, and a water storage tank. The total cost to construct these services is estimated at \$13.7 million. The mechanism for funding these improvements has not been resolved, but several funding options exist, including applying a \$2000/REU (residential equivalent unit) fee to all buildings that tap into this system. A memorandum of understanding (MOU) should be negotiated among the various jurisdictions to confirm the funding mechanism. This MOU should also address the cost of long-term maintenance of the water and sewer system services. Ideally, the managing entity (most likely Franklin County) would secure a steady revenue stream for this purpose.

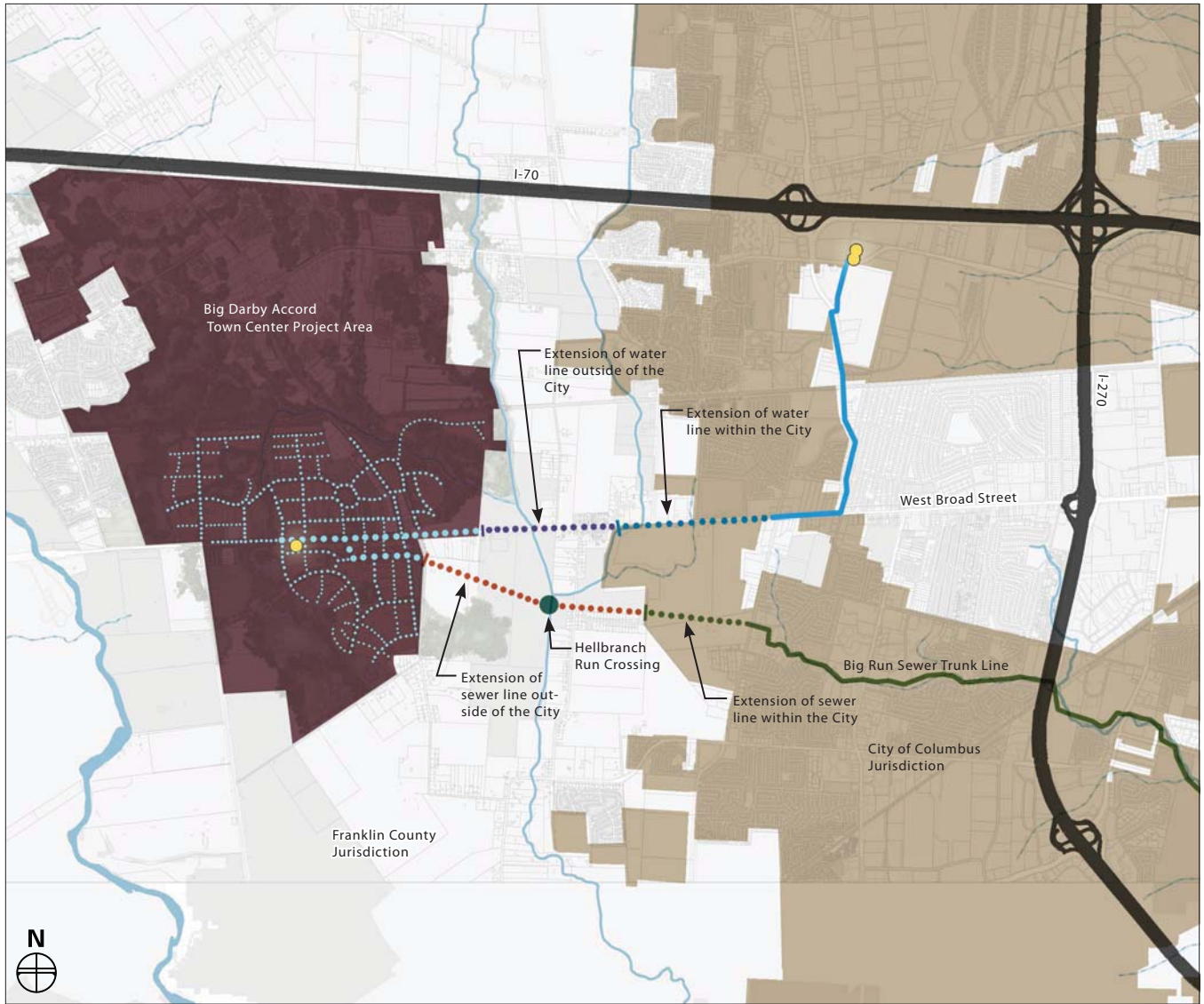
The offsite sewer line is intended to serve only the Town Center (as outlined in the Accord). The Town Center Master Plan discusses ways to utilize this sewer capacity and what is to be included within the Town Center provision.

This water extension is also intended to provide a point of connection for other future offsite developments. In keeping with the conclusions of the Accord, other developments may be allowed to tap into this extension in the future and these potential developments should be considered in the final planning and implementation of this system-sized water line.

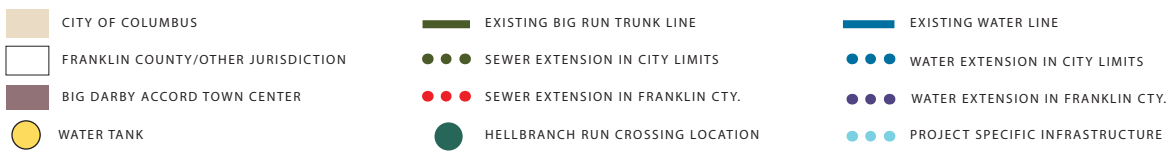
\* Sewer Pump Station will only be necessary if it is determined upon field surveying and detailed engineering that there is insufficient pipe coverage at the Hellbranch Run crossing.

\*\* The price for these improvements assumes the upgrade to a system-sized pipe (24" and 16" respectively) instead of a development-sized pipe of 8" within the Town Center. The cost, therefore, only reflects the extra cost incurred as opposed to the total cost of the line.

	SYSTEM IMPROVEMENT	SIZE/LENGTH	ESTIMATED COST
Sewer	Outfall Sewer	36" Pipe – 11,000 LF	\$4.2 million
	Sewer Pump Station*	13.3 mgd	\$6.0 million
	TOTAL		\$4.2 million
Water	Waterline along Rt. 40	24" diameter – 11,500 LF	\$6.4 million
	Waterline along Rt. 40	24" dia. in lieu of 8" pipe – 3,800 LF**	\$0.4 million
	Water Tank	1 million gallon	\$2.3 million
	Waterline onsite (increase in size)	16" dia. in lieu of 8" pipe – 8,000 LF**	\$0.4 million
	TOTAL		\$9.5 million
	SYSTEM TOTAL		\$13.7 MILLION



*Sewer Extension Diagram*









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# MASTER PLAN: PROCESS AND RESULTS

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# OVERVIEW

## TIMELINE

- » Big Darby Accord Master Plan Adopted 2006
- » Big Darby Accord Advisory Panel Created 2007
- » Big Darby Town Center RFP Fall 2007
- » Stream Setback Regulations Adopted 2008
- » Open Space Advisory Council Created 2008
- » Big Darby Accord Revenue Generation Signed April 2009
- » Big Darby Town Center Master Plan Process Initialized September 2009
- » BDTC Phase 1 Advisory Group Meeting 27 October 2009
- » BDTC Phase 1 Focus Group Meetings 28 October 2009
- » BDTC Phase 1 Public Meeting 28 October 2009
- » BDTC Phase 2 Advisory Group Meeting 8-9 December 2009
- » BDTC Phase 2 Design Charrette 26-28 January 2010
- » Implementation Strategy Session 17 February 2010
- » Meeting with Administrators from Jurisdictions 18 November 2010

## PROCESS

The consultants' approach to multi disciplinary, process-based design has three phases: understanding, exploring, and deciding. For the Big Darby Town Center, this process has unfolded over the course of eight months and six pivotal trips to central Ohio to meet with the jurisdictions, the advisory group, key stakeholders, elected officials, and the general public.

The Big Darby Town Center Master Plan process began in October 2009 with an information-gathering trip to Columbus, Ohio. The consultant team (composed of RCLCo, Walter Kulash, STV, AES, Design Workshop, Bricker and Eckler, and UDA) engaged in meetings with the jurisdiction and the advisory committee. A series of focus group sessions were also held where technical experts, community leaders, and stakeholders were invited to share their knowledge with the consultants. These meetings covered a range of topics including transportation, utilities and infrastructure, environment and ecology, design and engineering, development, and leadership. The initial public meeting invited people to share their opinions about the area and their aspirations for the master plan.

Following the October meetings, the consultants continued their efforts of gathering information and data and began to analyze this information. The results were presented to the jurisdictions and the advisory committee during a second trip to Columbus in early December.

## COMPONENTS OF PHASE I: ANALYSIS



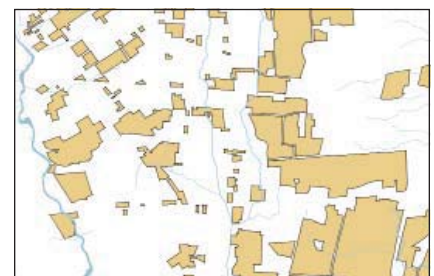
### SITE AND PRECEDENT DOCUMENTATION

Team members explored the site and its surrounding context. Regional precedents provided applicable town patterns.



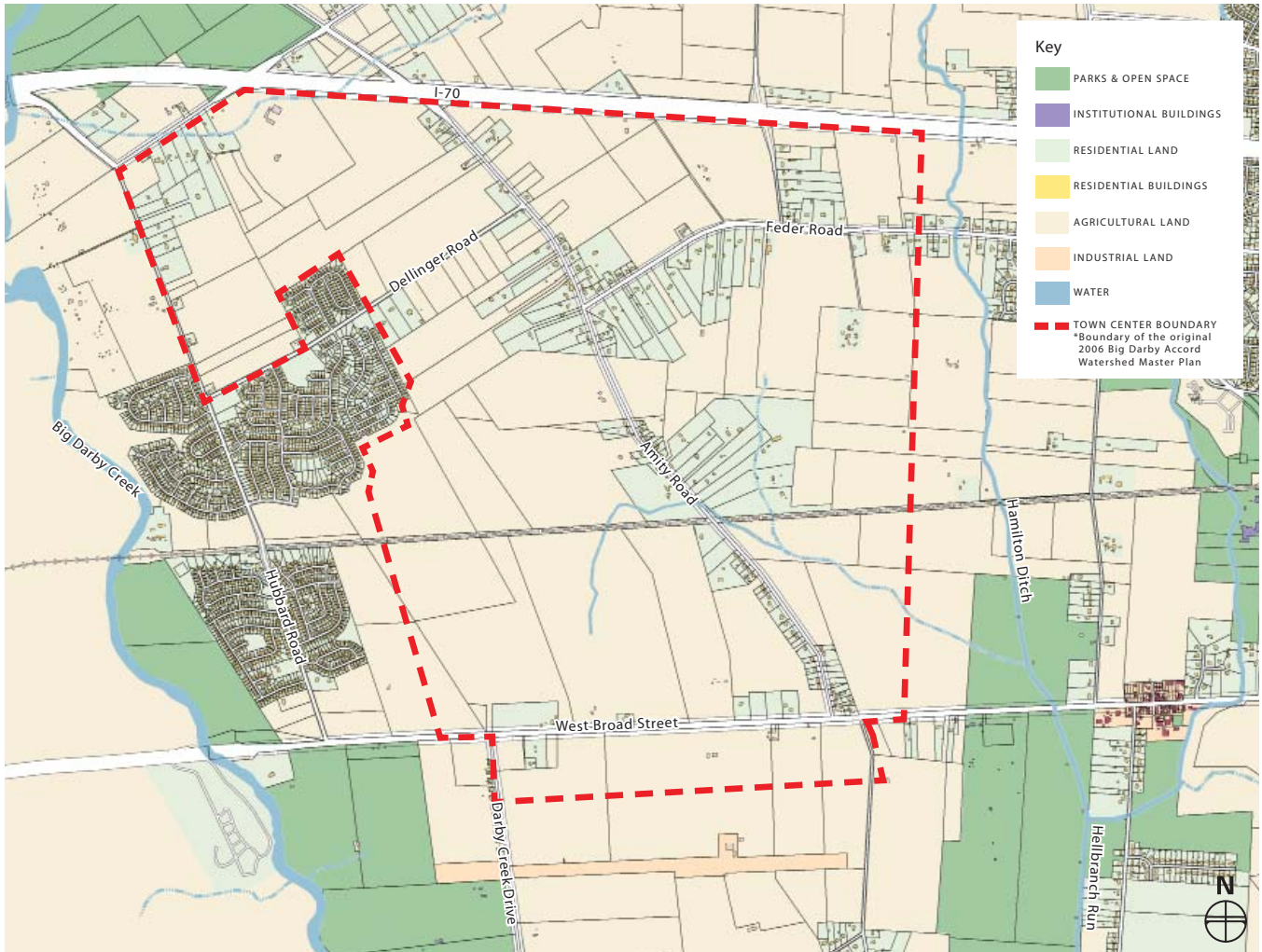
### FOCUS GROUPS AND PUBLIC MEETINGS

Participants and stakeholders were asked to answer questions about the strengths, weaknesses, and their visions for the study area.



### ANALYSIS DRAWINGS

X-Ray drawings extracted information and identified patterns such as residential settlement, shown above.



## PORTRAIT OF EXISTING CONDITIONS

*The Portrait of Existing Conditions illustrates the current uses and building locations within the Town Center site and the surrounding areas, including public open spaces, Darby Creek, existing residential development, and agricultural lands*





# OVERVIEW

## PROCESS, CONTINUED



Additionally, the UDA team began to test developable land scenarios and identify initial framework possibilities to be explored in further detail during the charrette at the end of January.

A pivotal moment in this process is always the design charrette. During this week-long workshop many ideas, concepts, and people came together, putting pen to paper to begin to solve the design problem. It is important to note that the design charrette is only the halfway point of the process. It is specifically structured not only to generate ideas, but also (and more importantly) to generate reactions. By understanding people's response to the ideas which surface during the charrette process, we are able to further hone and develop a coherent and plausible way forward.

The Big Darby Town Center design charrette was no exception. The full team gathered in Central Ohio from January 25th through the 29th (2010) to share our analysis, reconvene the focus groups, and design frameworks for the town center development. The week-long event included two public presentations, focus groups, and continued design work at both the framework and master plan levels. The final recommendations will be presented in early 2011.

### STRENGTHS

- » Quiet and scenic setting
- » Watershed and park system
- » Rural landscape
- » Proximity to Columbus, Hilliard, and Dublin
- » Western gateway to Franklin County
- » Multi-jurisdictional agreements in place
- » Conservation investments
- » Hilliard School District

### WEAKNESSES

- » Lack of good retail services
- » Poor pedestrian and public transit connectivity
- » Stormwater management problems
- » Crime and blight on West Broad Street
- » Perception of "this side of town"
- » Southwestern School District
- » Multiple land owners and jurisdictions
- » Loss of agricultural land

### VISIONS

- » Authentic Central Ohio village
- » Green network
- » Enhanced public transportation
- » Mix of uses (retail, offices, housing)
- » A community gathering place
- » Sustainable development
- » Keep the countryside close
- » Streets should be unique and livable
- » Nurturing and thriving place
- » Inviting and housing for all ages



## RESPONSE FROM PUBLIC ENGAGEMENT

The public and stakeholder response followed these basic themes:

- » Support for Darby Accord
- » Skepticism that plan can be implemented arising from:
  - › Too many land owners
  - › Weak market conditions
  - › Overly optimistic revenue assumptions
- » Schools – the blessing and the curse
- » Stormwater regulations – must take district-wide approach
- » Quiet setting, village feel; not Easton

## RESULTING DESIGN PRINCIPLES

- » Create an authentic Central Ohio village
- » Develop an appropriate mix of uses
- » Provide full spectrum of transportation options
- » Employ stormwater management actions from day one
- » Preserve and enhance biodiversity
- » Incorporate ecological educational opportunities
- » Reduce the impact on the land to protect the ecosystem
- » Identify and protect the endangered species
- » Provide connections to regional job centers
- » Limit use of paving and impervious surfaces
- » Incorporate native landscape
- » Create a successful village core rooted in local heritage
- » Employ ‘green’ building standards



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# ECOLOGY AND THE ENVIRONMENT

## ANALYSIS OF ACCORD DIRECTIVES

### KEY LAND USE RECOMMENDATIONS

- » Protect Tiers 1, 2, and 3 to create a network of green infrastructure.
- » Focus land acquisition efforts on Tiers 1 and 2 where resources are most sensitive.
- » Support local organizations and agencies that are actively involved in land conservation efforts.
- » Promote regional recreational trail development.
- » Adopt conservation development land use and zoning.
- » Create a new destination with a high density, mixed-use Town Center.
- » Apply low-impact development (LID) techniques to site design.
- » Support the 22 development principles from Darby Creek Watershed Stormwater Management Strategies and Standards for New Development.
- » Support principles from EPA National Management Measure to control non-point source pollution from urban areas.
- » Achieve the water quality goals set forth by OEPA Total Maximum Daily Load (TMDL) Report for total suspended solids, nitrogen, and phosphorus through changing land uses and application of best management practices.
- » Enhance stream morphology through restoration efforts in the priority stream restoration zone along Clover Groff and Hamilton Runs.
- » Promote regional stream restoration that allows connectivity to other watercourses.

The Big Darby Creek Watershed contains some of the most diverse freshwater and riparian ecosystems in the Midwestern United States. The main stem of Big Darby Creek is home to 15 species of rare fish and 23 species of rare mussel (Sasson 2009). The reach of the creek that runs through the western half of the Big Darby Accord planning area is designated “Exceptional Warmwater Habitat” (OEPA TMDL 2006) and is highly sensitive to impacts from development and agricultural land uses.

High-quality wetlands and forests abound in this rural landscape west of Columbus. Historically, the low-lying drainage basin consisted of elm-ash swamp forest, mesic oak and sugar maple forest, beech forest, and pockets of the eastern extension of the tallgrass prairie and wet meadow (Froehlich 2006). The historic Prairie Peninsula is unique to this region of the state and adds diversity to the natural landscape.

The Accord (2006) prioritized protection of environmentally sensitive lands by designating three tiers of sensitivity. The most sensitive Tier 1 lands include the 100-year floodplain, wetlands, and critical groundwater recharge and pollution potential zones. Tier 2 lands include highly erodible soils and wooded areas that are greater than three acres in size. Tier 3 lands provide habitat connectivity and natural resource buffers, and are well-suited for passive recreation and naturalized stormwater treatment. All tiered lands are to be prioritized for protection through land acquisition and other programs.

The Town Center Master Plan is designed to meet the water quality goals and land use recommendations of the Accord. Specific Accord directives include the following:

- » Water Quality Goals
- » Key Land Use Recommendations





The Accord planning principles highlighted the importance of preserving ecological systems and using them as the basic underpinning for all development strategies. The principles call for integrating natural resources as aesthetic and functional elements of development, enhancing quality of life by providing human access to the natural environment.

The Accord emphasized the need for water quality protection and stormwater runoff control. Environmentally sensitive stormwater management can enhance terrestrial and aquatic habitat quality by reducing the volume and flow rate of stormwater runoff with naturalized detention and infiltration elements upstream of receiving water bodies. The use of native plant species in alternative stormwater management systems will increase local wildlife diversity and provide aesthetic benefits to people in surrounding developments.

Stream restoration was another critical component of the Accord. A key objective of the overall plan was to achieve the aquatic life use designation for each watercourse in the planning area, upgrading streams that were not in attainment at the time of the 2006 TMDL Report. The Accord acknowledged the need for restoration of impaired reaches in the Hellbranch Run subwatershed, including Hamilton and Clover Groff Runs in the northeastern portion of the planning area. Restoration of these reaches was prioritized along with the protection of reaches that were already in attainment and supporting rare species and a diversity of wildlife, such as the lower-middle Big Darby Creek main stem.

The message underlying all of the Accord design principles is that the ecosystem services of the Big Darby Creek Watershed must be protected and restored. Healthy, diverse ecosystems impart a variety of benefits to people as well as to the flora and fauna they support. Residents of the Big Darby Watershed rely on the natural ecosystems for healthy soils, flood reduction, water filtration, local climate regulation, pest control, nutrient cycling, seed dispersal, air purification, carbon sequestration, the provision of habitat for rare species, aesthetic value, and perhaps the fulfillment of their spiritual and cultural needs. The principles of the Big Darby Accord underscore the importance of these services and the need to protect them rather than take them for granted.

## ECOLOGICAL PERFORMANCE

- » Water Quality
- » Water Quantity/Management
- » Infiltration
- » Wetland Buffers
- » Riparian Setbacks



# ECOLOGY AND THE ENVIRONMENT

## ANALYSIS OF TOWN CENTER SITE

### EVALUATION



The Town Center site outlined in the Accord is bordered by the Big Darby Creek main stem to the west and the impaired Hamilton and Clover Groff Runs to the east. Using the design principles outlined in the Accord and feedback from regulators and stakeholders, the site was analyzed for its development potential. Tier 1 and 2 lands were immediately removed from development consideration, thereby protecting wetlands and forested areas from impacts and prioritizing them for open space acquisition. Other important environmental considerations included Ohio Department of Natural Resources and Ohio Environmental Protection Agency regulations and guidelines; hydric soil patterns indicating historical drainageways; habitat connectivity and natural ecosystem linkages that could serve as green corridors; existing easements and stream setbacks specified in the Franklin County zoning ordinance; land acquisition plans of Metro Parks, Franklin Soil and Water Conservation District, the Nature Conservancy, and other conservation-oriented organizations. Ecological development constraints were compiled onto a base map and served as a framework for the rest of the planning process.

From the outset, it was clear that the Town Center area depicted on the Accord maps was bisected by a green corridor extending from McCoy Ditch northwest to the high-quality swamp forests east of the existing Darby Estates, roughly along Township lines. As a result, the northern and southern portions of the Town Center site were separately analyzed for their development potential based on the previously mentioned ecological factors along with jurisdictional and economic considerations.



*Tiers 1 and 2*



*Tiers 1 and 2, parks, and wetlands*

The northern portion of the Town Center site falls primarily in Brown Township. This area is further subdivided by a break between the Hellbranch Run and Middle Big Darby Creek subwatersheds. Agricultural drain tile lines running north to south into McCoy Ditch follow hydric soil linkages and indicate historical drainage patterns that may be restored for naturalized stormwater management. The Brown Township portion of the original Town Center site also contains a number of isolated, forested wetlands. From an ecological perspective, this portion of the site is not well-suited for centralized urban development. Logistically, the ecological and topographic features that subdivide the landscape pose significant constraints to high-density development.

The southern portion of the Town Center site falls primarily in Prairie Township. While some environmental constraints exist in this area, there are larger tracts of land along West Broad Street that area suitable for urban development. The western end of McCoy Ditch cuts through the southern portion of the Town Center site, however this could become as an amenity to Town Center residents and visitors when it is fully restored. There are fewer ecological restrictions in this section than there are north of the railroad right-of-way. Sensitive development could avoid impacts to these wetlands and enhance the water quality and habitat value of Hellbranch Run to the southeast.



*Protected lands (Tiers 1 and 2, parks, and wetlands rendered in one color)*



*Protected lands and hydric soils within Town Center boundary*



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# ECOLOGY AND THE ENVIRONMENT



Further south, portions of the Darby Dan Airport property and adjacent parcels are also suitable for development from an ecological perspective. Most development constraints occur south of the airstrip, west of Darby Creek Drive, where Metro Parks would eventually like to acquire the land containing large, high-quality wetlands. By the end of the December 2009 pre-charrette workshop, it became clear that shifting the development south to center around West Broad Street would be a practical way to minimize ecological impacts while allowing for economic growth and easy access to the Town Center.



North of the railroad right-of-way that subdivides the site, natural features are present that pose a constraint to high-density development but lend themselves well to a conservation development model. The wetlands and riparian corridors could serve as amenities to residential development and interested home buyers would pay a premium for large lots with a conservation easement, thus ensuring protection of the area's natural resources in perpetuity. This form of residential development is in keeping with the principles of the Accord and could set a precedent for other conservation development projects in the greater Accord planning area.

## SUMMARY OF INPUT FROM PROCESS

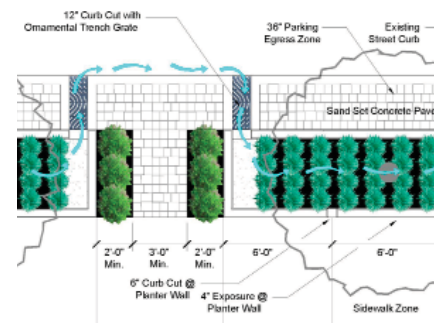
Feedback from the early focus group sessions and advisory group meetings shaped the initial analysis and ultimately the final design recommendations. Representatives of The Nature Conservancy, Darby Creek Association, Franklin Soil and Water Conservation District, U.S. Department of Agriculture, and Ohio Environmental Protection Agency (OEPA) along with individual stakeholders and interested community members attended the first environmental focus group session and public meeting in October 2009. The overarching ecological considerations identified during those meetings are as follows.

The Town Center plan must:

- » Honor the goals of the Accord by:
  - › Linking woodlands, riparian areas, and other habitat in a network of green corridors;
  - › Using greenfield development to leverage funding for additional open space protection, prioritizing environmentally sensitive lands identified in the Accord; and
  - › Valuing measures of stream health such as aquatic life use attainment
- » Emphasize the preservation and restoration of biodiversity in a range of native ecosystems.
- » Identify and protect threatened, endangered, and declining species in the greater Big Darby Accord planning area.
- » Incorporate Low-Impact Design (LID) principles at all levels of development to protect and restore ecosystem services.
- » Integrate educational opportunities into ecologically sensitive design.



*Green street and Low-Impact Design techniques play an important role in an integrated stormwater approach, helping to protect water quality and biodiversity.*



*Plan diagram further illustrates the detail in the photograph above*

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# ECOLOGY AND THE ENVIRONMENT



Stormwater management considerations were an important component of the initial ecological analysis. The Big Darby general stormwater permit reiterates Franklin County riparian setback regulations and also requires that stormwater management practices be chosen and sized to treat the “water quality volume” (WQv) and ensure compliance with all OEPA water quality standards. The general stormwater permit also specifies infiltration requirements for the Big Darby Watershed. Water quantity management requirements for the Town Center area will be set by Franklin County. New requirements were drafted in August 2007 and are expected to be adopted with the new subdivision requirements currently under development. Many stakeholders voiced concerns that current stormwater requirements are not stringent enough to protect high-quality aquatic ecosystems and the rare species they support. The recommended stormwater treatment strategy described in the following section proposes methods that would exceed the minimum requirements of the current regulations.

It is important to note that OEPA is updating their stormwater permit for the Big Darby Watershed. The new permit is to be determined in November 2011. The OEPA have reviewed the recommendation herein and are on the same page with respect to proposed performance criteria. See diagram on adjacent page.





CORE ISSUE	PERFORMANCE CRITERIA	REGULATORY BODY
WATER QUALITY	<ol style="list-style-type: none"> <li>1. Meet or exceed the updated OEPA Permit using the Stormwater Treatment Train (STT). [Updated OEPA Permit to be determined in November 2011]</li> <li>2. Continue to focus on restoring impaired watersheds and high-quality wetlands identified in the TMDL report, specifically Hamilton and Clover Groff Runs.</li> <li>3. Work with OEPA to set a numerical pollutant load requirement that would apply to stormwater runoff released from development sites.</li> </ol>	OEPA to update their Stormwater Permit for the Big Darby Watershed in 2011. Water quality criteria to be heavily based on recommendations from the TMDL report.
WATER QUANTITY/ MANAGEMENT	<ol style="list-style-type: none"> <li>1. Detention requirements should be achieved using naturalized stormwater treatment wetlands (part of STT) with a maximum level fluctuation of 3 feet for 100-yr storms and 2 feet for 2-yr storms.</li> <li>2. Performance monitoring standards to be adopted from following sources: Performance Monitoring for Naturalized Stormwater Treatment Systems (AES 2009) and approved OEPA biological monitoring protocols (IBI, ICI, etc.)</li> </ol>	Franklin County is nearing adoption of criteria that would be controlled through their subdivision requirements.
INFILTRATION	<ol style="list-style-type: none"> <li>1. A range of 3.0%–5.0% of the developed area (depending on coverage of impervious surface) should be used for infiltration elements with an expected capture of between .47" and .84" of water within the developed areas (a 6-month/15-minute storm up to a 6-month/1-hour storm). This assumes no underdrain in infiltration elements, so all water is either infiltrated into the subsoil (silty clay loam with conductivity of .13in/hr) or lost to evapotranspiration (i.e. no discharge of any kind for this storm event).</li> <li>2. Additionally, land equal to 15% of the outlying open space and conservation development areas will need to be allocated for larger naturalized stormwater treatment wetlands (this includes the detention requirements for Water Quantity), which will allow for an additional capture of 2.81" of rain (a 2-year/24-hour storm).</li> <li>3. The total capture of the STT will be roughly 2.24" of rain (a 1-year/24-hour storm), based on a weighted average of the capture in developed, open space, and conservation development areas.</li> </ol>	OEPA to update their Stormwater Permit for the Big Darby Watershed in 2011. Infiltration criteria may require up to .75" of rainwater capture within developed areas, which is consistent with these recommendations.
WETLAND BUFFERS	<ol style="list-style-type: none"> <li>1. A 300-foot native buffer around any existing wetland near development.</li> </ol> <p>OR</p> <ol style="list-style-type: none"> <li>2. A 200-foot buffer may be used when an existing wetland is connected directly to the STT so that the flow path length of runoff reaching the wetland is extended by bioswales and treatment wetlands upstream.</li> </ol>	Franklin County would need to control this through required setbacks within the land use zoning. The Town Center Master Plan has accommodated these buffers.
RIPARIAN SETBACKS	<ol style="list-style-type: none"> <li>1. Use the more conservative of the two accepted delineation methods: a) Setback distance from centerline of stream to be sized as greatest of 100-year floodplain, 100 feet on each side, or distance calculated by <math>w=133(\text{Drainage Area in sq. mi.})^{0.43}</math>; or b) Site-specific setback delineation which is streamway width centered over meander pattern of stream + additional 100 feet from edge of streamway per side.</li> <li>2. Recommend against intrusions into the setback area in order to restore degraded waterways to their natural meander, ensuring long-term stability and highest quality aquatic habitat.</li> </ol>	Franklin County and new OEPA Permit for the Big Darby Town Center.

