January 2011

City of Northfield

Business & Industrial Park

Master Plan

Prepared By:

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Plan Participants

Northfield City Council

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Suzanne Nakasian, Liaison to EQC
Richard Schulte, Liaison to HPC
Ivan Imm

Northfield Economic Development Authority

Jenelle Teppen, President
Steve Engler, Vice President
Richard Estenson
Jack Hoschouer
Victor Summa

Steering Committee

Richard Estenson, Chair
Mike Berthelsen, University of Minnesota
Glen Castore, Bridgewater Township
Tracy Davis, Northfield Planning Commission
Tim Geary, Malt-O-Meal
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Neil Lutsky, Carleton College
Jim Pokorney, Northfield City Council
Rhonda Pownell, Northfield City Council
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Consultant Team

Hoisington Koegler Group, Inc., Planning, Project Management
Design Workshop, Planning, Market Analysis
MSA Professional Services, Civil Engineering
Northland Securities, Public Finance
EcoDEEP, Architecture
Prologis, Industrial Development Consultant

Chapter 1

Introduction

Plan Background

Northfield desires to expand their economic base and improve their rate of college graduate retention.

Planning for the Northfield Business and Industrial Parks was the result of recommendations outlined in the 2006 Northfield Comprehensive Economic Development Plan and the 2008 Northfield Comprehensive Plan. The Comprehensive Economic Development Plan assessed community strengths, weaknesses, opportunities and threats to Northfield's economic development potential. It notes that while Northfield enjoys a highly educated workforce, an authentic downtown environment, and two world-class colleges, Northfield lacks industrial space and the land resources to accommodate future commercial business development. It also points out a low rate of college graduate retention, linked to the lack of job potential in Northfield. Both policy documents identify the need to diversify and expand Northfield's economic base and make land available for business expansion, particularly for the expansion of existing businesses, but also to make land available for business expansion in the following target industries:

Logistics

Includes firms involved in moving goods from producer to consumer in the most efficient manner. More sophisticated than warehousing and trucking activities in the past.

Specialty Manufacturing

Includes companies requiring IT capacity for manufacturing and paying above average wages for technical skills. Markets are specialized and emphasis is on design over production.

Environmental Technologies

Products and processes which are environmentally beneficial or benign. Includes industries such as renewable energy, sustainable building products, pollution control equipment, waste management, and remediation services.

Healthcare and Medical

Activities range from direct patient care to diagnostic services to medical research.

Professional and Technical

Includes a variety of occupations: attorneys, accountants, marketing and advertising, architects, and engineers, testing and research and development.

Information Technology

Includes firms that produce, transmit, or process data. Examples include publishing, software, broadcasting.

As a result of the recommendations proposed in the Comprehensive Economic Development Plan, the City of Northfield identified the need to annex additional lands into the City for future business and industrial growth along with the need to develop a master plan and guidelines for future commercial growth. In 2009, the City annexed approximately 530 acres of land from Greenvale Township and identified another approximately 450 acres of land in Bridgewater Township for potential annexation to

accommodate future business and industrial growth. Subsequently, the Northfield Economic Development Authority initiated a master planning process and created a Steering Committee to guide the master plan for the canidate sites.

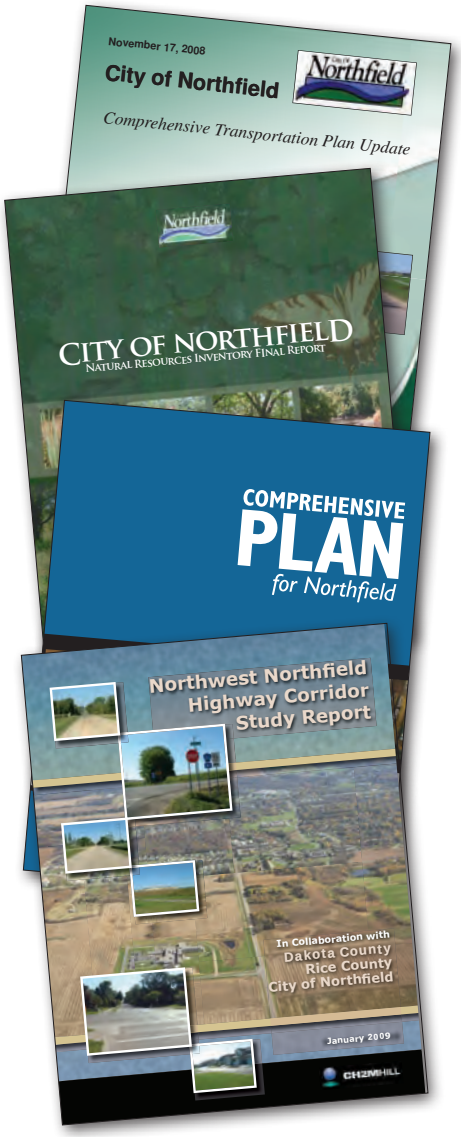
Plan Goals and Objectives

The Northfield Business and Industrial Master Plan provides a vision for future growth on two sites identified for economic development. Together, the Master Plan and Development Guidelines will enable Northfield to create a sustainable, mixed-use business park ready for development and poised to attract development in a competitive market place. To achieve success and insure future growth is consistent with the City's Comprehensive Plan, the Master Plan incorporates several goals and objectives derived from careful study of adopted City plans and policies. These goals and objectives have been vetted by the Northfield Business and Industrial Park Steering Committee, Economic Development Authority, Planning Commission, City Council, business and industry stakeholders, landowners, and the citizen's of Northfield, Bridgewater and Greenvale Townships through a series of meetings and public open houses. The following goals and objectives helped to shape the Master Plan and Development Guidelines:

The new development should complement, not compete, with the economic vitality of downtown Northfield.

- *Diversify the economic base of Northfield by making land available for business and industrial expansion that will serve to provide opportunities for new investment, tax base expansion, job creation and wage enhancement.*
- *Create a master plan and design guidelines that will insure that the new development patterns and design character maintain Northfield's distinctive quality of place.*
- *The development plan(s) should provide a positive gateway identity into the Northfield community.*
- *Create a plan for successful businesses and industries that will complement rather than compete with the economic vitality of the downtown business community.*
- *The planning process must include effective methods of engaging the participation of property owners, business and industry stakeholders, campus representatives and the citizens at large.*
- *Promote a high quality development that incorporates a sensitive approach to design while protecting and enhancing environmental resources.*
- *Promote energy efficient and sustainable development patterns, land uses and buildings that incorporate LEED standards.*
- *Develop a plan that provides for and promotes multi-modal transportation for the delivery of goods, services and overall access to the area.*
- *Create a development strategy that reflects feasibility in the marketplace and provides a realistic potential for business and industrial development adding to the economic vitality of Northfield.*
- *Develop strategies for successfully marketing the development to potential end users.*
- *Develop a plan and strategies to successfully attract and retain a talented and educated workforce.*

Plan Context



The Master Plan guides the planning, public investment, and future development of the two study areas by providing a vision and expectations for future development along with strategies for implementing the plan. This is accomplished by providing a preferred plan layout for each site and specifying the necessary infrastructure to support the anticipated development demands for each site at full build-out. The Master Plan considers existing City utility infrastructure, the City's utility expansion plans and the landowner's future intentions for their lands. Additionally, the Master Plan takes into consideration long-range planning efforts and capital improvements in and around the study area. The long-range plans and policy documents, which can be viewed in summarized memos in the appendix, considered in the planning process for this Master Plan include the following:

- 2002 Northwest Neighborhood Transportation Task Force Recommendations
- 2005 Natural Resources Inventory
- 2006 Comprehensive Economic Development Plan
- 2007 St. Olaf Non-Core Lands Study
- 2008 Comprehensive Plan
- 2008 Parks, Open Space, and Trail System Plan
- 2008 Northwest Northfield Highway Corridor Study Report
- 2008 Northfield MN Energy Task Force Report
- 2009 Northfield Land Development Code (DRAFT)
- 2010 Northfield Stormwater Ordinance (DRAFT)

Consistent with Northfield's Comprehensive Plan, the Master Plan provides the framework for making land available for commercial and industrial development, creating employment opportunities, enhancing the tax base, and sustaining the overall health and vitality of the Northfield community. Furthermore, the recommendations in the Master Plan are informed by a market study performed as part of the planning process. The planning team examined the potential for industrial park or business park development on the two candidate parcels, over the next 20 years, in order to inform the larger planning effort and assess the potential viability for industrial development within the Northfield area. The market study analyzes current and projected trends for industrial, office and associated uses in the Northfield area in the near and long term and studies comparables to inform the potential for distinct employment centers located in Northfield. The market study estimates demand and absorption of potential industrial and business uses in Northfield over the next twenty years, based upon regional growth trends and offers a viable development program.

As a result of the market analysis, community goals and objectives derived during the pre-design portion of the planning process, and direction provided by the Comprehensive Plan, the Master Plan considers complementary land uses and design strategies that will position the properties for successful and viable employment centers at each candidate site. A diverse mix of land uses is employed to provide these future employment centers with amenities that will distinguish them from other competition in the market place and contribute to a more sustainable development pattern. Furthermore, the development program for each site is tailored to the specific site attributes, including site access, visibility, utility access, topography and other natural features.

Plan Implementation

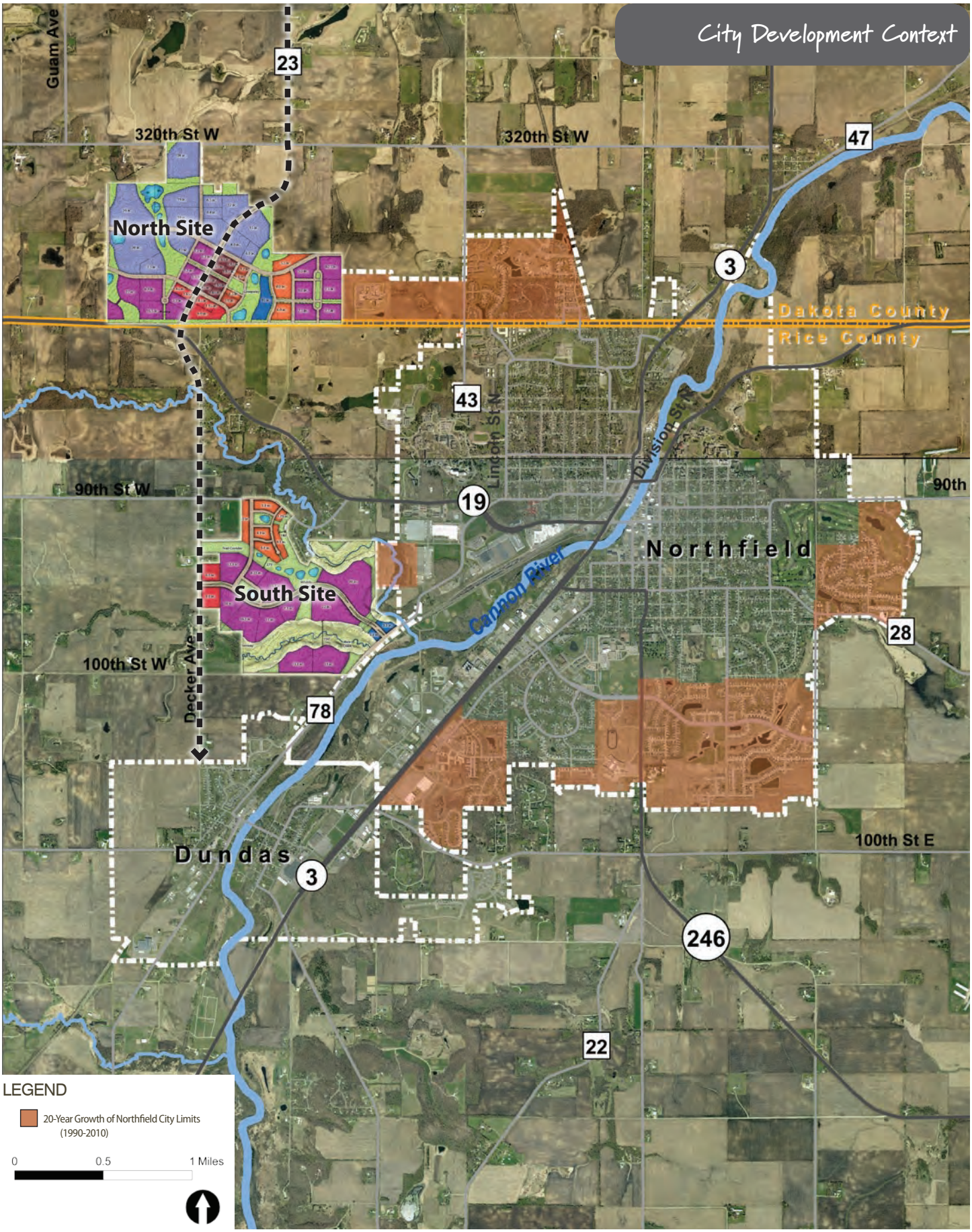
The Master Plan is structured to provide direction and a framework for future development patterns on each site but flexible enough to allow the City to respond to market conditions and developer interest. The Master Plan has been designed to accommodate and attract a range of land uses and potential target industries to the candidate sites while meeting the needs of existing employers in Northfield ready to expand their businesses. The plan also specifies the necessary infrastructure to support the anticipated development, estimates infrastructure costs, identifies potential phasing strategies, possible funding sources and strategies to finance the various capital expenditures.

The candidate sites for the master planning effort are located in the Economic Development Floating (ED-F) District. The ED-F District is applied to areas of the city appropriate for employment with an urban campus type character with a focus on high quality development that is designed in a way to preserve the city's natural resources while simultaneously promoting economic development. This district will provide opportunities for corporate administrative offices and medium sized research and development firms to locate in the city. Land uses within the district should be designed to minimize impact on any residential uses by appropriate buffering and overall subdivision design. High standards of appearance and design will be required and maintained with restrictions on outdoor storage and activities with undesirable characteristics.

The Northfield Business and Industrial Park Master Plan provides City of Northfield decision makers and staff with the tools and direction to guide future development on the candidate sites. The City should consider appropriate amendments to the Land Development Code and Comprehensive Plan as a result of the recommendations made within the Master Plan to gain compliance between each policy document. Together with the City's Comprehensive Plan and Land Development Code, the Northfield Business and Industrial Park Master Plan provide developers and designers with the City's expectations for future development on these sites.

Chapter 2

Existing Conditions


City Development Context
Guam Ave
23
320th St W
320th St W
47
North Site
3
Dakota County
Rice County
43
Lincoln St N
Division St N
90th St W
90th
19
Northfield
South Site
Cannon River
28
100th St W
Decker Ave
78
Dundas
3
100th St E
246
22
LEGEND
20-Year Growth of Northfield City Limits (1990-2010)
0
0.5
1 Miles

Introduction

The planning process included a detailed study of existing conditions, including those items which may influence planning decisions. The planning team gathered and reviewed market conditions, policy documents, planning studies and reports, physical site conditions and context information. The existing background information provides the foundation for planning alternatives. The information presented here is a summary of the data collected and evaluated. For additional information, please refer to the Project Resource Manual.

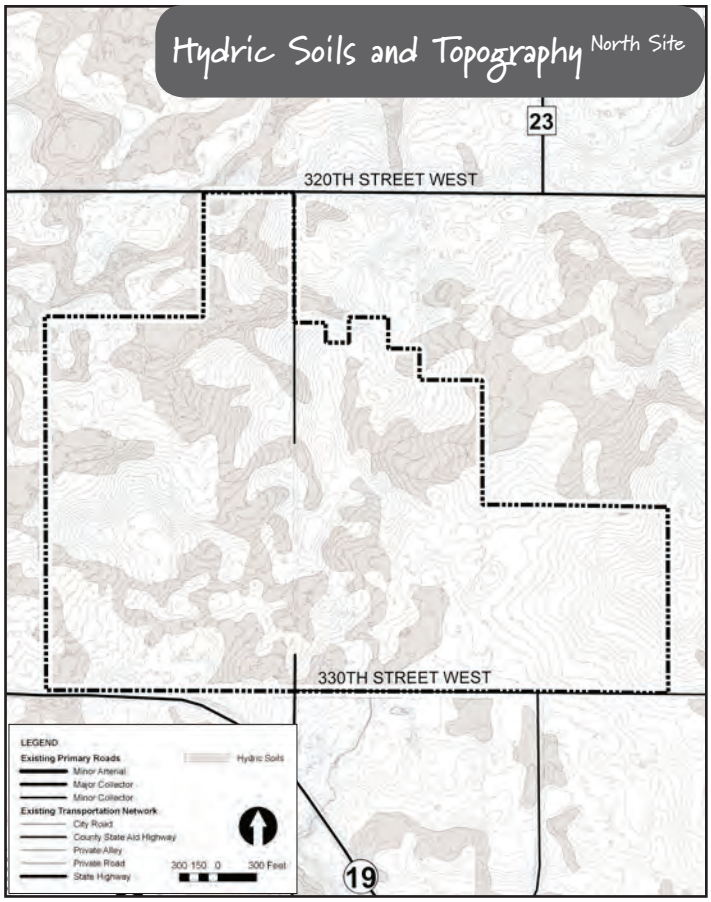
Location

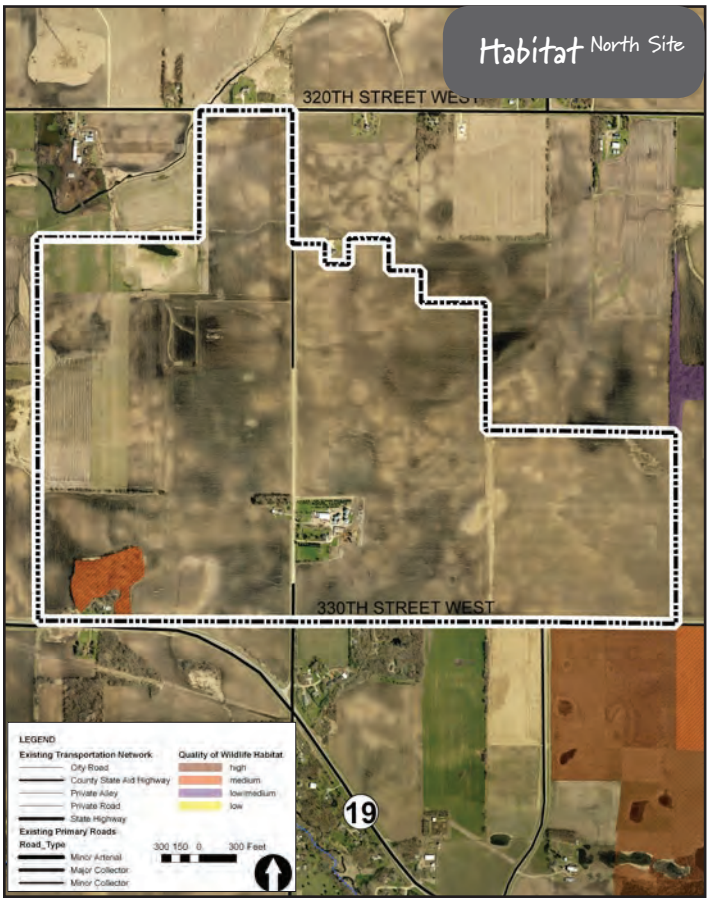
North Site

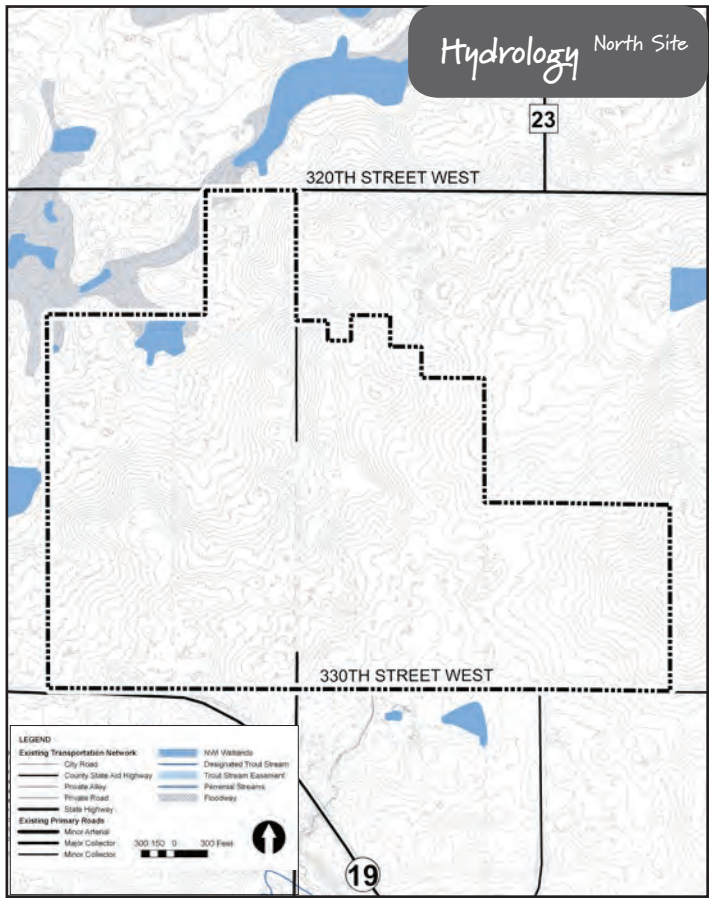
In 2009, the City annexed approximately 530 acres of land from Greenvale Township, located in Dakota County. The North Site, currently zoned for agricultural use, lies along State Highway 19, immediately to the west of the Northfield Hospital. The area remains agricultural and rural in character. The Northwest Northfield Highway Corridor Study Report, completed in 2008, identifies a future County Road 23 connection bisecting the site, connecting Foliage Avenue to the north with Decker Avenue to the south. The subsequent sections further describe the North Site in terms of natural features, land use and infrastructure.

South Site

The City of Northfield has identified approximately 450 acres of land located in Bridgewater Township, located in Rice County, for potential future annexation. The land is not currently within the City of Northfield. The South Site, presently zoned for agricultural use, lies between Decker Avenue (west boundary) and Armstrong Road (east boundary), and 90th Street East (north boundary) and 100 Street East (south boundary). The area remains agricultural and rural in character. Significant land features on the site include Heath Creek and Spring Brook (Rice Creek). The subsequent sections further describe the South Site in terms of natural features, land use and infrastructure.


Hydric Soils and Topography North Site
23
320TH STREET WEST
330TH STREET WEST
19
LEGEND
Existing Primary Roads
Minor Arterial
Major Collector
Minor Collector
Existing Transportation Network
City Road
County State Aid Highway
Private Alley
Private Road
State Highway
Hydric Soils
300 150 0 300 Feet


Habitat North Site
320TH STREET WEST
330TH STREET WEST
19
LEGEND
Existing Transportation Network
City Road
County State Aid Highway
Private Alley
Private Road
State Highway
Existing Primary Roads
Road_Type
Minor Arterial
Major Collector
Minor Collector
Quality of Wildlife Habitat
high
medium
low/medium
low
300 150 0 300 Feet


Hydrology North Site
23
320TH STREET WEST
330TH STREET WEST
19
LEGEND
Existing Transportation Network
City Road
County State Aid Highway
Private Alley
Private Road
State Highway
Existing Primary Roads
Minor Arterial
Major Collector
Minor Collector
NWI Wetlands
Designated Trout Stream
Trout Stream Easement
Perennial Streams
Floodway
300 150 0 300 Feet

Natural Features

North Site

Topography

The site is relatively flat, characterized by gently rolling fields of cultivated agricultural crops. Gentle ridgelines and swale areas define the site and its watersheds. The terrain appears suitable for development as there are no steep slopes on the site.

Hydric Soils

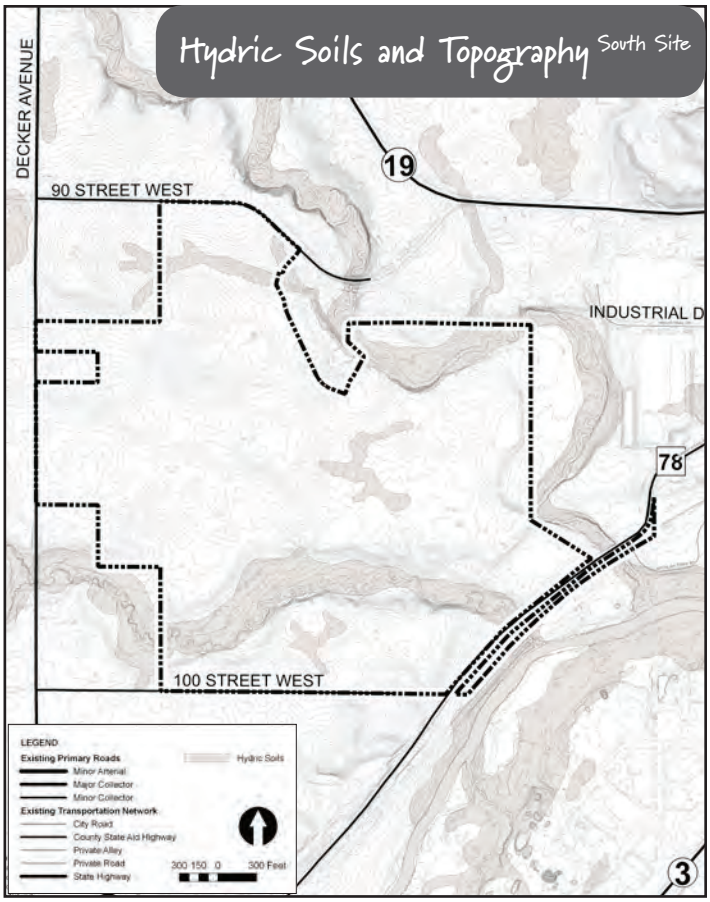
The site contains areas of hydric soils, most often located in areas where drainage collects. Hydric soils generally do not drain well and they may require special treatment to make them suitable for development.

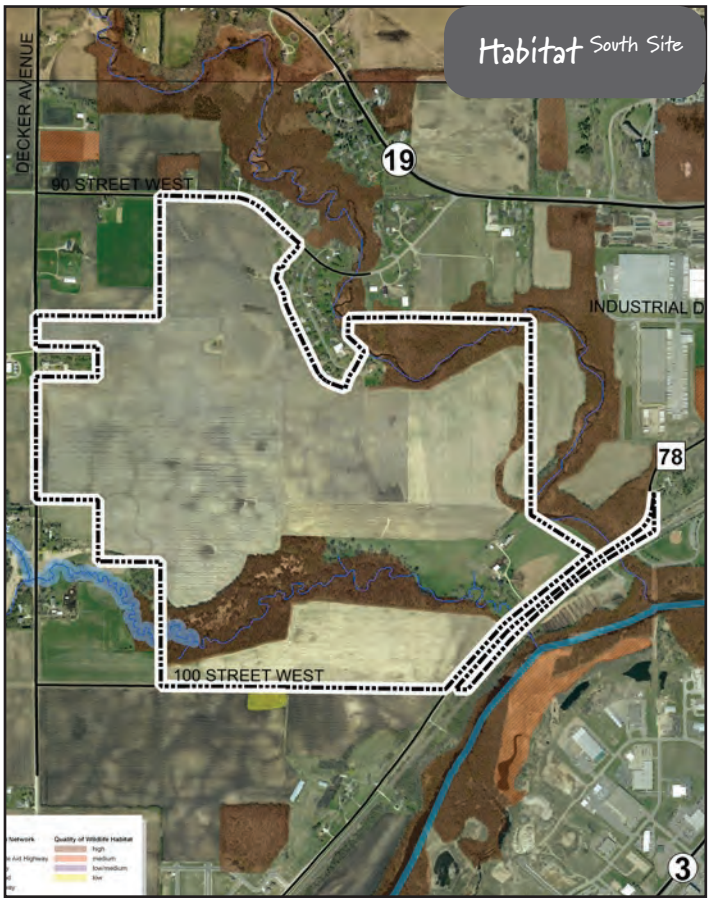
Habitat Quality

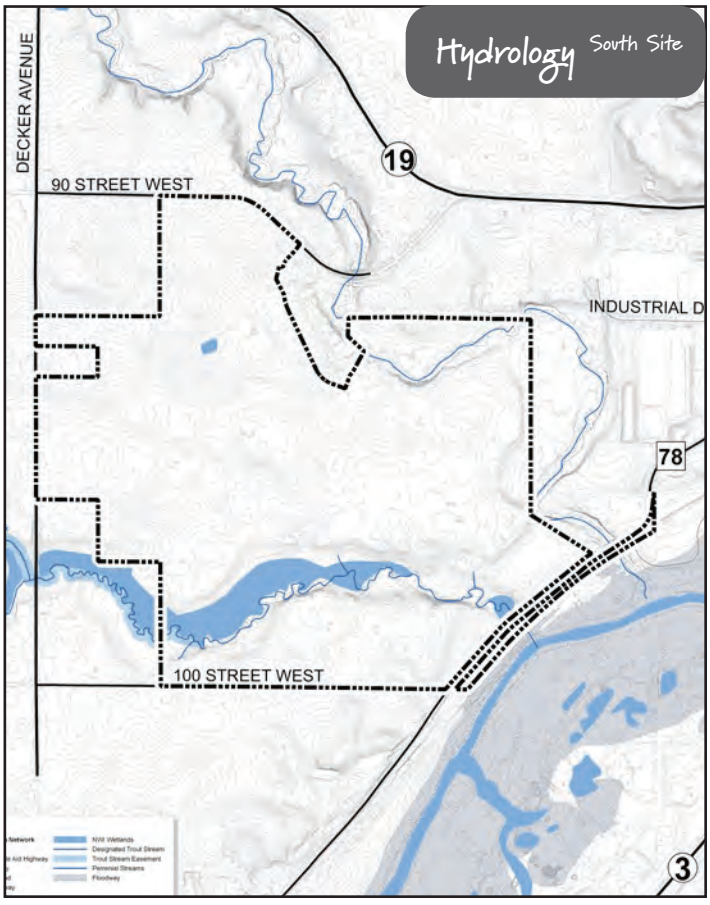
Much of the site is actively cultivated cropland. Very little forested or natural environments exist on the site, however, there is a small area located on the southwest corner of the site that is forested with a mix of native and non-native trees and shrubs. This area has been identified as being of medium quality wildlife habitat. Approximately 8 - acres of medium quality wildlife habitat exists here

Hydrology

The northwest corner of the site contains small areas within the floodway and an area containing wetlands. Approximately 5 - acres of wetlands exist on the site in this location. These are part of a larger system of wetlands located to the west of the site that run generally to the northeast.


Hydric Soils and Topography South Site
DECKER AVENUE
90 STREET WEST
19
INDUSTRIAL D
78
100 STREET WEST
LEGEND
Existing Primary Roads
Minor Arterial
Major Collector
Minor Collector
Existing Transportation Network
City Road
County State Aid Highway
Private Alley
Private Road
State Highway
Hydric Soils
300 150 0 300 Feet
3


Habitat South Site
DECKER AVENUE
90 STREET WEST
19
INDUSTRIAL D
78
100 STREET WEST
3


Hydrology South Site
DECKER AVENUE
90 STREET WEST
19
INDUSTRIAL D
78
100 STREET WEST
3

Natural Features

South Site

Topography

The site is defined by its topography. The site generally slopes downward from west to east, toward the Cannon River. The north border of the site is defined by Heath Creek, while the southern portion of the site is defined by Spring Brook (Rice Creek). Each creek drains into the Cannon River just east of the site. Development zones on the south site are determined by the two creeks – streambed alignment, channel structure, slopes, vegetation and setbacks required by the Northfield Storm Water Ordinance.

Hydric Soils

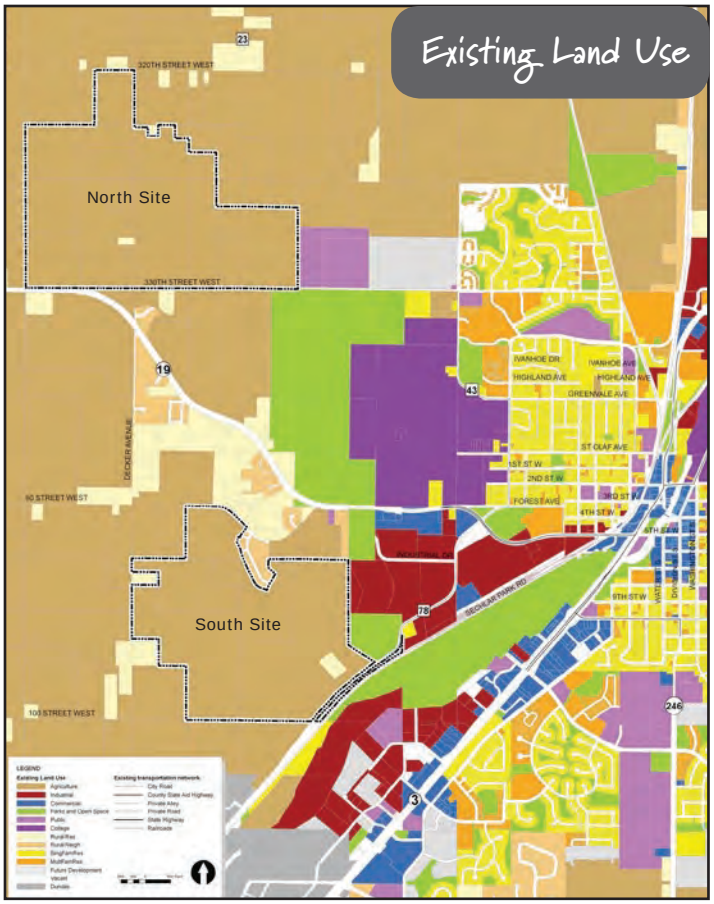
The site contains areas of hydric soils, primarily located in the Heath Creek and Spring Brook drainage corridors. The remainder of the site is relatively free of hydric soils.

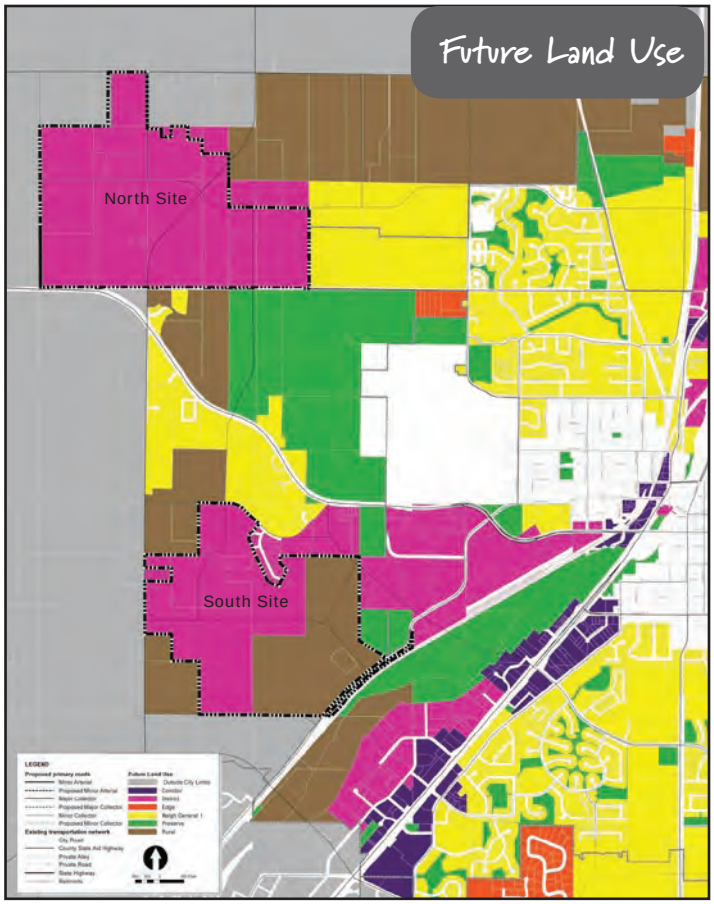
Habitat Quality

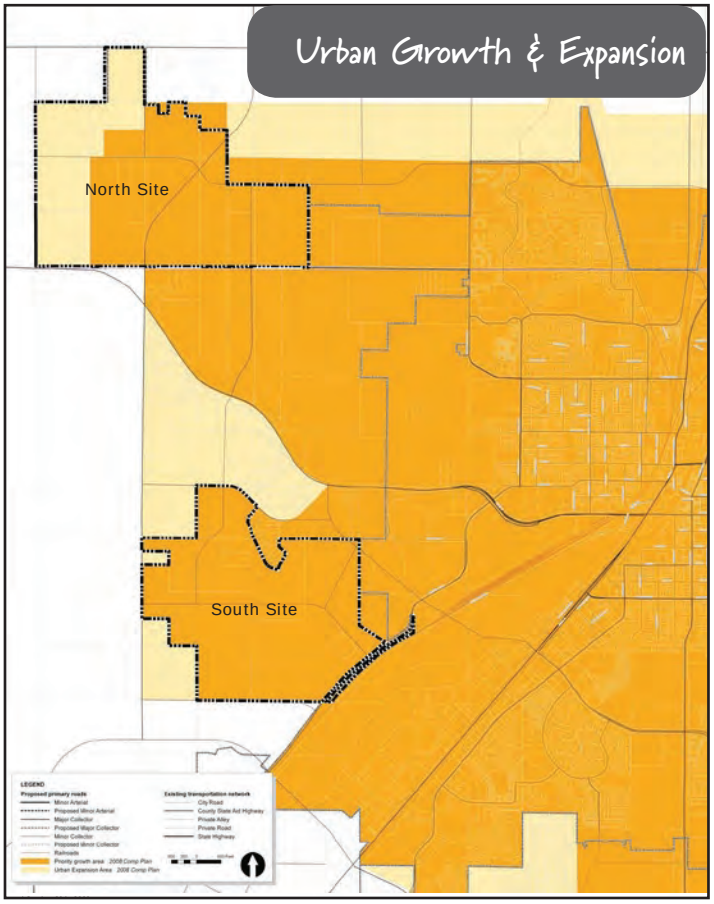
Areas of medium to high quality wildlife habitat exist along Heath Creek and Spring Brook, accounting for approximately 50-60 acres of the site. The rest of the site is actively cultivated cropland.

Hydrology

The site is outside the floodway, but contains two streams (Heath Creek and Spring Brook) and associated wetlands, primarily along Spring Brook. Spring Brook also includes a Trout Stream Easement, as one of only a handful of trout habitats in the Twin Cities metro area. A small wetland exists in the north central portion of the site.


Existing Land Use
North Site
South Site


Future Land Use
North Site
South Site


Urban Growth & Expansion
North Site
South Site

Land Use

North Site

Existing Land Use and Zoning

The existing land use for this site is predominantly "Agriculture". It contains a small area in the center of the site of "Rural Residential". Surrounding land uses include more Agriculture and Rural Residential, Public (Northfield Hospital) and Parks and Open Space. The site lies within a mile west of the St. Olaf College campus.

Future Land Use

The future land use identified for the North Site includes an Economic Development (Floating) District, applied to areas of the city appropriate for employment with an urban campus type character with a focus on sustainable, high quality development that is designed in a way to preserve the city's natural resources while simultaneously promoting economic development.

Urban Growth and Expansion

The site lies within the Urban Expansion Area as identified in the 2008 Comprehensive Plan. The eastern 70% of the property is identified as being within the City's Priority Growth Area. In 2009, the City of Northfield annexed the site from Greenvale Township, primarily to accommodate future expansion of employment growth.

South Site

Existing Land Use and Zoning

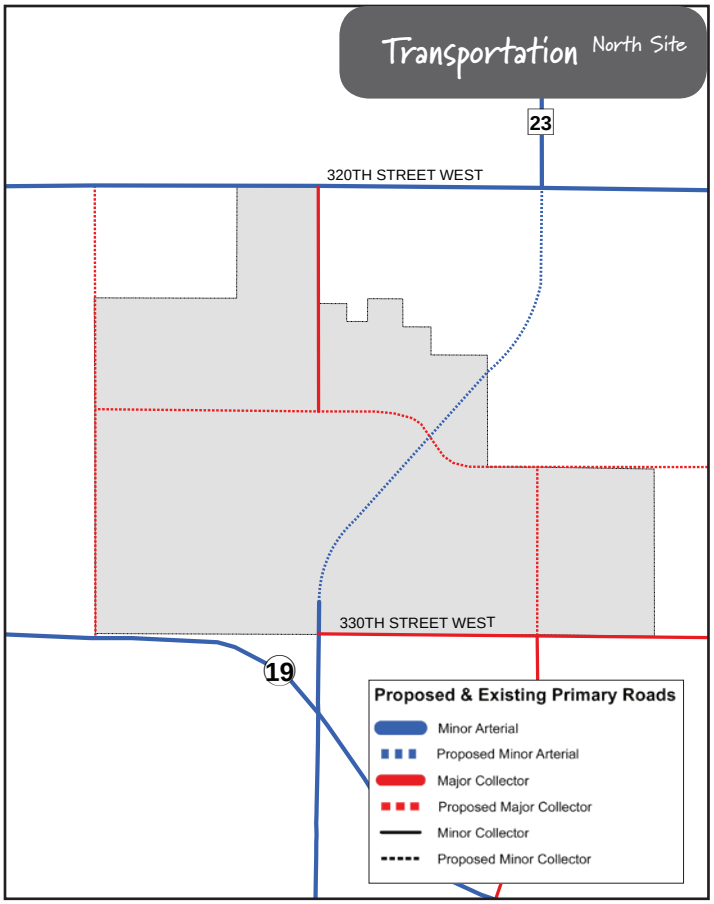
The existing land use for this site is predominantly "Agriculture". It contains a small area in the southeast portion of the site of "Rural Residential". Surrounding land uses include more Agriculture and Residential, Industrial and Parks and Open Space. The site lies just west of an existing industrial zone.

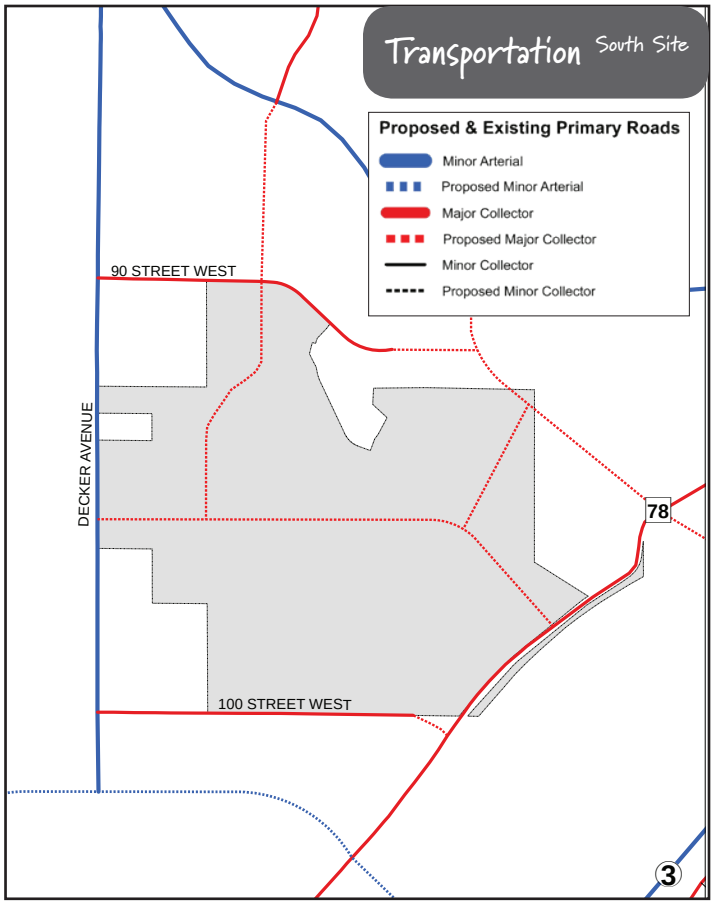
Future Land Use

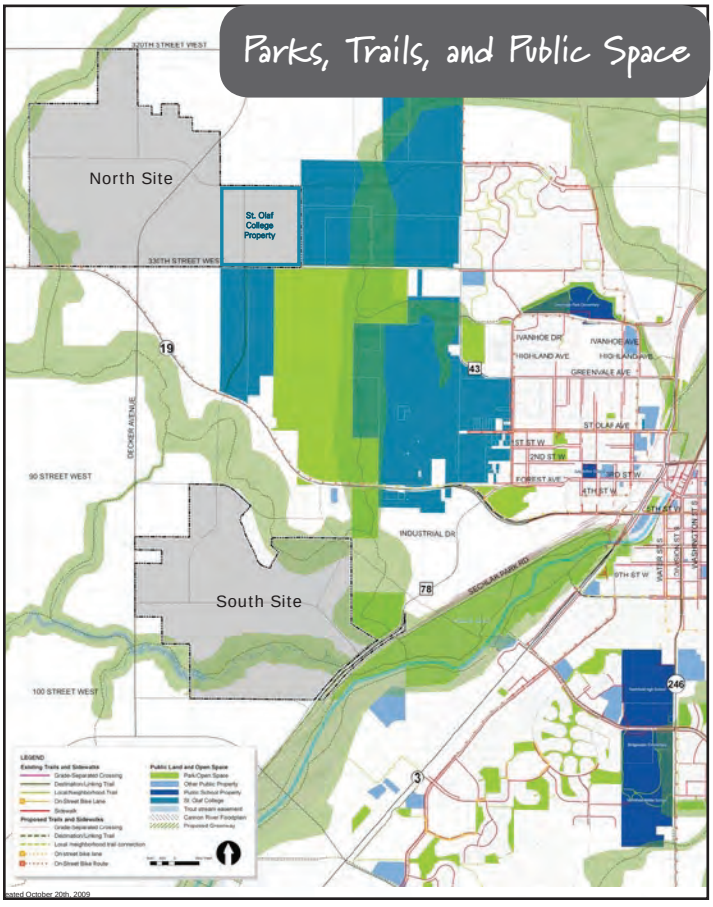
The future land use identified for the South Site includes an Economic Development (Floating) District and Rural Land Uses.

Urban Growth and Expansion

The site lies within the Urban Expansion Area as identified in the 2008 Comprehensive Plan. The entire property is identified as being within the City's Priority Growth Area. The City of Northfield has identified the site as a possible area for future annexation from Bridgewater Township.


Transportation North Site
23
320TH STREET WEST
330TH STREET WEST
19
Proposed & Existing Primary Roads
Minor Arterial
Proposed Minor Arterial
Major Collector
Proposed Major Collector
Minor Collector
Proposed Minor Collector


Transportation South Site
Proposed & Existing Primary Roads
Minor Arterial
Proposed Minor Arterial
Major Collector
Proposed Major Collector
Minor Collector
Proposed Minor Collector
90 STREET WEST
DECKER AVENUE
78
100 STREET WEST
3


Parks, Trails, and Public Space
North Site
St. Olaf College Property
330TH STREET WEST
19
43
90 STREET WEST
DECKER AVENUE
South Site
78
100 STREET WEST
246
3

Transportation and Open Space

North Site

Transportation

The site is located approximately 6 miles east of Interstate Highway 35, along State Highway 19. Current access is from Garrett /Decker Avenue off Highway 19, North Avenue and 320th Street. The 2008 Northwest Northfield Highway Corridor Study Report identifies a future County Road 23 connection through the site to connect Garrett/Decker Avenue with Foliage Avenue. In this report, County Road 23 is planned to bisect the site, running through the site northwest to northeast. The report also identifies future collector routes through the site, connecting to existing and future connector routes. Highway 19 is identified as an On-Street Bicycle Route and the site is planned to be connected by the regional trail system.

Parks, Trails and Public Space

Portions of the site along its western border are proposed in the City's Parks, Trials and Public Space System for "Greenway", a regional system of open space corridors that connect major natural features throughout the region with Northfield. The Greenway includes a Destination Linking Trail, linking to the Heath Creek drainage corridor to the south. State Highway 19 has been identified in the plan as an "On-Street Bike Route". An existing trail along North Avenue, to the east of the site, provides an opportunity to connect the site to an existing trail system.

