

# NORTHWEST-610

## Master Plan



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This plan is stronger because of the input, hard work, and commitment of area stakeholders and partner organizations. Thank you to everyone who contributed to the planning of the NW-610 area.

## Plan Purpose

Maple Grove is a growing community. Market demands continue to push development north. As infrastructure improvements set the stage for continued development, the City of Maple Grove recognized the need for strategic and detailed planning for the Northwest-610 Area. This plan establishes a guide for land use, transportation, parks and trails, natural resources, and water and utilities for the district.

This plan is intended to be in coordination with the 2040 Comprehensive Plan. The comprehensive plan sets the vision and high-level guidance for the city and this area. This plan takes the information from the comprehensive plan and provides a closer look and more detailed strategy.

## Planning Process

The NW-610 Planning Process began in Fall 2018 with background research into the study area, existing conditions, and changes happening in the surrounding area that would impact the NW-610 area. The project team then began speaking with stakeholders and local officials to review issues and priorities for the area. Those priorities formed the basis of alternative concepts developed for transportation, parks and trails, and land use. Those concepts were vetted with stakeholders and the general public at an Open House held in April, 2019. Through more dialogue, a preferred alternative was selected for the Plan. The project team then developed the detail of that alternative, including an implementation program and infrastructure cost estimates.



Land Use



Transportation



Parks & Trails



Natural Resources



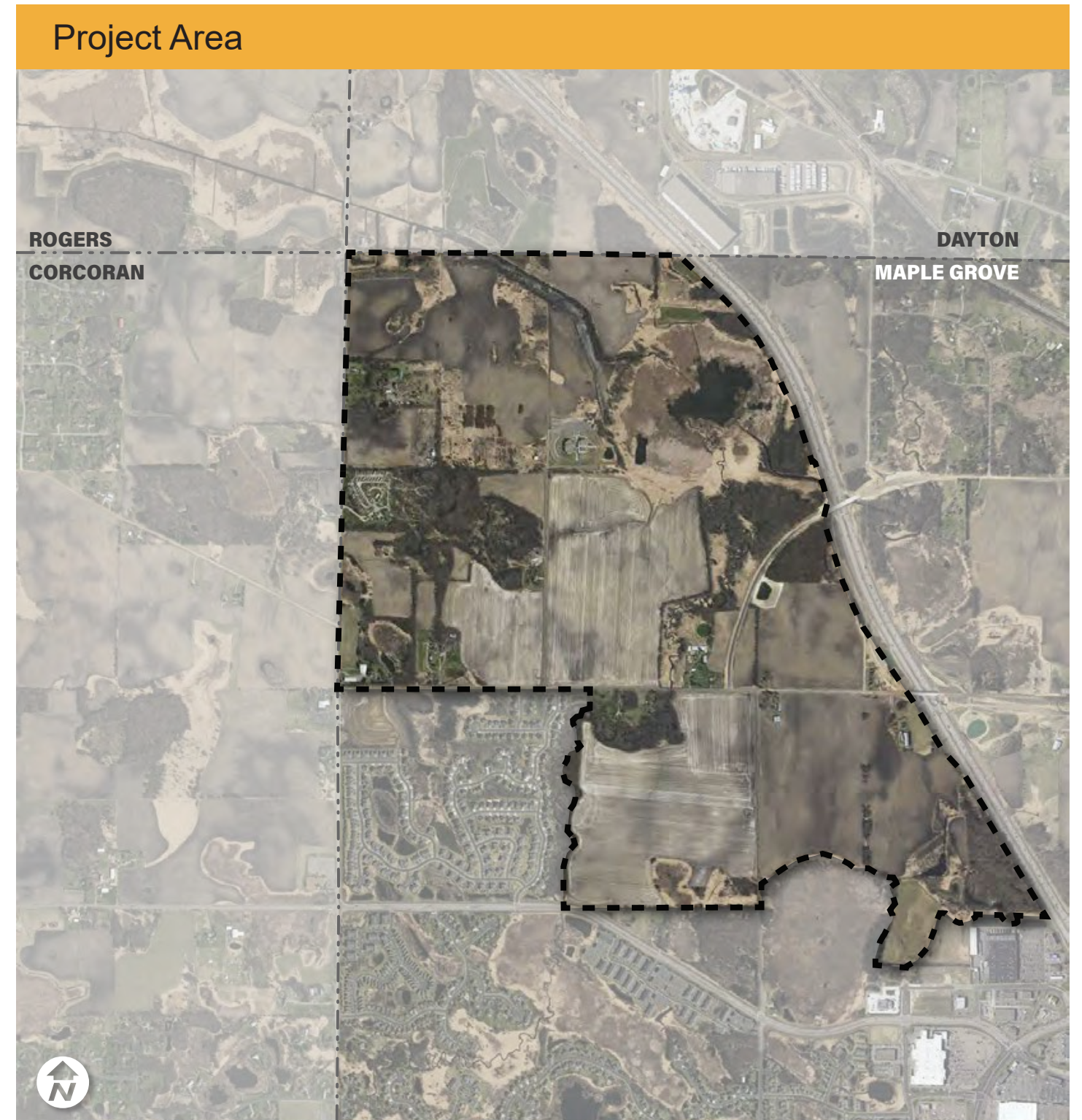
Water & Utilities



# Area Profile

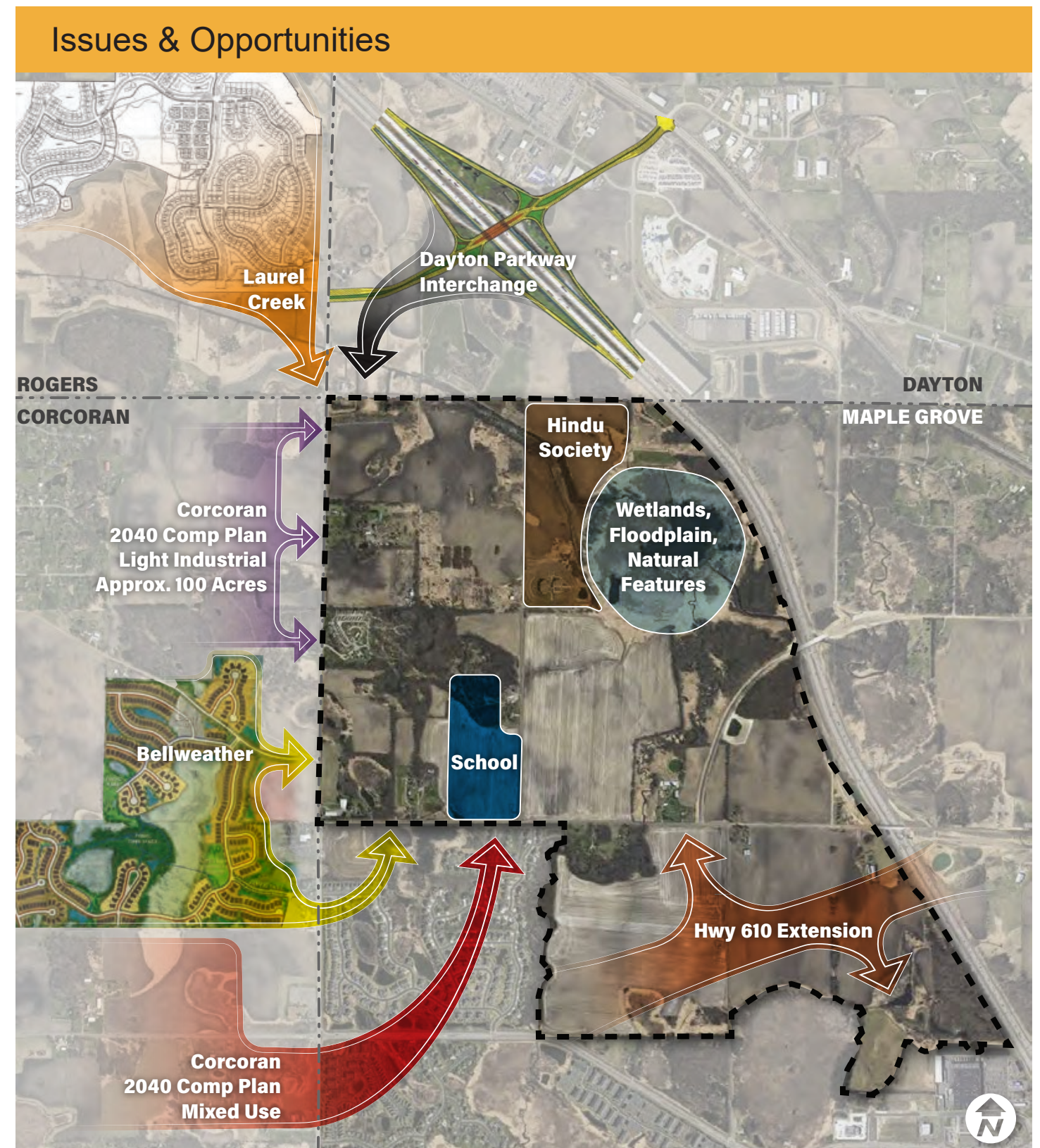
Currently, the NW-610 study area is a largely agricultural area with significant natural features. The study area is bound by the City of Corcoran to the west, the City of Dayton to the north, and the City of Rogers to the northwest. Real estate property is generally held by a few property owners who own several large parcels. One of the property owners is the Osseo School District, which is planning an elementary school there. The development of the school is dependent on the building out of the surrounding neighborhoods.

The transportation network is undergoing several changes that impact our study area. The nearby Dayton Parkway Interchange project in the City of Dayton is helping to accelerate development pressures from the northwest. Highway 610 is also planned to be extended between I-94 and County Road 30. This extension provides an opportunity to cluster appropriate density and intensity of land uses along what is expected to be a highly travelled corridor.





The City recognizes there are several unique characteristics of the Northwest 610 area that present issues and opportunities when examining future growth. This section provides the planning context and description of the major opportunities in the area.





# Land Use & Development

## Existing Land Use

Existing land uses within the study area primarily consist of agricultural uses and undeveloped open space. Approximately a dozen rural residences and farmsteads dot the study area. A 20-acre parcel containing the Minneapolis Northwest KOA campground and RV Park is located along Brockton Lane/County Road 101. The Hindu Society of Minnesota owns approximately 80 acres within the study area, which includes a Hindu temple facility.

Adjoining land uses within Maple Grove City limits include a combination of single-family and townhome residences to the south within the Delgany Neighborhood. Areas further to the southeast, include commercial and retail uses primarily within the Maple Commons development. Directly west and across I-94, land uses are similar to those within the study area, consisting of primarily undeveloped open areas, with larger-lot single-family residences. Areas to north within the City of Dayton are undeveloped west of I-94 and contain industrial uses east of the highway. Properties to the west contain land uses that are primarily agricultural, open space, and rural residential. A residential subdivision containing single-family residences and townhomes known as Laurel Creek is currently developing within the City of Rogers.

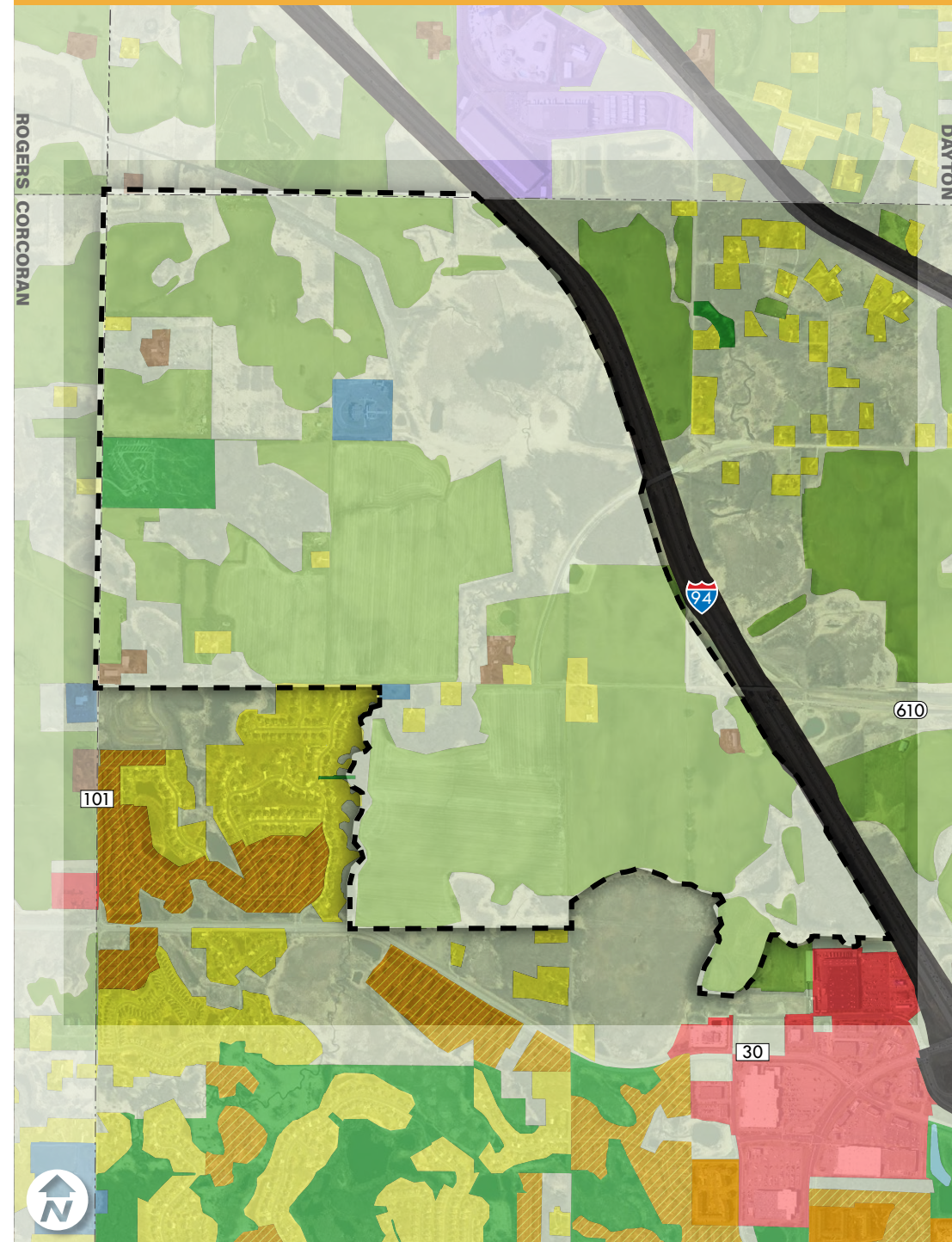
## Planned Land Use

The City's proposed 2018 Land Use plan designates the study area primarily low-medium density residential. Higher density residential categories are identified within the Hindu Society property in recognition of their campus master plan. An additional area identified for high-density residential is located at the intersection of 105th and 101st Avenues. Areas east of 105th Ave and Lawndale Lane are designated as mixed use, envisioned to contain a mix of residential, office, and office-warehouse uses primarily. The school district property is identified as a future public use.



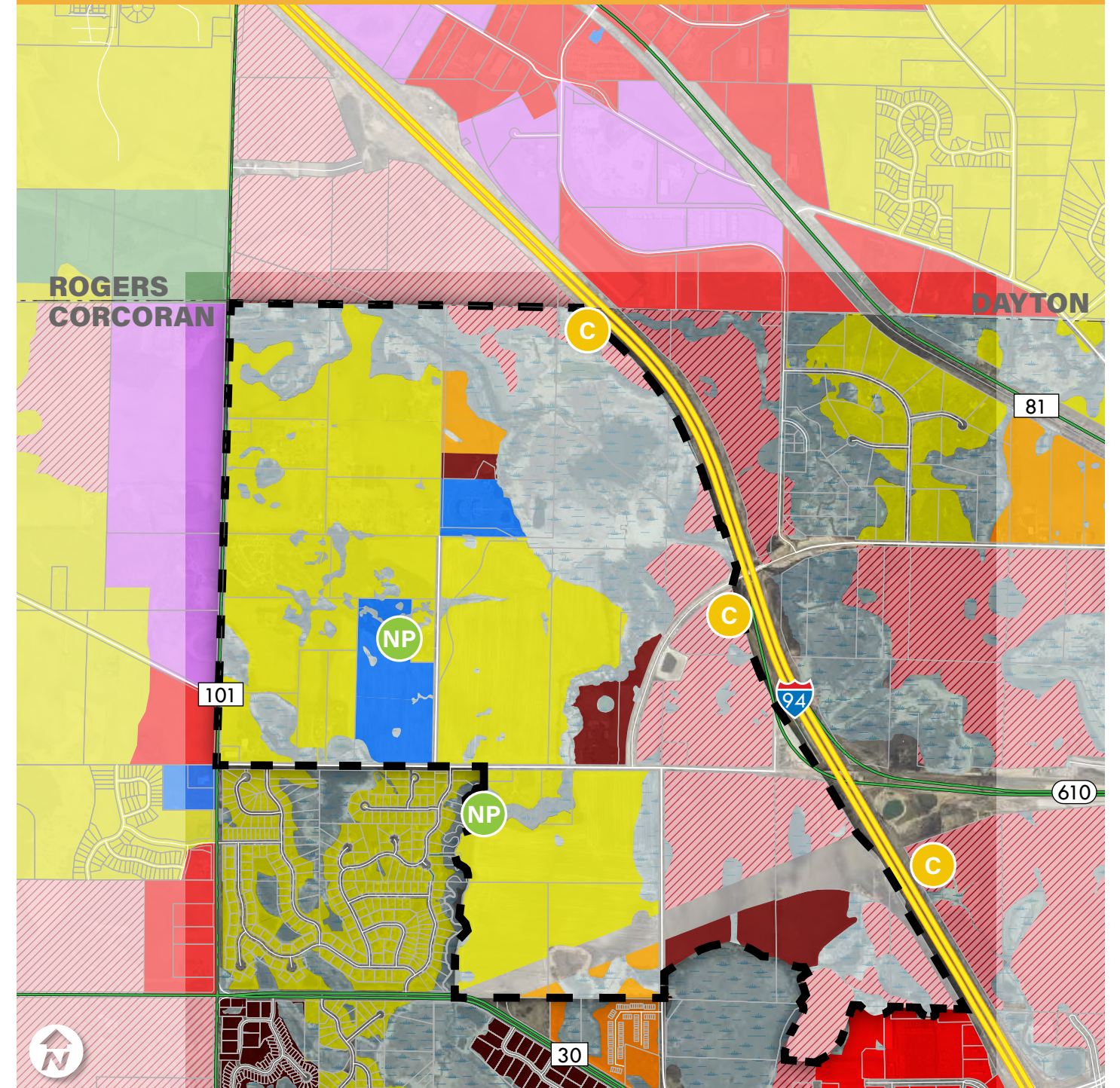


## Current Land Use



- |                        |               |                                 |                        |
|------------------------|---------------|---------------------------------|------------------------|
| Agricultural           | Institutional | Office                          | Single Family Attached |
| Farmstead              | Major Highway | Open Water                      | Single Family Detached |
| Golf Course            | Major Railway | Park, Recreational, or Preserve | Undeveloped            |
| Industrial and Utility | Multifamily   | Retail and Other Commercial     | Project Boundary       |

## 2040 Planned Land Use



- |                                |   |                  |                            |
|--------------------------------|---|------------------|----------------------------|
| Low-Medium Density Residential | Industrial                                | City Boundary    | Proposed Neighborhood Park |
| Medium Density Residential     | Mixed Use                                 | Project Boundary | Proposed Conservancy Park  |
| High Density Residential       | Institutional                             | Floodplain       |                            |
| Commercial                     | Park, Golf Course or Protected Open Space |                  |                            |



# City of Corcoran

## Area Context

As of early 2019, the City of Corcoran is in the process of completing the required comprehensive plan update. Corcoran’s draft Future Land Use Plan guides the area west of the NW-610 plan boundary a combination of low-density residential, mixed-use, light-industrial and public/semi-public. A significant portion of this area is guided in categories reflecting new development patterns from the current agricultural and farmstead uses; notably, as follows:

### 1. Bellwether Subdivision/West of Brockton Lane

Roughly 325+ acres west of Brockton Lane is guided for low density residential. This category accommodates single-family detached residential development at an average density of 3 to 5 units per acre. Around two-thirds of this area is encompassed by the Bellwether Subdivision.