# ECOLOGY AND THE ENVIRONMENT



## GOALS

- » Acquire Tier 1 and 2 lands in and around Town Center area.
- » Implement the Naturalized Stormwater Treatment Train.
- » Restore degraded waterways and protect high-quality reaches the Big Darby main stem.
- » Protect existing wetlands near development with buffers.
- » Ensure adequate upstream buffering for restored stormwater wetlands.
- » Consider natural resources amenities to development.
- » Ensure park aesthetics along all roads leading to Metro Parks land.
- » Use native species for all restored landscapes and stormwater management elements.
- » Replace cultivated species with natives whenever possible in formal landscape features.
- » Retain agricultural land to grow local food
- » Ensure long term protection and maintenance of open space in rural residential areas.

## RECOMMENDED DEVELOPMENT GOALS

Based on the ecological analysis of the Town Center site, a series of specific development goals and guidelines have been formulated.

Aid Metro Parks and other organizations in the acquisition of Tier lands in and around the Town Center area

One key goal of the Accord was to encourage development policies that provide mechanisms for acquiring environmentally sensitive areas in the Big Darby Creek Watershed. Metro Parks owns large tracts of land west of the Town Center site along Big Darby Creek and continues to acquire sensitive land in the area for preservation and restoration. The proposed Town Center development is situated to avoid fragmentation of clusters of Tier 1 and 2 lands (as identified by the Accord), particularly in areas contiguous with existing Metro Parks land, so that funding leveraged through development or some other mechanism may one day assist Metro Parks or other conservation organizations in the acquisition and protection of these important resources.

The creation of a sustainable open space maintenance system is essential to the success of the Town Center development. A well-run system will have adequate funding and professional governance and staffing. It is critical that the Town Center development authority include open space monitoring and maintenance as separate line items on any future budgets. The entire development's marketability depends on maintaining the quality of the surrounding landscape.

Where possible, it is also important to begin restoration activities two to three years before the development is marketed to establish a sense of place and a pleasant aesthetic for potential new residents. By building trail systems and restoring portions of the agricultural landscape ahead of the marketing campaign, developers will set the tone for the Town Center community and pique the interest of prospective buyers.



*Protected and restored landscapes to be acquired and managed by public authorities which can include Metro Parks, Franklin Soil and Water, etc.*

## OPEN SPACE CATEGORIES AND POTENTIAL FUNDING SOURCES

PROTECTED		RESTORED		DEVELOPED	
TYPES OF LAND	POTENTIAL SPONSOR	TYPES OF LAND	POTENTIAL SPONSOR	TYPES OF LAND	POTENTIAL SPONSOR
» Agricultural Lands	» Private operator » CSA/Local Market	» Accord-designated Tier 3 Lands	» Real Estate Transaction Fund	» Stormwater BMPs and Treatment Train Facilities that directly support Development	» Development Authority/HOA
» Accord-designated Tier 1 and Tier 2 Lands	» MetroParks/Public Funding	» Native Landscapes	» Annual HOA Assessed Fees and Land Management » Science-Based Stewardship » MetroParks/ Stewardship Fee	» Visual and Cultural Resources	» County/State
		» Stormwater Treatment Wetlands	» Community Sustainability Organization	» Parks and Recreational Lands	» Tax Assessment Fees » Joint Park District



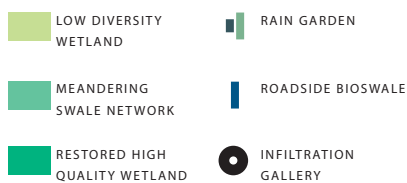
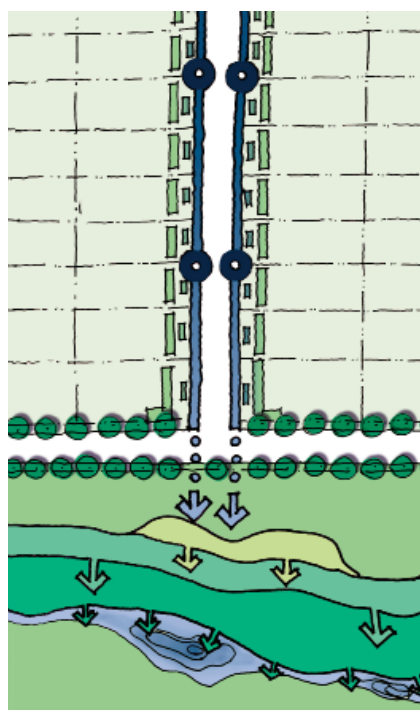
# ECOLOGY AND THE ENVIRONMENT



## REPLACE CONVENTIONAL STORMWATER MANAGEMENT METHODS WITH THE NATURALIZED STORMWATER TREATMENT TRAIN™ (STT)

Conventional stormwater management typically relies on large detention ponds and a system of sewers, pipes, and concrete channels to convey stormwater to receiving and treatment facilities. Beyond the sheer size and costs associated with constructing and maintaining these facilities are the problems that arise when pipes and channels clog or other system malfunctions or breakdowns occur.

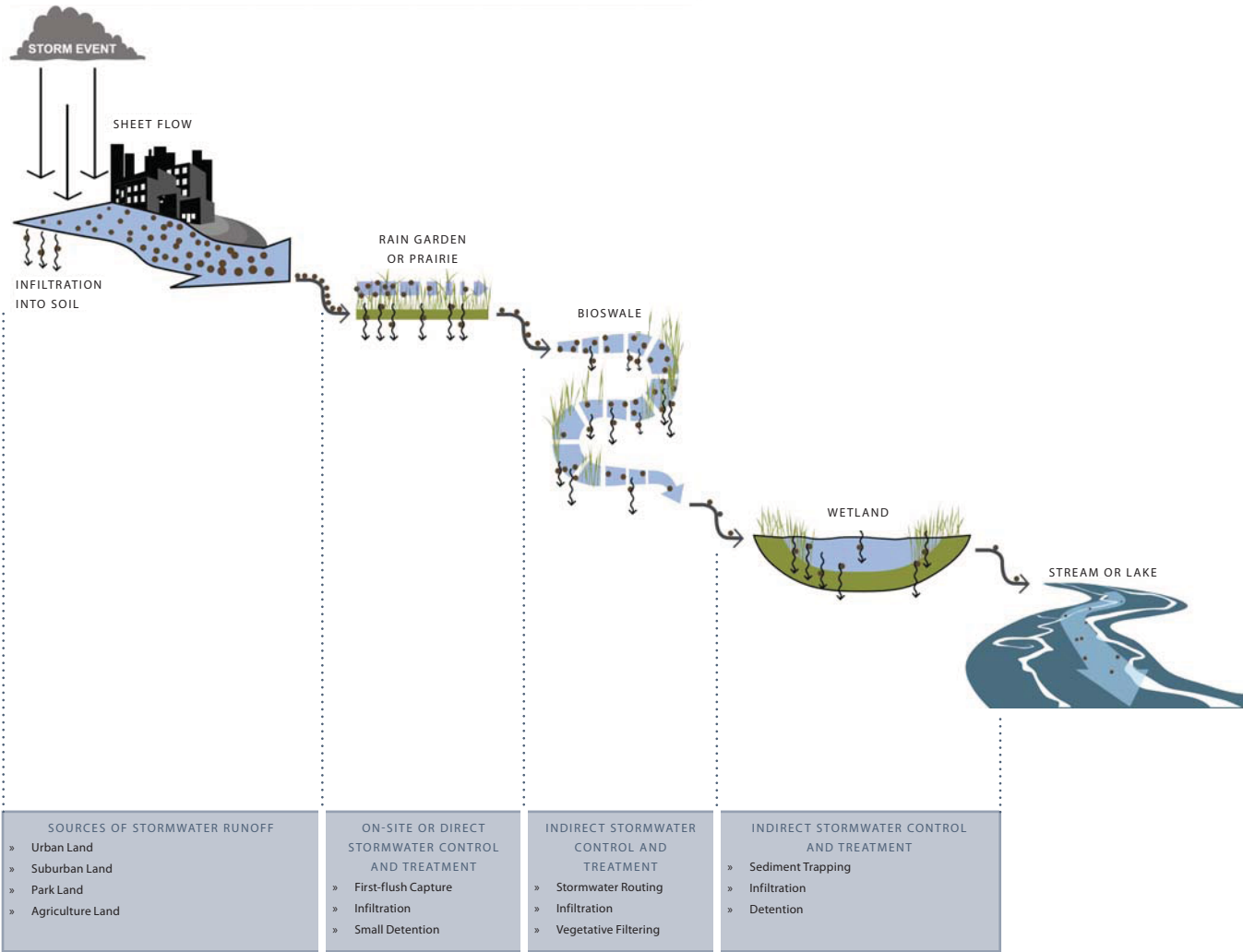
In contrast, the Stormwater Treatment Train (STT) approach uses multiple techniques integrated at the most localized level to slow runoff and diffuse it over the natural landscape. A continuum of rain gardens, bioswales, sedimentation wetlands, and naturalized detention wetlands enable stormwater to first infiltrate where it falls before feeding, as needed, into a larger facility. Urban and residential infiltration elements link with the natural open swale conveyance systems which, in turn, lead to larger constructed and restored wetlands. At every step, a portion of the water gets managed, treated, and infiltrated back into groundwater naturally, creating multiple backstops in the sequence where runoff can be handled without necessitating one, centralized, large constructed solution. The inherent groundwater and baseflow recharge protects streams and rivers from degradation caused by flashy, unpredictable flows. The STT is an integrated system that ties urban, developed areas to large tracts of protected open space with restored wetlands. Within developments, stormwater is first routed through created “sacrificial” wetlands to trap sediment and filter pollutants before the water is conveyed through a system of progressively larger bioswales. The release of water from the small, sacrificial wetlands is regulated by outlet control structures. Water release from larger restored wetlands outside of development may also be controlled to ensure runoff hydrographs match or improve upon the pre-development condition. Unlike conventional treatment facilities which can require large, upfront investments, STT is easily phased in to accommodate development as it comes online. In addition, as a naturalized system, STT creates aesthetic amenities for the community.



*Conceptual Stormwater Treatment Train Flow*

The STT's system of bioswales and restored wetlands should include wet meadows with diffuse surface and shallow subsurface hydrology. Wet meadows were once a predominant ecosystem in the Big Darby Creek Watershed and should be restored to the area to provide stormwater filtration and groundwater recharge functions. The Prairie Crossing conservation development in Grayslake, Illinois, demonstrates the utility of a variety of restored landscapes in the STT. Peak discharges were reduced by 60% from pre-development agricultural conditions after restored grasslands, wet meadows,

# STORMWATER TREATMENT TRAIN SYSTEM



*Examples of the components that are involved in the Stormwater Treatment Train System*

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# ECOLOGY AND THE ENVIRONMENT



and wetlands were incorporated into a naturalized stormwater management system (Apfelbaum et al. 1995). The STT approach is depicted and explained in more detail in the Stormwater Features section of the Ecological Framework.

Initial infiltration analyses using the OEPA's suggested model indicate that 2.5-5.5% of developed areas (depending on the impervious percentages of the areas) should be allocated for infiltration elements such as rain gardens and formal infiltration planters along streets. These elements should be dispersed within the development. Additionally, land that makes up approximately 10% of the developed area will need to be allocated for larger naturalized stormwater treatment wetlands to provide the necessary detention for large rain events. These infiltration recommendations were developed to achieve pre-settlement recharge rates. Post-development recharge should exceed the recharge rates from existing row crop agriculture.



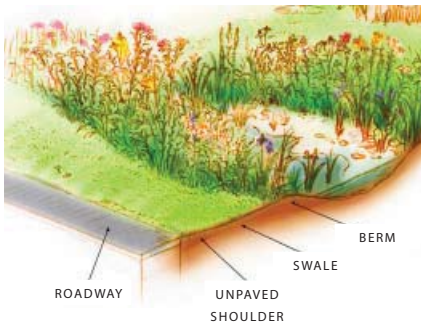
An alternative method for calculating the overall area necessary for infiltration is described in the Runoff Limits Program of the Etowah Habitat Conservation Plan (EHCP), written for the Etowah River Basin in North Georgia. The proposed EHCP Runoff Limits Program states that "in the most sensitive watersheds (designated Priority One), the volume of the surface runoff from a site must be the same as the volume that would come from the site under a forested condition" for small storms with less than a two-year recurrence interval. Development nodes are identified in Priority One areas where higher volumes of runoff are permitted "to accommodate commercial, industrial, and high density residential development" (Wenger et al. 2005). The quantity of runoff allowed in the development nodes is set at the amount of runoff that would be anticipated if the impervious cover was half of the actual impervious cover. For example, a proposed node with 60% impervious cover must reduce the runoff to the amount expected from the site if it had only 30% impervious area. ECHP recommendations are based on the Effective Impervious Area (EIA), which is found to be a stronger predictor of biological impacts than Total Impervious Area. EIA refers "only to those impervious surfaces that are connected to the drainage network" (Wenger et al. 2005). When this model was applied to the Big Darby Town Center area, it was determined that approximately 4% of the developed area would need to be allocated for infiltration in a development with 55% EIA. This number is within the range generated by the OEPA model and it is likely that the size requirement for larger stormwater wetlands would decrease slightly if 4% of the developed area was dedicated for infiltration elements.





It is critical that areas allocated for infiltration elements be located in spaces where water can be easily routed. It is also best to distribute the infiltration elements throughout the developed area to capture and infiltrate water close to where it falls. Infiltration/filtration planters should be incorporated within the streetscape and within pocket parks in the densest areas of the Town Center. Residential areas may also be served by rain gardens, bioswales, and other creative infiltration elements. Larger infiltration areas can easily be incorporated into broader tracts of open space that are available to serve a variety of aesthetic, cultural, and ecosystem benefits.

The Accord suggested regionalized stormwater management for the Town Center, but given concerns raised during focus group meetings, the development authority (the holder of the EPA permit for the Town Center) should consider a full range of stormwater mitigation techniques. By addressing stormwater issues closest to their source (eg. through rain gardens, bioswales, and treatment wetlands as discussed later in this section) the Town Center Master Plan will effectively manage stormwater runoff from development within it. The wetlands should be located in low areas adjacent to current flow paths on the edges of development. Riparian setbacks from streams are required as part of the stormwater regulations and stormwater management elements may not be located within this setback. Because stormwater naturally flows toward streams, the areas just outside of these setbacks are appropriate locations for stormwater treatment and detention elements such as naturalized wetlands. Additional space should be reserved outside of the setback, where possible, for stormwater treatment.



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# ECOLOGY AND THE ENVIRONMENT

## RESTORE DEGRADED WATERWAYS TO NATURAL, MEANDERING STREAMS AND PROTECT HIGH-QUALITY REACHES OF THE BIG DARBY MAIN STEM

Water quality initiatives for the Big Darby Accord planning area emphasize stream restoration activities in the impaired Hellbranch Run subwatershed, particularly in Hamilton and Clover Groff Runs. The goal is to bring these reaches into attainment of their aquatic life use designation. Equally important is the protection of the Big Darby Creek main stem that is currently designated as Exceptional Warmwater Habitat. The proposed Town Center spans the two subwatersheds, making it critical that developers make restoration and preservation high priorities.

McCoy Ditch is a partially tiled agricultural ditch that extends from Hamilton Run west through the proposed Town Center area and south to West Broad Street. As a fully restored stream, this ditch will serve as an important amenity to the Town Center development and will provide aquatic and riparian habitat for a diversity of species. The stream should be restored to its natural meander belt width to ensure long-term stability and the highest quality aquatic habitat.



## **PROTECT EXISTING WETLANDS NEAR DEVELOPMENT WITH BUFFERS**

State and County regulations do not specify a minimum buffer width for wetlands near development, but sources provided by the Wisconsin Wetlands Association suggest that minimum buffer widths of 200-300 feet are necessary to preserve wetlands with important wildlife functions (ELI 2008, Castelle et al. 1992, Semlitsch and Bodie 2003). The Ohio Rapid Assessment Method (ORAM) for wetlands indicates that a “wide” buffer is greater than 50 meters, or 164 feet. Appropriately sized buffers planted with native species protect wetland functions by removing the majority of sediments and adsorbed contaminants from stormwater runoff. Well-designed buffers also attenuate stormwater pulses and provide habitat for amphibious and terrestrial wildlife.

Many high-quality isolated wetlands surround the Town Center project area. Most are far from proposed development, but a 300-foot minimum native buffer is recommended for any wetland that will be located near buildings or infrastructure. In places where the existing wetland is connected directly to the STT, so that the flow path of water reaching the wetland is extended by bioswales and smaller treatment wetlands, the recommended buffer may be reduced to 200 feet.

## **ENSURE ADEQUATE UPSTREAM BUFFERING FOR RESTORED STORMWATER WETLANDS**

Restored and newly created wetlands used for stormwater treatment should be carefully sited in the context of the treatment train. Contaminated stormwater runoff must first be filtered through a system of “sacrificial” sedimentation wetlands and meandering bioswales before reaching the higher quality restored wetlands downstream.





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# ECOLOGY AND THE ENVIRONMENT

## CONSIDER NATURAL RESOURCES AMENITIES TO DEVELOPMENT



Lands designated as Tier 3 in the Accord should be protected from development to the extent possible to provide habitat connectivity as well as passive recreation opportunities. Stormwater treatment features, such as large bioswales and constructed wetlands, will serve as amenities to the community as they will attract wildlife and provide green corridors for extended walking and bicycle paths. Participants in early focus group meetings emphasized the importance of educational opportunities for Town Center residents and visitors. Educational features should be integrated into the ecological and stormwater management components of the Town Center design, wherever possible, to enhance people's sense of place and their connection with nature.

## ENSURE PARK AESTHETICS ALONG ALL ROADS LEADING TO METRO PARKS LAND



The proposed Town Center is located adjacent to Battelle Darby Creek Metro Park and will serve as a gateway to the park for those driving west on West Broad Street. It is important to maintain the park aesthetic along all roads leading into the park. It will be particularly important to preserve the forested parkway along Darby Creek Drive, which leads directly to the park entrance.



## RETAIN AGRICULTURAL LAND TO GROW LOCAL FOOD

The preservation of farmland for local food production is central to maintaining a sense of community and preserving the area’s rural aesthetic. Agricultural production and marketing should be integrated into the Town Center development to connect residents and visitors with the rural landscape and with fresh, local food. Trails should link open space to agricultural fields and orchards as well as to a central market, where people can support local agriculture and feel connected to the land and to nature.





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# ECOLOGY AND THE ENVIRONMENT



## USE NATIVE SPECIES FOR ALL RESTORED LANDSCAPES AND STORMWATER MANAGEMENT ELEMENTS, AND REPLACE CULTIVATED SPECIES WITH NATIVES WHEREVER POSSIBLE IN FORMAL LANDSCAPE FEATURES

Trees and shrubs associated with restored landscapes, stormwater management, and street plantings within the Town Center should be native species that historically occurred in the Big Darby Creek Watershed. Common forest communities in this area included multiple species of oak, hickory, ash, elm, beech, and maple. Native plantings should be in accordance with approved state and local lists, such as *The Native Plants of Ohio Bulletin* published by The Ohio State University (Sheaffer and Rose 1998).

Similarly, all herbaceous plantings in stormwater treatment elements and restored ecosystems should be native species from approved lists. The use of native species is encouraged wherever possible in formal public park space.

The table on the opposite page provides examples of species appropriate for various components of the stormwater treatment train. The matrix diagram on page 45-46 describes the expected diversity in each of these elements.





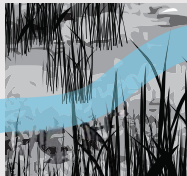













		PUBLIC RAIN GARDEN	SMALL SEDIMENTATION WETLANDS	BIOSWALES	NATURALIZED DETENTION WETLANDS
		» Showy forbs and grasses » Attractive to wildlife, birds, butterflies » Withstands fluctuations in soil saturation	» Forbs and graminoids tolerant of sediment burial » Withstand turbidity, fluctuating water levels » Tolerate periodic dredging and maintenance	» Rhizomatous species able to withstand scour » Stabilize soils during periods of high water flow	» Aesthetically appealing forbs and grasses » Tolerant of water level variability (including dry-down) in emergent zones
Aquilegia Canadensis	Columbine	•		•	
Asclepias Incarnata	Red Milkweed	•			
Asclepias Tuberosa	Butterfly Milkweed	•		•	
Aster Azureus	Sky-blue Aster			•	
Aster Novae-angliae	New England Aster	•			
Aster Umbellatus	Flat-topped White Aster			•	
Carex Grayi	Gray's Sedge				•
Carex Muskingumensis	Palm Sedge				•
Carex Trichocarpa	Hairyfruit Sedge	•			
Carex Vulpinoidea	Fox Sedge	•	•		
Cassia Hebecarpa	Wild Senna	•			
Chelone Glabra	Turtlehead				•
Echinacea Purpurea	Purple Coneflower	•			
Eleocharis Erythropoda	Bald Spikerush	•			
Elymus Candensis	Canada Wild Rye			•	
Equisetum Hyemale	Horsetail	•	•		
Eupatorium Perfoliatum	Boneset	•			
Helianthus Giganteus	Giant Sunflower			•	
Iris Shrevei	Wild Iris	•			
Iris Versicolor	Northern Blueflag				•
Lobelia Cardinalis	Cardinal Flower	•			
Panicum Virgatum	Switchgrass	•	•	•	
Rudbeckia Hirta	Black-eyed Susan			•	
Rudbeckia Triloba	Brown-eyed Susan	•			
Sagittaria Latifolia	Broadleaf Arrowhead		•		•
Scirpus Validus	Softstem Bulrush		•		•
Spartina Pectinata	Prairie Cordgrass	•	•	•	•
Tradescantia Ohiensis	Spiderwort			•	
Verbena Hastata	Blue Vervain	•			
Zizia Aurea	Golden Alexanders				•



# ECOLOGY AND THE ENVIRONMENT

## HABITAT AND BIODIVERSITY IN RELATION TO THE STORMWATER TREATMENT TRAIN

	Urban / Residential Lot with Rain Garden	Small Sedimentation Wetland	Small Bioswale	Large Bioswale
 Rain Event				
<b>CLASS</b>	<b>EXPECTED DIVERSITY</b>			
 Trees & Shrubs	5-6 canopy tree species 5-6 shrub species  Tulip Tree Sugar Maple Red Bud Serviceberry		1-2 canopy tree species 1-2 shrub species  Shrubby St. John's Wort Northern Spicebush	2-3 canopy tree species 2-3 shrub species  Sycamore Swamp White Oak Swamp Rose
 Grasses & Forbs	15-20 species  Bee Balm Cardinal Flower Fox Sedge Prairie Cordgrass	2-3 dominant species  Softstem Bulrush Prairie Cordgrass Fox Sedge Arrowhead	5-6 dominant species  Purple Coneflower Mountain Mint Switchgrass Prairie Cordgrass	10-12 dominant species 50-75 subdominant species  Prairie Blazing Star Yellow Coneflower Swamp Verbena Virginia Wild Rye
 Insects	Monarch Butterfly Ruby Meadow Hawk Dragonfly		Pearly Crescent Butterfly	Eastern Tailed Blue Butterfly Meadow Fritillary Butterfly
 Fish, Reptiles & Amphibians	American Toad Fence Lizard		Fowler's Toad Garter Snake	Northern Leopard Frog Eastern Box Turtle
 Birds	Northern Cardinal American Goldfinch American Robin		American Kestrel Field Sparrow	Song Sparrow Eastern Meadowlark Red-Tailed Hawk
 Small Mammals	Eastern Chipmunk Eastern Cottontail Little Brown Bat		Deer Mouse Masked Shrew	Eastern Fox Squirrel Meadow Vole
 Large Mammals	Raccoon Virginia Opossum		Raccoon Striped Skunk	White-Tailed Deer Coyote

\*Example survey results from Battelle-Darby Creek Metro Park, Fall 2009



Restored Wetlands	Protected Conservation Land
	
<b>2-3 canopy tree species</b> <b>2-3 shrub species</b>	<b>20+ canopy tree species</b> <b>20+ shrub species</b>
Swamp White Oak Green Ash Northern Spicebush Silky Dogwood	Red/White/Post/Pin/Chinquapin Oak Shagbark & Other Hickories Sassafras Osage-Orange Elderberry Paw Paw
<b>7-10 dominant species</b> <b>50-75 subdominant species</b>	<b>10-12 dominant species</b> <b>35-120 subdominant species</b>
Fogfruit Arrowhead Three-way Sedge Soft Rush	Wood Anenome Alum Root Wood Reed Hop Sedge
	<b>Insects: 300-315 butterflies, moths and dragonflies*</b>
Pearl Crescent Butterfly Blue Dasher Dragonfly Red Admiral Butterfly	Tiger Swallowtail Butterfly Blue-Ringed Danler Dragonfly
	<b>Fish: 75-80 species; Reptiles &amp; Amphibians: 35-40 species*</b>
Tiger Salamander Spring Peeper Painted Turtle	Red-Backed Salamander Pickereel Frog Spiny Softshell Turtle Spotted Darter Redbelly Dace
	<b>Birds: 175-200 species*</b>
Purple Martin Eastern Phoebe Great Blue Heron Scissor-Tailed Flycatcher	Wood / Hermit Thrush American Woodcock Tennessee Warbler Sharp-Shinned Hawk
	<b>Small Mammals: 25-30 species*</b>
Least Weasel Mink	Southern Flying Squirrel Eastern Pipistrelle Bat
	<b>Large Mammals: 10-15 species*</b>
Red Fox Muskrat	Gray Fox Beaver Black Bear



## **ENSURE THE LONG-TERM PROTECTION AND MAINTENANCE OF OPEN SPACE IN RURAL RESIDENTIAL AREAS THROUGH CONSERVATION EASEMENTS AND DEED-RESTRICTED OPEN SPACE**

Preservation lots are planned for the area north of the railroad right-of-way in Brown Township, where existing wetlands and restored riparian corridors will be protected as open space in perpetuity through conservation easements and deed restrictions on residential properties.

Market conditions will likely favor the creation of large, deed-restricted lots rather than clustered small lots around open space held in common. Deed-Restricted Open Space (DROS) allows individual homeowners to own relatively large lots but protects and maintains open space across the majority of each lot. In a 5-acre lot, for example, 4.75 acres should be deed-restricted to prohibit development activities and allow for ongoing open space monitoring and maintenance. Secondary uses for DROS may include community septic systems and stormwater management features such as bioswales and restored wetlands.

Homeowners Associations (HOAs) are often responsible for the enforcement of DROS. Qualified HOAs may also take responsibility for maintenance of this land.

Conservation easements are often used for open space that is held in common. These common areas are often controlled by a third party organization such as a land trust, County, or State to ensure that holistic, synergistic management of these lands occur. In conservation developments, easements on common open space may fall adjacent to DROS on private lots. In some cases, an easement may include DROS depending on the party responsible for enforcing and maintaining the easement.



Regardless of how the land is protected, it is important that HOAs and development authorities educate property owners on the rules and restrictions associated with DROS and conservation easements. Prior to the purchase of a preservation lot, homeowners must understand that they will be limited in their ability to engage in the following types of activities on the deed-restricted portions of their lots:

- » development or construction of any kind;
- » sodding, mowing, cultivating, or spraying without following an approved set of maintenance procedures;
- » grazing or domestic animal disturbance;
- » manipulation or degradation of natural watercourses, water bodies, or wetlands;
- » operation of snowmobiles, motorcycles, dune buggies, four-wheel drive vehicles, or any recreational motorized vehicles;
- » filling, dredging, mining, or drilling; and/or
- » removal of topsoil, sand, gravel, rock, or minerals.

It is critical to establish a reliable enforcement mechanism for DROS and conservation easements as soon as they are created. In addition to HOAs, municipalities and other taxing authorities may be able to provide enforcement for deed-restricted land, particularly if it is used for stormwater management and has direct effects on water quality.

Monitoring and maintenance of protected open space is often the responsibility of a third-party management company that provides full-service property management and has a professional staff to perform long-term monitoring and maintenance of open space land in conservation developments. In some cases, land trusts and HOAs have the resources and qualifications to perform this work on their own. Long-term maintenance is a critical component of open space protection in conservation developments and should be accounted for early in the planning process.

## MAPPING PRESERVED AND ENHANCED HABITAT

Restored and preserved lands serve important wildlife functions in the Big Darby Creek Watershed. The stormwater treatment train is a useful way to demonstrate the expected habitat value of various types of restored and preserved land. In the context of the STT, wildlife diversity generally increases with the size of the restored area and the quality of stormwater runoff it receives.

On-site, direct stormwater control elements such as rain gardens, small sedimentation wetlands, and roadside bioswales provide small infiltration areas for first-flush capture and treatment. They are generally planted with a small number of native species that can withstand relatively high pollutant and sediment loads and water level fluctuations. Overall habitat value in these areas is therefore low, although rain gardens and small infiltration planters still provide important ecosystem services and offer habitat for insects, birds, and small mammals that might not otherwise be found in developed areas. Additionally, rain gardens are sometimes planted with a high diversity of native forbs to increase their aesthetic appeal. The showy, flowering plants that appeal to humans also attract a variety of bird and butterfly species.

Larger bioswales and restored stormwater wetlands that primarily serve indirect stormwater control and treatment functions support a greater diversity of wildlife. Most of the runoff from frequent storm events is pretreated by on-site infiltration elements before reaching the large, restored landscapes at the downstream end of the STT. This minimizes water quality impacts in the large bioswales and restored wetlands, making them suitable for sensitive reptile and amphibian species. These areas also appeal to birds and mammals with large territories for hunting, foraging, and nesting.

Existing high-quality wetlands, streams, forests, and grasslands support the greatest number of wildlife species and meet the specific habitat requirements of rare species unique to the Big Darby Creek basin. In a Fall 2009 survey of Battelle-Darby Creek Metro Park, staff wildlife specialists found over 300 insect species, 75-80 fish species, 35-40 reptiles and amphibians, 175-200 birds, and 35-40 mammals (see Habitat and Biodiversity exhibit on pages 45 and 46). Tier 1 and 2 lands identified in the Accord must be prioritized for protection and can be linked to restored landscapes associated with the STT, thus providing habitat connectivity and green corridors throughout the Town Center planning area.