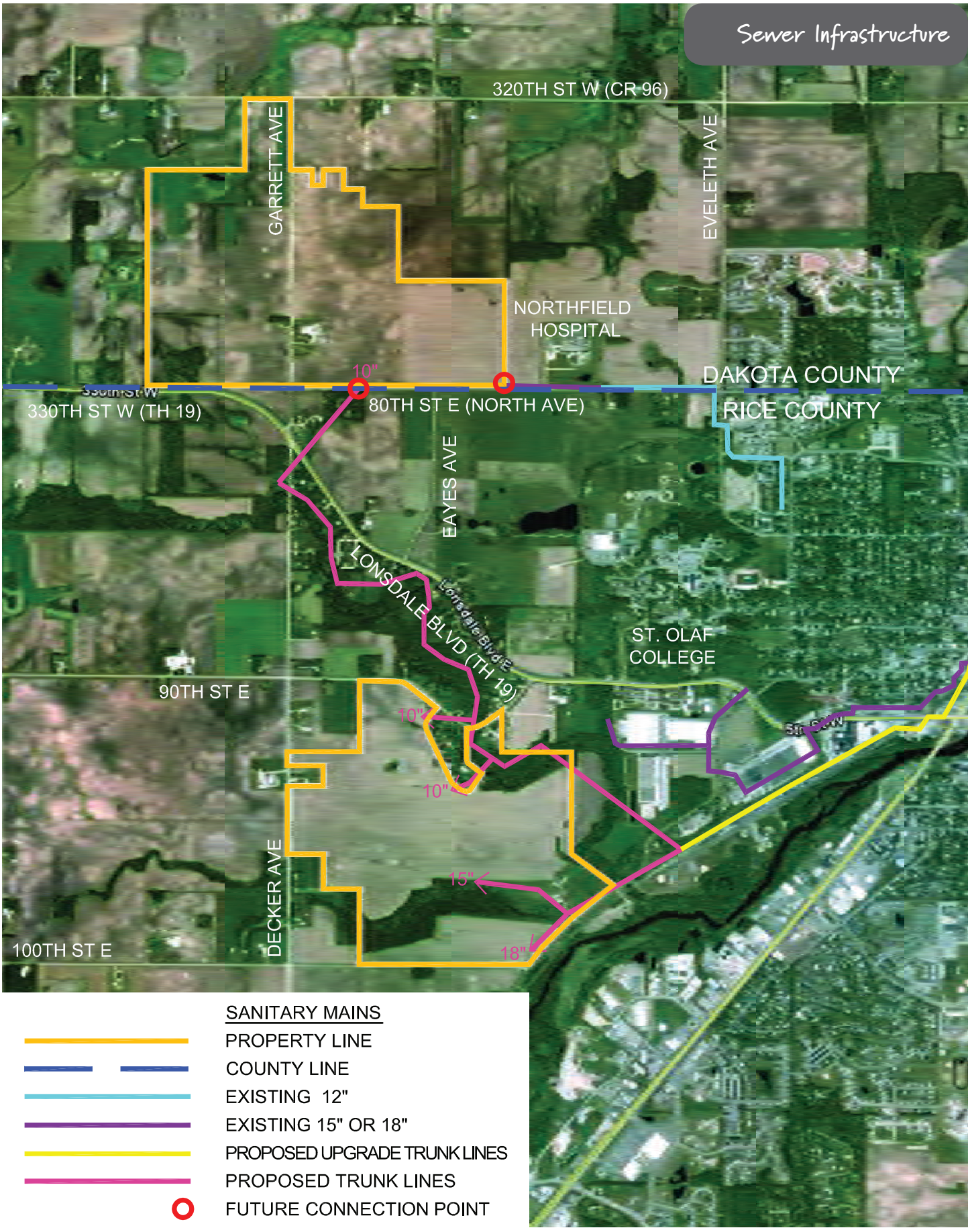
South Site

Transportation

The site is located approximately 7 miles east of Interstate Highway 35, and approximately a mile south of State Highway 19 along Decker Avenue. Current access is from Decker Avenue, 90th Street East, 100th Street East and Armstrong Road. The 2008 Northwest Northfield Highway Corridor Study Report identifies a future County Road 23/Decker Avenue connection to the site. The report identifies other collector routes through the site, connecting to existing and future connector routes. The site is planned to be connected by the regional trail system.

Parks, Trails and Public Space

Portions of the site are proposed in the City's Parks, Trials and Public Space System for "Greenway", a regional system of open space corridors that connect major natural features throughout the region with Northfield. The Greenways are routed along Heath Creek and Spring Brook. Each Greenway includes a Destination Linking Trail, linking portions north and west of the site to the Cannon River.


Sewer Infrastructure
320TH ST W (CR 96)
GARRETT AVE
EVELETH AVE
NORTHFIELD HOSPITAL
10"
330TH ST W (TH 19)
80TH ST E (NORTH AVE)
DAKOTA COUNTY
RICE COUNTY
EAYES AVE
LONSDALE BLVD (TH 19)
ST. OLAF COLLEGE
90TH ST E
10"
10"
15"
18"
DECKER AVE
100TH ST E
SANITARY MAINS
PROPERTY LINE
COUNTY LINE
EXISTING 12"
EXISTING 15" OR 18"
PROPOSED UPGRADE TRUNK LINES
PROPOSED TRUNK LINES
FUTURE CONNECTION POINT

Public Utilities

Sanitary Sewer

A comprehensive sewer study was completed in 2007. The study investigated a combined sanitary sewer service area for the cities of Northfield and Dundas. The study was prepared as a guide to define the sewer service area and accommodate anticipated development and growth in Northfield and Dundas.

General Information

The Comprehensive Sewer Study investigated fourteen different scenarios for the long-term development of Northfield and Dundas. The preferred scenario outlined in the Comprehensive Study (Scenario 6) is based on full development of the urban reserve areas (as defined by Northfield and Dundas) and is anticipated to accommodate development growth for the next 20-years. Site A and B are within the urban reserve area. Trunk Sanitary sewer improvements are needed to develop Site A and/or Site B.

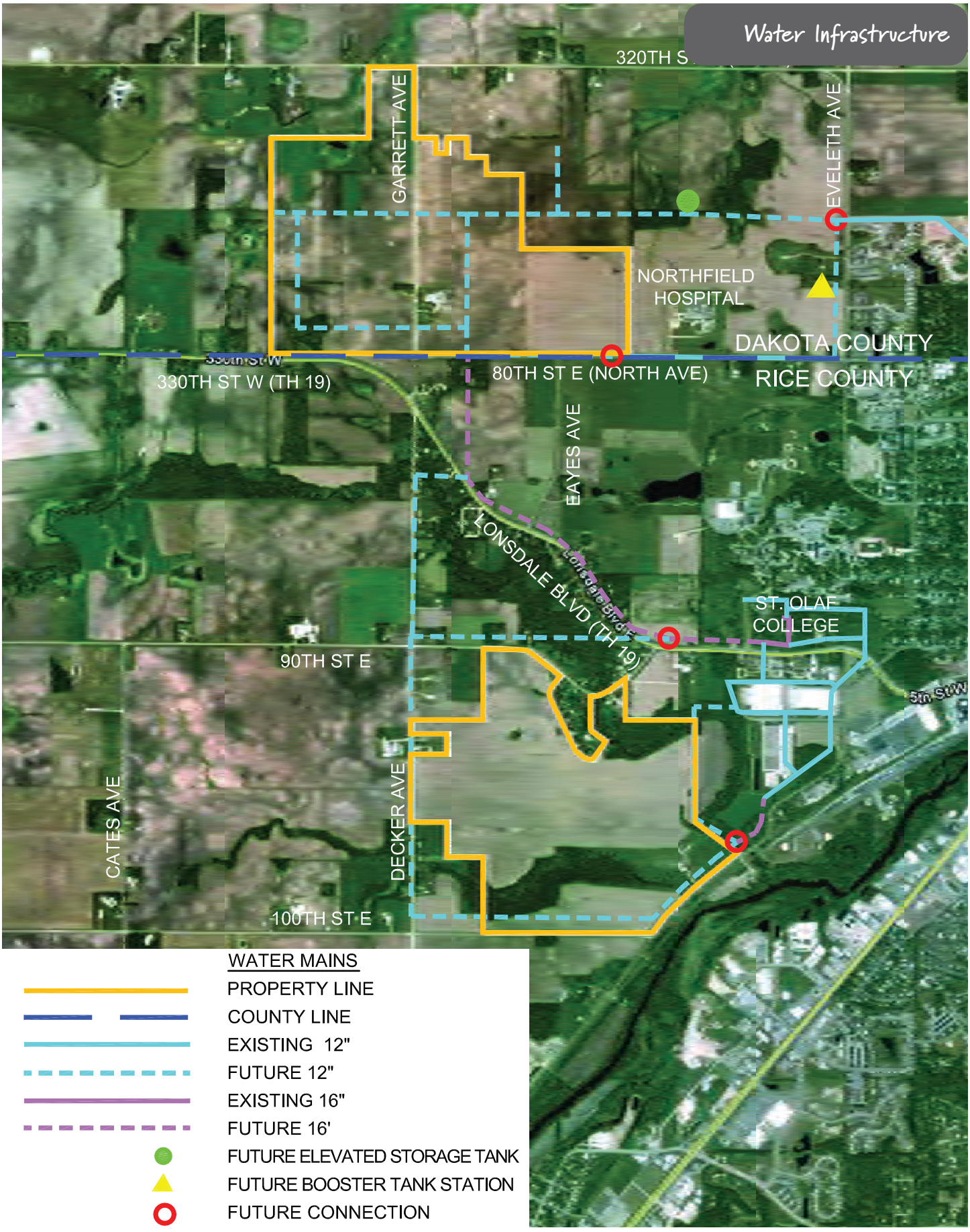
Site A (North Site)

» Site A will require the extension of sanitary sewer from the east or from the south.
» Site A is in three sewer subdistricts (Heath Creek, Mud Creek, and North
» Draw). Anticipated sewer flows from Site A will be evaluated with respect to flows anticipated in the comprehensive sewer study.
» Extension of the sanitary sewer will benefit Site A as well as future sewer needs to the west of Decker.
» The nearest sanitary sewer main is located on 80th Street adjacent to the hospital. The existing 12" sanitary sewer services the hospital and increases to 15" and then to 18" as the sewer flows to the east.
» Long-term service to Site A is thru the Heath Creek Interceptor which runs north and west through Site B.

Site B (South Site)

» Site B will require the extension of sanitary sewer from the east.
» Site B is part of the City's ultimate service area and was planned as a residential land use in the Comprehensive Sewer Study.
» The nearest sanitary sewer is located along Industrial Drive west of
» Armstrong Road.
» Sanitary sewer improvements are proposed along Dundas Blvd. A combination of 10", 12", 15", and 18" trunk sewer mains will extend westward from Dundas Blvd. into Site A.
» Extension of the Heath Creek Interceptor through Site B is part of the Cities long term sewer plans.

Water Infrastructure



Water Service

A comprehensive water study was completed in 2006. The study investigated the existing distribution system and made recommendations to improve the water system based on planned growth within Northfield.

General Information

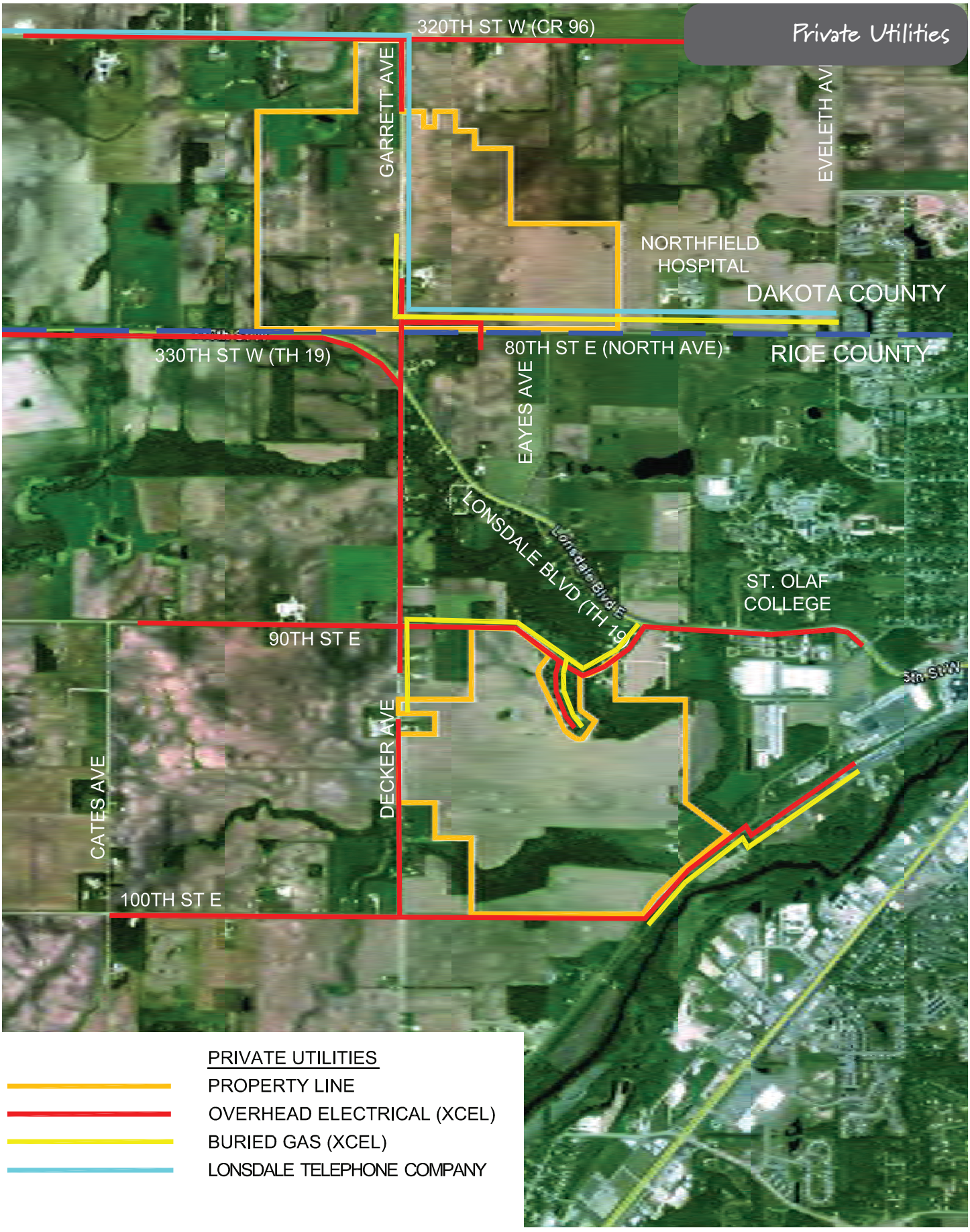
» Future development of Site A and/or Site B will require the extension of water services from the City's existing water system.
» Currently, the City's water supply capacity exceeds the maximum daily demand. Per the water study, the City's population growth rate is projected at 17%. At this rate, the City anticipates its first well improvement (new well) in 2018 and additional wells in 2035 and 2049.

Site A (North Site)

» Site A which is currently designated as an agricultural zone is planned for future commercial and business park use per the 2006 Water Study.
» Water to service the site can be provided by extending the existing water system east of Site A.
» The future water service can extend from two locations: 1) an existing 12" watermain serving the hospital on 80th Street and 2) an existing 12" watermain at Eveleth Avenue.
» From these two locations, the watermain can extend westerly into the new development and provide a looped watermain system.
» In addition to the 12" watermain extension to service Site A, the Comprehensive Water Plan anticipates a 16" watermain along County Road 19 from St. Olaf College northward to 80th Street. This extension of the 16" watermain will provide the necessary fire flow and reliability for the northwest portion of the City.
» The Comprehensive water study identifies a proposed booster pressure zone in which Site A falls in. Without the booster station less than desirable water pressures may occur. Figure 1.2 shows the approximate location of the booster station.
» In addition to a booster station, the City has also identified a need for an elevated storage tank in the northwest portion of the City. The elevated tank is planned to hold 0.5 to 0.75 MG of water.
» The type of uses anticipated within Site A should be identified as well as estimating the anticipated water demand from intended users. The actual amount of water needed by end users in Site A may be more or less than the estimate assumed in the Comprehensive Water Study.

Site B (South Site)

» Site B was historically outside of the City limits and has been annexed. The Comprehensive Water Study anticipated Site B within the City's ultimate service area.
» The land use plan used in the Comprehensive Water Study anticipated a residential land use of 3-4 units/acre for Site B.
» Water to service the site can be provided by extending the existing water distribution system northeast of the site into Site B.
» Water service can be extended form two location: County Road 19 and Armstrong


Private Utilities
320TH ST W (CR 96)
GARRETT AVE
EVELETH AV
NORTHFIELD
HOSPITAL
DAKOTA COUNTY
330TH ST W (TH 19)
80TH ST E (NORTH AVE)
RICE COUNTY
EAYES AVE
LONSDALE BLVD (TH 19)
ST. OLAF
COLLEGE
90TH ST E
DECKER AVE
CATES AVE
100TH ST E
PRIVATE UTILITIES
PROPERTY LINE
OVERHEAD ELECTRICAL (XCEL)
BURIED GAS (XCEL)
LONSDALE TELEPHONE COMPANY

Road; and Industrial Boulevard.

» Per the Comprehensive Water Plan, new 12" watermain would extend west into and through Site B.
» Both 12" extensions would extend to Decker Avenue where they would be connected to complete a new watermain loop.
» Based on the Comprehensive study, even with the water loop through Site B, there may be a small portion of Site B along Decker that may experience lower than desired water pressure.
» Determination of the type of uses proposed (i.e. industrial versus residential), their water demand and pressure requirements will be evaluated with respect to the Comprehensive Water Plan and identify if other improvements to the City water system is needed.

Private Utilities

General Information

» Calls have been placed to the individual providers as well as Gopher State One to obtain plans and schematic drawings for the location of private utilities within or near Site A and Site B
» Additional information on Gas, Fiber, Telephone, and Cable will be forthcoming.

Electric – Xcel Energy

Site A (North Site)

» Overhead electric lines currently run along County Road 23 to the north along 330th Street West to the south.
» Site A can be serviced from electrical utilities along Garret Avenue, which runs down the center of the site. Electrical services can then be extended from Garret Avenue into the site.
» Verification of end user electric needs will be required to determine if existing service is adequate.

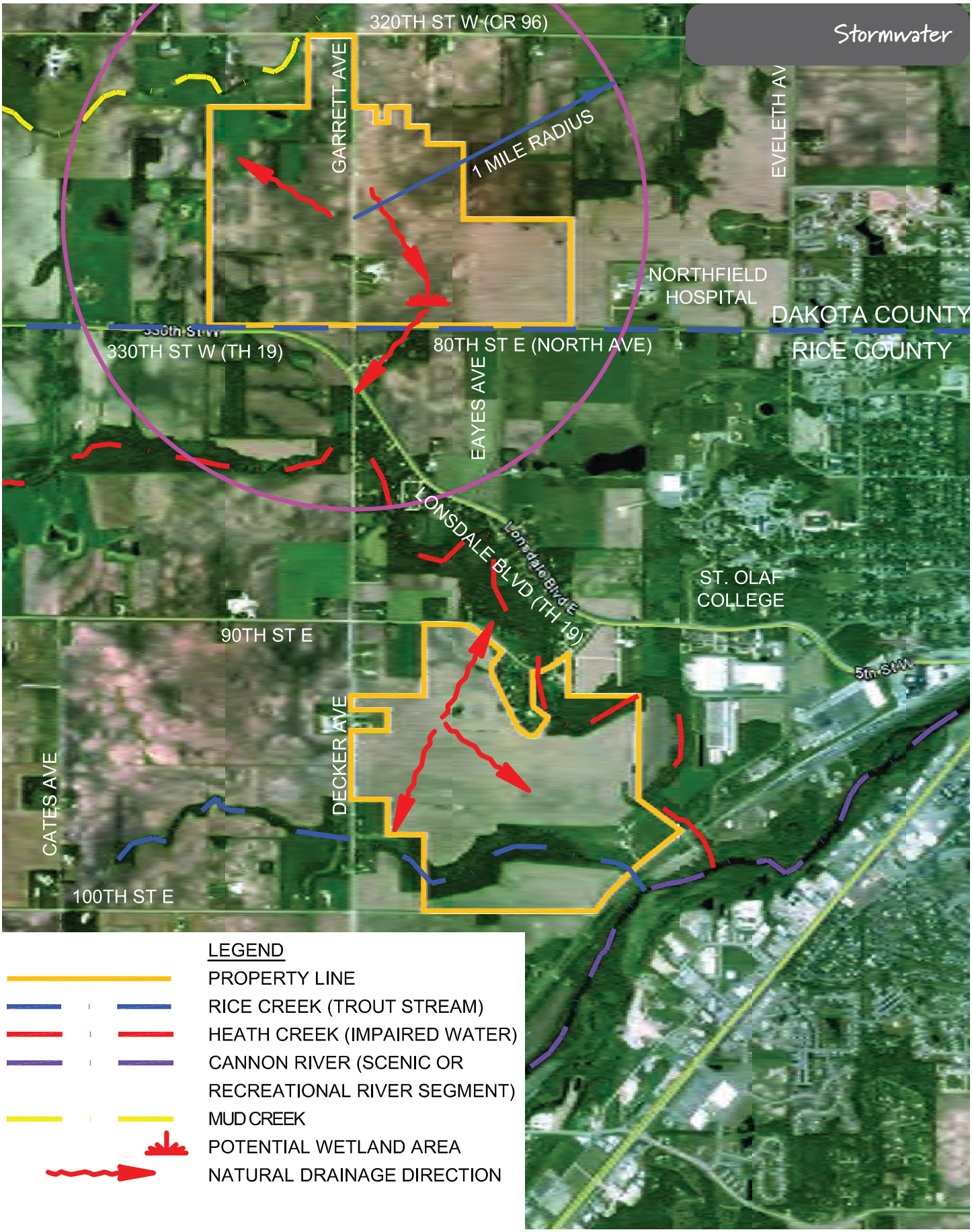
Site B (South Site)

» Overhead electric lines currently run along Decker Avenue to the west, 90th Street East to the north, 100 Street East to the south, and along the existing railway to the east.
» Site B can be serviced with electricity from all sides of the site. Verification of end user electric needs will be required to determine if existing service is adequate.

Gas – Xcel Energy

Site A (North Site)

» Existing gas lines run along 80th Street East to Decker
» Verification of end user gas needs will be required to determine if existing gas service is adequate.


320TH ST W (CR 96)
GARRETT AVE
1 MILE RADIUS
EVELETH AV
NORTHFIELD HOSPITAL
DAKOTA COUNTY
RICE COUNTY
330TH ST W (TH 19)
80TH ST E (NORTH AVE)
EAYES AVE
LONSDALE BLVD (TH 19)
ST. OLAF COLLEGE
90TH ST E
DECKER AVE
CATES AVE
100TH ST E
LEGEND
PROPERTY LINE
RICE CREEK (TROUT STREAM)
HEATH CREEK (IMPAIRED WATER)
CANNON RIVER (SCENIC OR RECREATIONAL RIVER SEGMENT)
MUD CREEK
POTENTIAL WETLAND AREA
NATURAL DRAINAGE DIRECTION

Site B (South Site)

» Existing gas lines run along 90th and 100 Street.
» Verification of end user gas needs will be required to determine if existing gas service is adequate.
» Electric lines currently run along Decker Avenue to the west, 90th Street East to the north, 100 Street East to the south, and along the existing railway to the east.

Fiber, Telephone & Cable

Information on service providers and available connection points for Site A and B are forthcoming.

Storm Water Management

Best Management Practices

» A comprehensive surface water management plan was completed in 2007. The study investigated land and water resources, identified water resource concerns, management goals concerning water quantity, water quantity and guidelines on storm water management.
» Storm Water best management practices for sites A and B shall be implemented in accordance with the Minnesota Pollution Control Agency and the City of Northfield Comprehensive Surface Water Management Plan.

Rate Control

General Information

» New developments will be required to meet the Pre-Settlement conditions for the 2 (2.8 inches in 24 hours) and 100 (6.1 inches in 24 hours) year critical events. Pre-Settlement conditions are defined as the estimated land coverage prior to European settlement.

Site A (North Site)

» Additional requirements beyond what is stated under General Information is not anticipated for rate control pertaining to Site A.

Site B (South Site)

» Site B will be required to meet the maximum discharge rate of 0.1 cfs per acre for the 100 year critical storm event, due to the fact that it is located with in the Rice Creek Sub watershed, per the City of Northfield Comprehensive Surface Water Management Plan.

Infiltration

General Information

» Based on the soils hydrologic group the following infiltration rates shall be used:

Hydrologic Soil Group	Infiltration Rate
A	0.50 in/hr
B	0.25 in/hr
C	0.10 in/hr
D	0.03 in/hr

» According to the Natural Resource Conservation Service (NRCS) soil survey, both sites A and B contain soils that are predominately classified as soil group B.

» According to the City of Northfield Comprehensive Surface Water Management Plan new developments are required to infiltrate storm water runoff except where it is demonstrated to be a risk to groundwater quality, the land use is incompatible, or soils are not conductive to infiltration. Conditions that will prohibit infiltration for either site A or B are not anticipated.

» Pre-treatment of storm water is required prior to discharge to an infiltration basin.

» Infiltration systems will be sized to infiltrate the runoff from the impervious surface area from a 0.34-inch rainfall event.

» Projects that discharge storm water from a point that is with in 1-mile of and flows to a trout stream, impaired water, or scenic or recreational river must infiltrate 0.5-inch of runoff from all impervious surfaces.

» Infiltration practices shall maintain three feet of separation between the bottom of the system and the top of the groundwater or bedrock/impervious surface.

Site A (North Site)

» Additional requirements beyond what is stated under General Information is not anticipated for infiltration pertaining to Site A.

Site B (South Site)

» Site B may require additional infiltration of runoff from a 1-inch rainfall over the impervious surface area due to its proximity to Rice Creek.

Water Quality Treatment

General Information

» Per the Comprehensive Surface Water Management Plan new developments must adhere to one of the following water quality treatment standards:
  » Developments must incorporate effective non-point source pollution reduction Best Management Practices to achieve 90% total suspended solids removal and 60% phosphorous removal from the runoff generated by the 2.5 inch rainfall.
  » New Developments must treat storm water to the National Urban Runoff
  » Protection guidelines which include: a permanent pool volume greater than or equal to the 2.5" storm over the entire contributing drainage area, a permanent pool depth greater than or equal to 4' and less than or equal to 10', side slopes of 3:1 (horizontal to vertical) or flatter, a 10' wide safety shelf below the permanent pool, and a pond ratio of 3:1 length to width.
» Catch basins shall have a 2' deep sump, and a 3' deep sump prior to discharge to a wetland, lake, or stream.

Stream, River, Wetland Buffers

General Information

» Scenic or Recreational river segments and trout streams (special waters) shall require an undisturbed buffer zone of 100 linear feet from the ordinary high water mark (OHW) of the special water. The city promotes and encourages the establishment of wetland buffers where feasible.

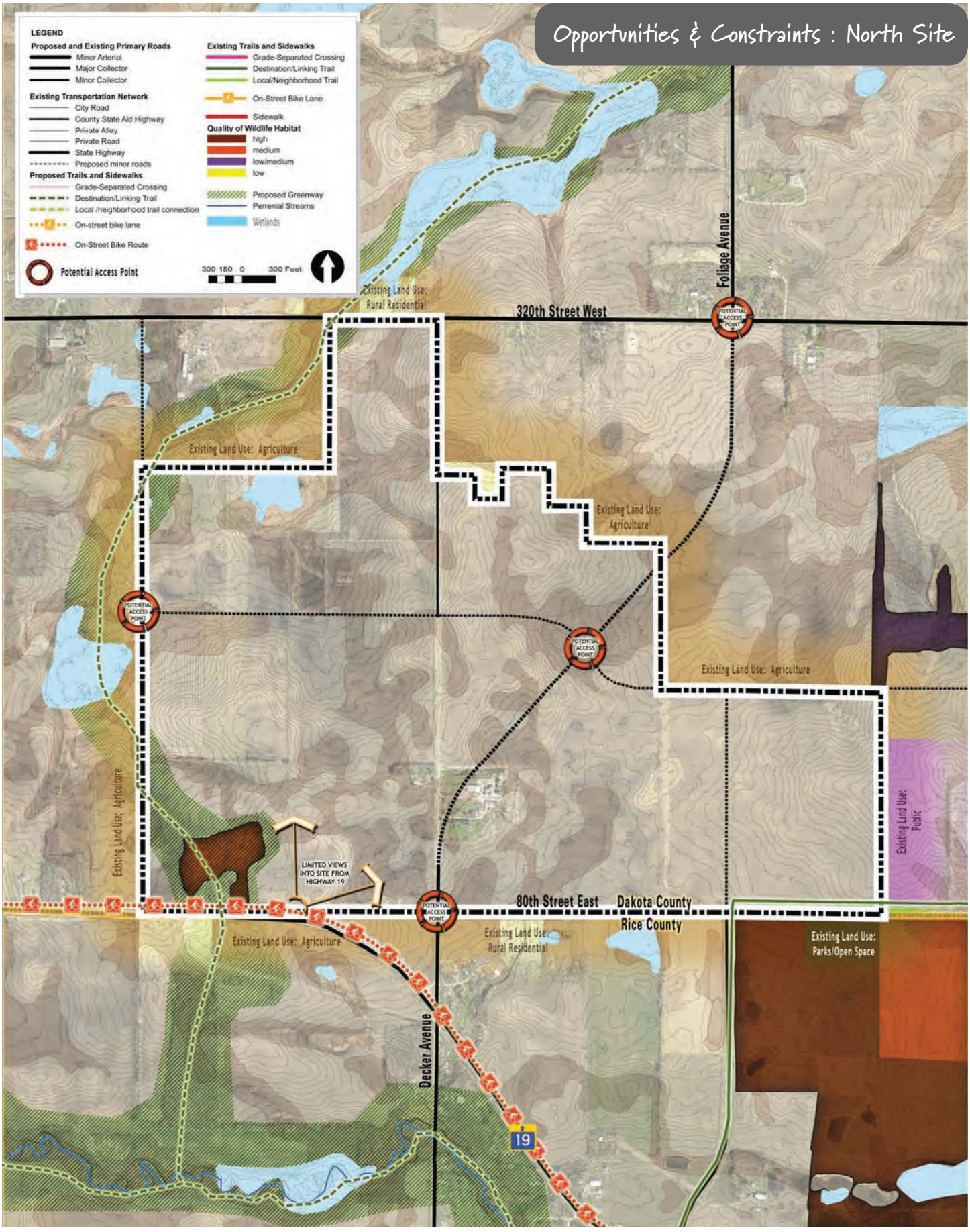
Site A (North Site)

» In reviewing USGS and National Wetland Inventory maps, wetlands may be present on Site A. The determination of wetlands that may fall within the project area will require confirmation through wetland delineation by a certified wetland delineator.

Site B (South Site)

» Rice Creek which is classified as a trout stream runs through Site B and will have to maintain an undisturbed 100 foot buffer zone from the OHW.

Opportunities & Constraints : North Site



Issues, Opportunities, & Constraints North Site

Issues

Significant issues related to development of the North Site as a future employment center include the following:

» Distance (6 miles) of site from Interstate Highway 35 is not an advantage for distribution and warehouse uses
» Potential for site development to create sense of "gateway" into the City of Northfield
» Site access from State Highway 19 needs improvement to make it safe for increased traffic and truck traffic
» Future routing of County Road 23 through the site is critical to establish better site access and egress
» Multiple land owners, including St. Olaf College
» Relationship to nearby St. Olaf College
» Hydric soils
» Cost of providing infrastructure to serve the site for future development

Opportunities

Significant opportunities related to development of the North Site as a future employment center include the following:

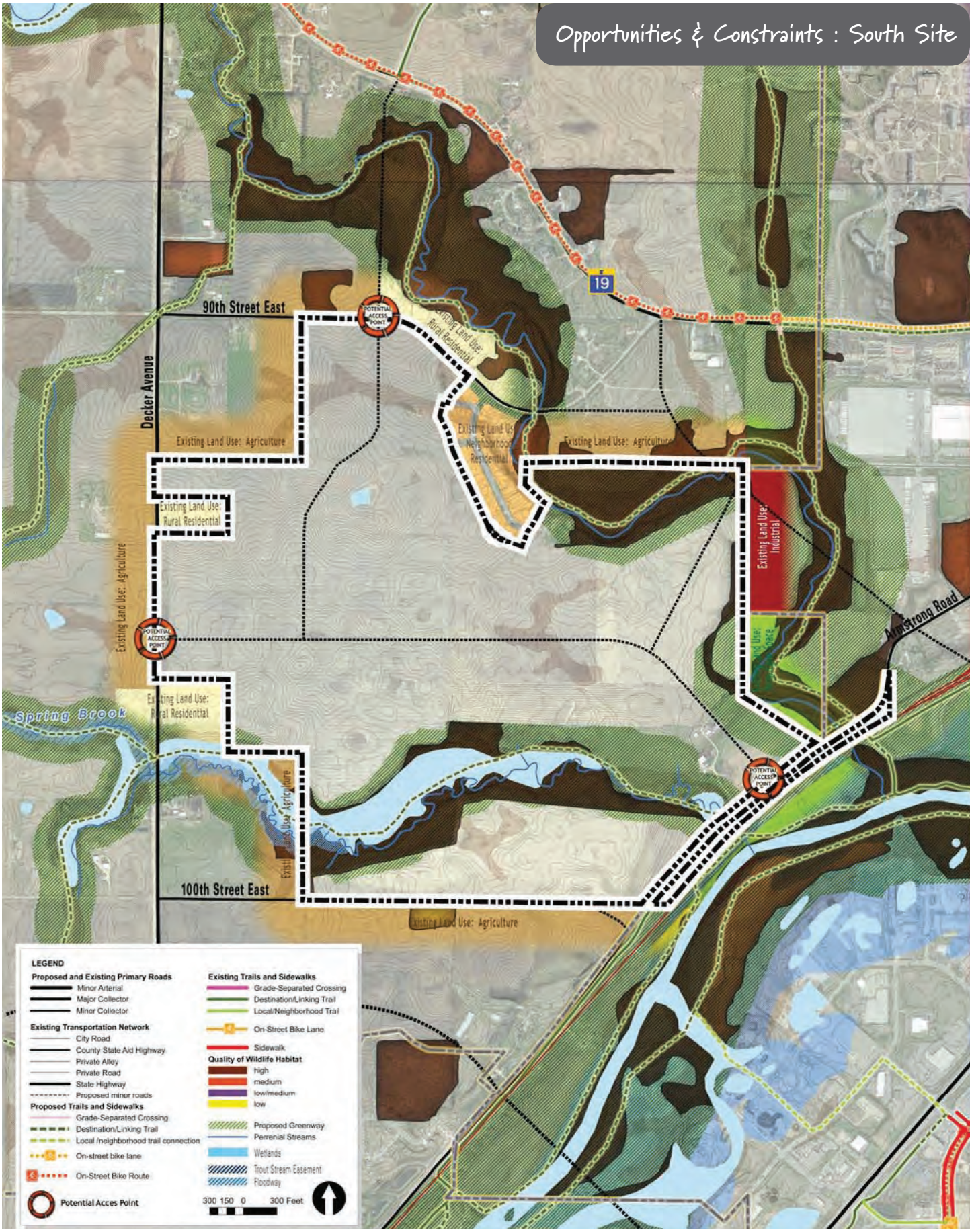
» Good visibility from State Highway 19
» Potential for site development to create a positive sense of "gateway" into the City of Northfield
» Improve site access
» Connect Northfield Hospital more directly to State Highway 19
» The sites natural features are conducive to large scale, commercial development
» Build on success of Northfield Hospital
» Build on "campus" theme
» Connect to the regional trail and open space system

Constraints

Significant constraints related to development of the North Site as a future employment center include the following:

» Site is not currently served by public utilities – water, sanitary and storm sewer, gas, electric, etc.
» Current site access is unsafe and challenging for truck traffic
» Distance (6 miles) of site from Interstate Highway 35 is not an advantage for distribution and warehouse uses
» Multiple land owners

Opportunities & Constraints : South Site



Issues, Opportunities, & Constraints South Site

Issues

Significant issues related to development of the South Site as a future employment center include the following:

» The site lies within Bridgewater Township - it has not been annexed into the City of Northfield
» Distance (7 miles) of site from Interstate Highway 35 is not an advantage for distribution and warehouse uses
» Site access and visibility are currently poor, particularly for commercial uses
» Multiple land owners
» Potential storm water impacts to Heath Creek and Spring Brook
» Potential trout habitat impacts to Spring Brook
» Existing residential uses located adjacent to the site
» Topography does not lend itself to large scale, industrial buildings
» Cost of providing infrastructure to serve the site for future development

Opportunities

Significant opportunities related to development of the North Site as a future employment center include the following:

» Unique site amenities – the two creeks – offer a desirable location for certain land uses (corporate office and residential)
» Development of the site and new land uses provide the opportunity to restore and enhance the stream corridors and improve water quality
» Potential to improve site access and visibility
» Connect to the regional trail and open space system
» Potential to annex site into City of Northfield

Constraints

Significant constraints related to development of the North Site as a future employment center include the following:

» Site is not currently served by public utilities – water, sanitary and storm sewer, gas, electric, etc.
» Current site access and visibility are poor, particularly for commercial uses
» Distance (7 miles) of site from Interstate Highway 35 is not an advantage for distribution and warehouse uses
» Multiple land owners
» Streambank and stormwater ordinance restrictions limit and control the type of development that can occur on the site
» Site does not lie within the City of Northfield

Chapter 3

Community Involvement

Community Involvement

The project was initiated with a tour of both candidate sites.

The tour included adjacent site features.

The community was involved throughout the planning process in several ways, providing the planning team with valuable project information, setting goals, generating ideas, reviewing concepts, and providing direction regarding the planning process and outcomes. The subsequent sections describe the process and outcome for each community engagement:

Steering Committee

The City formed a project Steering Committee consisting of Northfield business leaders, elected and appointed officials, college representatives, and Bridgewater Township officials. The Steering Committee's mission was to provide the planning team with guidance and input throughout the planning process. The planning team met on a monthly basis with the Steering Committee to review plan progress and receive input on process, concepts, and outcomes.

Economic Development Authority

The Economic Development Authority (EDA) initiated the planning process and met on a regular basis with the planning team and the Steering Committee in a joint meeting format. Several members of the EDA met at each monthly Steering Committee meeting. Similar to the Steering Committee, the role of the EDA during the planning process was to monitor the process and provide input to the planning team on key initiatives, planning progress and concepts.

Technical Committee

The Technical Committee consisted of City staff members representing the Northfield Economic Development Authority, Community Development, Planning and Engineering. City staff and the planning team met regularly to track plan progress, coordinate and manage expectations, review proposed concepts and discuss outcomes. The Technical Committee provided the planning team with day to day communication and important project information.

Property Owners

The planning team and Technical Committee met with property owners and Northfield business leaders at key intervals during the planning process. Property owners were consulted with early in the process to establish long-term objectives for the properties being planned. The planning team met again with property owners to review preliminary concepts and then again to review a draft of the preferred master plans. Property owners were encouraged to attend the monthly Steering Committee meetings to stay abreast of planning progress and discuss planning issues.

Local Business Community

Local business leaders were interviewed early in the process to provide the team with a better understanding of what attracts and retains businesses to Northfield, and what may be the barriers to establishing and maintaining a business in Northfield. These interviews provided valuable information that was incorporated into the market report.

Strategic Visioning Charrette

In December, 2009, the City and planning team conducted a Strategic Visioning Charrette. The intent of the Visioning Charrette was to explore context and site issues, opportunities, desired outcomes and potential solutions and strategies for future business and industrial park development on each project site.

A charrette is an intense, on-site, collaborative work session between the client and the project team, usually done in a very short period of time. The charrette workshop accelerates the planning process by creating an interactive environment with all major participants working together without the normal interruptions that delay communications. It provides an opportunity to achieve consensus on the worthiest approaches to the project.

The charrette was a collaborative planning process, in this case, designed to harness the talents and energies of the planning team along with members from the EDA, Steering Committee, stakeholders with input from the community to create and discuss preliminary master plan concepts. Specifically, the purpose of the charrette was to achieve the following:

- Kick start the creative planning process
- Explore and discuss potential master plan alternatives for the business park site(s)
- Capitalize on the history and knowledge of key stakeholders and members of the community
- Build consensus for preliminary master plan concepts
- Develop preliminary land use programs, concept drawings, diagrams, design principles and strategies

The planning team was able to successfully generate three options for the North Site and two options for the South Site during the two-day charrette. The charrette concluded with a pin-up forum open to the community to provide the planning team with feedback on the preliminary concepts. The summary of comments received can be reviewed in the Project Resource Manual.

The City and planning team conducted a Strategic Visioning Charette to explore ideas.

Open House Presentation

Developers Roundtable

An important step in the planning process for a master plan of this magnitude is for the planning team to review and confirm the feasibility of preliminary planning concepts with the development community. In the case of the Northfield Business and Industrial Parks, the planning team conducted a "Developers Roundtable", where project background and preliminary concepts were presented for feedback and discussion with a group of local development professionals. The developer input served several purposes, including the confirmation of the feasibility of the development program and the preliminary plan concepts, discussion of potential strategies for funding the development, and key issues to anticipate in the marketing and development of the master plan. Notes from the Developers Roundtable are included in the Project Resource Manual.

Public Open Houses

Checking in with the community to gain important feedback on plan goals, preliminary concepts, concerns and priorities is critical to the planning process. During the Northfield Business and Industrial Park planning process, the City and the planning team facilitated two Public Open Houses. The purpose of each open house was to present plan background, purpose and concepts and to receive feedback from the community.

In April, 2010, the City and planning team conducted the first open house. The primary mission of the first open house was to present preliminary concept alternatives for each site and then to listen to community desires and concerns regarding each concept. A summary of public comments can be reviewed in the Project Resource Manual.

In September, 2010, the City and planning team conducted the second open house. The purpose of the second open house was to present progress on preferred master plans and to receive community input regarding the draft master plans, development guidelines and potential phasing strategies. A summary of public comments can be reviewed in the Project Resource Manual.

Developers Roundtable

Planning Commission

The Northfield Planning Commission provided necessary and important review of the plan concepts, development guidelines and the preferred master plan. The planning team met with the Planning Commission three times to review plan progress and receive input.

In April, 2010, the planning team met with the Planning Commission to review project background, the market report and preliminary concepts. In September and October, 2010, the planning team met with the Planning Commission to review progress on the development guidelines, preferred master plans and potential phasing strategies.

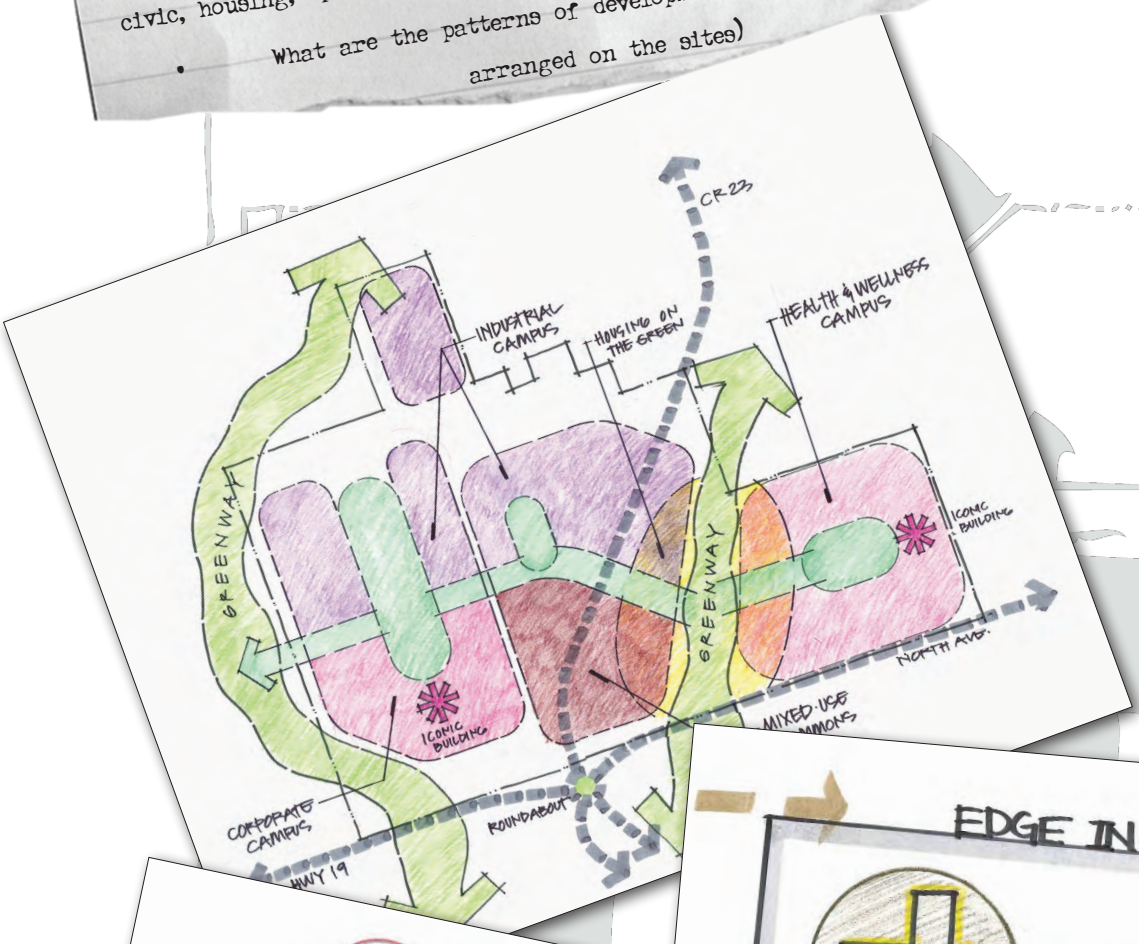
City Council

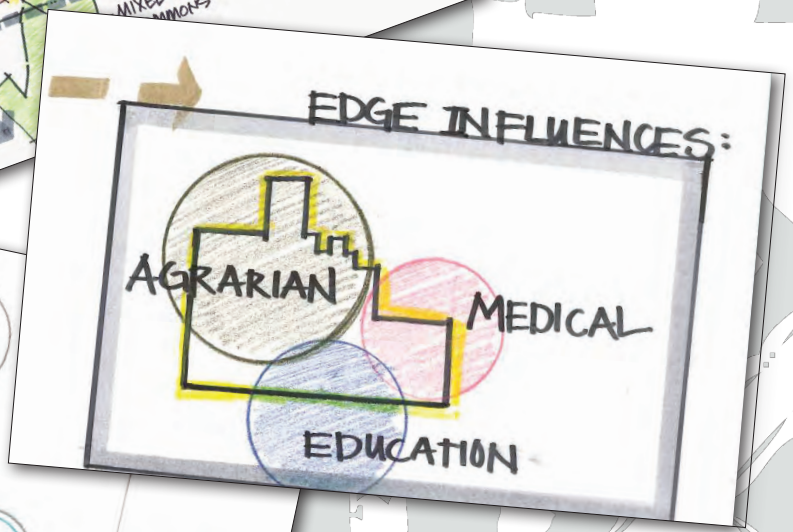
The planning team met with the Northfield City Council in April and November, 2010, to review project process and recommendations of the Draft Master Plan. Several City Council members also participated in the process as members of the steering committee.

