

CITY OF FITCHBURG NEIGHBORHOOD PLANS

June 17th, 2025

Plan Commission Public Hearing #1

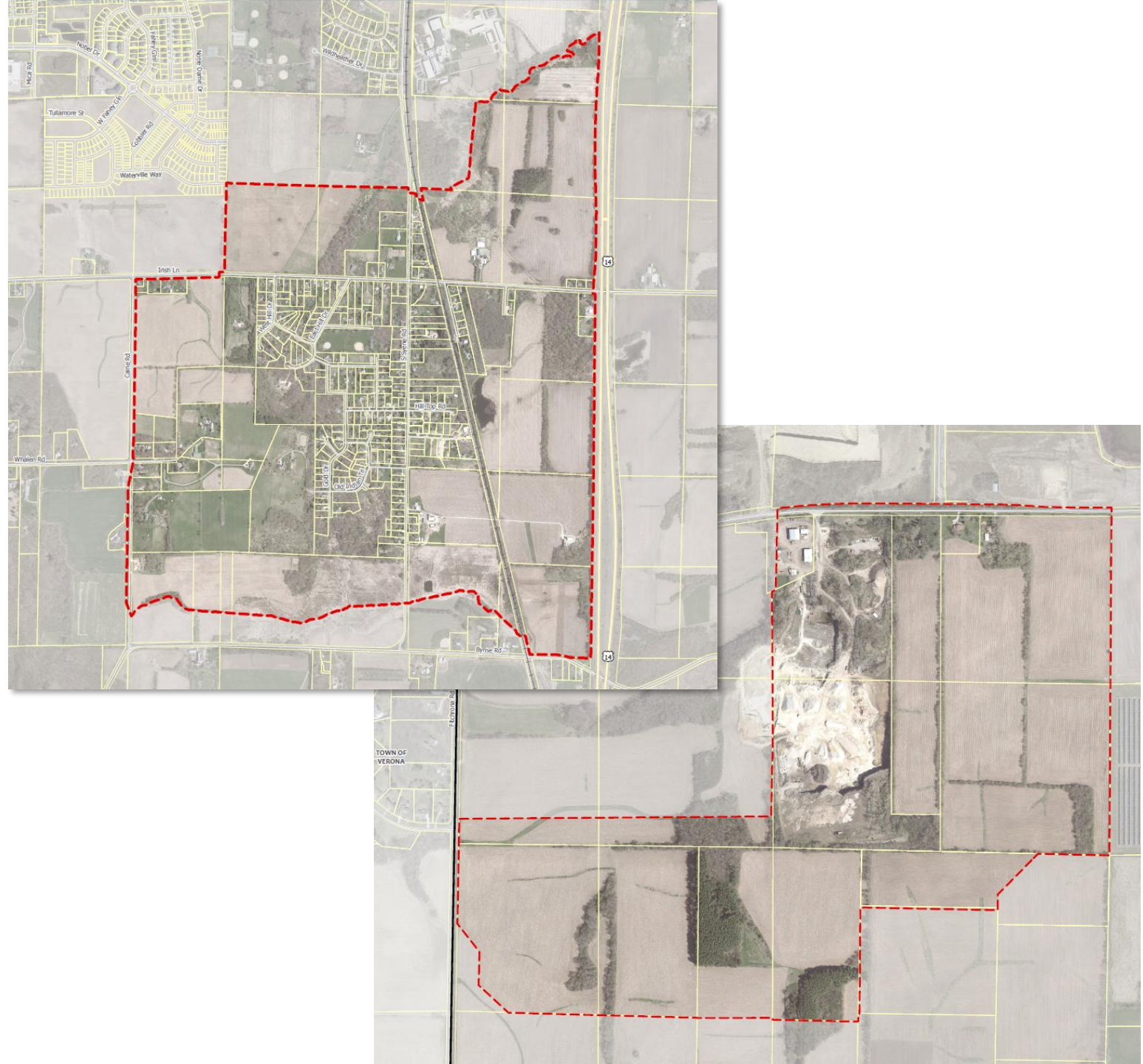


Presentation Agenda

- Process
- Public Engagement Summary
- Preferred Concept and Land Use Development
- Vision, Goals, Strategies, and Actions
- Sanitary + Water Design
- Traffic Analysis
- Petition Response (Greenfield)