### 2. County Rd 116 and County Rd 30 Mixed Use District

The area located between the intersections of County Road 116 and County Road 30 on the west and County Road 30 and County Road 101 on the east is guided as mixed use. The city’s draft comprehensive plan states that future connections to County Road 30 will enhance and improve the roadway’s role as a major east-west corridor to Highway 610 in Maple Grove. The plan states that this general mixed-use district will likely include a mix of uses, including commercial and retail services and offices. Further to the north, a roughly 30-acre portion of a 102-acre parcel west of Brockton Lane is guided as mixed use. However, despite this area being in the 2018-2025 staging area, there is no current direct access to improved right-of-way.

### 3. Brockton Lane Light Industrial

Roughly 100-acres west of and adjoining Brockton Lane are guided as light-industrial. This category is intended to provide areas for manufacturing, warehousing, automotive, trucking, office, and other related industrial uses.

## Recent Developments

### A. Bellwether Subdivision

A noteworthy development project in the vicinity of the plan area is the Bellwether Subdivision – a residential development of 398 homes on 225.9 acres located west of and adjoining Brockton Lane. Bellwether is designed for and will be restricted to residents 55 years and older. A final plat for an initial development phase received approval in October of 2018 creating 78 single family residential lots. Subsequent phases are anticipated over the next 5 years (ending in 2022). Lots within the initial phase of development are accessed from a new roadway along Brockton Lane aligned with the intersection of 100th Ave North and Brockton Lane. Subsequent development phases involve the potential re-alignment of Stieg Road. A number of commercial and industrial out-lots fronting Brockton Road are delineated on the preliminary plat.

## City of Rogers

### Area Context

The City of Rogers is similarly in the process of completing the required Comprehensive Plan update. The draft Future Land Use Plan guides the area northwest of the NW-610 planning area boundary a combination of low-density residential, mixed-use, light-industrial and public/semi-public. As with Corcoran, a significant portion of this area

is guided for new development patterns distinct from the current agricultural and farmstead uses; including:

### 1. County Road 101/Brockton Lane & County Hwy 116 Mixed Use District

Roughly 575-acres west of Brockton Lane and south of County Highway 116 are guided for Mixed Residential. This category envisions a mix of housing types at an average density of 4 units per acre. A large portion of this area is encompassed by the Laurel Creek Subdivision.

### 2. Fletcher Lane & 109th Ave Mixed Use District

A Mixed-Use Neighborhood land use designation is applied to approximately 135-acres at the intersection of Fletcher Lane (CR 116) and 109th Avenue (CR 117). This district is intended to “provide additional development options within the southern growth areas of the City (of Rogers).” Per the city’s comprehensive plan, commercial nodes within this district are to be limited to 10 to 15 acres in size, and the associated residential component is envisioned as accommodating between 4 and 6 units per acre.

### 3. Stieg Woods Open Space

A roughly 75-acre area encompassing the Stieg Woods is designated as Park Preserve. Stieg Woods is designated as a greenway/open space, to be perpetually preserved as natural open space, likely through the use of conservation easements negotiated with developers and landowners as development occurs, or land dedicated or acquired via park dedication.

## Recent Developments

### A. Laurel Creek

Laurel Creek was originally approved as a 475 mixed-unit residential development on 316 acres west of Brockton Lane, south of Territorial Road (County Road 159). The development includes 147 acres of wetland and buffer areas, 18 acres preserved as passive or active spaces, including 2 acres for a park, and a mix of housing include single family homes, two story townhomes and single level living.

- Phase 1, totaling 79 lots, was approved in July of 2017.
- Phase 2, totaling 136 lots, was approved in February 2018.
- The third phase of development was approved in December 2018 creating an additional 86 residential lots. This development phase establishes an access point for lots within the development from Brockton Lane via the extension of 109th Avenue (CR 117).
- The final phases will create an additional 173 lots within the subdivision.

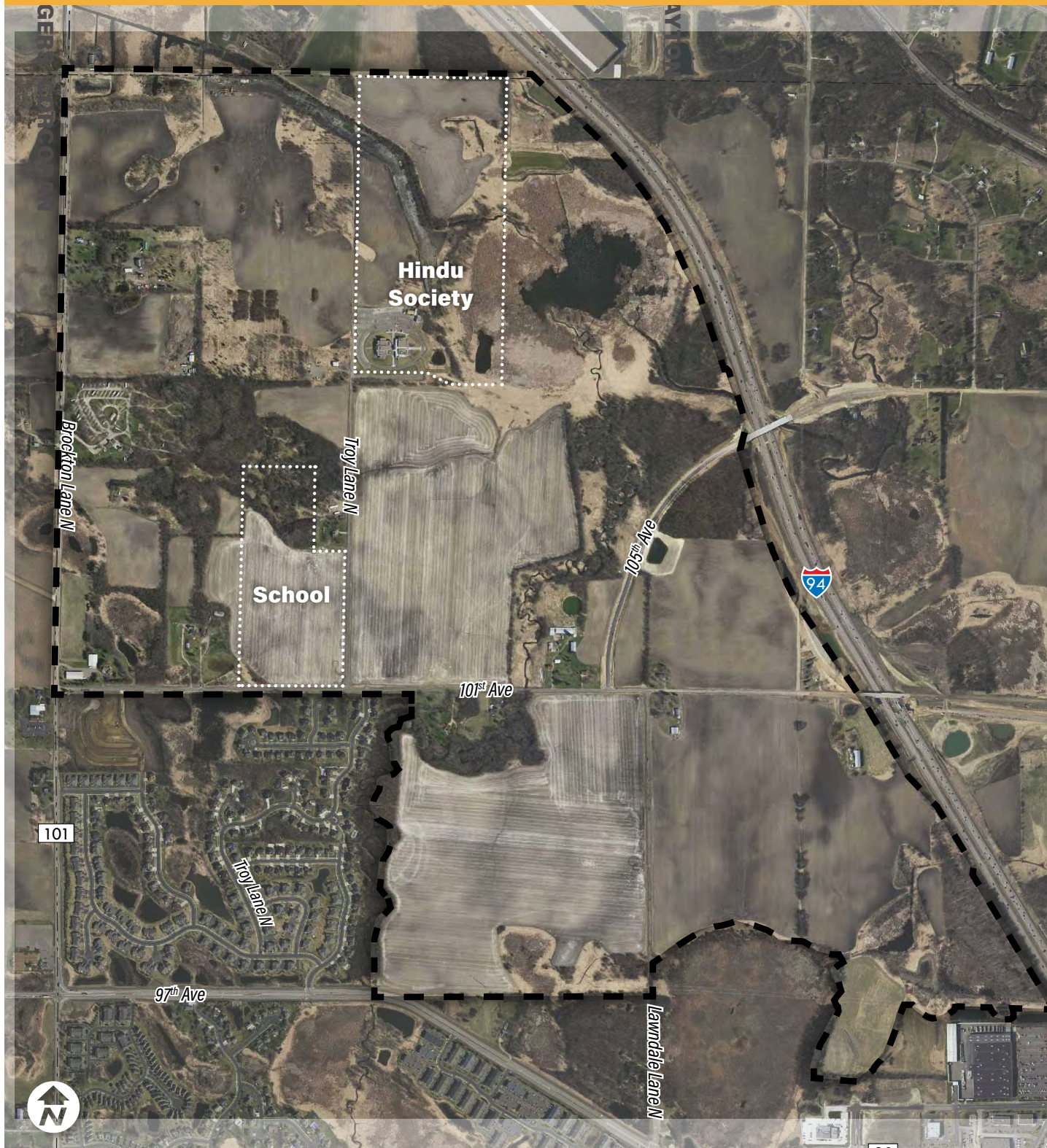
## City of Dayton

### Area Context

As of early 2019, the City of Dayton also was in the process of updating its Comprehensive Plan. While the City has yet to finalize the document text, it has established a final future land use map. The future land use map designates just under 150-acres south of Interstate 94 and east of Brockton Lane as mixed use. Other future land use categories within the vicinity include industrial, business park, and commercial.



## Hindu Society & School Sites



## Hindu Temple Site

The Hindu Society owns approximately 80-acres of land on the northern edge of the study area. According to their 2016 master plan 2016, they intend to construct a retreat center, outdoor recreation space, and a community center on the property. The uses as planned by the Hindu Society were included as part of the City's 2040 Comprehensive Plan Future Land Use map. The wetlands and floodplain areas on the site may present some challenges to their desired build-out on the northern-most portions of the property.

## School Site

The Osseo School District owns property in the middle of the NW-610 study area. The district plans to develop the site for an elementary school, timed with the residential development of the area. The site contains woodlands and wetlands on the northern portion, which will be preserved for environmental education.

Having a school in this area provides opportunities for creating non-motorized connections to developing residential areas. The school will also be a huge amenity for the neighborhood.



# Transportation

The NW-160 area is bound by Interstate 94 to the northeast; County State Aid Highway 101 (Brockton Lane) to the west; and County Road 30 (95th Avenue) and 101st Avenue to the south. 105th Avenue, a major collector roadway, was recently extended across I-94 from the east, connecting with 101st Avenue. Lawndale Lane provides a connection from 101st Avenue to the north and County Road 30 to the south. Lastly, the segment of Troy lane, a minor collector, is located within the study area extends north of 101st Avenue to the Hindu Society property

## Dayton Parkway Interchange

The planned Dayton Parkway interchange in the City of Dayton is expected to be a catalyst for development south of I-94 and into the NW-610 area of Maple Grove. The neighboring communities of Dayton, Corcoran and Rogers are all planning for mixed use and/or light industrial development along the parkway corridor. While Maple Grove does not have commercial or industrial uses planned on the east side of Dayton Parkway, the future land use plans of the surrounding communities provide some important context for designing residential uses abutting the corridor.

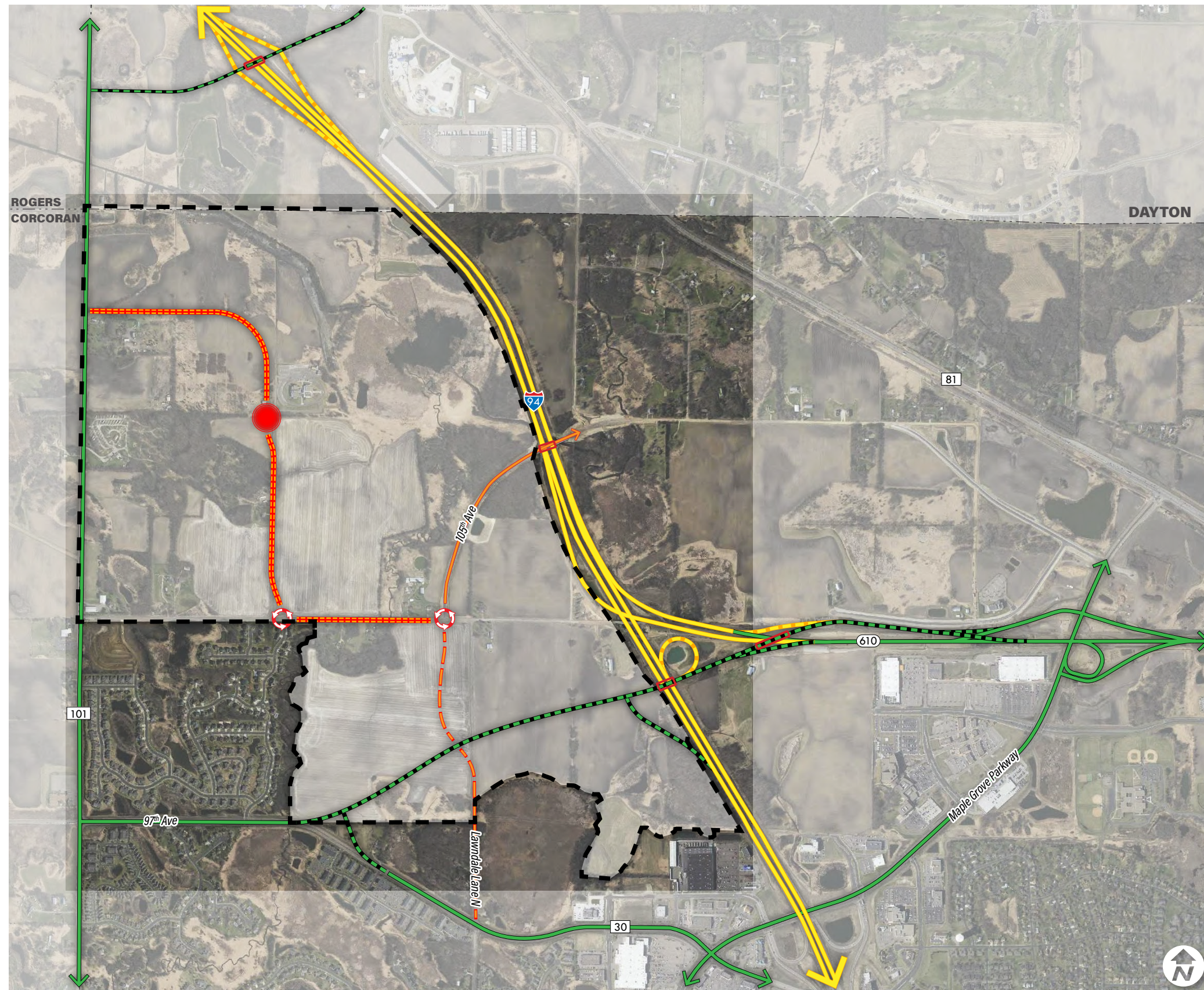
### Dayton Parkway Interchange





# CSAH 610 Alignment & Interchange

The City is pursuing a project to connect Trunk Highway (TH) 610 with I-94 and County Highway 30 to the southwest. This would be a continuation of the project completed in 2017 to connect I-94 to US 169. County Road 30 serves a large area and is a highly developing corridor. Existing and future traffic in the northwest area of Maple Grove is warranting another connection to I-94. While the alignment has not been finalized, this extension provides an opportunity for more intense uses to be concentrated along Trunk Highway 610. East of I-94 from Maple Grove Parkway, MnDOT is proposing a "Braided Loop" design. This concept will provide additional capacity as well as future access from TH 610 to the west of I-94.



## Proposed CSAH 610 Alignment & Interchange

- Principal Arterial
- Minor Arterial
- Major Collector
- Proposed Principal Arterial
- Proposed Minor Arterial
- Proposed Parkway Collector
- Proposed Major Collector
- Roundabout
- Roundabout or Signal
- Project Boundary

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# Parks & Trails

Being a largely undeveloped area, neighborhood park facilities are not currently located within the study area. The nearest park facilities within Maple Grove are to the south within the Hidden Meadows neighborhood, and the Fernbrook School and Maple Grove Senior High Community Playfields to the east across I-94. The Elm Creek Regional Park is located to the northwest of the study area. Segments of the City-owned linear park system located along Rush Creek were established with the development the Delgany Neighborhood to the south. Notably, a pedestrian bridge extends across Rush Creek providing a linkage from the Delgany neighborhood to the study area.

## 2018 Parks and Recreation System Plan

The City's 2018 Parks and Recreation System Plan outlines future park needs in the far northwest corner of Maple Grove. The NW-610 area consists of Park Service Area (PSA) 6S and 6N. The combined area is large (approximately 1 1/2 square miles in area) and has been split into 6 North (6N) and 6 South (6S). Several factors have contributed to the split:

- 101st Ave serves as a barrier to park access, which is now the boundary between two park service areas
- Two neighborhoods have been proposed for this area, which makes the two new PSAs each include one proposed park
- The combined PSAs have a rather large combined population for a park service area

## Park Service Area 6 North

The neighborhood park site would be approximately 2/3 of a mile north of 101st Ave and just west of Troy Ln. The planned neighborhood park will potentially be combined with the future school site. Rush Creek and some large wetland areas along a drainage ditch entering the City from Dayton are the most significant natural features.

The neighborhood park site is classified in the 2018 System Plan as a Neighborhood Park with athletic fields. This is similar to what is currently developed at Rush Creek School. Due to the location of this park in proximity to other play fields in the system and the potential for a cooperative facility with the School District, this park will have more facilities than the traditional Neighborhood Park. The park may be planned to accommodate a baseball field, two multi-use ballfields, a soccer/football field, a hockey rink, and tennis courts, as well as play structure, trails, and site furniture. A 20-acre site may be needed to accommodate these facilities. It is anticipated that this will be a joint-use facility with the School District requiring a land acquisition totaling 30 acres or more. The exact park acreage will be a function of the school's involvement and the amount of land needed to fulfill the program requirements.

## Park Service Area 6 South

Within 6S and 6N, the area west of Rush Creek and south of 101st Ave has developed at this time. The proposed neighborhood park site would be located on the east bank of Rush Creek at the river's "bend" approximately 1/4 mile north of County Rd 30. The southern park site is proposed to be approximately 10-acres and would include basic neighborhood park facilities and is proposed to be part of the proposed Rush Creek Linear Park which starts on the south end of County Rd 30 and continues north near 105th Ave at I-94.





# Natural Resources

Rush Creek runs through the project area from the north perimeter, converges with the South Fork Rush Creek just east of the Hindu Temple, continues its flow eastward under I-94. The creek creates a natural, linear green space that divides the overall project area. The study area also includes numerous wetlands, identified tree preservation zones and preservation areas.