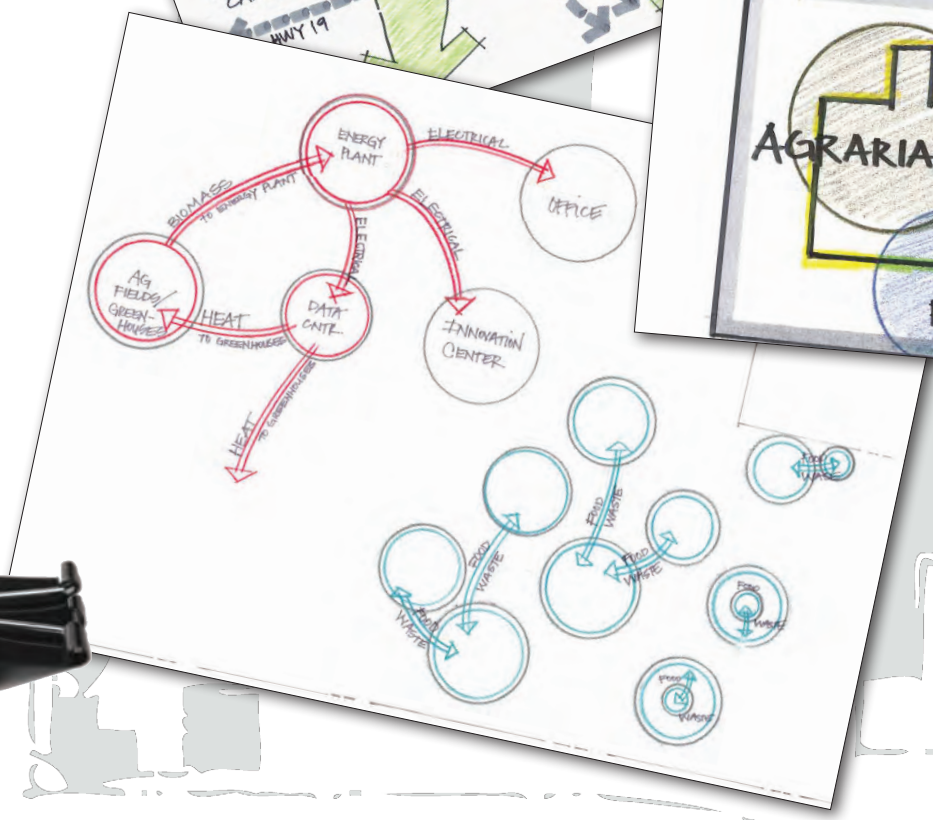
Two Public Open Houses were held to receive feedback from the community.

What is your vision for the Business/Industrial Park?

- What is the mix of land uses? (office, industrial, retail, civic, housing, open space and parks)
- What are the patterns of development? (how are buildings, arranged on the sites)







Chapter 4

Alternative Analysis

Design Process

Design Process

The process to develop preliminary concept alternatives included extensive input from the planning team, stakeholders, city representatives and the community. Upon completion of background analysis, site studies, market analysis and goal setting, the process of developing plan options began. This process included creative workshops, concept development, design reviews, and public open houses to provide feedback on the planning progress. Specifically, the design process included the following key components:

Visioning Charrette

The planning process commenced with a two day visioning charrette in December, 2009 to generate preliminary land use programs, concept drawings, diagrams, design principles and strategies for each site. With constant feedback from charrette participants, the charrette forum provided the opportunity to build consensus on common plan elements at an early stage in the process. The planning team developed three concept alternatives for the North Site and two concepts for the South Site during the charrette. These preliminary concepts provided the foundation for further development of the master plan.

Design Charette

Concept Development

The preliminary alternatives prepared and public input received during the Strategic Visioning Charrette provided the basis for further concept development. The planning team, with direction from the Technical and Steering Committees, developed three plan options for the North Site and two plan options for the South Site. Each option proposes a land use program geared to create employment centers with support uses to help distinguish the future business parks and provide identity, such as workforce housing, retail, civic, and open space uses. Transportation systems were studied and planned for to provide access and circulation for vehicular, bicycle and pedestrian modes of transportation. Open space systems were planned to connect with the regional greenway system and to provide adequate open space on-site for storm water management and recreational use of the system.

Concept Development

Concept Review

Once concepts had been developed, they were reviewed extensively to gain consensus on the most desired qualities and characteristics of each plan. The review input provided the planning team with direction regarding planning themes, concepts and strategies to incorporate into the preferred master plans for each site.

The following groups reviewed and provided input on the concept plans:

- Steering Committee/Technical Committee – Monthly Meetings, 2010
- Landowners – April, 2010
- Professional Development Community – Developers Roundtable, June, 2010
- Planning Commission – April, 2010
- City Council – April, 2010
- Community – Public Open House, April, 2010

Concept Review

Common Design Elements

The land use mix proposed includes support retail.

Planned greenways connect to proposed regional greenway system.

While each concept plan incorporates a different underlying theme and set of land uses to support that theme, each also shares the following common plan elements:

Land Use

» Land uses are employment based – office, light industrial, industrial
» Includes a mix of support uses – housing, retail, civic and institutional, open space
» General locations of land uses relative to infrastructure and adjacent uses

Infrastructure

» Trunk roadways connected to regional systems
» Future CR 23 alignment informed by 2008 Northwest Northfield Highway Corridor Study Report
» Interchange improvements – better access off SH 19
» District storm water management strategy
» Existing utilities will extend into each site from east to west and south to north.

Open Space

» Greenways – connect to proposed regional greenway system identified in the 2008 Parks, Open Space, and Trail System Plan
» Protect and enhance Heath Creek and Spring Brook
» Utilize the open space system to infiltrate and detain storm water
» Connect proposed trail systems to the regional trail system

Development Program

Each concept includes a development program that is employment based, with a mix of additional land uses identified to create a more diverse and sustainable development. The development program utilized for each concept was informed by prior planning studies, the master planning process, the market analysis and the underlying theme of each concept. Specifically, the development programs have been informed by the following:

Targeted industries include environmental technologies.

Target industries

As mentioned in earlier segments of this document, the Northfield Business and Industrial Park Master Plan builds on recommendations from the 2006 Comprehensive Economic Development Plan. That study identified the following target industries to pursue for future economic development in Northfield:

- Logistics
- Specialty Manufacturing
- Environmental Technologies
- Healthcare and Medical
- Professional and Technical
- Information Technology

Target Industrial Program

As a result of the market analysis, a program for industrial land was recommended, based on analysis of the proportions of each property type in the Minneapolis-St. Paul metropolitan region, adjusted for the market conditions observed in the I-35 Corridor from Eagan to Owatonna. Assuming the GDP continues to grow at a rate similar to the last decade over the next twenty years, and assuming the creation of new industrial space demand will track the change in GDP as it has historically done, projections indicate the following industrial property demand will be created in Northfield by 2030:

Land Use	Percentage (by SF)	Building Program	Acres
Bulk Warehouse	15%	300,000 sf	30 acres
Office Warehouse	15%	300,000 sf	30 acres
Office Showroom	10%	200,000 sf	20 acres
Manufacturing	40%	800,000 sf	75 acres
Other (Data Center, Professional Office, R & D)	20%	400,000 sf	38 acres

Extended Development Program

Several other potential development types and land uses were discussed and explored as a result of input from Technical/Steering Committee and the Northfield business community and further informed by the market analysis. Many of these land uses were discussed as potential differentiators to distinguish the Northfield Business and Industrial Park and attract new businesses to the City. The following additional land uses and associated land requirements were discussed and planned for in the concept alternatives:

The extended program development includes a potential conference center.

Land Use	Percentage (by SF)	Building Program	Acres
Energy Park			20-30 acres
Conference Center			20-30 acres
Corporate Campus			20-40 acres
Community/Technical College			5-10 acres
Hotel Accommodations			5-10 acres
Civic Uses (daycare, recreational, community center, other support uses)			10-25 acres
Residential (alumni housing, senior housing, townhomes, live/work)			20-50 acres
Retail (support retail)			5-10 acres
Open Space	20-25%		100-125 acres
Right of Way	10-20%		50-100 acres

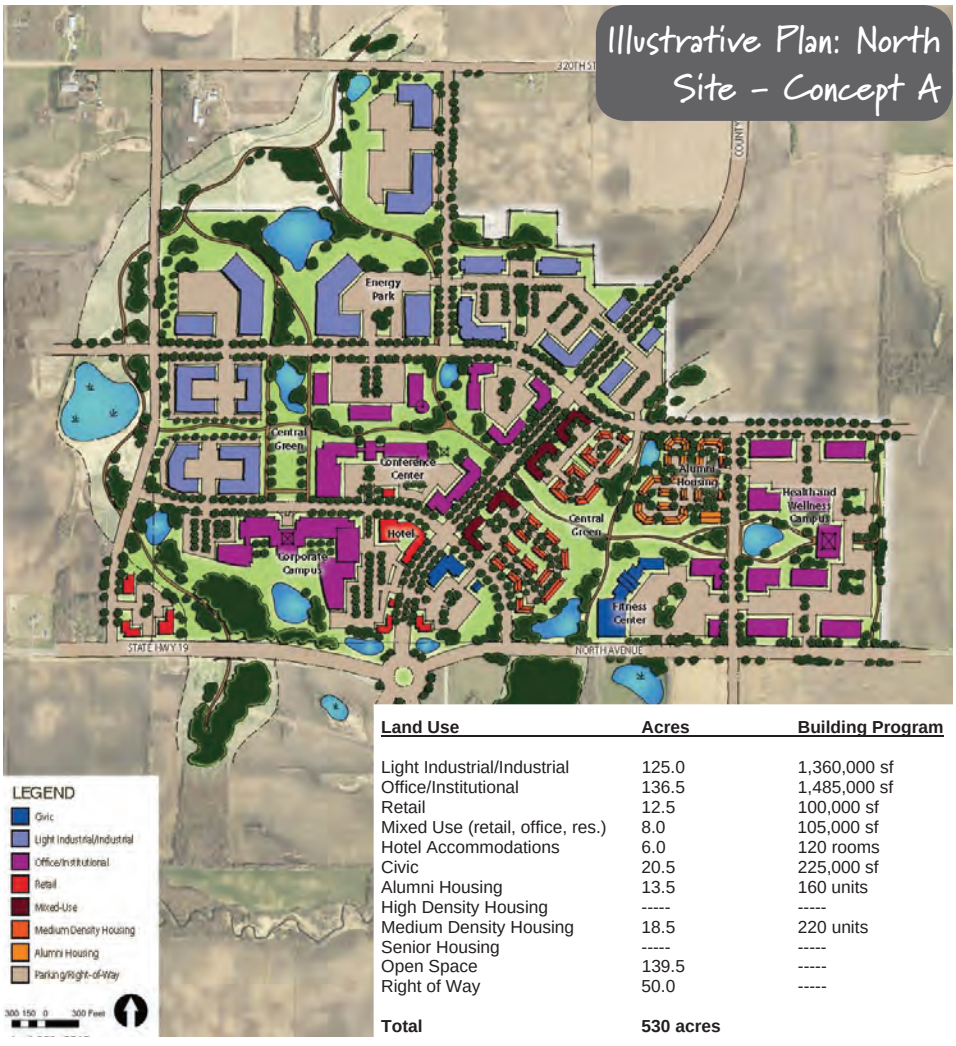
Concept Programs

Each concept plan incorporates a "big idea". For instance, one of the concepts for the North Site is built around the 'campus plan' idea, where businesses and other land uses are organized around a series of courtyards, connected by pedestrian greenways. In each case, the big idea influences the specific mix of land uses and their locations. Further discussion of the big idea and land use strategies is discussed in the next section.

North Site - Concept A

Big Idea

Concept A builds on the history of Northfield's two renowned colleges and proposes the business and industrial park in a campus setting in which buildings are organized around public open spaces – parks, plazas and greenways, similar to the campus quadrangles found on the academic campuses of Carleton and St. Olaf Colleges. The design of an attractive public realm for employees, residents and visitors to enjoy is critical to the success of the Campus Plan Concept. The internal roads should provide adequate circulation to businesses within the park but should also be designed so that the pedestrian and bicyclist can move safely and feel comfortable with the environment around them. As much of the movement within campuses will be on foot, direct, safe and attractive pedestrian routes must be provided. There must be large open spaces within the campus. The public environment therefore becomes the basis for the Campus Plan Concept. This not only includes roads, bicycle trails and pedestrian routes; but also includes parks, open spaces, plazas and the general environment. This is fundamental to establishing the ambiance of the business park and attracting businesses to the campus.

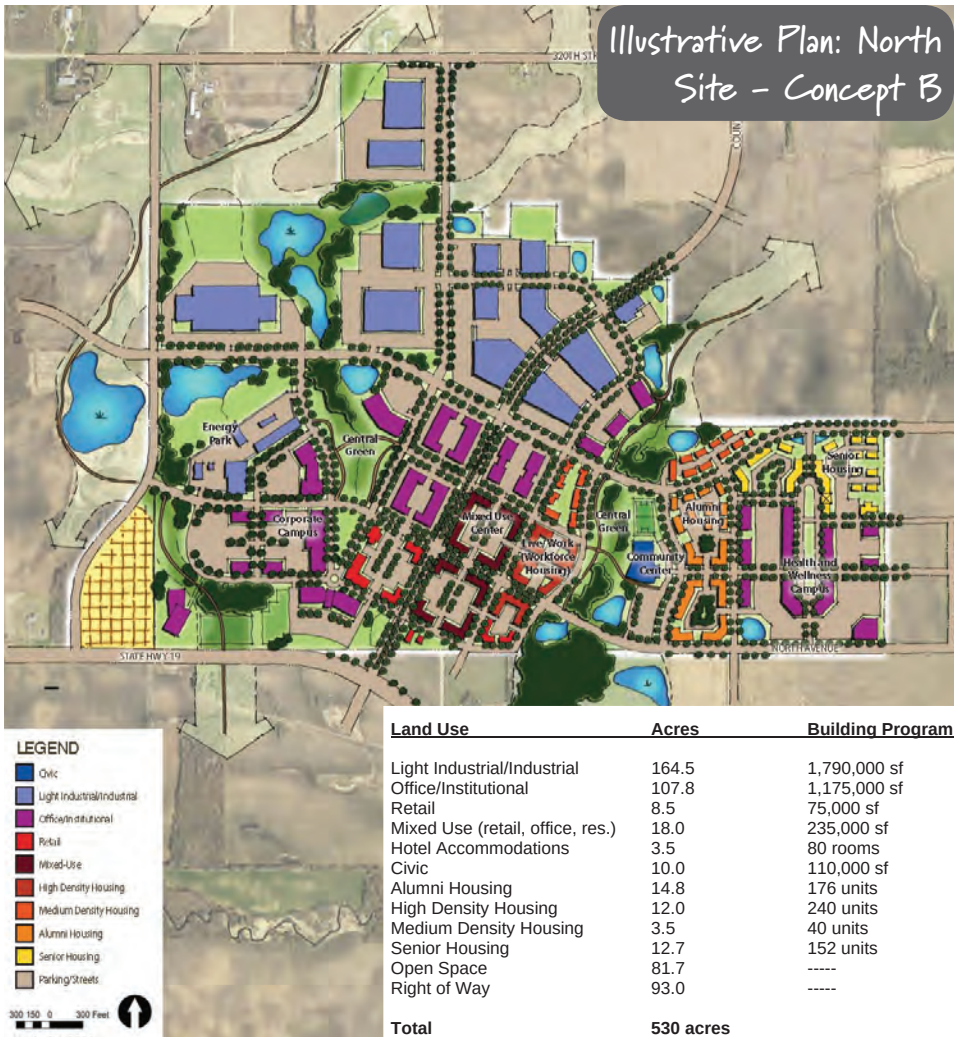


Land Use	Acres	Building Program
Light Industrial/Industrial	125.0	1,360,000 sf
Office/Institutional	136.5	1,485,000 sf
Retail	12.5	100,000 sf
Mixed Use (retail, office, res.)	8.0	105,000 sf
Hotel Accommodations	6.0	120 rooms
Civic	20.5	225,000 sf
Alumni Housing	13.5	160 units
High Density Housing	-----	-----
Medium Density Housing	18.5	220 units
Senior Housing	-----	-----
Open Space	139.5	-----
Right of Way	50.0	-----
Total	**530 acres**	

North Site - Concept B

Big Idea

Concept B proposes a more sustainable alternative to typical business park developments by promoting a greater mix of land uses intended to support the needs of businesses, employees, residents and visitors. The concept proposes a business park organized around a more urban and dense mixed-use center including places of employment, shops and services, places to live and recreate. The concept is to create a "place" within the business park that is distinct, identifiable and pedestrian-scaled. It is intended to fit within the context of Northfield in a way that recalls traditional patterns of development with smaller blocks, narrower streets, public gathering spaces and buildings designed to support a vibrant streetscape. Further from the village center, the patterns of development are planned to be more flexible and suitable for larger-scaled, industrial and corporate office uses.

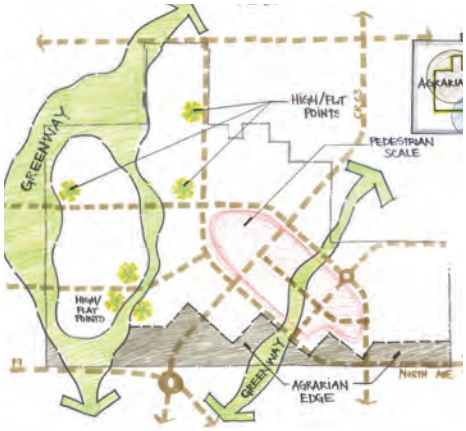


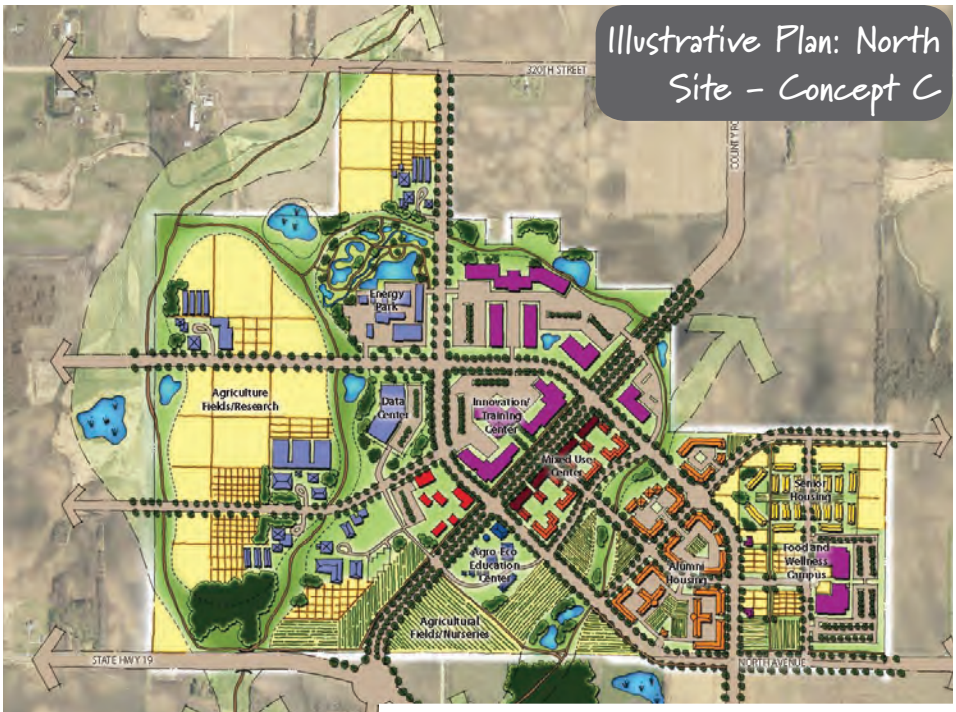
Land Use	Acres	Building Program
Light Industrial/Industrial	164.5	1,790,000 sf
Office/Institutional	107.8	1,175,000 sf
Retail	8.5	75,000 sf
Mixed Use (retail, office, res.)	18.0	235,000 sf
Hotel Accommodations	3.5	80 rooms
Civic	10.0	110,000 sf
Alumni Housing	14.8	176 units
High Density Housing	12.0	240 units
Medium Density Housing	3.5	40 units
Senior Housing	12.7	152 units
Open Space	81.7	-----
Right of Way	93.0	-----
Total	**530 acres**	

North Site - Concept C

Big Idea

Concept C is rooted in the function and form of the rural landscape, specifically the farmstead; and it is guided by the conservation of natural resources and improvement in environmental function. The Ag-Eco Industrial Park proposes a unique concept built around the idea of combining research and innovation for agricultural related industries and energy efficiency. The concept builds on the regions history of agriculture and food production and the city's desire for intellectual curiosity and environmental awareness. It is a visionary concept that sees a future of sustainable and innovative agricultural practices being researched and developed within the business park. It incorporates a renewable energy park that utilizes waste from the agriculture and food industries from the business park and surrounding region. Conceptually, the Ag-Eco Industrial Park learns from the natural ecosystem and seeks a closed cycle of materials flow among industries themselves. Practically, the Ag-Eco Industrial Park is trying to find ways to minimize and reprocess the waste rather than discard it.





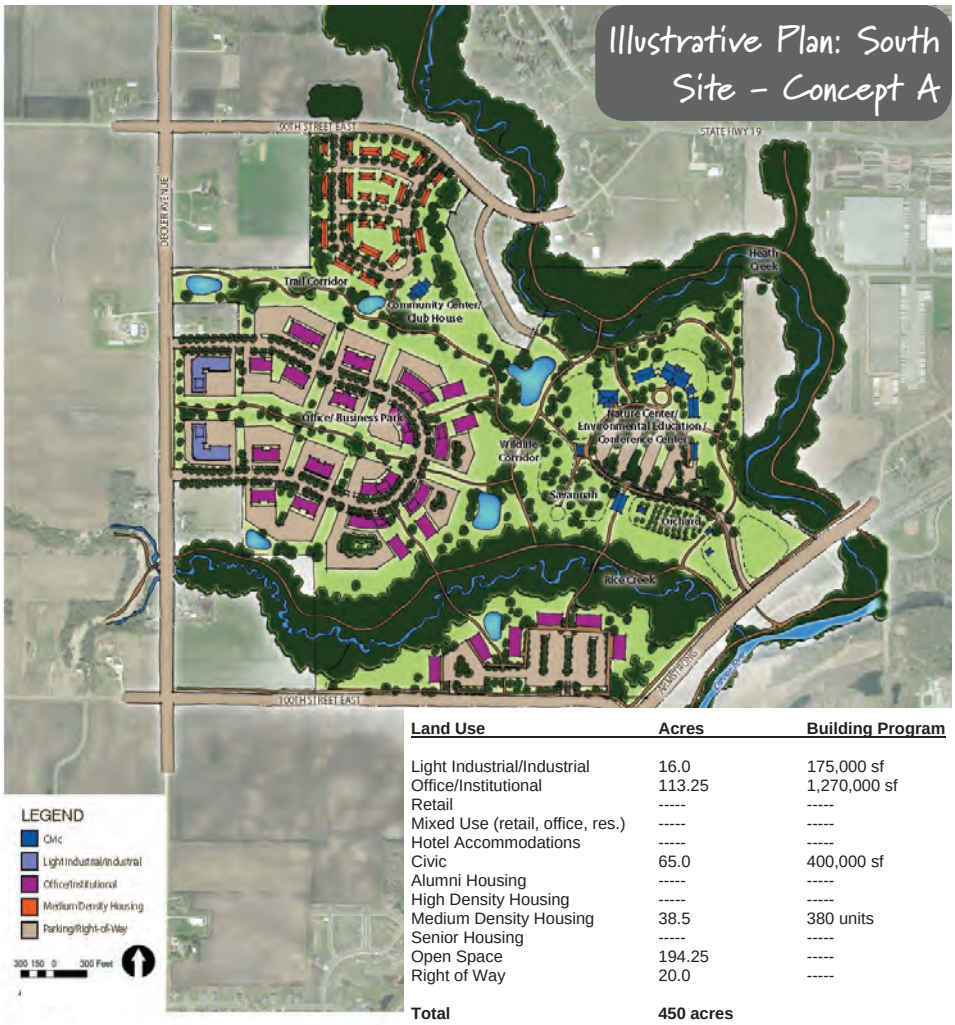
Illustrative Plan: North Site - Concept C

Land Use	Acres	Building Program
Light Industrial/Industrial	212.5	1,850,000 sf
Office/Institutional	68.0	740,000 sf
Retail	8.0	70,000 sf
Mixed Use (retail, office, res.)	6.0	80,000 sf
Hotel Accommodations	-----	-----
Civic	8.0	87,000 sf
Alumni Housing	32.0	384 units
High Density Housing	3.0	60 units
Medium Density Housing	7.0	84 units
Senior Housing	20.0	200 units
Open Space	95.5	-----
Right of Way	70.0	-----
Total	**530 acres**	

South Site - Concept A

Big Idea

Concept A proposes a "park in the landscape". Clusters of development are shaped by setbacks along the two creeks and the wildlife greenways that connect them. Capitalizing on the potential high quality of the landscape, this concept maximizes development edges by clustering development while maximizing opportunities to create wildlife habitat and restore the stream corridors. The idea is that protecting and enhancing the landscape will create value in the business park. The plan proposes landscape buffers between different clusters of land uses, eliminates vehicular circulation through the site from Armstrong Road to Decker Avenue, and promotes pedestrian connections throughout the park. A potential nature center, environmental education center or conferencing facility is proposed at the confluence of the two creeks, providing the park with a unique civic and natural identity. Business uses are located with access off Decker Avenue and 100th Street East on the site. A cluster of townhomes is proposed adjacent to existing residential uses with access off 90th Street East.

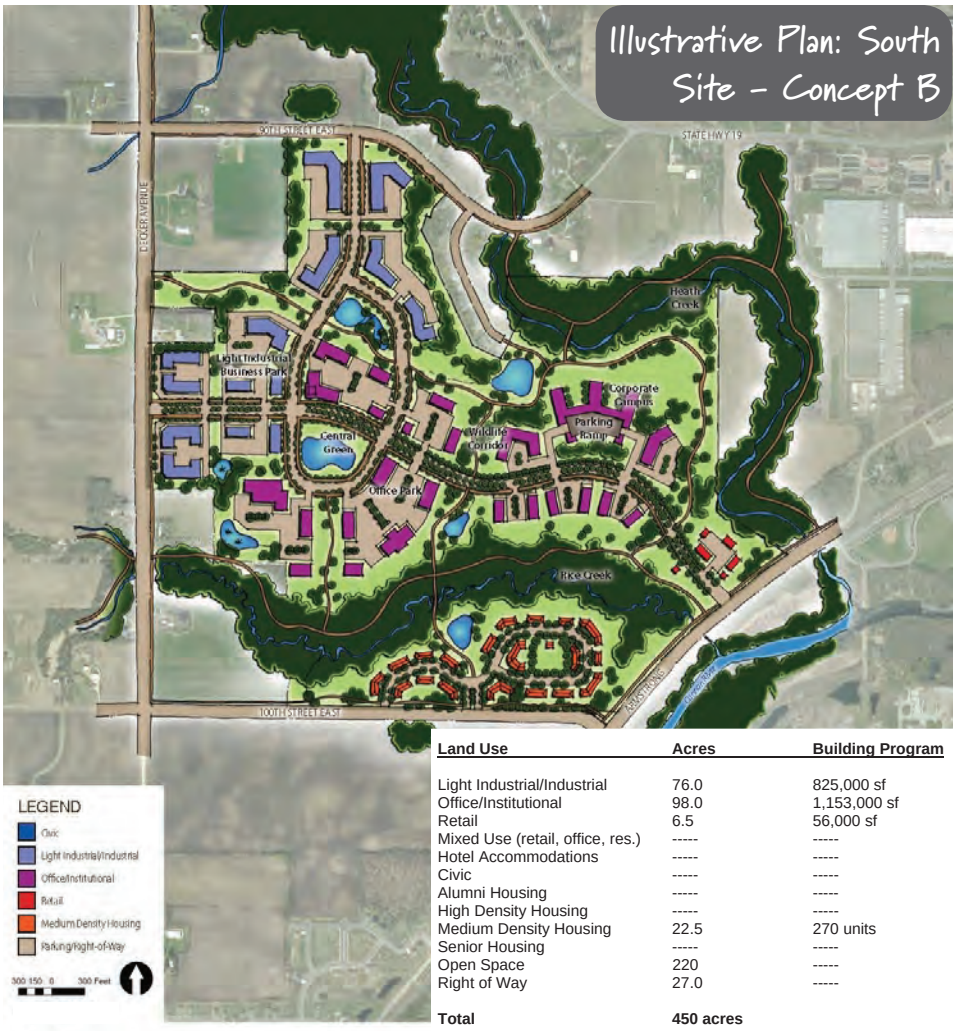


Land Use	Acres	Building Program
Light Industrial/Industrial	16.0	175,000 sf
Office/Institutional	113.25	1,270,000 sf
Retail	-----	-----
Mixed Use (retail, office, res.)	-----	-----
Hotel Accommodations	-----	-----
Civic	65.0	400,000 sf
Alumni Housing	-----	-----
High Density Housing	-----	-----
Medium Density Housing	38.5	380 units
Senior Housing	-----	-----
Open Space	194.25	-----
Right of Way	20.0	-----
Total	**450 acres**	

South Site - Concept B

Big Idea

Concept B offers a development pattern shaped by a parkway spine that mimics the natural drainage patterns of the two creeks. The proposed parkway is a rolling and winding green street that connects Armstrong Road and Decker Avenue. The park get's its identity from the quality and role of the parkway as a collector and connector of cars, bicycles, pedestrians and storm water. Concept B more fully integrates industrial and office uses, located along the parkway with good access to Decker Avenue and 90th Street East. Like Concept A, the stream banks of the creeks are protected with setbacks from development. A grade separated wildlife crossing is proposed under the parkway to connect the two creek greenway systems. A cluster of townhomes is proposed along 100th Street East. Across 100th Street East, Bridgewater Township has planned the property for future residential land use. At Armstrong Road, Concept B proposes a small retail/office node at the entry to the project, built around the organization of the historic farmsteads Northfield. This gateway concept could set the tone for quality and organization of development in the park and provide a unique sense of identity that remembers the rural history of the area.



Land Use	Acres	Building Program
Light Industrial/Industrial	76.0	825,000 sf
Office/Institutional	98.0	1,153,000 sf
Retail	6.5	56,000 sf
Mixed Use (retail, office, res.)	-----	-----
Hotel Accommodations	-----	-----
Civic	-----	-----
Alumni Housing	-----	-----
High Density Housing	-----	-----
Medium Density Housing	22.5	270 units
Senior Housing	-----	-----
Open Space	220	-----
Right of Way	27.0	-----
Total	**450 acres**	

Chapter 5

Master Plan

North Site

South Site

Northfield Business and Industrial Park Master Plan

Feedback from the public process and direction from the Steering Committee resulted in preferred master plans for each of the study sites. The preferred master plans combine the best features from the preliminary alternatives, including the mix, layout and location of land uses, roadways and open spaces. Each plan creates a unique business park that provides opportunities for employment based development while protecting natural resources, planning for public infrastructure, and implementing several quality of life elements. Each concept is designed to create value by capitalizing on the unique natural features and existing infrastructure associated with each site.

The master plans provide a 20-30 year vision and a development framework to achieve differentiation in the market place by promoting sustainable developments that fit within the context of the Northfield community. This means the plans support the community and are sensitive to the scale and patterns of development in Northfield. They complement, rather than compete with existing businesses and destinations, particularly in downtown Northfield. The mix of land uses and open spaces are designed to attract development interest to Northfield by creating an employment center that is differentiated in the market place – one that offers places for people to live, eat, shop and recreate near their place of employment. A compact, mixed-use development will contribute to reduced vehicular trips per day, a healthier environment in which to live and work, and reduced greenhouse gas emissions, all goals of the Northfield Comprehensive Plan.

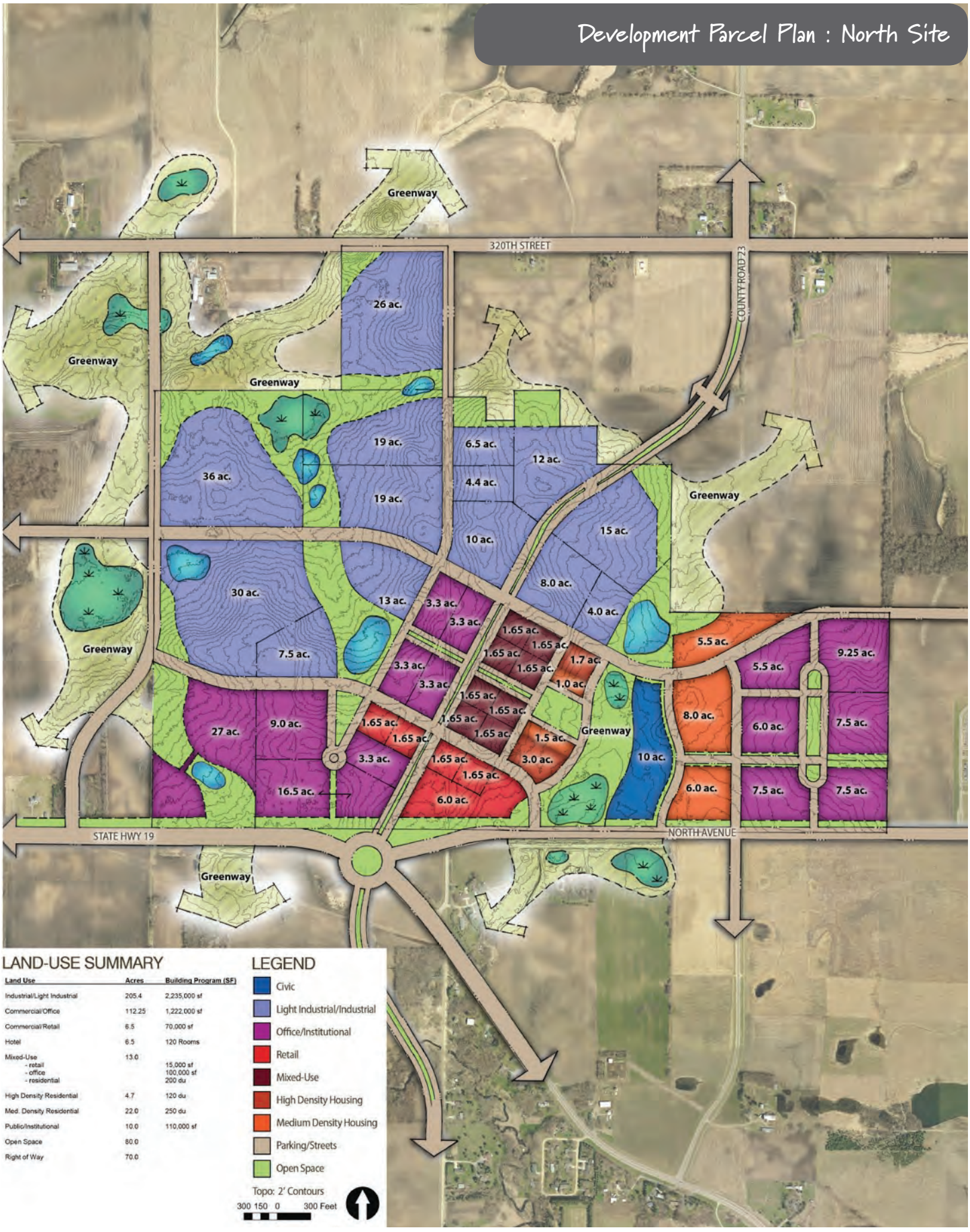
The plan includes a description of the design concept, intended to communicate the preferred development form and expectations. Secondly, each plan identifies future infrastructure improvements necessary to support the desired development. The master plan also includes development guidelines which are intended to implement the community's values to create attractive and sustainable employment districts. And finally, the master plan provides strategies to assist the community with implementing development.


Guam Ave
23
320th St W
320th St W
47
3
Dakota County
Rice County
43
Lincoln St N
Division St
90th St W
19
Northfield
Cannon River
28
100th St W
Decker Ave
78
Dundas
3
100th St E

Master Plan Design Concept - North Site

The North Site is designed as a sustainable, mixed-use employment district. The plan is primarily intended to develop as an office and industrial park however, it promotes a more urban development pattern and diverse mix of land uses than a typical business park. The greater mix of uses and more compact development pattern is intended to create a more sustainable, healthy and attractive business park. It's more sustainable in the sense that it provides affordable places for people to live within walking distance of their work place. It also promotes the development of support services where people work and live, like restaurants, fueling stations and convenience stores. The open space plan is designed to promote healthy lifestyles by connecting to the regional greenway and trails systems and providing the infrastructure necessary for alternative modes of transportation to exist. The open space system is viewed as an attractive and distinguishing amenity of the business park. It is also planned to accommodate a regional stormwater system that infiltrates and detains stormwater runoff, providing an attractive incentive for developers.

Development Parcel Plan : North Site



LAND-USE SUMMARY

Land Use	Acres	Building Program (SF)
Industrial/Light Industrial	205.4	2,235,000 sf
Commercial/Office	112.25	1,222,000 sf
Commercial/Retail	6.5	70,000 sf
Hotel	6.5	120 Rooms
Mixed-Use	13.0	
- retail		15,000 sf
- office		100,000 sf
- residential		200 du
High Density Residential	4.7	120 du
Med. Density Residential	22.0	250 du
Public/Institutional	10.0	110,000 sf
Open Space	80.0	
Right of Way	70.0	

LEGEND

- Civic
- Light Industrial/Industrial
- Office/Institutional
- Retail
- Mixed-Use
- High Density Housing
- Medium Density Housing
- Parking/Streets
- Open Space

Topo: 2' Contours

300 150 0 300 Feet

Land Use - North Site

The mix of land uses support the goals of Northfield's Comprehensive Plan. They are designed primarily to create the framework for a future employment center with a mixed-use core. The mix of uses supports the concept of sustainable development at the business park.

Mixed-Use/Retail

The greatest mix of uses are located at the center of the project along the future County Road 23. The master plan provides development parcels at the core of the project site to accommodate higher density housing, professional office, small-scaled retail uses and lodging accommodations. These uses are intended to complement the employment uses and help to create a vibrant mixed-use center within walking distance of all other uses on the site. The primary purpose of housing development should be to provide workforce housing near places of employment. High density housing should be developed in the form of apartments, condominiums or townhomes. Live/work and affordable housing developments are encouraged. A small amount of retail activity is envisioned as an ancillary use to the primary employment uses. Retail should be small scaled and service the needs of the development. It should not be designed or developed as a destination retail environment that might compete for business with downtown Northfield. Office uses in the mixed-use district are envisioned to provide spaces for professional services such as financial, legal, design and engineering, and health related services.

The architecture fronts the street.

Key Elements

- *Limited areas are dedicated to accommodate mixed-use development*
- *Land uses include high density residential, professional office, shops and services*
- *Residential uses are intended to provide workforce housing*
- *Supports retail and service uses intended to complement industrial and employment uses. Appropriate uses may include convenience stores, restaurants, fueling stations, banks, clinics, day cares, athletic clubs and the like*
- *Oriented to pedestrian scale with buildings located close to the street and parking located behind the building*
- *Intended to support multiple retail/service tenants with no single tenant or use occupying the entire site*
- *Limited vehicular oriented uses and design elements*

Vertical mixed-use with ground floor retail.

Attractive industrial buildings.

Light Industrial/Industrial

The master plan proposes larger scaled industrial uses located to the north and the west of the mixed-use center and office parcels, on large, open sites that can accommodate large building floor plates and have good access to the trunk roadway system but do not dominate visibility from Highway 19. The industrial zone is intended to provide industrial uses that will provide living-wage jobs for members of the community. Industrial uses are envisioned to include office showroom, manufacturing, assembly, warehouse, energy production, food processing, research and development. Industrial developments will project a clean appearance with service and manufacturing activities being conducted indoors and/or screened outdoor areas. Operations are envisioned to be relatively quiet and will limit impacts such as odor, noise and vibration. The plan provides the opportunity for industrial uses that complement Northfield's existing industrial clusters and agricultural activity.

Key Elements

- *Supports light industrial and industrial uses such as office showroom, manufacturing, assembly, warehouse, energy production, food processing, research and development*
- *Limits industrial activities from producing excessive noise, odor, light and vibration*
- *Provides flexibility in parcel sizes*
- *Located to limit outside industrial activities from view along SH 19*

Prominent building entries that face the street.

Office/Institutional

The master plan provides areas to accommodate future employment needs of the community by providing large flexible development sites located on relatively flat and unencumbered land. The parcels identified for office uses are intended to support a range of office tenants such as corporate campuses and professional services that will provide good paying jobs for community members and attract and retain college graduates. Development on the office sites is envisioned to project an attractive façade and entry into Northfield from the west along SH 19. Corporate office uses are located along Highway 19 and North Avenue, where they enjoy good visibility and access off the trunk roadway system, and set the tone for the image of the business park. A health and wellness campus is located along North Avenue adjacent to the Northfield Hospital. Land uses here are encouraged to include medical office, outpatient clinic, hospice, health spas and clubs, and other wellness uses.

Key Elements

- *Supports office uses such as research and development, technology, professional services, and corporate headquarters*
- *Provides flexibility of parcel sizes*
- *Buildings and site development present an attractive appearance into Northfield*
- *Located to screen industrial uses from view along SH 19*

Housing

Other land uses in the plan include medium and higher density residential areas to provide workforce and lifecycle housing opportunities within the community. It is estimated the employment uses on the north site could generate over 5,000 jobs. Providing places for future employees to live nearby helps the development achieve greater measures of sustainability. The higher density residential uses are located in the mixed-use center. The medium density residential uses are located between the mixed-use center and the health and wellness campus, along the greenway. The types of housing products envisioned include apartments, condominiums, and townhomes. Live/work types of development are encouraged.

Workforce housing.

Key Elements

- » *Housing cannot include single family detached types*
- » *Housing must be developed as either apartments, condominiums and/or townhomes*
- » *Live/work types of housing development are encouraged*
- » *Housing should be seen as an opportunity to provide workforce housing near places of employment. As such, housing should not be developed in early phases of development – thresholds of employment development should be established and built before housing is developed*
- » *The plan provides specific locations for housing development related to employment uses and open spaces*

Civic

Finally, the plan includes a place for civic uses, along the greenway and within walking distance of the mixed-use center. Some ideas discussed for this site included a potential location for a Community Center or a skating rink. Other ideas may include a performing arts center, environmental education center, or a health related training and education center.

Civic/Community facilities.

Key Elements

- » *Civic uses should support the goals of the community and the employment district*
- » *Civic uses are ancillary to the employment uses*
- » *Specific uses should complement other civic uses in Northfield*

Open Space Plan : North Site

Open Space - North Site

The open space system is an important distinguishing element and attractive amenity in the plan. It creates a framework for development organized around public spaces and greenways, unique to the business park. It includes a comprehensive system of parks, trails and natural open spaces connected to the regional system of greenways and trails as planned for in the 2008 Parks, Open Space, and Trail System Plan. The open space plan is also designed to accommodate regional stormwater management needs, which are discussed in further detail later in the document.

The primary features of the open space system include:

Greenways

The greenways are located along existing drainage corridors and connect to the planned regional greenway system and adjacent open space preserves. The greenways provide linear open spaces and effective landscape buffers between planned land uses. They contain trails/multi-use paths to provide open space for passive recreation and connections to regional trail networks. They also provide potential areas for treating stormwater discharge.

Parks

The plan includes parks and public green spaces to provide outdoor places for social gathering and recreation. Park and recreational amenities are included in the plan to contribute to the daily health and quality of life for those who live and work within the development. The parks are located in the mixed-use center and the health and wellness campus.

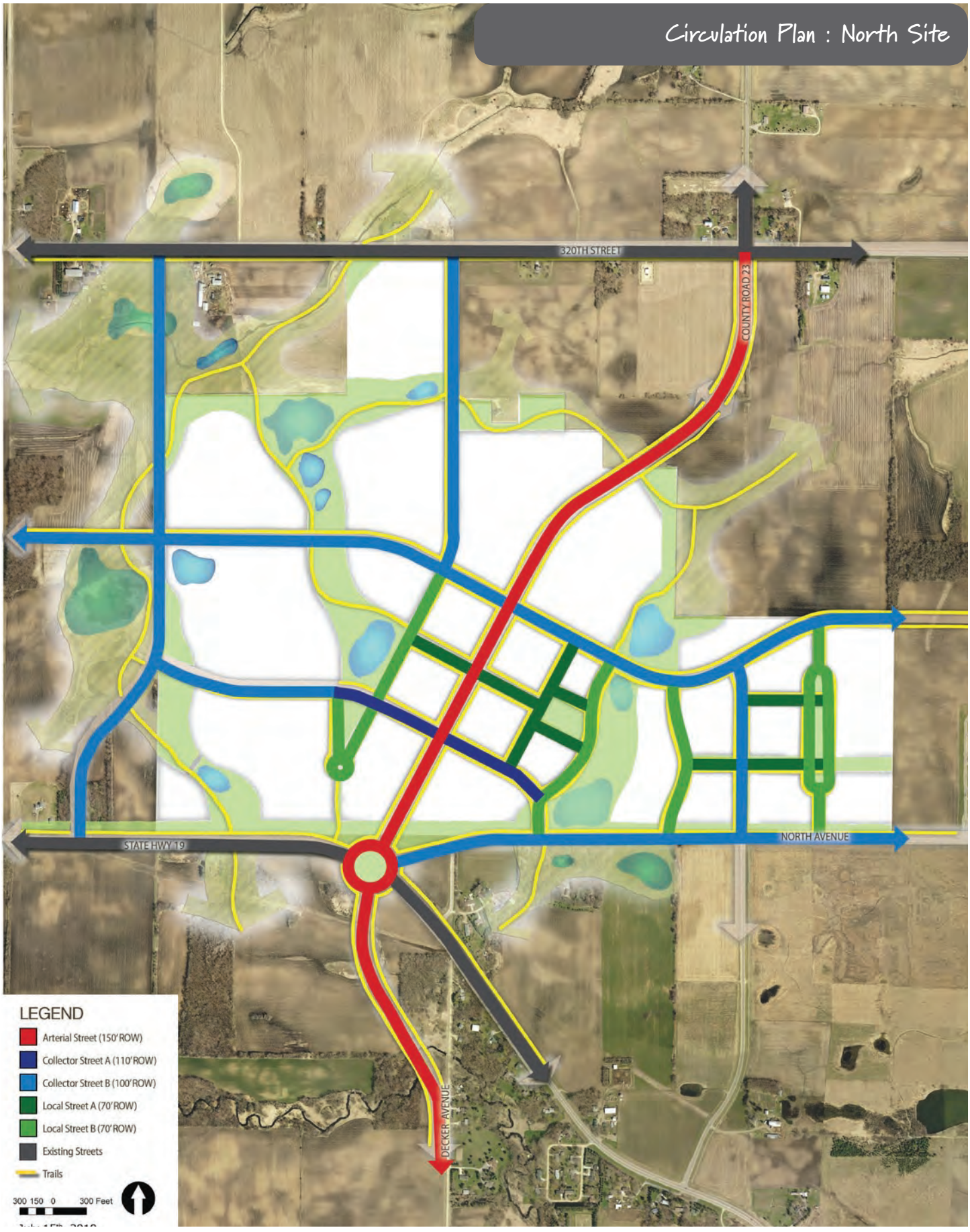
Stormwater ponds should be integrated with the open space system and treated as an amenity.

Stormwater Ponds and Infiltration Areas

Stormwater treatment is proposed to be managed in the open space areas. Areas have been identified to accommodate stormwater infiltration and ponding based upon an analysis of projected stormwater discharge flows created by the development. The infiltration areas and ponds are located within the greenway system and within landscape easements identified for development parcels.

Trails

Trails are an important aspect of the open space system. They offer alternative routes for pedestrians and bicyclists to move within and through the development. The plan identifies a comprehensive and complete trail system that includes sidewalks and multi-use trails. The trail system connects users to the regional trail system and destinations within the business park.