- **Public Hearing**
- **Commission Discussion**

** Non-substantive (e.g., grammatical or formatting) changes can be provided to Brad Sippel after the meeting*

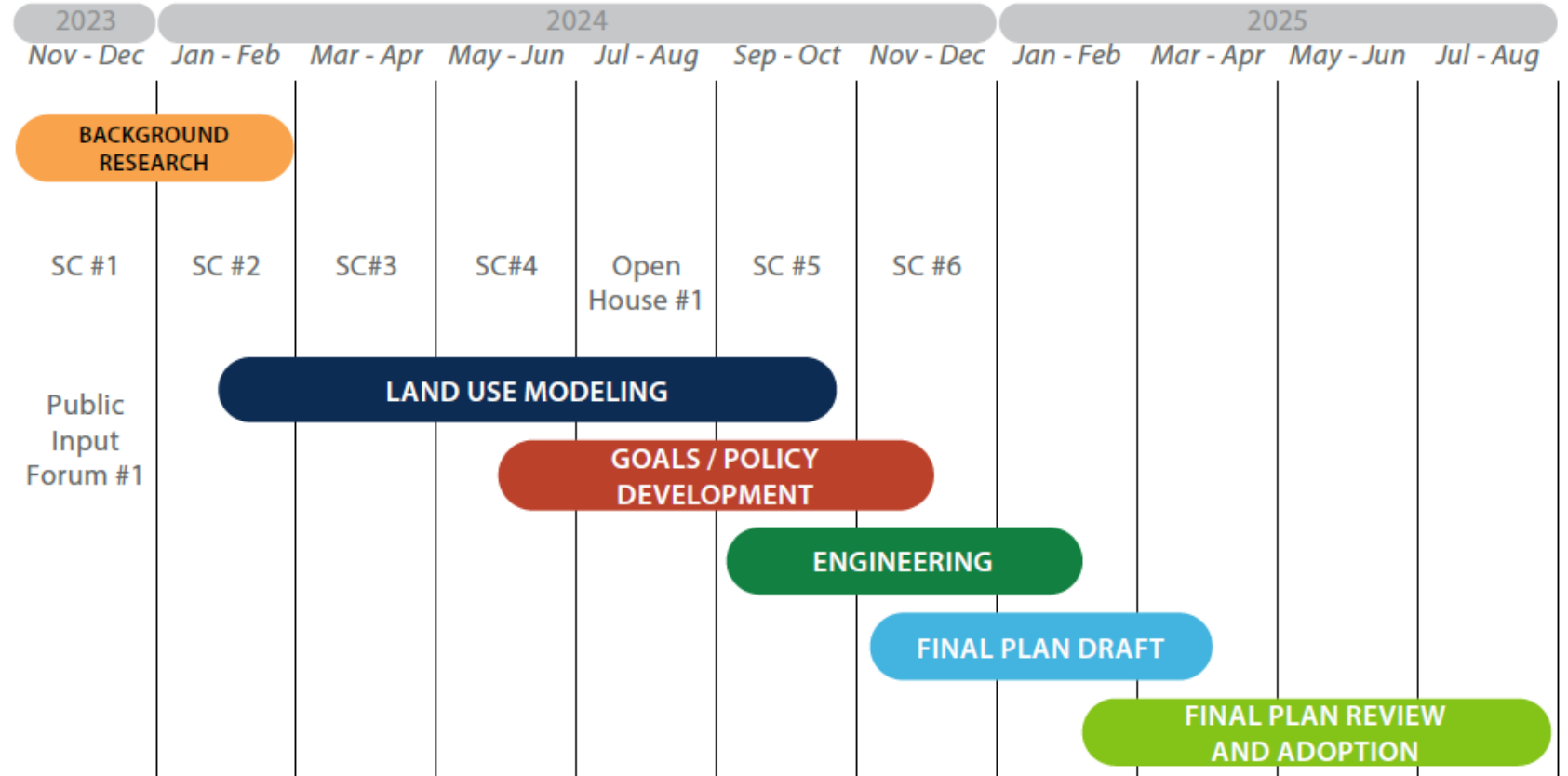


Plan Development Elements

- Background research and open house
- Vision, goals, strategies, actions
- **Land use concept development**
- **Bubble diagrams**
- **Land use concepts**
- **Preferred concept**
- Preliminary engineering and traffic analysis
- Plan drafting