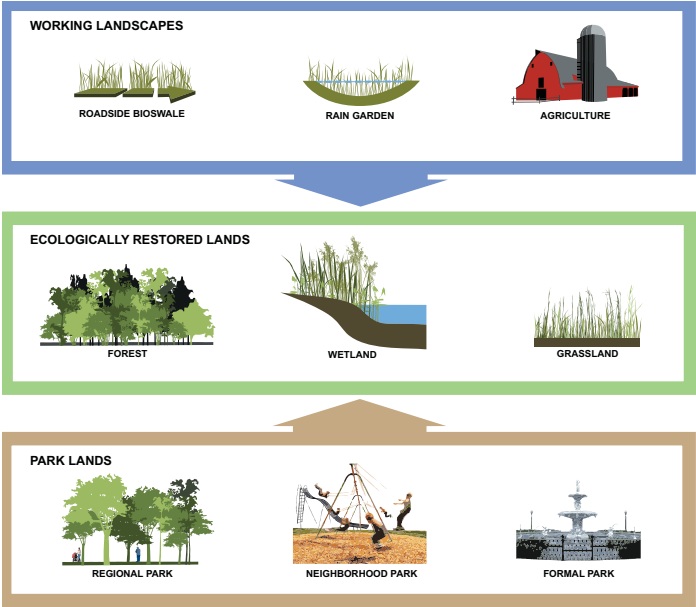
### MANAGEMENT PLAN

Professional management of restored and preserved lands is vital to the success of the Town Center development. The jurisdictions involved the Town Center project must develop a diverse revenue stream to fund the purchase and maintenance of conservation lands. For instance, the OEPA Division of Environmental and Financial Assistance has multiple low-interest loan funds for programs related to water quality and supply protection. Other options may include the formation of a conservancy district with taxing authority or the establishment of a utility owned by the development authority to charge future residents for the ecosystem services they receive.

The stewardship of restored and preserved land within urban and rural development should be the responsibility of a professional land management organization. Typically, such an organization is hired by the master developer, the homeowners association, or the land trust to provide restoration planning and maintenance of natural areas in addition to many other aspects of property management.

Alternate mechanisms for land acquisition and management are discussed in more detail in the Implementation section of this report.

### INTEGRATED OPEN SPACE SYSTEM



## POINTS TO CONSIDER

- » The real estate development market has adjusted considerably since the adoption of the Accord
- » The Town Center Plan incorporates a re-evaluation of the current and forecasted market conditions to update revenue expectations
- » The principles of the Accord are still relevant while the estimated revenues are somewhat lower given the state of the economy
- » The essential qualities to a successful Town Center Plan are the same: regionally-responsive character in a vibrant collection of neighborhoods

## EVALUATION OF CURRENT CONDITIONS

The Accord outlines a conservation strategy that relies on the revenue generated from the Town Center development. This, in addition to the moderately denser development pattern, serves as the primary mechanism by which the most sensitive land is protected. While the principles of this approach remain intact, the revenue available for land conservation has been re-evaluated to adjust for current and forecasted market conditions.

## MARKET ANALYSIS

Market analysis suggests an opportunity exists for development on the proposed Big Darby Town Center site. Columbus is a growing market and the site is well-positioned in terms of where this growth is likely to occur. In addition, a moratorium on the issuance of new sewer permits has not only left a blank slate that allows for a high degree of creativity and freedom in design, the moratorium has likely given rise to pent-up demand for new homes in the area. Furthermore, commercial uses are projected to become feasible over the long-term and, as they are built, the Big Darby Town Center has the potential to offer a mixed-use, walkable experience relatively unique for suburban Columbus. This competitive advantage should provide a strong foundation for value growth over a long period.

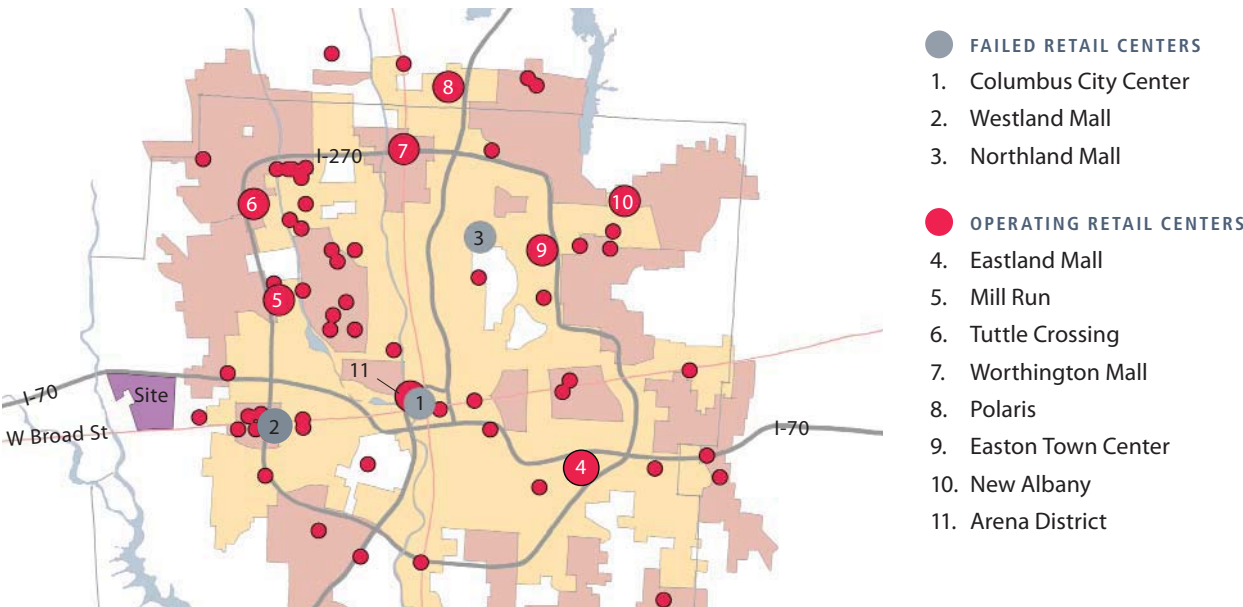
That said, there are still several hurdles. Synchronizing land development is always challenging and, given the number of potential landowners involved in the Town Center, that will certainly hold true in this case. In addition, the forecasted phased development will take 30 years to fully realize. In that timeframe, the market will likely experience two complete cycles. Therefore, the ability to accept that risk and adapt to changing circumstances will be critical. Finally, this development involves pioneering a more complex style of development that is almost completely new to Columbus in an area that, for all of its advantages, does not enjoy the strongest reputation. The challenge will be to identify a local development entity with the capacity to undertake this effort.

## THE REGIONAL MARKET

Macroeconomic trends in the Columbus Metropolitan Statistical Area are more favorable to new development than any other major city in the state of Ohio. Claritas projects that the MSA will add about 40,000 new households over the next five years, most of which will locate in the suburbs outside Interstate-270. A robust and diverse economic foundation drives this growth in Columbus. Major employers include Ohio State University, the state government, and private sector enterprises, such as JP Morgan Chase and Nationwide, which is headquartered in Columbus.

Despite the strengths of the MSA, the national recession of 2008 – present has had a dramatic impact on Columbus. Over 20,000 jobs have been lost, commercial vacancy rates have risen, and home prices have declined 18% from their peak in 2006. New home construction activity has fallen off as well. Only about 3,200 new permits were issued in the Columbus MSA in 2009 compared to the more than 12,000 new permits issued in 2006. These statistics, combined with tighter capital markets across the country, indicate a major shift in the realities of real estate development in Columbus. While recovery is projected to begin in earnest by the end of 2010 and continue over the next several years, it would be unrealistic to assume a quick return to the rapid price inflation and high sales volumes of the years prior to the recession.

The market cycle is not, however, an entirely negative story. From a developer’s perspective, the current situation, at or near the bottom of the cycle, is exactly the right time to purchase land and engage in an entitlement process. Typically, the developer that has planned ahead and is capable of delivering new product as soon as the market recovers enjoys an advantage over those that wait until the recovery before starting the development process.

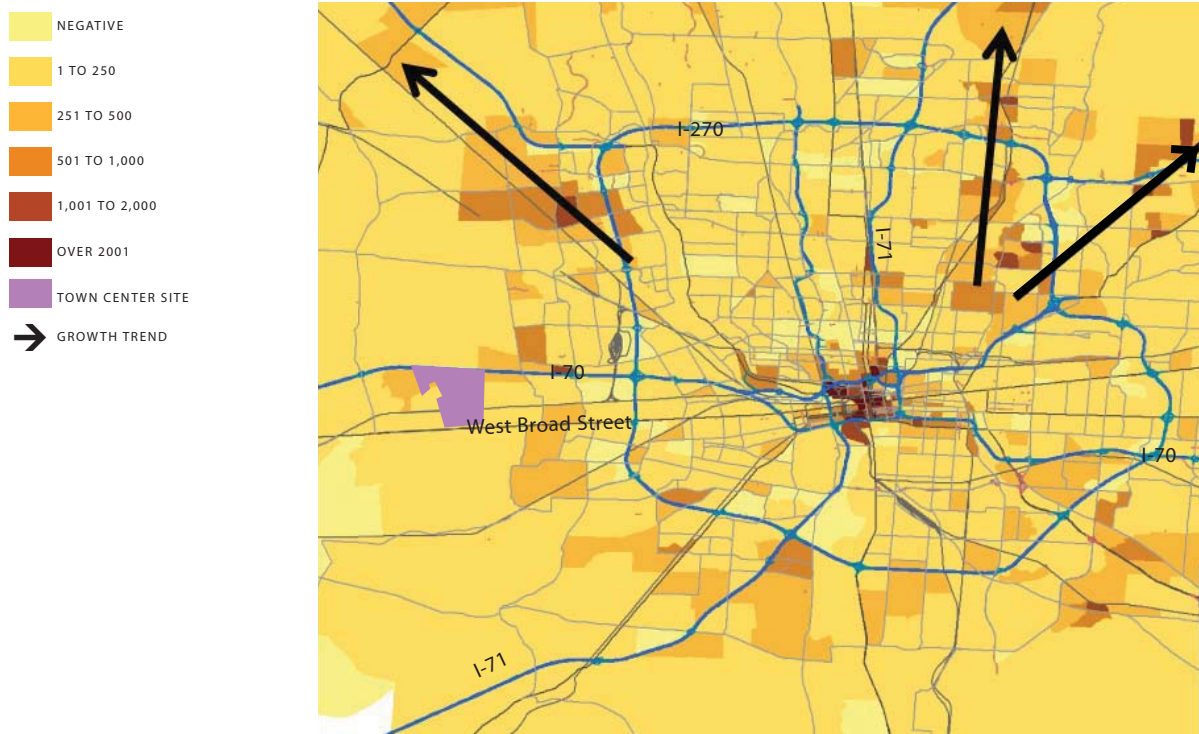




# MARKET STUDY

## SITE

From a real estate perspective, the site for the proposed Big Darby Town Center presents opportunities and challenges. In Columbus, the “favored quarter,” where most of the jobs and high-income residents are located, extends to the north and northwest through Dublin. The site, located directly west of downtown, lies just to the southwest of this area. Significant employment concentrations along I-270 in Dublin and Hilliard are less than a 20-minute drive away. Moreover, the Mid-Ohio Regional Planning Commission (MORPC) is projecting strong new job growth in these concentrations in particular over the next 20 years. Nevertheless, any developer on the site must strive to redefine perceptions of the area. The main route to the site, Broad Street, is characterized by aging, low-rent retail and inexpensive entry-level homes which make up the bulk of the new housing market near the site. Finally, many view the South-Western City Schools, which covers much of the site, to be inferior to those in Dublin and Hilliard.



*Projected household growth per square mile by Traffic Analysis Zone (TAZ) 2000-2030*



*Existing retail centers along the West Broad Street corridor.*



*Potential retail core for the Big Darby Town Center.*

# MARKET STUDY

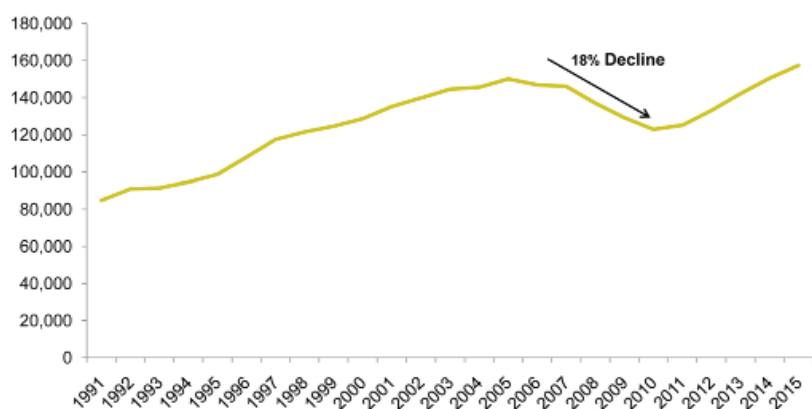
## KEY FINDINGS

- » Columbus' MSA is a strong residential market and should experience steady growth of around 13,000 units per year after recovery in 2012 – 2013.
- » Smaller household sizes will comprise most of the new demand, which may suggest greater demand for smaller housing units in the future.
- » The majority of residential demand is for housing under \$200,000, despite incomes, which imply the capacity for more expensive homes.

## RESIDENTIAL

The market for new residential units represents the strongest opportunity on the site. There is proven demand for single-family homes in the area of the Big Darby Town Center and, had the moratorium not been implemented, it is likely that they would already cover much of the site. In the near-term, demand for this style of home will be strongest, though demand for smaller product types, including townhouses and condominiums is projected to increase as the commercial space is built and the Town Center develops a sense of “place.” Based on an analysis of demographics in the primary market area and other factors, analysis estimates that the total potential demand across all price ranges and product types amounts to 156 units per year. This estimate, however, is based on existing data and projections and as such, its accuracy will diminish over time. In addition, in order to capture much of this demand, homes must be priced appropriately. The market research revealed that there is likely to be limited demand for high-end luxury homes in the Town Center (see graph below). As the Town Center is built-out and the appeal of its unique design becomes apparent, the initial price points are projected to increase faster than inflation.

Finally, the market analysis suggests that while market demand could sustain the delivery of approximately 45 – 50 rental units per year on the site, these could not command sufficient rents to make them financially feasible for approximately 20 years. This is mainly due to the relatively affordable home prices in Columbus, which limit the upper end of apartment rents.



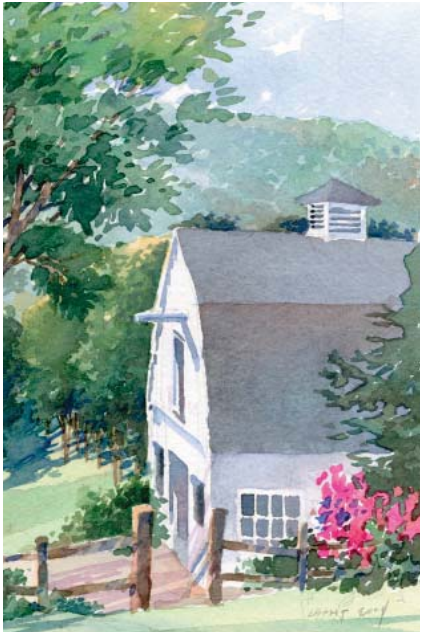
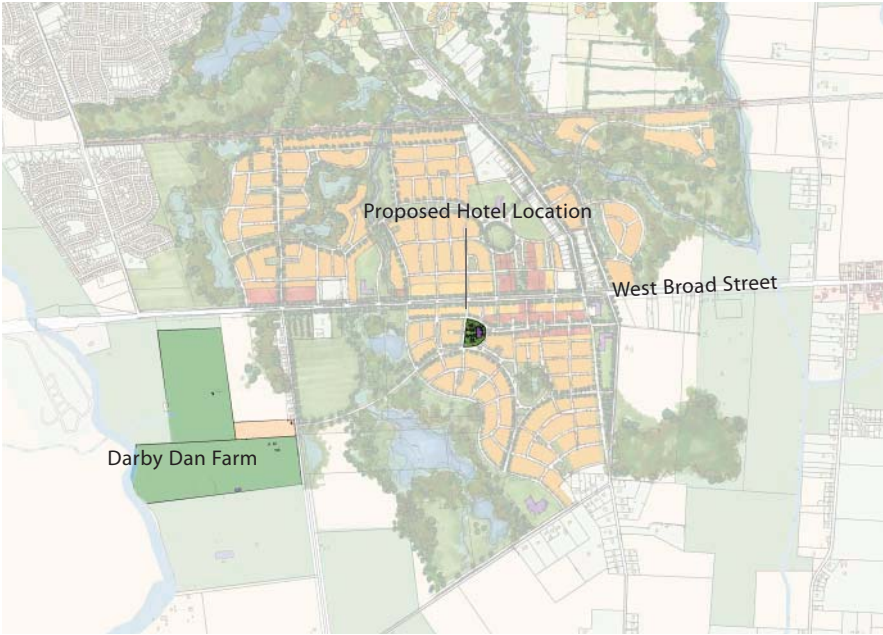
SOURCE: Moody's Economy.com

*Projected household growth by income group*



# HOSPITALITY

There is a near-term opportunity to build a 100-room hotel in the Big Darby Town Center site. The Darby House creates this opportunity because, although it holds over 60 weddings per year and numerous corporate events, the nearest hotels are five miles away. A hotel in the Town Center would thus have a source of built-in demand. By combining this built-in demand with the appeal of a small spa of five rooms or less, the hotel becomes feasible.



*The opportunity exists to leverage the presence of the Darby House (entry shown left) on Darby Dan Farm with a boutique hotel and spa.*

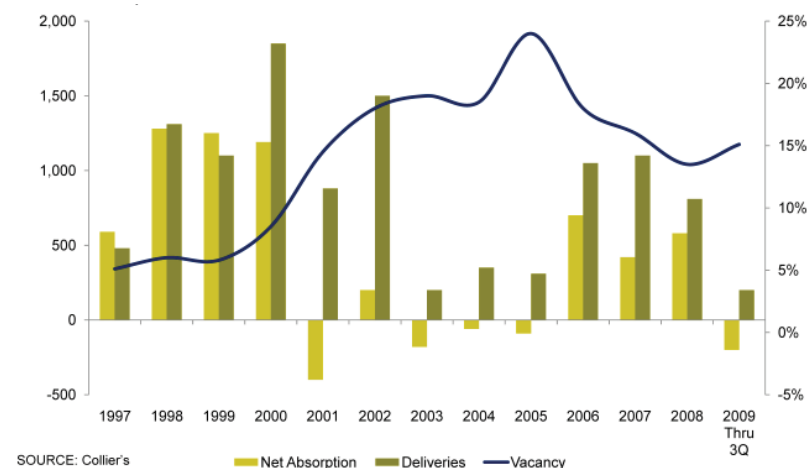
# MARKET STUDY

## KEY FINDINGS

- » Columbus' MSA has lost over 20,000 jobs in the last year but the worst is likely past.
- » With the university, the state government, and the presence of major corporations such as Nationwide and JP Morgan, Columbus has a strong foundation for future job growth.
- » The professional services, education, and healthcare sectors will lead the way to recovery.
- » The metro office market is oversupplied. Supply and demand equilibrium, as indicated by vacancy rates under 9%, will not likely return for at least 5 to 10 years, depending on the pace of new construction.

## OFFICE

Office space is a desirable use because it can bring daytime activity to the Town Center and contribute tax revenues without placing an additional burden on the school system. Unfortunately, the evidence suggests that the Columbus market suffers from an oversupply of office space resulting from too much new construction in the early part of the decade and limited new demand for office space in the years following. The nearest office submarket of Dublin/Hilliard is currently experiencing a vacancy rate of about 16%, which amounts to over 1 million square feet of vacant space. Based on the market analysis, it will take at least 12 years for this market to return to a healthy state. Only at that point will it become reasonable to attempt new office construction on the Town Center site. Large tenants and medical office users are envisioned to be the main sources of demand. Success will depend heavily on the quality of design and "place" as these factors must compensate for the site's distant location relative to Dublin and Hilliard.



Columbus suburban office absorption, deliveries, and vacancy 1997 to 2009



# RETAIL

The retail market analysis suggests there is an opportunity for phased development of local-serving retail. The data indicates that the current retail offerings are not satisfying local demand. While households within a 10-minute drive of the site are projected to generate over \$600 million in annual demand for retail goods, only about half of that amount is spent within the trade area. Nearby retail on Broad Street has suffered from high vacancy recently. The most likely explanation for these trends is that residents are willing to drive to the newest shopping centers, even if they are somewhat further away, than shop at an aging destination nearby. The failure of Westland Mall is an example of this trend. This interpretation suggests an opportunity exists to fill local demand locally. A new shopping center that provides a quality experience superior to the aging retail in the vicinity will likely capture much of the local demand that is currently “leaking” to other parts of Columbus. By the same token, it also suggests a limitation on the amount of retail that should be planned. A large, regional shopping center could only succeed by stealing demand from other shopping centers in Columbus. This proposition is undesirable and unlikely to work in any case given that Broad Street does not provide sufficient access and visibility for such a development.

## KEY FINDINGS

- » Despite substantial amounts of new construction over the last 10 years, the oversupply in the retail sector is less dramatic. Nevertheless, the downturn has caused negative absorption and competition among retailers is intense.



Columbus retail absorption, deliveries, and vacancy 2001 to 2009



## RECOMMENDED PROGRAM

The development program presented on the following page represents a phased approach to development that balances a variety of concerns. The proposed program takes into account the desire for a Town Center environment on the site and subjected this to a test of market and financial feasibility. While the total program envisions fewer residential units and less commercial square feet over a longer timeframe than originally conceived under the Accord, it still represents an enormous development project of over 3,500 units and nearly 700,000 square feet of commercial space. It is important, however, to emphasize that this program is not intended to reflect the results of a “highest and best-use” analysis or to maximize profit. Instead, it is intended to build a Town Center that reflects market realities, present an attractive opportunity for private developers, and generate additional revenue for Accord purposes.

The development potential of the site and the proposed phasing are based on the market analysis and the consulting team's experience in programming town centers. In the near-term, the program relies on the proven demand for single-family homes and the built-in demand for the hotel to start activity on the site and generate positive cash flow. Initial elements of the commercial program, which may need to be leased at below-market rates to secure tenants, are also programmed for the first phase. Given that, the commercial space may not generate a profit (or even suffer a loss initially); however, establishing commercial space early-on will distinguish the Town Center from standard subdivisions and contribute to price premiums that ultimately will make the project more profitable. In each phase thereafter, denser residential product is phased in, beginning with townhouses in Phase 2, and ending with for-sale condominiums and garden apartments in the final phase. This reflects the notion that, as the Town Center develops, people will become increasingly willing to trade off space for "place," and choose to purchase smaller homes. Similar to the commercial space introduced in Phase 1, the developer may initially have to sell some of the townhouses and condominiums for a loss, or at least a smaller than typical profit margin.



DEVELOPMENT PROGRAM TABLE						
USE	PRODUCT	PHASE I	PHASE II	PHASE III	PHASE IV	
		2015 – 2019	2020 – 2024	2025 – 2034	2035 – 2044	Total
For Sale Residential	6-Acre Conservation Lots	45	50	30	20	145
For Sale Residential	Village SFD	225	225	320	250	1,020
For Sale Residential	Two Over Two	-	-	120	150	270
For Sale Residential	Garden	-	-	-	-	-
For Sale Residential	Mid-Rise Above Retail	-	-	-	90	90
For Sale Residential	High-Rise Above Retail	-	-	-	-	-
For Sale Residential	Mid-Rise	-	-	-	120	120
For Sale Residential	High-Rise	-	-	-	-	-
For Sale Residential	20' Townhouses	-	130	390	350	870
For Sale Residential	22' Townhouses	-	205	370	390	965
For Sale Residential	Sub Total by Phase	270	275	1,230	1,370	3,480
For Rent Residential	Garden	-	-	-	300	300
For Rent Residential	Mid-Rise Above Retail	-	-	-	-	-
For Rent Residential	High-Rise Above Retail	-	-	-	-	-
For Rent Residential	Mid-Rise	-	-	-	-	-
For Rent Residential	High-Rise	-	-	-	-	-
For Rent Residential	Sub Total by Phase	0	0	0	300	300
Retail	Unanchored In-Line	-	-	-	-	-
Retail	Anchored In-Line	100,000	-	-	-	100,000
Retail	Village Retail	50,000	50,000	100,000	-	200,000
Retail	Large Format	-	-	-	-	-
Retail	Sub Total by Phase	150,000	50,000	100,000	0	300,000
Office	Medical Office	30,000	30,000	-	-	60,000
Office	Above Retail	-	-	50,000	-	50,000
Office	Mid-Rise	-	60,000	60,000	80,000	200,000
Office	Sub Total by Phase	30,000	90,000	110,000	80,000	310,000
Hotel	Hotel Boutique	100	-	-	-	100

*The market analysis yielded a recommended program totaling 3,780 residential units, 300,000 SF of retail, 310,000 SF of office, and a 100-room hotel.*

## ANTICIPATED RESULTS

### FINANCIAL RESULTS

In order to determine the land value, which the development program would support, a land residual model was created using inputs developed from the market analysis, interviews with local development experts, and the market consultant's extensive knowledge and experience. The model works by subtracting from the market price or value, the hard and soft construction costs, including in-tract land development costs and typical developer profits, to arrive at the "land residual." Essentially, this is the amount left over that a developer could use to purchase land and still generate a positive return. Based on the model's projections and a 15% discount rate, the net present value of the land residual of the 30-year development program is equal to about \$41,000,000, which equates to approximately \$23,000 per acre if 1,800 acres are purchased. This value assumes that starting prices and rents would increase by 15% plus inflation over the first five years of development to account for the premium of the Town Center and at an inflation rate of 3% thereafter. To be sure, this value can only be considered an estimate. A more detailed land plan, cost estimates, and other information would be necessary to validate this number. Nonetheless, it is clear that the program has the capacity to generate a significant amount of revenue for land acquisition.

### ACCORD REVENUES

A main purpose of the development of the Big Darby Town Center is to generate additional revenue for land conservation and other Accord purposes. Utilizing a revenue model developed under the Accord that relies on Tax-Increment Financing, Developer Contributions, and additional property taxes imposed by a New Community Authority, it is estimated that the Town Center will indeed generate significant amounts of additional revenue but it is unlikely, under any scenario, to cover the costs of conserving all of the land designated for conservation under the Accord. There was also the provision for allowing additional sources of revenue to be considered. This plan recommends the creation of a JEDD with a 2.5% income tax rate for commercial properties only. The exact amount of revenue produced by the project varies widely depending on the assumptions used but under the most likely scenarios, the amount is estimated to be at least \$38 million and, in the most optimistic scenarios currently thought plausible, reaches as much as \$64 million. Finally, these estimates represent revenues only and do not account for additional expenditures, which may be required to service the development and its residents.





LAND RESIDUAL ANALYSIS SUMMARY						
USE	PRODUCT	PHASE I	PHASE II	PHASE III	PHASE IV	
		2015 – 2019	2020 – 2024	2025 – 2034	2035 – 2044	Total
For Sale Residential	6-Acre Conservation Lots	\$1,495,000	\$3,579,000	\$3,203,000	\$3,531,696	\$11,808,696
For Sale Residential	Village SFD	\$11,083,000	\$19,143,000	\$38,479,000	\$46,176,041	\$114,881,041
For Sale Residential	Two Over Two	\$0	\$0	\$3,297,000	\$8,654,145	\$11,951,145
For Sale Residential	Garden	\$0	\$0	\$0	\$0	\$0
For Sale Residential	Mid-Rise Above Retail	\$0	\$0	\$0	(\$5,422,627)	(\$5,422,627)
For Sale Residential	High-Rise Above Retail	\$0	\$0	\$0	\$0	\$0
For Sale Residential	Mid-Rise	\$0	\$0	\$0	(\$2,549,239)	(\$2,549,239)
For Sale Residential	High-Rise	\$0	\$0	\$0	\$0	\$0
For Sale Residential	20' Townhouses	\$0	(\$156,000)	\$4,335,000	\$12,643,441	\$16,822,441
For Sale Residential	22' Townhouses	\$0	(\$2,384,000)	(\$8,000)	\$9,503,915	\$7,111,915
For Rent Residential	Garden	\$0	\$0	\$0	\$27,427,497	\$27,427,497
For Rent Residential	Mid-Rise Above Retail	\$0	\$0	\$0	\$0	\$0
For Rent Residential	High-Rise Above Retail	\$0	\$0	\$0	\$0	\$0
For Rent Residential	Mid-Rise	\$0	\$0	\$0	\$0	\$0
For Rent Residential	High-Rise	\$0	\$0	\$0	\$0	\$0
Retail	Unanchored In-Line	\$0	\$0	\$0	\$0	\$0
Retail	Anchored In-Line	(\$3,305,000)	\$0	\$0	\$0	(\$3,305,000)
Retail	Village Retail	(\$1,342,000)	\$34,000	\$1,357,000	\$0	(\$49,000)
Retail	Large Format	\$0	\$0	\$0	\$0	\$0
Office	Medical Office	(\$1,152,000)	(\$231,000)	\$0	\$0	(\$1,383,000)
Office	Above Retail	\$0	\$0	\$310,000	\$802,000	\$1,112,000
Office	Mid-Rise	\$0	(\$367,000)	(\$92,000)	\$1,982,616	\$1,523,616
Hotel	Hotel Boutique	\$1,899,000	\$0	\$0	\$0	\$1,899,000
Total		\$8,678,000	\$19,618,000	\$50,881,000	\$102,749,486	\$181,926,486
Present Value at 10% Discount Rate		\$8,678,000	\$12,181,000	\$19,617,000	\$15,273,000	\$55,749,000
Present Value at 15% Discount Rate		\$8,678,000	\$9,754,000	\$12,577,000	\$6,278,000	\$37,287,000

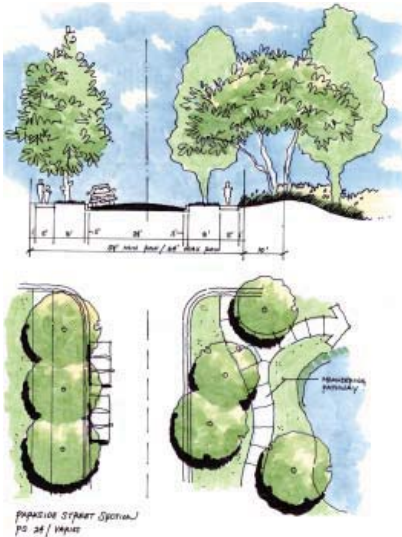
# TOWN CENTER MASTER PLAN

## OVERVIEW

As the Accord highlighted, there are many benefits to developing a master plan vision for development. Strategic planning for decades to come enables jurisdictions and governing bodies to plan for extensions and improvements to infrastructure while limiting the amount of ad hoc, one-off development schemes that further the loss of rural landscapes to poorly conceived, single-use subdivisions. Neighborhood services and facilities can be situated to provide the maximum access, use, and benefit, while a walkable, bikeable village feel is enhanced. A comprehensive approach to planning provides the ability to integrate stormwater management and pursue a more comprehensive approach to conservation.