Circulation Plan : North Site
320TH STREET
COUNTY ROAD 23
STATE HWY 19
NORTH AVENUE
DECKER AVENUE
LEGEND
Arterial Street (150'ROW)
Collector Street A (110'ROW)
Collector Street B (100'ROW)
Local Street A (70'ROW)
Local Street B (70'ROW)
Existing Streets
Trails
300 150 0 300 Feet

Transportation - North Site

The Circulation Plan identifies connections for multiple modes of transportation to the City's existing and planned transportation system. The plan provides for the needs of multiple users including trucks, automobiles, public transit, bicyclists and pedestrians. The alignments and designations in the plan are conceptual and subject to further study.

Vehicular Circulation

The Circulation Plan identifies a connected and comprehensive system of streets that are connected to the regional street network. The streets are intended to provide the ability for vehicular, bicycle and pedestrian movement – "complete streets". The street system plays a major role in the success of the business park, providing safe and convenient access and circulation to businesses and residences with the development.

The trunk street system includes the County Road 23 future extension, State Highway 19 and North Avenue. The plan identifies an alignment of County Road 23 that is consistent with alignment recommendations identified in the 2008 Northwest Northfield Highway Corridor Study Report. County Road 23 is planned as a future 3-lane arterial, based upon projected traffic flows created by the development of the business park and anticipated traffic moving through the site at build out.

The plan also anticipates a Minnesota Department of Transportation study on State Highway 19 will occur within the next two years. The SH 19 study may include several roadway improvements to the highway, including an improved intersection with the future CR 23. An improved intersection between SH 19 and CR 23 is essential to provide safe and convenient access to the development. The master planning effort evaluated a standard intersection and roundabout intersection solutions. The plan identifies a preference for a large roundabout intersection based upon safety and access factors. This type of intersection provides safer access and allows North Avenue to have a direct connection to SH 19, perceived by the steering committee to be a benefit for ambulance service to the Northfield Hospital.

Other roadways in the street system include a series of collectors, parkways and local access streets. These secondary streets provide efficient movement of trucks, cars bicycles and pedestrians. They are connected to the City's network of existing and future off-site streets. Together, they form a modified grid of connected streets and smaller block sizes at the core of the site development. A gridded system of streets has been found to be most effective at dispersing traffic, thus the plan for the street network utilizes the grid pattern to effectively move traffic in and through the site. More on the design of each street can be seen in the street cross sections on the following page.

Pedestrian and Bicycle Circulation

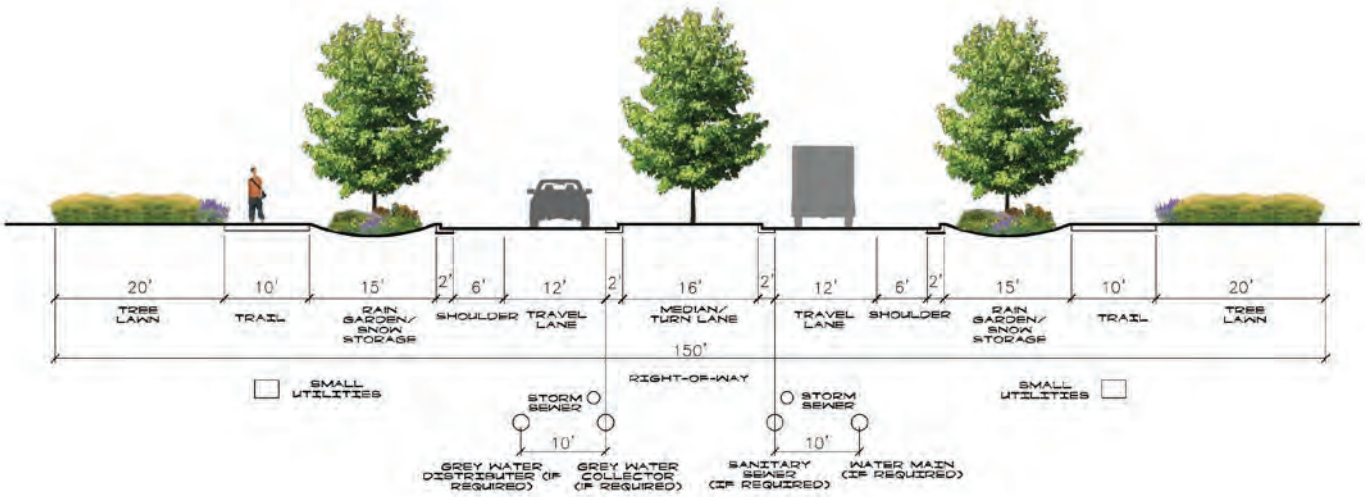
Each street is envisioned as a "complete street", providing the infrastructure to accommodate all modes of transportation including bicycles and pedestrians. Bicycle and pedestrian traffic is accommodated and encouraged in the plan to provide alternative

modes of transportation and recreational use. The plan includes a comprehensive trail and sidewalk system to complement the streets and provide the infrastructure for alternative modes of transportation.

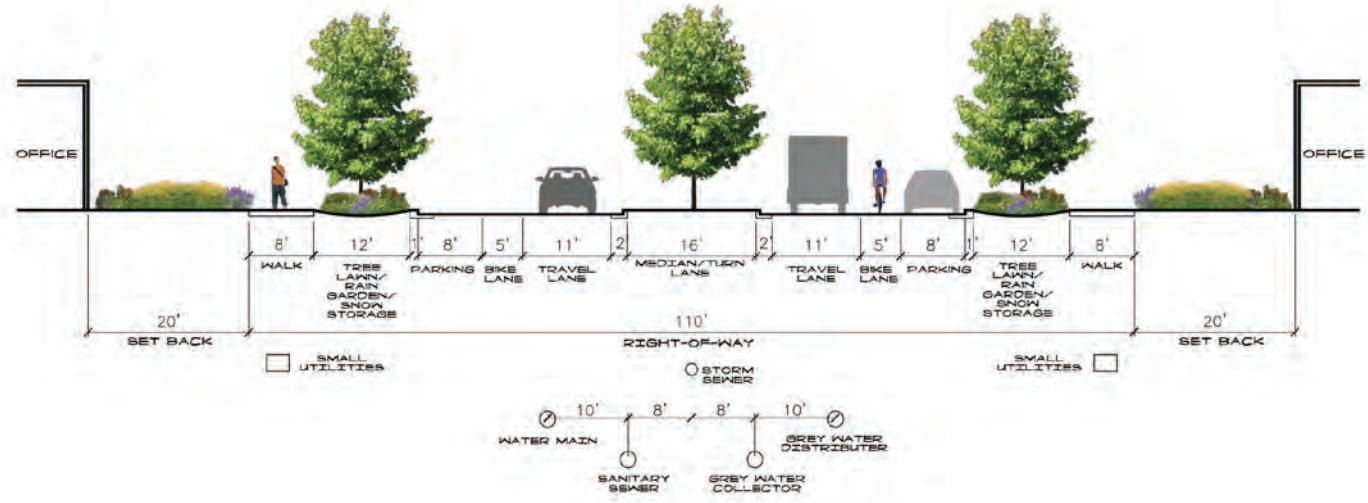
Key Elements

- » *Safely and effectively accommodate semi-truck, public transit and delivery vehicles*
- » *Provide pedestrian sidewalks and/or multi-use paths along all roadways*
- » *Plan for bicycle traffic on roadways. Provide designated bicycle lanes or multi-use trails along arterial and collector routes and plan for shared facilities on local streets*
- » *Establish a streetscape design that identifies the district as a unique part of the Northfield community including uniform landscaping and streetscape elements*
- » *Provide safe and visible roadway crossings for pedestrians.*

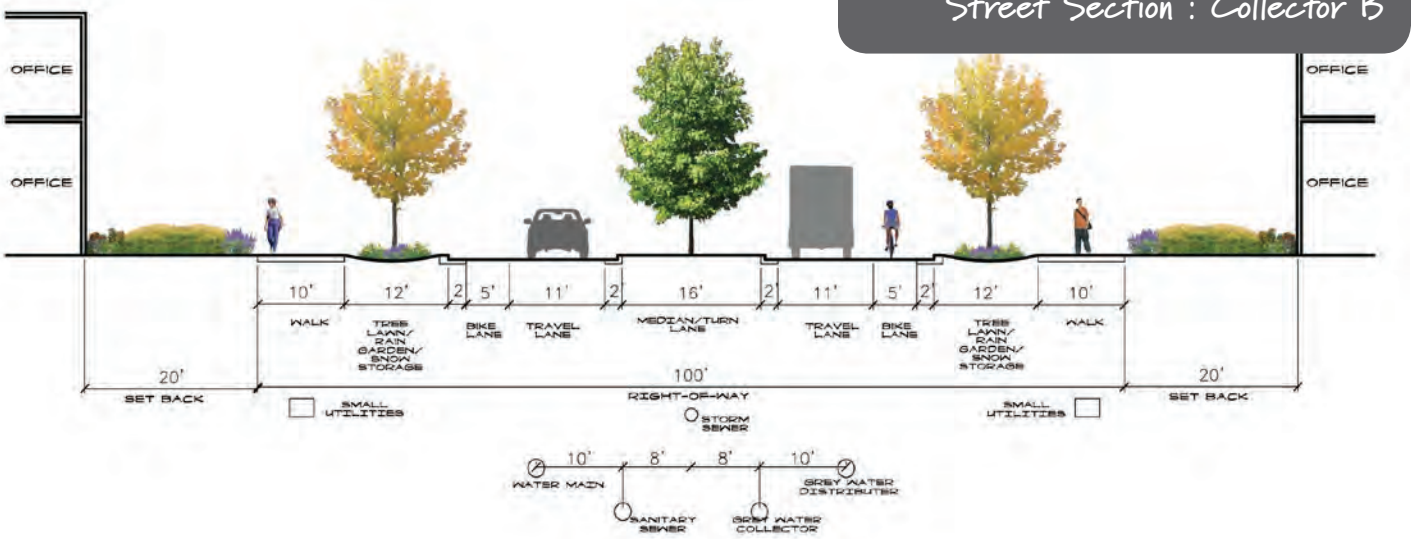
Street Section : Arterial Street



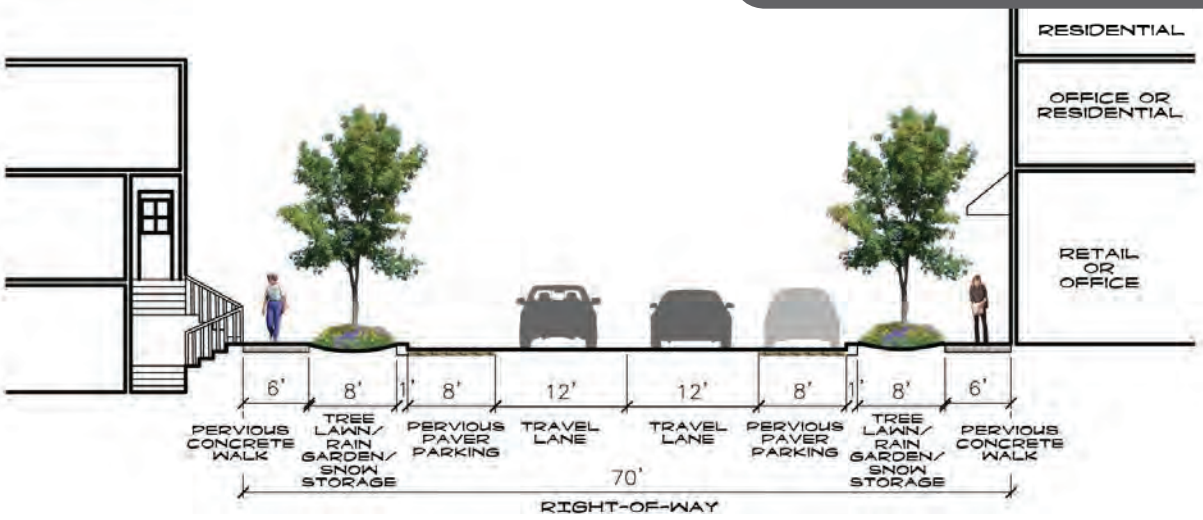
Street Section : Collector A



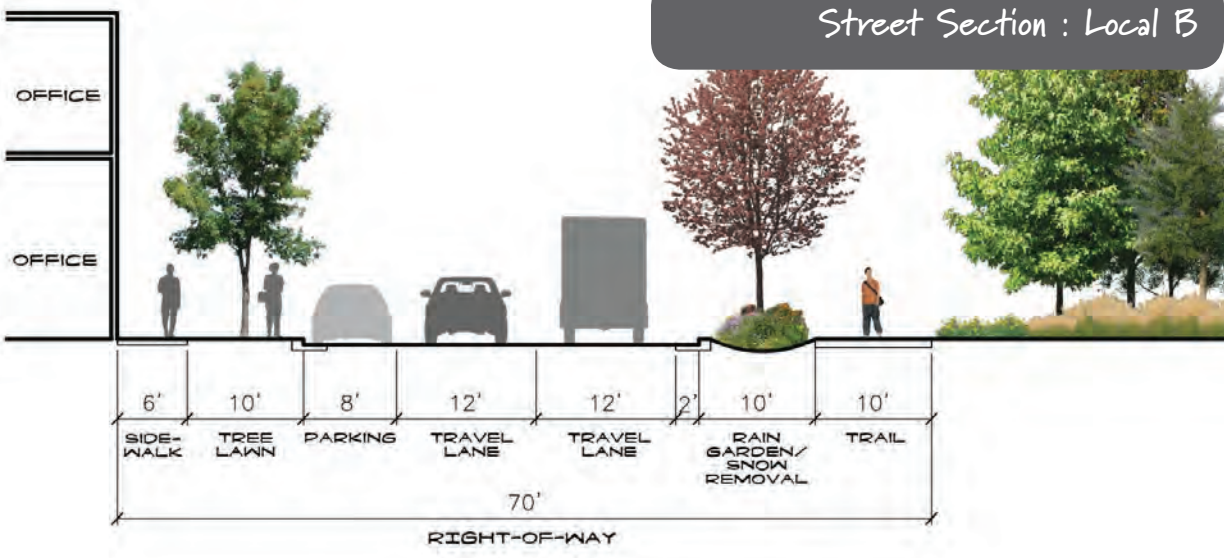
Street Section : Collector B



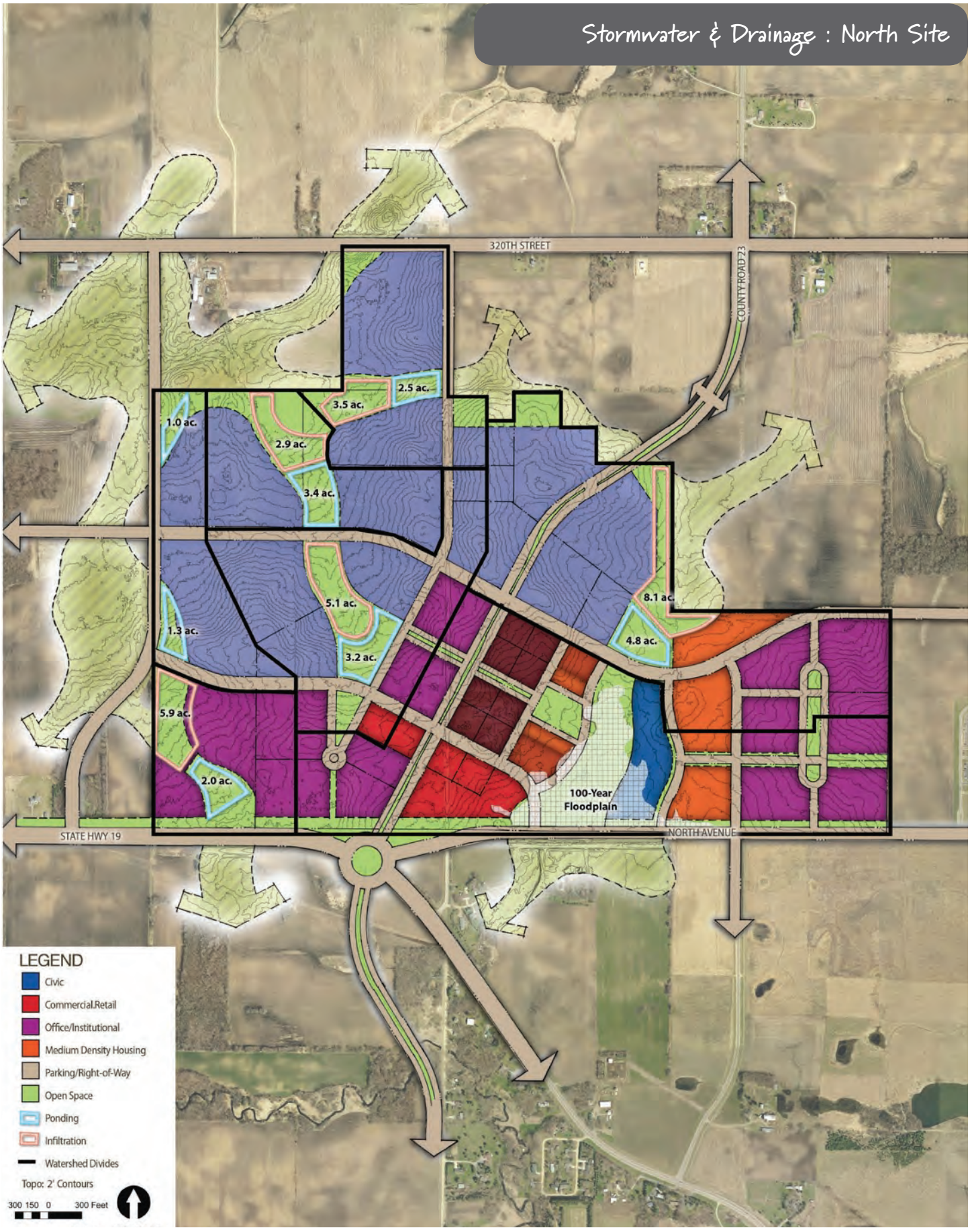
Street Section : Local A



Street Section : Local B



Stormwater & Drainage : North Site



Stormwater - North Site

The north site, approximately 530 acres, will be served by four regional stormwater management facilities consisting of paired wet detention and infiltration basins. The stormwater facilities serving the north-central portion of the site are incorporated into the greenway and occupy a natural low area. In addition to providing stormwater management it proposed to be a principal conveyance for storm- and flood-waters as well. The system is planned for twelve individual basins within the site, seven wet ponds and five infiltration basins. A total area of 40 acres of land are identified to accommodate stormwater management facilities. Further analysis and confirmation of an existing culvert from the southeast portion of the site may be necessary. Initial analysis was not able to confirm culverts draining the site to the south side of North Avenue; verification of culverts and drainage direction will be necessary as development plans progress. In addition, at this conceptual level of design, the analysis approach is conservative and does not take into consideration low-impact development practices that could be implemented on individual sites. The implementation of low-impact stormwater management strategies are encouraged to reduce the impacts on the site due to development.

Stormwater Considerations for the North Site

From a strict post-development stormwater management perspective, the north site is more challenging to develop than the south site even when considering the additional stormwater management requirements for the Rice Creek Watershed which affect the development of the south site. The two principal development challenges for the north site are:

» Presence of hydric soils and wetland indicators. Field delineation of wetlands may result in buffer protection areas and potentially reduce development areas. The presence of existing wetlands is indicative of at least seasonally high groundwater which impacts infiltration capabilities. High groundwater conditions will either result in the site being non-compliant with the infiltration performance standard outlined in the City's ordinance, or large infiltration areas will be required.

» Based on preliminary investigation of field conditions, it does not appear that there is an outlet for the southern portion of the north site. The absence of an outlet creates a large low area (estimated at 22 acres) on the north site. Based on conversations with City staff, this portion of the site drains to the ditch on the north side of North Avenue and drains thru culverts to the south. More detailed analysis of drainage in this area of the north site will be necessary as design progresses. If there is no existing outlet in this area wetland indicators may be present and a more detailed wetland delineation will be necessary.

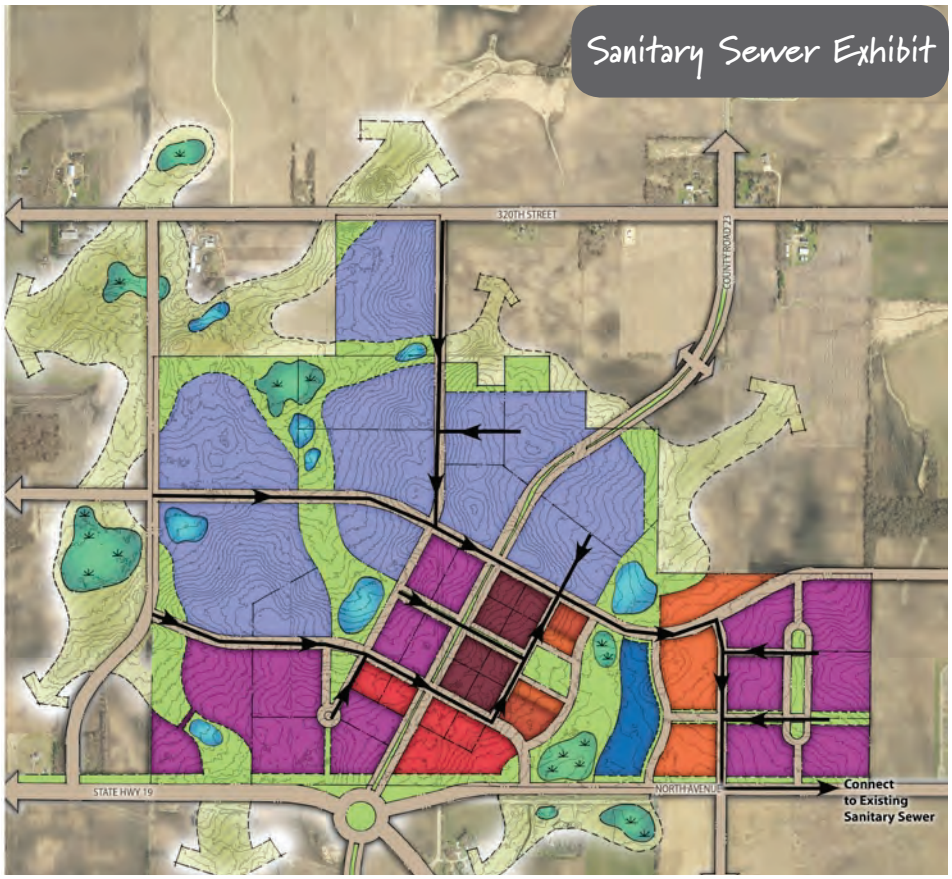
» Soil testing should be conducted to verify infiltration rates and assumptions used during master planning. Furthermore, preliminary geotechnical investigation should be completed to get a general understanding of underlying soils and potential modifications that may be necessary to stormwater management based on conceptual design proposed land uses.

» Recently adopted City Stormwater encourages green land-use practices such as disconnecting impervious areas, pervious pavement, swale collection systems, etc. Implementation and analysis of disconnected impervious surfaces in individual development areas will improve the overall development water quality compared to conventional methods. The City anticipates developing an incentive program for developments which incorporate green land-use practices.

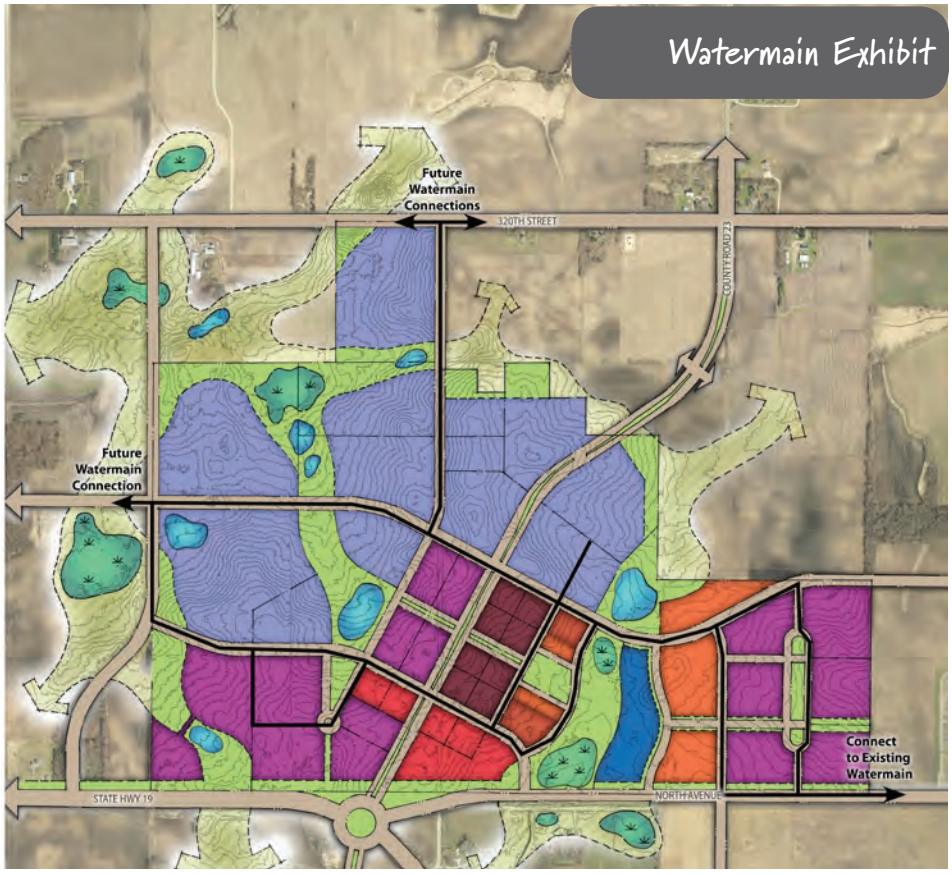
» Individual development areas should be encouraged to reduce impervious surface coverage. The stormwater analysis completed for the Master Plan anticipates a "conventional development" practices for a conservative review of stormwater management areas. For example regional stormwater trunk assessments could be reduced if developments achieve a certain percent (%) of LID on site. Low impact principals could include: green roofs; impervious pavement, reduced parking (but ability to proof per code), reuse of storm water on site (i.e. irrigation or non-potable uses), shared LID with adjacent properties, etc. Initial review estimates that if all development sites were to implement some sort of LID on site, regional stormwater management area could be reduced by 10%. LID principles are consistent with the practices encouraged by the City and outlined in the City Stormwater Ordinance. The City should use the conventional development framework as a means to measure low impact development and incentivize developers to implement LID.

» Design of onsite and regional stormwater management facilities should protect and preserve as much of the existing ecosystem as outlined in the City Stormwater Ordinance.

Sanitary Sewer Exhibit



Watermain Exhibit



Utilities - North Site

Extension of public utilities will be instrumental in developing the north site to the density and land uses identified in the Master Plan. Extension of sanitary sewer and water will benefit the North Site and complete looping of the City's water system. In addition, extension of these utilities may provide opportunities for growth/expansion beyond the current city limits. The schematic sanitary and water diagram illustrates conceptual sewer and water line routing. Extension of these utilities will be dependent on development phasing but in general utilities will be extended from east to west. The following summarizes utility service to the North Site:

Water

The North Site, which is located within the City of Northfield, can be served by City water from the east. City water is located within North Avenue (80th Street) right of way and is currently adjacent to the Northfield Hospital. The City is currently investigating the cost and feasibility of extending watermain facilities to the eastern edge of the Sorem Property (eastern portion of the North Site). As part of the watermain extension, provisions should be made to loop the watermain with the existing system.

Sewer

Based on the depth of the existing sanitary sewer on North Avenue and minimum slope/cover on sanitary sewer, lift stations will be required as part of the North Development Area improvements. The location of lift stations will be dependent on the overall development grading and plans to service properties outside of the North Site. Private grinder pumps or a low pressure sewer system may be an economical option to minimize lift station depth and/or maintenance costs while providing sewer service to land uses that are located at the outer edge of the development area or for development areas that are developed prior to municipal services being extended to a specific site. In addition, development of the North Site will require an elevated storage tank and potentially a booster station.

Based on land uses identified in the Master Plan, it is estimated that full development of the North Site will generate approximately 500,000 gallons per day of effluent. The estimated flows are based on conventional daily flows for specified land uses and do not take into consideration reduction in flows due to green technologies. For the purpose of this schematic analysis it is assumed that water demand equals effluent generated.

Gas

Natural gas service can be provided to the North Site from existing gas lines located in North Avenue (80th Street East). Verification of end user gas needs will be required to determine if existing gas service is adequate.

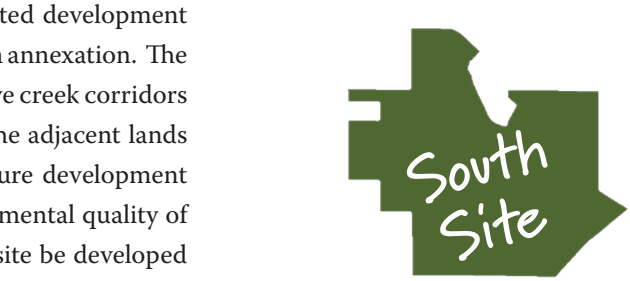
Electricity

Electricity can be delivered to the North Site from Garrett Avenue which runs down the center of the site. Electrical services can be extended from Garrett Avenue to other areas of the site. Verification of end user gas needs will be required to determine if existing gas service is adequate.

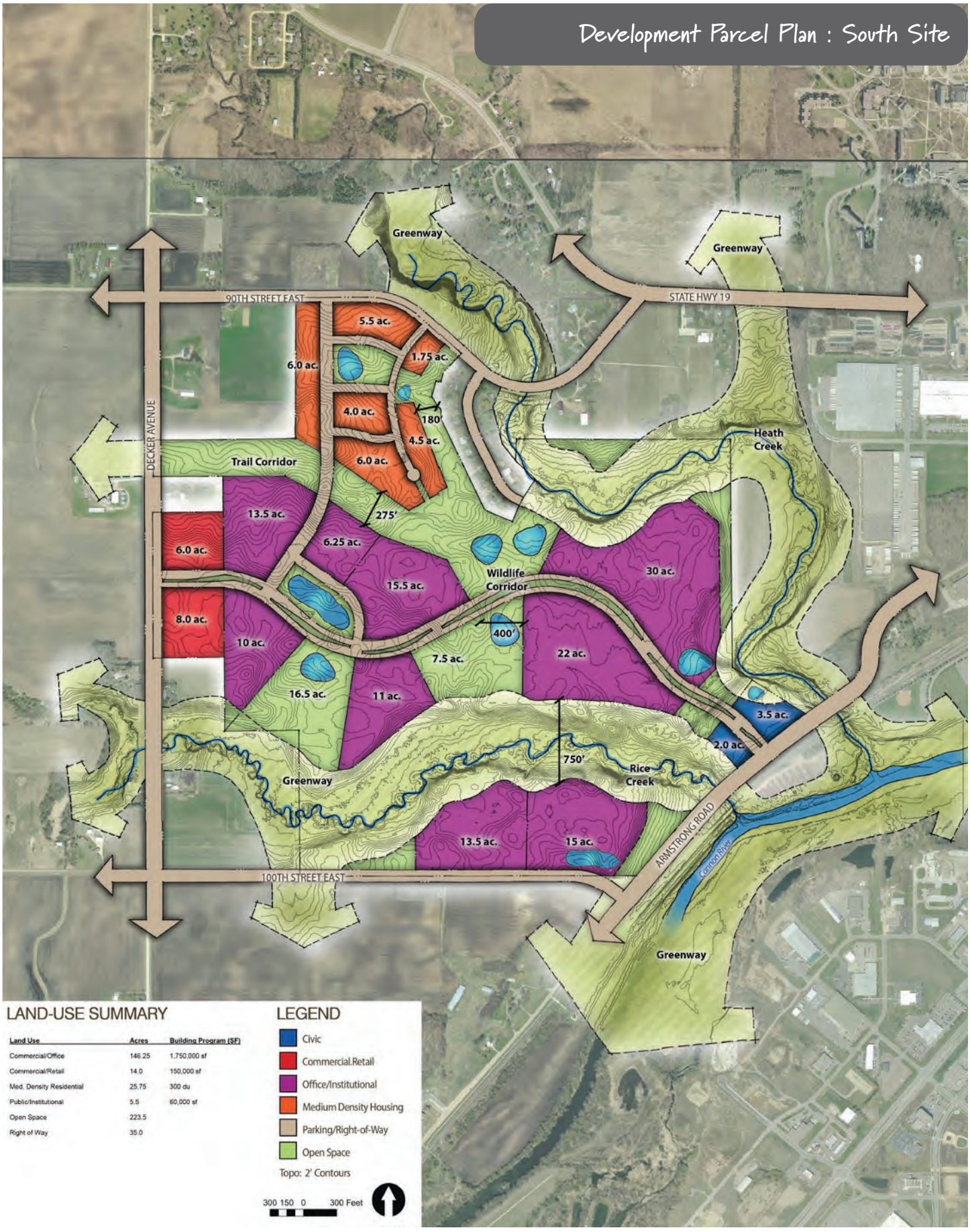

Guam Ave
23
320th St W
320th St W
47
Garrett Ave
3
330th St W
Dakota County
Rice County
43
Lincoln St N
Division St
90th St W
19
Northfield
Cannon River
28
100th St W
Decker Ave
78
Dundas
3

Master Plan Design Concept – South Site

Currently located in Bridgewater Township, the South Site has limited development potential until the City and the Township can come to an agreement on annexation. The South Site is located along two attractive and environmentally sensitive creek corridors – Heath Creek and Spring Brook. The historic agricultural use of the adjacent lands has had an impact on the environmental quality of the creeks. Future development of the site offers the opportunity to restore and enhance the environmental quality of Heath Creek and Spring Brook. The Master Plan recommends the site be developed as an environmentally sensitive business park, organizing development parcels and establishing development guidelines to protect and enhance the two creek corridors. Protected and restored creek corridors will create a healthier and more diverse landscape, wildlife habitat and movement corridors. At the same time, a restored and attractive natural landscape can bring greater development value to the site. The concept is to develop the site as a unique and high quality corporate business park that gets its identity from the quality of the natural environment that surrounds it. The plan also includes a mix of workforce housing, retail and civic uses to support employment uses and create a more distinctive business park.



Development Parcel Plan : South Site



Land Use - South Site

The mix of land uses focus on high quality corporate office uses, creating a distinctive business park that gets its identity from the environmentally unique site assets. Office parcels are set back several hundred feet from the creek channels and positioned so they front onto the open space and take full advantage of natural landscape views. Complementing the office uses, the plan incorporates a mix of other support uses, including retail, civic and housing. Retail parcels are positioned at the project entry off Decker Avenue where good access and visibility are critical. Civic land uses are located at the confluence of the two creeks. Housing is located to buffer existing residential uses from future office uses. A cluster of townhomes are proposed on the north portion of the site. Ultimately the specific land uses should complement the unique environmental quality of the site.

Commercial Retail

A small amount of retail activity is envisioned as an ancillary use to the primary employment uses. Retail should be small scaled and service the needs of the development. It should not be designed or developed as a destination retail environment that might compete for business with downtown Northfield.

Key Elements

- *Supports retail and service uses intended to complement employment uses. Appropriate uses may include: convenience stores, restaurants, fueling stations, banks, clinics, day cares, athletic clubs and the like*
- *Oriented to pedestrian scale with buildings located close to the street and parking located behind the building*
- *Intended to support multiple retail/service tenants with no single tenant or use occupying the entire site*
- *Limited vehicular oriented uses and design elements*

Commercial retail located close to street.

Office/Institutional

Office/corporate campus.

The master plan provides areas to accommodate future employment needs of the community by providing large flexible development sites located on relatively flat and unencumbered land. The parcels identified for office uses are intended to support a range of office tenants such as corporate campuses and professional services that will provide good paying jobs for community members and attract and retain college graduates. Office uses are located along the central parkway and off 100th Street East. Each parcel is sited to take advantage of the unique natural landscape features on the site. These natural features are seen as an attractive amenity that can and should be enhanced to distinguish the office park.

Key Elements

- *Supports office uses such as research and development, technology, professional services, and corporate headquarters*
- *Parcels are positioned to protect Heath Creek and Spring Brook stream corridors*
- *Provides flexibility of parcel sizes for a range of tenants*
- *Intended to attract corporate office uses*

Housing

Workforce housing.

Other land uses in the plan include a medium density residential area to provide workforce and lifecycle housing opportunities within the community. It is estimated the employment uses on the south site could generate over 4,000 jobs. Providing places for future employees to live nearby helps the development achieve greater measures of sustainability. The residential uses are located adjacent to existing off-site residential areas off 90th Street East and provide a buffer use between existing residential uses and future employment uses.

Key Elements

- *Housing cannot include single family detached types*
- *Housing must be developed as townhomes*
- *Housing should be seen as an opportunity to provide workforce housing near places of employment. As such, housing should not be developed in early phases of development – thresholds of employment development should be established and built before housing is developed*
- *The plan provides specific locations for housing development related to employment uses, existing off-site housing and on-site open spaces*

Civic

The master plan provides sites for civic uses located at the intersection of the central parkway and Armstrong Road. Some ideas discussed for this site included a performing arts center, environmental education center, or nature center related to the confluence of the two creeks. The civic use sites are located at the confluence of the two creeks to provide a use that can be sympathetic to the special hydrology and natural systems of the creeks. The civic use can provide additional attraction and identity elements to the project and help distinguish it. It can also be an economic generator for the development - if managed and operated effectively.

Civic/community facilities.

Key Elements

- *Civic uses should support the goals of the community and the employment district*
- *Civic uses are ancillary to the employment uses*
- *Specific uses should complement other civic uses in Northfield*
- *Civic uses should be sympathetic to the environmental quality of the two creeks*
- *Civic uses should project an attractive appearance along Armstrong Road*

Open Space Plan : South Site

Open Space - South Site

The design concept proposes a high quality open space system and landscape restoration of the two creeks. Heath Creek and Spring Brook are major landscape features of the south site and are protected by the Northfield Stormwater Ordinance, which requires significant setbacks for development. The master plan recommends further streambank protection and restoration measures. Low impact stormwater management strategies should be encouraged or required to reduce impacts to water quality and temperature on the creeks. Restoration measures should be implemented to enhance the environmental quality of these unique landscape features. The open space system provides much of the land dedicated to accommodate stormwater infiltration areas and detention ponds. The locations of these are closely related to existing drainage patterns. Key features of the open space system include the following:

Greenways

Linear greenways along each creek form the dominant open space patterns on the site. Major wildlife and trail corridors connect the two creek greenways. The greenways provide linear open spaces and effective landscape buffers between planned land uses and existing adjacent uses. Multi-use trails are proposed within the greenways to connect site destinations and link to the regional system of trails. Incorporating environmental and interpretive trail features within the greenways could add value to the open space system and raise awareness of the importance of environmental stewardship.

Parks

The plan includes parks and public green spaces to provide outdoor places for social gathering and passive recreation. Park and recreational amenities are included in the plan to contribute to the daily health and quality of life for those who live and work within the development. The parks are located along the central parkway and at the center of the residential cluster.

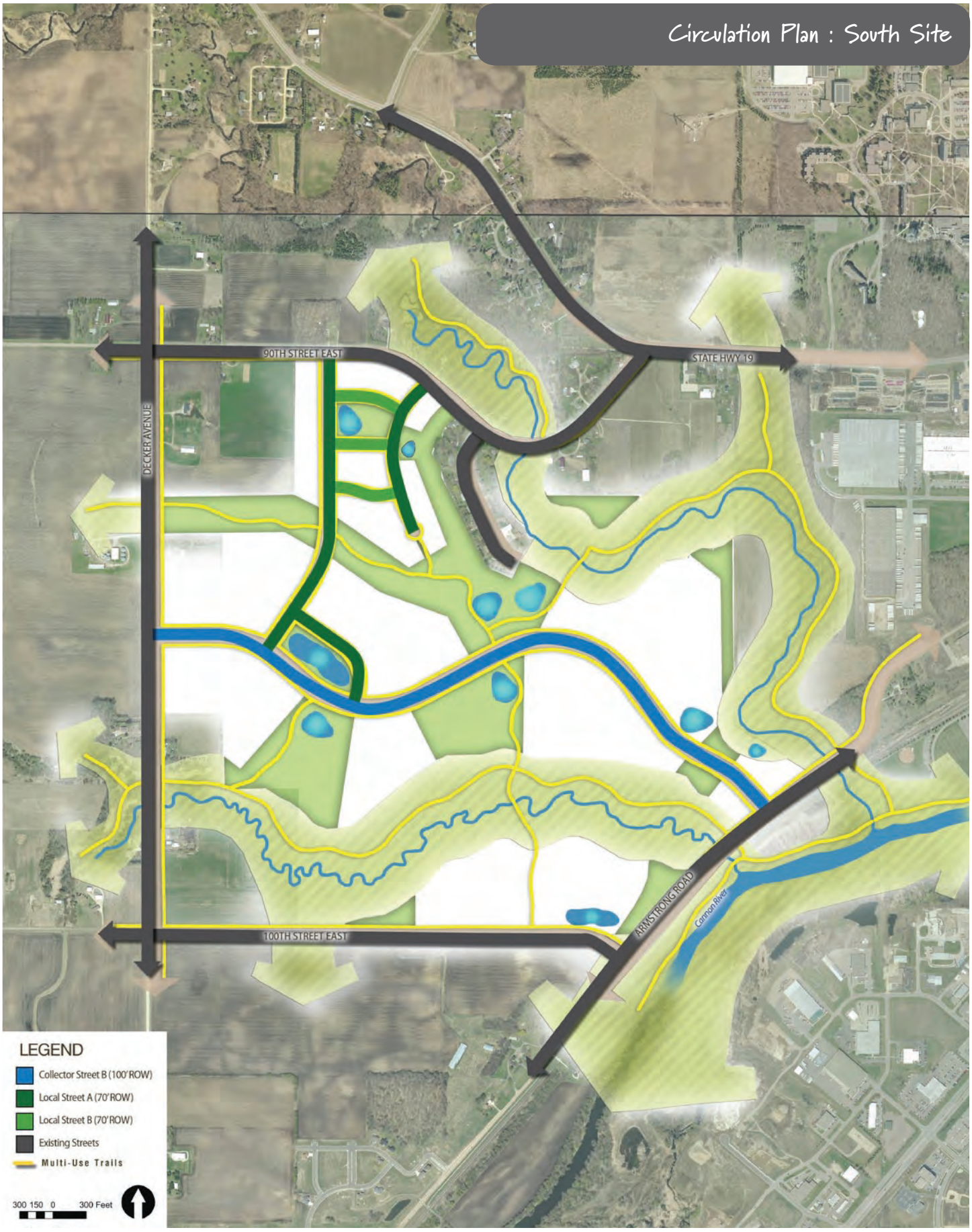
Greenway Trail

Stormwater Ponds and Infiltration Areas

Stormwater treatment is proposed to be managed in the open space areas and within development sites. Areas have been identified to accommodate stormwater infiltration and ponding based upon an analysis of projected stormwater discharge flows created by the development. The infiltration areas and ponds are located within the greenway system and within landscape easements identified for development parcels.

Trails

Trails are an important aspect of the open space system. They offer alternative routes for pedestrians and bicyclists to move within and through the development. The plan identifies a comprehensive and complete trail system that includes sidewalks and multi-use trails. The trail system connects users to the regional trail system and destinations within the business park.


Circulation Plan : South Site
90TH STREET EAST
STATE HWY 19
DECKER AVENUE
100TH STREET EAST
ARMSTRONG ROAD
Cannon River
LEGEND
Collector Street B (100'ROW)
Local Street A (70'ROW)
Local Street B (70'ROW)
Existing Streets
Multi-Use Trails
300 150 0 300 Feet

Transportation - South Site

The Circulation Plan identifies connections for multiple modes of transportation to the City's existing and planned transportation system. The plan provides for the needs of multiple users including trucks, automobiles, public transit, bicyclists and pedestrians. The alignments and designations in the plan are conceptual and subject to further study.

Vehicular Circulation

Vehicular access and circulation, provided for by existing and proposed street systems, is vital to the success of business activity in the park. Roadways provide access to property and save routes for emergency vehicles. The site's transportation network is planned for anticipating improvements to Decker Avenue as County Road 23 improvements are made north of the site. Other street improvements are informed by recommendations made with the 2008 Northwest Northfield Highway Corridor Study Report. Primary access points into the site are proposed off Decker Avenue and Armstrong Road. Secondary access points into the site are proposed off 90th Street East and 100th Street East. The master plan illustrates the proposed roadway network as shown on the Circulation Plan. The roadway system includes collector and local street routes. A major vehicular roadway collector, the wide landscaped parkway winding its way through the center of the site, mimics the flow of the two creeks. The parkway is envisioned to include a wide, planted median, designed to collect and infiltrate stormwater runoff. It also carries the bulk of the traffic to and from the Decker Avenue to Armstrong Road, connecting the business park to the regional roadway system. The parkway provides primary access to each of the office parcels. A system of local streets provides access to the residential sites and connects the central parkway to 90th Street East. The office parcels south of Spring Brook are accessed off 100th Street East.

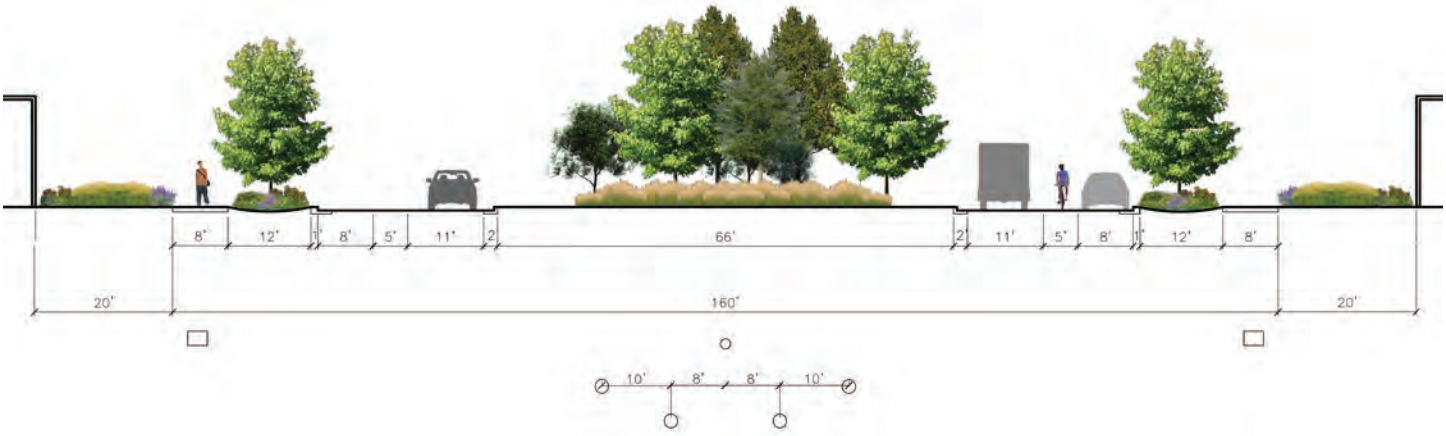
Pedestrian and Bicycle Circulation

Each street is envisioned as a "complete street", providing the infrastructure to accommodate all modes of transportation including bicycles and pedestrians. Bicycle and pedestrian traffic is accommodated and encouraged in the plan to provide alternative modes of transportation and recreational use. More on the design of each street can be seen in the street cross sections on the following page. A comprehensive network of multi-use and low impact walking trails complements the street and sidewalk network, connecting uses and destinations on the site and to off-site trail systems.