ENGAGEMENT ACTIVITIES

- Online Opportunity Mapping
- Two Neighborhood Meetings *(Greenfield only)*
- Online Survey
- Public Open Houses/Input Forums
- Developer Focus Group
- Stakeholder Interviews
- Steering Committee “Working Meetings”
- Plan Commission Meetings
- Public Hearing and Adoption Meeting
- Questions and responses were also provided through City email



Remaining Process

Adoption

TONIGHT

- **Presentation on Both Plans**
- **Public Hearing**
- **Plan Commission Discussion**

** Non-substantive (e.g., grammatical or formatting) changes can be provided to Brad Sippel after the meeting*

- July 10 – Comment deadline on the current draft plans
- Process and consider comments
- September 16 – Plan Commission Public Hearing & Adoption
- **September 23 - Council Public Hearing and Adoption**

PLAN DOCUMENT LAYOUT

- **CH 1** – Background / Engagement Summary*
- **CH 2-** Policies to guide decisions on development proposals
- **CH 3-** Documenting Concept Development, including establishing a preferred concept and desired design themes
- **CH 4-** Infrastructure evaluation and recommendations

* City of Fitchburg website will include full meeting/engagement materials

Chapter 1: Introduction & Process 1

Chapter 1 discusses the plan's purpose and objectives, and summarizes the planning process, and public feedback.

Chapter 2: Vision, Goals, & Guidelines 15

Chapter 2 establishes the vision, strategies, design guidelines to guide the future growth of the Greenfield Neighborhood study area.

Chapter 3: Land Use 36

Chapter 3 looks at a variety of factors that impact the current and future development in the Greenfield Neighborhood, developing a series of land use diagrams to facilitate discussion about land use, design preferences, and general road pattern. This chapter provides the recommended land use concept for the neighborhood.

Chapter 4: Engineering 59

Chapter 4 reviews capacity of existing municipal infrastructure within the planning area, and identifies analysis of how to serve the preferred concept and proposed Future Land Use.

Appendix A: Implementation Action Plan

Appendix B: Relevant Plans & Development Review

Appendix C: Engineering Analysis

Appendix D: Maps

GREENFIELD

Engagement Feedback Impact

What we learned from this process:

- **Keep Greenfield Green!**
- Preference for low-density residential and farming areas.
- Preference for maintaining the current character of the neighborhood and history of Fitchburg as farming community.
- Concerns with current traffic and stormwater management issues. More development will increase these issues.

What we changed based on the feedback:

- Reduced residential density
- Added additional “open space” buffering between existing and new development areas
- Preservation of significant open space
- Includes “Agrihood” land use category
- New collector roads to limit non-residential traffic on Irish and Syene
- Reducing commercial and business areas and limiting them east of the tracks
- Limited interventions within the existing neighborhood

VISION, GOALS, STRATEGIES & DESIGN GUIDELINES

Vision Statement

Greenfield Neighborhood will balance residential and economic growth while preserving the local character and quality of life of its current and future residents.

Goals

Goals and strategies will guide the development of the Greenfield Neighborhood.