## Tree Preservation & Natural Features

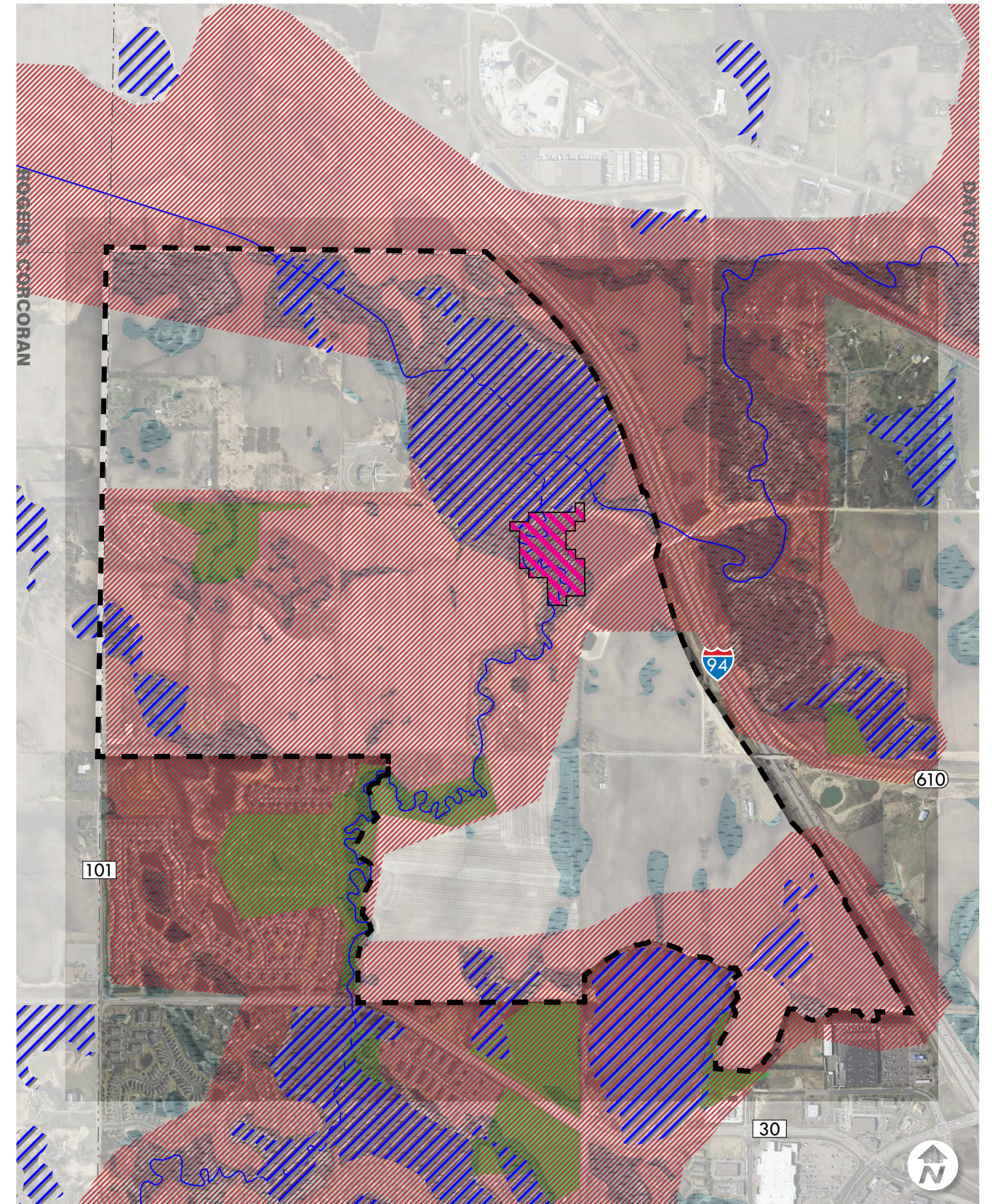
The NW-610 area has an abundance of natural features that provide both development constraints and opportunities for passive recreation and non-motorized connections. Three DNR regulated wetlands exist on the site:

- One extremely large wetland in the northeast part of the study area, including development restriction buffer
- The Rush Creek running through the site, including development restriction buffer
- DNR-identified Ecologically Significant Area adjacent to the large wetland, suggesting an area for preservation

In addition to DNR-identified resources, there are some large non-fragmented wooded areas that have been designated T-Zones (Tree Preservation District) by the City. This overlay district restricts tree removal and requires tree preservation plans for any new development. The T-Zones in this area are near the school site and along the southern portion of Rush Creek.

### Natural Resources Inventory

-  DNR Ecologically Significant Area
-  DNR Public Water Basins
-  DNR Public Watercourse
-  Wetlands
-  Conservation Corridors
-  City T-Zones
-  Project Boundary





The best plans include many voices. Meetings and workshops were held with area stakeholders, property owners, and the public to hear ideas, concerns, and aspirations. Input from the community helped guide this plan.

## Developers

- » Generally, in favor of flexible lot sizes so that:
- » A variety of home sizes and products can be built
- » Overall density per the Comprehensive Plan can be maintained
- » Natural features such as wetlands and woods can be preserved
- » There is interest in constructing small “villas” and attached townhomes in some areas
- » Minimize cut-through traffic through the study area
- » Open to incorporating trails that connect to regional trail and/or open spaces to the southeast
- » Main concerns with the area are traffic, road noise, and safety
- » Concerned that road layouts will segment properties
- » Prefer to design homes so that they do not front collector roads
- » Concern with the safety of traffic on Brockton Lane once new interchange is constructed
- » Supportive of some small, convenience-type retail in the study area to serve new residents
- » Supportive of connections to school site, parks, and natural amenities
- » Need clarity of location of existing and planned sewer infrastructure
- » Access from I-94 and the 610 extension impacts the desirability of development for non-residential properties
- » Concern about density of future land use



## Hindu Society

- Concerned with safety of the site given past incidents of vandalism
  - » Not comfortable with regional trail on their property
  - » Would like to minimize traffic near and visibility of their property
  - » Would like one-way entry and exit on site
  - » Need to balance access to the site with security concerns
- Would like to see improvements at the intersection of 105th Ave and Troy Ln
- Need for additional parking for special events near the site
  - » On-street
  - » Off-street on adjacent properties
  - » Shared parking with school site or other uses
- Noise from traffic coming to and from events could be a concern of future neighbors
- Because of the wetlands dividing the northern portion of the site, will need to construct a private access road that avoids wetlands
- Plans to build senior housing in the next 2-3 years

## School District

- Transportation connections (motorized and non-motorized) are important to keeping the school walkable
  - » Pay special attention to street crossings
  - » Create trails that connect to the regional trail system
  - » Create non-motorized pathways to and from new developments
- Concern with heavy traffic moving through or around school site
  - » Need to ensure that streets near the school will be designed to facilitate safe crossings
- Concern with Brockton Lane interchange potentially letting people into and through the area
  - » Design roads with curves to discourage cut-through traffic
- Maintain natural area (woods and wetland) on the site for outdoor education
  - » Public trails through the nature area would be fine



Combining stakeholder input with data, this plan provides analysis and recommendations for the future of the NW-610 area.

## Land Use & Development Analysis

Once the “bones” of the Master Plan are in place (natural features analysis, roadway alignments and non-motorized transportation network), the land uses can be designed. The goal the land use analysis is to delve deeper into the density, pattern, and scale of future development within the framework of the 2040 Comprehensive Plan.

### Principles for the Development of the Area:

The land use plan for the NW-610 area has been developed with the following principles in mind:

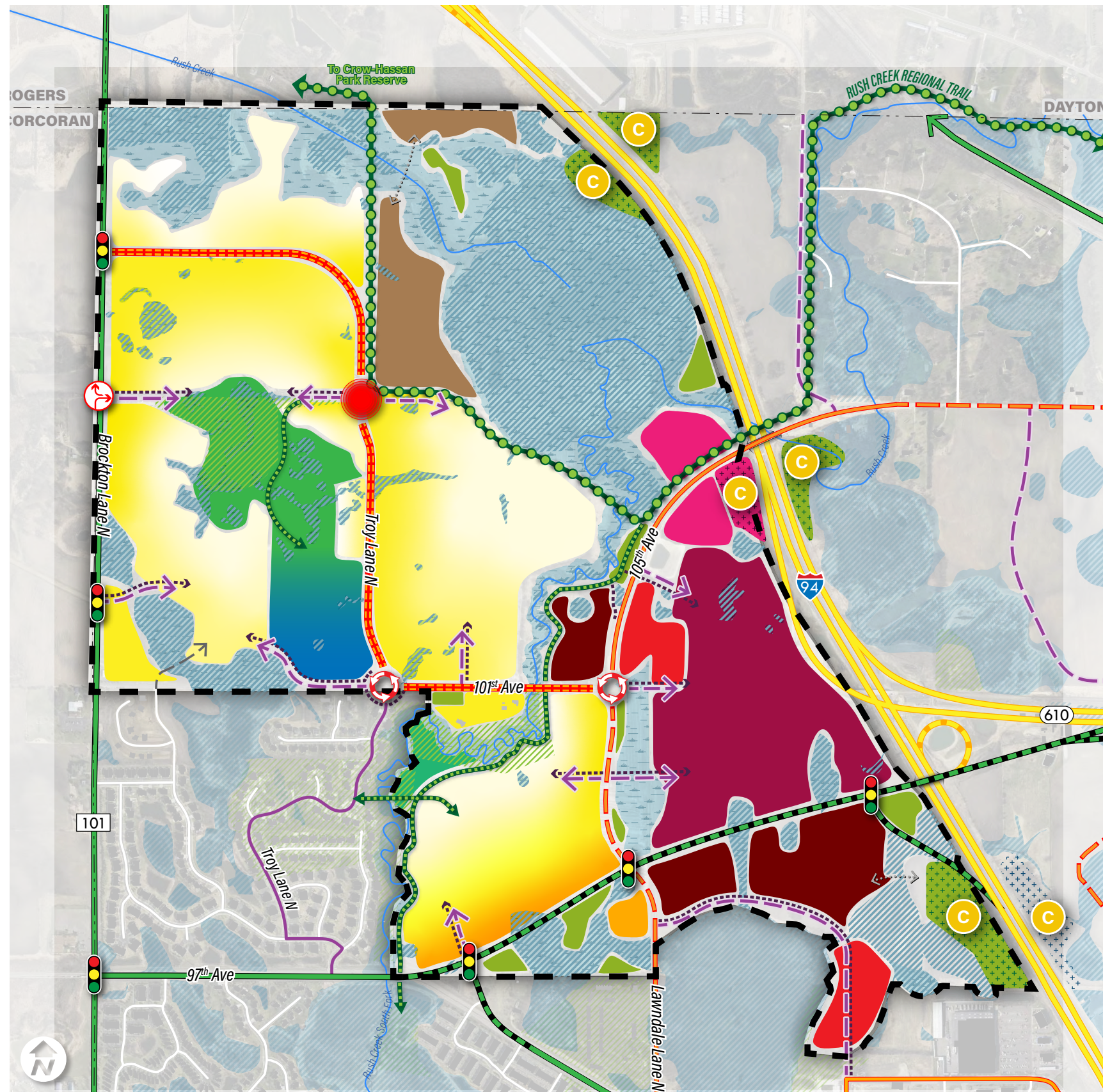
- Concentrate density where there is roadway and infrastructure capacity
- Cluster housing away from significant natural resources so that they can be preserved
- Provide flexibility for developers to provide a variety of lot sizes and housing types, within the overall density prescribed for the area
- Maintain the density prescribed in the 2040 Comprehensive Plan, including the number of high-density housing units and the number of employment opportunities
- Prevent the area from becoming a cut-through route for traffic moving between the new Dayton Parkway interchange and destinations to the southeast.
- Provide non-motorized connections between neighborhoods and the future school site and regional trail

The entire plan for the area is shown in on the Land Use Concept map. The plan is divided up into 5 areas that are described in more detail below and depicted on the maps next to the text.

### IMPORTANT NOTE:

**The land use concept is not parcel or ownership-specific. The plan intends to afford opportunities to vary lot sizes and densities according to the principles above. Based on location and natural features on each parcel, there may not be an opportunity to take advantage of the full range of densities prescribed for the area as a whole.**



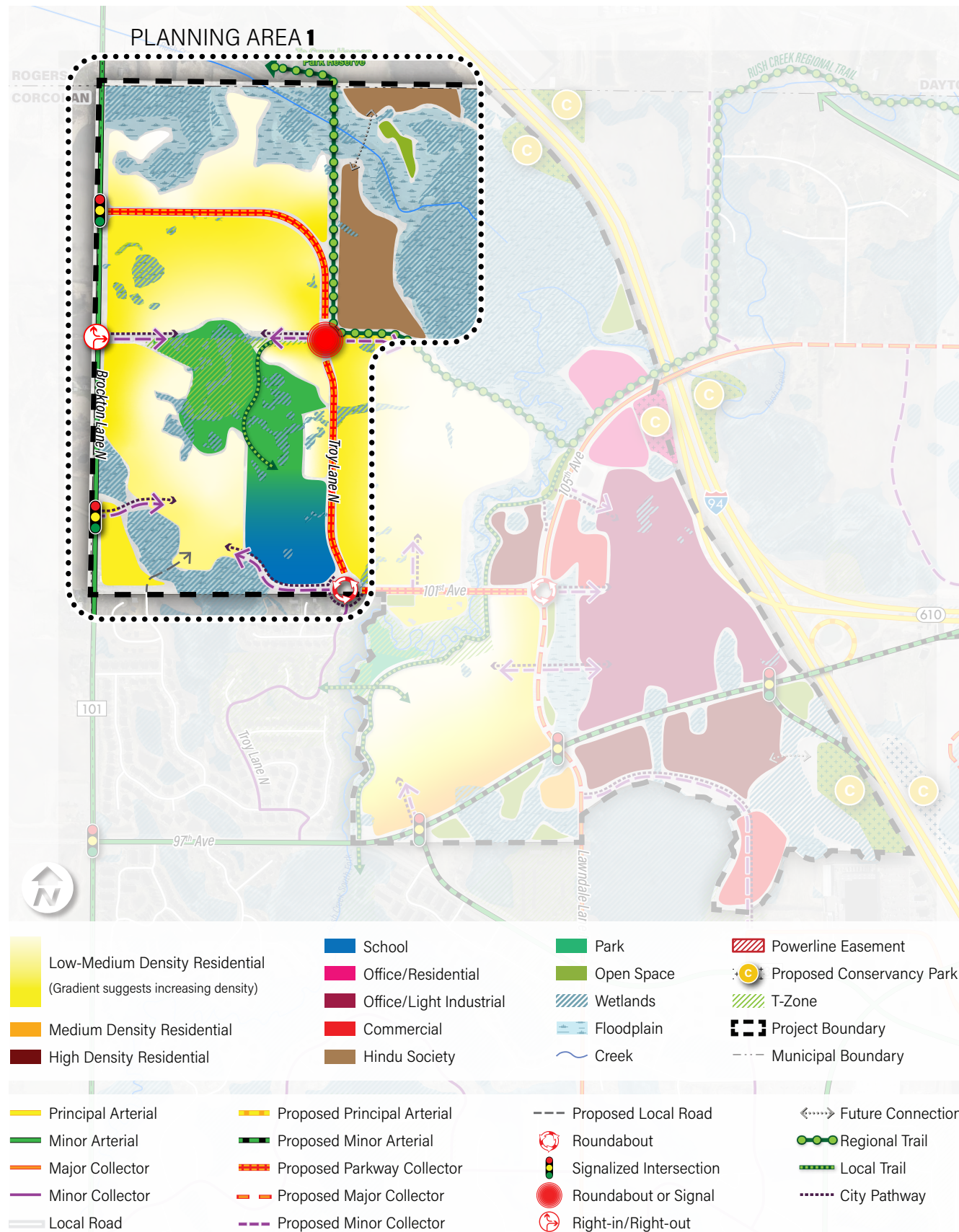


## Land Use Master Plan

- |  |  |  |                             |
|--|--|--|-----------------------------|
|  | Low-Medium Density Residential<br>(Gradient suggests increasing density) |  | Principal Arterial          |
|  | Medium Density Residential   |  | Minor Arterial              |
|  | High Density Residential   |  | Major Collector             |
|  | School   |  | Minor Collector             |
|  | Office/Residential   |  | Local Road                  |
|  | Office/Light Industrial  |  | Proposed Principal Arterial |
|  | Commercial   |  | Proposed Minor Arterial     |
|  | Hindu Society  |  | Proposed Parkway Collector  |
|  | Park   |  | Proposed Major Collector    |
|  | Open Space   |  | Proposed Minor Collector    |
|  | Wetlands   |  | Proposed Local Road         |
|  | Floodplain   |  | Roundabout                  |
|  | Creek  |  | Signalized Intersection     |
|  | Powerline Easement   |  | Roundabout or Signal        |
|  | Proposed Conservancy Park  |  | Right-in/Right-out          |
|  | T-Zone   |  | Future Connection           |
|  | Project Boundary   |  | Regional Trail              |
|  | Municipal Boundary   |  | Local Trail                 |
|  |  |  | City Pathway                |

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## Planning Area 1:

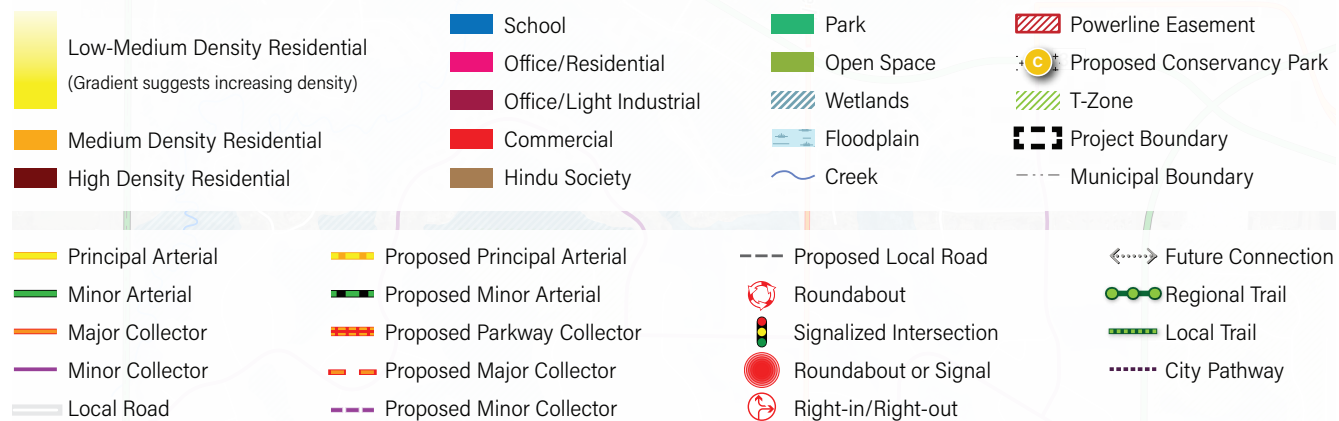
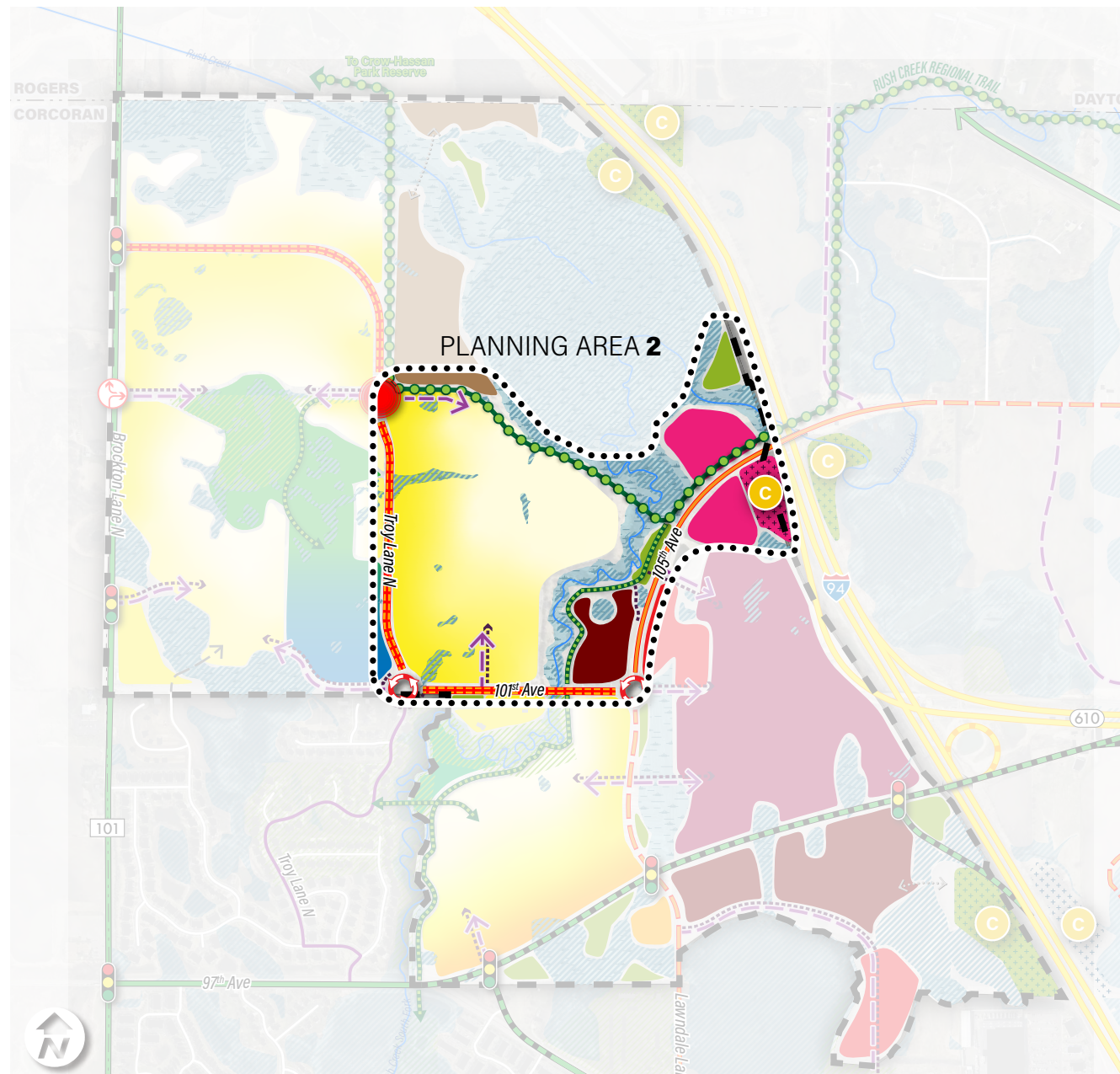
### Current characteristics:

- Largely vacant land, significant natural features (wetlands, woodlands, T-Zones)
- Adjacent to new school site on Troy Lane
- Proposed major collector and several minor collectors/local roads whose alignment is to-be-determined based on development
- Non-motorized trails connect through new developments to the school site and the regional trail
- Mix of uses at the Hindu Temple site

### Development Plan:

- Focus more intense and dense development near larger roads and utility infrastructure, and away from natural features
- Allow cluster development to preserve gross site density while preserving wetlands and wooded areas
- Leave gross density the same as prescribed in the Comprehensive Plan (1-4 units per acre), but allow for clustering of units on certain areas of the developments at smaller lot sizes (up to 7 units per acre or 6,200 square foot lots)
- Density ranges:
  - » 1-2 units per acre in lowest density areas (northern most portions of the area, on the insides of blocks, and near natural features)
  - » 3-4 units per acre adjacent to minor arterials and local roads
  - » Smallest lots / higher densities (which may include small lot “villas”) along the major collector routes. Density range: 5-7 units per acre
- Require non-motorized trail connections from private developments to the school site and regional trail
- Cross-section detail of Troy Lane/Regional Trail crossing and description of safe-school crossing of Troy Lane is provided in the Implementation section





## Planning Area 2:

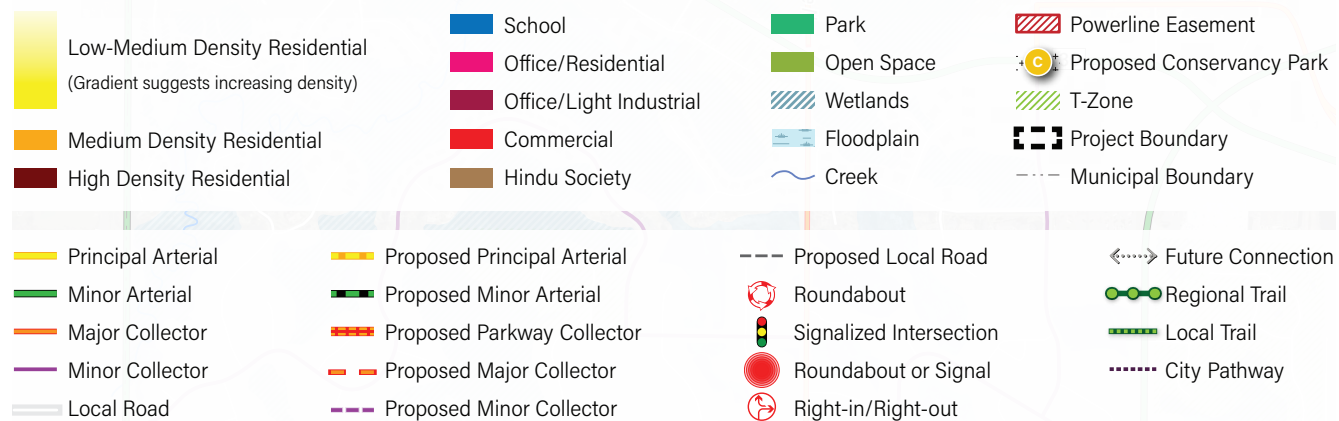
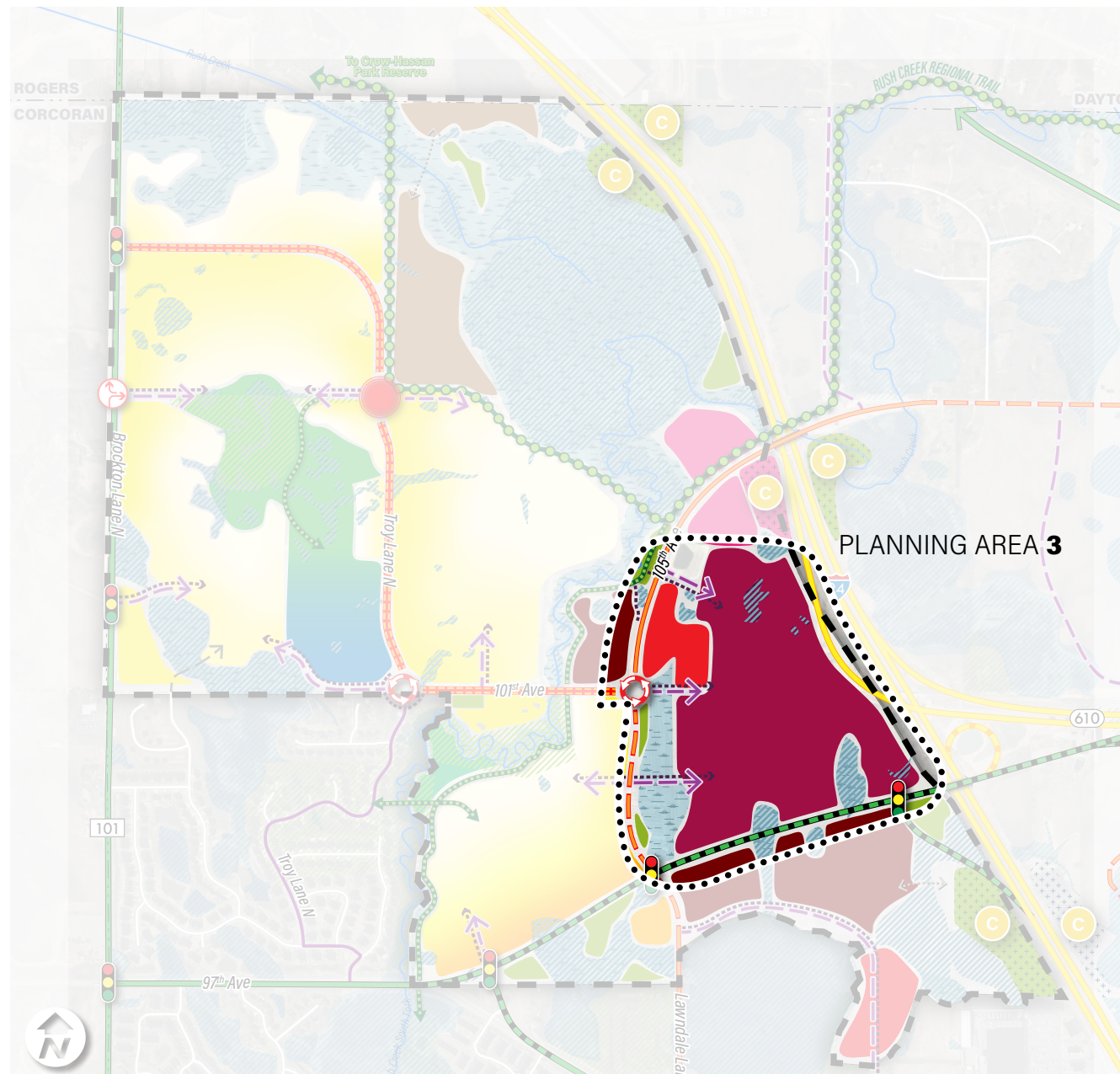
### Current characteristics:

- Largely vacant land
- Fewer natural features cutting through the area than Area 1, but is bounded by a significant wetland and regional trail
- Adjacent to future elementary school site (Osseo Public Schools)
- Proposed major collector on the western edge and minor collector through the center (final alignment to be determined based on development)

### Development Plan:

- Lowest density single-family near the South Fork Rush Creek and the regional trail
- Gradually decrease density further away from the major collector roadways
- Concentrate medium densities, which may include small lot “villas,” adjacent to major collector routes along the western and southern edge. Density range: 5-7 units per acre
- High density development (multi-family, condos and/or townhomes) in the area between South Fork Rush Creek and the planned local trail and the 105th Ave/101st intersection. Density range: 10-18 units per acre.
- Mixed-use near 105th Ave and I-94;
  - » Developable land highly constrained by wetlands and floodplain
  - » Focus on office development designed for a park-like setting with visibility from 610 and I-94
  - » Allow for integration of high density residential





## Planning Area 3:

Current characteristics:

- Characterized by vacant land and very few natural features, except for one wetland area
- Excellent visibility from I-94 and the 610 extension
- Proposed major collectors/traffic circles to provide access to the area

Development plan:

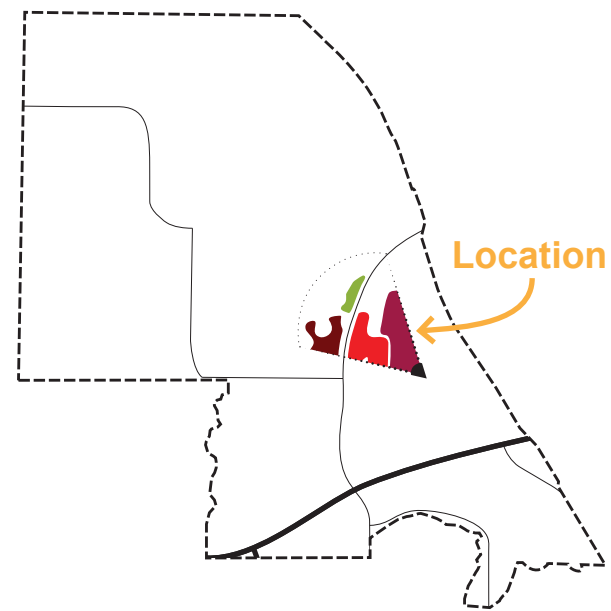
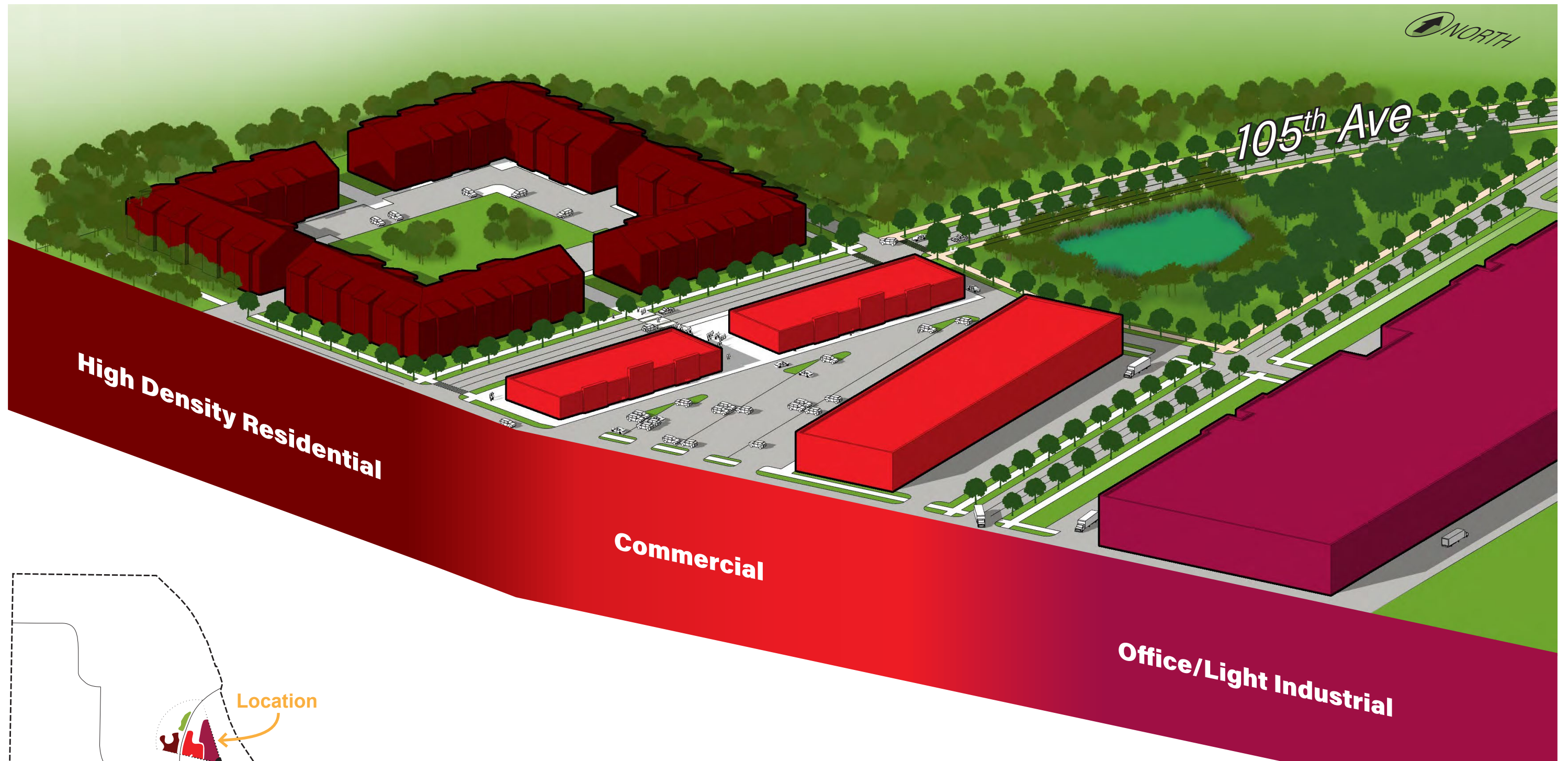
- Office/light industrial/warehouse uses closest to I-94 where there is visibility and to serve as buffer to residential uses
- Create a commercial node to provide goods and services to the area. Square footage of buildings should be limited to keep at development at the neighborhood scale
- Vertical mixed use (including multi-family residential) could be considered between the commercial node and the proposed minor collector as a transition to office/warehouse uses

## 105th Avenue Area Rendering

The image on the next page is a conceptual possibility given the mix of land uses being proposed along 105th Ave, their interface with the non-residential mixed-use area west of I-94, and other urban design principles

- It approximates how development could take shape so compatibility between the various land uses is achieved
- It also illustrates how the intensity of land uses transitions across the area, increasing as one moves west to east toward I-94
- Connections for motorized and non-motorized transportation throughout the area should be coordinated to strengthen relationships between the various uses
- Building masses should be oriented to give preference to the public right-of-way and the pedestrian experience along 105th Ave

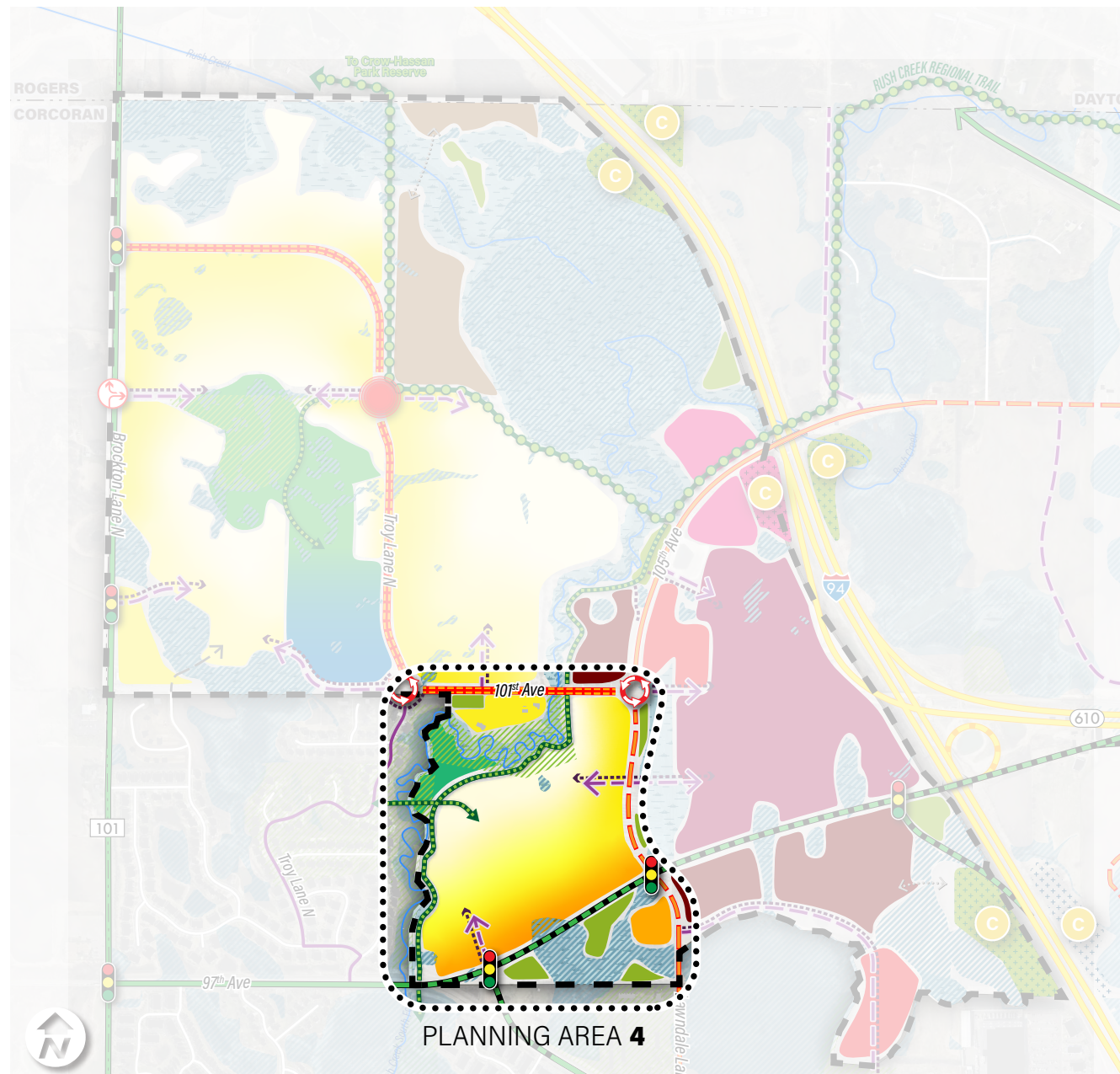




## One possible future for 105th Avenue

The rendering above is meant for planning purposes only and is not based on a proposed or anticipated development project. The image is intended to visually display the interplay of possible building types and size, roads, trails, sidewalks, parks, and open space.