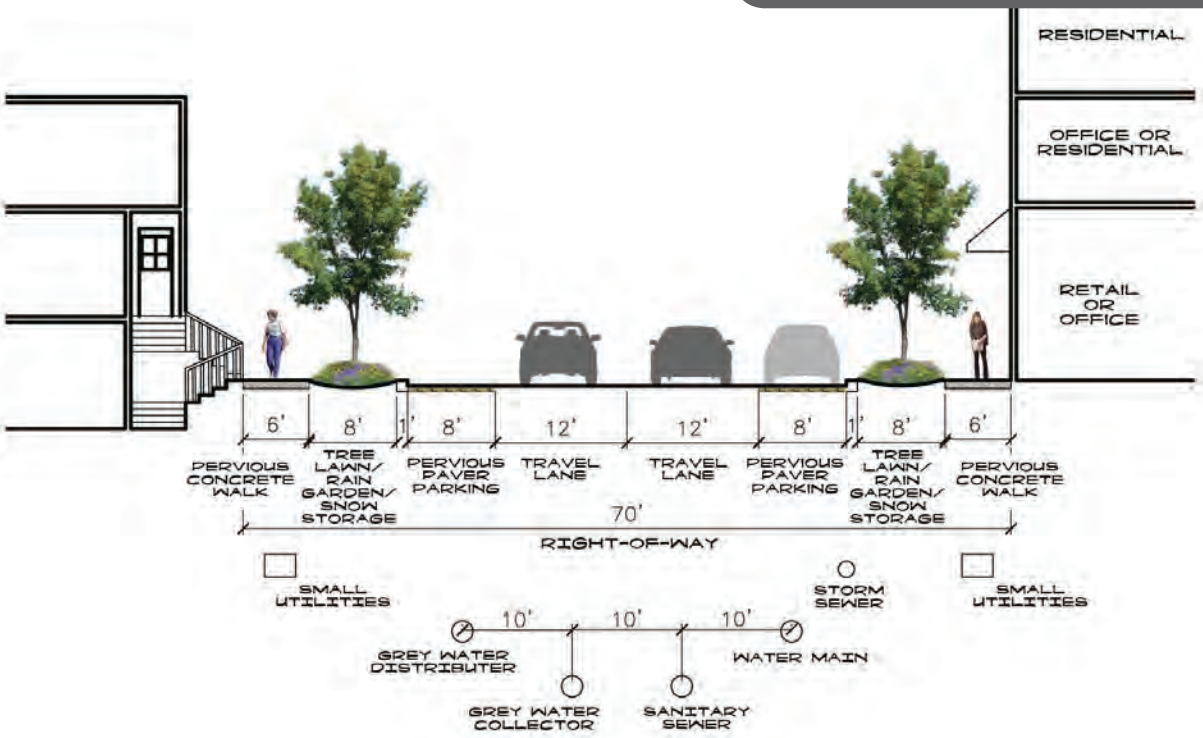
Key Elements

- *Safely and effectively accommodate semi-truck and delivery vehicles*
- *Provide pedestrian sidewalks and/or multi-use paths along all roadways*
- *Plan for bicycle traffic on roadways. Provide designated bicycle lanes or multi-use trails along collector routes and plan for shared facilities on local streets*
- *Establish a streetscape design that identifies the district as a unique part of the Northfield/Bridgewater Township community including uniform landscaping and streetscape elements*

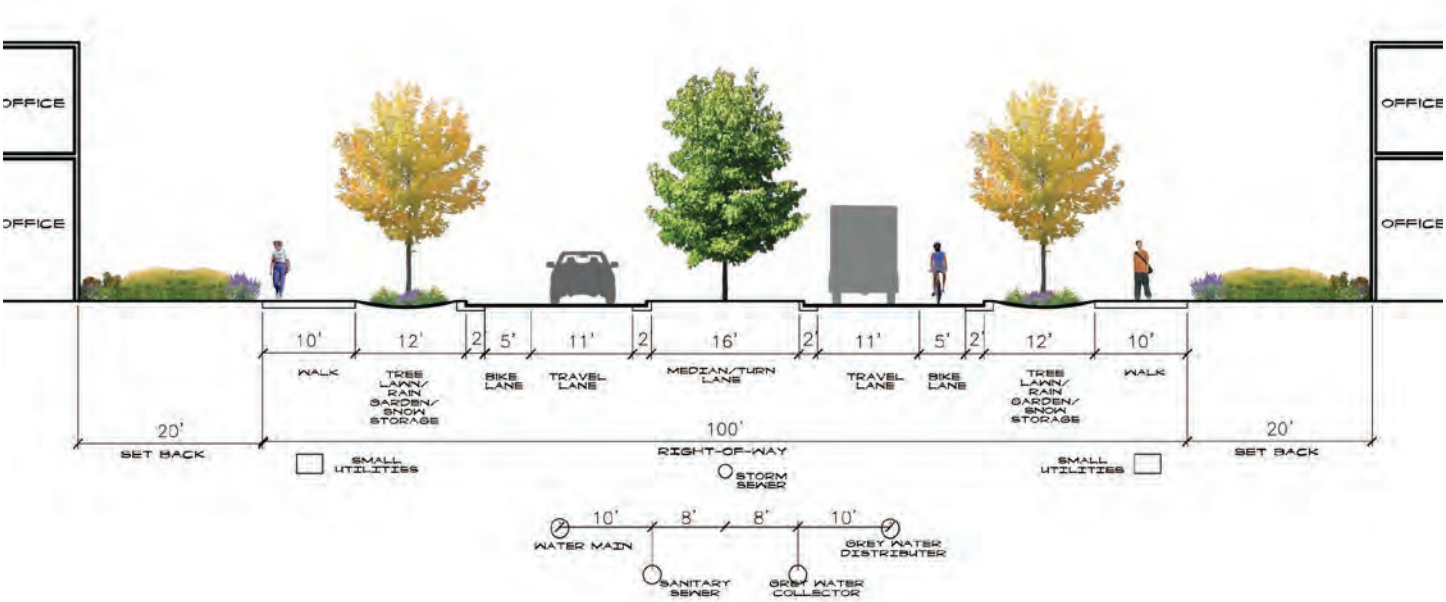
Street Section : Collector A



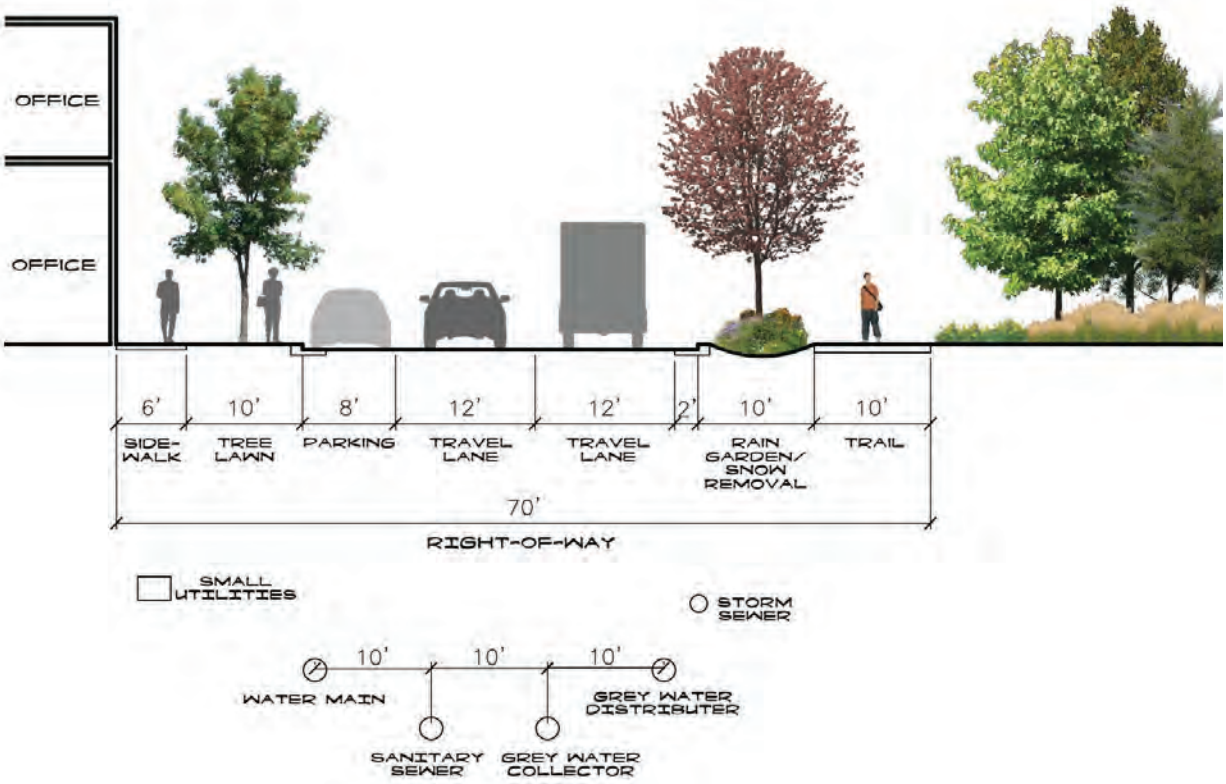
Street Section : Local A



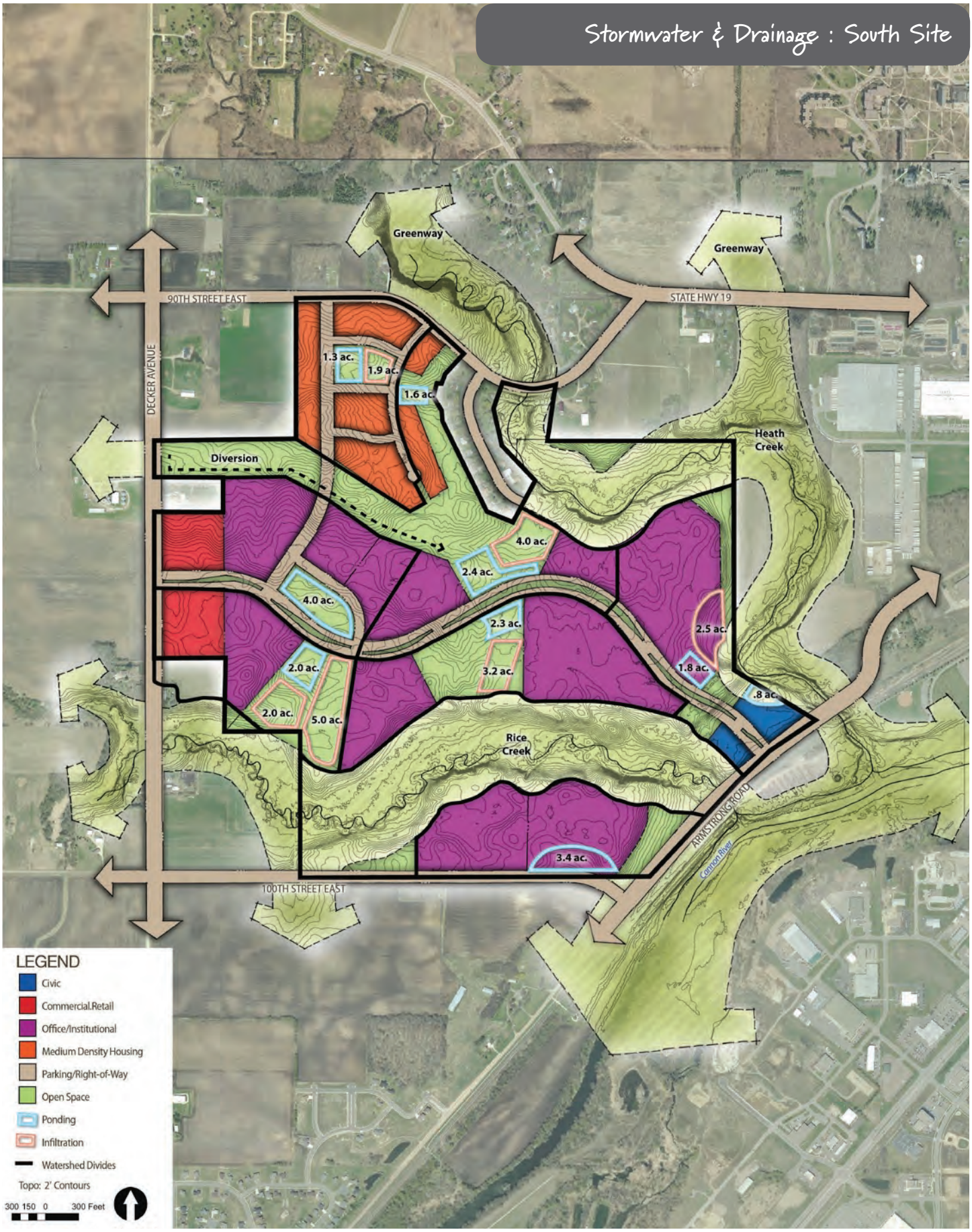
Street Section : Collector B



Street Section : Local B



Stormwater & Drainage : South Site



Stormwater – South Site

The south site, approximately 450 acres, is planned to be served by six regional stormwater management facilities consisting of paired wet detention and infiltration basins. The stormwater management plan accommodates fifteen individual basins within the site, nine wet ponds and six infiltration basins. A total area of 38 acres of land is designed to occupy stormwater management facilities. The actual amount of land required to construct and maintain the stormwater facilities is expected to be approximately 20% larger, due to topographic features of the south site.

Stormwater Considerations for the South Site

» The most significant challenges associated with development of the south site have to do with topography and the large elevation changes across individual subwatersheds. Regardless, the proposed stormwater management facilities can be accommodated within the allocated green spaces. Further refinement of stormwater management will be necessary as development plans progress and site topography is verified.

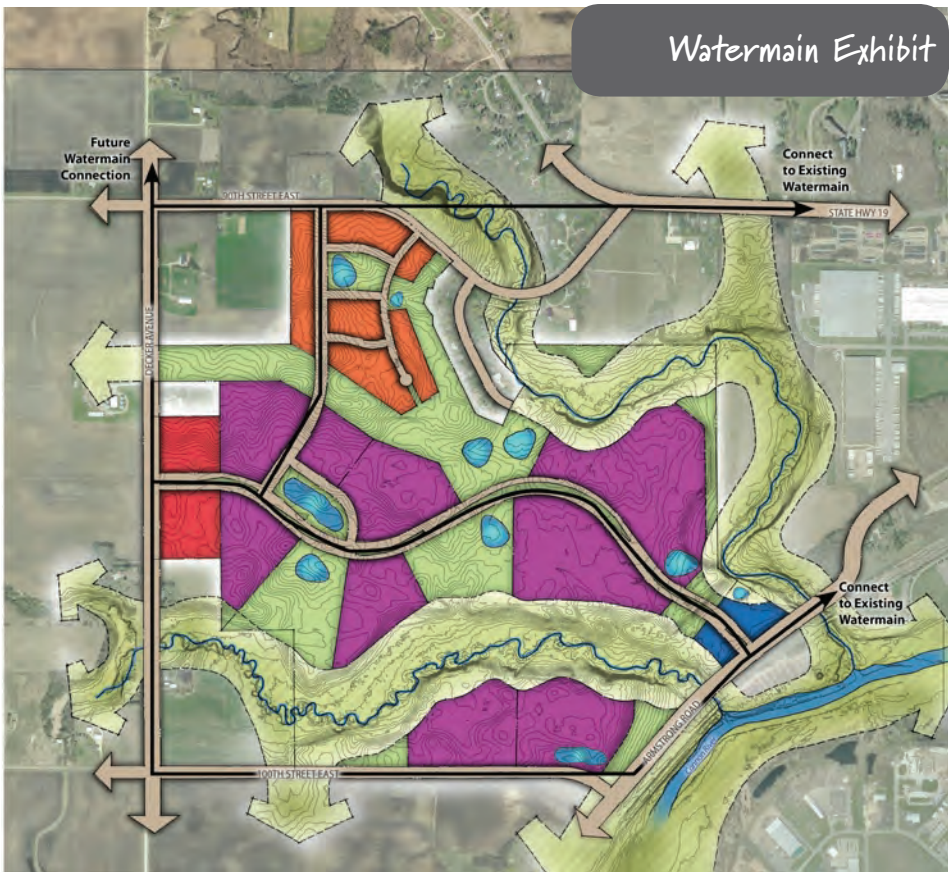
» Soil testing should be conducted to verify infiltration rates and assumptions used during master planning. Furthermore, preliminary geotechnical investigation should be completed to get a general understanding of underlying soils and potential modifications that may be necessary to stormwater management based on conceptual design proposed land uses.

» Recently adopted City Stormwater encourages green land-use practices such as disconnecting impervious areas, pervious pavement, swale collection systems, etc. Implementation and analysis of disconnected impervious surfaces in individual development areas will improve the overall development water quality compared to conventional methods. The City anticipates developing an incentive program for developments which incorporate green land-use practices.

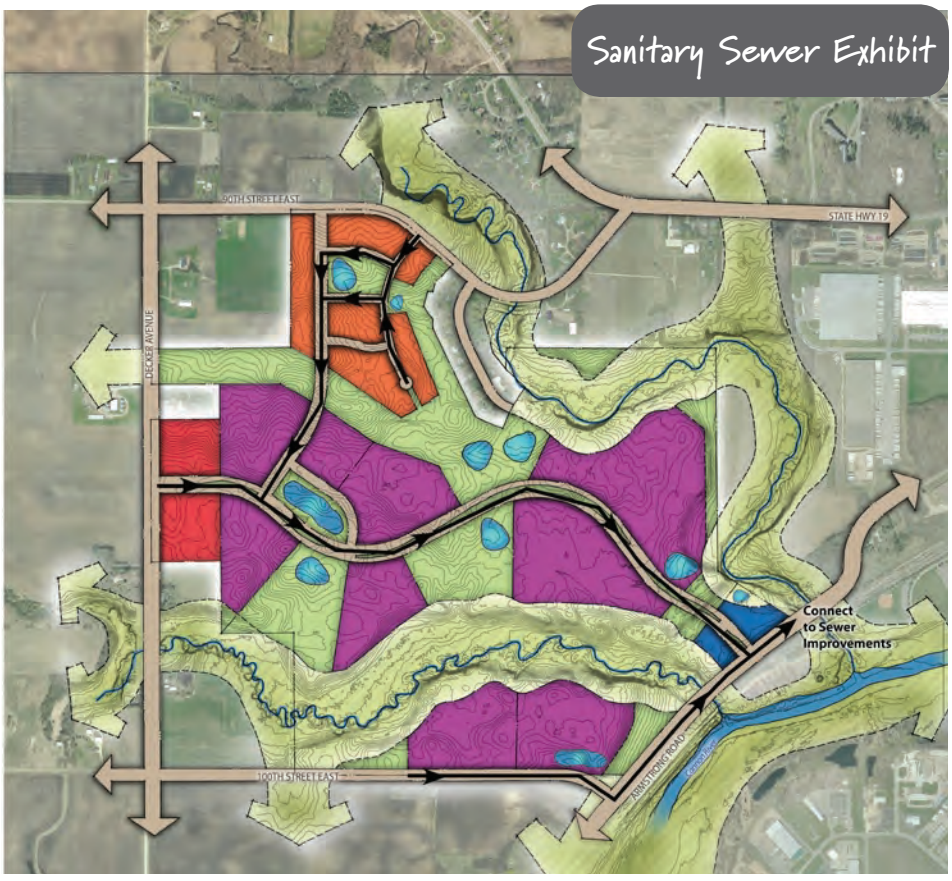
» Individual development areas should be encouraged to reduce impervious surface coverage. The stormwater analysis completed for the Master Plan anticipates a "conventional development" practices for a conservative review of stormwater management areas. For example regional stormwater trunk assessments could be reduced if developments achieve a certain percent (%) of LID on site. Low impact principals could include: green roofs; impervious pavement, reduced parking (but ability to proof per code), reuse of storm water on site (i.e. irrigation or non-potable uses), shared LID with adjacent properties, etc. Initial review estimates that if all development sites were to implement some sort of LID on site, regional stormwater management area could be reduced by 10%. LID principles are consistent with the practices encouraged by the City and outlined in the City Stormwater Ordinance. The City should use the conventional development framework as a means to measure low impact development and incentivize developers to implement LID.

» Design of onsite and regional stormwater management facilities should protect and preserve as much of the existing ecosystem as outlined in the City Stormwater Ordinance.

Watermain Exhibit



Sanitary Sewer Exhibit



Utilities - South Site

The South Site is not currently within the City of Northfield city limits. The City is considering annexation of the property and development of the South Site will be dependent on successful annexation. Once the property is annexed it can be served by public utilities. Extension of public utilities will benefit the South Site and complete looping of the City's water system. City water and sanitary sewer are located in close proximity to the site. The City is currently evaluating system upgrades independent of development of the South Site. Development of the South Site may accelerate the schedule of system upgrades. The schematic sanitary and water line routing has been illustrated in sewer and water exhibits. Extension of these utilities will be dependent on development phasing but in general utilities will be extended from east to west. In addition, extension of these utilities may provide opportunities for growth/expansion beyond the current city limits. The following summarizes utility service to the South Site:

Water

Water service will be extended through the site to provide a "looped" system for the overall City water system. In addition, low water pressures may be experienced in the west portion of the South Development Area. Analysis of the water system will be required as development progresses. A booster station may be required to address low water pressure issues.

Sewer

Extension of sewer facilities will require improvements and upgrades to the existing municipal system. Lift stations are not anticipated with development of the South Site as topography rises from east to west. Consideration of private grinder pumps or a low pressure sewer system may be an economical option to provide sewer service to land uses that are located at the outer edge of the development area or for development areas that are developed prior to municipal services being extended to a specific site.

Based on land uses identified in the Master Plan, it is estimated that full development of the South Site will generate approximately 300,000 gallons per day of effluent. Estimated flows are based on conventional daily flows for specified land uses and do not take into consideration reduction in flows due to green technologies. For the purpose of this schematic analysis it is assumed that water demand equals effluent generated.

Additional Water and Sewer Considerations

Due to the projected timeline for development of both the North and South Sites and the potential to implement 'green' techniques such as water conservation, wastewater reuse, and so forth, further evaluation of sewer and water flows will be required throughout the development process. Analysis of anticipated flows will need to be evaluated in comparison to flows estimated in the Comprehensive Sewer and Water Studies completed in 2007 & 2006. The implementation of green technologies will provide an opportunity to reduce demand on the City sewer and water system.

Gas

Natural gas service can be provided to the South Site from existing gas lines located in 90th Street East (north) and 100th Street East (south). Verification of end user gas needs will be required to determine if existing gas service is adequate.

Electricity

Electricity can be delivered to the South Site from all sides of the site. Existing electrical lines are located in Decker Avenue, 90th Street, 100th Street and along the existing rail line to the east of the site. Verification of end user gas needs will be required to determine if existing gas service is adequate.

Additional Master Plan Design Fundamentals

Thematic Design Elements

The Northfield Business and Industrial Parks are intended to be developed with a coordinated design theme that is compatible with the small-town character of Northfield. The design theme may include landscape design, architecture, façade treatment, signage, fencing and walls, and/or building color. Specifically, it is envisioned that design elements are complementary and the business parks project a scale and character of development that is harmonious with Northfield.

A thematic design approach may be achieved in both the public and private realms. Specifically, streets standards for the business parks may include standards for pavement design, signage, furniture, lighting, and, landscaping so that capital improvements establish a distinct character and feel. Streets, parks and recreational areas must be designed with common design elements as used in other parts of City to further strengthen the notion that the business parks are a part of the Northfield community. Individual projects should be designed to include and/or complement design elements used in the business park's public areas.

Northfield's small town character

Sustainable Design

The Northfield business and industrial parks are intended to develop with sustainable design elements that attract businesses with operational characteristics that limit impacts on the natural environment. The master plan seeks to reduce waste, pollution, energy use, and water consumption within the planned areas. The plan's sustainability strategy is multi-faceted and identifies strategies that affect land use planning, public infrastructure, transportation, building design, business operation practices, and area maintenance. Sustainable practices and design will be shared by both public and private entities. The subsequent sections highlight general actions that will ensure future development and land use activities within the plan area are more sustainable. More specific recommendations are addressed in the Development Guidelines.

Sustainable building design reduces energy use

Waste Reduction

Construction Waste: Encourage site development and building construction that are designed and managed to minimize the amount of materials used on a given project. Development projects should seek to minimize waste to landfills and explore options to discard excess materials for local reuse. New development should utilize durable building materials with longer life spans.

Recycling: Individual business operations should be planned and/or modified to ensure waste materials are sorted for recycling and reuse. Coordinate with the local waste management hauler to ensure facilities and resources are adequate to accommodate the recyclable materials generated from the business parks. Examine options to consolidate recycling within the parks.

Recycling

Proper stormwater treatment

Vertical mixed-use

Alternative transportation

Composting: Require existing landscaping material and organic waste to be composted or reused. Explore options to provide composting on individual project sites, a central district facility, or collected by the local waste management hauler.

Product Packaging: Coordinate with individual businesses to reduce product packaging to the absolute minimum to allow for its safe transportation and consumer purchase. Provide incentives for manufacturers that limit packaging or utilize innovative solutions to packaging.

Pollution

Local Materials: Encourage development projects to use locally available materials to reduce carbon emissions caused by transport. Ensure that local building codes and development standards do not otherwise require construction materials that are only available in or from far away origins (i.e. do not specify street furniture available only at faraway locations, stonework from out of state aggregates or landscaping material that is not available locally).

Stormwater Treatment/ Water Quality: Require that stormwater generated from paved surfaces is adequately cleaned and purified before it is discharged into the natural system. Require water quality facilities for streets, parking areas, roof tops; treatment requirements are applicable to both public and private developments. Bio-retention areas, raingardens and permeable paving systems should be encouraged to reduce and treat stormwater runoff.

Mixed Land Use: Allow for and encourage a mix of complementing land uses within the business park sites to provide a mix of housing, shops and services within close proximity to employment uses. Reduce or eliminate motorized vehicular trips by providing housing, retail and restaurant uses near employment uses with attractive alternative transportation connections.

Alternative Transportation: Create a transportation network and building pattern that encourages transit use, pedestrian and bicycle travel, carpooling, and rideshare. Develop a trail/multi-use path network within open space corridors to promote bicycle mobility.

Landscaping and Tree Planting: Install native plant and tree species as part of all new development to off-set carbon emissions. The urban forest can not only reduce carbon emissions, but also has the added benefit of reducing heat island effect. Explore opportunities to use vegetation in lieu of fence and wall construction.

Energy Conservation

Solar Orientation: Individual developments and buildings should be sited and oriented to capitalize on solar exposure to lessen energy demands related to lighting and heating.

Landscaping for shade and cooling: Require landscaping along exterior building walls to provide shade and cooling. Require tree planting in surface parking areas to reduce the heat island effect created by large paved areas.

Daylighting buildings: Encourage the design of buildings with architectural features that utilize sunlight for interior illumination. Ensure that public structures in parks and open spaces include daylighting elements to off-set energy consumption.

Renewable Energy: Explore opportunities to incorporate renewable energy sources within the business parks including solar, biomass, geothermal and wind. Explore opportunities to install geothermal, solar and wind harvesting systems in development projects to offset energy consumption and reduce carbon emissions. Explore opportunities to use solar and wind harvesting devices in public areas (i.e. along right-of-way, within parks, and atop public buildings).

Passive solar building

Water Conservation

Native Landscaping: Limit landscaping material to native and drought tolerant plant species to reduce irrigation needs.

Rain Water Harvesting: Encourage the collection of rain water for irrigation and toilet flushing purposes. Consider the design and construction of harvesting facilities for recreation and other public areas.

Water Efficient Irrigation: Restrict new irrigation facilities to water efficient systems. Adopt development details for efficient irrigation systems as part of the City's Land Development Code.

Recycled Irrigation: Extend recycled water service lines to the plan area. Provide incentives to encourage future development to connect to recycled water lines for irrigation and other uses when feasible.

Water Efficient Utilities: Require that buildings and recreational facilities are constructed with water efficient utilities (i.e. toilets, sinks, showers and the like).

Native landscaping

Green street

Chapter 6

Development Guidelines

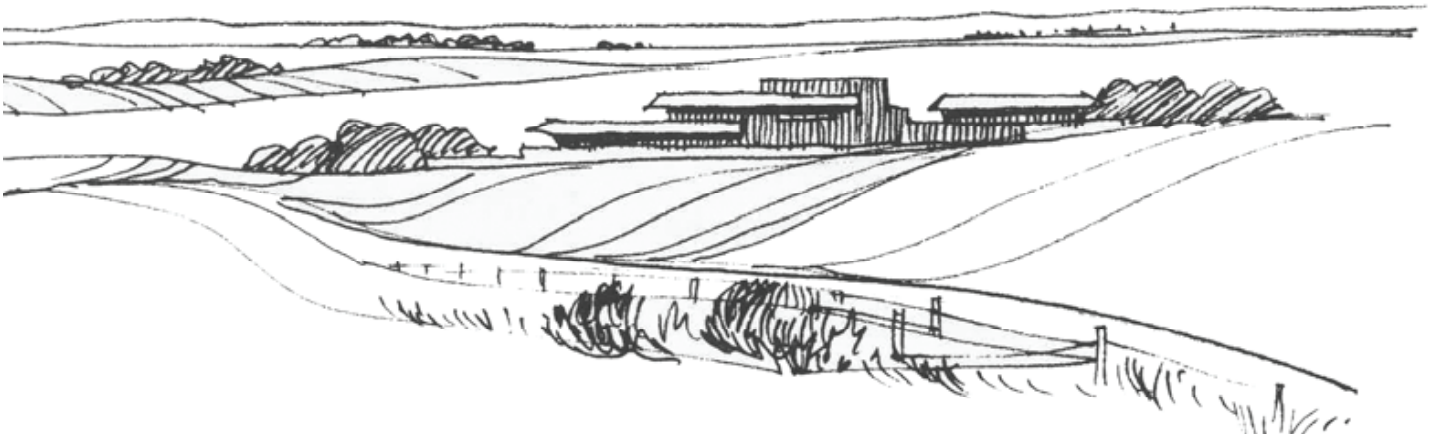
Introduction

The Master Plans for the North and South sites borrow from organizational characteristics found in Downtown Northfield, the campuses of Carleton College and St. Olaf College, and the surrounding agrarian landscape. Clear organization, axial relationships, and a hierarchy of public space orders the layout of buildings sites and open space parcels. Northfield's traditional patterns of development are recalled through smaller blocks, narrower streets, and public gathering spaces and buildings designed to support a vibrant streetscape. It is imperative that the design of the proposed site infrastructure, landscaping, architecture and site details be of high quality and that these elements be visually and functionally coordinated with the existing agrarian landscape as well as elements found within the city of Northfield to establish a sense of continuity and identity that is consistent with the city and the region. The mission of these Development Guidelines is to create a commonly understood set of expectations for the character and quality of Northfield's Business and Industrial Park.

Intent and Purpose

The purpose of the development guidelines is to create a commonly understood set of expectations for the character and quality of development at Northfield's Business and Industrial Parks. These guidelines will aid private development in the creation of high quality, functional and aesthetically unified business and industrial parks that are consistent with the quality and character of the City of Northfield.

The guidelines are intended to establish development that demonstrates innovation and high levels of environmental and economic performance. They will guide and monitor development, individual sites and buildings, roadways, landscaping, signage and other site improvements. Used in conjunction with basic principles of good design, applicable jurisdictional regulations, the Business and Industrial Park Master Plan, and staff assistance, these Development Guidelines are intended to expedite the approval process and facilitate the development of quality projects within the Industrial Park.



A process has been established to review site planning, architecture, landscape design, lighting, and signage for conformance to these Development Guidelines, in addition to encouraging excellence and innovation in development. All private development on the Northfield Business and Industrial Park property shall be subject to the design specifics contained herein.

General Objectives

The general objectives of the Northfield Business and Industrial Park Design Guidelines are to:

- Promote a functional and attractive environment
- Protect environmental and natural resources
- Ensure a high quality development
- Protect and enhance private property values and investments
- Protect public investments
- Preserve the character of Northfield
- Employ Sustainable Design practices

In achieving these objectives, such development is anticipated to be more competitive than in a conventional business-industrial park and to be more ecologically sensitive at the same time.

How the Guidelines are to Be Used

The guidelines will provide direction to designers, developers, City staff, City commissions and decision makers regarding the City's expectations for design excellence at the Northfield Business and Industrial Parks. The guidelines provide review agencies with an implementation and planning tool that can be used to judge the merits of proposed projects at each of the business and industrial parks, informing the design review and approval of individual development projects.

Relationship to Other Planning Documents

Used in concert with the City of Northfield Zoning Ordinances and applicable building codes, the development guidelines provide City staff, decision makers, and private interests a common basis for the evaluation of design and development issues during the design review and approval process for individual private development proposals. Once adopted by City Council, the City should incorporate specific guidelines that support the goals of the Comprehensive Plan into the City's Land Development Code providing the City with additional policies for enforcing the goals and guidelines outlined in the Northfield Business and Industrial Park Development Guidelines.

Character/Sense of Place

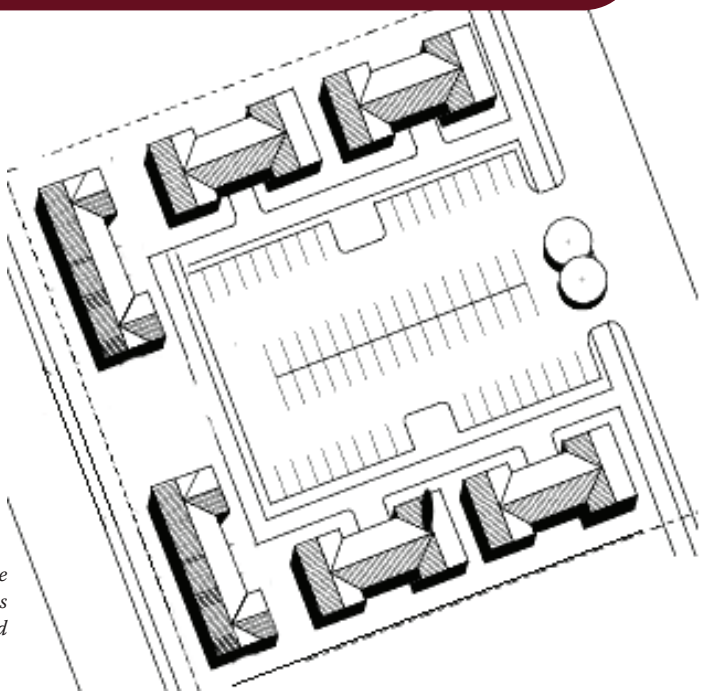
The sense of place found in a community, from either the intrinsic character of a place or the meaning people give to it, greatly influences the quality of life of those who inhabit that space. Existing patterns of human development illustrate that the character of a place and the sense of attachment people have to it can be altered and affected by quality design and planning. By drawing upon the best from the past and the present, we can plan healthy communities that will successfully serve the needs of those who live and work within them. The term healthy community implies the presence of a vibrant social infrastructure that is directly related to the built and natural environment and its overall sense of place. Such planning for healthy communities should adhere to certain fundamental principles for site planning, parking and circulation, building mass and character, landscape design, lighting and amenities.

Site Planning

The purpose of the Site Planning portion of the development guidelines is to consider the organization of the business and industrial parks and the relationship with the public right-of-way, adjacent properties and future projects. The overall site plan should provide direction for development and organization of the of the Business-Industrial Park in order to achieve a built environment that is in harmony with the natural setting, provides a comfortable, distinctive, and stimulating environment for the users of the park, and is based on the sound economic practice of thoughtful sustainable design. The intent is to create an environment that finds its' unique identity by becoming a part of the natural setting while also aligning with the character of Northfield; ultimately encouraging its users to experience this distinctive environment and spectacular outdoor setting that is an integrated component of the City of Northfield.

The built environment should generally be characterized as low in profile and hewn in colors and materials that complement the land and native environment, and fit into the rolling agricultural landscape and built character of Northfield. The arrangement of structures, parking, circulation areas, and open space are all key elements in site planning and design. The siting and orientation of each building shall be considered as it relates to its specific parcel, its affect on adjacent parcels, and, as it occurs, the massing of consecutive lots.

Goal: The overall site design will be in harmony with the natural setting, contribute to the growing sense of place and character of Northfield, and will enhance the safety and vitality of the pedestrian environment.



Buildings should face the street and parking ares should be located behind primary buildings.

Guidelines:

» Buildings should relate to the terrain and each other in their massing and form. Larger masses should be located at the centers of building compositions, with smaller forms stepping outwards and down.

» Consider breaking very large buildings into modules or sub-parts to reduce perceived scale.

» The siting and orientation of the buildings should protect and enhance existing views and vistas.

» Parking areas should be located behind primary buildings to encourage continuity of building uses that contribute to a pedestrian friendly environment.

» Building placement that creates opportunities for plazas, courtyards, patios, or outdoor dining is strongly encouraged.

» Building entrances should address and front the street.

» Buildings should engage to the ground. Minimize the use of heavy bases and built up platforms for the buildings.

» Where feasible and appropriate, keep buildings low and oriented to the contours of the topography so that the form of the rolling landscape continues to be dominant.

» Buildings should enhance the character of existing land forms and site features.

» Site and building design shall accommodate pedestrian circulation on-site from parking areas to plazas, open space, pedestrian pathways, and to adjoining buildings. Existing and proposed pedestrian and/or bicycle circulation systems and easements shall be integrated into site design.

Mixed Use:

» Buildings should be placed to occupy the street edge to the greatest degree possible, creating a continuous pedestrian-oriented façade along the street.

» Encourage recessed space for front door entries, outdoor dining, and sales areas of plazas intended to invite pedestrian activity.

» Building corners at primary intersections should be treated as prominent features, taking advantage of the opportunity to create a unique district identity by incorporating attractive entrances and architectural features.

» Gaps and openings between buildings should be minimized in order to maintain continuity of the pedestrian environment.

Residential:

» Buildings should be set back a minimum of 15 feet, but no more than 50 feet from the public right-of-way.

» The set back area should be utilized as a transitional experience from public to private and could include: front stoops, building entries, plaza/patio space, landscaping, ornamental fencing and building identity.

Building occupy the street edge to create a continuous pedestrian-oriented facade.

Building and parking placement accommodates pedestrian access and amenities.

Building placement provides space for outdoor gathering.

Building Mass and Character

The siting, massing, orientation and a building's overall design character affect the way a building relates to and "fits" within its natural and manmade context as well as its environmental and energy performance. When designed well, a building can contribute to the continuity of street elevation, as well as emphasize a site's unique characteristics (e.g., slopes, , street front, open space, corner lot, etc). Buildings with varied roof lines, window details, façade articulation, entry details, and different but complementary materials contribute to the interest of a streetscape. Consequently, a building's design, its shape, form, articulation and exterior materials can have a significant impact on how the structure is perceived and how it performs.

The use of different architectural elements can enhance a building's visual appeal and even diminish the perceived size of a large structure, thereby helping it fit into the proposed development pattern. Regularly spaced entrances, windows, balconies, and different rooflines provide visual relief to large buildings by dividing their total mass into smaller, identifiable sections with a more human scale. A building's roofline can also facilitate compatibility with adjacent structures and reinforce the architectural character of a street.

The development shall strive to also create buildings that through their placement, orientation and relationship with the prevalent site forces can take advantage of passive and natural climatic floes providing for the responsible use of energy and natural resources.

Goal: The development will create buildings that through their massing, size, scale, orientation and physical characteristics will contribute to a positive, though varied, design aesthetic that responds to appropriate human scale.

Industrial/Warehouse

Buildings with large footprints (15,000 sf and higher) and/or elevations (1,500sf or higher), should be articulated in such a way as to break up the apparent scale of the building into smaller areas.

Commercial/Office/Mixed Use/Community

The ability of small to large commercial buildings to articulate their massing, depth, texture and materials can help provide a unifying sense of character and context to both the streetfront and overall development.

Residential

Whether single family or multi-family, housing can withstand - and in many cases, demands – the use of a variety of styles, scales and types but must maintain an overall sense of context and character.

Guidelines:

Buildings should utilize daylighting to the greatest extent possible.

Buildings shall emphasize a human scale at ground level and along street frontages.

Low profile buildings are encouraged.

Massing, Size and Articulation:

Daylight Plane

» Buildings should allow for an establishment and continuation of a daylight plane in order to maintain access to daylight for all buildings and sites. The daylight plane shall be established and measured from a point five feet above the property line and an angle of 45 degrees.

» Buildings should utilize daylighting to the greatest extent appropriate and achievable for their use in order to increase energy efficiency of the building.

Building Composition

» Build structures with a clear design concept. Designs may be symmetrical or asymmetrical, may highlight a courtyard or architectural elements (e.g., arcade, entry), or may use terracing and setbacks for daylighting and viewsheds (a technique that can reduce a building's impact on a site with steep slopes). Buildings should be designed and situated on sites to complement the existing natural and built environment, as well as to provide compatibility and connectivity with neighboring sites.

» The desired condition is to have the building frame enclose the street, which is achieved by providing building height that is proportionate to the width of the adjoining major street. A ratio of building height to street width of one-to-two creates a strong "room-like" street, while a one- to-three ratio provides good street definition and proportion. Shorter buildings of one story facing broad streets will not achieve the desired relationship

» Use building forms that reinforce the perception of the natural topography.

» Buildings that cut into slopes are encouraged where they can help minimize the perceived mass and size.

» Step buildings down at hillside edges, to minimize visual impacts and reduce the apparent height.

Size, Scale and Height

» A single, large, dominant building mass should be avoided. Where large structures are required, mass should be broken up through the use of setbacks, projecting and recessed elements, and similar design techniques. Changes in mass shall be related to entrances, the integral structure, and/or the organization of interior spaces and activities and not merely for cosmetic effect.

» A variety of building sizes is appropriate according to function and type.

» Building design shall emphasize a human scale at ground level, at entryways, and along street frontages through the creative use of windows, doors, columns, canopies, and awnings or other architectural elements.

» Low-profile buildings are encouraged, though a minimum building height of 15 feet is required with 25 feet being preferred. On larger structures and sites, a minimum building height of 25 to 40 feet is preferred.

» Avoid placing tall buildings at high points on the site or in other highly visible areas unless required by the building's function or development concept.

Relationship to Other Buildings

» Building mass should reinforce the definition and importance of the street or open space.

Articulation of Façade

» In building façade design consider: compatibility, proportion, human scale, repeating patterns, consistent levels of detail, continuity of a theme, signage, durability of materials, color, texture, and window-to-wall-area ratio.
» Buildings with façades possessing common elements (e.g., architectural features, building materials) contribute to a unified street character even though their uses may differ.
» Variations in facade treatment may be continued through the structure, including its roof line and front and rear facades to reduce the perceived size of the building.

Orientation

» Major building entries shall be designed and located to provide the primary building access oriented to the public street and sidewalk.
» Doorways should be prominent and obvious in appearance, so as to attract the users toward the entry. Major entry features should primarily address the street, with entry courts, display windows, signage, lights, walkways, and vestibules, as appropriate. Major entries should be adjacent to, or very close to, the street and public sidewalk
» Orient buildings on the site to complement the natural topography.
» Orient buildings on the site to take advantage of the site's microclimate, solar, daylighting, natural ventilation and energy floes.

Building mass should reinforce the importance of the street, sidewalk, or open space.

Orient buildings on the site to complement the natural topography.

Orient buildings on the site to take advantage of the site's microcliamte, solar, daylighting, natural ventilation and energy flows.

Building entrances should include architectural elements.

Entrance Design:

Relationship to Street

» Buildings should have entries directly accessible and visible from their principal roadway, plaza or open space. Buildings with the main entry on the side should include architectural elements that make the entry visible from their principal roadway, plaza or open space and include a generously proportioned sidewalk from the street to the entry. In multiuse buildings, each building use and ground floor tenant space should have at least one functional entrance directly visible and accessible from the street.

Expression of Entries

» Entries should be marked by architectural features that emphasize their importance. Features such as tall building features, a change in the building plane, projecting overhangs, special lighting, awnings and signage can signify the location and importance of an entry.

Façade Design:

Transparency and Openings

» Building facades should animate the street, providing visual interest to passers-by. Transparency means that one can see or have a sense of what is behind a building facade, creating an interesting and lively street face.

» Transparent doors and windows should extend at least 60% of ground floor facades facing principle streets and open spaces, and 50% of second floor facades. These percentages may be reduced if they are not appropriate for a buildings use or energy efficiency/performance.

» Facades should have ample, articulated doors and windows to create visual interest and allow one to see inside.

» Windows shall be located in all building facades visible from the public way, especially on building facades along the major public street or open space.

» Limitations on transparency, such as dark or reflective glass, or interior coverings, should be avoided. Where interior uses are not conducive to transparent viewing from the public way, windows can still convey a sense of activity and presence

Windows should be located on building facades visible from the public right of way.

Facades should have ample doors and windows so that one can see inside.

along the street. Even these more private windows can convey occupancy and habitation when lighted from within, as during evening hours, even if the interior is screened from view.

Glazing

» Glazing should be designed and selected with energy performance in mind.

» Glazing should not prevent one from seeing inside a building. The use of reflective or dark-tinted glass is discouraged, especially at ground level, because it prohibits transparency and lacks the visual interest of clear window openings

Solar Control

» Solar control devices should not interfere with the transparency of a building facade. Awnings and deep overhangs are appropriate because they provide protection from the elements and enliven facades without obstructing views into and out of buildings or obscuring the pattern of openings.

» Sunscreens that mask windows and other facade articulation may also be appropriate if not detracting from the transparency of the facade or otherwise mask articulations which provide a sense of human and visual scale.

Consistency of Expression

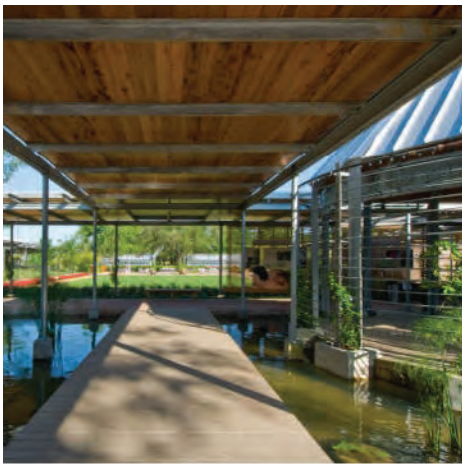
» Residential or mixed-use residential projects should incorporate elements that signal habitation such as entrances, stairs, porches, bays and balconies that are visible to people on the street.

» All exposed sides of a building should be designed with the same level of care and integrity. Buildings should be attractive and visually engaging from all exposed sides.

» Architectural details and features should be architecturally valid, not just decorative. Features should be related to the building s structure, function and/or engineering, rather than rather than tacked on or arbitrary.

Solar control devices should not interfere with the transparency of a building facade.

Solar control devices should not obstruct views into and out of the building.



Roofs that protect and frame viewsheds and provide acres to daylight are encouraged.

Change in materials should be integral with building facade and structure.

Exterior building material should convey a sense of integrity, permanence and durability.

Rhythm and Scale

» Building facades should be designed to have a rhythm and pattern measured according to human movement and scale. Architectural elements can contribute to the rhythm and pattern of the facade, creating visual interest and an inviting pedestrian environment. Vertical proportions of doors, windows and projections should achieve human scale.

Articulation and Depth

» Building elevations should have variation and depth, rather than a false front treatment. Varied massing, projections and recesses can be used to create a sense of articulation and depth. Structural elements such as columns, parapets, rooflines and window fenestration can inform building design, as can functional elements such as location of entries, circulation spaces and special rooms.

Street Front/Public Space Character

» The street frontage should have continuous ground floor commercial uses characterized by display windows, recessed entries, and amenities such as arcades, awnings and seating areas. Grade-level and partially subgrade parking should be fronted with habitable building space such as storefront and building lobbies.

Building and Roof Form

Flat Roofs and Parapets

» Flat roofs with parapets are strongly encouraged. Gabled and hip roofs are generally discouraged except when used for solar energy production or in the case of mixed use or residential projects that are reflecting an appropriate residential character based on traditional building forms.

» Parapets should be provided to articulate flat roofs and hide roof mounted equipment. Parapets may have strong cornice detailing to provide scale and visual interest.