Housing



Mobility



Economy



Quality of Life



Sustainability

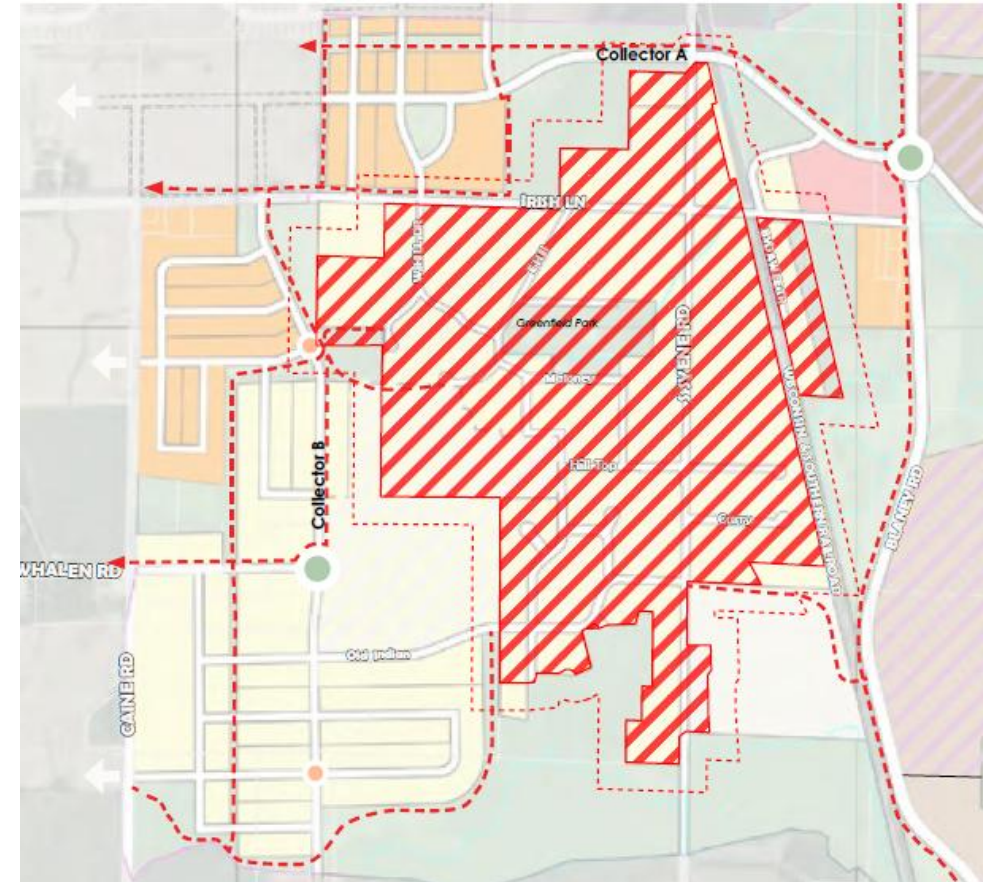


1. Housing Goal

Additional housing options will be provided in the neighborhood, but will be strategically placed, designed and buffered to be compatible with the existing Greenfield residents.