## Planning Area 4

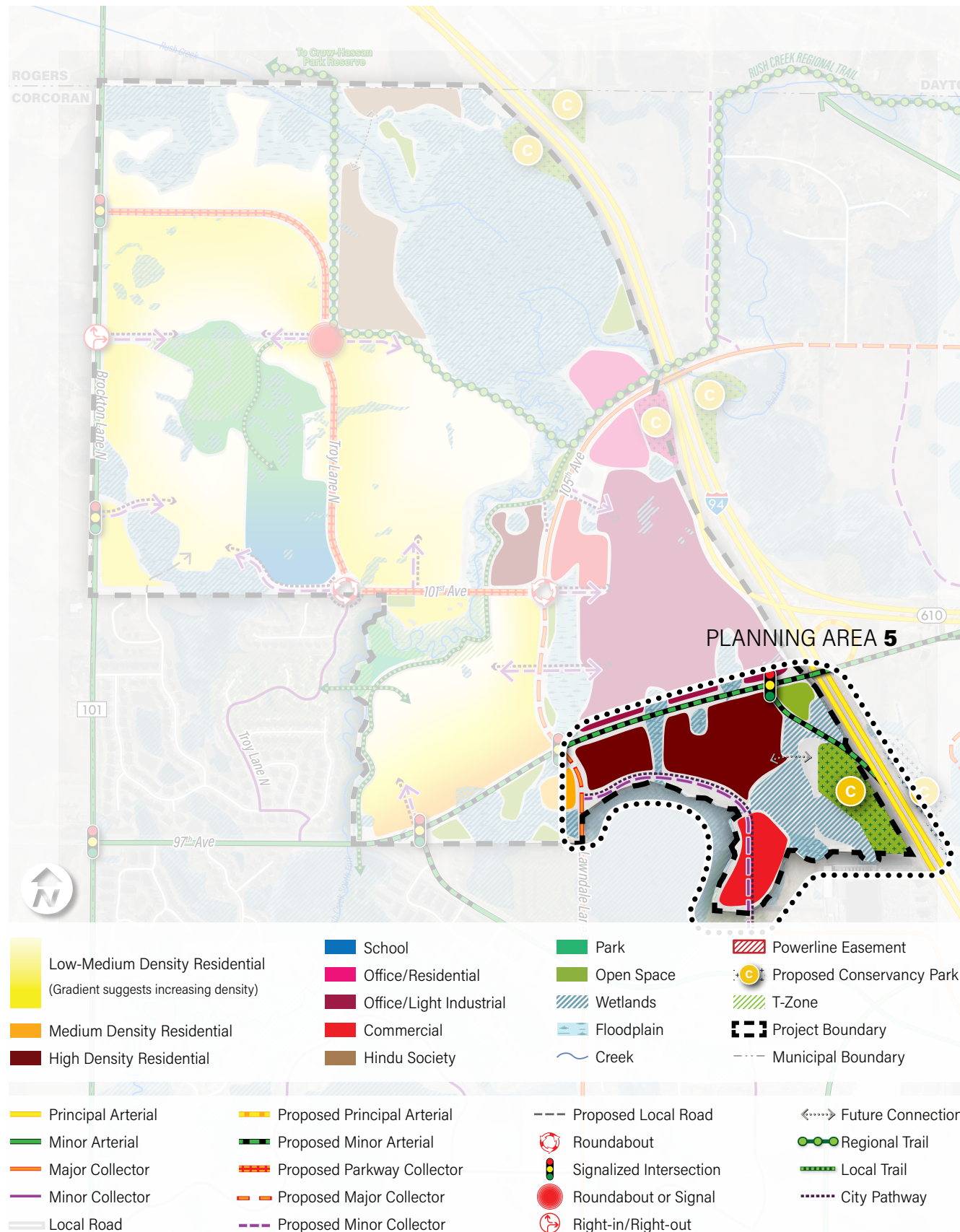
### Current characteristics:

- Characterized by vacant land adjacent to the wooded creek corridor
- One major collector is planned to provide access through the area, connecting the 610 extension to 101st Ave.
- T-Zones protect the woodlands near the creek

### Development Plan:

- Cluster residential development with higher densities near the planned major collector and lower densities near the trail corridor
- Highest residential densities may include small lot “villas”
- Design developments with density transitions and/or mixed densities
- Development along the 610 extension should be in the 8-10 units per acre range and may include small apartment buildings
- Other than at the intersection of the 610 extension and the proposed major collector, there is very little area for development south of the 610 extension. Some of this should be dedicated park/ open space with an area that could be developed at 8-10 units per acre near the intersection.





## Planning Area 5

### Current Characteristics:

- This is a difficult-to-develop area due to large wetland and tree preservation areas which fragment the area and make access a challenge.
- There is a need to provide access to the Tri-care property and from there to the Radintz property to the east
- Big box commercial is located immediately to the south

### Development Plan:

- Because of the natural features on the site and proximity to the 610 extension and major collectors, high density uses clustered to preserve wetlands are recommended for much of the area
- Provide high density residential (10-18 units per acre) in the area closest to the 610 extension and along the proposed major collector
- Encourage mixed use (mix of high density residential and commercial, including vertical mixed use) as a transition moving south toward the existing big box area
- A local road (alignment to-be-determined) is planned to provide access to Tri-Care and access to the Radintz property near I-94

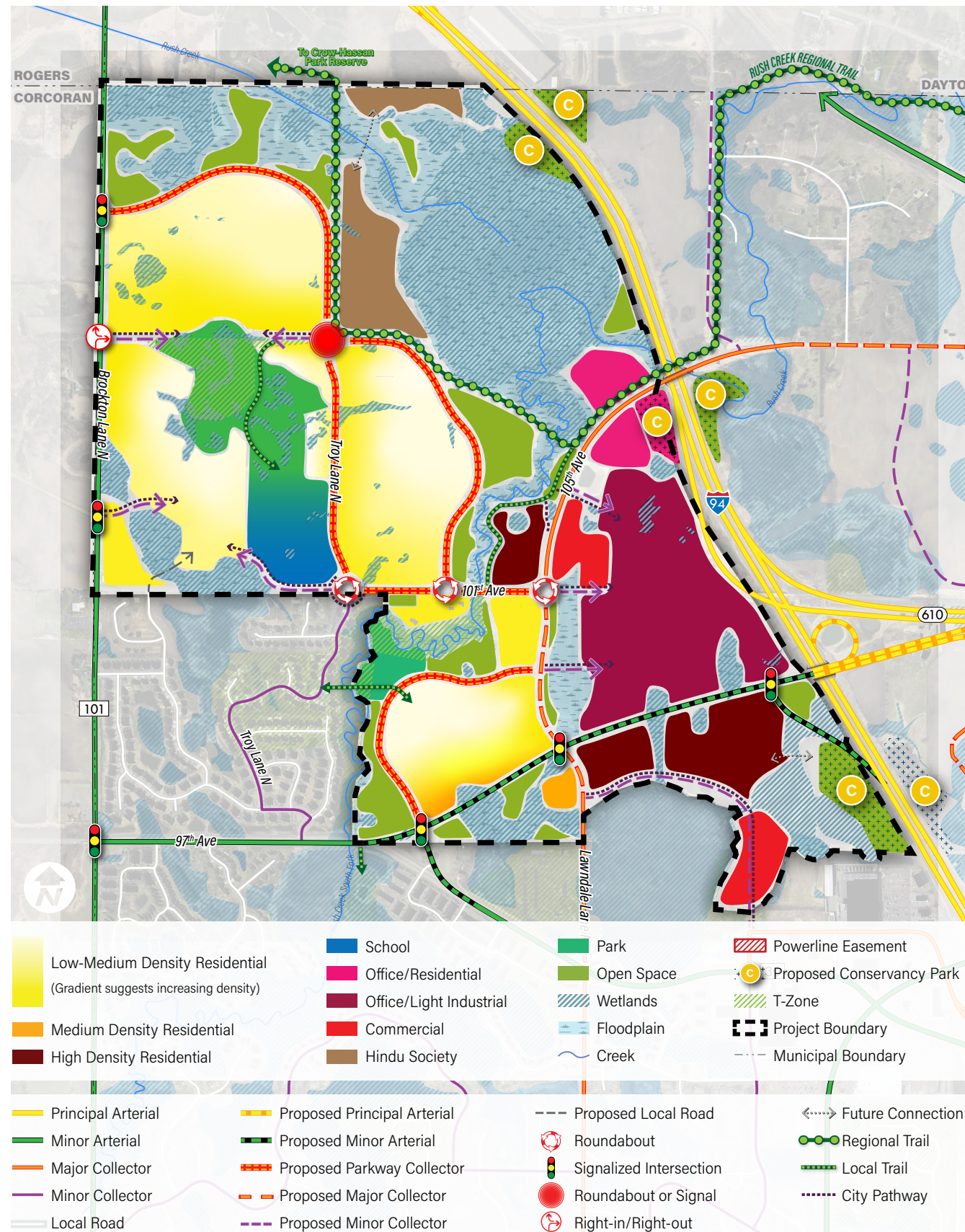


# Density Transfer and Creekside Parkway Option

It is the intent of the NW-610 Master Plan to promote the transfer of density away from areas with important natural features. More specifically, the City supports the alternative discussed here as an opportunity to shift density away from the creeks and forested area toward new roads and infrastructure.

This alternative includes a Parkway Collector which is located further east than the minor collector shown north off of 101st Ave. In this alternative, density from the developable land to the east of the Parkway Collector could be transferred to the areas west of the collector. This alternative also illustrates the transfer of density away from the woodlands north of the school site and into adjacent areas more appropriate for residential development.

Methods for implementing a density transfer program are included in the Implementation – Land Use section of the Plan.





# Transportation Analysis

## Background

The existing roadway network has access to the regional system via CSAH 30 and CSAH 101 (Brockton Ln), which are both classified as minor arterial roadways. As outlined in the Maple Grove 2040 Transportation Plan Update, 2018 annual average daily traffic (AADT) indicate that none of the roadways within this area currently are at or approaching capacity. However, future (2040) AADTs indicate some roadways in the area are predicted to be over or approaching capacity including:

- CSAH 101 (Brockton Ln) - CSAH 30(97th Ave) to north City Limits
- 101st Ave - Troy Ln to Lawndale Ln/105th Ave.

## Issues

The existing transportation network will need to be expanded to account for future residential and commercial development in the area. Throughout the planning process several transportation issues and concerns were identified that were considered in the development of the future roadway network, including:

- CSAH 610 (TH 610 Extension) – Access and alignment
- Dayton Parkway – Cut through traffic using the proposed interchange
- CSAH 101 (Brockton Ln) – Access, intersection spacing and control
- 101st Ave – Access to CSAH 101 (Brockton Ln) vs access to area development
- Osseo School Site – Access to the new site, traffic through and adjacent to site
- Hindu Temple Site – Traffic adjacent to site.
- New Area Development – Access and circulation

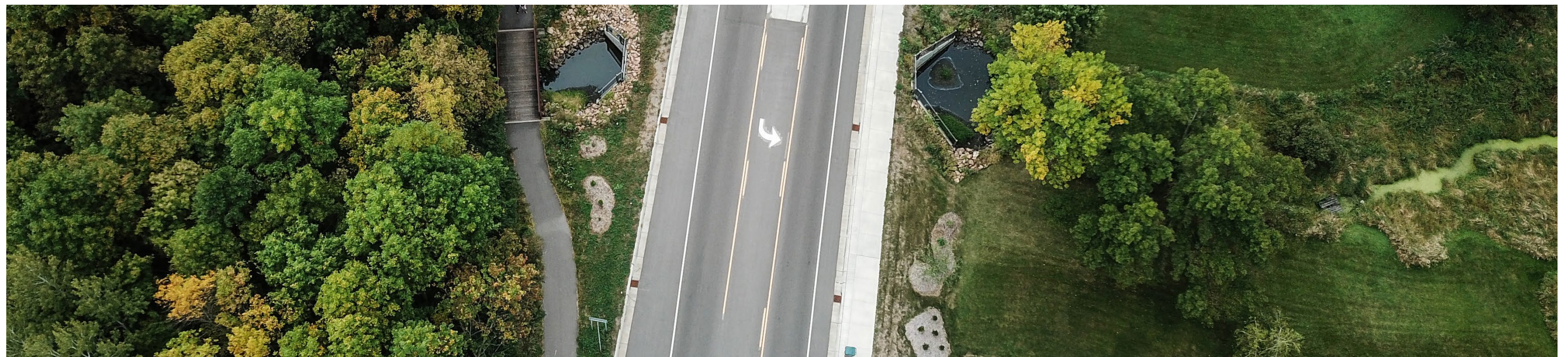
A significant improvement to the existing transportation system will be the implementation of the CSAH 610 (TH 610 Extension) project connecting the newly constructed TH 610 alignment to existing CSAH 30. This proposed project would include construction of CSAH 610 as a new four-lane divided roadway between CSAH 30 and TH 610.

The new CSAH 610 roadway would be classified as a Minor Arterial and would be a vital east-west link to the growing northern suburbs. CSAH 610 would provide improved regional connections to important roadway facilities in the northwest Twin Cities metropolitan area including I-94, TH 610, and CSAH 30. The CSAH 610 project would also complete some of the missing movements at I-94, including the loop ramp connection from westbound I-94 to westbound CSAH 610 and a bridge over I-94 to connect eastbound CSAH 610 to TH 610.

Future local access to the NW-610 area will be provided from major and minor collector roadway connections from CSAH 610 (TH 610 Extension) and CSAH 101 (Brockton

Ln) as shown on the “NW-610 Transportation System Map.”

The following sections discuss the background assumptions in the development of the “NW-610 Transportation System Map”. The primary source in the development of the map is the 2040 Transportation Plan Update.





# Right-of-Way

With the anticipated growth in the NW-610 study area, existing roadways will be expanded and new public roadways will be developed to accommodate growth. Such improvements will require adequate right-of-way be maintained or secured. The City of Maple Grove has development right-of-way guidelines to meet these future capacity and connectivity demands. The table below shows the guidelines by functional classification and facility type from the 2040 Transportation Plan Update.

Table 2: Draft Maple Grove Right-of-Way Guidelines

Functional Classification	Right-of-Way Widths
Principal Arterial	150 to 300 feet
A-Minor Arterial	120 to 150 feet
B-Minor Arterial	100 to 120 feet
Major Collector	80 to 100 feet
Minor Collector	60 to 80 feet
Local Roadways	60 feet

The City will coordinate with Hennepin County for right-of-way acquisition along existing or future county roadways.

# Capacity Analysis

In order to ensure that the existing and proposed arterials and major collectors have adequate capacity in the future, forecasted traffic volumes were determined. The forecasted 2040 average daily traffic (ADT) volumes are based on the City of Maple Grove's current Transportation Plan; Hennepin County's Transportation Plan, and the anticipated residential and commercial land use outlined in this document. The map on the next page shows the anticipated forecasted 2040 ADT volumes on the area arterials and major collectors.

Based on the traffic conditions, the roadway cross sections of the arterials and major collectors were identified using Planning Level Roadway Capacities by Facility Type (Table 7 in the City of Maple Grove's Transportation Plan). During the design phase for each area roadway, additional analysis will be completed to determine the required intersection control and turn lane lengths.





# Transportation System Plan

The following outlines the proposed roadway system functional classification, including the anticipated intersection control and roadway cross section (number of lanes).

## Minor Arterials:

- CSAH 610 (TH 610 Extension), I-94 to CSAH 30 (97th Ave): 4-lane divided with turn lanes at intersections.
  - » Signalized intersection at proposed I-94 on-ramp
  - » Signalized intersection at Lawndale Ln/105th Ave
  - » Signalized intersection at CSAH 30/proposed minor collector
  - » Signalized intersection at CSAH 101 (Brockton Lane)
- CSAH 101 (Brockton Ln), CSAH 30 (97th Ave) to New Brockton Interchange in City of Dayton: 3-lane with a center left turn lane and right turn lanes at intersections.
  - » Signalized intersection at CSAH 610 / CSAH 30 (97th Ave)
  - » Right-In/Right-Out at 100th Ave
  - » Closure of existing 101st Ave
  - » Signalized intersection at Stieg Rd(City of Corcoran)/proposed Minor Collector
  - » Signalized intersection at proposed Troy Ln
  - » Signalized intersection at proposed Brockton Ln connection to I-94 (City of Dayton)

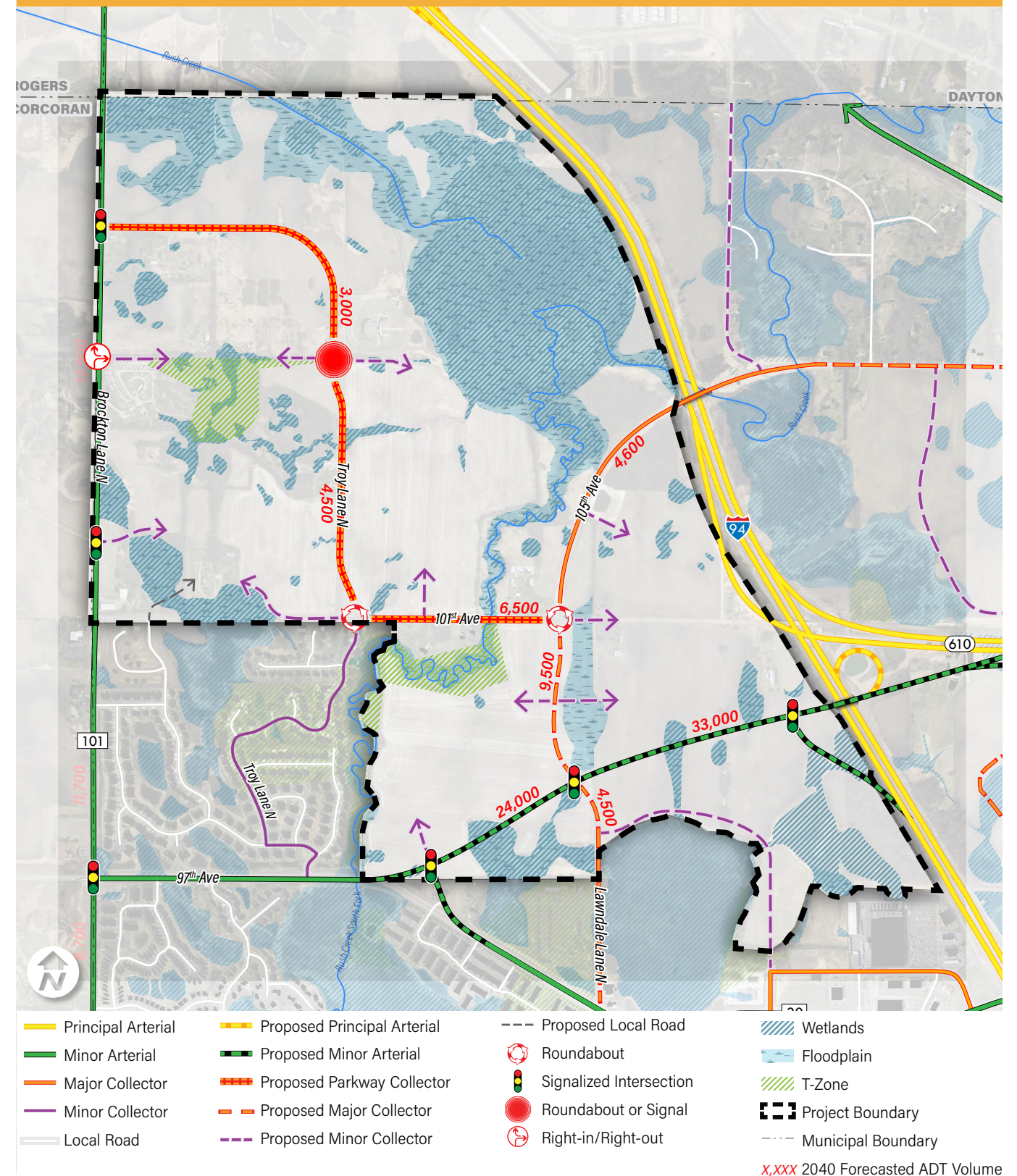
## Major Collectors:

- Lawndale Ln / 105th Ave, CSAH 30 (95th Ave) to I-94: 2-lanes with turn lanes at intersections
  - » Signalized intersection at CSAH 30 (95th Ave)
  - » Controlled full movement intersection at proposed minor collector
  - » Signalized intersection at CSAH 610 (TH 610 Extension)
  - » Controlled full movement intersection at proposed minor collector
  - » Roundabout at 101st Ave
  - » Controlled full movement intersection at proposed minor collector
- 101st Ave, 105th Ave / Lawndale Ln to Troy Ln: 2-lane parkway with turn lanes at intersections
  - » Roundabout at 105th Ave / Lawndale Ln
  - » Controlled full movement intersection at proposed minor collector
  - » Roundabout at Troy Ln
- Troy Ln, 101st Ave to CSAH 101 (Brockton Ln): 2-lane parkway with turn lanes at intersections
  - » Roundabout at 101st Ave
  - » Roundabout at proposed minor collector
  - » Controlled full movement intersection at proposed Minor Collector
  - » Signalized intersection at CSAH 101(Brockton Ln)

## Minor Collectors:

- Connections between minor arterial and major collectors as development occurs

## Planned Transportation - 2040 Forecasted Average Daily Traffic Volumes



DRAFT



# Parks & Trails Analysis

As part of the master planning process, the non-motorized transportation network of trails, sidewalks and open space in and surrounding the NW-610 study area have been evaluated. While the area is currently predominately undeveloped, there are several existing features that will impact the proposed trail connections to future land uses.