The Big Darby Town Center site area is situated south of I-70 and extends beyond West Broad Street. The site is also bisected by a combination of the railroad right-of-way and a substantial drainage corridor (the McCoy Ditch). There are a number of wetlands and woodlands of ecological significance presently on the site as well. With a modest but sensitive development program, it has been a key mission of this design team to identify a plan configuration that can achieve the highest level of success - both commercially and aesthetically. This means not only organizing the plan so that it can be phased over time (limiting substantial infrastructure investments like highway interchanges and costly railroad bridges), but also differentiating the plan from the conventional and banal suburban patterns of cul-de-sacs and failing strip commercial uses.

The design concepts for the Big Darby Town Center Master Plan emulate authentic Central Ohio villages. Villages and neighborhoods in this region share key characteristics: a gridded pattern of blocks and streets, a commercial main street or square, the incorporation of natural features and park systems, and a clear delineation between the village and the rural landscape. Here, the plan takes a framework approach to the design. By describing the formative elements of the plan, a vision is created that will respond to the market over time without compromising the critical design components.

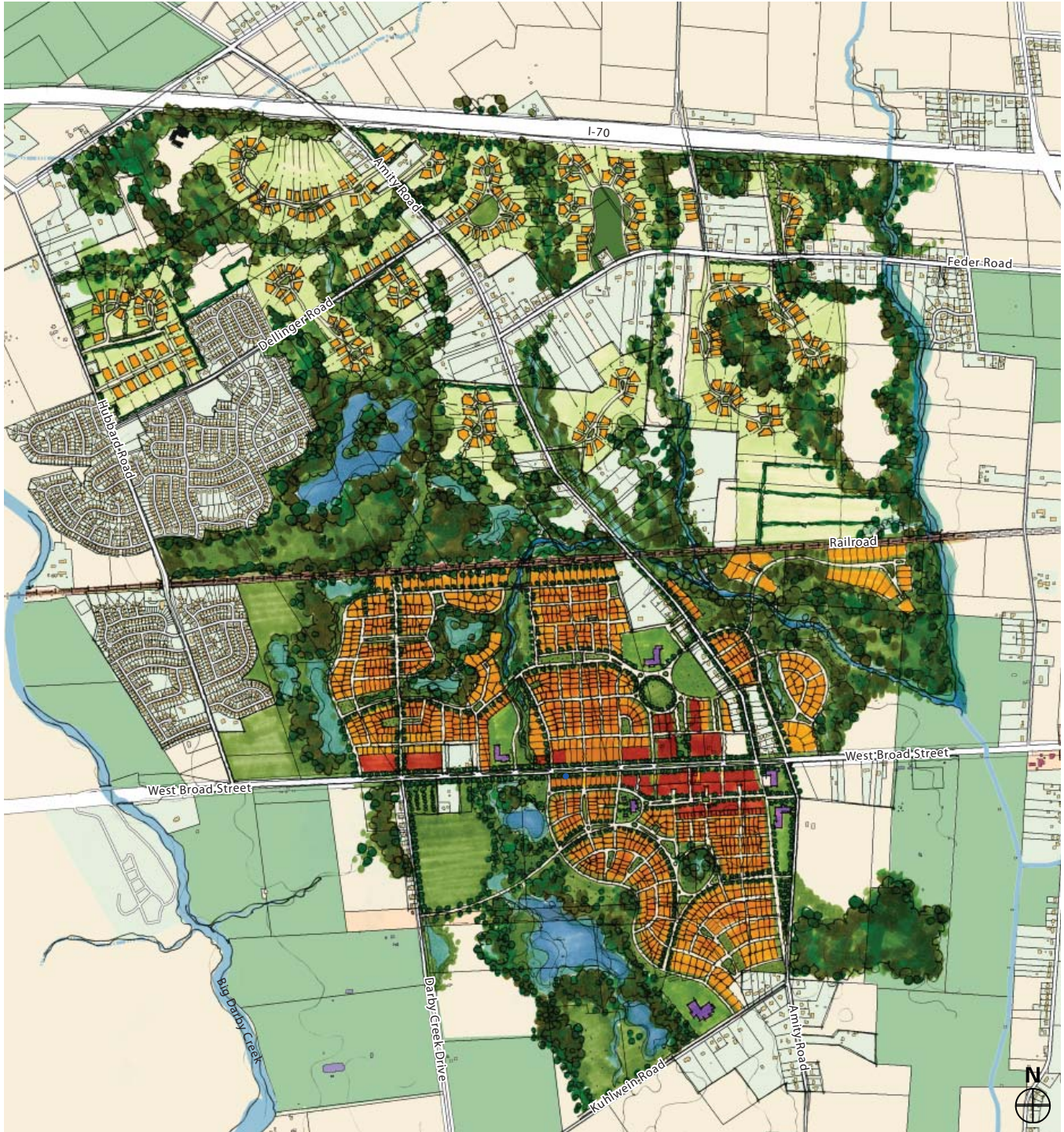


*View of neighborhood street*



*View of West Broad Street*





*Illustrative Master Plan*



# TOWN CENTER MASTER PLAN

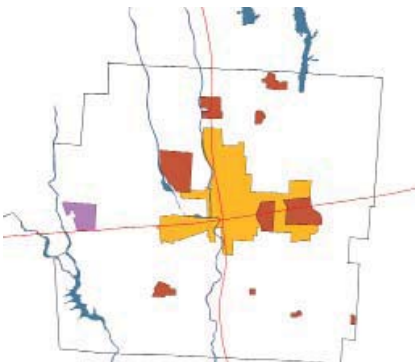
## FRAMEWORK OF DEVELOPMENT

### METHODOLOGY

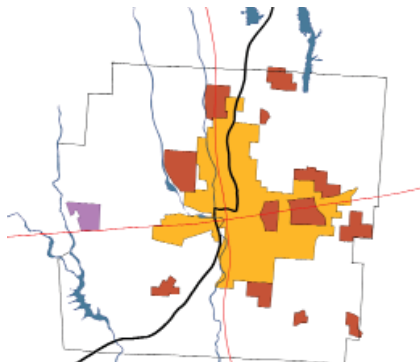
- » Evaluate regional growth patterns of the Columbus region as they evolved over time
- » Find comparably scaled places which are similar distances from downtown Columbus
- » Study precedents to understand scale of buildings, block and street patterns, and uses which are sustainable
- » Develop viable block patterns which can fit into a civic framework of streets and open spaces

### PRECEDENT RESEARCH

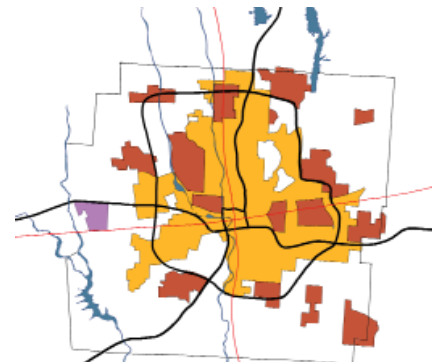
Building on the desire expressed in the focus groups and public meetings to create a Central Ohio village, the team documented comparable precedent communities in the region. This Master Plan envisions the future development building on the rich traditions of local villages. Commercial uses are often organized in main street, village square, or crossroads configurations and the presence of the famed midwestern grid is a hallmark of many of the successful and well-established towns in the area. The natural growth of these towns originated around major thoroughfares, making Route 40 an important spine to the Big Darby Town Center. Furthermore, elements of development can be incorporated while remaining sensitive to the rural informality of this area – one of the favorite characteristics of the Town Center site. Nearby towns are good models of the mix of uses appropriate to the Town Center, including building types, scales, and densities. Rural precedents give clues about how to integrate buildings into landscape and natural features.



METROPOLITAN GROWTH, 1950



METROPOLITAN GROWTH, 1960



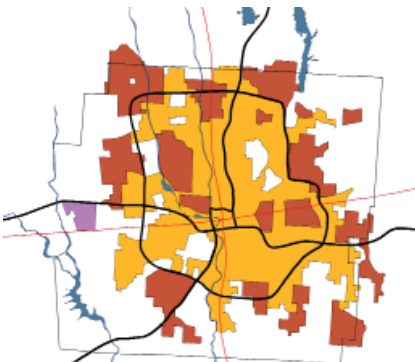
METROPOLITAN GROWTH, 1970



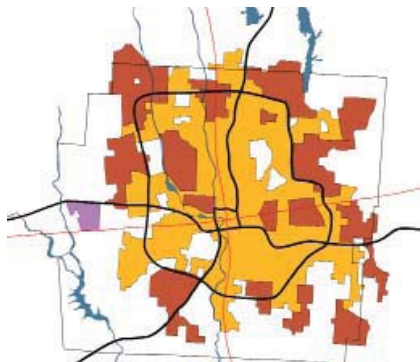


### LOCAL PRECEDENTS FOR PLANNING

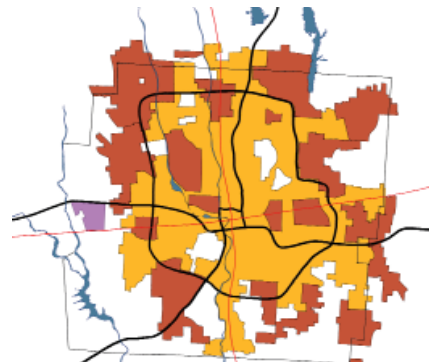
- » Granville
- » Powell
- » Sunbury
- » Worthington
- » Upper Arlington
- » Grandview



METROPOLITAN GROWTH, 1980



METROPOLITAN GROWTH, 1990



METROPOLITAN GROWTH, 2000

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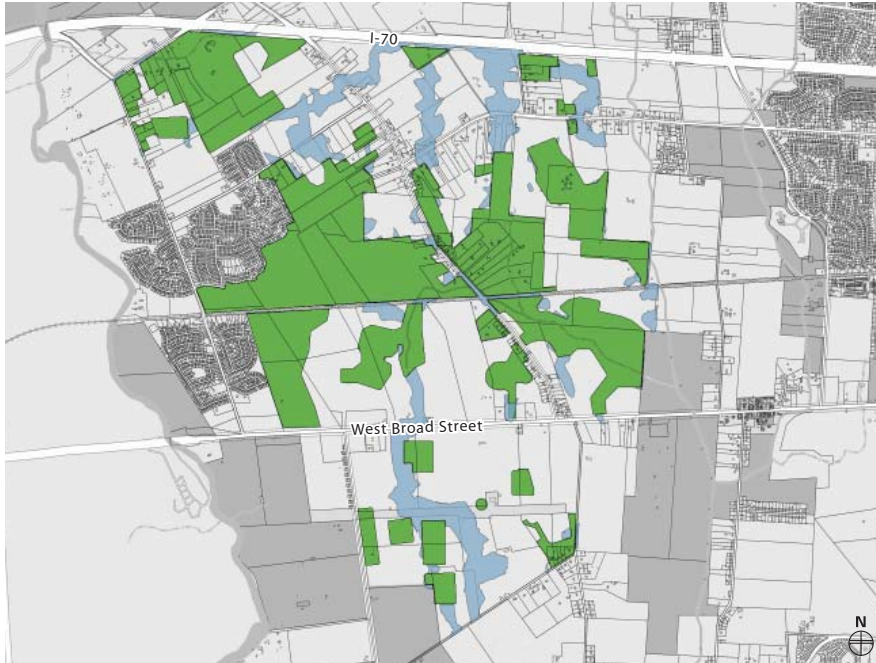
# TOWN CENTER MASTER PLAN



## DEVELOPABLE LAND AND TOWN CENTER "BOUNDARIES"

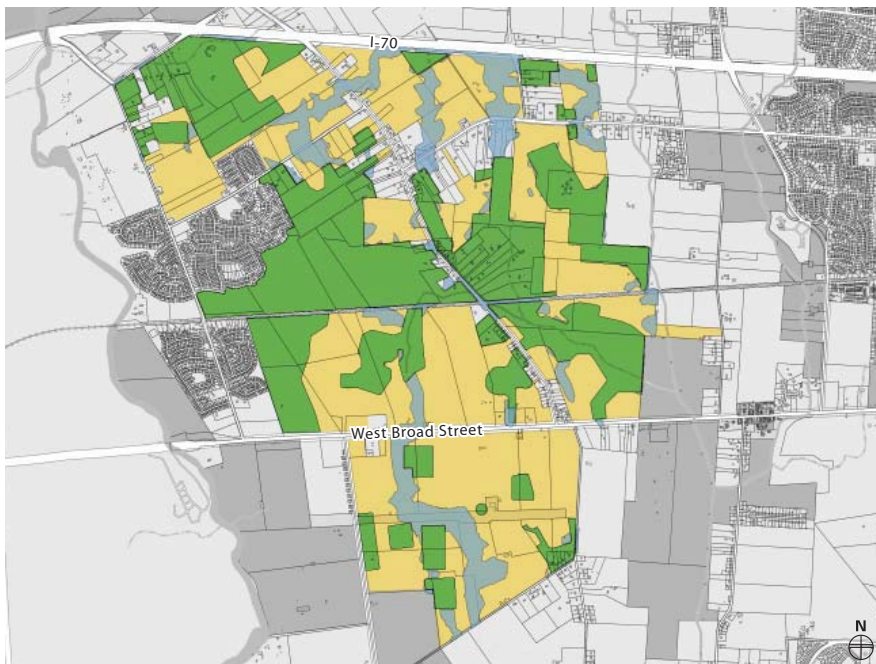
The basis for discussing what constitutes developable land within the Town Center area stems from the ecological analysis begun in the Darby Accord. In the Accord, a general area was identified for the purposes of developing the Town Center. That boundary bore little relationship to the actual natural features of the land itself and for that reason was reevaluated as part of this Town Center planning process. It is the recommendation of this plan to extend the boundary to Kuhlwein Road in order to capitalize on the direct connection to Battelle Darby Creek Park, optimize the access to West Broad Street from both sides, and bring development closer to the trunk sewer extension (more will be said about this in the utilities section).

Viewing this whole area as a starting point, ecological and physical analysis was used to evaluate which lands were available for Town Center development before commencing design. The process was one of subtraction. First, all lands that had already been identified and prioritized for conservation in the Accord were eliminated from the developable area. These included woodlands, wetlands, streams and stream setbacks, terrestrial habitat corridors, and linkages. Second, a large portion of the lands within the Town Center boundary are already occupied with existing houses and other low-density structures. For purposes of this planning effort, these existing structures were assumed to remain in place and intact, at least throughout the early phases of development. Finally, some areas show evidence of hydric soils. These patterns (as identified in the plan shown at right) indicate where water is most likely to drain during storm events. These corridors are not ideal for intense building and had to be carefully incorporated into the proposed plan concept. All remaining lands are considered "developable" for the purposes of this effort.



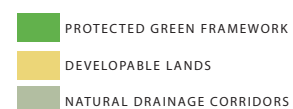
### GREEN NETWORK

The Green Network consists of the identified Tier lands from the Darby Accord and Metro Park's assets which include streams and stream setbacks, riparian corridors, habitat corridors, and identified natural areas. The Green Network represents the land within the Town Center boundary which is not developable. Lands would have to be purchased for conservation.



### OPEN SPACE AND DEVELOPMENT

The open space overlayed on the boundaries of the Town Center begin to divide the lands into those necessary for open space and habitat connections and those which will form the developable land aggregate. The development as a whole will gain value from this interconnected network and access to open space, trails, and parks.





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# TOWN CENTER MASTER PLAN

## HOW TO DECIDE

The process for deciding which pattern is most appropriate takes into account the intent of the Darby Accord and the existing ecological and infrastructure constraints.

## ECOLOGY

The ultimate purpose of the Town Center development is to protect the ecologically sensitive lands in the Darby Creek Watershed. This intent was reaffirmed through the public process, with over half of the design principles relating to protection and restoration of the ecological assets. The design flagged all identified tiered lands, stream setbacks, metro parks, and sensitive areas as exempt from development. Furthermore, the hydric soil patterns within development indicate drainage ways which must be preserved as well. The proximity and frequency of these sensitive areas indicate whether more or less intense development is appropriate.

## EXISTING DEVELOPMENT PATTERNS

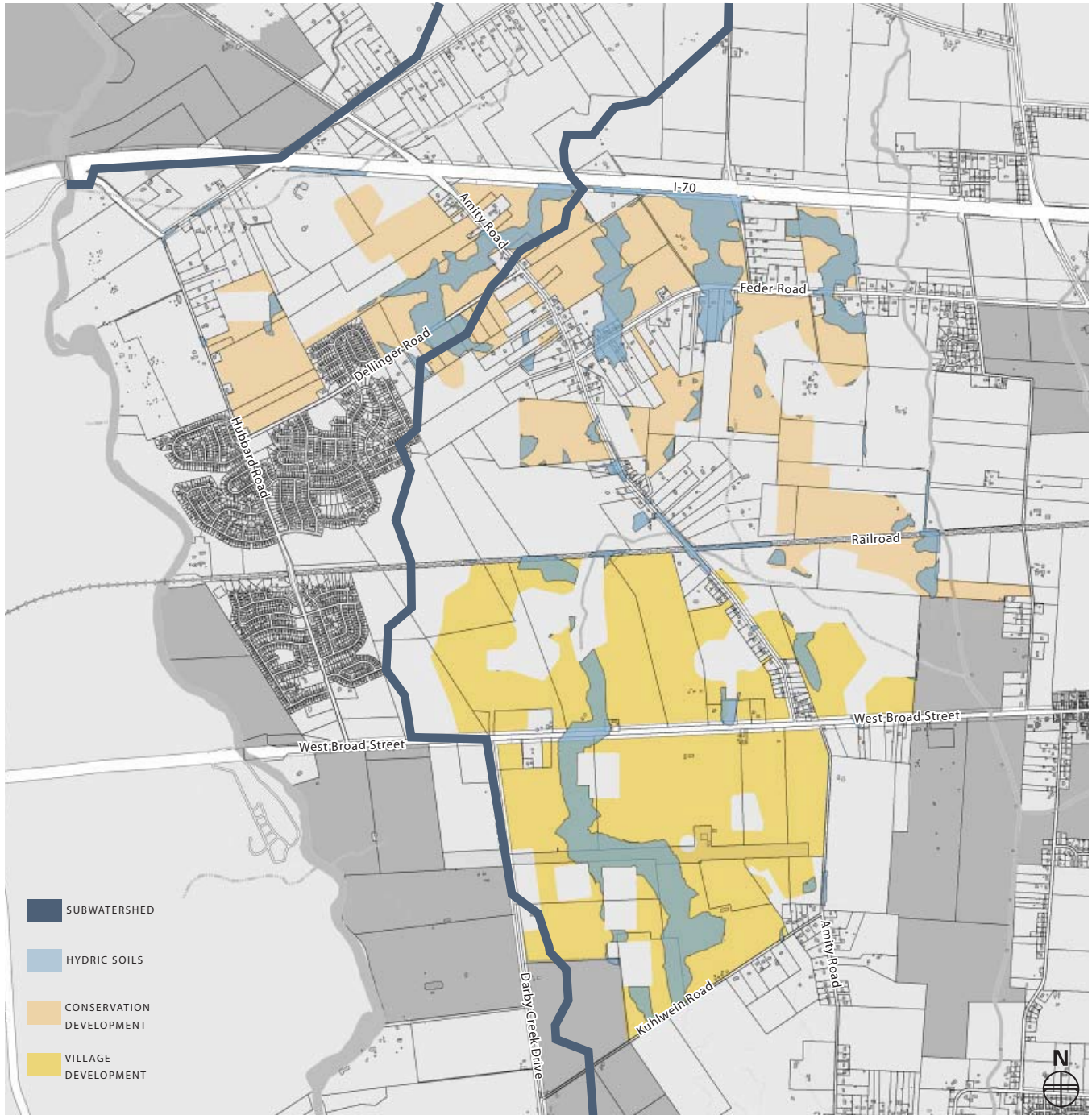
The existing patterns of development within the Town Center boundaries will impact how lands are developed. Larger parcels and fewer land owners will make assembling developable parcels and creating partnerships easier. More intense development depends on contiguous developable lands so that residential neighborhoods can surround and support retail and mixed-use areas.

## TRANSPORTATION AND ACCESS

The Town Center development is limited by existing and future road access. Without significant public investment in a new interchange on I-70, the primary access to the area is by US-40, West Broad Street. This presents the best opportunity for locating mixed-uses such as retail and offices. Lands north of the rail line are limited by access on Feder Road and Amity Road.

## UTILITIES

Availability of utilities will determine how the Town Center develops. The sanitary sewer will be extended from the southeast into the development. Within the Town Center boundary, this system will operate on gravity flow. A portion of the Town Center is beyond a subwatershed dividing line where extending service would require expensive pump stations.



*Developable Lands: The developable parcels represent the parcels which do not fall within the protected green network and which are not occupied by existing development. Characteristics such as utilities, transportation and access, property ownership, and ecology determine whether lands will be developed as conservation lots or as village development.*



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# TOWN CENTER MASTER PLAN

## TWO PATTERNS OF DEVELOPMENT

The Town Center will include two patterns of development. The following pages outline key characteristics and criteria for each character area.

### CONSERVATION DEVELOPMENT

Conservation Development is appropriate in areas where there are more ecologically sensitive areas dividing the developable lands. In addition, areas which have more existing development are more difficult to assemble and may tend towards Conservation Development. This development pattern is also appropriate for areas which have limited access to road infrastructure and public utilities.

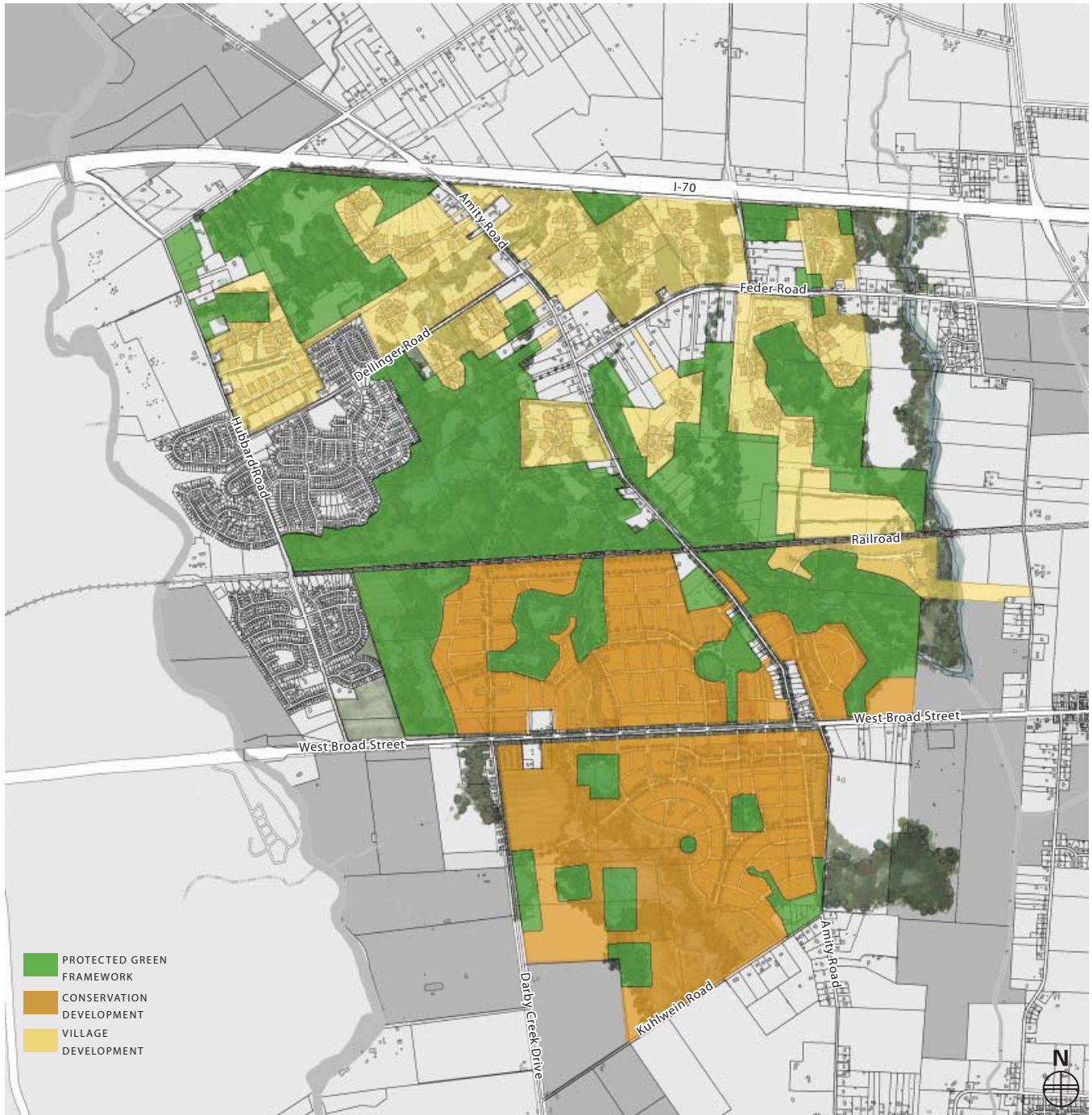


### VILLAGE DEVELOPMENT

Village Development will be modeled on traditional Ohio town patterns. Lands which are flattest, least encumbered by ecologically sensitive areas, larger parcels with fewer property owners, and lands accessible by existing or extended infrastructure are most appropriate for Village Development.





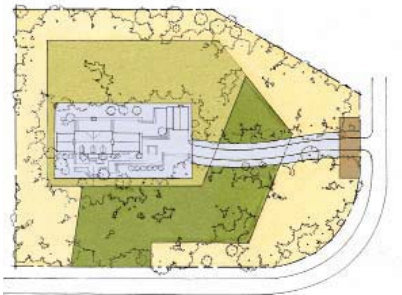


*Development in Master Plan: Developable land is shown in the shaded tone. Many developable properties also overlap historic drainage patterns which will be preserved in the new development. Higher restrictions on stormwater management techniques, open space, and setbacks on these parcels will ensure improved water and flow quality while still allowing development.*

# TOWN CENTER MASTER PLAN

## KEY CHARACTERISTICS OF CONSERVATION DEVELOPMENT

- » 3- to 5-acre lots
- » Land clearing regulations
- » Minimum 50% dedicated open space
- » On-site stormwater management
- » Low-impact development standards with minimum site disturbance created by roads and infrastructure



## WOODLAND PRESERVE LOT CHARACTERISTICS

- » 3- to 5-acre lots of single-family detached building types
- » Rural lanes enhance the wooded character and houses are set back deeper into tree cover
- » Development safeguards the natural resources and aesthetic character
- » Houses are nestled in a picturesque clearing at the end of driveways

## CONSERVATION DEVELOPMENT

Within Conservation Development patterns, residential houses take low-impact forms that relate closely to the ecology and landforms of the more sensitive areas. These development patterns allow limited development while preserving open space, views, productive farmland, cultural landscapes, natural wildlife habitats, water quality, and rural character. Typically lots are given a Conservation Overlay dedicating a minimum of 50% of the land as open space to be managed by an HOA or a third party conservation group. In this case, the development strategy creates 3- to 5-acre lots with zones indicating which lands may be cleared for building and which lands must be preserved. The open space is privately owned by individuals, but accessible to the larger community by trails and greenways. In the Town Center, conservation development will pull from a palette of the following three forms.

## WOODLAND PRESERVE LOTS

When siting development on forested lands, their minimal clearing should be allowed on the lots and houses should be tucked into the woods to reduce visual impact.



*(top) Woodland Preserve Lot showing cleared areas, tree preservation and the driveway*

*(left) Rural Lane section through a woodland area*



### PRAIRIE PRESERVE LOTS

Houses are located at the edges of lots, often along tree lines, connected by rural lanes. Central prairies allow the ecology to be restored and protected.



*Prairie Preserve Lots surrounding a central, preserved prairie*

### CLUSTER DEVELOPMENT

The third development pattern involves locating houses in small clusters around shared courts and greens. This pattern of development allows for community gardens and small-scale food production, creates beautiful spaces, and conserves ecologically sensitive lands.