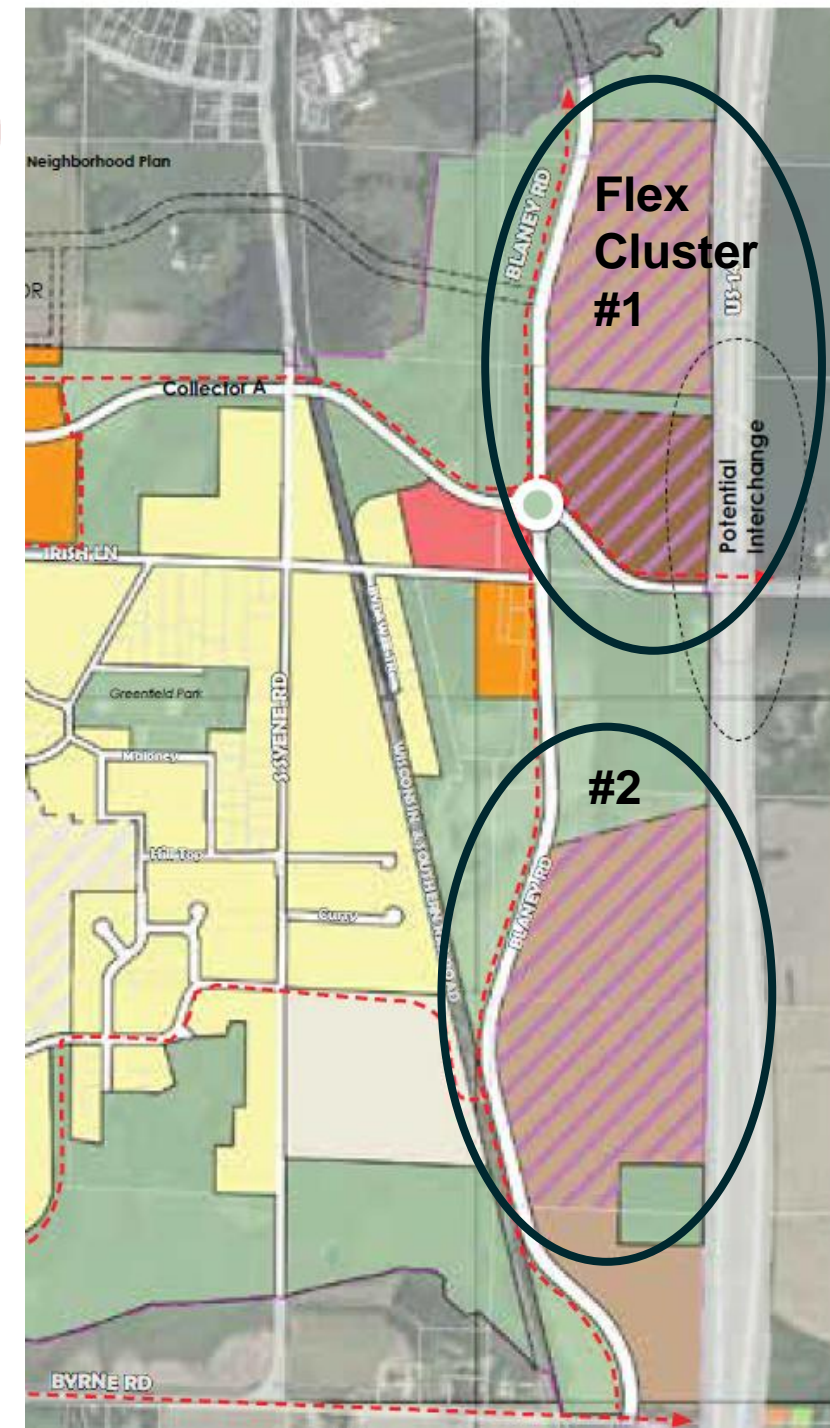
Strategies

1. Encourage a variety of housing types, forms, price points and tenures in the neighborhood, locating the least dense housing next to existing residential lots.
2. Encourage well-designed developments that mitigate any potential conflicts in providing a mix of housing types.
3. **New development adjacent to the existing established Greenfield neighborhood should include mitigation techniques to maintain the general local character of this neighborhood.**
4. Encourage Traditional Neighborhood Design (TND) developments that allow for 'missing middle' and small-lot housing.



2. Economy Goal

Employment and goods/services will be strategically located and connected to reduce the dependency on longer vehicle travel and to provide local and convenient options near the neighborhood.



Strategies

1. Commercial uses and building forms will be compatible with general neighborhood context.
2. **Promote flexible land uses east of the tracks that allow for either gentle increases in residential density or business park to respond to market needs and landowner interests.** 2 Clusters of flex area (BP/Residential) along Blaney Rd – Whichever use is approved for more than half of a cluster shall result in requiring the remaining of the cluster to match the initial requested use for that specific cluster area.



3A. Mobility Goal

Support future regional transportation connections that limit impacts on Greenfield's local streets as the region continues to grow.

Strategies

1. Develop a contiguous bike network through the neighborhood, connecting to the rest of the City and to the greater Dane County trail system
2. **Encourage alternative north-south and east-west collector streets that shift traffic growth away from S. Syene and Irish Lane.**
3. Continue considerations of a USH 14 interchange between the Lacy Road and MM interchange to plan for regional transportation needs.



3B. Mobility Goal

Implement safe, convenient and attractive streets for everyone regardless of age, ability or mode of transportation (pedestrian, bike, vehicle, transit).