- Hindu Temple Site: The temple site currently does not have any direct non-motorized routes that connect to their campus. In a meeting with representatives of the Temple, concerns were raised about the potential of a public trail running near the Temple, as they have experienced vandalism in the past. It was mentioned that there are very few members of their community that would make use of non-motorized transportation, and it is not a priority for them or their future expansion plans.
- School Site: Osseo School District 279 owns property within the study area, which has been identified for a future elementary school. The school site will have shared outdoor facilities with the park facility, in the form of field areas, playground and natural open space. Non-motorized access to the school site is a high priority for future development in this area.
- Neighborhood Park Site: A second neighborhood park site is identified along the Rush Creek corridor, adjacent to the existing Delgany neighborhood. Currently, a Rush Creek bridge crossing provides access to the area from that neighborhood. The future trail network should connect to this crossing. Non-motorized access to this park site, as well as the Rush Creek corridor, is a high priority.

- T-zone, Preservation and Wetland areas: The study area includes numerous wetlands, identified T-zones and Preservation areas. These areas are being looked at as potential green space connections along the trail corridors.
- Rush Creek: Two forks of the Rush Creek run through the project area from the north and south edges, joining together and flowing towards the east. This creek creates a natural, linear green space that divides the overall project area. The creekway provides a corridor for trails to follow, creating connections between the land uses it traverses.
- Open space and natural features: Other open space and natural features can provide links and connections throughout the master plan study area. These features shall be connected by a non-motorized trail network including trails and sidewalks whenever possible.

## Regional Trail

As part of a proposed regional connection, Three Rivers Park district has identified a corridor within the project area to be developed as the Rush Creek Regional trail. This trail plan will connect Elm Creek Park Reserve in Maple Grove with Crow-Hassan Regional Park Reserve in Rogers. The proposed trail loosely follows Rush Creek to make that connection, and will bisect the study area. Since the exact alignment of the trail has not yet been determined or finalized, Three Rivers Park District is open to exploring alternative alignments that best work with the municipalities and landowners to ultimately make the connection.

Goal:

- Create a regional trail connection through the site area, loosely following the Rush Creek corridor

### Proposed Alignment:

Several options were explored for the alignment of this trail segment. The original alignment as shown in the Three Rivers master plan, shows the trail following the west side of the large wetland in the northeast corner of the site. This alignment followed the creek along and through the Hindu Temple property, but that land owner has security and privacy concerns with a trail in this location, and desires more separation from a public trail facility. A second trail alignment to the east and north of the large wetland was explored as well. This alignment essentially followed I-94 and wetland areas, but takes the trail almost entirely outside of the study area.

The Master Plan Concept has re-routed the originally identified regional trail corridor to provide more access to properties within the NW-610 area. The proposed alignment will not closely follow the I-94 corridor, avoids major wetlands and will follow the more visible, public edge of the Hindu Temple property. The proposed trail alignment, traveling from east to west through the site, crosses I-94 at the 105th Avenue bridge. The trail will parallel 105th Avenue until it reaches the linear greenway created by Rush Creek. The regional alignment then turns in a northwestern direction, following existing wetland edges on the east side and development areas to the west, which are guided residential. As the trail approaches the Hindu Temple site, it will remain in a significant easement, while it follows the proposed roadway to the west and north. As the trail travels north, it will make connections to proposed residential developments and additional natural wetland areas as it exits the study area.

To meet the goals of Three Rivers Park district, this trail will need to remain separated from roadways wherever possible and provide crossings at safe and clear intersections. While it primarily follows undevelopable natural greenspaces and wetlands, there are areas where the corridor does intersect proposed residential and

institutional zones. In these areas, dedicated easements will need to be established to ensure the corridor has adequate buffering, screening, and separation from homes, institutions and streets.

## City Trails

As identified in the Parks and Recreation chapter of Maple Grove's 2040 Comprehensive Plan, the goal of the City's trail system is to provide safe, accessible, and continuous routes that provide connections between residential areas, schools, commercial areas, parks, and other destinations in and around Maple Grove.

The NW-610 area contains a natural linear greenway that follows Rush Creek. This greenway is an ideal location for a trail bisecting the study area.

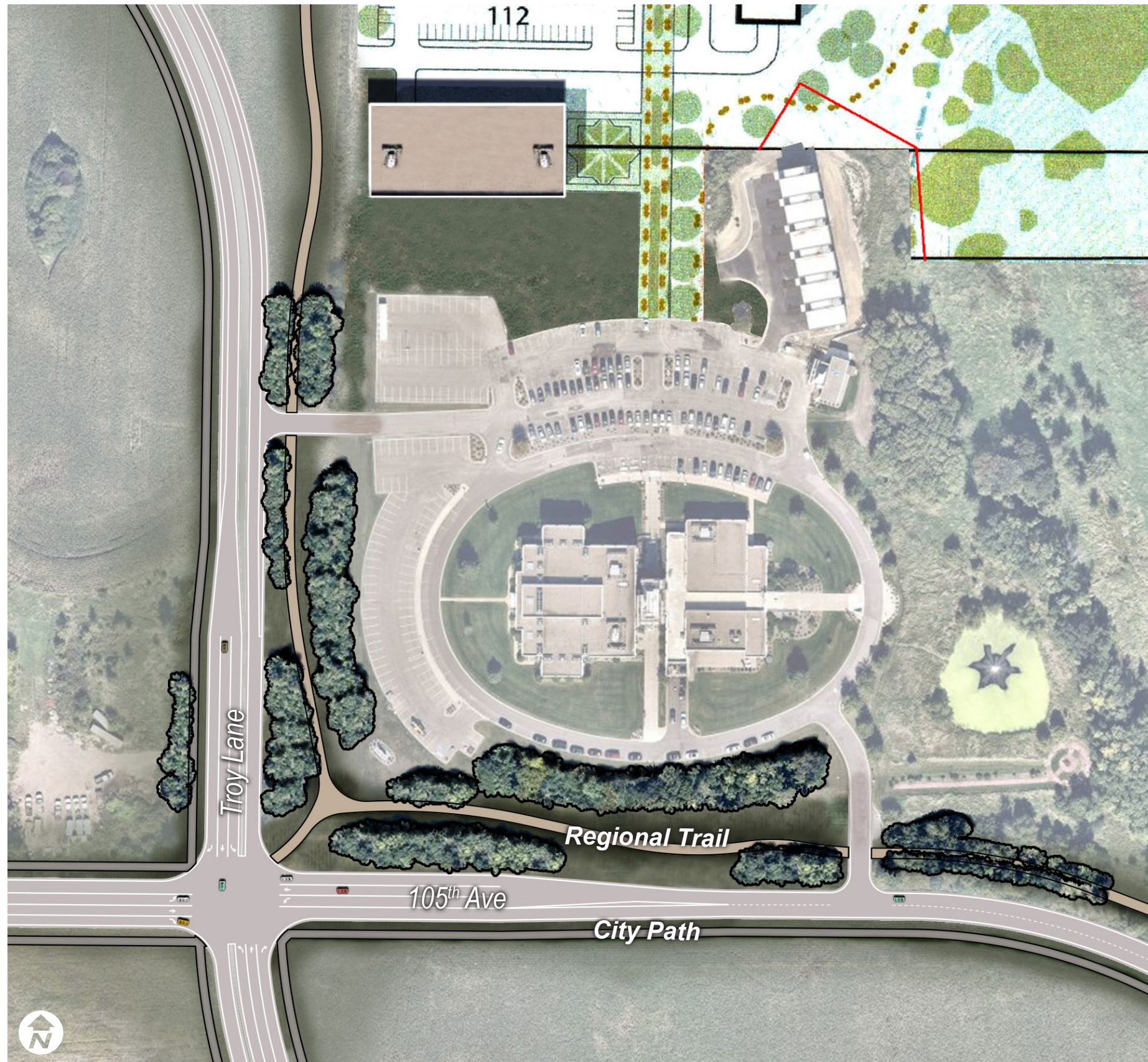
Goals:

- Non-motorized trails connect to new developments, the school site, and the regional trail
- Create trail network to connect land use types within the study area, as well as surrounding areas
- Require non-motorized trail connections from private developments

### Proposed Alignment:

Where the regional trail corridor shifts to the west of Rush Creek, an off-street City trail will continue to follow the Rush Creek corridor to the south. The trail will cross 101st Avenue at grade and continue south to 97th Avenue, at the south edge of the study area. Within this corridor, the City trail will be able to access the proposed neighborhood park site, as well as allow for a connection over the creek to the existing Delgany neighborhood to the west. As a greenway "spine" through proposed residential neighborhoods, this trail will allow for non-motorized connectivity throughout numerous neighborhoods.





## Regional Trail Detail

The NW-610 Master Plan proposes to route the regional trail across the project area following 105th Ave south of the Hindu Temple and then north between its western edge and Troy Lane, as shown on the image to the left. The trail corridor will be approximately 100 feet wide, which creates a generous buffer between Troy Lane and the Temple while accommodating a regional trail and natural amenities that offer a pleasant experience to trail users. The Master Plan also links the regional trail to the proposed local path network that parallels both major and minor collector roads throughout the project area, offering future residents regional access via a valuable recreational amenity.



## Sidewalks and Pathways

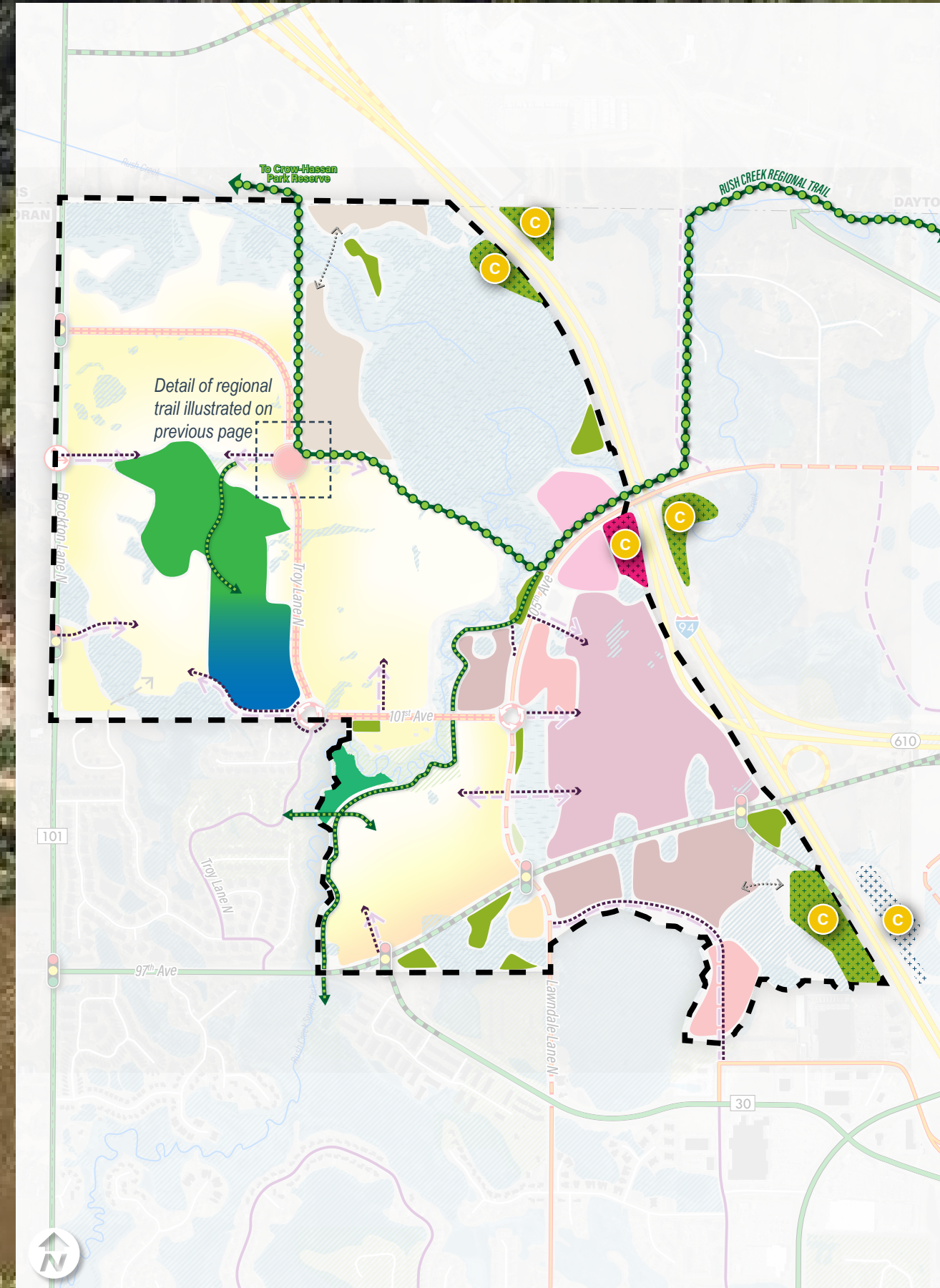
As development occurs, neighborhood streets will be installed with sidewalks on one or both sides. These sidewalks and pathways will be a critical link between individual users and the larger City and Regional trail corridors. Within residential developments, sidewalks will be required to connect to nearby trails, creating neighborhood connections to the rest of the study area and various different land uses. Commercial and industrial areas will be required to have sidewalk and pathway connections for non-motorized transportation connection.

## City Parks

There are two locations within the study area that are identified in the 2040 Comprehensive Plan as locations for future neighborhood parks.

The identified location in the north part of the study area will be at or adjacent to the proposed elementary school site. The school site is centrally located within the study area and is bordered by a natural wetland area to the north. The park and school will have shared outdoor facilities, in the form of field areas (ballfields and soccer field), playground, and natural open space.

The second neighborhood park site is identified along the Rush Creek corridor, adjacent to the existing Delgany neighborhood. This park will serve the southern half of the study area as well as the existing developed areas to the west. The site is located within in an oxbow curve of the creek, creating a natural boundary defining the space. There is currently a bridge crossing Rush Creek to access the area from the Delgany neighborhood, and the future trail network within the study area will connect at that point.



## Conservancy Parks

Conservancy parks are land holdings intended to preserve a unique natural resource in the community. These parks, which vary in size and shape, serve a special purpose in the park system by providing visual interest and diversity to the community landscape. Conservancy parks are intended for passive recreation such as walking and bird and animal watching. High quality wetlands, woodlands, or wildlife habitats are examples of sites categorized as conservancies.

### Planned Trails & Pathways

- School
- Park
- Open Space
- C Proposed Conservancy Park
- Project Boundary
- ← → Future Connection
- Regional Trail
- Local Trail
- - - - - City Pathway



# Natural Resources Analysis

The project area was analyzed for sensitive ecological features to identify locations for avoidance, preservation, or protection. The area was reviewed using publicly available desktop resources including the Department of Natural Resources (DNR) Regionally Significant Ecological Areas (RSEA), DNR native plant communities, Minnesota Biological Survey (MBS) sites of biodiversity significance, National Wetlands Inventory (NWI), DNR Metro Conservation Corridors, DNR Natural Heritage Information System (NHIS), The Nature Conservancy (TNC) Priority Conservation Areas, wildlife management areas, US Fish and Wildlife Service (USFWS) Bird Conservation Regions, MN Audubon Important Bird Areas, Scientific and Natural Areas (SNA), State Historic Preservation Office (SHPO) historic and archaeological database search, and DNR Public Waters inventory.

## Ecologically Significant Areas

One DNR Regionally Significant Area was identified within the project area located along the South Fork of Rush Creek, west of I-94 and north of 105th Ave. RSEA areas are located where intact native plant communities and/or native animal habitat are still found in the region and continue to provide important ecological function. This area was likely identified due to its connectivity to other RSEAs and that it is a large forested wetland, likely with moderate species diversity. No MBS sites of biodiversity significance were located within the project area. A small section of

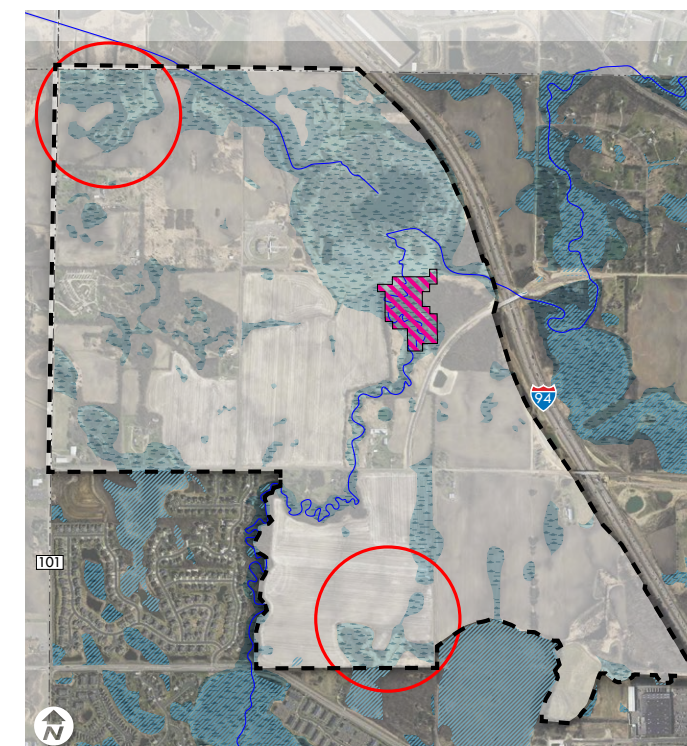
stream along Rush Creek to the north of the RSEA is also identified as an Aquatic Species Route, meaning that it provides significant connection between natural areas for aquatic wildlife. Given the RSEA designation, this area and those wetland, stream, and forested areas connecting to it should remain as natural habitat for local wildlife to preserve species diversity of the area.