*Cluster Lots showing the nature of clustered homes located around shared courts*



### PRAIRIE PRESERVE LOT CHARACTERISTICS

- » 3- to 5-acre lots of single-family detached building types
- » Houses are sited in a picturesque manner to take advantage of viewsheds
- » Each driveway is picturesque and terminates in a small court.
- » Tree cover is strategically planted to safeguard the natural resources and aesthetic character



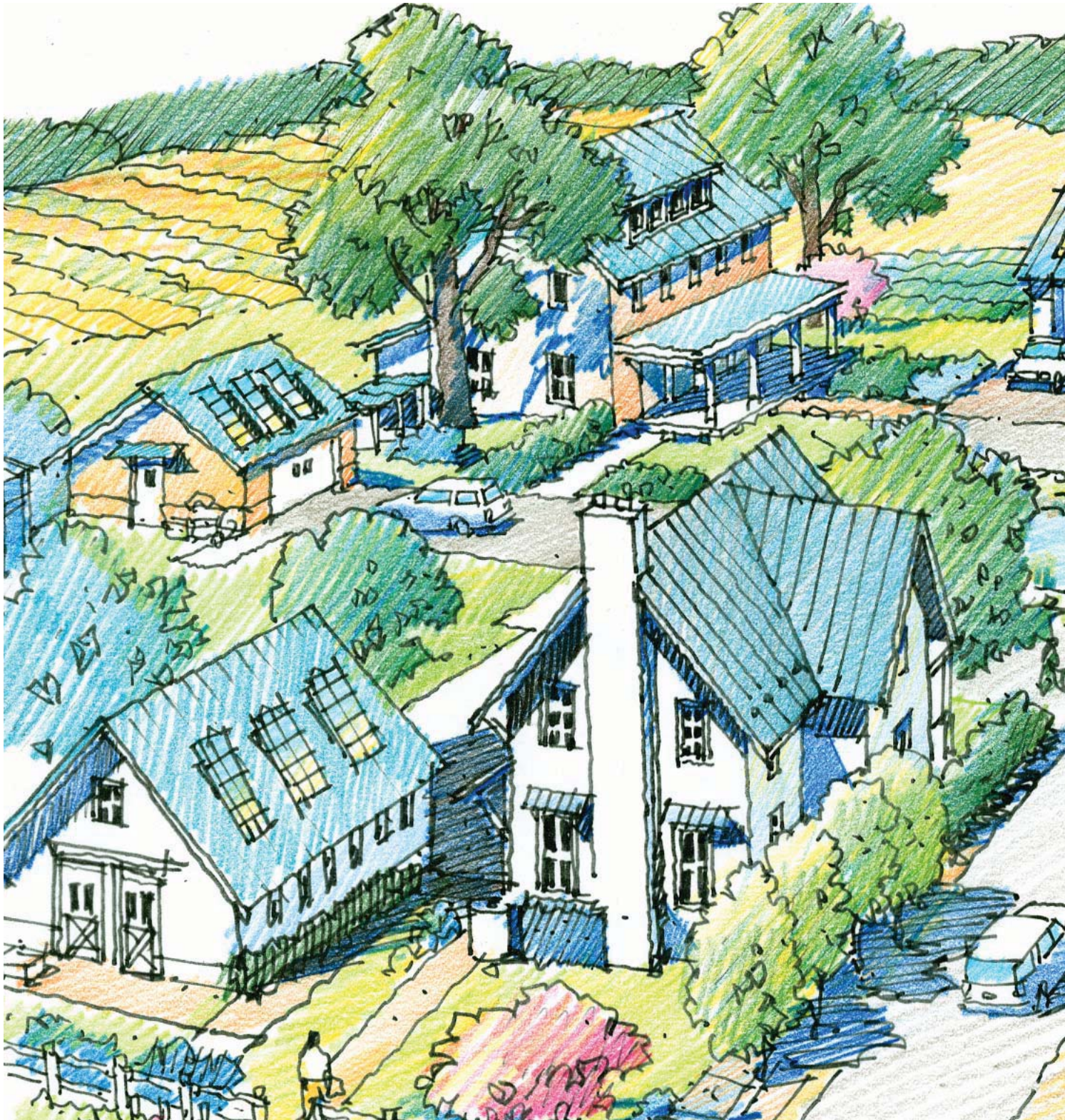
### CLUSTER DEVELOPMENT CHARACTERISTICS

- » 3-5 acre lots of single-family detached building types
- » Modest assemblies of residences in close proximity to one another create small roadside communities
- » The house sits relatively close to the shared green space or courts
- » Houses take advantage of tree cover and safeguard the natural resources and aesthetic character



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# TOWN CENTER MASTER PLAN









# TOWN CENTER MASTER PLAN



## FARMSTEAD CENTERS

Within the preserve developments, need will still exist for community-serving amenities, resources, and retail. These small commercial and institutional uses should fit into a built form which respects, reflects, and enhances the rural character of the area. Local centers can reside in farmstead buildings grouped around courts. Examples of uses in a local center include a farmer's market, cider mill, small convenience retail, coffee shop, corner shop, ecological learning centers, community meeting facility, trail heads and recreation facilities, and community farms.

Architecture and scale of buildings play important roles in maintaining the rural character. Design guidelines for the appropriate building types and groupings are necessary along with the capacity for design review. The character of the local centers should communicate an authentic understanding of Central Ohio's environment, culture, and farmstead history, as well the unique ecology of the Darby Watershed in which this development will sit.

## KEY CHARACTERISTICS

- » A small center tucked into the residential fabric or park space network
- » Composed of neighborhood-serving uses, such as a farmer's market, small commercial, community, leisure, or civic uses
- » Farmsteads are linked by a sequence of parks and open spaces



*Local/ Farmstead Centers aesthetically reflect the rural character of the region while supporting and assisting a local and sustainable economy.*





*Small civic buildings can identify parks and open spaces that link the local centers and farmsteads.*



*Organic farmer's market encourages organized local production by offering local farmers, food producers, and craftspeople a place to sell their goods to local residents in a community setting.*



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# TOWN CENTER MASTER PLAN









# TOWN CENTER MASTER PLAN

## VILLAGE DEVELOPMENT

Lands that are identified as village development will be regulated by design guidelines sculpting the built environment. Village-type development centers around West Broad Street. Mixed-use block and building typologies here are based on access and the ecology of the land. The framework of streets and open spaces create a logical block pattern. Village development follows basic principles derived from traditional villages including houses and buildings that front onto streets, small neighborhood parks, and a variety of parking strategies. The open space and streets form the public realm and connect all parts of the Town Center with trails and sidewalks.

## DIVERSE BUILDING TYPES

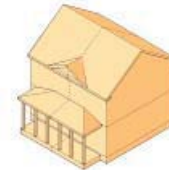
The village-type development within the Town Center accommodates a variety of building types. These types range from single-family houses, duplexes, and townhouses to mansion-style apartment buildings, small multi-family buildings, and mixed-use buildings with shopfronts. The development block dimensions allow for flexibility in locating this range of buildings, yielding a layered and interesting streetscape.

## FLEXIBLE BLOCKS

The development framework will allow for an overall framework of streets and open space which can then accept multiple block types. Each block type will deal with density, building placement, and parking in a slightly different way to produce a range of characters. The blocks allow for transitions from rural to urban areas and also allow the plan to be flexible as market conditions change. For example, if, after early phases of development, buyer preferences evolve from large single-family detached houses to neighborhood-scaled houses and townhouses, the building types being built can easily switch from one to the other without drastically modifying the plan or infrastructure.



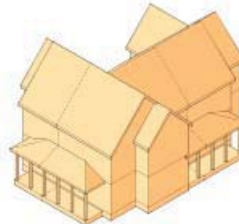
SINGLE-FAMILY HOUSE



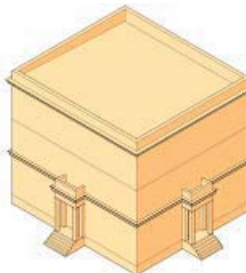
DUPLEX



TOWNHOUSE



MANSION-STYLE FLATS



SMALL MULTI-FAMILY BUILDING



MIXED-USE BUILDING



Key

- CONSERVATION LOTS
- LOW DENSITY RESIDENTIAL (3-7 DU/AC)
- MED. DENSITY RESIDENTIAL (7-14 DU/AC)
- MIXED USE
- INSTITUTIONAL

*The Town Center is composed of standardized block types that support a number of building types. This allows market flexibility over time to respond to changing buyer preferences.*



SINGLE-FAMILY  
HOUSES

PRIVATE GARAGES



SINGLE-FAMILY HOUSES  
& TOWNHOUSES

PRIVATE GARAGES



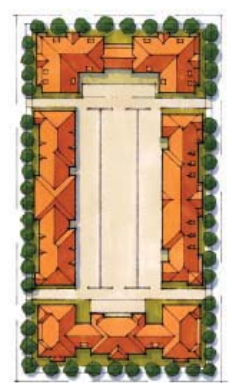
SINGLE-FAMILY HOUSES,  
TOWNHOUSES, MANSION  
APARTMENTS

PRIVATE GARAGES



TOWNHOUSES AND MULTI-  
FAMILY  
BUILDING

SURFACE PARKING COURT



MULTI-FAMILY BUILD-  
INGS

SURFACE PARKING  
COURT



# TOWN CENTER MASTER PLAN



## VILLAGE DEVELOPMENT TYPOLOGIES

### MIXED-USE MAIN STREET

The Main Street development pattern is one of the most recognizable urban patterns throughout the country, especially in the Midwest. Retail, office, civic, and residential uses co-exist on mixed-use main streets, creating a delightful energy and vibrant street life. Wide sidewalks and parallel on-street parking enhance the pedestrian experience, encouraging people to shop and dine. Parking is accommodated both on the street and in the rear of buildings, out of sight. Mixed-use main streets thrive when located in close proximity to and visible from major transportation routes with high traffic volumes.

Building types can range from multi-story mixed-use buildings with shops on the ground floor and offices or apartments above, to single story-houses converted to shops, to townhouses and small multi-family buildings. The variety and eclectic nature of main streets make them beloved destinations for neighborhood residents and visitors alike.

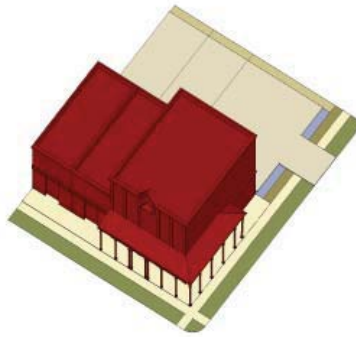
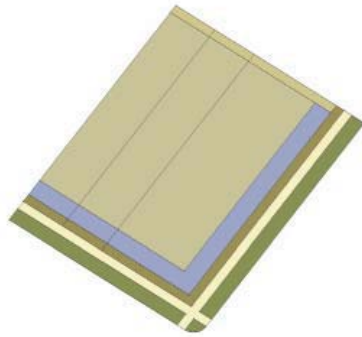
### KEY CHARACTERISTICS

- » Buildings sit on or close to lot lines
- » On-street parking and street trees
- » Deep sidewalks
- » Parking banks accommodated in the rear of retail and mixed-use buildings
- » Integration of fabric and civic buildings



*Main Street, Mixed-Use Block*





## LOT CRITERIA

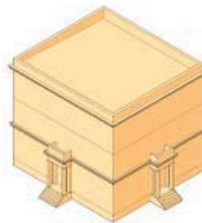
- » Lot Sizes: 18 to 100 feet wide; to 200 feet deep
- » Setbacks and Facade Zones: 0- to 5-foot Front and Side Street Setback; 10-foot Facade Zone; 5-foot rear paving setback

## LOT UTILIZATION

- » Mixed-use blocks prioritize the street experience. Arcades can provide shaded circulation and small setbacks can create room for outdoor seating.



MIXED-USE BUILDING



SMALL MULTI-FAMILY BUILDING



MANSION-STYLE FLATS



TOWNHOUSE



*A typical commercial street section showing parking on both sides of a two lane cartway*

## BUILDING TYPES

- » Range from multi-story mixed-use buildings with shopfronts and office or residences above to small multi-family apartment buildings, mansion-style houses, and townhouses





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# TOWN CENTER MASTER PLAN









# TOWN CENTER MASTER PLAN



## VILLAGE RESIDENTIAL

Residential neighborhoods in the village development will follow traditional neighborhood patterns, documented in the Columbus metropolitan region. A clear pattern of streets and blocks accept a variety of lot sizes ranging from 40 feet to 65 feet wide. The blocks can also accommodate both front- and rear-loaded houses, giving neighborhoods a variety of houses and characters. In all cases, houses and buildings should sit close to the street with front yards and gardens.

Neighborhood streets are tree-lined with sidewalks and planting strips. Streets either have on-street parking on one or both sides, protecting the sidewalk zone from traffic, while providing additional resident and visitor parking. The neighborhood will not only be connected by sidewalks, but also by a network of trails, bike paths, and small neighborhood parks.

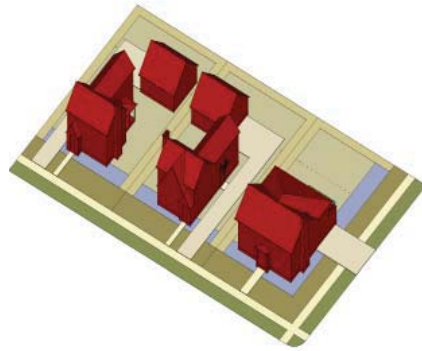
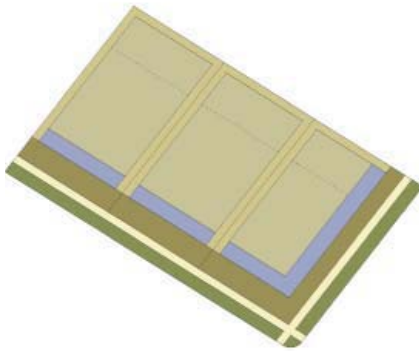
Village residential building types will be primarily single-family houses, in a range of sizes, and duplexes. Corner lots and blocks closer to main street or retail uses can transition into mansion-style flats and townhouses. Houses should have elements such as front porches and stoops, pitched roofs, dormers, and small wings to reinforce the residential character.

### KEY CHARACTERISTICS

- » Variety of housing types developed around key addresses
- » Front and rear-loaded parking strategies
- » A network of pedestrian-friendly streets with sidewalks, bike lanes, and trails
- » Interconnected network of community spaces and small parks for gathering and recreational uses



*Village Residential Block*



## LOT CRITERIA

- » Lot Sizes: 35 to 65 feet wide. Lots are typically 90 to 110 feet deep.
- » Facade Zones: 15-foot Front, 10-foot Side Street, 5-foot Side Yard, 5-foot Garage, 10-foot Facade Zone

## LOT UTILIZATION

- » Village houses have noticeable yard space. Gardens and sustainable plantings are encouraged. The porch is an important mediator between the public and private zones.



DUPLEX



SINGLE-FAMILY  
HOUSE



MANSION-STYLE FLATS



TOWNHOUSE

## BUILDING TYPES

- » A diverse and healthy community offers a variety of residential building types which include single-family, semi-detached, and townhouse homes.



*A typical village neighborhood street section showing parking on one side of a two-way street*





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# TOWN CENTER MASTER PLAN









# TOWN CENTER MASTER PLAN



## PARKSIDE RESIDENTIAL

Edges of residential neighborhoods which border larger parks and open spaces have a unique character. In all cases, houses and buildings should front onto a street or parkway address, with the public open space on the other side of the street. Streetscapes may include different landscaping, boulevards, multi-use paths, bike lanes, and other enhancements. Often, larger houses sit further back from the street with deeper setbacks addressing the open space. This additional space accommodates outdoor living and responds to the public nature of the parkway.

Larger homes and small multi-family buildings help hold the edge of the open space better than smaller buildings and also command a market premium on a valued address. Architectural character of these houses is important given their prominent location and high visibility within a neighborhood and community.

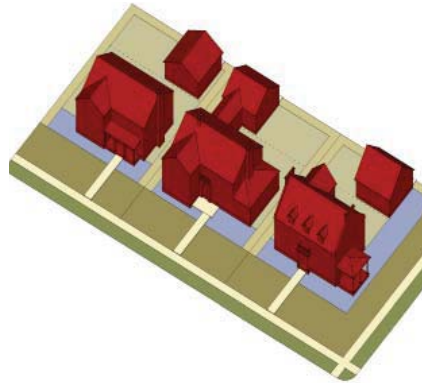
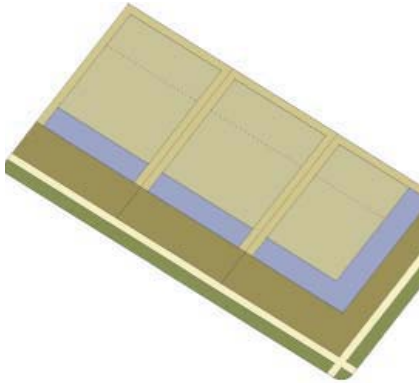
Parkways and edges of open space bring added value, serving as major connection points for neighborhoods to larger open space networks. Links to trails provide mobility and recreation for communities, allowing people to access schools, shops, parks, employment centers, and regional amenities.

### KEY CHARACTERISTICS

- » Variety of housing types developed around key addresses
- » Front- and rear-loaded parking strategies
- » Network of community spaces and small parks that provide pedestrian-friendly connections
- » A streetscape that is more naturalized to complement the adjacent parks



*Parkside Residential*



## LOT CRITERIA

- » Lot Sizes: 65 to 85 feet wide, 110 to 140 feet deep.
- » Facade Zones: 15- to 30-foot Front, 10- to 15-foot Side Street, 5-foot Side Yard, 5-foot Garage, 10-foot Facade Zone

## LOT UTILIZATION

- » Parkside residential lots have large yards to allow for outdoor living options and garden spaces. The lot size addresses a variety of park spaces and responds to the context in terms of scale and character.



DUPLEX



SINGLE-FAMILY HOUSE



MANSION-STYLE FLATS



TOWNHOUSE

## BUILDING TYPES

- » A diverse and healthy community offers a variety of residential building types, including single-family, semi-detached, and townhouse homes.



*A typical parkside neighborhood street section showing parking on one side of a two-way street and deeper lot setbacks to accommodate outdoor living and to respond to open space addresses*





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# TOWN CENTER MASTER PLAN

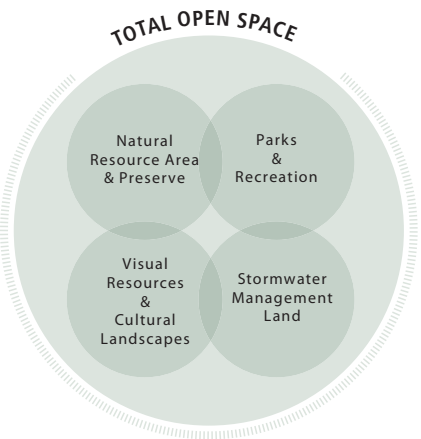








# OPEN SPACE FRAMEWORK

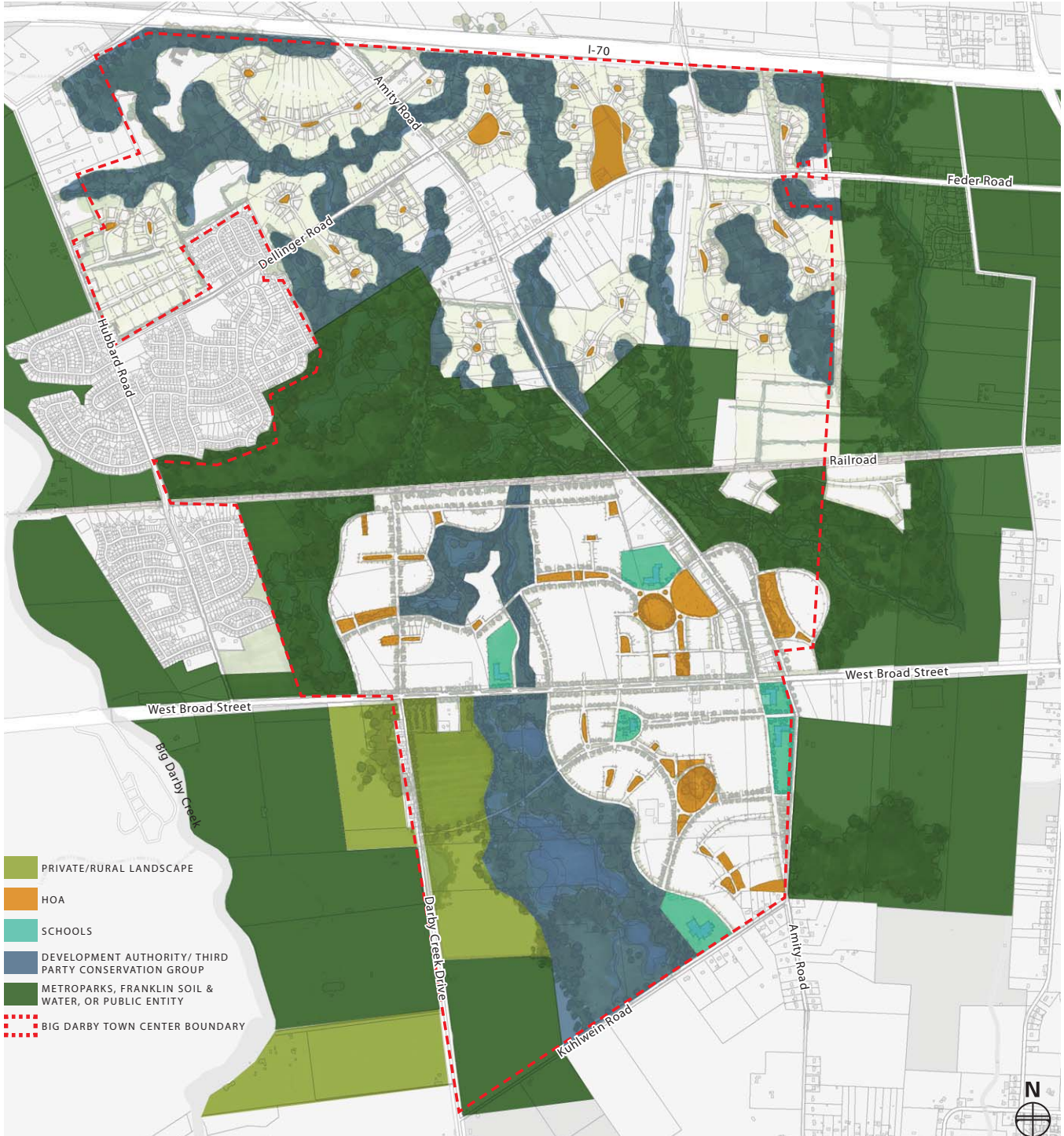


## OPEN SPACE CATEGORIES

The open space within the Big Darby Town Center can be categorized as four types:

- » Natural Resource Area and Preserve are those areas identified in the environmental analysis for protection such as steep slopes, floodplain, naturally-occurring wetlands or critical habitat.
- » Parks and Recreation lands are those areas programmed for active and passive recreation, such as ballfields, playgrounds, and others.
- » Visual Resources & Cultural Landscapes are landscapes that have particular community importance and meaning or are valued for the views they provide. The view along West Broad Street as one leaves the retail corridor and drives across the existing agricultural land into the Big Darby Town Center is one such cultural landscape.
- » Stormwater Management Lands are those lands that are set aside to serve the stormwater needs of the development project and may take the form of rain gardens, bioswales, or wetlands. The Master Plan recommends that two to five percent of the developed area be set aside for stormwater infiltration elements and an additional ten percent be targeted for larger naturalized stormwater treatment.

As illustrated in the Total Open Space diagram, these four different types of open space overlap in function with a given area serving more than one function. Open space lands may contain a combination of these categories. For example, natural resource areas and preserves containing wetlands may be utilized for stormwater management; parks and recreation land may be designed to have the appearance of a cultural landscape.



*Open Space Typologies and Management Entities Diagram*



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# OPEN SPACE FRAMEWORK

## DESIGN PRINCIPLES

### PARKS AND RECREATION

A series of design principles were developed based on input gathered from all of the stakeholders who participated in the focus groups, meetings, and the design charrette. These design principles are enumerated below.

- » Locate all active recreational space at or adjacent to a school.
- » Locate neighborhood parks in each quadrant of the Big Darby Town Center site.
- » Locate neighborhood parks within a 5-minute walk (1/4 mile radius) of all residences.
- » Locate pocket parks within two blocks of all residences.
- » Allow mowed turf only in those areas where human use requires it, such as playfields.
- » Allow manicured landscape only in boulevards, public streets, and pocket and neighborhood parks.
- » Connect all parks to residential areas by trails.
- » Create an interconnected network of trails within the parks and that link the parks with one another via the open spaces.

### NATURAL RESOURCE AREA AND PRESERVE /STORMWATER MANAGEMENT

- » Regard wetland and woodland open space systems as natural recreation spaces.
- » Ensure that all park lands are bordered by public streets rather than residences so that they are accessible and visible to everyone.

### VISUAL RESOURCES AND CULTURAL LANDSCAPES

- » Ensure that the region's cultural landscape is conveyed as West Broad Street travels through the watershed.

## PARKS PROGRAMMING

The Big Darby Accord recommends that the amount of land dedicated to parkland should focus on the amount of people the plan will be serving as a result of higher density in the Town Center than in the surrounding areas. The plan calls for the Town Center to contain the following:

- » At least 6 to 10 acres of parkland per 1,000 residents
- » Neighborhood parks located within at least ¼ mile radius of all residential properties

Because of the unique natural setting of the Big Darby Town Center, a substantial percentage of the area will be part of a comprehensive green network, with areas specifically reserved for common space and recreation facilities, far exceeding the amount required by any current local regulations.

National standards for parks and recreation programming have been utilized to determine the parks programming for the Big Darby Town Center as shown in the table below.

The National Recreation and Parks Association (NRPA) provides guidelines for calculating the number of acres of parklands that should be allocated per 1,000 people. The development program is anticipated to yield a population of approximately 7,400 people which, according to NRPA standards, would equate to 24 total acres of parkland. The number and size of the parks designed within the Big Darby Town Center open space framework exceed the national standards to provide 15 parks totalling 74 acres.

FUTURE COMMUNITY POPULATION ASSUMPTIONS: APPROXIMATELY 7,400 PEOPLE						
PARK TYPE	*NRPA GUIDELINES ACRES/1000 PEOPLE	TOWN CENTER ACRES PER SITE	TYPICAL ACRES PER PARK	RECOMMENDED NUMBER OF PARKS	ACTUAL NUMBER OF PARKS	TOTAL ALLOCATED ACRES
Pocket Park	.52/1000	4	0.50	8	18	36
Neighborhood Park	.85/1000	6	8.00	1	4	24
Community Park	.93/1000	7	21.50	possibly 1	1	7
Athletic Complex	.89/1000	7	15.00	possibly 1	1	7
Totals		24			15	74

*\*Parks Planning Guidelines 3rd. Ed. National Recreation and Park Association*



# OPEN SPACE FRAMEWORK

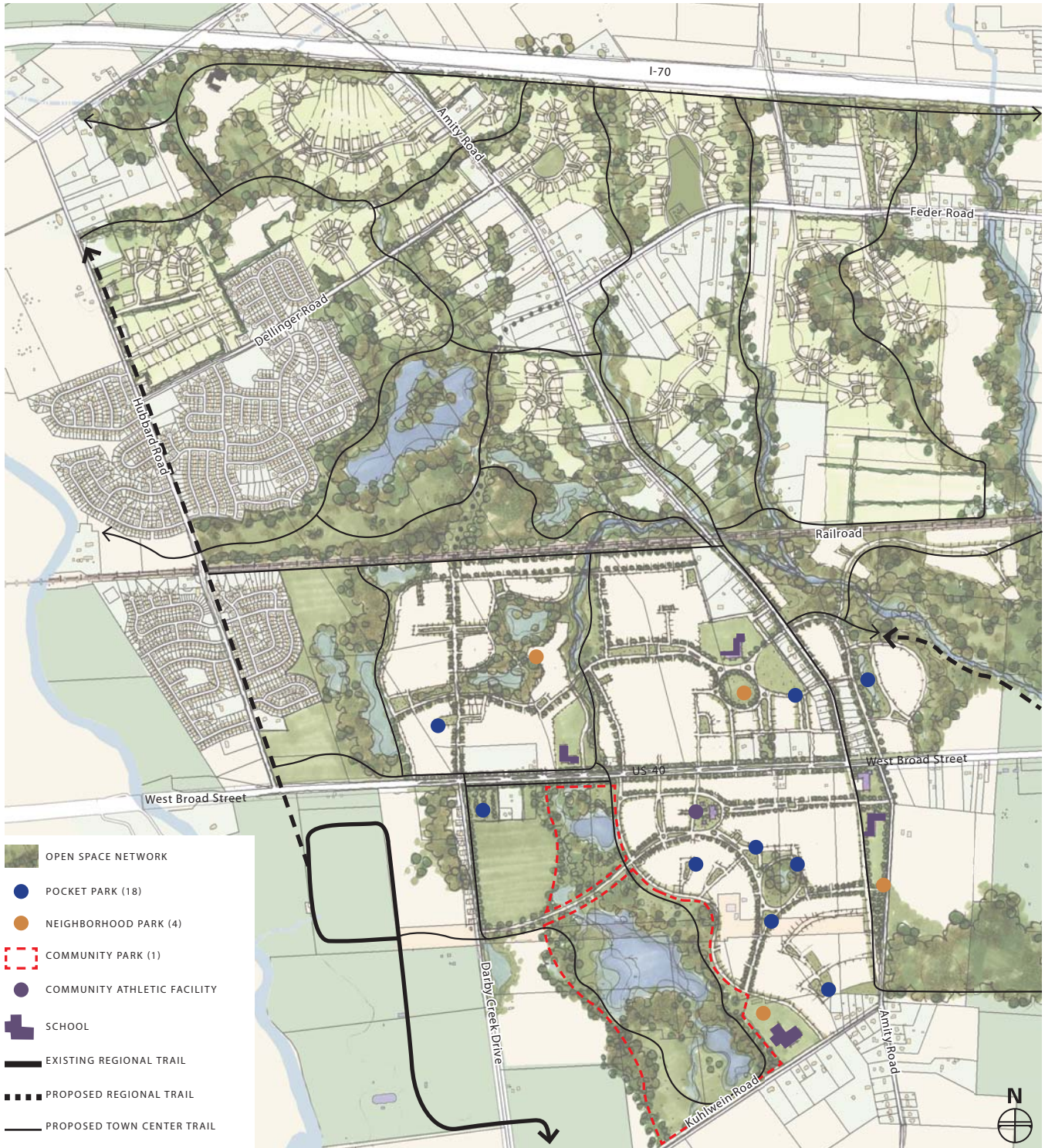
## RECREATION PROGRAMMING

Recreation programming guidelines shown in the table below indicate the number of sport facilities recommended per person. The number of facilities calculated was then rounded and related to the school sites and community athletic facilities.