Strategies

1. Provide sidewalks and bike facilities (if appropriate) along all streets to promote walkability and connectivity.
2. Promote narrower streets to increase pedestrian safety and to develop land more sustainably.
3. **Encourage proposed streets to connect to existing streets and intersections, wherever practical.**
4. Utilize traffic calming measures (e.g., bump-outs, traffic circles, speed tables, rectangular rapid flash beacons) where appropriate to create a better street environment for pedestrians and cyclists.
5. Design streets, multi-use paths, and trails that include adequate lighting to ensure safety of users.



4. Quality of Life Goal

Create and maintain open spaces accessible to all residents for recreation and neighborhood character preservation.

Strategies

1. Plan and design public infrastructure that is sustainable, attractive and low maintenance.
2. Design new neighborhood residential areas around community gathering places.
3. Plan for parks that vary in size and facilities to fulfill ranging neighborhood recreation interests consistent with the Fitchburg Parks and Open Space Plan.
4. **Make intentional multi-modal connections between local and regional park/open space areas, especially developing a path through a proposed Moraine Edge Corridor.**





5A. Sustainability Goal

Create an economically and environmentally sustainable development pattern, protecting existing natural features.

Strategies

1. Provide adequate vegetative buffers between development and natural features.
2. Integrate environmental corridors and open space into a comprehensive stormwater management system that provides key ecosystem services on a regional scale where appropriate.
3. **Integrate environmental features into the neighborhood as common open spaces for active or passive recreation, public gathering spots, or flood protection and stormwater management.**
4. Consider opportunities for alternative energy use within neighborhood design.



5B. Sustainability Goal

Consider the historical significance of the neighborhood, especially opportunities to preserve farm fields and implementation of low-impact development techniques for infrastructure design.

Strategies

- 1. Strategically preserve natural lands and existing farmland that can complement neighboring housing developments.**
2. Ensure, through the development review process, that site development and infrastructure improvements occur in area with least possible impact to natural environments.
3. Encourage landscaping practices on public and private property that help to filter and infiltrate rainwater.
4. Encourage energy-efficient buildings consistent with the city's existing energy targets.

Placemaking – Design Guidelines

Application: All new developments are encouraged to meet these guidelines.

Topics:

1. Eco/Sustainable Design

- Building orientation, green roof technologies, “dark sky” friendly lighting, rainwater collection systems, porous paving , drought tolerant plantings

2. Site Planning

- minimize disturbance of existing terrain, preserve native trees, match adjacent building setbacks, primary entrance fronting public street

3. Signage & Lighting

- appropriately-scaled signage, monument-style freestanding signs, full-cut lights

Placemaking – Design Guidelines

Application: All new developments are encouraged to meet these guidelines.

Topics:

4. Architecture & Design

- vertical proportions and massing, street-facing facade materials, clearly-defined entrances, screened service areas

5. Parking, Screening & Landscaping

- shared parking, parking side/rear/under, walkways from entries to public street, landscaped parking edges/islands, curbing, complementary fencing

6. Agrihood

- preserve natural resources, maintain 60%-70% as farmland open space, include shared use trails, encourage engagement with food-production spaces

Placemaking – Design Guidelines

Application: All new developments are encouraged to meet these guidelines.

Topics:

7. Compatibility Guidelines *(3-story or larger or PD zoning abutting or across the street/alley from low-intensity (LI) residential uses (SF, Duplex, Townhomes (<7U), MF (<9U))*