Much of the project area has also been identified by the DNR as a Metro Conservation Corridor which the DNR selects as potential locations for land acquisition and restoration using Legislative-Citizen Commission on Minnesota Resources (LCCMR) funding. The purpose of this initiative is to preserve remaining natural lands in the metropolitan areas with a focus on connectivity and maintaining the quality of life in the region. The Minnesota Land Trust division of the DNR is responsible for this program. Several areas of unfragmented forest are located within the project area that provide desirable connectivity between other natural areas, such as wetlands and streams, and likely provide habitat corridors for wildlife. A large area of trees is located adjacent to the RSEA indicated above and likely contributes to the overall biological diversity and health of the large wetland complex and Rush Creek located in the northern part of the site. Another large forested area is located along the far west part of the project area. Forested areas are rare in the metro and will provide ecological, aesthetic, and quality of life values to the area. It is recommended that large forested areas are avoided and preserved.

## Wetlands

The NWI shows two large wetland areas and various smaller forested wetlands within the project area. Wetlands are regulated by the State under the Wetland Conservation Act (WCA) to achieve no net loss in the quantity, quality, and biological diversity of existing wetlands. Wetland





should be avoided and impacts to wetlands minimized to the greatest extent feasible during development. Impacts to wetlands generally require mitigation at a 2:1 replacement ratio in this area. Aerial photographs were reviewed between the dates of 1937 and 2017 to identify wet signatures which may indicate the presence of wetland hydrology in farmed areas. These areas may have historically been wetland and would have the potential for wetland bank development. Two locations that may have wetland bank potential are in the upper northwest corner and the far southern portion of the project area (as shown on the Potential Wetland Bank Map). The project is located within Elm Creek Watershed District, and under the District rules, a 25-foot-wide (or minimum 10-foot-wide) buffer is required around wetlands, watercourses, or lakes for new development. It is recommended that all structures have an additional 15-foot setback from the buffers. The DNR also requires a 16.5-foot buffer around Rush Creek and a 50-foot buffer around the South Fork of Rush Creek and the most stringent buffer requirement would apply.



## Rare or Sensitive Species

The DNR's NHIS database (license number 896) was queried for listings of rare or sensitive species. No listings occurred within the project areas. The loggerhead shrike (*Lanius ludovicianus*) is a state-listed endangered bird species that was last observed within one mile of the project area in 1996. This species depends on open grassy areas with scattered trees and shrubs such as prairies, pastures, and grassy roadsides. Their population declines are attributed to loss of habitat resulting from conversion of grasslands and pastures to development. They utilize barbed wire fence or natural thorns for impaling prey and often rely on barbed-wire fence or hawthorn trees for feeding. Conservation practices to help this species include preservation of existing grasslands, prevent trees and shrubs from dominating grasslands, and minimizing the use of pesticides. The SHPO performed a database search for historic or archaeological sites. No listed archaeological sites are located within the project area and two historical site locations are listed but may no longer be intact: the Radintz Farmstead and the abandoned township bridge near the central and eastern parts of the project area.

### Potential Wetland Bank Location

-  DNR Ecologically Significant Area
-  Wetlands
-  Potential Wetland Bank
-  Project Boundary



# Water Resources Analysis

## Drainage Patterns

Stormwater runoff generally drains in three directions in the NW-610 Area (Water Resources Inventory Map).

- The southwest corner of the site drains to a series of wetlands before flowing south and west into Corcoran
- The southeast corner of the site drains into a series of wetlands, which ultimately discharge to the south and east
- The majority of the site drains into the large wetland complex in the northeast corner of the site and into Rush Creek. Rush Creek flows to the south and west

Existing drainage patterns must be maintained once development of this area occurs.

## Elm Creek Watershed Rules

The NW-610 Area is located within the Elm Creek Watershed Management Commission (ECWMC) boundary. The ECWMC regulates the following:

- Activities that increase the rate and/or volume of stormwater runoff
- Activities that degrade runoff water quality and will cause water quality issues in receiving water bodies
- Activities that fill within floodplain or wetland areas

Future development within the NW-610 Area will need to meet the requirements of the ECWMC, along with any City requirements.

## FEMA Floodplain Restrictions

The Water Resources Inventory Map shows the designated floodplain and floodway boundaries. The City of Maple Grove has developed Floodplain Management Regulations for uses within these boundaries. These regulations generally prohibit uses or activities within the floodplain that include structures or fill or that obstruct flood flows or cause increased flood elevations.

## Rush Creek Concerns – Impairment and Erosion Control

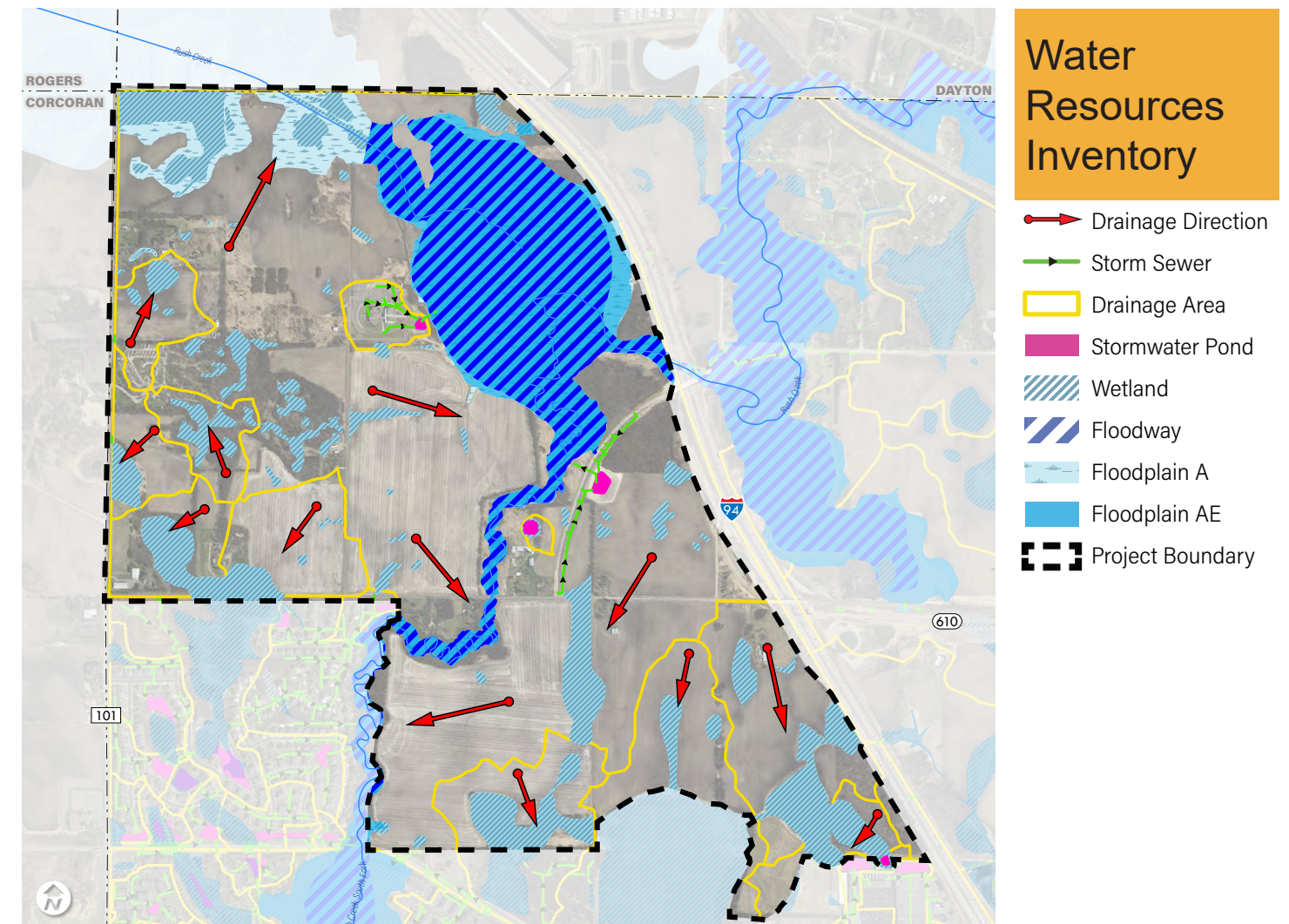
Rush Creek has been identified by the Minnesota Pollution Control Agency (MPCA) as being impaired for chloride and E. coli. A total maximum daily load (TMDL) report and protection strategy was approved in 2016. This report identifies opportunities to meet the TMDL target water quality goals.

Erosion in Rush Creek has also been identified as a concern in the City's Surface Water Management Plan. The development within the NW-610 Area will need to meet City and ECWMC volume and rate control requirements to help alleviate current erosion control concerns and to better protect water quality of the Creek.

## Groundwater

Wellhead protection means protecting the area surrounding public drinking water supply wells, and in turn, protecting drinking water supplies. Groundwater is the main source of drinking water for Maple Grove. Wellhead protection areas are identified and managed through the City's Wellhead Protection Plan. The site is not located within a wellhead protection area.

The hydraulic connection between surface water and groundwater systems makes our lakes, streams, and wetlands vulnerable to increasing groundwater withdrawal for growing urban demand. Some surface water-groundwater interaction occurs within waterbodies located within the NW-610 Area. The large wetland complex to the northeast is shown as recharging groundwater, whereas the flow through Rush Creek is supported by groundwater levels.





The City will implement the Northwest-610 Plan in a number of ways. Action items to make the concepts in this plan a reality are described in this section.

## Land Use & Development

The Land Use Concept presented in this plan will require some changes to existing City ordinances to enable the pattern of development shown in the Master Plan.

The Planned Unit Development (PUD) ordinance will be the primary implementation tool for development in the NW-610 area, as it is currently the only method for a developer to achieve mixed residential density. Currently the PUD allows all permitted uses in the R-1 through R-5 zoning districts; those districts range in density from 2.1 single-family homes per acre to high density multi-family buildings. One reason for the PUD district is to allow preservation of natural features and innovations within a single development with regard to type, siting, and design. These are also goals for the NW-610 Master Plan.

In addition to the current PUD, the following changes would help further these goals:

- Require the development of a “yield plan” that makes clear what the allowable density is per the comprehensive plan and this plan. The yield plan should show that the density proposed meets that guidance.
- Allow density bonuses, smaller lots, and decreased setbacks in exchange for extra natural features preservation.

To allow even more clustering of residential development and further the preservation of important natural resources, the City may establish a density transfer overlay district for the NW-610 area. Such an overlay would provide clarity on where increased or decreased density is desired with the establishment of “sending” and “receiving” zones. The overlay district should include:

- A map of sending and receiving zones, in addition to the boundaries of the overlay district as a whole
- Minimum lot sizes / maximum densities that will be considered in receiving zones
- Minimum area requirements for sending and receiving properties
- Submission requirements that include a yield analysis of both sites be submitted
- All compensation for density units shall be accomplished via private purchase
- Requirement that the change of yield be via deed restriction or other legal instrument approved by the City Attorney
- Requirement that the City determine that there is appropriate public infrastructure available to service the proposed receiving site

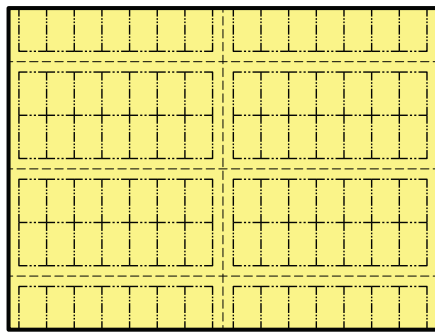
The City could also consider similar density/floor area ratio transfer allowances for non-residential or mixed use sites within the Master Plan area.



The graphic below illustrates how a density transfer overlay could work. Development density would first be determined by a “yield plan” based on standard development regulations in the underlying zoning district. Next, a density shift is proposed which keeps the same number of lots (and the same developed area), but allows flexibility and variety in lot size.

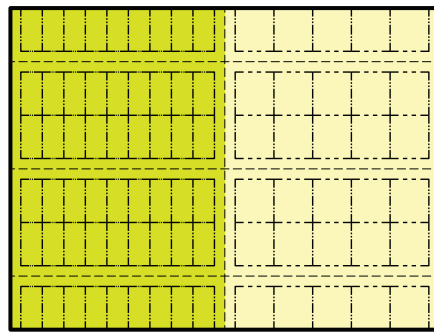
Another option in a density transfer overlay would be a cluster bonus. In this scenario a density bonus is granted in exchange for common open space. This option can be particularly helpful on sites with natural features and / or T-Zones that can serve as an amenity for the neighborhood. In this case, the number of units permitted to be developed would increase and the developed area would decrease. The amount of the density bonus would be proportional to the percentage of common open space provided. In the graphic example, there is a 31% common open space provided and a 31% density increase granted.

Yield Plan



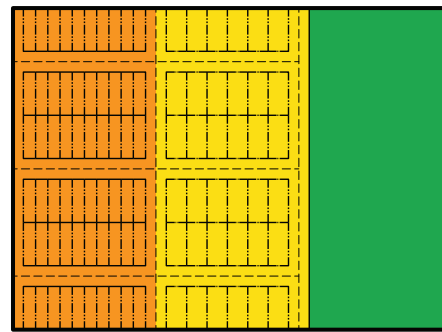
84 10,000 sq ft lots  
26 acres of development  
3,812 linear feet of street

Density Shift



30 14,000 sq ft lots  
54 ~7,500 sq ft lots  
26 acres of development  
3,812 linear feet of street

Cluster Bonus



84 ~7,000 sq ft lots  
60 townhome lots (33 ft wide)  
18 acres of development  
8 acres of common open space  
2,915 linear feet of street

- 14,000 sq ft lots
- 10,000 sq ft lots
- ~7,500 sq ft lots
- ~7,000 sq ft lots
- ~4,000 sq ft townhome lots
- Open Space

The City could also consider similar density/FAR transfer allowances for non-residential or mixed use sites within the Master Plan area.

## Transportation

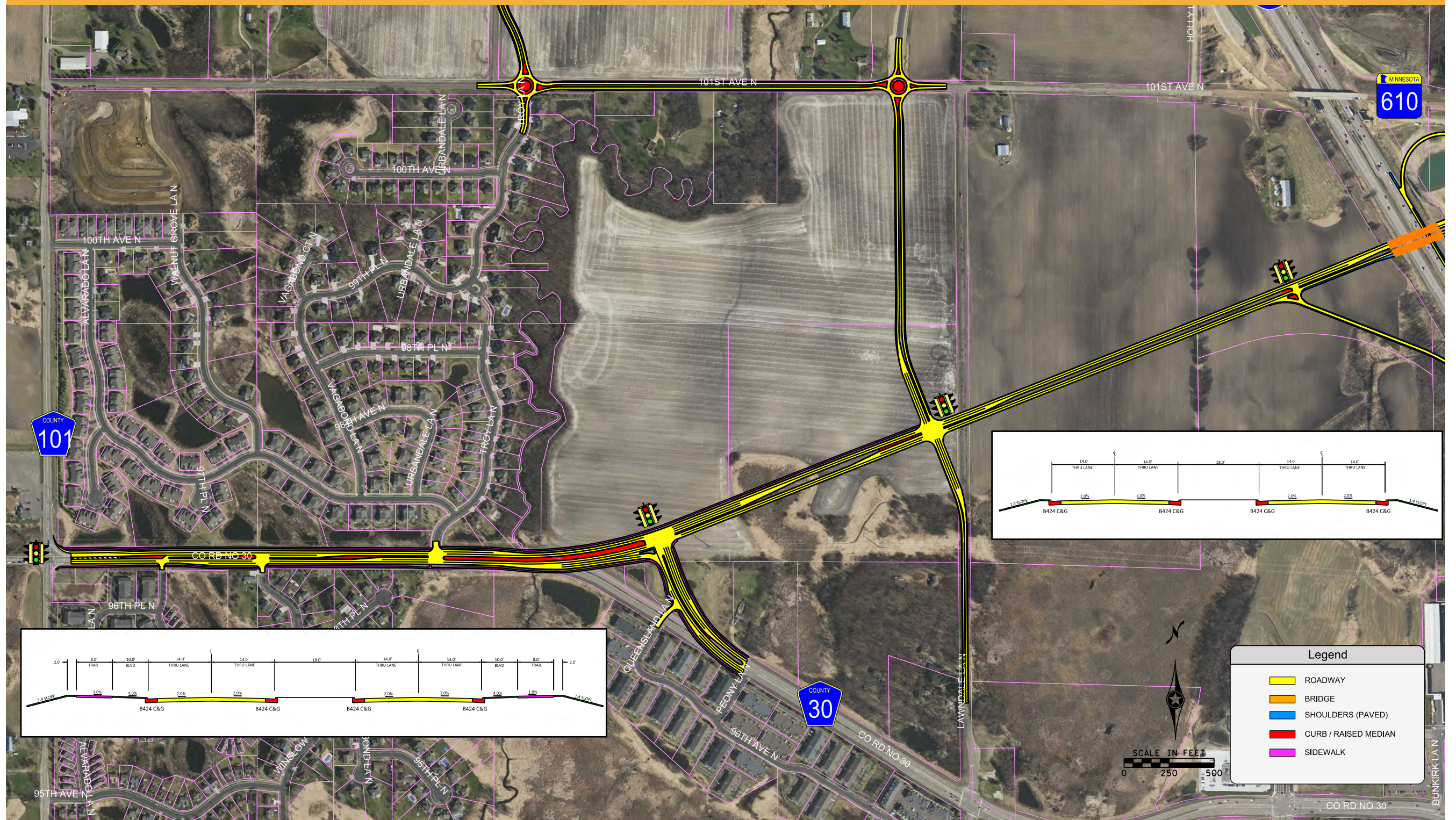
Preliminary concept layouts showing the anticipated roadway cross sections and traffic control for the arterial and major collector roadways in the project area are provided on the following pages. Preliminary concept layouts are provided for:

- 97th Avenue
- 101st Avenue
- Lawndale Lane
- Troy Lane





# Proposed Concept Plan - 97th Avenue



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# Proposed Concept Plan - 101st Avenue





# Proposed Concept Plan - Lawndale Lane



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# Proposed Concept Plan - Troy Lane





# Proposed Concept Plan - Troy Lane Alternative



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## Parks & Trails

As land development commences and the population grows in the NW-610 area, the identified school site will need to be developed. With that development, the northern park site will also be constructed to provide amenities such as ballfields, playgrounds and nature areas for use by the students and residents.