Roof Line Consistency and Integrity

» Roofs and architectural elements should have functional integrity and should not be used primarily to create a style or image. False roof structures such as mansards are strongly discouraged.

Roof Forms

» Roof forms should be appropriate to the design of the building and style reflect the facade articulation and building massing, as opposed to a single-mass roof over an articulated facade.

» Roof forms that protect viewsheds, access to daylight and views of significant features are encouraged

Screening

» Rooftop mechanical equipment should be screened with either a full height equipment screen wall or penthouse. The screen or penthouse should have a material and form similar or complimentary to the building.

Materials

Durability

» Exterior building material and finishes should convey a sense of integrity, permanence and durability. The selection of appropriate materials and finishes has a powerful impact on the perception of quality.

Articulation of Materials

» Change in materials should be used to articulate building elements such as base, body, parapets caps, bays, arcades and structural elements. Change in materials should be integral with building facade and structure, rather than an application.

Local Materials

» As much as possible, give preference to locally (within 500 miles) harvested and manufactured materials.

Recycled Content Materials

» After durable and local material choices have been made, give preference to materials that contain recycled content.

Parking and Circulation

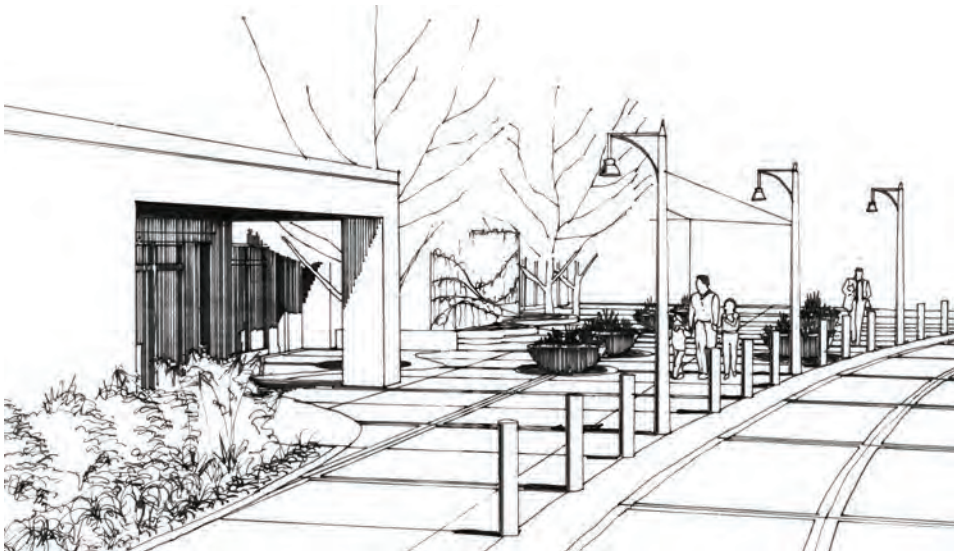
A fundamental development objective for all sites is the safe and efficient movement of vehicles and pedestrians with the least amount of impact to the surrounding properties. The Business-Industrial Park must balance the need for truck and large vehicle circulation with the requirements of an active pedestrian environment, which is often at odds with generous vehicular provisions. Large reservoirs of surface parking have detrimental effect on street life, as it produces a void in the street wall and subsequently no activity.

The design of commercial and residential buildings can sufficiently accommodate required parking while still contributing to good urban design. Adequate parking provision need not produce a dead realm of surface parking lots.

Goal: Parking areas will be designed to provide safe and convenient movement of motor vehicles, limit vehicular/pedestrian conflicts, limit impervious surfaces, provide for screening of paved areas, and soften the visual impact of parking areas.

Guidelines:

- Driveway access along streets shall be kept to a minimum which is essential for proper industrial traffic circulation.
- Driveways should be aligned with existing or planned driveways on the opposite side of the street or oriented to existing or future street median breaks.
- In order to minimize interference with street circulation, a minimum driveway length of twenty feet may be required between the property line and the first parking stall.
- At least one sidewalk connection between the building and the perimeter street is required. Large parking areas shall have sidewalk connections to the building entries or ground plaza areas.



Pedestrian circulation should be separated from vehicular circulation as much as possible.

» A combination of on-street public parking and off-street public parking should be utilized to be easily accessible and identifiable.
» Where opportunities exist for shared parking between users with staggering peak parking demands, owners and developers shall make every possible effort to take advantage of this opportunity to reduce the total number of parking spaces within each site or parcel.
» Parking facilities should be designed to limit conflicts between vehicles and pedestrians. Pedestrian circulation shall be separated from vehicular circulation as much as possible to reduce traffic hazards and make the pedestrian system safer, more efficient, and visually attractive.
» In the locations where parking areas are exposed to the sidewalk they should be separated from the public right-of-way by a landscaped strip or hedge.
» Surface parking areas should be landscaped with trees, shrubs and planting. Perimeter landscape planting and grading should be used to screen the parking from off-site views. Internal landscape planting should be used to break up the parking lots, provide shade, and provide opportunities to capture stormwater runoff.
» Design interior landscape islands to be at least six feet wide and plant with a minimum of one shade tree and full groundcover of native plants for stormwater infiltration and uptake.
» A maximum of 15 contiguous parking stalls are permitted before providing a landscape island.
» Parking lot landscape islands are to be a minimum of 350 square feet.
» Bicycle parking and/or carpool parking spaces should be provided at a amount equivalent to 10% of the total automobile parking for each non-residential and multi-family building on site (LEED ND)
» Bicycle parking should be located close to the building entrance to help prevent vandalism. Avoid locating bicycle parking in hidden areas, dark locations, or garage recesses.

<u>Mixed Use/Office/Retail</u>

» Parking areas shall be located behind primary buildings to encourage continuity of building uses that support pedestrian activity along the street. Ground floor parking should not be exposed to the street.
» Parking should be accessed from the rear of buildings and along secondary streets, if possible. If not possible, the entrance to parking from the street should be designated as part of the rhythm of storefront, but not in such a way that it becomes a hazard for pedestrians.
» When necessary, such driveways should be minimized in width and provide good visibility of pedestrians from vehicles using the driveway. A change in material for the sidewalk should be utilized to indicate or warn pedestrians where the access to parking is located.

Large parking areas shall have sidewalk connections to the building entries or ground plaza areas.

Internal landscape planting in large parking areas should be used to provide shade and opportunities to capture stormwater runoff (Image courtesy of the Metropolitan Design Center).

Bicycle parking should be located close to the building entrance to help prevent vandalism.

Landscape

The purpose of the landscape portion of the Development Guidelines is to provide guidance for site landscaping - an important sensory component that will define the overall visual character of the Business-Industrial Park and is critical for sustaining the ecological processes of water, land, plants, and animals. The concepts guiding these objectives aim to preserve and restore ecological processes that replicate natural conditions, while also sustaining the human community.

The water cycle represents the key response among these elements. Throughout the site design process, it is important to limit areas of high water use turf to areas of intensive use by people. Such areas include active recreation areas and areas highly visible by pedestrians (such as building main entrances). Turf grasses should be used as a ground plan amenity and not just as infill material. With natural hydrology established, the plan provides for the preservation of the ability for groundwater reserves to store rainfall for later use and to provide adequate habitats for people and wildlife.

A diverse and healthy urban forest provides many environmental benefits, including enhanced energy efficiency, stormwater management, air quality, and wildlife habitat, but also is one of the most important elements in creating a humane streetscape and attractive public realm. Trees and plants soften the development's hard surfaces and sharp edges, not just by screening but also by adding organic forms, colors, textures, and movement to the setting. They also add scale to the Business-Industrial Park environment that people can readily relate to, and, as living organisms that grow and change with the seasons, introduce a dynamic quality that mitigates the largely inanimate character of the built environment.

Goal: The landscape will be aesthetically pleasing, maintain and support the character of Northfield, minimize water use for irrigation, increase wildlife habitat, and provide opportunities to encourage social interaction.

To minimize maintenance and water consumption, native, drought tolerant species should be selected.

Guidelines:

- Landscaping should be introduced to the public realm to contribute to the quality of the pedestrian experience by adding color, texture, and form that add visual interest, and provide scale, shade, and buffering that contribute to the sense of comfort.
- Landscaping should maintain and expand the City's urban forest in order to minimize urban heat island effects, reduce stormwater runoff, improve air quality, and reduce energy consumption.
- Plant materials should be in scale and compatible with the adjacent land uses and buildings. Plant materials and landscaped areas should be used to enhance the appearance of structures, define site functions and edges, and screen undesirable views.
- For maximum visual effect, plant material should be placed in masses rather than as isolated individual plantings sporadically placed.
- Natural areas should be integrated seamlessly into the development. Employ mow strips where separation from natural area is desired and create appealing boundaries to natural landscapes such as clean edges or artful species layering.
- Plant species should be selected for their suitability to climatic conditions in Minnesota, including native or naturalized species that provide potential habitat for local wildlife.
- Prime habitat for sensitive wildlife species should be identified to protect their seclusion. Use vegetation screening to separate wildlife habitat from developed areas.
- A design pattern of large habitat cores, buffers, and connecting corridors that include prairie, savannah, wetland, and marsh habitats should be used.
- Wetlands should be designed as a functional and integrated natural system by using natural patterns of slope and soil to create new wetlands.
- To minimize maintenance and water consumption, emphasis should be placed on the selection of native, drought-tolerant species, and all landscape areas should be irrigated with high-efficiency automatic drip and low-flow watering systems. High water use turf should not be used on slopes greater than 4:1, or in medians and narrow strips of planting that are less than 6 feet wide, whether in a parking lot application, roadway median or setback area.

Native plant species should be selected for their suitability to climate conditions.

Plant materials and landscaped areas should be used to screen undesirable views.

Wetlands should be designed to function as an integral natural system.

Gateways & Access

Gateways provide a unique sense of transition, identity, and anticipation. The Northfield Business-Industrial Park Master Plan identifies the need for vehicular gateway features to be constructed at the edges of the Business-Industrial Park, particularly entries along Highway 19, as well as on Highway 19, which is an important gateway into downtown Northfield. The primary functions of these major gateway features are to:

» Serve as landmarks highlighting the arrival to the Business and Industrial Park.
» Provide a transition from a rural setting into the Business-Industrial Park; and
» Reflect the character of the Business-Industrial Park.

In addition to these aesthetic functions, gateway features may also serve as traffic calming features, performing two primary functions. The first is to slow traffic down to an acceptable speed within the Development Core and secondly increase the motorists' level of awareness that they are entering an area with a greater level of pedestrian activity. The design of a major gateway is subject to the function of the road and the width of the right-of-way, and is directly associated with pedestrian and vehicular access and movement.

Secondary gateways can exist within the community and provide transition between different districts and land uses. They should relate to the development's unique function, character, and features and can be identifiable through the use of landscaping, public art, signage, or other features. These design elements can quickly build a sense of place, orient people and define a quality that people will identify with and relate to.

Goal: Special design and treatment of Gateways will enhance the character and identity of the development and will provide an appropriate sense of transition from adjacent properties.

Gateways provide a sense of transition and identity and convey a sense of entry.

Guidelines:

» Public areas, including parks, common courtyards, schools, and civic spaces should incorporate threshold structures such as gateways, arbors, signage etc. that convey a sense of entry and clearly mark points of access to those spaces.
» Medians as part of gateways should be designed to be accessible as refuges for pedestrians crossing the roadway.
» Landscaping around gateway signage should be native and in keeping with the specific characteristics of the gateway's location. Plant material and planting designs that reflects the agricultural or horticultural heritage of Northfield (e.g., orchard-like) may be acceptable.
» Where feasible, lighting may be incorporated in the gateway designs to enhance the entry experience at night. Any lighting should be the minimum needed for safety and sensitively placed to avoid light pollution and adding to visual clutter.
» Materials for gateway signs, supporting structures and other landscape structures will be high-quality and durable, preferably natural, and consistent with the specific characteristics of its location.

Lighting

Lighting needs vary and while it is important to safely light pedestrian and auto routes, it is also important to respect the visual sensitivity around residential areas and the adjacent rural landscape. Views of evening sunsets over the agricultural landscape are among the most enjoyable features of living in Northfield. Views can be ruined, however, by excessive light from street lights, athletic fields, parking lots, and buildings. Eliminating glare and reducing visibility of the light sources are important aspects to reducing the visual impacts to the residents of Northfield.

Goal: Lighting will contribute to the visual continuity and ambiance of Northfield and will not distract from neighboring properties.

Guidelines:

- Luminaire styles that reduce the amount of light thrown into the sky should be selected.
- Pedestrian lighting shall utilize lens technology that sheds the light onto the path and away from windows.
- Parking lot areas shall use cutoff fixtures to reduce glare and spillover onto adjacent sites.
- Light poles within parking lots shall be a maximum of 24 feet in height.
- Site lighting must be directed onto vegetation or prominent site features, such as boulders or signage, and shall be achieved with hidden light sources.
- No lighting will be permitted in natural areas, with the exception of walkways and trails.
- Lights should be kept low to provide lighting underneath tree canopies and to preserve the human scale of the development.
- Exterior light fixtures shall be located and oriented to focus light inward to minimize light encroachment on neighboring tenants or residences.

Lighting should contribute to the character of a place and can be incorporated with sculpture and art.

Signage

Signage should be used for information, direction, and wayfinding. High quality signs that are limited in number, appropriately sized, and suited to the context of the overall architectural theme of the building, street, or development enhance the appearance and character of the development. The size, placement, and design details of all signs are considered to be an integral part of the site development approval process, as well as an integral part of the entire Business & Industrial Park.

Goal: Signage will provide project identity, adequate wayfinding, and create a functional information system that contributes to the city's character, while remaining subordinate to the surrounding buildings and landscape.

The three basic sign categories for project signage addressed in these guidelines include project identification, informational/directional, and temporary.

- Signs that provide the user with information about location, business hours, and other general information are Informational/Directional Signs. Any sign giving identity to three or more buildings shall be considered a Complex Identification Sign.
- Project Identification Signs include signs for hotels and retail, distribution/warehouse, residential development, and business directory signs.
- Temporary Signs can be used for construction and design team information or future tenant identification.

The information provided on freestanding identification sign should be limited to company logo, building, and address.

Guidelines:

- All project identification signs shall be integrated into the surrounding landscaping.
- Over-signage should be avoided throughout the Business-Industrial Park.
- Sign materials should be constructed of high quality, attractive, and durable materials.
- Buildings with multiple tenants should have a common signage program and include a multiple directory.
- The Informational/Directional sign system should provide information and wayfindnig for all users (vehicles, transit, bicycles, and pedestrians).
- Signs for pedestrians should be placed at decision points in parking lots, in plazas, and where highly traveled walkways intersect.
- Location and size of signs shall preserve sight lines and enhance visual corridors to foster wayfinding and circulation. Visual conflicts with adjacent residential uses should be avoided whenever possible.
- Parking lot entrances should be identified with employee and/or visitor designation along with the complex or building name.
- Retail Identification Signs shall be building-mounted only. Signs may be mounted on building face or canopy.
- Distribution/Warehouse Signs may be ground-mounted (single or double-faced) or building mounted.
- Only one Distribution/Warehouse Sign at the main entry drive along the street frontage is allowed for any given building.
- Distribution/Warehouse Signs may only contain the business name, logo, and principal service or product only if necessary to clarify the nature of the business.
- Only one Temporary Sign may be installed and directed towards street frontage.
- Hotel Signs may be ground-mounted, single or double-faced, or single-faced building mounted.
- The information provided on a Complex Identification Sign shall be limited to the complex name, complex logo (if applicable), and address. The signs may be single- or double-faced, ground-mounted monuments only.
- The information provided on a Freestanding Building Identification Sign shall be limited to company logo (if applicable), building, and address. The signs may be single or double-faced ground-mounted monuments only.

Retail Identification signs should be mounted on building face or canopy.

Ground-mounted project Identification signs should be integrated into the landscape.

Signs for pedestrians should be placed at decision points and where highly traveled walkways intersect.

Water Resources

Clean water is an increasingly scarce resource throughout the world. In order to seamlessly integrate stormwater and greywater management systems into the natural landscape, greenways that run along the natural lowlands should be preserved and developed into a system of parks, trails, and natural open space. On-site stormwater management can help transform water at the source from a potential nuisance as polluted and erosive, into a resource for the environment and community. In turn, it will beautify the landscape, support wildlife habitat, provide recreational amenities, and reduce the need for more sewage lines and treatment plants. Properly utilizing native plantings, shade trees, porous paving, rain barrels and cisterns, rain gardens and bioswales, and onsite greywater management systems are a few of the ways by which to help Northfield remain a sustainable and prosperous community. Following is a list and description of sustainable devices and techniques strongly encouraged for every developer and tenant to use in order to achieve sustainable water management and conservation.

Reducing water consumption and protecting water quality are key objectives of sustainable design. One critical issue of water consumption is that in many areas of the country, the demands on the supplying aquifer exceed its ability to replenish itself. To the maximum extent feasible, facilities should increase their dependence on water that is collected, used, purified, and reused on-site.

The protection and conservation of water must be considered throughout the life of the building, and facility owners and developers must seek to:

» Reduce, control, and treat surface runoff;
» Use water efficiently through low or ultra-low flow fixtures, elimination of leaks, water conserving cooling towers, and other actions;
» Improve water quality; for example eliminate lead-bearing products in potable water;
» Recover non-sewage and gray water for on-site use (such as irrigation)
» Establish waste treatment and recycling centers;
» Apply the FEMP Best Management Practices for Water Conservation.
» Follow Energy Independence and Security Act (EISA 2007) Hydrology requirements to maintain or restore pre development hydrology of the property with regard to the temperature, rate, volume and duration of flow.

Ponds and Wetlands

Stormwater detention ponds are designed specifically to store stormwater runoff for short durations following rainfall events to reduce peak flow rates and improve water quality. Water quality improvement is achieved through a combination of settling, microbial action and nutrient assimilation by wetland plants. Stormwater wetlands are designed to provide final 'polishing' of stormwater quality. They can also be an aesthetic feature, offering wildlife habitat as well as functioning as part of the stormwater management system.

Bioretention Areas

A bioretention area, similar to a rain garden, is a depressed landscaping area that collects runoff and promotes pollutant removal through percolation. They are typically a shallow depression consisting of a prepared planting bed, organic mulch and woody and herbaceous plant species. Water is detained, passing slowly through the soil medium and allowing the physical and biological processes in the facility to enhance water quality before discharge.

Bioswales

Bioswales are a hybrid of a drainage swale and a biofiltration device. Bioswales are an attractive alternative to traditional (pipe) infrastructure since they combine drainage with infiltration and water quality treatment Bioswales can improve water quality through the removal of sediments and the assimilation of nutrients. A bioswale can be vegetated with plant material that tolerates periods of inundation and road salt.

Green Roofs

In non-residential developments as much as 33% of runoff can be generated by roof tops. A green roof involves installation of a layered system of membranes, substrate and plants onto a conventional roof. There are two main types of green roofs: extensive and intensive. Extensive green roof systems are lightweight and typically do not require a roof to be designed with extra reinforcement. Intensive green roof systems offer greater stormwater retention capacity and better energy efficiency benefits for a building. They are also capable of supporting a greater variety of plants than extensive systems, and allow for the creation of different plant habitats. Intensive green roofs are generally more attractive aesthetically than extensive systems, but they have a higher capital cost. Green roofs should be encouraged or required on commercial, industrial and civic buildings with footprints over 50,000 square feet.

Permeable Pavement Systems

Another design technique that should be encouraged or required to reduce runoff from impervious surfaces is to utilize pervious paving materials in lieu of traditional pavements. Permeable pavement enables stormwater to drain through the surface and into the soil below, rather than collect on the surface and run off into storm sewers. Permeable paving materials include, but are not limited to, porous concrete, permeable interlocking concrete pavers, concrete grid pavers, and porous asphalt. Permeable surfaces, if installed correctly and maintained properly, duplicate the structural and functional features of traditional pavement, but generate less runoff. The various forms of permeable pavements can be used in many areas, including low-traffic roads, emergency access roads, parking lots, sidewalks, and road shoulders.

Shade Trees

Trees in urban areas reduce stormwater runoff, improve air quality, and reduce energy consumption. Tree canopies intercept and capture rainfall, reducing the amount that reaches the ground and help to keep homes up to 20-degrees cooler in the summer time. Tree roots and forest soils allow for better infiltration of rainfall. Trees and Riparian Forests also protect and buffer streams and are critical to maintaining healthy, clean waterways. Tree roots provide streambank stability, reducing erosion, filter out sediments, remove nutrients, shade and cool the water, provide habitat for many different species, and provide the primary food source for aquatic insects that are a critical part of the aquatic food chain.

Cisterns & Water Harvesting

Rainwater harvesting refers to a system of capturing stormwater runoff and using it to supplement or replace water from a centralized system or a well. Typically, water is captured from a rooftop and stored in a cistern for later use or released in a slow and controlled manner for a host of secondary uses. Harvested rainwater has many practical uses, from irrigation during dry periods and washing vehicles to flushing toilets, or virtually any industrial use that does not require treated water.

Mulching

Organic mulches act to cool the soil during hot weather, thereby reducing the evaporation and subsequent water use. Mulches also reduce the growth of weeds and buffer soil temperature fluctuations throughout the year. Inorganic mulches are very beneficial and have excellent applications for specific purposes. Organic mulch/compost, when mixed with topsoil, can mitigate construction related soil compaction reducing post-construction runoff.

Native Plants

Landscaping with native plants serves an important role increasing evapotranspiration due to its comparatively higher biomass than turf grass. Additionally their deep root structure helps to mitigate soil compaction helping to promote infiltration. Native plants also do not require permanent irrigation and hence to not contribute to wasteful and costly water practices of the past.

Stormwater Management/Water Quality

Stormwater runoff from roofs, driveways, and roads carries pollutants such as oil, heavy metals, chemicals, and lawn fertilizers directly to nearby waterways, where they accumulate and seriously harm water quality. Despite the varying techniques, the purpose of such ecologically-conscious design attempts to minimize changes to the hydraulic cycle within the development site. The principal tenet is to first reduce the amount of stormwater runoff through disconnection or minimization of impervious area. Secondary aspects of this approach include maximization of infiltration and possible water reuse. The volume of stormwater runoff can be reduced substantially or eliminated through compact design and the adoption of technologies such as green roofs, permeable pavement and bioretention systems. Additionally, proper management techniques will beautify the development and streetscapes.

Goal: The development will implement a regional water management system that collects and filters stormwater, improves water quality, reduces infrastructure and long term maintenance costs, and provides a valuable aesthetic amenity for the community.

Guidelines:

- Avoid direct connections from impervious surfaces to the stormwater collection or management system.
- Integrate the stormwater management systems and community open space to provide unique public amenities.
- Where feasible and appropriate, install swale conveyance facilities in place of traditional storm sewer.
- Use native grasses where possible and limit the use of bluegrass and other non-native species.
- Trees and shrubs should be placed in mulched areas rather than in turf areas so that irrigation can be zoned separately, the soil stays cooler, and for ease of maintenance.
- Maximum ponding depth in bioretention basins shall be established such that the duration of standing water after a rainfall is no longer than 24 hours to prevent stressing/killing vegetation.
- Conduct on-site infiltration testing to optimize site selection and design of infiltration best management practices to ensure proper function.

Rain Gardens improve water quality, reduce run-off, and can be aesthetically pleasing and attractive.

Water Conservation

Water conservation is the planned management of water to prevent waste, overuse, and exploitation of the resource. Effective water conservation planning seeks to "do more with less," without sacrificing comfort or performance. Demand-side management methods can reduce the amount of water consumed on-site at a facility or site, and include system optimization, water conservation measures, and water reuse and recycling systems. Other efficiency options at a building scale include leak detection and repair, industrial process improvements, and changing the way fixtures and equipment are operated and maintained. On a watershed scale, Northfield will provide leadership in sustainable and ecological design working with Dakota and Rice Counties to develop systems, both natural and manmade, that will help protect and enhance the sensitive watersheds of the communities that are built here.

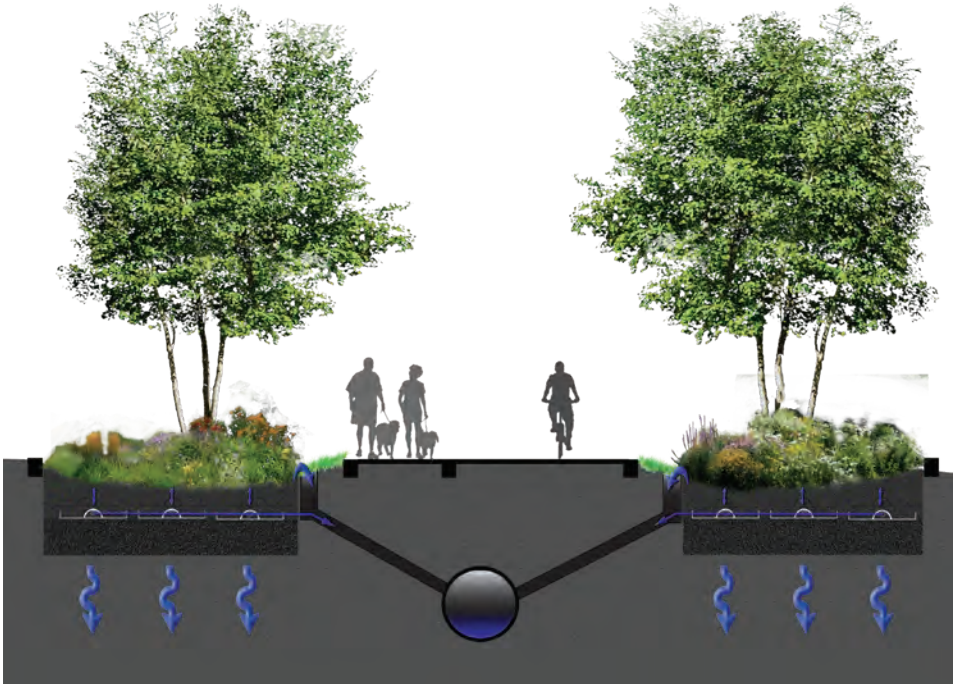
Goal: The development will design and implement a stormwater management system that minimizes runoff, water movement and overuse, prevents water waste; and reuses, recycles and conserves our water resource for generations to come.

Greywater use can significantly reduce the amount of potable water needed for landscaping irrigation, toilet flushing and other non-drinking water applications. To increase greywater recovery and use, coordinate with local water authorities to explain the value of greywater recovery and the benefits to them and their community. Passive survivability is a fairly new approach to disaster recovery and continuity of operations. Ensuring that an on-site water storage system can survive a natural disaster would allow a facility to operate through the disaster or restart operations soon after a disaster. Extreme weather has taxed water supply systems and caused major damage to facilities along coastlines and rivers. Before rebuilding after extreme weather events, apply sustainable development principles to rebuilding water supply systems and stormwater management (from the Whole Building Design Guide - learn more about greywater at www.WBDG.org).

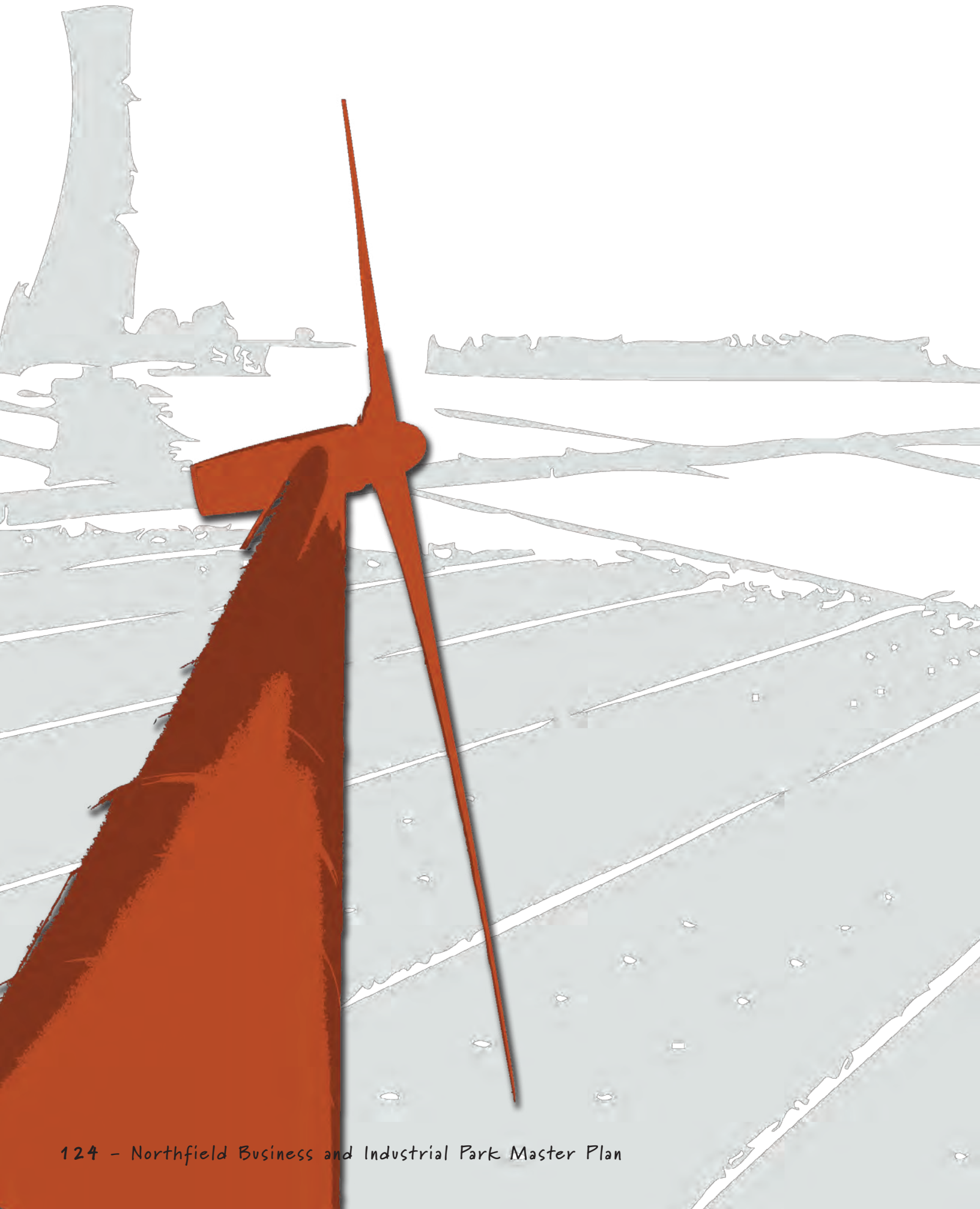
Guidelines:

- » Water conservation techniques should allow the community to maintain its ground and surface water levels and protect optimal water balance within the watershed.
- » Wherever feasible, re-use stored storm water supply for irrigation of public spaces utilizing sub-surface chambers and passive irrigation strategies.
- » Consider the provision of roof runoff storage and distribution to provide temporary water supplies utilizing cisterns or rain barrels.
- » Consider opportunities to re-circulate water, including collected stormwater or high quality wastewater within industrial operations and between businesses.
- » Sensible placement and design of water features should allow for enhancement of public areas with minimal resource consumption.
- » Water-efficient plumbing fixtures (e.g., ultra-low-flow toilets and urinals, waterless urinals, low-flow and censored sinks, low-flow showerheads, and water-efficient dishwashers and washing machines) should be considered in all buildings.
- » Where stormwater is not recycled for irrigation, water-efficient irrigation systems should be implemented to reduce water use associated with landscaping (irrigation-control systems, low-flow sprinkler heads, water-efficient scheduling practices, and xeriscaping)
- » All buildings should evaluate and consider the use of graywater and process recycling systems that recycle or reuse water for daily plumbing needs.
- » Buildings with water intensive processes should determine how to harvest and re-use industrial water or make it available for use by others.
- » Use low or ultra low water-efficient plumbing fixtures and integrate other water-saving devices into buildings.

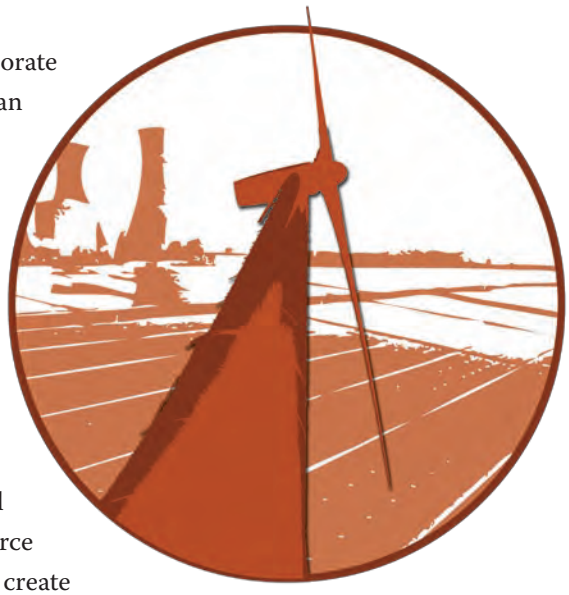
Water from roof tops and impervious surfaces should be used for irrigation of landscaping.



Gravity based reservoirs beneath raingardens manage stormwater runoff, providing slow infiltration and the opportunity for later re-use of the resource. The chambers can also be utilized for passive irrigation, designed to slowly release water for later use, to keep the rooting zone of turf moist.



Energy Resources



Building at Northfield's Industrial Park presents an opportunity to incorporate sustainable development strategies early in the design process and at an integrated systems level, which will provide both environmental and economic benefits. In the context of the Northfield Business-Industrial Park, energy conservation methods, a primary component of sustainable development, consist of strategies to reduce the amount of fossil fuels required for a building to function. The Sustainable Design of buildings and sites requires an evolving palette of design tools. Some tools, like proper solar orientation, require the application of common sense and best practices for the region. Other tools require designers to incorporate the latest technologies for mechanical systems and material use. The amount of development projected for the Northfield Business-Industrial Parks provides a unique opportunity to promote more energy and resource efficient buildings, support greater recycling and waste reduction, and create greater synergies between adjacent Park tenants, integrating operations to create new value-streams.

Each project should undertake a comprehensive analysis to diminish the use of energy and reduce the use of non-renewable resources. The development intends to be a leader and champion of environmentally sensitive design, demanding innovation and creativity from each of the building project teams and sharing of resources and waste streams. The development is committed to creating a cohesive environment that moves beyond merely sustainable, to one that actively improves the quality of life and the environment for its users. The following are energy goals that all sections of these design guidelines uphold:

- Siting new structures mindful of orientation, shading and the effect on adjacent buildings and spaces.
- Using landscape design to create healthy and ecologically appropriate spaces, provide pleasant outdoor environments, reduce exterior lighting demand and minimize stormwater runoff.
- Reduce energy consumption of building and site systems (HVAC, hot water, lighting) through the use of appropriate mechanical and construction technology (natural cooling, light recovery, passive solar design, etc.)
- Reducing dependence on non-renewable resources by using renewable energy sources, appropriate recycled materials and by promoting adaptive reuse of existing structures.
- Reducing marginal energy costs by promoting selection of locally manufactured or fabricated products and materials.
- Minimizing maintenance and operating costs by employing whole-systems lifecycle evaluation to determine the true project costs, and by integrating innovative daylighting and building engineering solutions at project inception.
- Improving indoor environmental quality.
- Maximizing building flexibility to satisfy the varied demands of current and future users and residents.

Passive Methods:

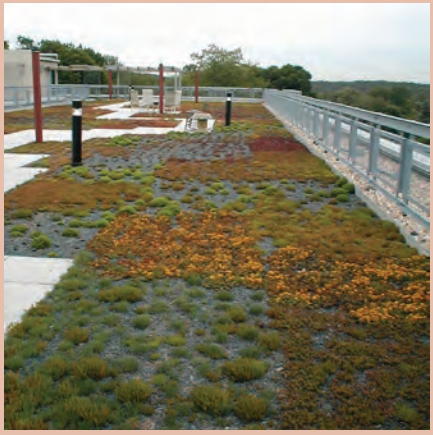
Vegetated Shading

Trees and landscaping can reduce peak cooling loads through shading and can cool the ventilation air entering a building. Trees and vegetation are most useful as a mitigation strategy when planted in strategic locations around buildings or to shade pavement in parking lots and on streets. Vegetated shading in the urban environment provides benefits beyond reduced energy use. These benefits include improved air quality and lower greenhouse gas emissions, enhanced stormwater management and water quality, reduced pavement maintenance, and improved quality of life.

Windbreaks & Earth Sheltering

Earth sheltering is the method of positioning buildings to take advantage of natural landforms as windbreaks. Earth sheltering offers extra protection from the natural elements, energy savings, provides substantial privacy, and is an efficient use of land, specifically for stand alone buildings that do not benefit from the efficiency of adjacencies found in denser urban cores. If designed properly, windbreaks around a home can reduce the cost of heating and cooling and save energy, especially in a winter climate. Winter winds can increase the rate of air exchange between the indoors and outdoors, increasing a building's heating demand and energy use.

Green Roofs



The use of a green roof can provide benefits not available from regular construction. These benefits include improved thermal insulation for buildings, reduced heating and cooling requirements, increased life expectancy of roofing membrane from better protection from mechanical damage, ultra-violet rays, hail, and extreme temperature differences, reduced heat absorption, and natural production of oxygen and the consumption of carbon monoxide.

Alternative Energy:

Wind Power

Wind is a clean, inexhaustible, indigenous energy source that can generate enough electricity for millions of homes and businesses. Wind energy is one of the fastest-growing forms of electricity generation in the world. Wind turbines, which convert the kinetic energy of wind into electricity, provide an extremely clean source of energy. However, the turbines are land intensive, requiring a large area per turbine for the most efficient production of power. Smaller scale wind turbines within certain areas of the Business-Industrial Park, however, may power specific industrial processes. They should be sited in industrial areas that pose the least physical and visual disruption in the landscape.

Solar Power

Solar energy, radiant light and heat from the sun, has been harnessed by humans since ancient times using a range of ever-evolving technologies. Northfield's Business-Industrial Park should use a wide range of applications, from individual homes to large buildings, and from passive solar to active solar. Solar hot water heaters, photovoltaics, daylighting, solar architecture, and other passive solar techniques are just a few of the technologies that can be employed in the development. As technology continues to evolve, solar power will continue to be integrated into multiple facets of everyday life.

Biogas

Biogas, a source of energy produced from the biological breakdown of organic matter, should serve as a sustainable fuel source for the development. Biogas, which can be produced from farm waste and sewage, provides and effective way to recycle a variety of otherwise problematic waste streams into a renewable energy source. Biogas is a quick, easily controlled fuel, and is converted to fuel in a naturally simple process known as anaerobic digestion.

Passive Energy

Passive design strategies refer to non-mechanical systems or architectural features that use the sun's natural energy to heat living spaces during colder seasons, while minimizing heat gain during winter seasons. Heating and cooling loads are minimized by designing standard building elements—windows, walls, and roofs—so that they control, collect, and store the sun's energy to optimum advantage. Utilizing energy efficient strategies and passive design strategies can increase energy efficiency by up to 30%, which translates into financial savings. Some passive design strategies include: insulation, glazing selection, daylight harvesting, and displacement ventilation.

Goal: Energy efficient and passive design strategies will contribute to lower dependence on fossil fuels, a cleaner environment, increased cost savings and affordability for the tenants and residents of Northfield's Business-Industrial Park.

Orient the buildings so that patios, courtyards, and windows take maximum advantage of the sun's heat in winter.

Protect all glass areas exposed in summer with deep recesses, overhangs, or other devices to minimize heat gain.

Guidelines:

- Orient the buildings so that patios, courtyards, and windows take maximum advantage of the sun's heat in winter and are shaded in summer.
- Where feasible, design and orient the development such that 75% or more of the project's blocks has one axis of each block within 15 degrees of geographical east/west, and the east/west length of the ach block is as long, or longer, as long as the north/south length of the block (LEED ND).
- Protect all glass areas exposed in summer with deep recesses, overhangs, or other devices to minimize heat gain.
- Future development may be required to connect buildings to a District Energy System or to make provision for future connection to this system.
- Consider planting trees and shrubs along Southern and Western sides of buildings.
- Insulation should meet and exceed all energy conservation code requirements, including the International Energy Conservation Code and the National Home Energy Rating Standards.
- At least half of the non-roof impervious site area should be shaded by vegetation or other devices.
- Trees and major landscape elements should be located to provide useful shading and reduce cooling loads.
- Utilize wind screens of evergreen vegetation on the northwest portions of lots but do not interfere with important solar access to adjacent indoor and outdoor paces.
- Reduce the size and number of windows on the heat-intensive west side of homes and use larger windows for greater ventilation and day lighting on the north and east sides of homes.
- Where feasible and appropriate, nestle buildings into the landforms with creative land forming to provide earth sheltering.

Alternative/Renewable Energy

There are a limited amount of nonrenewable energy sources on Earth; therefore it is critical to conserve our current supply or to use renewable sources so that our natural resources will be available for future generations. Renewable energy sources, those that are constantly renewed or restored, include wind (wind power), water (hydropower), sun (solar), vegetation (biomass), and internal heat of the earth (geothermal). Energy conservation is also important because consumption of nonrenewable sources impacts the environment; specifically, our use of fossil fuels (oil, coal, and natural gas) contributes to air and water pollution. Today, eighty-five percent of all energy produced in the United States comes from burning these fuels; and that energy powers almost two-thirds of our electricity and virtually all of our transportation.

Goal: The development will evaluate all renewable energy harvesting opportunities as a means to cut greenhouse gas emissions and reduce our reliance on fossil fuels.

Guidelines:

- New buildings and site plans shall be designed for optimum sustainability; especially with respect to energy performance derived from resource conservation and optimized on-site renewable energy sources (solar, geo-exchange, wind, biomass, etc).
- Developers should conduct all required feasibility analyses (including, but not limited, to those described above).
- Establish energy-use targets that surpass applicable codes and standards.
- Ensure that the planned building configuration takes maximum advantage of the site and climate.
- Use case studies and passive solar performance maps to help determine appropriate strategies for the specific project type at hand.
- The developer should conduct a User Energy Needs Assessment that considers occupancy, operating hours, and all aspects of the interior and exterior climates
- Investigate using renewable power sources as part of the facility's overall power supply. Consider using solar (domestic) hot water on building types with high hot water usage (such as laboratories) and building-integrated photovoltaics (BIPV) to reduce reliance on non-renewable power.

Consider the use of photovoltaics on roofs, especially on industrial buildings.

By-Product Synergies

The principle underlying by-product synergy is that the waste stream of one industry can be used by another as a primary resource. By-Product Synergy is about creating and capturing value through matching producers of under-valued waste streams with users, and working with regulators to establish support for the process. This promotes a shift from a waste disposal system to a reuse methodology, saving energy and cutting emissions. Facilitated collaboration is utilized to identify innovative ways of integrating operations to cut pollution, save energy, reduce material costs and improve the bottom line. The design team takes advantage of the natural symbioses and commonalties that exist between building uses that might otherwise be overlooked.

Goal: The development should strive to minimize energy use through the efficiency, sharing, and waste recovery principles of by-product synergy.

Guidelines:

- The opportunities to share energy, heating and cooling, between site areas and with other parcels shall be considered.
- The opportunity to pool backup generation systems with other buildings and parcels shall be considered.
- Waste recovery opportunities shall be considered.
- Appropriate site selection should be considered to increase the likelihood for other low-energy building strategies to be implemented.
- The nature of the facility should be defined in order to match the end use with complementary energy needs and minimize the resulting wastes.

Productive Landscapes

The properties of Northfield's Business-Industrial Parks are located in an area that has long agricultural history. Aesthetically the agricultural landscape pattern should focus on blending the new community with the rural context of the site. However, while it is common to think of landscape design as primarily an aesthetic exercise, the landscape at Northfield's Business-Industrial Park is intended to accomplish several objectives: habitat enhancement, stormwater cleansing, carbon sequestration, and provide an interaction between residents/employees and the land that results in a strong social fabric and a closer tie with our earth's supply of energy. These objectives are what may be referred to as a productive landscape.

While policy-level attempts to address agricultural land conservation focus primarily on the preservation of agricultural land and urban containment, few solutions have been explored at the edge – where the two meet. Present day strategies are generally characterized as prescriptions for land-use conflict mitigation and the resultant places – or placelessness – are largely defined by segregation and/or buffering of residential development from agricultural land. Northfield's Industrial Park proposes an alternative strategy of integration at the urban-agricultural edge based on agrarian values and the use of development as a mechanism for the transformation of our local food system.

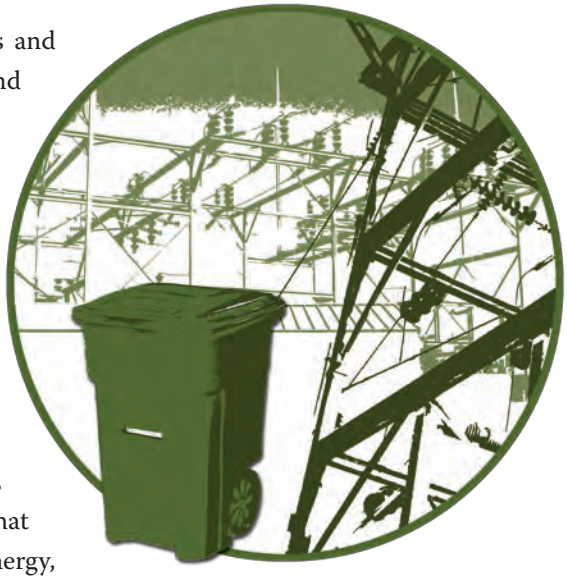
Goal: Supporting community-based and local food production will minimize the environmental impacts from transporting food long distances and increase direct access to fresh foods.

Guidelines:

- Dedicate permanent and viable growing space and/or related facilities (such as greenhouses) within the project (LEED ND).
- Provide fencing, watering systems, soil and/or garden bed enhancements (such as raided beds), secure storage space for garden tools, solar access, and pedestrian access for these spaces (LEED ND).
- Ensure that the spaces are owned and managed by an entity that can include occupants of the project in its decision-making, such as community group, a homeowners association, or a public body (LEED ND).

Dedicate permanent and viable growing space for food.

Utilities & Services



This section contains development guidelines to assist developers, engineers and contractors with the procedures and details needed to complete utilities and services, including service and loading, lighting, maintenance, and waste management projects within Business-Industrial Parks of Northfield. For the purposes of these development guidelines, they outline the provision of the above mentioned utilities and services while protecting the health, safety, and welfare of the City's residents and users of City provided utilities and services. In general, utilities should be as unobtrusive as possible and pose the least possible resource impact; municipal or other utility systems outside the Business-Industrial Park are to be used whenever economically and environmentally practicable; where possible and authorized, cost-sharing with municipalities and others shall be conducted in meeting new, expanded, or replacement utility needs. An exception to unobtrusive utilities are those that might be highlighted to reveal their function, such as those using renewable energy, an important aspect of education.

Service and Loading

Service areas (loading docks, refuse collection areas and similar facilities) can be a source of odor, noise and smoke, or can be visually unpleasant. However, they serve an important daily need for the development. Therefore the design considerations for locating, screening, and accessing them are significantly important.

Goal: Service and loading will be carried out with the least amount of impact on the surrounding properties and impediments to vehicular and pedestrian movement.

Guidelines:

Loading and service dock

- Loading and service dock areas shall be located to the rear or sides of a building, away from the main building entrance, or related high visibility areas.
- Preferably, service, loading, emergency generator, and trash areas should be enclosed within the building structure.
- Locate loading docks and service areas so that views from adjacent proprieties, streets, open spaces, and pathways are minimized.
- External facilities must be enclosed and screened with landscaping to minimize adverse views from adjoining streets, buildings, open space, or the golf course, and designed and constructed of the same design theme and material as the adjoining building.
- Loading areas shall be designed to accommodate backing and maneuvering onsite, not from a public street, and when occupied shall not prohibit onsite vehicular circulation.
- The developers may be encouraged to share service areas amongst buildings and with adjacent parcels (e.g., waster collection and sorting, shipping and receiving, parking, outdoor lunch areas).