FUTURE COMMUNITY POPULATION ASSUMPTIONS: APPROXIMATELY 7,400 PEOPLE			
SPORT	*FACILITIES PER 1,000 POPULATION (RECOMMENDED BY TSSLA)	*TSSLA RECOMMENDED FACILITIES	ACTUAL NUMBER OF FACILITIES
Multicourt	Min 1 + 1/2,000 - light 25-50%	3.7	5
Handball	Min 1 + 1/5,000-10,000	1.5	0
Volleyball	1/2,000 to 1/3-4,000	3.7	4
Shuffleboard	Min 1-2 + 1/2,000 - light 25%	1.5	2
Basketball	1 goal/500 1 goal/1,000 + one full court 1 acre/5,000 persons	7.4	8
Croquet	1/2,000 - light 25%	3.7	4
Horseshoe	Min 2 + 1/2,000 - light 25-50%	3.7	4
Softball	Min 1 + 1/3,000 - light 50%	2.5	5
Little League	1/10,000 Min 1 + 1/4,000 - light 25%	1.9	2
Baseball	1/3,000 Min 1 + 1/6,000 - light 50% 1/30,000 1/6,000	1.2	2
Football/Soccer	Min 1 + 1/5,000-15,000 Min 1 + 1/8,000 for football 2 acres/1,000 1/80,000	0.9	2
Tennis	Min 1 + 1/2,000 - light 50-76% 1,500 s.f./player 1 acre/5,000	3.7	4
Athletic Field	Approximate 20 acres 1/5,000-lighted accommodate 200 people/acre	1.5	1
Pool	1 for 10,000 people	1	1
Playgrounds	1 for every 3,000	3	3

*\*Time Saver Standards for Landscape Architecture (TSSLA), 2nd Ed. Table 210-1, p. 210-13*

## PARKS AND RECREATION PLAN





# OPEN SPACE FRAMEWORK

## ELEMENTARY/INTERMEDIATE SCHOOLS (3)

- » Playground
- » Softball
- » Multi-Purpose Fields
- » Shuffleboard
- » Horseshoe
- » Volleyball
- » Croquet
- » Basketball

## MIDDLE SCHOOLS (1)

- » Little League Fields (2)
- » Softball
- » Soccer
- » Football/Special Events
- » Baseball
- » Basketball
- » Running Track

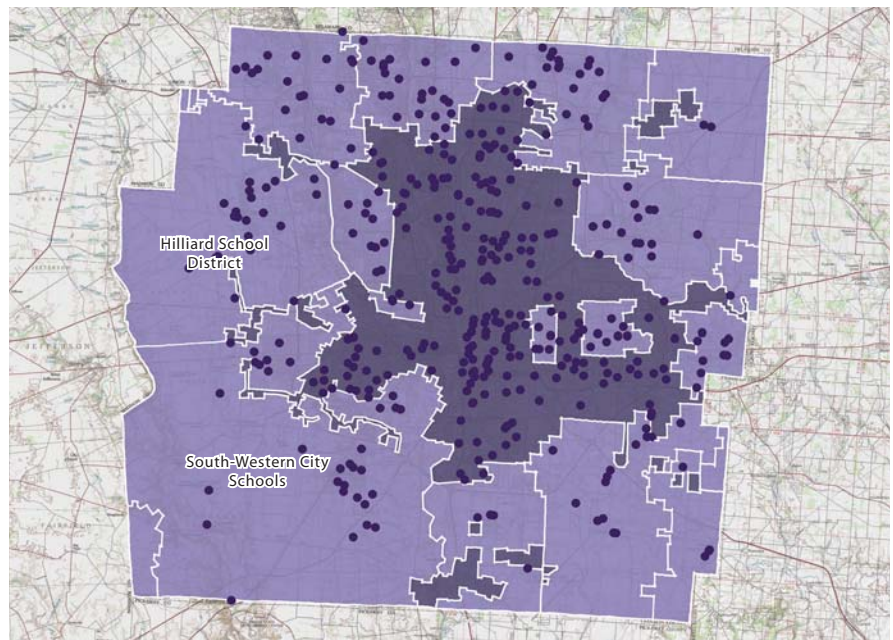
## COMMUNITY ATHLETIC FACILITY (1)

- » Pool (1)
- » Tennis (4)



## SCHOOLS

All active recreational space is to be located at or adjacent to a school in order to limit human disturbance to natural resource and preserve areas. The number of schools that are anticipated to be needed for the 3,600 students projected for the Big Darby Town Center are based on student generation rates and average school sizes experienced in the South-Western City Schools. The number of acres needed for the school sites and the types of recreation facilities are based on recommendations provided in the 2009 Ohio School Facilities Commission School Design Manual.



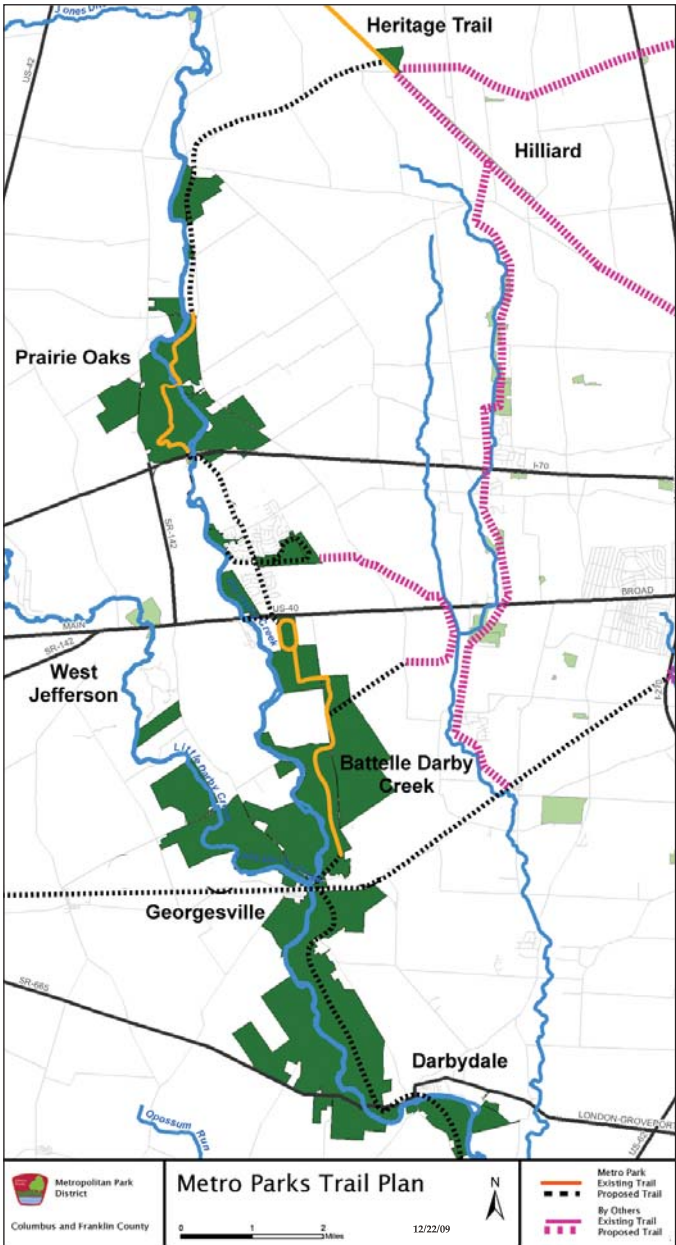
● SCHOOLS

SOUTH-WESTERN CITY SCHOOLS					
LEVEL	STUDENT GENERATION	TOTAL NUMBER OF STUDENTS	AVERAGE SCHOOL SIZE	NUMBER OF SCHOOLS	SITE SIZE/ SCHOOL (AC.)
Elementary	0.30	1080	450	2.4	14.5
Intermediate	0.25	900	700	1.3	17.0
Middle	0.25	900	450	2.0	24.5
High	0.20	720	1500	0.5	50

*Student Generation and School Size from Conversation with Phil Warner, Deputy Superintendent of South-Western City Schools*  
*Site Size is from Ohio School Facilities Commission 2009 School Design Manual*

## TRAILS

Trails are designed to provide connectivity within natural areas throughout the site. The Big Darby Town Center trails will connect to the existing Metropolitan Park District trails in the Battelle Darby Creek Park and the Prairie Oaks Park the trail systems that are currently proposed by Metroparks and other jurisdictions.



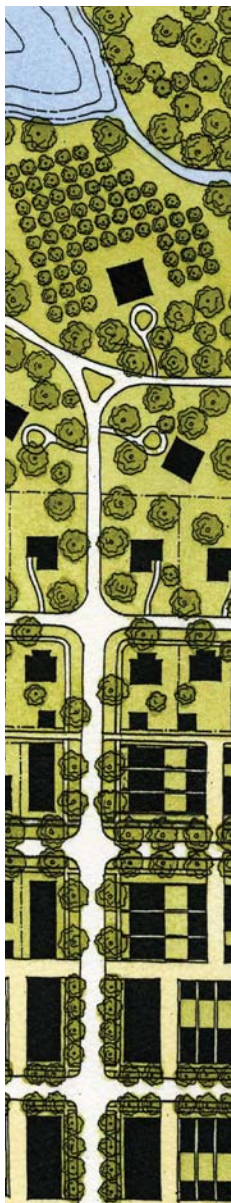


# OPEN SPACE FRAMEWORK

## LANDSCAPE CHARACTER TYPES

The following five landscape types are defined for the Big Darby Town Center within a transect that ranges from natural areas to an urban center.

Each portion of the site is designated in the Landscape Character Types diagram with the recommended treatment. In addition, it is anticipated that each neighborhood within the plan will have a distinct street tree and landscape palette to establish a distinct character for each district.



**NATURAL ZONE (T1)** are the preserved or restored natural areas that, at a maximum, allows for walking path construction.



**RURAL ZONE (T2)** embodies the cultural landscape and passive recreation. Facilities include picnic structures, multi-use paths, water recreation access, and wildlife observation and interpretation. This zone includes conservation lots.



**SUB-URBAN ZONE (T3)** includes single-family homes at five dwelling units per acre. Pocket parks and neighborhood parks are part of the T3 zone.

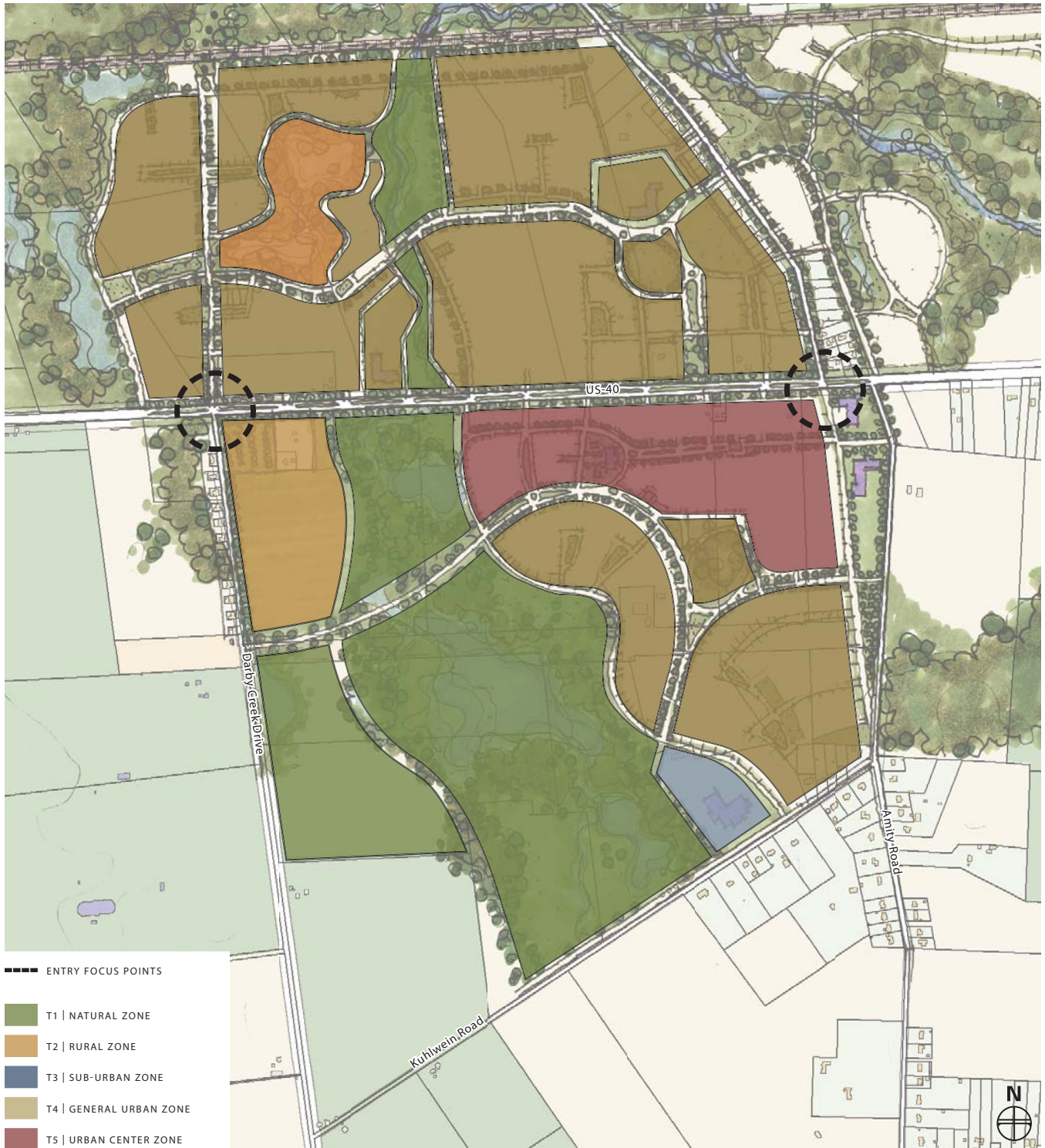


**GENERAL URBAN ZONE (T4)** includes higher-density single-family and multi-family lots. Neighborhood parks, pocket parks, schools, community parks, and facilities are located within this zone.



**URBAN CENTER ZONE (T5)** includes the highest density single-family and multifamily lots within the Big Darby Town Center. It includes urban style parks.







# TRANSPORTATION

## TRANSPORTATION AND STREETS



*The Town Center was designated in the Accord as being west of I-270, north of West Broad Street and south of I-70.*

The existing traffic and street network in and around the Town Center area was analyzed as part of the master plan process. Specifically, major and minor arterial capacity as well as a potential I-70 interchange location and justification were evaluated for this plan.

### MAJOR ARTERIALS

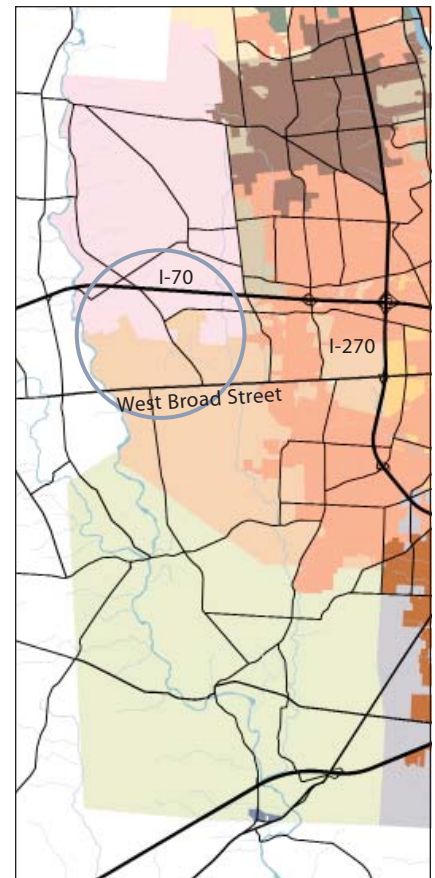
Transportation planning considerations strongly support locating the earliest and most intensive stages of the Big Darby Town Center near West Broad Street, the only arterial road serving the entire Town Center area.

A location centered on West Broad Street will minimize the amount of new road mileage required for the Town Center, limit the amount of new travel on existing local roads, and permit a gradually staged buildup of the Town Center.



*The Town Center site encompasses many transportation facilities such as frontage along I-70 and West Broad Street. Hilliard Rome Road and I-270 are nearby north-south transportation corridors.*

*The Town Center also sits amongst two jurisdictions: Brown Township and Prairie Township.*



West Broad Street is the primary route between the Town Center and the regional freeway system, through either the West Broad Street/I-270 interchange (interchange #7 on I-270) or through the Hilliard Rome Road/I-70 interchange (interchange #91 on I-70). Two programmed road improvements – the relocation (and grade separated rail crossing) of Hilliard & Rome Road and the traffic operation and streetscaping of West Broad Street – will further establish West Broad Street as the primary access route to the regional freeway system. Although a new I-70 interchange suggested in the Accord would replace West Broad Street as the primary access to the regional freeway system, the likelihood of such an interchange being constructed is now too remote for it to be assumed in planning for the Town Center.

West Broad Street is also the most direct route between the Town Center and the existing commercial destinations along West Broad Street and therefore like to draw a substantial number of trips from the proposed Town Center.

Key features of the Town Center street plan will benefit from the capacity of West Broad Street, even as it retains its function as a major regional arterial highway by:

- » Limiting Town Center access to West Broad Street to properly spaced new public cross streets that avoid the need for driveways and parking entrances from West Broad Street.
- » Using the new internal street network of the Town Center to control the need for new traffic signals on West Broad Street, thus minimizing the impact on West Broad Street traffic capacity.
- » Creating a supporting parallel street network, so that local trips (within the Town Center) do not need to use West Broad Street for that travel.
- » Establishing a parklike preserve along West Broad Street through the Town Center, preserving the existing rural feel along the road.
- » Siting the commercial area (“Main Street”) of the Town Center close to West Broad Street, with both good local street access to it and immediate access to parking from the proposed new local streets.



*The site is served by two primary east-west access routes along Fisher Road to the north and West Broad Street along the southern edge of the Town Center.*



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# TRANSPORTATION

## MINOR ARTERIALS AND COLLECTOR ROADS

Hilliard & Rome Road is an important link for the proposed Town Center site, for access to the regional Interstate system via the I-70/Hilliard & Rome Road interchange (interchange #91 on I-70). This link is an alternative, for town center travel, to the use of the I-270/West Broad Street interchange (interchange #7 on I-270). Two routes connect the Town Center site to the I-70/Hilliard & Rome Road interchange: (1) for the southern part of the Town Center site, the combination of West Broad Street and Hilliard & Rome Road and (2) for the central and northern part of the town center site, Amity Road connecting to Feder Road.

Two north-south minor arterial roads – Hilliard & Rome Road and Alton & Darby Creek Road cross over I-70, and therefore have value for the Town Center site, providing north-south access to important concentrations of employment in Hilliard and Dublin, without requiring the use of the Interstate system.

Two collector roads – Alton Road and Galloway Road – provide access between the Town Center site and the sparsely developed areas south of it. A combination of Galloway Road and Georgesville Road to interchange #5 on I-270 could be used as an alternative to West Broad Street and interchange #7 on I-270 for motorists destined for I-270 southbound.

## I-70 INTERCHANGE

A new interchange on I-70 to be located in the Town Center area (tentatively, around milepost 88) was included in the master plan of the Big Darby Accord. That plan's concept for this interchange called for a design that allows interchange access to and from the south (Prairie Township), while discouraging it to/from the north (Brown Township).

The proposed interchange would not only serve its immediately surrounding area in the Big Darby Town Center site but also would: (1) be the preferred means of freeway access for an area extending to the south and west well beyond the Town Center area and (2) reduce the volume of traffic using the I-70/Hilliard & Rome Road interchange (Interchange 91 on I-70).

Despite its inclusion in the Accord, a new interchange on I-70 should not be assumed as a “given” in planning the town center, because of:

- » Regional planning status – A new I-70 interchange has not yet been incorporated into the long range transportation plan for the greater Columbus

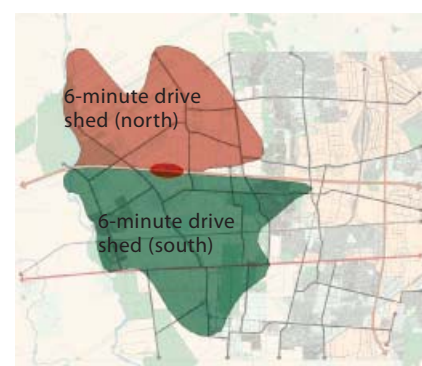
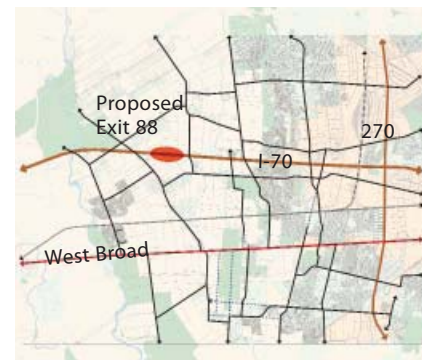


*Access to I-70 is limited at the site's boundary.*

region. Accordingly, no planning or design for the new interchange has been included to date within the regional transportation improvement program (TIP).

- » Federal Highway Administration (FHWA) status – An Interchange Justification Report (IJR), a requirement for gaining Federal Highway Administration (FHWA) approval for adding an interchange, has not been funded or even seriously advanced.
- » Traffic impact mitigation – A new interchange is not a reasonably-scaled mitigation for the traffic impacts generated by the proposed Town Center.
- » Cost effectiveness – The level of development being considered for the Town Center would generate only a small fraction of the traffic that would justify the investment in a new interchange.
- » Impact on Brown Township – A number of interchange designs, some of them in wide use on Interstate highways throughout the U.S., have ramp configurations that limit the connection to the surrounding road system. Such a design for a new interchange on I-70 could be used to limit ramp connections to only those roads to the south of the proposed interchange (i.e., in Prairie Township). However, this limitation would be ineffective in preventing the use of the interchange for trips to/from the north (i.e., to/from Brown Township). No matter how a new interchange would connect to only the adjacent road system in Prairie Township, the existing road system with its three crossings of I-70 (Amity Road, Jones Road and Alton & Darby Creek Road) would provide direct and plentiful access between the new interchange and Brown Township.

Beyond recognizing in this Town Center Plan that a new interchange on I-70 is not a “given”, it is strongly recommended that further consideration of a new interchange be pursued only through the ongoing regional transportation planning process of the Mid-Ohio Regional Planning Council (MORPC).



*If an I-70 interchange were to be installed at mile marker 88, the drive shed, using existing street alignments would be almost equally distributed north and south of the interstate.*



# TRANSPORTATION

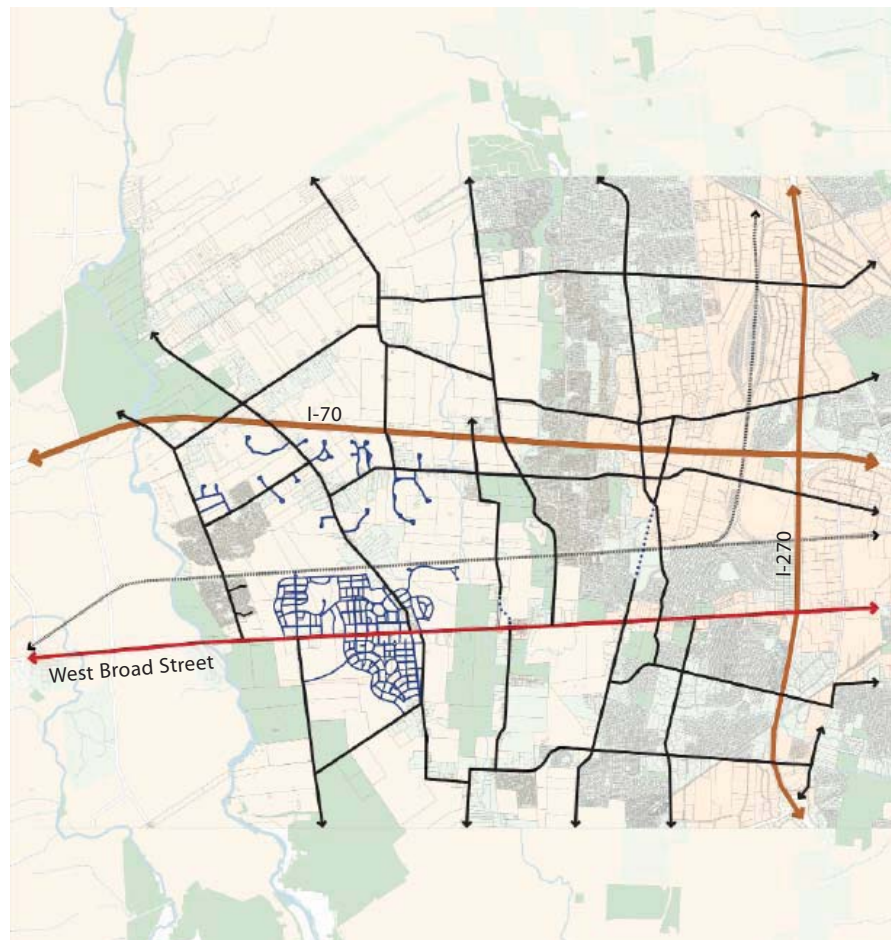


*The reconnaissance process analyzed the existing network of streets to determine appropriate connections for a proposed framework.*

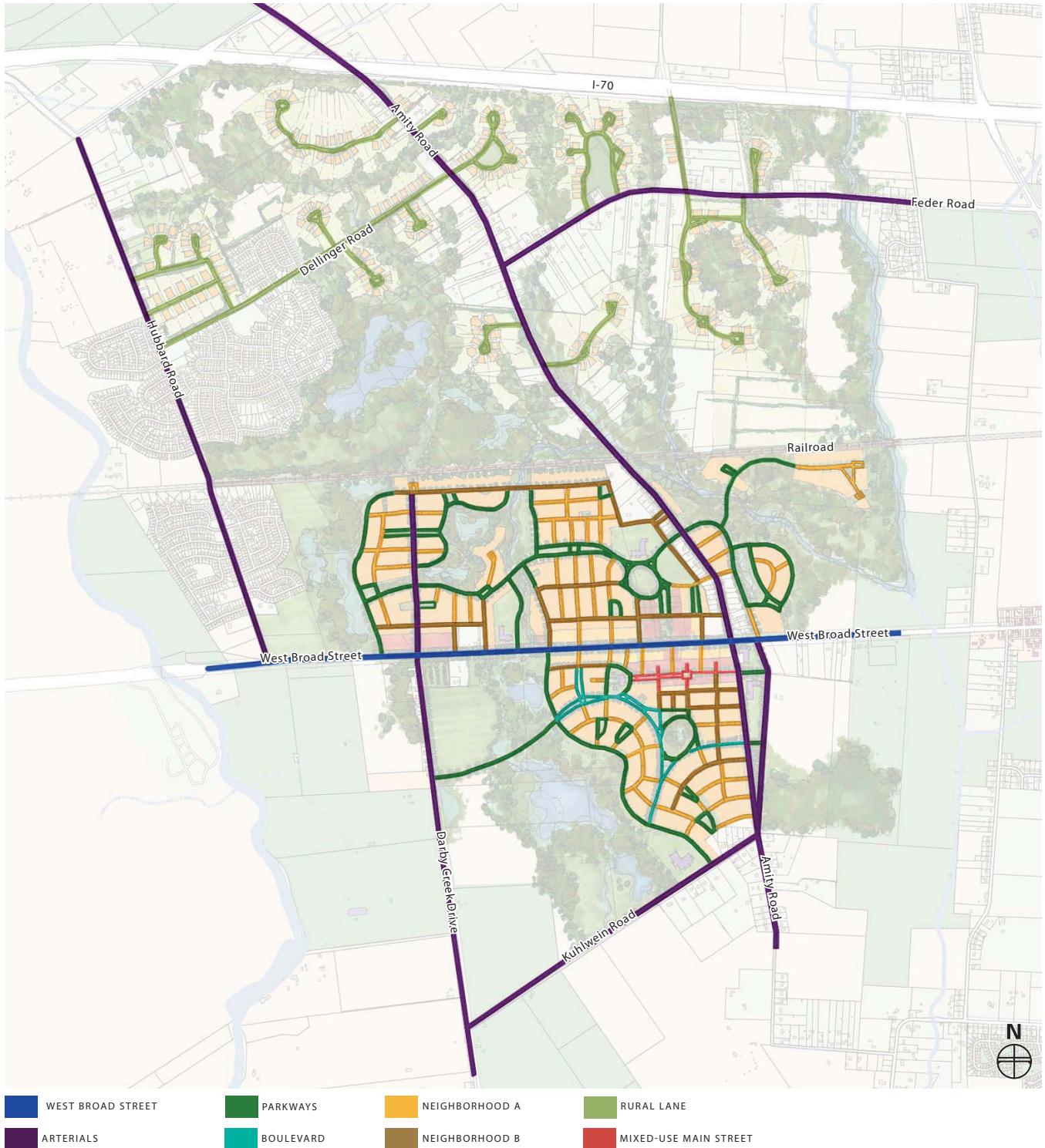
## PROPOSED STREET NETWORK

Four extensions or relocations of existing roads are envisioned as part of the Town Center Plan:

- » The currently planned relocation of Hilliard & Rome Road between West Broad Street and Feder Road.
- » A short crossover at West Broad Street between Alton Road and Cole Road, eliminating the “dog leg” movement on West Broad Street now required for north-south travel along the combination of these two roads.
- » Two east-west extensions of Hall Road into the Town Center site.