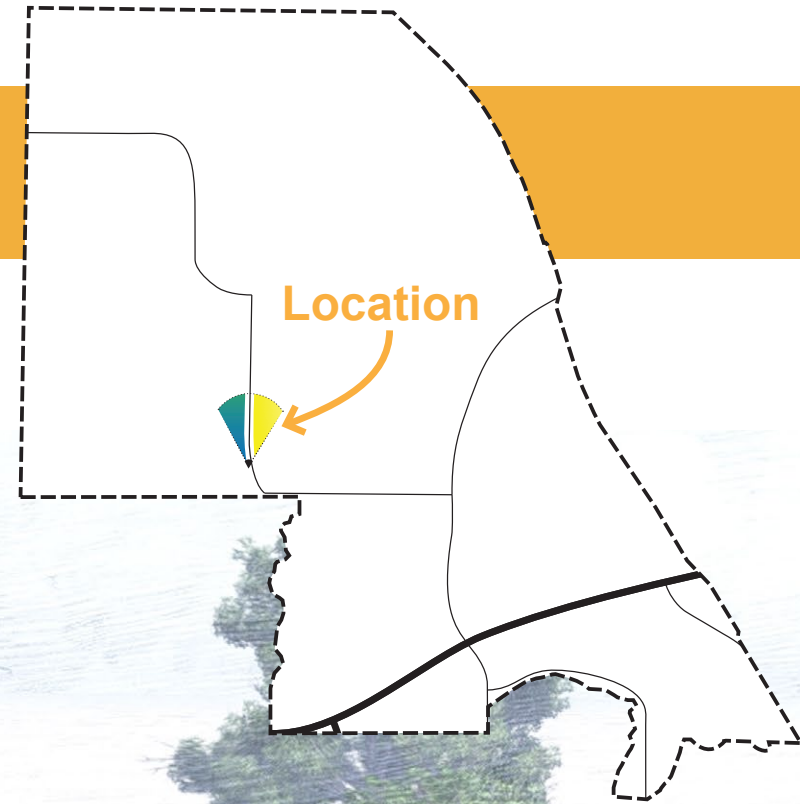
The southern neighborhood park will be developed in conjunction with land development in the area, which will provide both an increased demand for the new park, as well as the facilities to access it (streets, trails, etc.)

The regional trail will be constructed as property within the identified corridor becomes available. Through development, land areas will be sold or dedicated for the trail system, and once a continuous corridor is identified, the trail can be constructed. The regional trail corridor goes well beyond this study area, so construction of the regional trail may depend on the availability of the corridor in other municipalities as well.

In general, City pathways will be built in conjunction with local streets, and will be constructed as development spreads throughout the study area. During implementation, the trail network may be fragmented, as areas develop in different phases. In full build-out, the trail system will be complete, allowing for thorough non-motorized access throughout the NW-610 study area.



# Concept Pedestrian Crossing

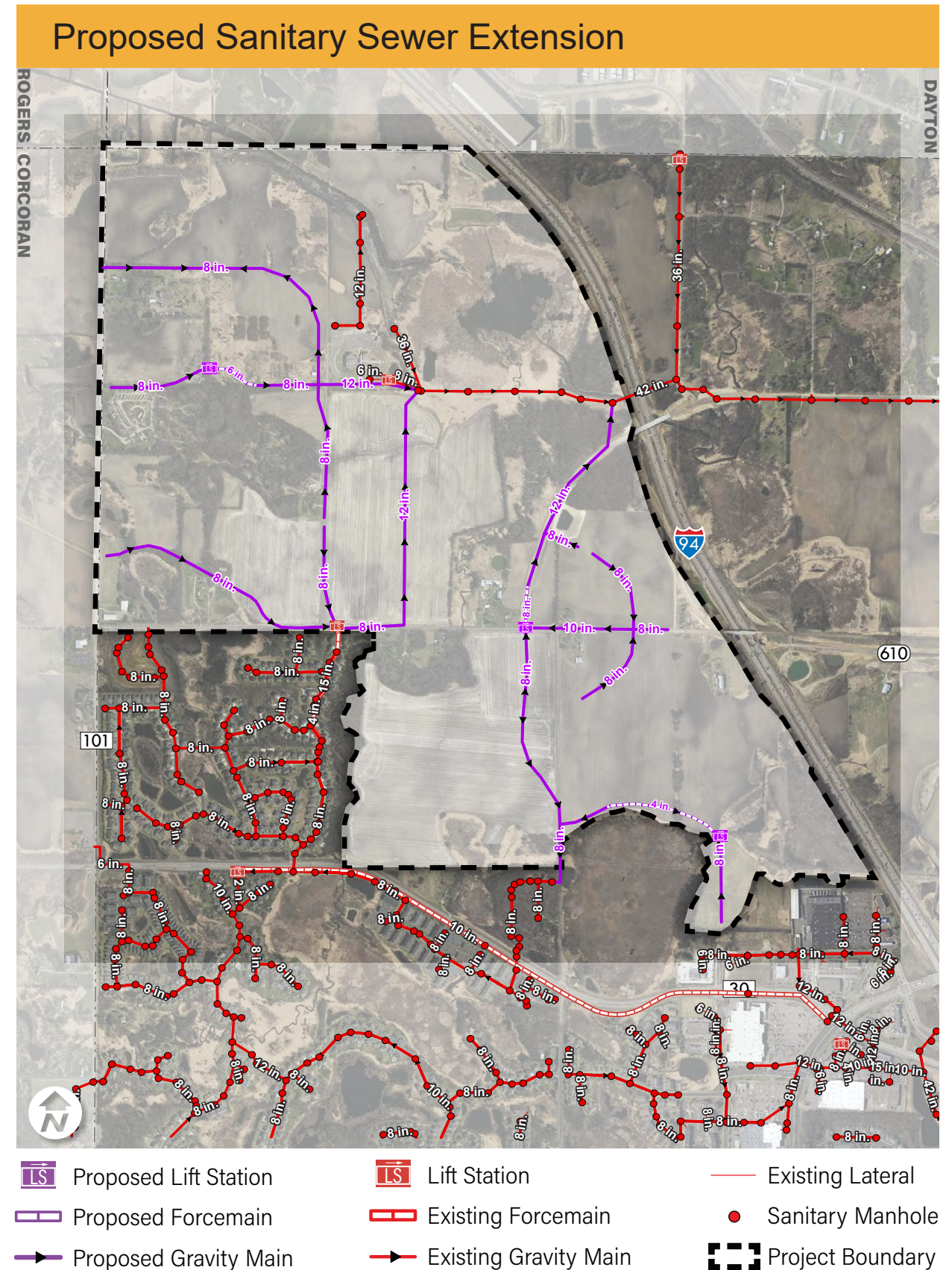




# Utilities

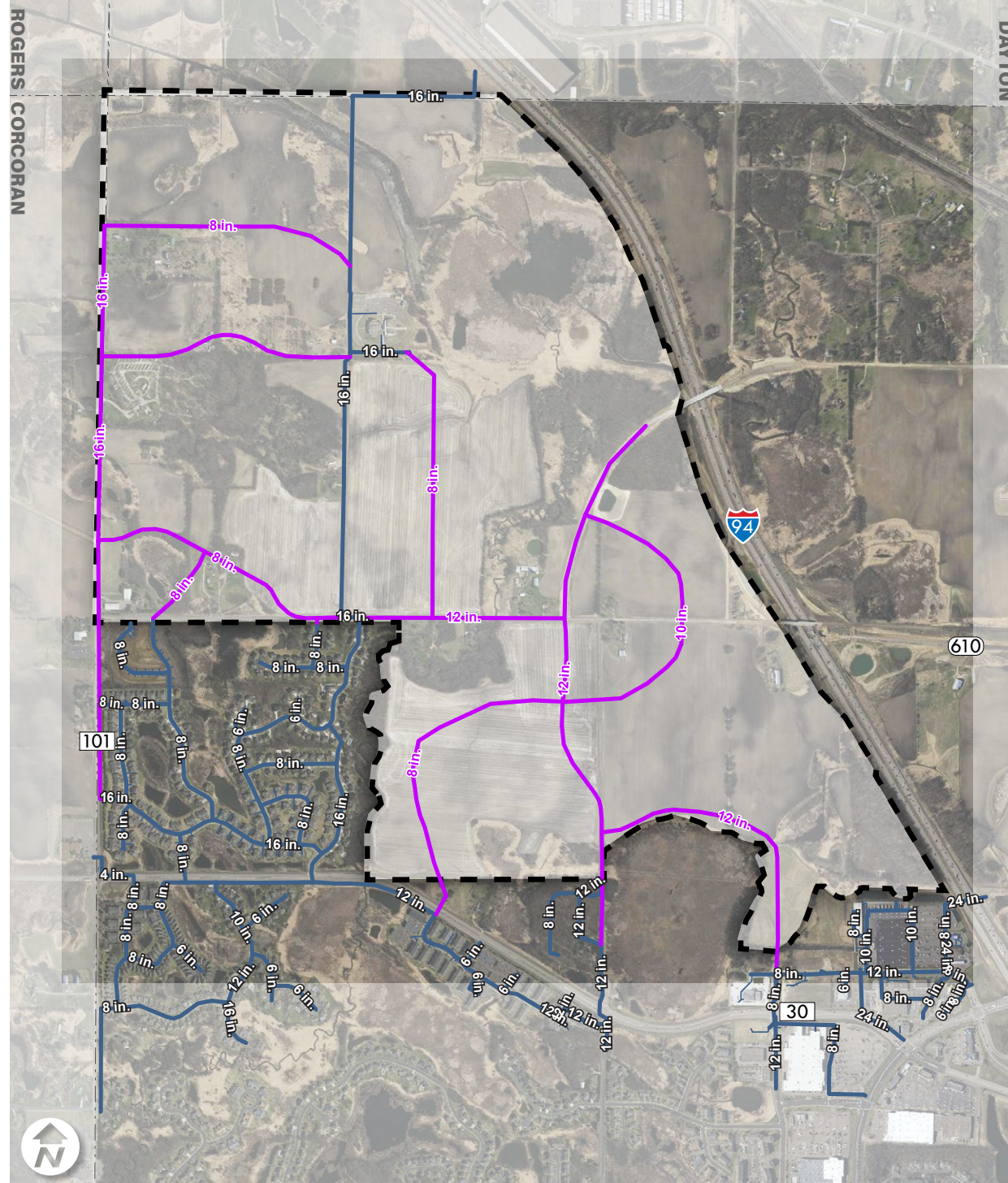
Recommended water and utility improvements include:

- The watermain and sanitary sewer extensions were designed based on the transportation plan and how to best serve the desired plan use for the areas. This layout is subject to change depending on developers needs and planned use for the area.
- The watermain was designed to provide watermain loops throughout the area of consistent sizing to ensure adequate fire flow and consistent pressures.
- The sanitary sewer was designed to accommodate for the desired plan use for the areas.
- The lift stations were placed in areas based on the contours. Additional lift stations may be needed within the developments based on the contours and layouts of the developments.
- The assumption was to provide a trunk sewer system throughout the area and that the design for each individual neighborhood would be expanded upon later. The cost of the proposed utilities is based on the pricing for 2019 construction and is based on the cost of just the utilities without any restoration to the area.





# Proposed Watermain Extension



- Proposed Watermain
- Existing Watermain
- Existing Water Laterals
- Project Boundary

## OPINION OF PROBABLE COST

OPINION OF PROBABLE COST						
WSB Project: Northwest and 610 Areas - Master Plan				Design By: KLK		
Project Location: Maple Grove, MN				Checked By:		
City Project No.:				Date: 4/24/2019		
WSB Project No: R-012780-000						
Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
<b>A. Watermain</b>						
1	2504.602	INSTALL HYDRANT & VALVE	EACH	17	\$ 4,500.00	\$ 76,500.00
2	2504.602	INSTALL GATE VALVE	EACH	35	\$ 2,200.00	\$ 77,000.00
3	2504.603	8" PVC WATERMAIN	L F	12682	\$ 48.00	\$ 608,736.00
4	2504.603	10" PVC WATERMAIN	L F	3341	\$ 52.00	\$ 173,732.00
5	2504.603	12" PVC WATERMAIN	L F	10805	\$ 54.00	\$ 583,470.00
6	2504.603	16" PVC WATERMAIN	L F	7102	\$ 60.00	\$ 426,120.00
7	2504.608	DUCTILE IRON FITTINGS	LB	33930	\$ 10.00	\$ 339,300.00
<b>CONSTRUCTION TOTAL</b>						<b>\$ 2,284,858.00</b>
<b>CONTINGENCY TOTAL (10%)</b>						<b>\$ 228,485.80</b>
<b>SUBTOTAL</b>						<b>\$ 2,513,343.80</b>
<b>INDIRECT COST TOTAL (28%)</b>						<b>\$ 703,736.26</b>
<b>TOTAL</b>						<b>\$ 3,217,080.06</b>
<b>B. Sanitary Sewer</b>						
1	2503.602	LIFT STATION	EACH	3	\$ 75,000.00	\$ 225,000.00
2	2503.603	8" PVC PIPE SEWER SDR 26	L F	19695	\$ 68.00	\$ 1,339,260.00
3	2503.603	10" PVC PIPE SEWER SDR 26	L F	1190	\$ 72.00	\$ 85,680.00
4	2503.603	12" PVC PIPE SEWER SDR 26	L F	5963	\$ 78.00	\$ 465,114.00
5	2503.603	4" PVC FORCE MAIN	L F	460	\$ 55.00	\$ 25,300.00
6	2503.603	6" PVC FORCE MAIN	L F	860	\$ 60.00	\$ 51,600.00
7	2503.603	8" PVC FORCE MAIN	L F	1375	\$ 70.00	\$ 96,250.00
8	2506.602	INSTALL MANHOLE	EACH	135	\$ 6,800.00	\$ 918,000.00
<b>CONSTRUCTION TOTAL</b>						<b>\$ 3,206,204.00</b>
<b>CONTINGENCY TOTAL (10%)</b>						<b>\$ 320,620.40</b>
<b>SUBTOTAL</b>						<b>\$ 3,526,824.40</b>
<b>INDIRECT COST TOTAL (28%)</b>						<b>\$ 987,510.83</b>
<b>TOTAL</b>						<b>\$ 4,514,335.23</b>
<b>GRAND TOTAL</b>						<b>\$ 7,731,415.30</b>

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# Appendix



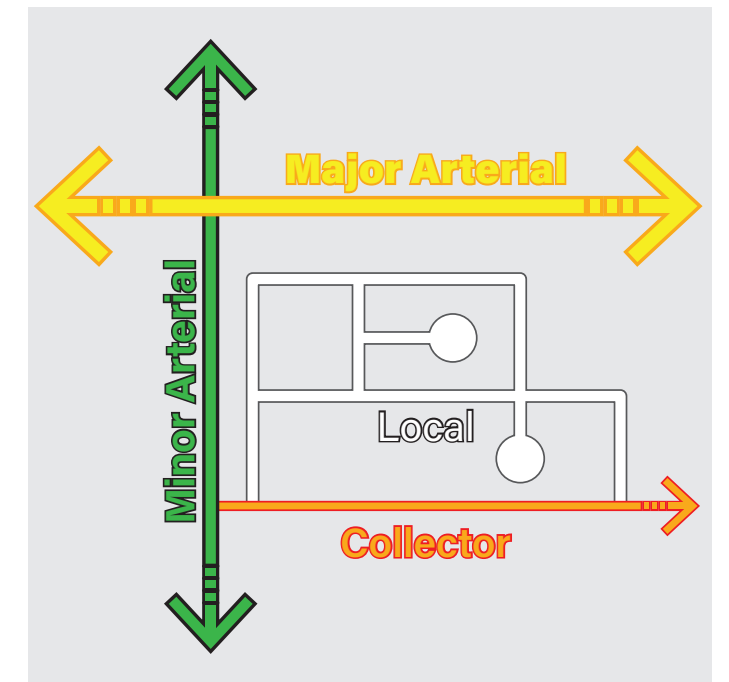
## Roadway Functional Classification

The Functional Classification System organizes a roadway and street network that distributes traffic from local streets to collector roadways, then to minor arterials and ultimately the principal arterial system. Roads are categorized based on the degree to which they provide access to adjacent land and mobility for through traffic. Functional classification indicates the relative hierarchy of roadways in the transportation network.

**Principal Arterials.** Principal Arterials are roadways that provide the greatest level of mobility and access control. Principal arterials are typically interstate highways or other state or federal freeways or expressways. These facilities are intended to serve trips greater than eight miles and express transit trips. These facilities connect regional business and commercial concentrations, transportation terminals, and large institutions within the metropolitan area. Principal arterials also connect to other cities, regions, and states outside of the metropolitan area. I-94 and TH 610 are the existing Principal Arterials in the NW-610 study area.

**Minor Arterials.** Minor Arterials maintain a focus on mobility but provide more land access than principal arterials. Minor Arterials are intended to serve trips of four to eight miles in length. Minor arterials connect cities and towns within the region and link to regional business and commercial concentrations. Access points along minor arterials are generally at grade and typically controlled with signals or stop signs. CSAH 30 and CSAH 101 (Brockton Ln) are the existing Minor Arterials in the NW-610 study area.

**Collector Roadways.** Major and Minor Collector roadways provide linkages to larger areas and community



amenities. They generally do not link communities to one another. Collector roadways generally favor access to the system over mobility but try to balance the two competing needs. These roadways are generally lower speed than the principal or minor arterial routes. Collectors link minor arterials, other collectors, and local streets.

**Major collectors** typically serve higher density residential areas and concentrations of commercial and industrial land uses. These facilities tend to serve longer trips than minor collectors. 101st Ave and 105th Ave are existing Major Collectors in the NW-610 study area. Minor collectors serve fewer trips than major collectors and typically link lower density residential and commercial land uses. Troy Ln north and south of 101st Ave is the existing Minor Collector in the NW-610 study area.

**Local Roadways.** Local streets provide access to adjacent properties and neighborhoods. Local streets are generally low speed and designed to discourage through traffic.



Table 1: Hennepin County Access Spacing Guidelines

Access Type	Movements Allowed	Rural Arterial			Urban & Urbanizing Arterial		
		Greater than 7,500 ADT	Less than 7,500 ADT	Collector	Undivided	Divided	Collector
Single family residential driveway or farm field entrance	Full movements allowed	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)	Not allowed	Not allowed	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed	1/16 mile (330 feet)
Low Volume Driveway (less than or equal to 500 trips per day)	Full movements allowed	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)	Not allowed	Not allowed	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed	Not allowed	1/8 mile (660 feet)	1/16 mile (330 feet)
High Volume Driveway (greater than 500 trips per day)	Full movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed	Not allowed	1/8 mile (660 feet)	Not allowed
Low Volume Public Street (less than or equal to 2,500 ADT)	Full movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed	Not allowed	1/8 mile (660 feet)	Not allowed
High Volume Public Street (greater than 2,500 ADT)	Full movements allowed	1/2 mile (2,640 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)
	Limited access	Not allowed	Not allowed	Not allowed	Not allowed	1/8 mile (660 feet)	Not allowed

## Access Spacing

Access spacing to the area roadways is and will be controlled by the agency who has jurisdiction of the roadway (i.e. Hennepin County or City of Maple Grove). The City utilizes Hennepin County’s access spacing guidelines to guide access decisions on the City’s arterial and collector roadway network.

Access to Minor Arterials - The guidelines generally call for 1/4 mile spacing of all full movement access points and 1/8 mile spacing of all limited (right-in/right-out) access points, such as cross streets and driveways.

Access to Collector Roadways - The guidelines generally call for 1/8 mile spacing of all full movement access points and 1/16 mile spacing of all limited (right-in/right-out) access points, such as cross streets and driveways.