Utilities

Utility connections need to be optimally located so that they are both accessible yet secondary to the building's key features. The visual and noise impacts of utility structures need to be minimized as much as possible at the Business-Industrial Park. There is also a strong desire for utility easements to be located within street right-of-way or the open space system wherever feasible.

Goal: Utility structures will be incorporated in a visually unobtrusive manner while still serving the need of the development.

Guidelines:

- Integrate future water, sewer, and waste water infrastructure with existing utilities that will remain to serve the future residents and businesses of the business-industrial park
- Above grade utility structures should be minimized, and when necessary, screened with landscape materials, fencing, or other approved screening devices and not be left floating and exposed in setback zones.
- Utilities connections to buildings should be designed to minimize their occurrence and mitigate their visual impact.
- All utilities should be buried within a public right-of-way or easement and make connections to individual projects from a "back of house" location.
- Locate above ground utility and communication access points and/or structures away from major pedestrian and gathering areas, building entrances, windows, and drainage corridors.
- Plumb buildings such that they may be connected to a future hydronic district heating system.
- Plumb buildings to be "retrofit ready" for solar hot water pre-heating systems.
- The design and installation of utilities should be coordinated with private and public utility companies to ensure timely installation of private utility infrastructure.

Lighting (for Safety)

Exterior lighting is extremely important to the safety and visibility necessary for nighttime business-industrial campus functions and the movement of pedestrians, bicycles and automobiles. The site would be unsafe without appropriately lighting potential hazards for people and vehicles. Security is enhanced by illuminating potentially hazardous sites, directional and informational signage, movement routes and, in general, providing uniform lighting where people are present.

Ideally, street lighting needs to meet multiple objectives. In addition to ensuring that public safety and security criteria are met, street lighting should be designed to create a comfortable and attractive pedestrian environment and enhance the ambiance and character of the development. Lighting contributes to a human-scaled spatial definition of the streetscape, separating pedestrians from street traffic and providing for increased security and visibility. Pedestrian-scaled lighting can act both as a functional deterrent to unwanted activity and also as a stimulus to extend the active hours of street use.

Goal: Lighting should contribute to the safety and ambiance, or perception of ambiance, of the development in Northfield.

Safe lighting levels for pedestrian moment should be compatible with the architecture.

Guidelines:

- Lighting should be continuous (without dark gaps) along primary pedestrian routes and bike paths.
- Building mounted luminaires are encouraged for building entrances and should be compatible with the architecture
- Safe lighting levels for vehicular and pedestrian movement in all parking lots shall be provided.
- Generally, shorter light standards should be more closely spaced to provide appropriate levels of illumination. Although in lower activity areas where lower lighting levels are acceptable, closer spacing may not be necessary.
- Within the Mixed-Use, Retail, Office, Public, and Residential areas, street lighting should be scaled to the pedestrian, with light fixtures that are more closely spaced and mounted closer to the sidewalk.

Maintenance

The key to creating a sustainable development is to have implementation and maintenance build on the design process, each having sustainability as a major consideration. A development with sustainable practices will improve the environment by conserving resources and reducing labor inputs making it less expensive to implement and maintain. The aim is to maintain a high standard of appearance and function of the development in both the short term and the long term. This applies to the appearance and function of buildings, landscaped areas, fencing, storage areas, signage, etc.

Goal: Development completed on the Northfield Business-Industrial Park will be continually maintained in a state of good repair and condition and will contribute to the overall sustainability of the Park.

Guidelines:

- Advertising structures should be maintained as part of the maintenance of the building.
- Landscaped areas should be maintained, including removal of weeds and replacement of any dead plants.
- Car parking areas, vehicle access areas, and any pedestrian pathways, including all sealed/paved areas, should be maintained in a continuously useable condition.
- Train end-users for sustainable landscape care. End-users should be provided with a written Landscape Maintenance Plan and trained as needed.
- Essential maintenance equipment (such as mulching lawn mowers and chippers) should be built into the construction budget, or ensure that maintenance budget will provide them.
- All broken, deteriorated, or missing site improvements shall be replaced and/or repaired within a reasonable amount of time.

Waste Management

Waste will be seen as both a resource and a liability. Northfield's Business-Industrial Park will promote comprehensive waste reduction practices and provide effective solid waste services including recycling, composting and trash disposal. Waste reduction (or prevention) is the preferred approach to waste management because waste that never gets created doesn't have waste management costs. An example of waste reduction is reducing unnecessary packaging from manufactured products and produce.

Extended Producer Responsibility is inherent in Northfield's Business-Industrial development guidelines. Also known as Product Stewardship, this strategy places a shared responsibility for end-of-life product management on the producers, and all entities involved in the product chain, instead of the general public; while encouraging product design changes that minimize a negative impact on human health and the environment at every stage of the product's lifecycle.

The Business-Industrial Park community will have the knowledge and resources in place to avoid waste and manage the resulting waste in a manner that allows for the least environmental impact. Proper waste management and waste avoidance will be considered in decisions made by all affiliates of the development on a daily basis.

Goal: The Business-Industrial Park will promote waste reduction and provide effect solid waste removal services that minimize environmental impact.

Guidelines:

- The trash pickup route should be located along alleys and service routes, where possible. Where alleys are designated as pedestrian routes, additional requirements may apply.
- The waste storage area should not interfere with pedestrian or vehicular traffic to the building and should be separate from landscaped areas.
- A central and unified waste procedure should be identified that collectively handles procedures for removal, separation, storage, and/or transportation.
- When the building contains food service operations, containers and exterior space must be allocated for food waste recycling and grease collection.
- Considerations should be made for greenhouses, athletic venues, and other grounds maintenance facilities generating compostable plant material.
- Retractable bollards on shared-use alleys and pedestrian alleys shall limit trash pick-up times to off-peak hours.
- Trash storage areas shall not be in the 20' public right-of-way of the alley, but rather be recessed into the private parcel. The trash area should be protected from rain, secured behind a lockage door or gate, and screened to minimize visual disturbance.
    - Where it is physically infeasible to provide waste storage facility within the developments' interior space, the outdoor trash storage facility should be designed as follows:
    - The walls of the trash enclosure shall be constructed of solid masonry material with decorative exterior surface finish compatible to the main building.
    - The structure shall have lockable, decorative, »»heavy gauge, solid metal gates and be designed with cane bolts to secure the gates when in open position.
    - The height of wall shall be minimum six feet and contain a decorative roof to screen bin from view.
    - The perimeter of the facility shall be landscaped

Large-scale worm bin

Industrial-scale food composter

Construction Management

It is important that the new Business-Industrial Park at Northfield be designed and operated to the highest standards of sustainable development. This view towards environmental protection, energy reduction, and material reuse also holds true for the construction process. To ensure that the intent of these guidelines are incorporated into the building process and that the natural landscape of Northfield is not unduly damaged during construction, the following guidelines will apply to all construction sites and temporary facilities installed during site improvement construction. Northfield will conduct a monitoring program during the course of any construction to ensure that building is proceeding in accordance with these guidelines and the Builder/ Developer will be notified of any inconvenience.

Environment

Clean air, soil, and water are symbiotic with a sustainable environment. Construction activities may result in temporary impacts on air quality from land clearing, asbestos demolition, and operation of portable asphalt batching plants, rock crushers, and Portland concrete cement plants. During construction, erosion control and prevention of hazardous material spills are most important to avoid impacts on water quality. Cooperation with other agencies is important to ensure compliance with environmental commitments made during project development. The primary concern with stormwater runoff during construction is erosion prevention and sediment control as deposition of sediment in water bodies degrades water quality and severely impacts aquatic habitat. Fortunately, many new best management practices introduced in recent years provide developers with reasonably priced options to maintain clean air, water, and soil on their construction sites. Taking preventive measures in advance of construction greatly reduces erosion and increases the survival rate of trees and landscape plantings.

Goal: Measures to maintain the health of the soil, air, and water will be implemented during construction to minimize the affect of the development on the environment.

Text....

Guidelines:

Vegetation:

- To retain natural vegetation, site areas to be disturbed should be minimized.
- Natural areas of vegetation should be protected from damage by fencing them.
- Preservation of existing vegetation shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities in areas identified on the plans to be preserved, especially on areas designated as Environmentally Sensitive Areas (ESAs).
- Use appropriately sized grading equipment to minimize the weight placed on sensitive soils, especially when it is necessary to work close to mature trees.
- Develop and implement a “tree save” plan.
- No heavy equipment, vehicular traffic, or storage piles of any construction materials shall be permitted within the drip line of any tree to be retained.
- Tree roots shall not be left exposed to air; they shall be covered with soil as soon as possible, protected, and kept moistened with wet burlap or peat moss until the tunnel and/or trench can be completed.

Erosion and Sedimentation:

- Maintain creek water quality by minimizing pollution, erosion and sedimentation.
- Wind erosion controls shall be considered year-round for all disturbed soils on the project site that are subject to wind erosion and when significant wind and dry conditions are anticipated during construction of the project.
- BMPs to divert or manage concentrated flows in a non-erodible fashion may be required on a project-by-project basis to divert off-site drainage through or around the construction site or to properly manage construction site storm water runoff.
- Use temporary sedimentation catchers, or silt ponds, to catch and trap bulk sediment during construction.
- Immediately after grading, install temporary slope stabilization measures, including blown straw with binder and hydro-seeding with fast-growing temporary grass.
- Create appropriate protection for drain inlets, including concrete blocks covered with erosion-control material oriented to allow water through while filtering out sediment. The entire assembly must be surrounded with gravel.
- Design all construction areas to minimize impacts to water quality in drainage areas adjacent to the site.

Erosion control measures to protect water quality

Sediment control

Site Maintenance

There are a number of regulations, best practices, and permitted activities that are critical for the execution of proper construction site maintenance. On-site management includes handling, excavation, and dewatering activities. The contractor is responsible to safely and responsibly manage contamination in a cost-effective manner in accordance with all federal, state and local laws. Project construction often requires the use of hazardous materials, such as gasoline, diesel, motor oil, hydraulic fluid, etc., that are used in construction equipment and vehicles. Cement, paint, liquid asphalt binder, and emulsified asphalt are also used to renovate or construct buildings, pedestrian walkways, parking areas, and roadways. Spills caused by the contractor are the contractor's responsibility to clean up, report, and dispose of properly. Construction noise is temporary but may adversely affect nearby residents. During project development, the design engineer should have considered ways to reduce or mitigate the adverse impacts of construction and incorporated any requirements into contract plans and special provisions

Goal: Regulations and best management practices will be followed in order to achieve proper site management during construction.

Storm drain protection

Guidelines:

- The documentation of contracts and working document should be handled and reviewed properly.
- Mobile operations common to the construction of a project include asphalt recycling, concrete mixing, crushing and the storage of materials shall implement BMP's year-round, as appropriate, to control the individual situations these mobile operations can create.
- Stockpiles of soil, demolition debris, cement, sand, top soil, etc. must be covered with a waterproof material or bermed to prevent being washed off site.
- Excavated topsoil should be saved and protected from rain and wind with tarps for later use.
- Soil or sediment suspected of being contaminated through visual and field evidence should be segregated and stockpiled.
- All hauled material should be properly accessed and transported to a proper facility.
- Fuels, oils, paints, solvents, and other liquid materials must be kept inside bermed areas. Spills must not be washed to the street.
- Waste concrete must not be washed into the street, storm drain catch basins, or a public right-of-way. All dust and slurry from concrete cutting must be removed using a wet-dry vacuum or equivalent.
- Wash water from cleaning construction vehicles and equipment must be kept on-site within a containment area.
- Damage to any property a result of the construction should be replaced according to codes and regulations.
- The contractor shall be responsible for any dust or noise affecting the site during construction activities.
- After all other work is complete, fences and barriers shall be removed last. This is because protected trees may be destroyed by carelessness during the final cleanup and landscaping.

Proper managment

Soil erosion protection

Job-site Waste

The disposal of wastes generated from construction and demolition activities represent a significant portion of operating expenses in addition to consuming valuable landfill space. Therefore, reducing job-site waste and recycling is beneficial both to builders and to the environment. In addition, if used as part of a green building strategy, job-site waste reduction and recycling can be a visible sign of a company's commitment to the environment.

Benefits from waste reduction and recycling include

- Savings on material costs
- Waste-disposal cost reductions
- Better job-site organization and cleanliness
- Improved environmental image
- Extended life of landfills
- Reduction in embodied energy costs of construction
- Avoidance of new government regulations

Goal: Job-site waste reduction will convey greater economic efficiency for builders, while reducing the development's environmental impact.

Guidelines:

- The City shall work with the Construction Manager and the Contractor for General Construction to develop an aggressive Waste Management Plan.
- Construction waste shall be minimized, e.g. by selecting products that conform to required material dimensions.
- Waste materials should be separated for recycling where possible.
- Contractors should be required to hall off their own waster materials.
- The builder should consider source separation first.
- The builder should incorporate frequent hauling to conveniently locate recycling centers into the regular routine or builders should work with trades to separate their waste.
- A Recycling Coordinator should be charged with training and encouraging the construction team.
- Use source reduction and Optimum Value Engineering (OVE) practices during both the design and material purchasing phases.
- The builder should reuse materials on site. Possibilities include mulch from land-clearing, debris/wood, or aggregate from the crushed rock of excavation.
- The contractor should select suppliers that take back packaging, pallets, unused or scrap materials.
- Materials should be protected from multiple-handling, weather conditions, theft, and damage from construction activities.

Separate construction waste

Construction Storage, Parking, and Access

Each contractor shall be responsible for its subcontractors and suppliers obeying the speed limits and traffic regulations posted within the development. Fines will be imposed against the Contractor for repeated violation.

Goal: Construction-related traffic and storage will be planned to minimize impacts and disturbances to on and off-site circulation and environmental systems.

Guidelines:

- Construction truck traffic should be minimized.
- Clearly establish site access and staging areas at portions of the property where soil disturbance will occur for building sites, drives, and parking. Avoid areas planned to be left natural or overseeded.
- All vehicles shall be parked so as not to inhibit traffic.
- Construction materials, equipment storage, and parking areas shall be located where they will not cause root compaction.
- All temporary components of the construction phase, (such as construction trailer, portable toilets, construction tools and materials) should be contained within a chain link fence or in a storage facility.
- Lightweight materials that could easily be blown away are to be covered or strapped down accordingly.
- Keep equipment away from trees to prevent trunk and root damage.
- Fence and isolate hazardous material storage areas to prevent contamination and to encourage organized removal of hazardous wastes to appropriate disposal sites.

Minimize construction truck traffic

Signage

The purpose of this signage is to allow the public to contact the responsible party if visible dust emissions or track-out of material is observed from a construction site. The sign regulations are designed to encourage the creation of an attractive appearance, even during construction, while eliminating signs that may contribute to visual clutter.

Goal: Construction signage for development projects will conform to a unified standard and be attractively executed.

Guidelines:

- In general, construction signs should be located together and not spread about the site.
- Only one sign should be allowed per lot.
- No other constructions signs (i.e. materials, subcontractors, etc.) should be permitted on the lot.
- It is recommended that a standard construction sign frame be employed throughout the development.
- Construction signs shall convey the developers/general contractor's and/or architects identification– name, logo, and telephone number.
- Construction signs shall be removed by the contractor at the completion of construction.

Chapter 7

Implementation Plan

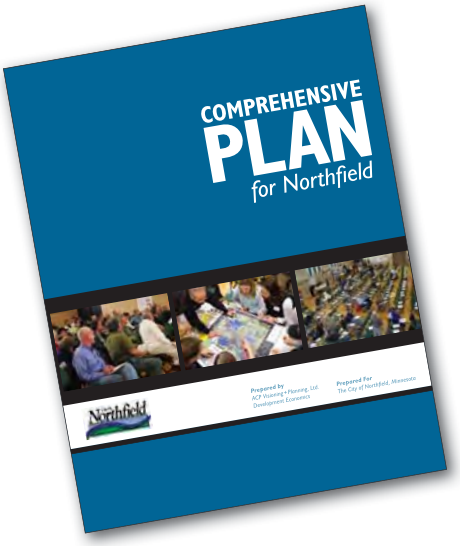
Introduction

This section of the Master Plan identifies several strategies necessary for future development of the Northfield Business and Industrial Park sites. It will be important to engage the community with each step of the planning and development process to ensure that the vision being carried forward reflects the community's desires. Recommendations outlined in this section of the Master Plan with focus on the North Site, as it is already annexed into the City of Northfield and until the South Site is annexed it has limited development potential.

Infrastructure Phasing and Financing

In order to fund the improvements necessary to allow for the development of the master plan, the City will need to examine a comprehensive approach to phasing and funding infrastructure. Such an approach should consider the tools identified in following sections of the Implementation Plan.

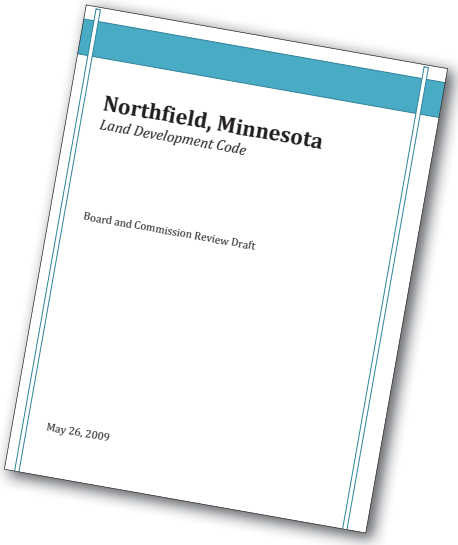
Comprehensive Plan



Implementing the vision of this plan will require amendments to the City's comprehensive plan. The Northfield Business and Industrial Park Master Plan can be adopted as a supporting document to the comprehensive plan or specific goals and policies can be included within the comprehensive plan to reflect the vision of the plan. The City's public facility master plans for water, sewer, and transportation which are supporting documents of the comprehensive plan will need to be amended periodically to identify projects necessary to allow for development of the area.

Land Development Code

In order to facilitate development of individual properties, specific standards and controls will need to be in place to ensure the vision of the plan is carried through. The vision of this plan will be implemented through the City of Northfield's Land Development Code. The study area sites for the master planning effort are located in Floating Zoning District ED-F (Economic Development Floating District). The Economic Development Floating District (ED-F) is applied to areas of the city appropriate for employment with an urban campus type character with a focus on sustainable, high quality development that is designed in a way to preserve the city's natural resources while simultaneously promoting economic development. This district will provide opportunities for corporate administrative offices and medium sized research and development firms to locate in the city. Land uses within the district should be designed to minimize impact on any residential uses by appropriate buffering and overall subdivision design. High standards of appearance and design will be required and maintained with restrictions on outdoor storage and activities with undesirable characteristics.



Amendments to the City's Development Code should be conducted upon adoption of the Northfield Business and Industrial Park Master Plan. Amendments will include specific recommendations and development guidelines outlined in this Master Plan document. Those recommendations will be determined through another zoning ordinance process following the adoption of the Master Plan.

Annexation

In order to consider development of the South Site it is strongly recommended that the City initiate an agreeable annexation approach with Bridgewater Township to bring properties into the City. Coupled with this approach will be the need to outreach to the community as annexations are voter approved. Until such time, development on the South Site is limited.

Marketing Plan

The City should initiate the preparation of a marketing plan to reach out to potential developers and end users of the Northfield Business and Industrial Park sites. This plan outlines several strategies for consideration, however, it is recommended the City consult with a professional market and branding firm(s) to assist the City with the future marketing of the business parks.

Phasing

Introduction

The primary intent of the Northfield Business and Industrial Park Master Plan is to communicate and detail the vision for the two candidate sites. With that said, it is important to begin identifying strategies to make the vision a reality. This section describes phasing strategies and key catalytic projects that relate to phasing.

Successful implementation of the Master Plan will occur if all elements of the plan are considered throughout the implementation process and careful stewardship of the plans fundamental goals are adhered to and supported by community leaders. Many factors evolve over time and can change the priorities in implementing the plan. As funding becomes available the project scope will be refined, the budgets will be adjusted, and the order of development events may shift. Having the plan as a development tool will keep implementation on track as various other factors shift over time.

The implementation plan addresses factors affecting both candidate sites, however the focus of implementation efforts should be applied toward the North Site, as it has already been annexed into the City of Northfield and the future of the south site is still uncertain.

Catalytic Projects

The following catalytic projects have been identified for the North Site and are presented in no particular priority. These projects have been identified since their planning, design and development will affect great change on the site and can build momentum for implementing the Master Plan. Other projects and recommendations that are included in the Master Plan can be implemented independently as funding and opportunities arise.

State Highway 19/County Road 23 Interchange

Improved access and visibility into the North Site is critical to the success of the future business park and to the ability to attract early development interest on the site. Current site access and circulation are not safe or adequate to accommodate heavy truck use that can be expected for future businesses. This project will require land acquisition to provide the land for an improved intersection. It will also require on-going coordination and negotiation with the Minnesota Department of Transportation as well as Dakota and Rice Counties. The City of Northfield should begin discussions with these agencies upon the approval of the Master Plan.

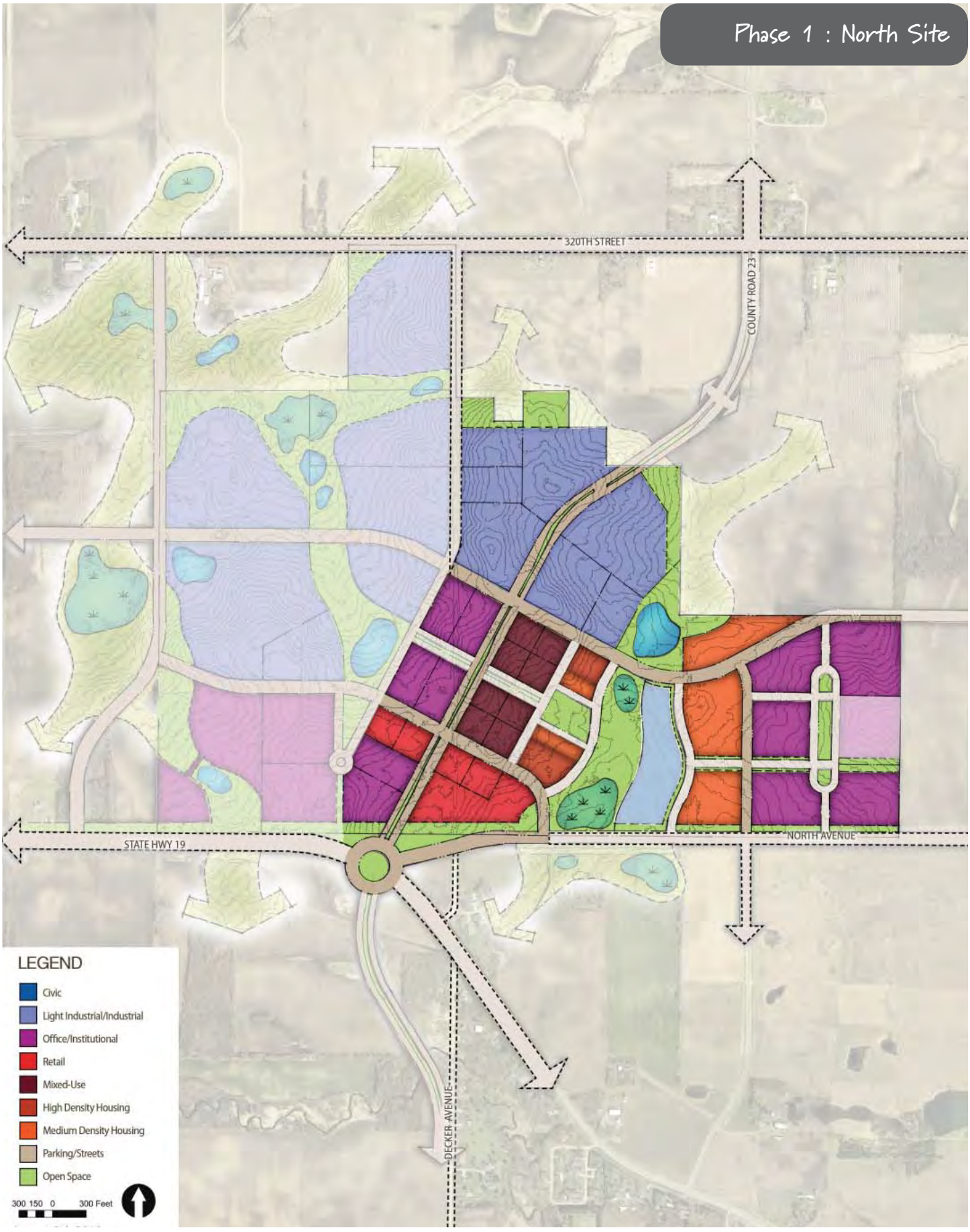
County Road 23

The future alignment and development of County Road 23 is another critical component to the success of the Northfield Business Park. County Road 23 (Dakota County) is planned to be the only arterial roadway within the business park and provides critical access to future development sites. Without this roadway built to minimum arterial standards, access and circulation for future businesses is compromised. With it, the business park will attract future businesses and provide adequate access and circulation to development sites. A portion of the planned roadway can and should be built as deep into the site as possible. Future land acquisition will be necessary to complete the roadway as planned to the north and to the south of the site. This project will require on-going coordination and negotiation with Dakota and Rice Counties.

North Avenue

North Avenue plays an important role, providing access to the Northfield Hospital and to future development sites within the business park. The extension of North Avenue to either the future roundabout at SH 19/CR 23 (if this option is approved by MNDOT and Dakota and Rice Counties) or to CR 23, is critical to the future success of the business park. It also provides necessary access to the hospital from SH 19. Design and engineering of utility extensions within the North Avenue right of way are already underway. These studies should continue westward as funding becomes available.

Phase 1 : North Site



Phasing - North site

The following are specific recommendations related to the phasing of development on the North Site.

Phase 1

Roadways

» Develop a portion of County Road 23 as an arterial per the general alignment and cross section outlined in the master plan and consistent with standards outlined in the 2008 Northwest Northfield Highway Corridor Study Report to service the center of the site and the primary access point into the site off SH 19

» Develop an improved intersection at CR 23 and SH 19. The plan illustrates a large roundabout intersection, based upon direction from the Steering Committee. An improved intersection along SH 19 is critical for safe and convenient access to the site

» Develop a system of collector streets as identified in the phasing plan to disperse traffic throughout the site

Utilities

» Extend utilities in North Avenue west to the Sorem property

» Build additional water and sewer lines within the street rights of way as streets are constructed to serve development sites

Land Acquisition

» Land acquisition will be necessary to construct an improved intersection at CR 23 and SH 19

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Water Tower

» It has been determined that a water tower must be constructed to adequately service the new development. This water tower will also service off-site needs.

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Development Program

» The development sites that become serviceable based upon Phase 1 public improvements include a diverse set of land uses occupying approximately 170 acres. The land uses include office, industrial, retail, lodging, mixed-use, and housing

Job Creation

» An estimated 2,700 jobs could be created if all sites were developed in Phase 1

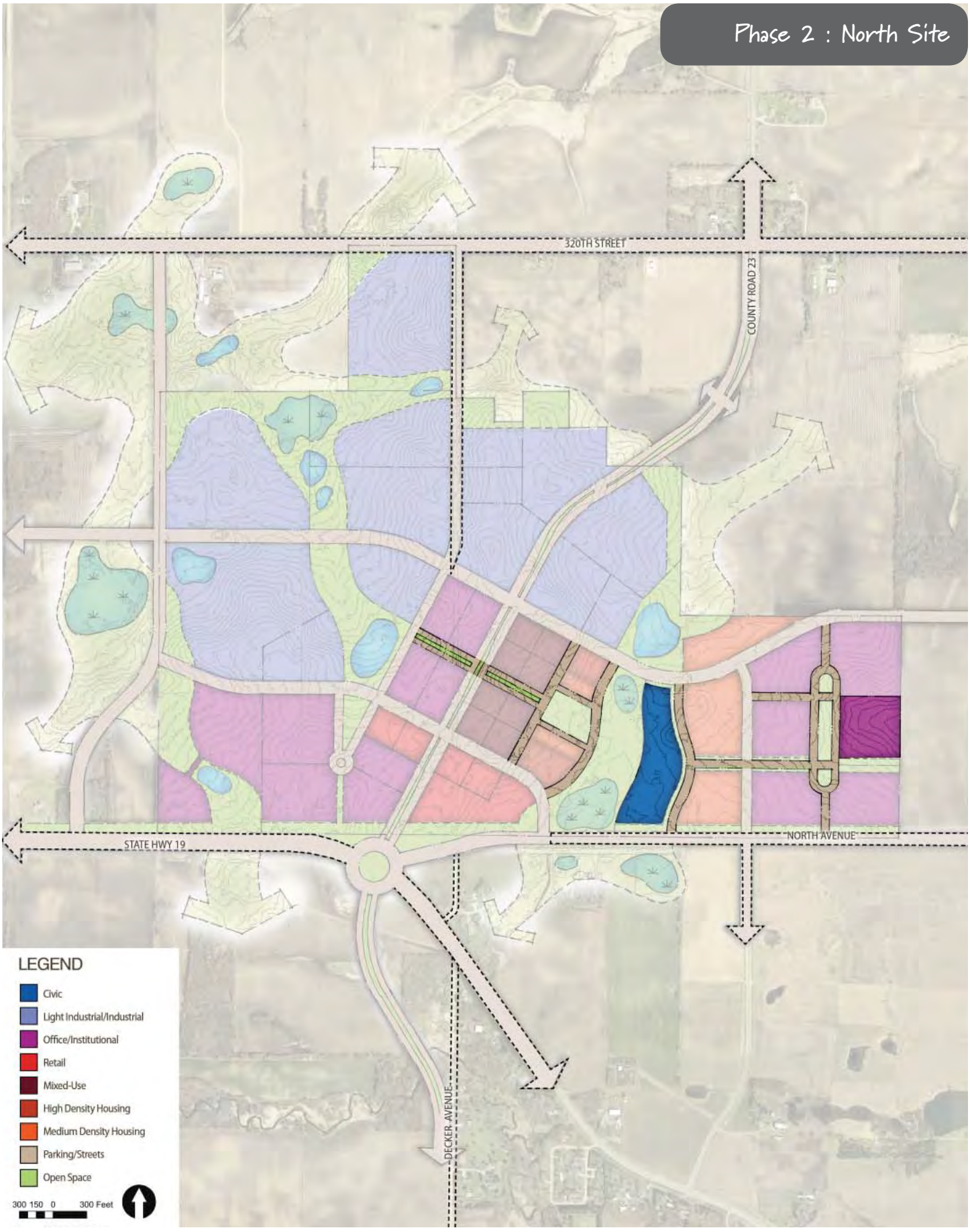
Estimated Costs

» Costs to construct public improvement necessary to provide services for Phase 1 are estimated to be approximately $12,000,000. All costs are estimated with 2010 unit costs.

Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $1,900,00 in annual tax revenue to the City of Northfield.

Phase 2 : North Site



Phase 2

Roadways

» Develop local roads to service additional sites. These roads may be negotiated with the developer of the sites being serviced to fund and construct

Utilities

» Build water and sewer lines within the street rights of way as streets are constructed to serve development sites

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Development Program

» The development sites that become serviceable based upon Phase 2 public improvements include approximately 17 acres of office and civic land uses

Job Creation

» An estimated 315 jobs could be created if all sites were developed in Phase 2

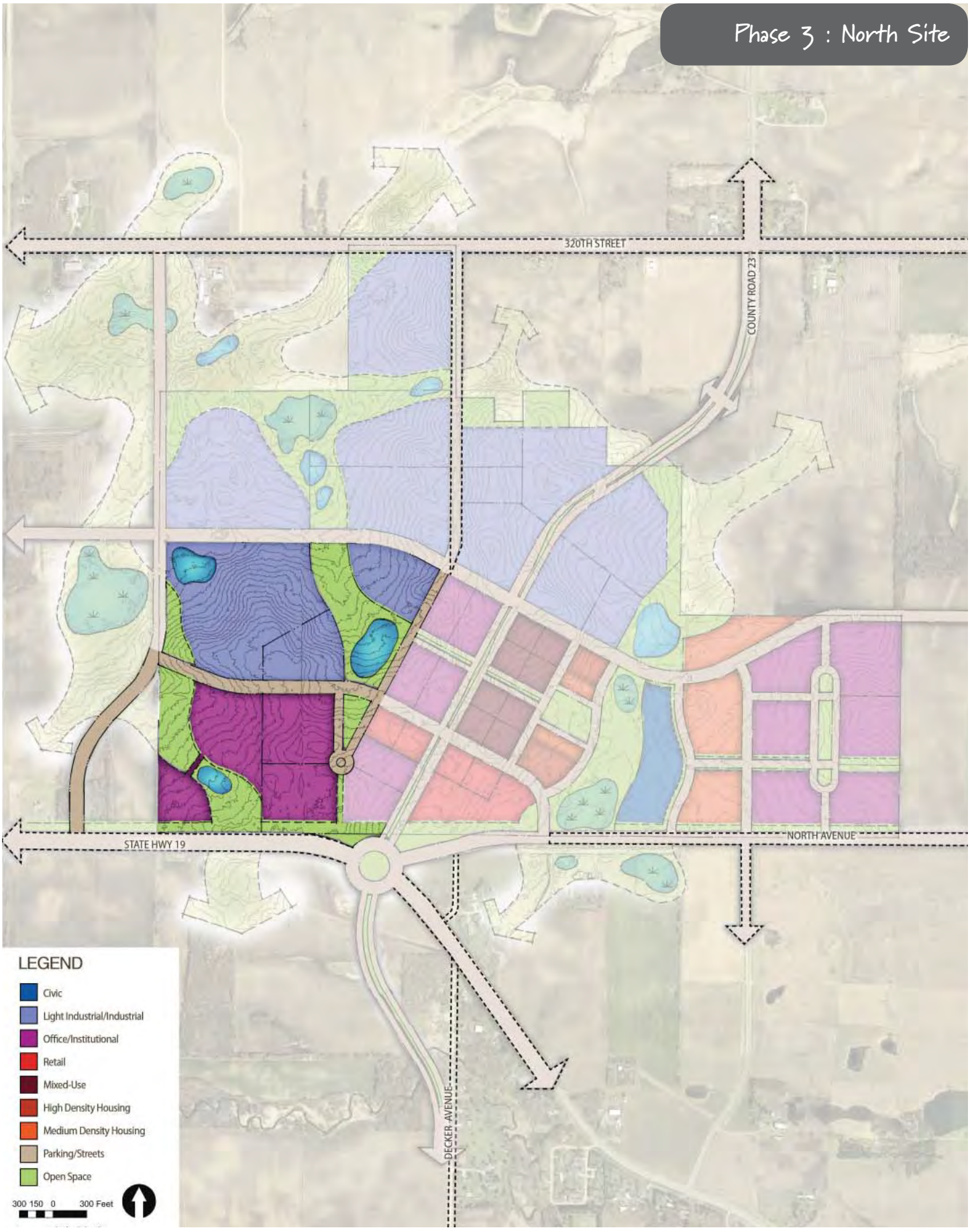
Estimated Costs

» Costs to construct public improvement necessary to provide services for Phase 2 are estimated to be approximately $5,000,000. All costs are estimated with 2010 unit costs.

Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $68,000 in annual tax revenue to the City of Northfield.

Phase 3 : North Site



Phase 3

Roadways

» Develop collector streets and local roads to service the southwestern portions of the site

» Develop an additional access intersection on to SH 19 just west of the property line. This will provide important access to and egress from the site, particularly for truck traffic from the industrial sites

Utilities

» Build water and sewer lines within the street rights of way as streets are constructed to serve development sites

Land Acquisition

» Land acquisition will be necessary to complete the collector streets and access on to SH 19

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Development Program

» The development sites that become serviceable based upon Phase 3 public improvements include approximately 99 acres of office and industrial land uses

Job Creation

» An estimated 1400 jobs could be created if all sites were developed in Phase 3

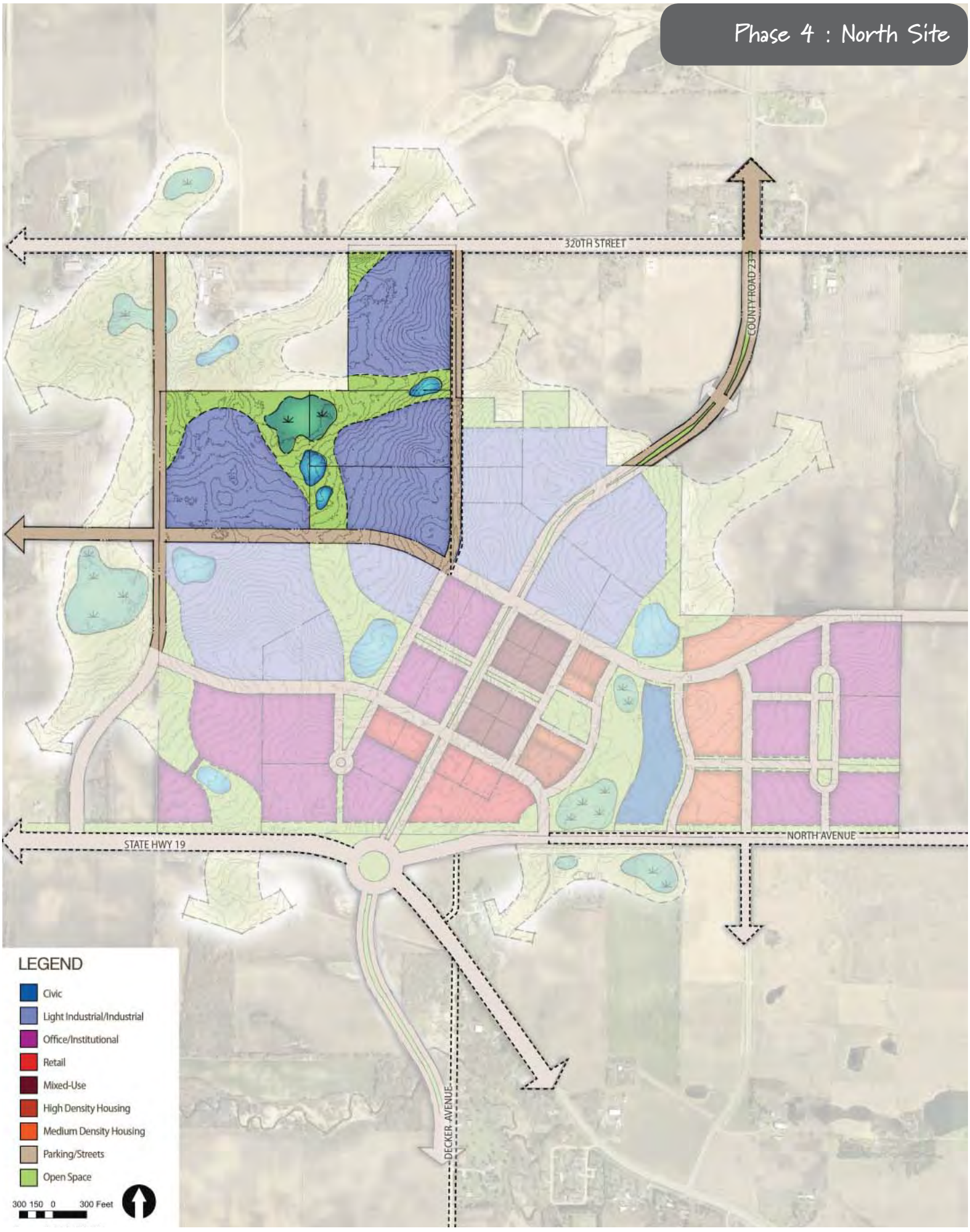
Estimated Costs

» Costs to construct public improvement necessary to provide services for Phase 3 are estimated to be approximately $4,000,000. All costs are estimated with 2010 unit costs.

Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $500,000 in annual tax revenue to the City of Northfield.

Phase 4 : North Site



Phase 4

Roadways

» Develop collector streets to provide access to 320th Street East
» Continue the development of CR 23 as an arterial to connect north to 320th Street East

Utilities

» Build water and sewer lines within the street rights of way as streets are constructed to serve development sites

Land Acquisition

» Land acquisition will be necessary to complete the construction of CR 23 north to 320th Street East

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Development Program

» The development sites that become serviceable based upon Phase 4 public improvements include approximately 100 acres of industrial land uses

Job Creation

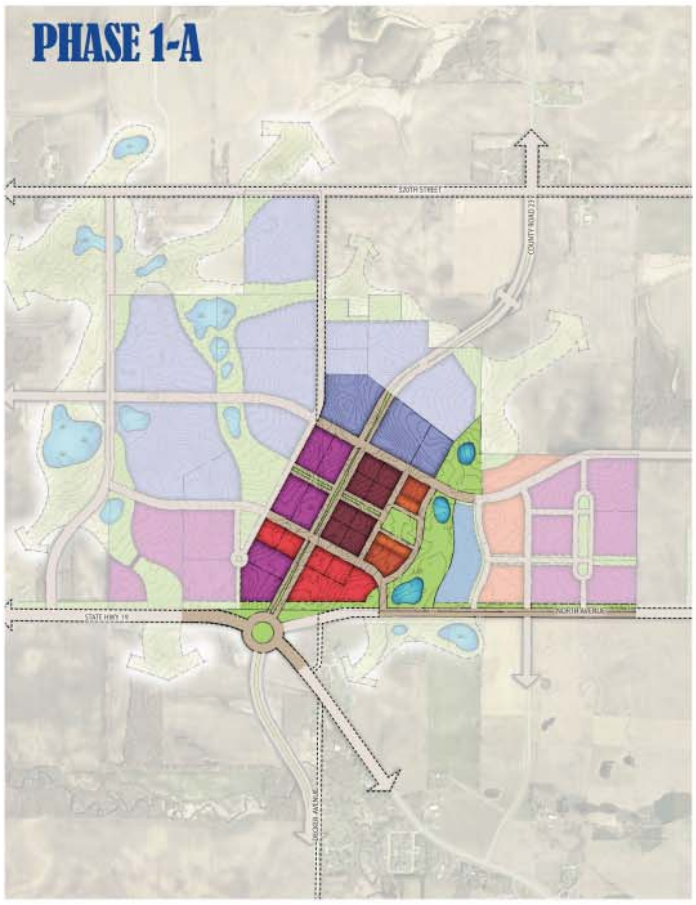
» An estimated 635 jobs could be created if all sites were developed in Phase 4

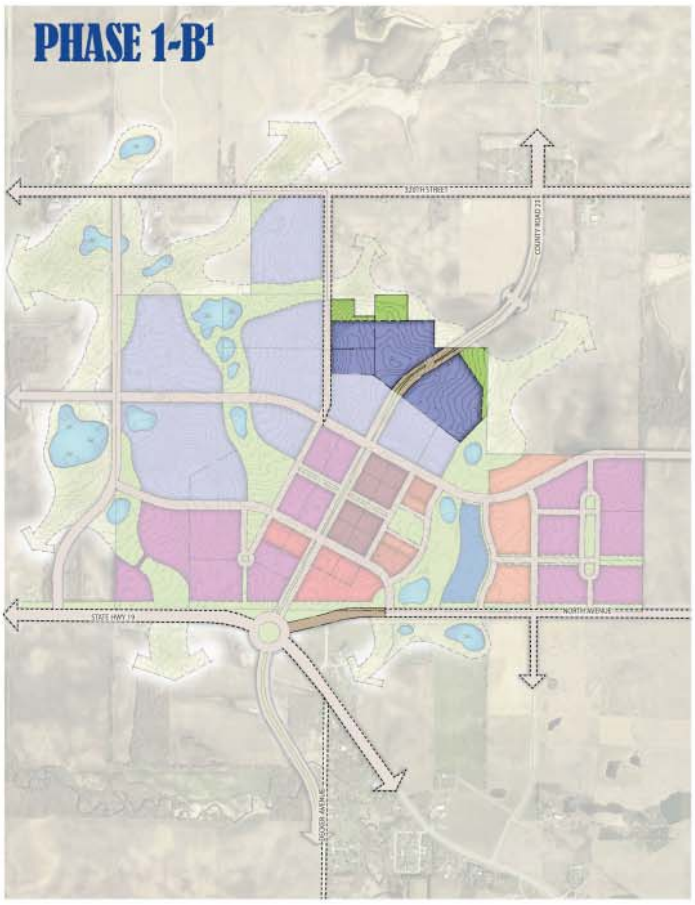
Estimated Costs

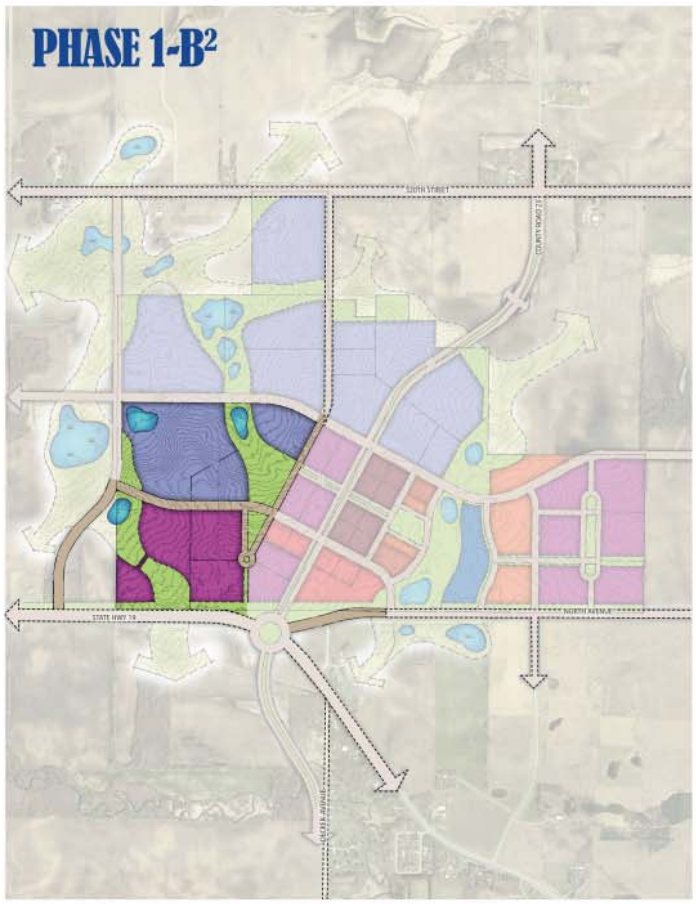
» Costs to construct public improvement necessary to provide services for Phase 4 are estimated to be approximately $6,000,000. All costs are estimated with 2010 unit costs.

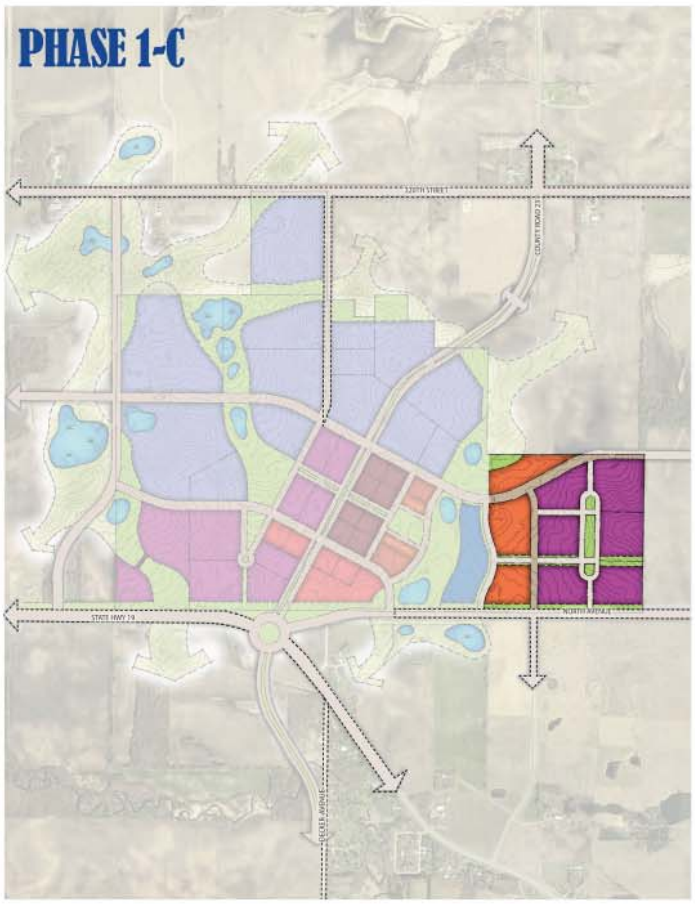
Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $300,000 in annual tax revenue to the City of Northfield.