*The design charrette analyzed existing transportation facilities and identified corridors show in dotted lines for future extensions. By providing an interconnected system, much of the traffic pressures can be reallocated from West Broad Street.*





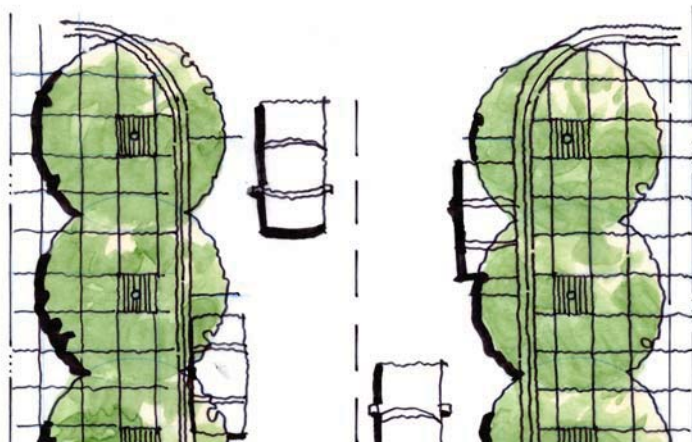
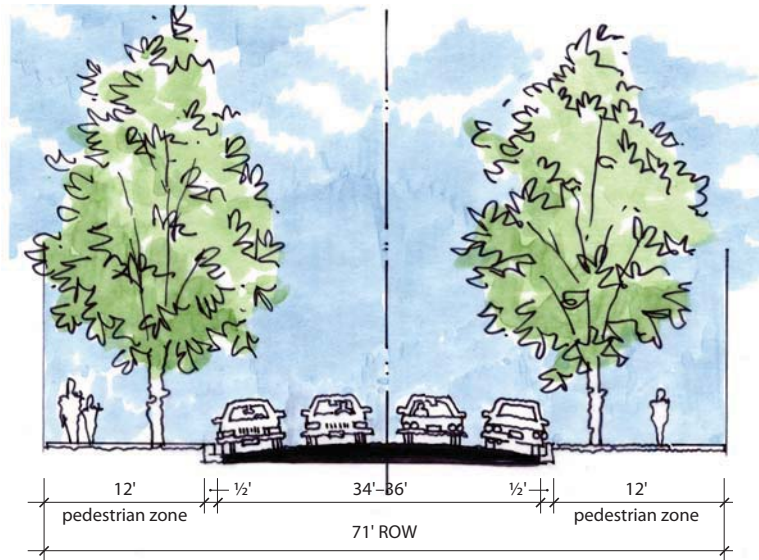
# TRANSPORTATION



*Mixed-Use Main Street*

## PROPOSED STREET NETWORK: MIXED-USE MAIN STREET

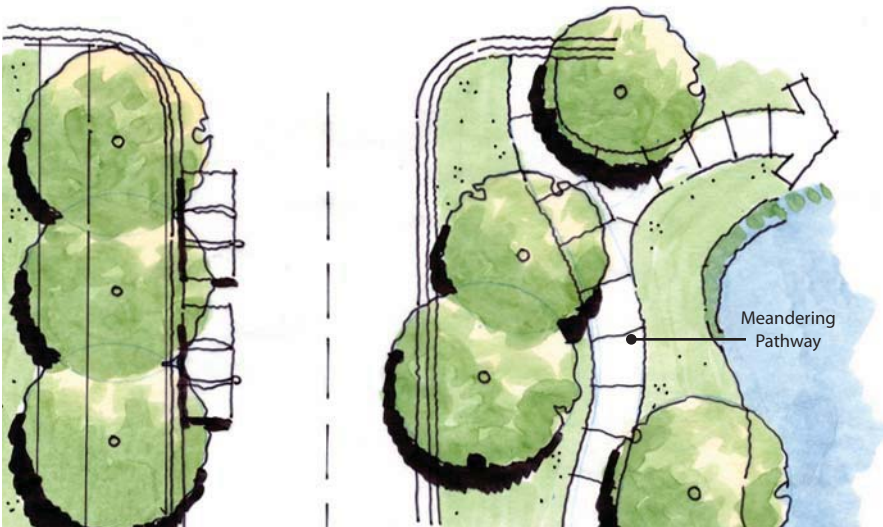
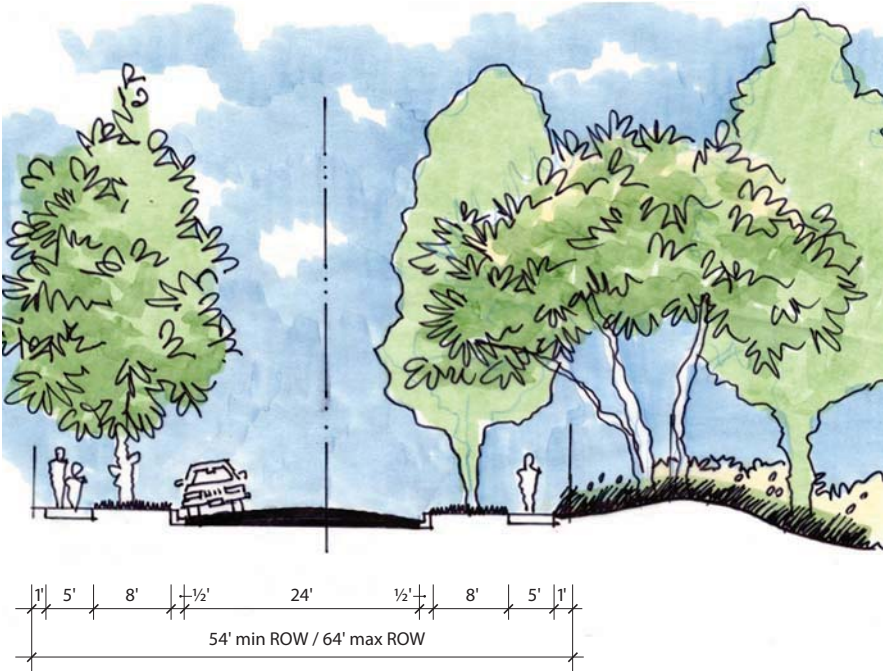
The Main Street right-of-way is defined by a two-lane street with on-street parking and wide sidewalks adjacent to the curb. The large sidewalks accommodate pedestrians and outdoor seating areas, while the minimal setbacks allow high visibility for the retailers and their consumers. The design of the cartway and the designated parking stalls permit freely flowing traffic, unhindered by the presence of parked vehicles.





**PROPOSED STREET NETWORK: PARKWAYS**

Parkways treat edges along natural corridors and features by responding to the context, scale, and character of its address. The proposed street type provides for a two-lane street with parking on one side. The design accommodates residential frontage on one side of the right-of-way while providing special opportunity for parks and open space features with adjoining pathways for the other side.



*Parkways*





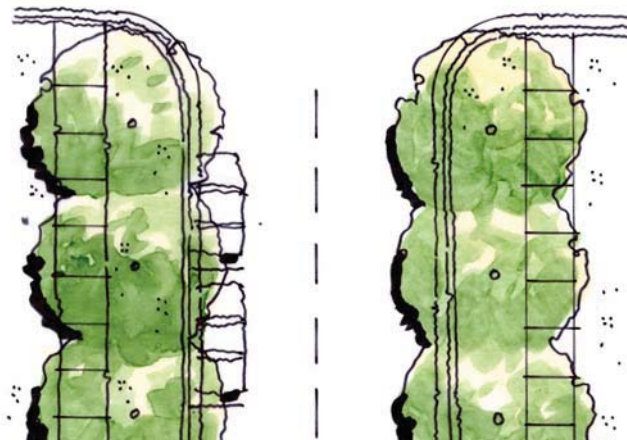
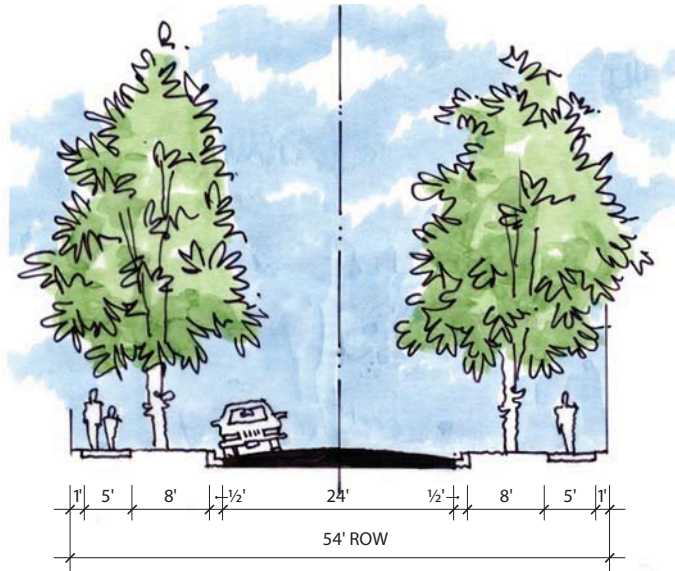
# TRANSPORTATION



*Neighborhood Street: Type A*

## PROPOSED STREET NETWORK: NEIGHBORHOOD STREET A

The Neighborhood Street 'A' is defined by a two-lane street with parking on one side, sidewalks on both sides, and planting strips to buffer the residential frontage. The design is the standard cross section for residential neighborhoods with larger lots. This street type prioritizes pedestrian walkability, on-street parking, and tighter right-of-ways to create a sense of intimacy. On-street parking and a tighter right-of-way are carefully designed to reduce traffic speeds and minimize environmental impact, while maintaining strong connections from the residential neighborhoods to connecting uses.



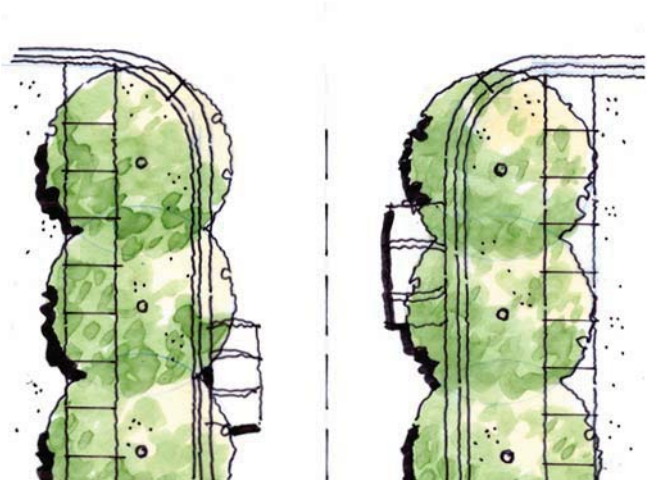
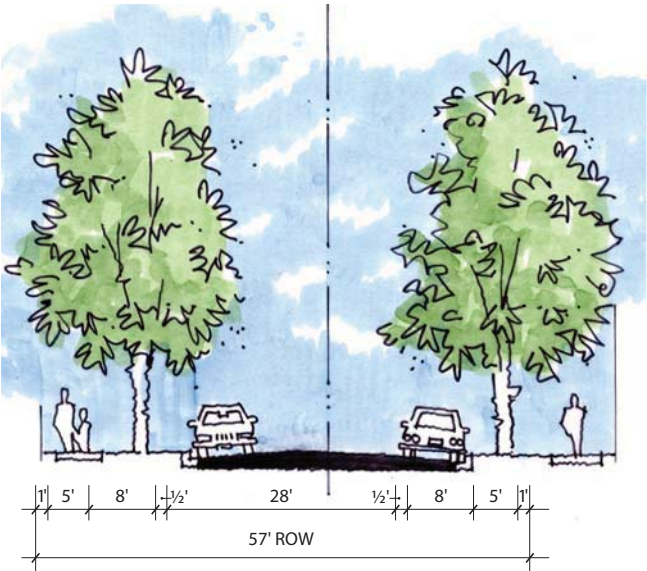


**PROPOSED STREET NETWORK: NEIGHBORHOOD STREET B**

The Neighborhood Street ‘B’ is defined by a two-lane street with parking, sidewalks, and planting strips to buffer the residential frontage on both sides. The design is the standard cross-section for residential neighborhoods with compact lots or with multi-family residences. Although lower hierarchically, this street type plays a vital role in distributing residential multi-modal traffic through the neighborhoods.



*Neighborhood Street: Type B*





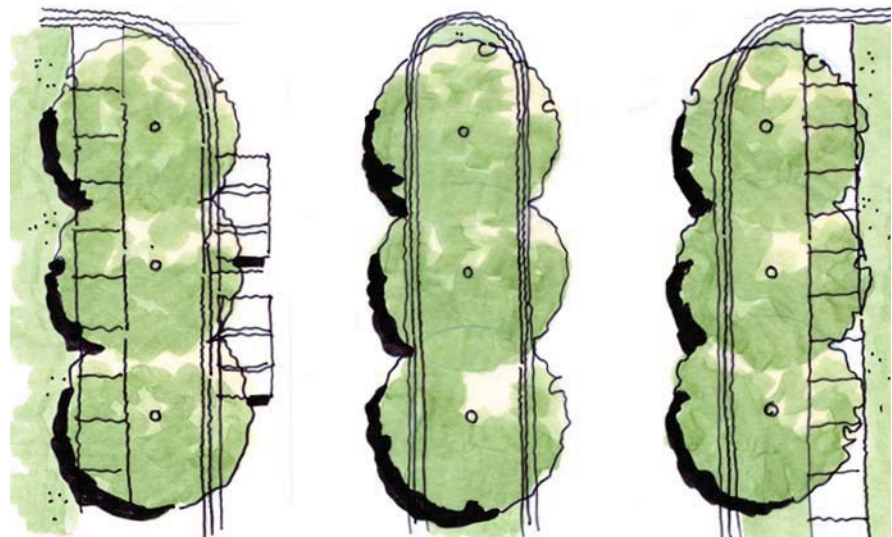
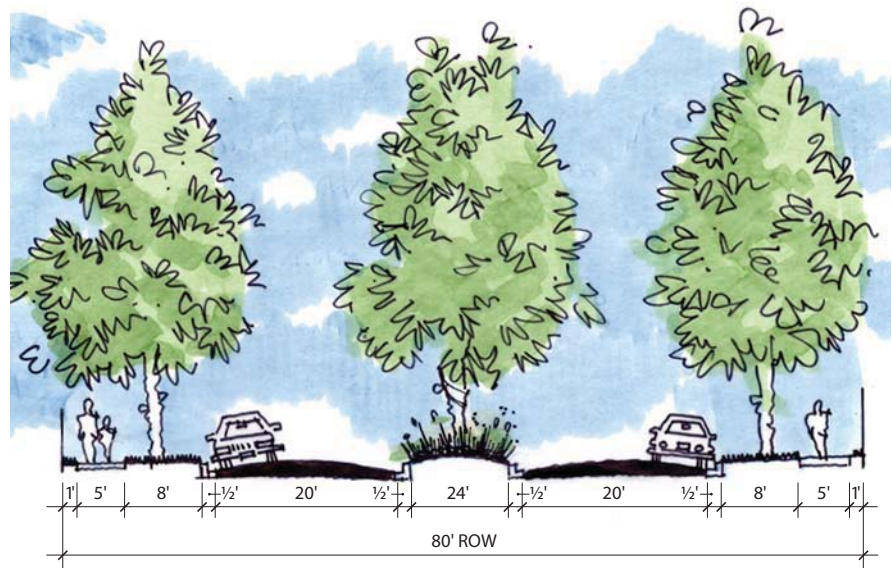
# TRANSPORTATION



*Collector Street*

## PROPOSED STREET NETWORK: BOULEVARD STREETS

Collector streets serve as the primary streets, facilitating movement, providing places for neighborhood activity to occur, defining edges and open space moments, and connecting places within a neighborhood. The design encompasses a two-lane divided street with landscaped median, accommodating residential frontage, with parking, sidewalks, and planting strips adjacent to the curbs on both sides.





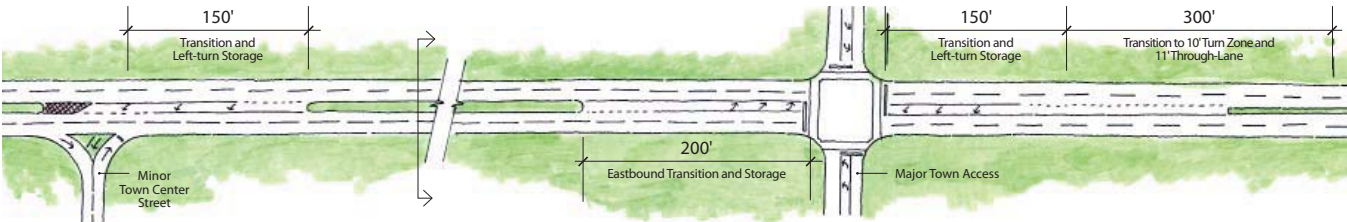
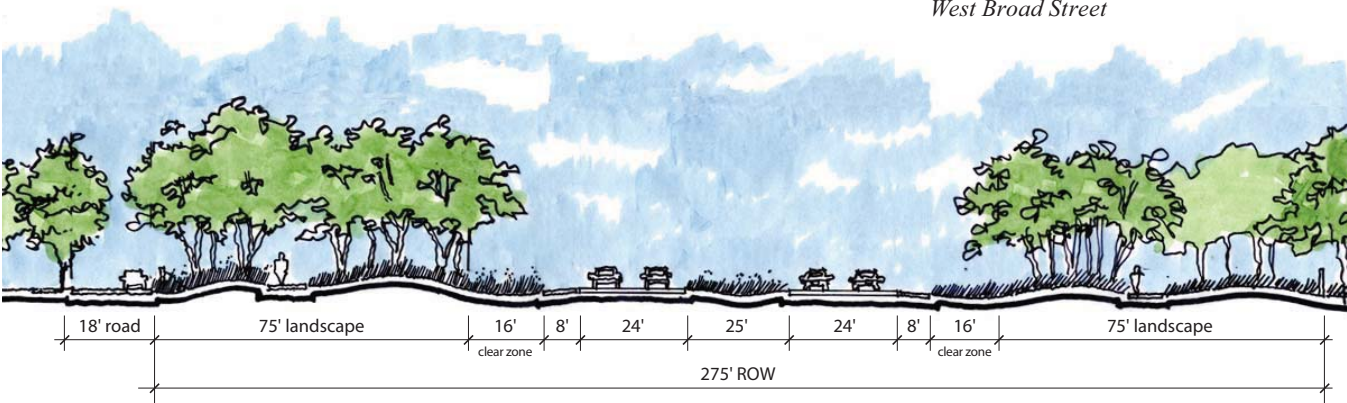
**PROPOSED STREET NETWORK: WEST BROAD STREET**

The proposed section of West Broad Street maintains the existing four lanes of traffic with additional features to be implemented.

For example, proper left-turn lanes should be created as well as right-in/ right-out, left-in access and with signalized intersections at major Town Center intersections. The median should be widened and a 75-foot landscaped buffer to each side of road should be placed to improve the landscaping. To encourage pedestrian traffic, a 10-foot multi-use trail within the landscaped buffer should be included.



*West Broad Street*





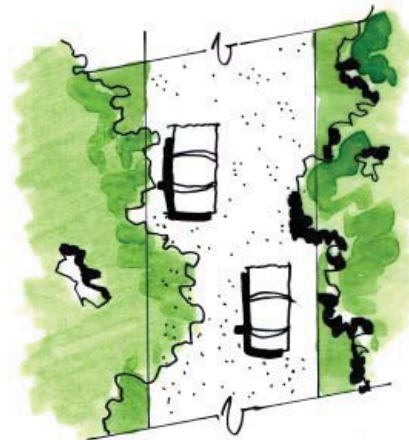
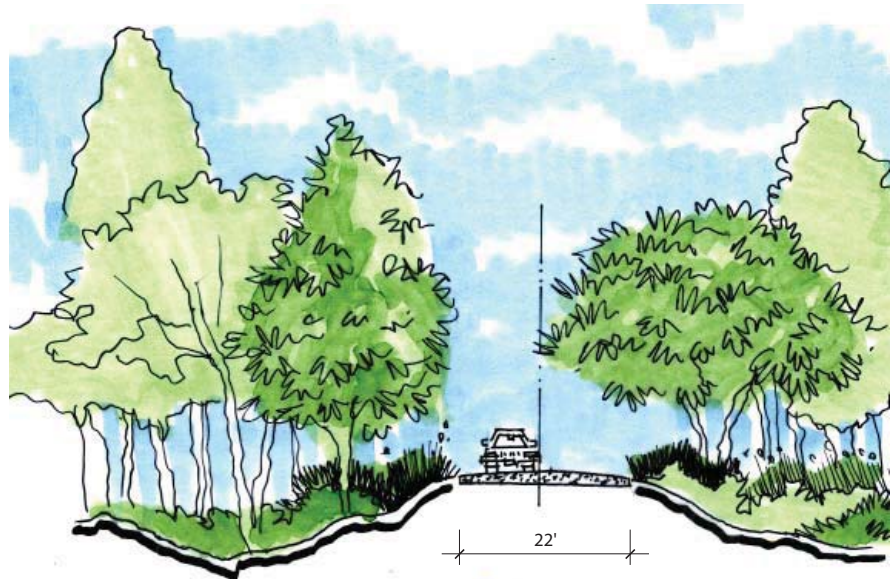
# TRANSPORTATION



Rural Lanes

## PROPOSED STREET NETWORK: RURAL LANES

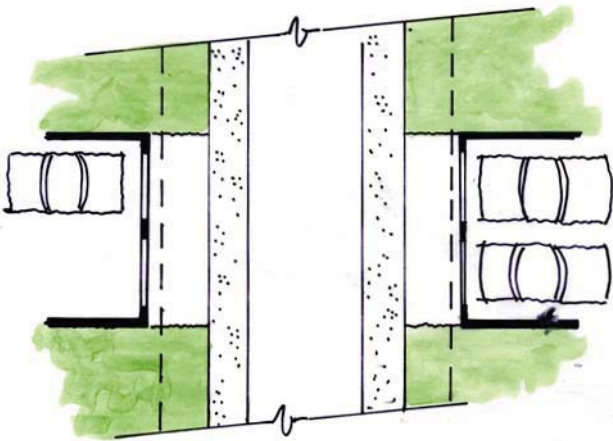
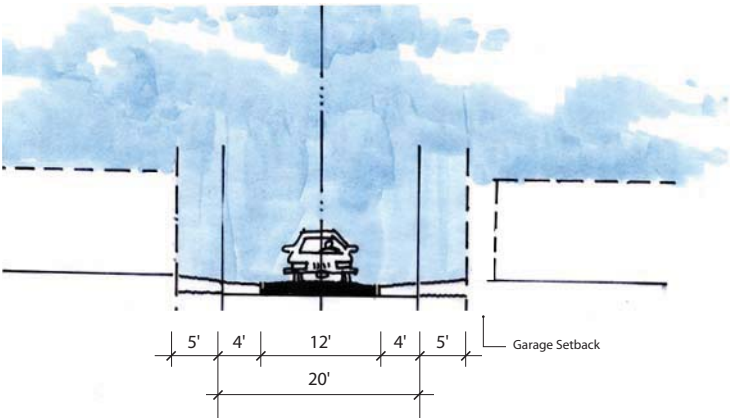
A rural lane assumes a less formal characteristic than the other street types. With a narrow right-of-way, this two-lane road, with no parking, is suited for rural or very low-density frontage. Formalities such as the curb treatment, sidewalks, street trees, and on-street parking may begin to disappear as the lane communicates a more rural aesthetic.





**PROPOSED STREET NETWORK: ALLEYS**

Alleys provide for service functions and serve as ancillary address in residential areas. They provide access to parking lots and structures; serve as the preferred location for garbage pick-up and utility lines, and locations for accessory units and niche retail uses.





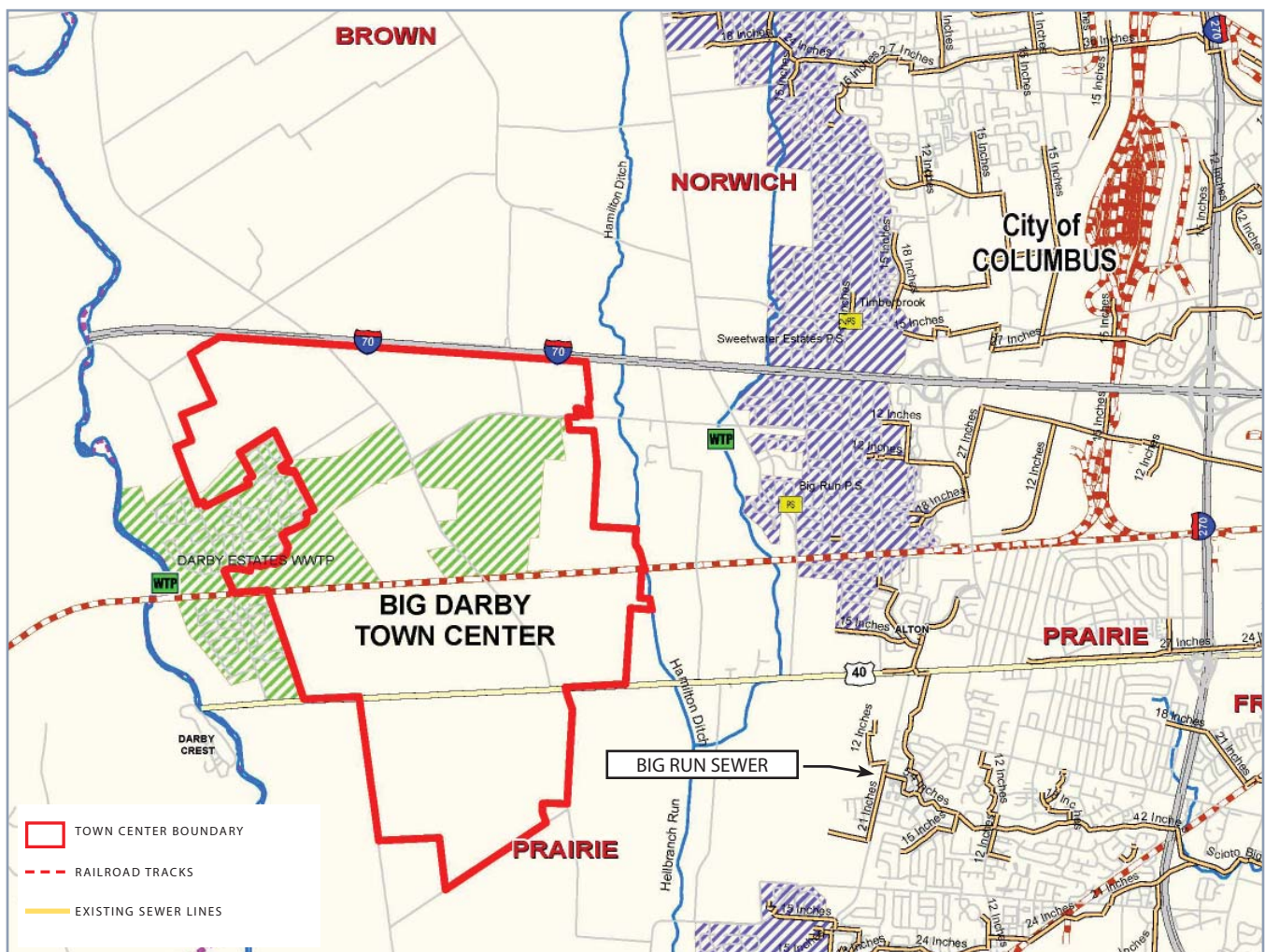
# UTILITIES AND INFRASTRUCTURE

## SEWER AND WATER

The plan for the Big Darby Town Center is only possible through the extension of sewer and water service from the City of Columbus. Without these services, there has been an effective development moratorium in this area for nearly 13 years, as the OEPA will not approve any new septic or package treatment plants within the Darby watershed. The following section highlights the issues and strategy surrounding this undertaking.

### WASTEWATER TREATMENT: EVALUATION OF OPTIONS

Most of the Big Darby Town Center drains towards Hellbranch, located east of the subject property, which then drains further south into the Big Darby Creek. A portion of the site, located in the northwest corner, drains directly to the Big Darby Creek. During the Accord process, discussions and negotiations



The Big Run sewer is the best location for connecting the Big Darby Town Center system.



were formulated between the City of Columbus and the various jurisdictions to allow for the Big Darby Town Center to discharge into the Big Run sewer located south of Route 40, redirecting the flow from the Town Center into a different sewershed.

The Big Run trunk sewer drains to the Jackson Pike Wastewater Treatment Plant, which is then interconnected with the Southerly Wastewater Treatment Plant, both of which are operated by the City of Columbus. The treatment plant capacity of these two plants combined is 300 million gallons per day (mgd). The City has imminent plans to increase the capacity of the Jackson Pike WTP to 150 mgd and the Southerly WTP to 330 mgd, which will result in a combined capacity of 480 mgd. The City also has programmed a series of system-wide upgrades to the sanitary sewer collection system, to reduce wet weather flows and disconnect storm and sanitary systems. These improvements are programmed over time, as the costs of these improvements will be borne by rate payers, but this connection is considered the most advantageous for this project.

Other treatment facilities and strategies were also analyzed, and subsequently dismissed as part of this Town Center design process, either because of cost, location, or capacity, and they include:

- » The Darby Estates Wastewater Treatment Plan
- » A variety of other small treatment facilities owned and operated by Franklin County
- » A new Big Darby Town Center Wastewater Treatment Facility

As described in previous sections, however, the Big Darby Town Center is divided into Village Development and Conservation Development. The conservation area is a candidate for alternative wastewater treatment, utilizing community-based septic strategies. Ultimately, the decision to pursue this form of treatment will be up to the development authority based on several factors including cost, market, and proximity to infrastructure. The following page indicates the potential locations for sewer infrastructure and septic fields.



# UTILITIES AND INFRASTRUCTURE



*Proposed Sanitary Sewer Layout*



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### **DOWNSTREAM SEWER CAPACITY**

During the initial Accord effort, a sewer study was prepared by the City of Columbus to establish existing sewer capacities, and it was determined that the existing Big Run sewer has capacity for 5,000 residential equivalent units (REUs).

Another sewer study is being prepared by CDM consultants for the City of Columbus. This study is being completed in response to the EPA consent decree, requiring further evaluation of the infiltration/inflow and overflow situations throughout the entire City sewer system. The study is not yet complete, and will need to be referenced when detail design of the proposed Big Darby Town Center system is commenced.

### **EXAMINATION OF PROPOSED SANITARY SEWER FLOWS**

The proposed town center program of development is capped at a maximum of 5,000 REUs based on infrastructure capacity. Therefore, the system extension is sized to accommodate this full capacity. Ultimately, however, the Town Center will be developed with a full mix of uses that include residences, offices, shops, schools, and public facilities. The non-residential uses each have a square-footage that equates to 1 REU and can be used to ensure the capacities are not exceeded as the development is built out.

For the purpose of estimating the sizes needed, and therefore the cost of the system, flows have been estimated for the development scenario of 5,000 single-family homes to serve the entire Town Center as originally contemplated by the Accord. The resulting estimated sanitary sewer flow is 20.7 cfs. This would represent the highest flow rate possible with the Big Darby Town Center development. The current program supported by the market study yields a more modest flow of 17.2 cfs, but falls short of the total allowed capacity by about 1200 REUs.

It is important to note that the background documents associated with the Accord sewer capacity evaluation estimated a peak flow of 12 cfs and 18 cfs, for the 5,000-unit program. The methodology in estimating sewer flows needs to be validated with the sewer flow estimates herein, which are based upon City of Columbus design manual criteria. For the purposes of estimating costs and sizes conservatively, this plan used a 20.7 cfs flow rate and tested the system conceptually as follows.



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# UTILITIES AND INFRASTRUCTURE

## **SANITARY SEWER PIPE SIZES**

The City of Columbus sewer design criteria establishes minimum pipe slope of 0.12% for 18 inches diameter and larger sewers. Design capacities for proposed sewers shall not exceed 75% for pipes 18 inches through 27 inches diameter and 92% for pipes 30 inches and larger. The estimated sewer size for the Big Darby Town Center will be 36 inches in diameter and sloped at 0.15% minimum.

## **PROPOSED DOWNSTREAM ALIGNMENT AND COST**

Utilizing topography provided by Franklin County (GIS available topography), a sewer outfall alignment has been analyzed by the consultants to serve the Big Darby Town Center. The construction cost to extend sewer to the site from the existing Big Run trunk sewer is estimated at \$4.2 million. If the sewer is designed to meet all City of Columbus design standards, a gravity outfall is possible, but potentially problematic at the Hellbranch Run crossing. The City of Columbus criteria stipulate 4 feet of cover over the sewer at stream crossings, and require pipe to be built crown to crown. The current estimated pipe cover at the Hellbranch Run stream crossing appears to be just shy of this requirement by mere inches. Accurate field surveying to verify existing stream invert and existing sewer inverts is recommended as a next step toward implementing this plan. If the City of Columbus and/or Franklin County will relax the design requirements, or if a more advantageous stream crossing location can be identified (that achieves sufficient clearance under the stream) a gravity sewer will be feasible. If not, and a wastewater pump station is required, the size of pump station is estimated at 20.7 cfs (13.3 mgd) at a cost of approximately \$6 million.

The payment of a substantial sewer capacity charge will be required before discharge into the city system. This cost will be collected by Franklin County at the time of building permit, but then passed on to the City of Columbus. For planning purposes, this cost is estimated at \$5,574 per housing unit. Front footage charges are assessed at \$45 for sanitary sewer. The capacity fees that will be paid by this development are estimated at \$27.9 million.



SYSTEM IMPROVEMENT	SIZE/LENGTH	ESTIMATED COST
Outfall Sewer	36-inch Pipe – 11,000 LF	\$4.2 million
*Sewer Pump Station	13.3 mgd	\$6.0 million
<b>TOTAL ESTIMATED COST</b>		<b>\$4.2 million</b>
Front Foot Charges at \$45		\$5,574/unit
<b>CAPACITY FEES</b>		<b>\$27.9 million</b>

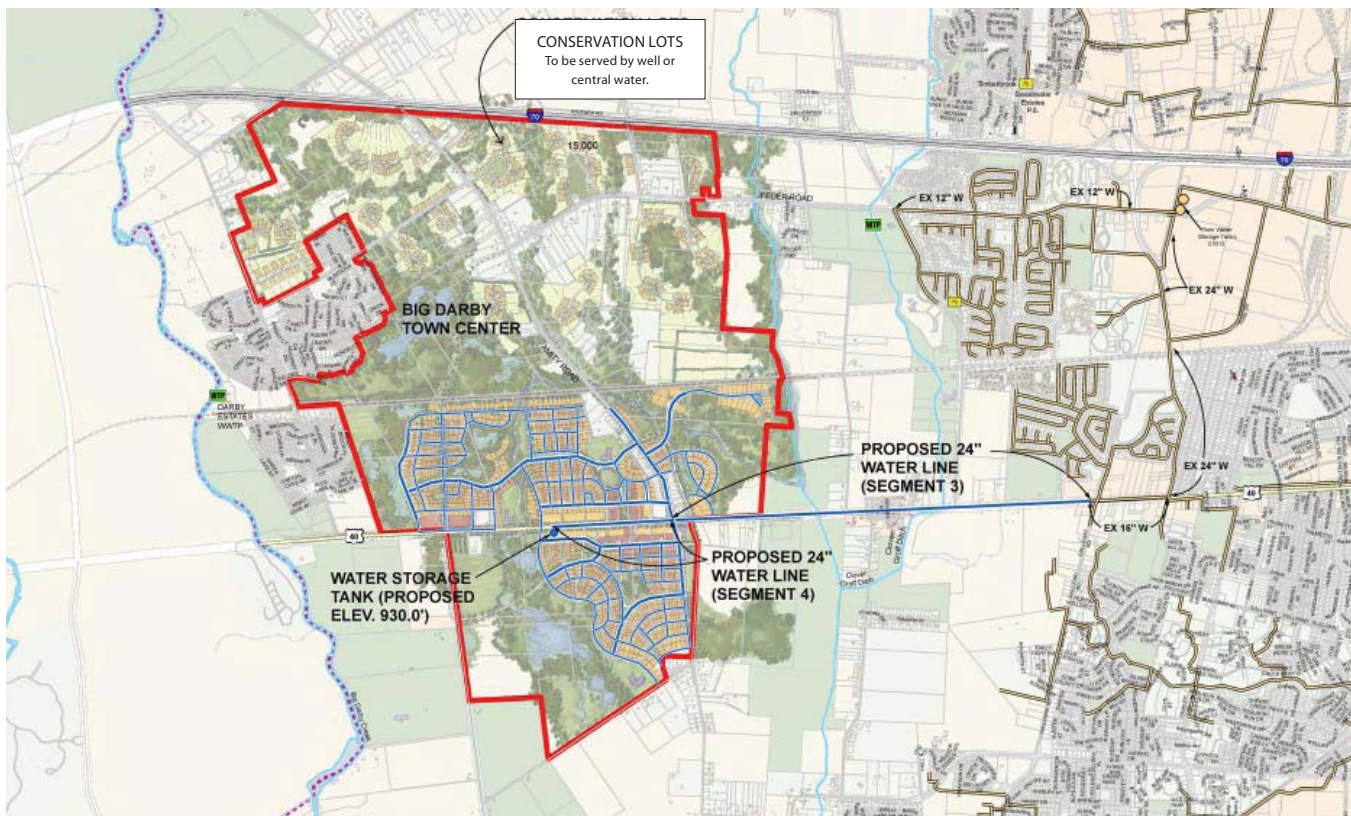
*\* Sewer Pump Station will only be necessary if it is determined upon field surveying and detailed engineering that there is insufficient pipe coverage at the Hellbranch Run crossing. We are cautiously optimistic that this will be unnecessary.*



# UTILITIES AND INFRASTRUCTURE

## WATER SERVICE

The existing City of Columbus water system is shown below. It is anticipated by the consultant that water service will be extended from Rome Hilliard Road south of Route 70, near two existing water storage tanks. With the southern shift of the Town Center now contemplated, a new waterline is proposed, extending from the existing 16-inch water main along Route 40 to the site. A second waterline was analyzed, extending from the tanks at Hilliard Rome Road, across Feder Road and then south along Amity Road to the project site, in order to build a redundant system. This added significant initial cost to the system extension and is seen as a phasable option as development warrants.



*The proposed connection to the City of Columbus water system is along W. Broad Street.*



## WATER EXTENSION SIZING

The proposed primary waterline to the Big Darby Town Center is estimated by the consultant as a 24-inch mainline extension of the 16-inch feed along US 40. This would connect to a new 1 million gallon water tank to be located on site. This system extension is estimated to cost \$9.5 million (See chart below for breakdown of costs). This single feed system is sufficient to service the early years of development in the Town Center. As development continues north from W. Broad Street, and additional conservation developments come online (outside of the Town Center), there will be additional financial ability, as well as service need, to complete a redundant system and tie the Big Darby Town Center extension into the 12-inch main in Feder Road.

As a result of this assumption, the waterline to serve Big Darby Town Center will need to be sized for other future development in the Accord master planning area. The City and the County have not yet determined definitive amounts and locations of future development. At some point in the future, the other proposed development needs to be estimated and factored into the sizing of this waterline extension.

The Town Center will generate an estimated water storage requirement for the variation in average daily consumption (ADC). The tank needs to be sized for both fire flow and variations in ADC, therefore, tank storage is estimated at 1,055,000 gallons (455,000 for ADC plus 2500gpm x 4 hour duration). A tank of this size will provide onsite storage and better pressures, eliminating some of the pitfalls of a single-feed system. For example, in this scenario, if the system were to temporarily shut down for maintenance, water distribution is still possible for a limited period.

SYSTEM IMPROVEMENT	SIZE/LENGTH	ESTIMATED COST
Waterline along Rt. 40	24-inch diameter – 11,500 LF	\$6.4 million
Waterline along Rt. 40	24-inch diameter in lieu of 8-inch pipe – 3,800 LF**	\$0.4 million
Water Tank	1 million gallon	\$2.3 million
Waterline onsite (increase in size)	16-inch diameter in lieu of 8-inch pipe – 8,000 LF**	\$0.4 million
<b>TOTAL</b>		<b>\$9.5 million</b>
<b>CAPACITY FEES</b>		<b>\$.3 million</b>

*\*\*The price for these improvements assumes the upgrade to a system-sized pipe (24-inch and 16-inch respectively) instead of a development-sized pipe of 8 inches within the Town Center boundary. The cost, therefore, only reflects the extra cost incurred as opposed to the total cost of the line.*



# UTILITIES AND INFRASTRUCTURE

## FUNDING THE INFRASTRUCTURE EXTENSION

The issue of how to fund the construction of sanitary sewer and water extensions and water storage facilities to the Big Darby Town Center is a critical issue. It is typical for treatment, storage, large water mains, and large collection sewers to be funded by the City, when such systems are within the City limits. In that case, the water and sewer capacity fees paid by development are utilized to retire long term debt for system wide improvements for this purpose.

At the Big Darby Town Center, because this system is connected to but not part of the City system, capacity fees are not available to fund the construction of this system-sized improvement. Therefore, some form of cost sharing among the City of Columbus, Franklin County, and the development entity will be necessary.

To help defray the cost of the system, the Big Darby Town Center master plan proposes a \$2000/unit charge be added to repay a portion of the infrastructure extension. The following chart identifies this proposed and other previously established funding mechanisms that allow the ultimate development authority to fund a portion of the sewer and water extension through fees.

The remaining funding required, \$7.8 million, would need to be paid for through grants and contributions from the City and the County or other sources. These other sources could include the remaining revenue mechanisms identified in the Accord Revenue Agreement (TIF or NCA fees), but there is concern that this may detract from the other intended uses of these funds. Of course, without this important infrastructure extension, no development of this scale can occur and revenue will not be generated by the Town Center, period.

ESTIMATED COST OF SEWER AND WATER EXTENSION		\$13.7 MILLION
FUNDS AVAILABLE FROM DEVELOPMENT		
Proposed NCA Sewer Charge		\$2.7 million (5% net present value)
FUNDS AVAILABLE FROM REVENUE SOURCES		
Developer Contributions (75% of total revenue generated from a \$2500/residential equivalent unit charge)		\$3.2 million (5% net present value)
REMAINING FUNDING REQUIRED		\$7.8 MILLION



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## APPROVAL, PERMITTING, AND MAINTENANCE

The City of Columbus and Franklin County will both review the proposed plans for the system extension. Inspection during construction will be handled by Franklin County, as will ultimate maintenance of the system. The City of Columbus plan review will be a courtesy review, and no plan review fees will be assessed. Franklin County review fees are nominal.

With this current arrangement, the water and sewer system built for the Big Darby Town Center is planned to connect to the City of Columbus system; however, from the point of connection to and within the BDTC, the system is proposed to be owned and maintained by Franklin County, not City of Columbus. Depending on who builds and maintains the water supply lines and water storage tank at BDTC, the county and city will need to establish schedules for filling of storage tanks at BDTC during off peak hours, utilizing automated tank level monitoring in both locations. Coordination of and the scheduling of sanitary flow wet well pump out will also need to be coordinated, to occur during non-storm events, whenever possible. These issues of system interface can simply remain open until the BDTC progresses to a final development process, but nevertheless, the cost split to build and maintain this system and the system interface will ultimately need to consider the limits of city versus county system.

Franklin County has expressed significant concern with regard to how to fund the costs to maintain this water and sewer system over time. Based on current scenario, the City of Columbus expects that the capacity fees will be collected by Franklin County, but then turned over to the City for future use. Similarly, the monthly water and sewer rates paid by homeowners will be collected by Franklin County but turned over to the City. The cost to maintain the CIP system sized water and sewer system and the onsite “subdivision” water and sewer system over a 20-year period is estimated at \$5.3 million. An equitable cost sharing between City of Columbus and Franklin County needs to be negotiated to address sufficient funding stream for Franklin County to maintain these systems. The City of Columbus suggested that Franklin County add a Franklin County maintenance fee to the regular monthly water/sewer usage charge for users of this system. A memorandum of understanding should be developed between the City of Columbus and Franklin County to establish an equitable cost sharing arrangement and revenue stream for both jurisdictions.

For the purposes of design and pricing the sewer and water extensions, this plan has maintained the 5000-unit capacity as prescribed in the Accord. While the current and conservative market projections anticipate fewer units in the 30-year timeframe, this does not suggest that the infrastructure should be built for less capacity. In fact, the cost difference is negligible.



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# UTILITIES AND INFRASTRUCTURE

## CAPACITY AND MARKET PROJECTION

To account for this “excess capacity” as it has been termed, this plan evaluated several scenarios and options. The following indicate the preferred way forward.

- » The 5000-unit capacity should be controlled by the development authority to give the flexibility to respond to unforeseen market demand.
- » Existing houses that are currently on septic and are within 200' of the Big Darby outfall should be allowed to connect into the system. The anticipated drawdown from the handful of units to whom this applies is minimal and the effect will be negligible to the impact of the Town Center.
- » Lake Darby Estates has been evaluated to determine whether they should be permitted to tap into the Town Center sewer and water. This is infeasible for the following reasons: (1) they are physically on the wrong side of the sewer-shed and would require a transformation of their treatment plant into a pump station as well as the addition of a force main in order to feed into the Town Center system (a several million dollar venture); (2) they are currently being served by Ohio American Water and it is unknown whether this private entity has any desire to turn over control of the system to a public entity; (3) there are no funds available to acquire or upgrade the system.



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## OTHER UTILITIES

The project site is within the service area of American Electric Power (AEP), Columbia Gas of Ohio, and AT&T. Inquiries were originally made with these agencies with regard to capacity and costs to provide services to a project with approximately 5000 residential units and 300,000 square feet of commercial retail.

AEP has a 3 phase service line along Amity Road and Feder Road. AEP has a planned substation to be built near the Columbus South Ohio Railroad and Cole Road (near the project site). AEP confirmed capacity to service this project. Based on current and near term agency guidelines, the cost to extend and construct electric service for this site would be borne by AEP; however the developer will be required to complete the trenching before AEP will install electric conduit. The cost of electric service to the commercial or retail portion of the site however will require a cost sharing split between developer and AEP.

Columbia Gas of Ohio will provide gas service to this site. Currently the nearest gas lines are located in Feder Road remote from the site and in Dellinger Road west of Amity Road. A larger 16-inch high pressure line exists in Hilliard Rome Road. In meeting with Columbia Gas of Ohio, they offered to provide early review and “ballpark” costs to serve the site, after a land plan is provided. This plan has been submitted and estimates are pending. This is not viewed as a “make or break” issue for this project.

AT&T Ohio will provide telecommunications service to this site. Existing facilities, costs and capacity to serve will be evaluated by AT&T at the time of final development plan processing.





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## **IMPLEMENTATION RECOMMENDATIONS**

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# OVERVIEW

Moving the Big Darby Town Center into the implementation phase is not a straightforward process. Multiple land owners currently own the land on which the Town Center would be developed and there are multiple vested interests and project stewards from the public sector. Development economics demand a phased development process. Real estate economies are still in flux. In addition, stronger levels of political will and increased availability of development capital are both necessary to proceed.

Four options for moving the Big Darby Town Center beyond design and into development were explored by the consultant and include:

- » Market-driven Development with Zoning Intervention
- » Public Sector Developer with Bulk Sale to Fee Developer
- » Catalytic Development Entity with Bulk Sale to Fee Developer
- » Public/Private Partnership

The first of these options, the Market-driven Approach, assumes that Prairie Township rezones the Town Center area according to this master plan document, allowing the development of the Town Center to happen as the market determines. The benefit of this option is that it requires little to no active involvement from the jurisdictions (beyond the zoning administration), but it encourages parcel by parcel development. This is especially problematic when it comes to achieving the OEPA's goals of coordinated stormwater management and the Accord's vision of sewer and water extension. Smaller development parcels would have neither the scale, nor the financial return to bear the burden of either of these infrastructure components.

Both the Public Sector Developer and the Catalytic Development Entity involve either the jurisdiction or its proxy to acquire lands within the Town Center boundary for the purposes of executing this plan. Once acquired, the Public Sector Developer or the Catalytic Development Entity would enable the properties for development (zoning approvals, necessary permitting, etc.) and then sell the project to a fee developer to execute the master plan. In either case, a substantial amount of up-front capital would be required to not only purchase and acquire the properties, but also to fund the infrastructure extension.

It was determined that none of these first three options were truly viable in this current economic climate, given limited access to financing and funding sources for this type of development. Therefore, the recommended implementation approach is through the establishment of a Public/Private Partnership (PPP) to realize the Town Center vision.





**PUBLIC/PRIVATE PARTNERSHIP**

The PPP does not require the acquisition of land via transactions, instead, it would engage individual land owners in a constructive negotiation, whereby they would commit their land into the Town Center development as an equity contribution. Individual contracts would structure compensation for land contribution. Compensation would likely be tied to the proceeds from the sale of the project to a master developer and could include some participation in the value that the Town Center fetches in the marketplace.

The benefit of this model is that the Town Center development can move forward without the need to raise capital for land acquisition. It does require, however, the establishment of a Development Authority to oversee the negotiations with landowners and to be tasked with the execution of the Town Center Master Plan. This will involve some investment in staff and office space for an initial 5- to 10-year period. This approach will also require a complicated legal process for determining the terms of participation and structuring the mechanisms for equity return to the land owners.

PUBLIC/PRIVATE PARTNERSHIP IMPLEMENTATION MODEL			
PROS	CONS	YEARS	INITIAL COST
<div>» Accelerates development process</div> <div>» Allows for policy oversight by jurisdictions while maintaining development discipline and focus on financial returns.</div> <div>» Provides a single entity to steward Town Center from concept to completion</div> <div>» Requires no up-front capital for land acquisition</div>	<div>» Requires complicated legal and financial structuring and management to set up partnerships and agreements.</div>	<div>» 30 year build out.</div>	<div>» \$250k/year for 5-10 years.</div> <div>» (Assumes salary for 2 FTEs plus overhead and general &amp; administrative costs. This does not calculate office space, fixed costs [computers, marketing, communications, etc that may be another \$50k], legal, other consultant expenses, or acquisition fees.)</div>

# IMPLEMENTATION ENTITIES

## THE FORMATION OF A DEVELOPMENT AUTHORITY

In order to facilitate the development, public infrastructure construction, and land preservation for the Town Center project on unincorporated land owned by multiple property owners, an entity must be identified that has the legal authority to perform the following functions:

- » Contract with individuals and governmental entities;
- » Acquire, hold, manage, and convey real property and interests in real property; and
- » Issue debt for development, public infrastructure construction, and land preservation purposes.

The two entities that have these powers in the state of Ohio are a Community Improvement Corporation and a New Community Authority. The PPP model for implementation of the Town Center will use a combination of the two. First, this plan describes what these two entities are, and then how they will be applied to this venture.

### COMMUNITY IMPROVEMENT CORPORATION (CIC)

A CIC can enter into contracts; manage and convey real property owned by governmental entities as agent (with limited power to acquire real property for governmental entities as agent); and issue debt (but not tax-exempt debt) under limited circumstances. A CIC is a useful entity for controlling real property held by governmental entities, but has limited authority to acquire real property or issue debt for development, public infrastructure construction, or land preservation purposes.

THE CREATION OF A SINGLE AUTHORITY UNLOCKS THE POTENTIAL FOR DEVELOPMENT			
	CURRENT IMPEDIMENTS		THE SOLUTION
INFRASTRUCTURE	» Lack of sewer & water service and failing existing septic systems	→	» Development entity can receive, disburse, and raise funds for infrastructure improvements.
IMPLEMENTATION	» Multiple land owners (150+ distinct owners within the Town Center Area)	→	» Development entity can negotiate partnership agreements and amass lands for development.
ENVIRONMENT	» Belief by local builders that OEPA permit requirements cannot be achieved at Town Center densities.	→	» Development entity can act as the “permit-tee” for the OEPA stormwater permit and apply a more regional approach to mitigation
ADMINISTRATION	» Zoning intervention is insufficient for spurring development.	→	» Development entity can tie up enough land to attract an experienced and serious mixed-use developer.



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### **NEW COMMUNITY AUTHORITY (NCA)**

An NCA can enter into contracts; acquire, hold, manage, and convey real property; and issue debt (including tax-exempt debt) for development, public infrastructure construction, and land preservation purposes. In addition, an NCA has the ability to levy a community development charge on real property within the NCA district. The charge would serve as a revenue stream to pay costs associated with the development, public infrastructure construction, and land preservation for the Town Center project.

### **HOW THE CIC AND NCA FUNCTION IN THE PPP MODEL**

The first step to realizing the Town Center Master Plan is to establish a CIC expressly for the purpose of executing the plan. The CIC would initially focus on aggregating real property, through negotiation with existing land owners, to be contributed to the development. The corporation should negotiate with property owners regarding the current and future values of their real property and obtain options to include the property owners' real property within the development program.

Once the CIC has secured agreements for a minimum of 1,000 acres of real property, an NCA can be formed. The CIC would need to file a petition with the Franklin County Commissioners to establish the NCA. The petition must be approved by the City of Columbus and the Franklin County Commissioners, and a public hearing must be held on the NCA's formation. Once the public hearing has been held, the Franklin County Commissioners can establish the NCA.

After an NCA is formed, the options can be exercised and the real property can be placed under the control of the NCA. Compensation to participating property owners for including their real property in the development program would be negotiated up front, deferring compensation until revenue is generated from the development or proceeds are gained through the master developer contract.

The NCA will remain in place even after the development responsibilities are sold to a master developer in order to assume the role of administering the fees and revenue generated. The NCA will retain, disburse, and allocate monies for Accord Purposes as designated in the Revenue Agreement of April 2009. Other functions include putting in place entities to manage conservation areas, acting as the sole permittee for the OEPA stormwater permit, and collecting the sewer charge as outlined in the previous section.



## ANALYSIS OF AVAILABLE REVENUES AND FINANCING OPTIONS

The Big Darby Accord Revenue Program, approved by Brown Township, Prairie Township, the City of Columbus, and Franklin County, identifies three primary revenue sources associated with the Big Darby Town Center project:

- » Tax Increment Financing (TIF);
- » NCA Community Development Charge; and
- » Developer contributions.

### TIF SERVICE PAYMENTS

TIF revenues are obtained through real property tax exemptions authorized by certain local governments, like municipalities, townships, and counties. In lieu of paying real property taxes on the increase in assessed value of the exempted real property, the owners of the exempted real property pay service payments. Service payments may be used to finance public infrastructure improvements benefiting the exempted real property. These improvements can include such things as public roads and highways, water and sewer lines, stormwater and flood remediation projects, the enhancement of public waterways, and land acquisition.

### COMMUNITY DEVELOPMENT CHARGES

Community development charges are obtained when an NCA levies an assessment-like charge on real property within the NCA district. It is typically based on the assessed value of such real property and can be applied to residential, commercial, and industrial uses. Community development charges can be used to pay for any of the permitted purposes of an NCA, including the implementation of a new community development program, land development, and community facilities.



**DEVELOPER CONTRIBUTIONS**

The Big Darby Accord Revenue Program establishes that developers seeking to develop land in connection with the Town Center project will contribute \$2,500 per unit served by community facilities, including water and sewer utility services. The amount of each developer contribution and the method of collecting a developer’s contribution may change based on the specific terms agreed upon by the developer, the NCA, and the other contributing local governments.

**PERMITTED USE OF REVENUES**

The ability to structure a financing plan for the Town Center project depends largely on the permitted uses of the revenues available for the project. The contributing local governments have placed certain political restrictions on the use of the identified revenues. See the excerpt below for the allocation of these revenue sources.

Funding Source	Specific Formula	Portion dedicated to Accord Purposes
Tax Increment Financing (TIF)	30 year, non-school, non-township fire	75% of revenue
New Community Authority (NCA)	30 year, minimum of 5 mills, max of 10 mills	5 mills
Developer Contributions	\$2500 per residential unit	75% of revenue

Unincorporated Areas

- TIF: The 25% not required to go to Accord purposes shall be divided 12.5% to the applicable township and 12.5% to Franklin County. The applicable township will have discretion on the use of its 12.5% share. The County share may be allocated to compensate levy agencies or otherwise used at the discretion of the County Commissioners for priority regional and environmental infrastructure not meeting Accord purposes criteria.
- NCA: Any decision to impose community development charges above the 5 mills required for Accord purposes shall be subject to agreement between Franklin County and the applicable township, as will uses of revenue resulting from such additional millage.
- Developer Contributions: The townships shall have discretionary use of the 25% share not allocated to Accord purposes, in consultation with applicable developer(s).
- Revenue Options: Other revenue options should be explored to help cover the increased public sector operating costs anticipated from new residential and commercial development.

*This is an excerpt from the Big Darby Revenue Program, revised April 9, 2009*

# REVENUE

## ACCORD PURPOSES

The Big Darby Accord Revenue Program identifies six “Accord Purposes” critical to achieving the environmental and regional purposes of the Accord. The Accord purposes include:

- » Protection and/or restoration of open space;
- » Stream preservation and restoration;
- » Extraordinary costs associated with extending centralized sewer and water to the Darby Town Center;
- » Extraordinary costs associated with creating public regional alternative wastewater treatment systems and extending centralized water to serve conservation development areas;
- » Extraordinary costs associated with transportation improvements needed to allow access to the Darby Town Center to and from US 40 and/or I-70; and
- » Regional stormwater improvements.

The following chart forecasts the anticipated revenues generated by the three designated sources for the purposes of realizing the Accord goals.

BIG DARBY TOWN CENTER	75% TIF	100% NCA	75% DEV. CONTRIB.	JEDD	
FORECASTED REVENUE FOR ACCORD PURPOSES:	30YR NON-SCHOOL, NON-FIRE	5 MILLS	\$2500/RES UNIT	2.5% INC. TAX	TOTAL
Amount	\$284,683,000.00	\$25,525,000.00	\$8,700,000.00	n/a	\$318,908,000.00
Amount in 2010 \$	\$45,546,000.00	\$8,082,000.00	\$3,192,000.00	n/a	\$56,820,000.00





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## **NCA REVENUE BONDS AND FINANCING OPTIONS**

An NCA can issue taxable or tax-exempt revenue bonds to facilitate the development, public infrastructure construction, and land preservation necessary in connection with the Town Center project. Whether NCA revenue bonds are taxable or tax-exempt depends on the structure of the financing, the use of bond proceeds, and other conditions established under Ohio law and the Internal Revenue Code. Bond counsel should be consulted in connection with any NCA revenue bond financing.

NCA revenue bonds can be secured using a combination of some or all of the revenue sources identified above. First, through intergovernmental cooperative agreements Brown Township, Prairie Township, the City of Columbus, and Franklin County can assign to the NCA the TIF service payments made on the increase in assessed value of the exempted real property. The NCA, in turn, can pledge the TIF service payments to the payment of debt service charges on NCA revenue bonds issued to finance public infrastructure improvements. TIF service payments, if unpaid, are given a lien status under Ohio law equivalent to real property taxes. Second, community development charges levied by the NCA on the owners of real property within the NCA district can be pledged to the payment of debt service charges on NCA revenue bonds. Community development charges, if unpaid, are given a lien status under Ohio law equivalent to real property taxes. Third, developer contributions and grants, low-cost loans, or other matching opportunities can be pledged as additional security for NCA revenue bonds if contemplated by the financing structure.

In addition to debt issued by a new community authority, other financing structures may be available to assist the Big Darby Town Center project. Any of the participating jurisdictions — Brown Township, Prairie Township, the City of Columbus, and Franklin County — could issue bonds directly or could cooperate with a third-party issuer, like an NCA or an Ohio port authority, to finance a portion of the Town Center project.

# REVENUE

## OTHER AVAILABLE REVENUES AND THE CREATION OF A JEDD

Revenues obtained through grants, low-cost loans, or other matching opportunities may be useful in funding specific activities in connection with the Town Center project. For example, the Ohio EPA's Finance Division offers low-interest loans to assist with the purchase, restoration, and maintenance of conservation lands. It is also possible that grants may be available for implementing portions of the sewer extension, as it provides an environmental benefit to the Darby.

One-time grants and the revenues highlighted on the previous pages are obviously very helpful and necessary to realizing the best possible development at the Big Darby Town Center. Over the course of its 30-year build out, the NCA should be perpetually and actively seeking funding mechanisms to continuously bolster the conservation and restoration efforts within the watershed. But, throughout this planning process, it became clear that Prairie and Brown Township will need a more reliable and permanent income stream in order to support the residents, employees, and visitors of the Town Center. For this reason, it is critical for the jurisdictions involved in this process to consider the creation of a Joint Economic Development District (JEDD). The JEDD would generate an income from a 2.5% income tax on employees of all commercial properties within the Town Center. This would not be in addition to taxes already paid by individuals, but rather would allow these tax payments to remain local to the Town Center jurisdictions and to be used for the benefit of Darby.

Income available from the JEDD as well as the anticipated revenues not earmarked for Accord Purposes are forecasted in the chart below.

BIG DARBY TOWN CENTER	25% TIF	0% NCA	25% DEV. CONTRIB.	JEDD	
FORECASTED FUNDS NOT ALLOCATED FOR ACCORD PURPOSES	30YR NON-SCHOOL, NON-FIRE	5 MILLS	\$2500/RES UNIT	2.5% INC. TAX	TOTAL
Amount	\$94,894,333.33	n/a	\$2,900,000.00	TBD	\$97,794,333.33**
Amount in 2010 \$	\$15,182,000.00	n/a	\$1,064,000.00	\$1,750,000.00*	\$17,996,000.00

\* Amount estimated by the City of Columbus Planning Division

\*\* Does not include JEDD income.





*Images provided by Urban Design Associates, Applied Ecological Services, Design Workshop, STV, and RCLCO.*