PHASE 1-A
120TH STREET
COUNTY ROAD 21
STATE HWY 19
NORTH AVENUE
HOOD AVENUE


PHASE 1-B1
120TH STREET
COUNTY ROAD 21
STATE HWY 19
NORTH AVENUE
HOOD AVENUE


PHASE 1-B2
120TH STREET
COUNTY ROAD 21
STATE HWY 19
NORTH AVENUE
HOOD AVENUE

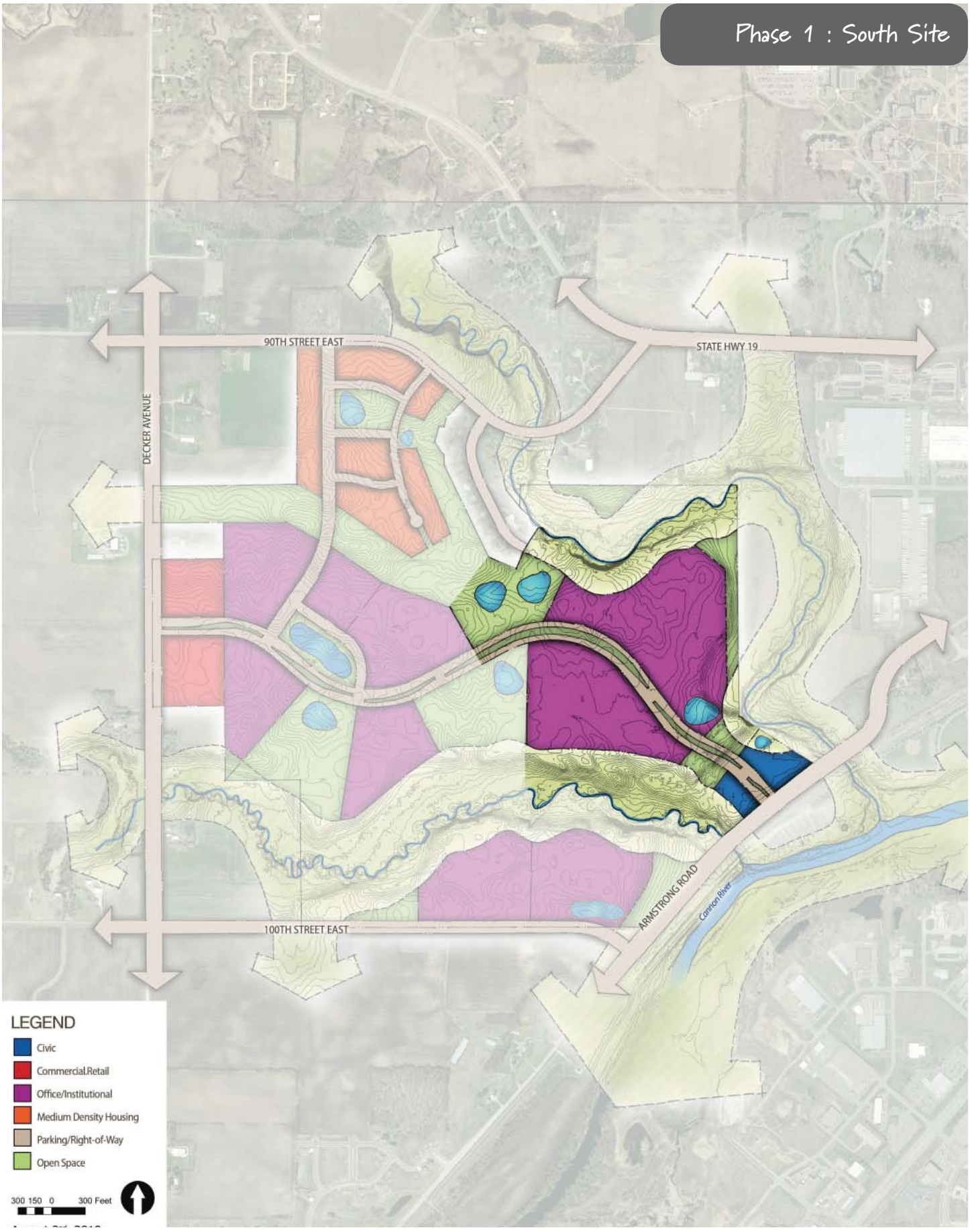

PHASE 1-C
120TH STREET
COUNTY ROAD 21
STATE HWY 19
NORTH AVENUE
HOOD AVENUE

Phase 1 – Sub-Phase Options

The planning team provided options to break down Phase 1 of public improvements on the North Site into sub-phases to illustrate how the development of public improvements could be done in a way to minimize costs while maximizing development opportunity. This plan will not get into the details of each sub-phase but recommends the following general strategies:

» Develop an improved intersection off SH 19 and the trunk road system to support a diverse mix of land uses and variable parcel sizes in the first phase.
» Improved access, circulation and visibility is critical to success of the business park
» Utilize existing infrastructure as much as possible to minimize public improvement costs
» Follow up phases should respond to market demand and available funds to construct public improvements
» Each phase of development should provide flexibility of parcel sizes and land uses

Phase 1 : South Site



Phasing – South Site

The following are specific recommendations related to the phasing of development on the South Site.

Phase 1

Roadways

» Develop the primary collector/parkway from Armstrong Road going west into the site

Utilities

» Build water and sewer lines within the street rights of way as streets are constructed to serve development sites

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Streambank Enhancement

» Restore and enhance stream banks along Heath Creek and Spring Brook adjacent to site development

Development Program

» The development sites that become serviceable based upon Phase 1 public improvements include approximately 58 acres of office and civic land uses

Job Creation

» An estimated 1,500 jobs could be created if all sites were developed in Phase 1

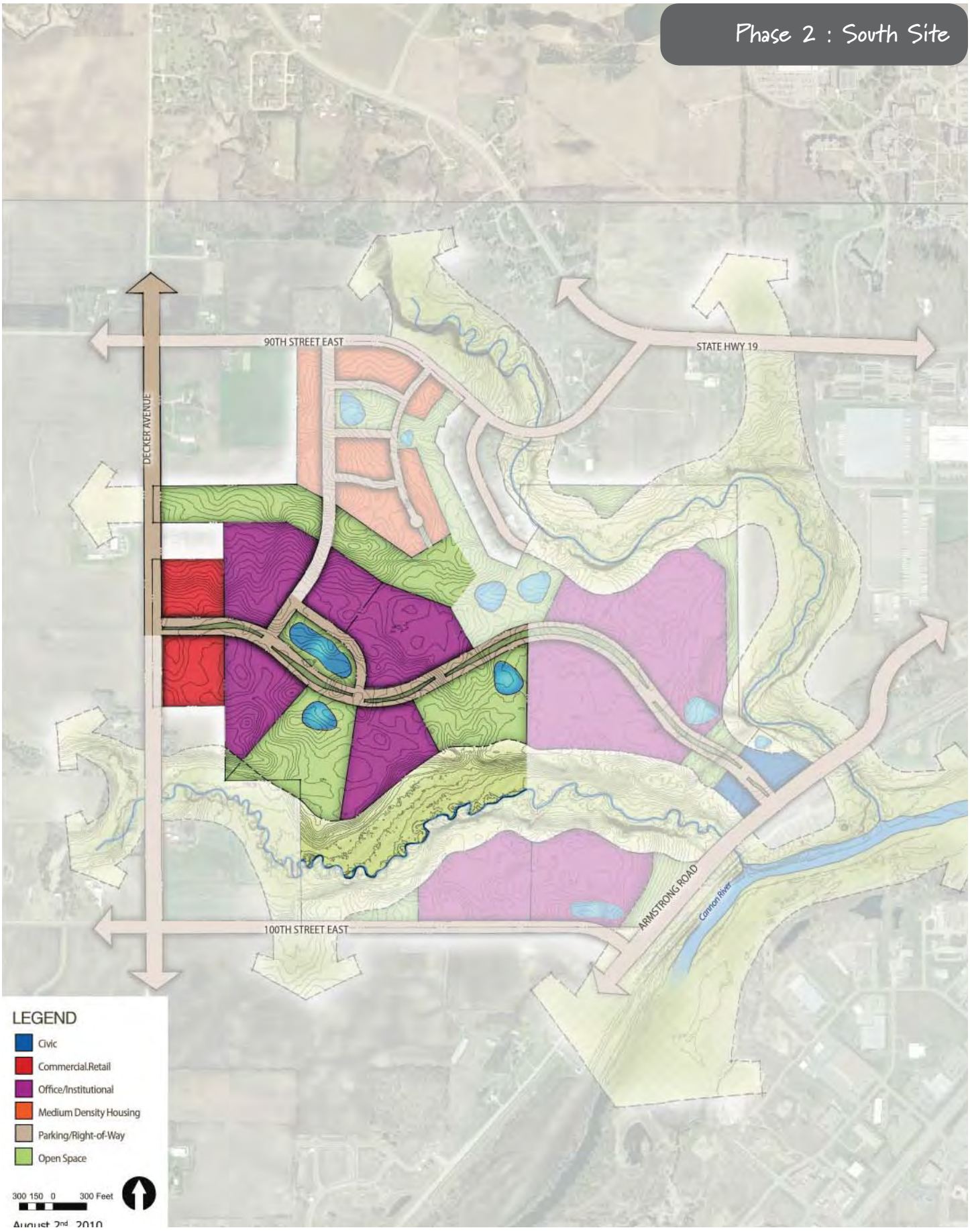
Estimated Costs

» Costs to construct public improvement necessary to provide services for Phase 1 are estimated to be approximately $2,500,000. All costs are estimated with 2010 unit costs.

Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $500,000 in annual tax revenue to the City of Northfield.

Phase 2 : South Site



Phase 2

Roadways

» Develop extension of the primary collector/parkway west to Decker Avenue/CR 23
» Develop Decker Avenue/CR 23 roadway improvements north to SH 19
» Develop local roads to service development sites

Utilities

» Build water and sewer lines within the street rights of way as streets are constructed to serve development sites

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Streambank Enhancement

» Restore and enhance stream banks along Spring Brook adjacent to site development

Development Program

» The development sites that become serviceable based upon Phase 2 public improvements include approximately 80 acres of office and retail land uses

Job Creation

» An estimated 2,000 jobs could be created if all sites were developed in Phase 2

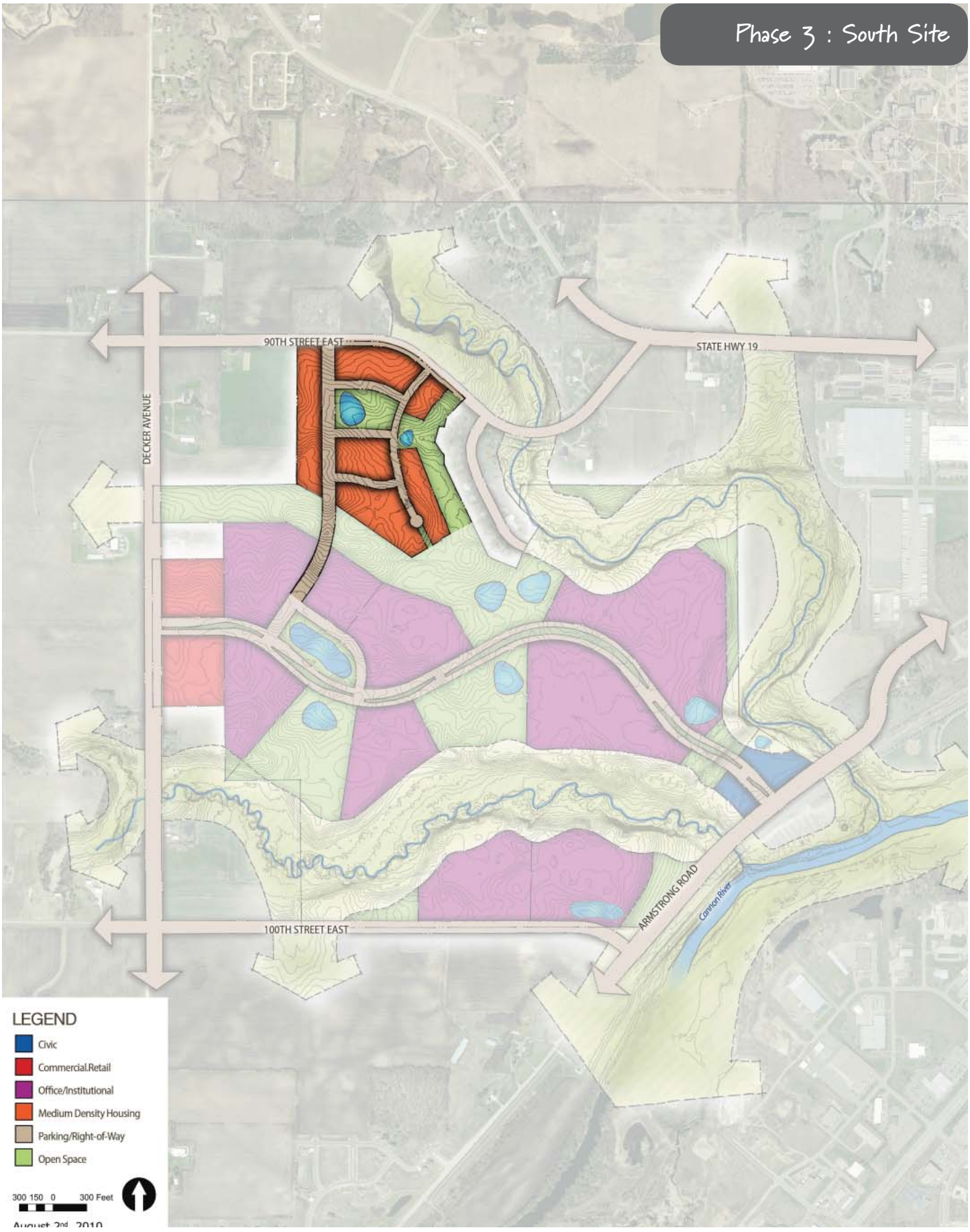
Estimated Costs

» Costs to construct public improvement necessary to provide services for Phase 2 are estimated to be approximately $8,000,000. All costs are estimated with 2010 unit costs.

Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $825,000 in annual tax revenue to the City of Northfield.

Phase 3 : South Site



Phase 3

Roadways

» Develop local roads to service development sites

Utilities

» Build water and sewer lines within the street rights of way as streets are constructed to serve development sites

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Development Program

» The development sites that become serviceable based upon Phase 3 public improvements include approximately 25 acres of residential land uses

Job Creation

» N/A

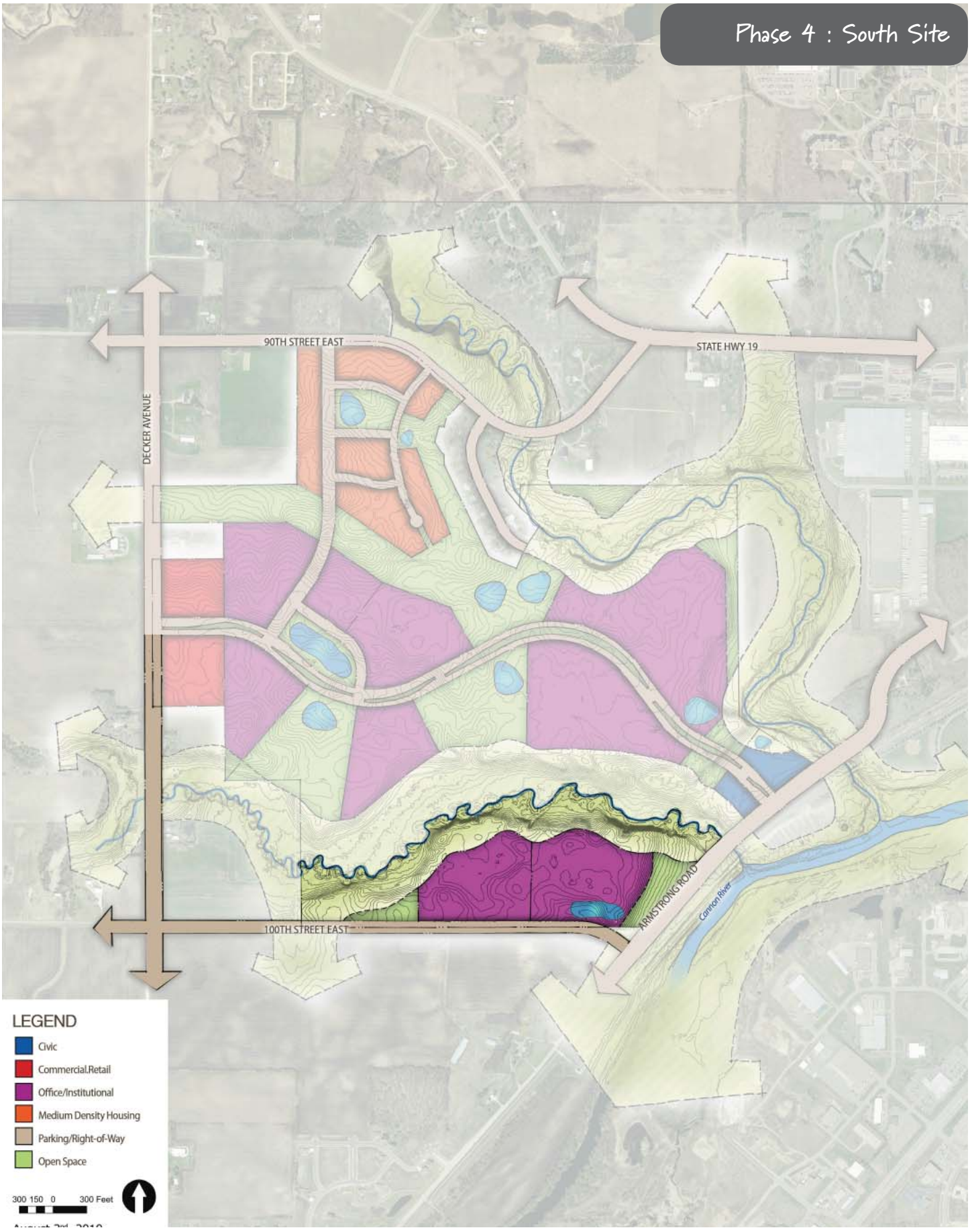
Estimated Costs

» Costs to construct public improvement necessary to provide services for Phase 3 are estimated to be approximately $3,000,000. All costs are estimated with 2010 unit costs.

Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $500,000 in annual tax revenue to the City of Northfield.

Phase 4 : South Site



Phase 4

Roadways

» Develop Decker Avenue/CR 23 roadway improvements south to 100th Street East

» Develop 100th Street East roadway improvements from Armstrong Road west to Decker Avenue/CR 23

Utilities

» Build water and sewer lines within the street rights of way as streets are constructed to serve development sites

Open Space/Stormwater Improvements

» Develop adequate infiltration areas and stormwater ponds as identified on the phasing plan to mitigate stormwater runoff created by new development

Grading

» Site grading may be required to provide adequate access to each development site as a result of roadway and stormwater facilities construction

Streambank Enhancement

» Restore and enhance stream banks along Spring Brook adjacent to site development

Development Program

» The development sites that become serviceable based upon Phase 4 public improvements include approximately 28 acres of office land uses

Job Creation

» An estimated 750 jobs could be created if all sites were developed in Phase 4

Estimated Costs

» Costs to construct public improvement necessary to provide services for Phase 4 are estimated to be approximately $4,500,000. All costs are estimated with 2010 unit costs.

Estimated Annual Tax Revenue Generation

» At full build-out the development program is estimated to generate approximately $250,000 in annual tax revenue to the City of Northfield.

Public Finance

Introduction

One of the keys to implementing the Northfield Business and Industrial Park Master Plan (the "Plan") is the ability to finance the public improvements needed to facilitate the desired private development and land use. Given the scope and time horizon of the Plan, it is not possible to offer a specific implementation finance plan. Instead, this section of the Plan describes the critical improvements and finance tools needed to implement the Plan. It is intended to serve as a guide for future action by the City. Unless otherwise noted, the comments pertain to both the North and South sites.

Critical Improvements

The Plan identifies and estimates the costs of public improvements. Several general recommendations apply to financing these improvements. Careful financial planning is required. The Plan describes four phases of development and related public improvements for both the North and South sites. More detailed financial planning is needed to guide the implementation of this Plan. Some critical financial planning issues are:

» How does the construction of infrastructure coordinate with development? What improvements should be built in advance of development?

» The City has limited financial resources available to implement the Plan. These resources include utility reserves/revenues, utility connection charges and property taxes. Financial planning will help the City to evaluate the potential demand on these resources for improvement alternatives.

» Financial planning is needed to evaluate the financial feasibility of initially providing improvements to both the North and South sites.

» Current City policy requires the developer to build the infrastructure within a development area. This approach may not work in the business park area. Unless a "master developer" is willing to prepare larger areas for development, the City will face the need to build (and finance) the improvements needed to open land for development. Financial planning allows the City to better understand the financial implications of this approach.

The remainder of this section explores the implementation issues associated with specific public investments.

Connection to City Utility System

The City must make utility improvements to extend sanitary sewer and water service to the business park sites. Strategies for undertaking and financing the connection to the City utility system include:

1. These improvements should be made prior to the initial development project. Creating utility capacity to serve the area allows the City to react promptly to development proposals.
2. The full extension to the North site is tied to decisions about the Highway 19/ County Road 23 intersection.
3. The improvements can be from utility funds, the issuance of bonds or a combination

of both.

4. These costs should not be assessed to business park property, increasing the cost of development.
5. Reserve funds could be replenished from capital charges (SAC and WAC) paid by future development.

Water Tower

A water tower will eventually be needed to serve the North Site and other development to the west. Financing of the water tower is similar to the North Avenue watermain:

1. The water tower should be financed from water utility funds and/or the issuance of bonds.
2. The improvements should not be assessed to business park property.
3. Costs to construct the water tower should be spread over those who will benefit from it. The project should not have to bear all of the cost.

A new water tower will eventually be needed.

Stormwater Management Systems

The Plan creates an area-wide approach to stormwater management improvements. This approach may require improvements to be made up front to serve both current and future development. One of the finance options discussed in the planning process was a storm sewer improvement district. Under State Law, a storm sewer improvement is a special taxing district. The area within the district is defined by ordinance. A property tax is levied on property in the district to raise revenues needed for the construction and maintenance of the improvements. Several factors shape the use of a storm sewer improvement district:

1. Will the district cover the entire site or will each phase have a separate district?
2. Are the improvements built all at once (up front)?
3. Assuming that improvements precede development (and the tax base needed to pay for the improvements), what other funds are needed to make this approach feasible? Any analysis of a storm sewer improvement district requires assumptions about the timing, type and scale of future development. These assumptions shape the projection of tax base and revenue capacity of a district.

Stormwater pond

These questions should be explored as more detailed infrastructure and development planning takes place.

County Road 23

The Arterial Road shown in the Phasing Plan is the extension of County Road 23 (Dakota and Rice counties). A portion of the costs will be paid by the County and a portion must be paid by the City. The construction of the County Road 23 improvements raises a variety of issues:

1. When and how will the necessary right-of-way be acquired?
2. If the County will not build the road on a schedule that supports the City's plans, is it important for the City to build it?
3. How would the City pay for the entire project if action was needed before the County was ready? If so, would the County agree to pay its share at a future date?
4. Should some of these costs be assessed to adjacent properties? To the North/South site overall?

Arterial street

Construction

Finance options for arterial roads include:

1. The City can issue general obligation improvement bonds if at least 20% of the cost of the project to the City is assessed. Some assessments may be possible against adjacent property.
2. The City can spend municipal state aid road construction revenues on this project if the road is added to the City's state aid street system. Future revenues can be leveraged with state aid road bonds.
3. Another option would be the creation of a special service district (SSD). In simple terms, a SSD is a special taxing district that can be used to finance improvement to areas of commercial-industrial property. The costs of the road improvements would be spread over the taxable value of commercial-industrial property in the site. Bonds supported by SSD revenues can be used to finance the improvements. (It should be noted that a SSD can be used to finance any other the improvements discussed in the Plan. More information about SSD can be found later in this section.)

Improved Intersection at County Road 23 and State Highway 19

The Phase One improvements for the North site include a roundabout at the intersection of County Road 23 and State Highway 19. Many of the same finance issues for arterial roads also apply to the CR 23/STH 19 intersect improvements.

1. What portion of these improvements are funded by the State and what costs will be local?
2. Are these intersection improvements part of a broader plan to finance road improvements in the North Site?
3. If some local costs are assessed, what properties get assessed and for how much?

Site Improvements

The Phasing Plan contains cost estimates for the infrastructure (street, sanitary sewer, water, storm sewer and other improvements) needed to allow the property to develop ("Local Streets" in the cost estimates). As noted earlier, additional planning is needed to evaluate options for building and financing these improvements. Issues to be considered in this evaluation include:

1. Given the incremental nature of future development and the environment for commercial-industrial development, it seems unlikely that requiring developers to build this infrastructure is a reasonable strategy. Infrastructure cannot be built on a parcel-by-parcel basis. The evolution of the Plan should consider the scope of improvement projects that best facilitate development.
2. Some of these costs are related to "oversizing" of utilities and street to serve a broader area. The oversizing costs are typically not assessed to the adjacent property. What costs can be attributed to oversizing and what will be assessed? Are some oversizing costs "City" expenses? Are some to be assessed to future phases?
3. The keys for describing the financial implications of financing these improvements are the amount of assessable costs and the timing of development. Money will be borrowed to make the improvements. If costs are assessed and payable, then the property owner carries the cost until development. If the City defers payment,

the City must provide monies to support the debt until property develops and assessments paid.

4. Assessing costs to benefitted property increases the cost of development in Northfield. At what level does the amount of assessment combined with the cost of land become a financial barrier to development?

Parks/Open Space

The Plan anticipates the acquisition of land for public parks and open space through park dedication. Implementation of this element of the Plan raises several financial issues:

1. More detailed land use planning is needed to more clearly define the location and amount of park land to be acquired. If that amount is in excess of current park dedication policies, then the City needs some other form of funding to acquire this property.
2. The Plan seeks the acquisition of specific areas rather than pieces from all property as it is platted. This approach requires a combination of land dedication and cash payment in lieu of dedication. Coordination of acquisition and development is needed to project a flow of funds for implementation.
3. Land shown for parks and open space include area for stormwater infiltraton and detention. Cost estimates for these improvements are included in the Phasing Plan. The Phasing Plan does not include any improvement costs for parks and open space used for recreational purposes.

Park/open space

Tools for City Actions

State Law provides a broad array of powers and tools that may assist the City in undertaking the public investments needed to implement the Plan these initiatives. The following section provides a brief discussion of the tools currently available to the city. This information is designed as a point of reference in continued financial planning.

Overview of Statutory Authority

Every statutory power contains a unique set of authorizations and restrictions. Understanding these provisions is a key to effective use. In some cases, the city may have several options. For example, public improvements can be financed with special assessments, special service districts, housing improvement areas, tax abatement and tax increment financing. To evaluate the use of potential statutory powers, the city should find the answers to the following questions.

Who can use the powers?

Most municipal powers are granted directly to the city. In these cases, the city council can act without the involvement of any other body. Some development powers reside solely with another entity, such as the housing and redevelopment authority and the economic development authority.

How do the powers function?

Every municipal development power carries certain requirements and implications for its use. For example, tax increment financing involves a complex set of statutory requirements. Property owners must petition to start the process for establishing a special service district. Tax abatement discussions should involve the County. These

are just some of the important issues that shape decisions on finding and using the right tools to implement the plan.

Does the power provide funding capacity?

Many statutes provide access to revenues and debt that can be used to finance implementation initiatives. Several questions can help guide the evaluation of the funding capacity in a given statute:

» What revenues are authorized?
» How can the revenues be used?
» Can the city issue the bonds as "general obligations," achieving the lowest interest rates?
» Do the bonds count against the city's debt limit?
» What approvals are needed to authorize use of these powers?

Some key sources of statutory authority come from the following:

» Constructing public improvements and levying special assessments - Chapter 429.
» Constructing, operating, and maintaining water, sanitary sewer and storm water utility systems - Section 444.075.
» Creating and using special service districts - Sections 428A.01 though 428A.101.
» Creating and using housing improvement areas - Sections 428A.11 though 428A.21.
» Establishing and using tax increment financing districts - Sections 469.174 through 469.1791.
» Making and using tax abatement levies - Sections 469.1812 through 469.1815.
» Powers granted to cities through housing and redevelopment authorities - Sections 469.001 through 469.047.
» Powers granted to cities through economic development authorities - Sections 469.090 through 469.1081.
» Lease financing for real and personal property - Section 465.71.

These statutes are available on the Internet at www.revisor.leg.state.mn.us/stats.

The following discussion highlights key finance tools, but the specific statutory requirements for using them are not fully described. In addition, the laws governing these programs change over time. Finance plans for actual projects should be made using appropriate technical and legal advice.

Special Assessments

Public improvements are often financed using the power to levy special assessments (Minnesota Statutes Chapter 429). A special assessment is a means for benefiting properties to pay for all or part of the costs associated with improvements, and to spread the impact over a period of years. This tool can be applied to both the construction of new improvements and the rehabilitation of existing improvements.

Special assessments can be used to finance all of the public improvements resulting from the Plan. Eligible improvements include sanitary sewer, water, storm sewer, streets, sidewalks, street lighting, park, streetscape, and parking.

Special assessments provide a means to borrow money to finance public improvements. Chapter 429 conveys the power to issue general obligation improvement bonds to finance the design and construction of public improvements. Important factors in the use of improvement bonds include:

» A minimum of 20% of the cost of the improvement must be assessed against benefited properties.
» Beyond the 20% threshold, any other legally available source of municipal revenue may be used to pay debt service on improvement bonds.
» Improvements bonds are not subject to any statutory debt limit.
» Improvement bonds may be issued without voter approval.

Careful consideration must be given to setting the amount of the assessment. From a legal perspective, the amount of an assessment cannot exceed the benefit to property as measured by increased market value. There are also practical considerations. In growth areas, cities must decide how to allocate costs between current and future development. Assessment policies must consider how to make this allocation and the financial resources needed to carry future costs until development occurs. For reconstruction, the challenge becomes determining how much benefiting property owners should pay for enhancing an existing improvement. Within this limitation, several factors will shape the amount of the assessment.

» The amount of the assessment must be 20% or more of the improvement cost to allow the issuance of bonds.
» Local improvement policies and/or decisions made on previous projects often create parameters for assessments. Likewise, assessment decisions should be made with consideration of the potential implications for future similar projects.
» The assessment must strike a balance between equity and feasibility. Properties that benefit from improvements should pay a fair share of the costs. The assessment must be affordable for both the property owner and the city. Reducing the assessment to the property requires the city to allocate other revenues to the project.

Utility Revenues

The City operates three municipal utilities: water, sanitary sewer and storm water. The revenues from the operation of these utilities are available to pay for capital improvements in support of Plan implementation. The primary sources of funding come from:

» Excess operating revenues can be used to pay for capital improvements on a cash basis or in support of debt.
» Utility fund reserves can be used to pay for capital improvements.
» The City collects connection charges from the platting of land. These monies are used to pay for utility system expansion.
» State Law (Minnesota Statutes, Section 444.075) gives the authority to pledge these revenues to general obligation bonds for utility system improvements.

Storm Sewer Improvement District

A storm sewer improvement district (Minnesota Statutes, Sections 444.14 through 444.21) is a special taxing district. The district is established by ordinance. The City

has the ability to levy a tax on all taxable property within the district. Revenues from the tax levy can be used to acquire, construct, reconstruct, extend, maintain, and otherwise improve storm sewer systems and related facilities within the district. The City may also issue general obligations bonds, secured by the district tax levy, to pay for improvements.

Street State Aid

The City receives state aid for the construction and maintenance of the local streets. This aid can only be used for streets designated for inclusion in the local state aid street system. These revenues can also be pledged to pay debt service on bonds issued for the construction and maintenance of state aid streets (M.S. 162.18).

Tax Increment Financing

Tax increment financing (TIF) is the primary development finance tool available to Minnesota cities (Minnesota Statutes, Sections 469.174 through 469.179). TIF is simple in concept, but complex in its application. Through tax increment financing, the property taxes created by new development (or redevelopment) are captured and used to finance activities needed to encourage the development. The challenge in using TIF lies with the complex and ever-changing statutory limitations. These complexities make it impractical to provide a thorough explanation of tax increment financing as part of this plan. Instead, this section highlights the use of TIF as it relates to the implementation of the Plan.

Under current State Law, TIF would have limited application for implementation of the Plan:

» An Economic Development TIF districts can be used for industrial development. These districts can be established when the city finds it is necessary to (1) discourage commerce, industry, or manufacturing from moving their operations to another state or municipality; (2) increase employment; or (3) preserve and enhance the tax base of the state. The TIF Act defines specific types of industrial uses that are eligible for the establishment of this form of district. The primary uses are manufacturing, warehousing, research and development, and telemarketing.

» A Housing TIF District can be established for a project, or a portion of a project, intended for occupancy, in part, by persons or families of low and moderate income.

Other current forms of TIF districts do not fit the conditions that exist within the North and South sites.

The use of TIF would likely be focused on incentives for a specific project, reducing the cost of development in Northfield. Limitations on the use of TIF prevent it from providing assistance in funding improvements needed to serve broad sections of this development area.

Tax Abatement

Tax abatement acts like a simpler and less powerful version of tax increment financing. With TIF, the city controls the entire property tax revenue from new development. Under the abatement statute (Minnesota Statutes, Sections 469.1812 through 469.1815), the city, county and school district have independent authority to grant an abatement.

Abatement in Minnesota works more like a rebate than an abatement. The city (and other units abating taxes) adds a tax levy equal to the amount of taxes to be abated. The revenue from the abatement levy can be returned to the property owner or retained and used to finance development activities. Tax abatement can be use to finance the key development actions related to implementation of the Plan: land acquisition, site preparation and public improvements.

Unlike TIF, tax abatement is not tied to specific forms of development. It can be used in association with all forms of private development set forth in the Plan.

The statute grants the authority to issue general obligation bonds supported by the collection of abated taxes. The proceeds of the bonds may be used to pay for (1) public improvements that benefit the property, (2) land acquisition, (3) reimbursement to the property owner for improvements to the property, and (4) the costs of issuing the bonds. These bonds can be issued without an election and are not subject to the debt limit.

Special Service District

A special service district is a tool for financing the construction and maintenance of public improvements within a defined area of commercial and industrial. Minnesota Statutes, Sections 428A.01 through 428A.10 govern the creation and use of special service districts. A special service district provides a means to levy taxes (service charge) and provide improvements and service to a commercial area.

The district can provide an alternative means of financing the construction of any of the public improvements discussed previously with special assessments. The service district approach avoids the benefits test imposed by special assessments; the test for the district is that the amount of service charges imposed must be reasonably related to the special services provided. The costs of improvements could be spread across a district or phase area rather than through assessments to individual properties.

Another important use of the special service district is the maintenance of public improvements. If some of the improvements described in the Plan require a level of maintenance above the typical public improvement, a special service district can become a source of revenue. Without a special service district, these costs are typically borne through the General Fund of the City.

The process to create a special service district and to levy taxes must be initiated by petition of property owners and is subject to owner veto. The use of a special service district requires a collaboration of property owners and the city.

The service charge applies solely to non-residential property. State Law limits the application of a service charge to only property that is classified for property taxation and used for commercial, industrial, or public utility purposes, or is vacant land zoned/designated on a land use plan for commercial/industrial use. Other types of property may be part of the service district, but may not be subject to the service charge.

Market Strategy

Introduction

Speculative development is not practical in the immediate future (probably the next 24 months). First effort will be to seek companies who are looking for build-to-suit opportunities. It is critical that these buyers (or developers with tenants already in hand) build upon the vision for the project, so that the initial development phases support the marketing of future phases. If the first users of the site are in conflict with the vision of the project articulated in marketing efforts, no momentum will be created and the site will not achieve its full potential. So, the need to find "early adopters" who buy into the principles of the master plan is an essential ingredient to the development strategy.

The factors that will attract the best buyers and tenants to this project are the things that make this site and this plan stand out in a competitive market – the differentiators. The primary differentiators are described below with a summary of the ways in which they can be used to attract users.

Differentiators

Strong Vision

Developers and business owners are always seeking to reduce risk and uncertainty. The more defined the vision and master plan are, and the degree to which the community and the city agencies responsible for review and approval of development plans communicate openly about their backing of the plan, the more comfortable they will be about committing to develop their project at Northfield.

City and Community Commitment

As noted above, the commitment of the City at all levels, from the Manager and the staff to elected officials is vitally important. Being able to promise personalized attention to interested developers and businesses and expediting reviews and approvals to the greatest extent possible, without compromising the integrity of the system or the vision, is truly a differentiator. Site selectors, the individuals and companies hired by corporate clients to find sites for developing new facilities and operations, often say that personalized treatment is one of their top criteria for selecting a particular venue. The financial aspects of the deal have to work as well, but the commitment of a city and the backing of the community can overcome many other obstacles and win the deal.

Co-Branding

If the city government and the community leaders have accepted the vision for the business park, and are willing to stand behind it, the opportunity exists to leverage the "brand identity" of Northfield, and potentially St. Olaf and Carleton Colleges as well. The community and its two institutions of higher education have a national reputation for quality, integrity, community and sustainability that can be joined with the vision for a high quality, sustainably designed business park that will bring good jobs and a strong tax base to the community. The identity of the city as a college town reinforces the sense of an educated workforce being available which attract businesses looking for employees. The reputation Northfield has for a high quality of living in the region will attract businesses looking to relocate employees here. Quality of Life in Northfield is driven by the beautiful neighborhoods with well-maintained historic homes, the natural environment with trees and a river through the center of town, the charming downtown enlivened by the multi-generational community, the cultural and intellectual resources and activities available through the colleges, and a location close to, but not too close to the Twin Cities. Co-branding also allows the community to use the business park master plan as a way to communicate with the business community that the city government and the community stakeholders do want to see industrial and commercial growth in the community, with certain guidelines, and that they are "open for business."

Master Plan for Amenitized Business Park

The master plan for the Northfield Business Park includes a plan for good infrastructure, including telecommunication and data as well as convenient access. The planning for infrastructure improvements makes this more than raw land with potential for development. In addition, the plan defines a suite of amenities, including open space,

trails, retail and residential areas within the business park. These amenities make this business park a cutting-edge development that will be attractive to businesses that know what knowledge workers, and frankly all employees, want in their work environment today. Being able to deliver on these elements of the plan early in the phasing of the business park will be vital to the long-term success of the project.

Focus on Sustainability

As was described in the Market Analysis for the Northfield Business Park, there are very few developments of this type that can truly say that they are organized according to principles of sustainable development, much less eco-industrialism. It is well within reason to assume this business park can achieve certification within the LEED-ND® criteria, and it is becoming standard practice among the large industrial developers to build all their facilities to LEED standards. Being conversant with those standards and the benefits sustainable development practices bring to a building in terms of reduced operations and maintenance and extended lifecycle will create a strong marketing presence. The extent to which this business park can achieve a more integrated site with businesses coordinating their inputs and outputs, will depend on the types of users the marketing and sales team can attract to the project. The further along the continuum of sustainability the project moves, the higher the factor of differentiation.

Strong, integrated design guidelines

Design Guidelines are the tool by which the owners and the city can uphold the principles upon which the project was founded. They provide a clear statement to potential buyers and developers as to what is allowed and encouraged and what is prohibited and discouraged. They also provide a level of assurance to buyers that future development in the business park will be held to a certain defined standards, which protects their investment in the property. The design guidelines should be used as a marketing tool to reduce the sense of uncertainty a developer or business owner might feel and to demonstrate the level of commitment the City and stakeholders have made in defining what they believe in.

Opportunities to Integrate Uses

As mentioned above, the sustainability goals for the project encourage businesses within the park to work together to increase efficiency, reduce cost and decrease waste. Even without the benefits to the environment and the community, this approach should be attractive to businesses because of its economic sustainability. Another opportunity at the site, which will make it stand out in the region, is the potential for co-generated power, heating and cooling. Because of the size of the site, there is a potential for shared savings in energy costs by creating a central plant. One of the potential users of the site is a power plant, which could serve a dual purpose for the site and to the outside grid. The marketing efforts should target potential users and communicate the benefits of this approach to the community.

Synergies with Existing Companies

There are several successful existing industrial companies in Northfield that can be used as a model for development in the community (e.g. Malt-O-Meal, Cardinal Glass and Northfield Community Hospital). These businesses may also serve to attract potential buyers at the new business park. For instance, suppliers to Malt-O-Meal or businesses that want to use some part of their downstream waste, businesses upstream or downstream in the supply chain to Cardinal Glass, or medical office users, medical manufacturers or other suppliers to the medical profession may be attracted to the hospital.

Aggressive Use of State Programs

State incentive programs, such as JobZ, are very important factors in getting businesses to develop or expand in one location instead of another. Other communities understand this and use it as a marketing tool. Northfield must find creative ways to combine local, state and federal incentives, and private sources such as grants from foundations, if it hopes to compete and to stand out in the marketplace. The other differentiators, especially sustainability, may help to give this project access to incentives that other projects cannot use.

Strategies

Promote the "Vision"

- Develop marketing materials, brochures, website information and other resources in order to promote the master plan and business opportunities in Northfield.
- Market the business park opportunities in trade publications and journals related to business and industry, commercial development and planning.
- Attend and actively promote the master plan and business park opportunities at industry conferences and professional organization events.
- Seek speaking engagements at industry conferences and seminars, regional and statewide planning and economic development events, and campus forums to promote the master plan and business opportunities in Northfield.
- Meet with existing Northfield businesses to promote and discuss the master plan and business development opportunities in the City of Northfield. Discuss ways to retain existing businesses through expansion within the business park.
- Actively seek out businesses the City would like to attract to Northfield to promote the master plan and business development opportunities in Northfield.
- Meet with brokers and site selectors to promote the master plan and discuss business development opportunities in Northfield.
- Connect to the network of economic development organizations locally, for the state, the region, and nationally.
- Connect to the groups of "site selectors" who consult with firms looking to relocate or expand to new markets. Pursue publication opportunities (newspapers, business journals, trade industry magazines, websites, blogs, social media sites, etc.)

Create Business Incentives

» Establish a regional stormwater management program within the business park. The benefits of a regional system on the environment,quality of open space and business amenities are significant and a regional program puts less burden on the developer to design and construct stormwater management facilities on each development parcel.
» Fund, design and develop the trunk system of public improvements (roads, utilities, stormwater management facilities, open space, parks and trails) within the business park. Gone are the days where the developer can be expected to fund and build these necessary services. The City will have to lead the development of these necessary public improvements to attract developers and businesses to the business park and compete with business development opportunities in other communities.
» Establish and enforce standards for quality and sustainability. Many of the businesses that Northfield will be interested in attracting to the business park will be concerned about the level of service, quality of development, other tenants in the business park, and the level of commitment toward sustainable design practices within the business park.
» Create financial incentive packages (public finance, tax incentives, etc.) that can be used to market the business park and assist in the financing of development.

Seek Partnership Opportunities

» The City and/or landowners could partner with a master developer to plan, promote and develop the business park. A master developer can bring experience, funding and other resources to the development of the business park.
» The City and/or landowners could partner with the local development community and financial institutions to organize a cooperative development partnership. This is a model that has been evolving in Europe with great success.
» The City and/or landowners could seek partnership opportunities with existing Northfield businesses to promote the business park and catalyze development interest within the business park. Expansion of existing businesses could provide some of the first development in the park.
» Seek partnership with utilities, the economic development community, brokers, and potentially big institutions.
» The City and/or landowners could partner with the colleges to promote the business park and its sustainability goals, initiate development or create incentives to attract new development and business to the park.

Audiences

The audiences for the marketing effort are as follows:

» City Government: All of the agencies that interact with potential buyers and developers on the property must be familiar with the vision and goals of the project so that there is no "cognitive dissonance" or confusion created my mixed messages.

» Community Leaders: Similarly, the leaders in the community that shape public opinion need to be supportive of the vision and goals of the project so that they will not deter good companies from locating here. These groups need to be marketed to as much as the end users.

» Lead Generators: The economic development groups in the city, county, region and state need to be made aware of the project and encouraged to direct interested businesses to Northfield. Site selectors can be targeted for a similar message, as can alumni from the two colleges, since they can share the information among colleagues and give personal testimony as to the quality of the community.

» End Users: This is a broad market, narrowed a bit by the target industries identified in the Market Analysis. Depending on resources, the trade publications and industry organizations for each of the target industries should be targeted by marketing efforts.

Target Industries

The following target industries have been identified by the Comprehensive Economic Development Plan:

» Logistics
» Specialty Manufacturing
» Environmental Technologies
» Healthcare/Medical
» Professional/Technical Services
» Information Technology

In addition to these, two more industries:

» Utilities: energy generation
» Real Estate Rental and Leasing: senior housing/managed care facility

Next Steps

The following is a list of recommendations that have been identified to move implementation of the business park forward. These are presented in no particular priority but each will be critical steps in the effort to see the vision of the Northfield Business Park become a reality.

Codify significant Master Plan recommendations

Upon approval of the Northfield Business Park Master Plan, the City of Northfield should incorporate specific plan recommendations and/or design standards into City policy documents such as the Comprehensive Plan and Land Development Code. This will ensure compliance with the intent of significant recommendations within the Master Plan.

Resolve land ownership issues

Current land ownership conditions – multiple owners with various expectations – adds a layer of complexity to the implementation of the Master Plan. The City may need to play a role in resolving any land ownership issues that would prohibit implementation of the plan.

Develop and implement a marketing plan

The City should budget for and conduct a marketing plan for development of the business park. The marketing plan should provide specific strategies to promote the plan and attract development interest to the business park, building on the strategies outlined in the Market Strategy section of the Master Plan.

Coordinate and negotiate plans for State Highway 19 and County Road 23

Development of key public improvements are critical to the future success of the business park – none more so than the development of a new interchange at SH 19 and CR 23. Additionally, the development of CR 23 into the site is necessary to provide access and circulation to development sites within the business park. The City should begin discussions with MnDOT, Dakota County and Rice County regarding the master plan and needed improvements on these two arterials upon approval of the Master Plan. These negotiations may take several years to come to terms on design and funding sources so getting an early start is important.

Seek funding sources

The implementation plan identifies several public improvements necessary to service future development of the business park and outlines several public financing options. In order to reduce public improvement costs to the City and attract potential developers to the business park, the City should begin seeking potential funding sources and strategies upon approval of the Master Plan.

Land acquisition

Some of the critical public improvements identified in the Master Plan will require land acquisition to provide the land necessary to build those improvements. In particular, an improved intersection at SH 19 and CR 23, development of CR 23/Decker Ave. will require land acquisition in order to complete these improvements.

Initiate design and engineering

The Master Plan provides a vision for the future business park and it also provides a basis to conduct preliminary construction cost estimates. Further design and engineering will be necessary to establish more accurate budgets and provide the materials necessary to bid the projects for construction.

City of Northfield

Business & Industrial Park

Master Plan