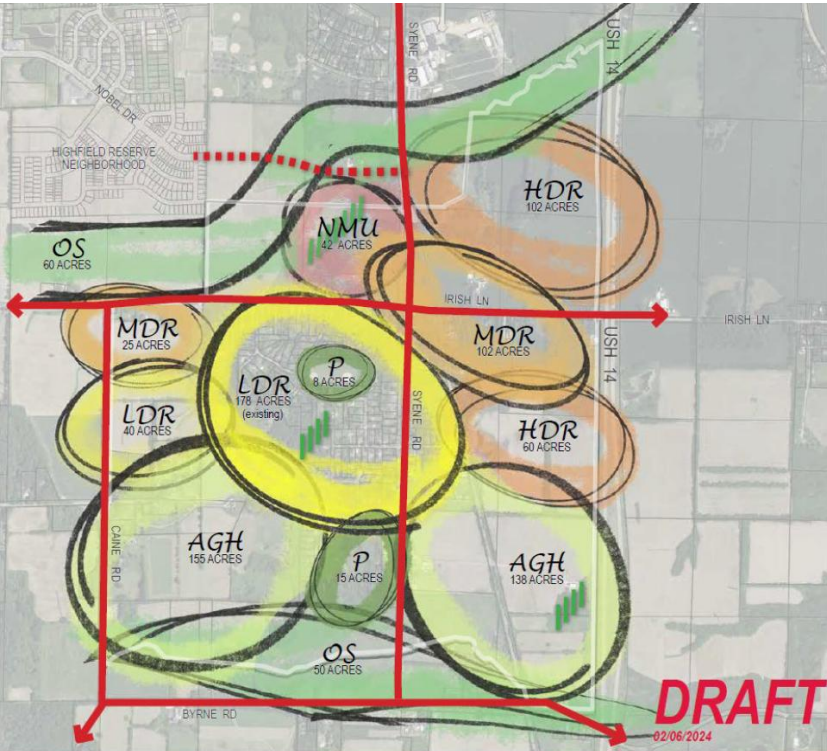
- Developments with multiple buildings, locate buildings with least intensive character nearest/abutting LI developments
- Buildings $\leq 35'$ w/in 60' of SF/Duplex lots and 30' from other LI uses
- Varying building plane setback at intervals equal to avg. widths of LI lots
- Providing gable, dormer or other change in the roofline at interval equal to avg. width of LI Lots
- 6:12-12:12 Roof pitch
- Individual unit entrances on street-level of MF buildings

PREFERRED CONCEPT & FUTURE LAND USE

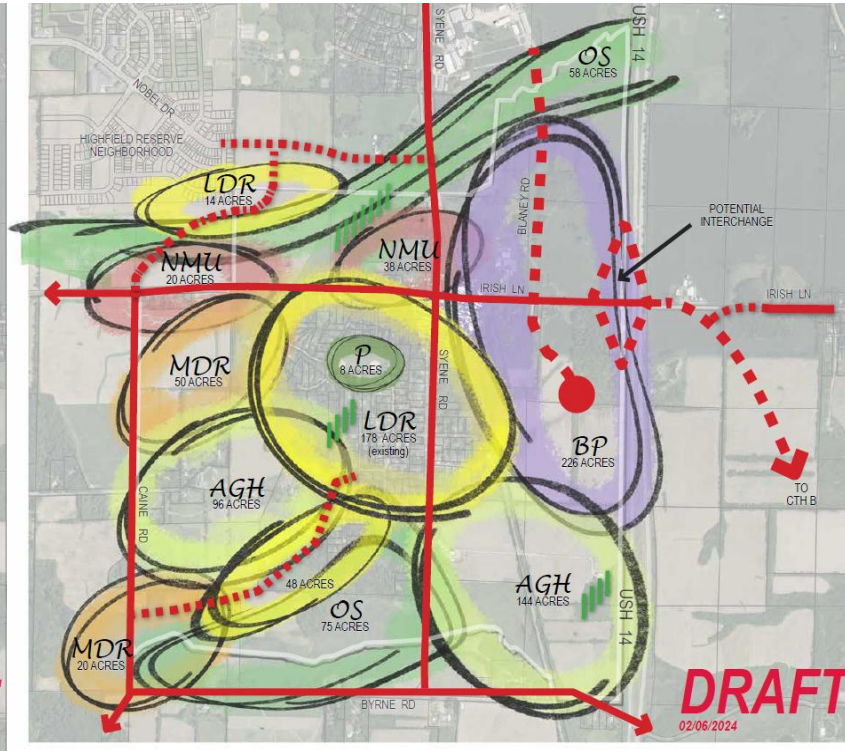
Development Process & Highlights

BUBBLE DIAGRAMS (SC Mtg - March 2024)

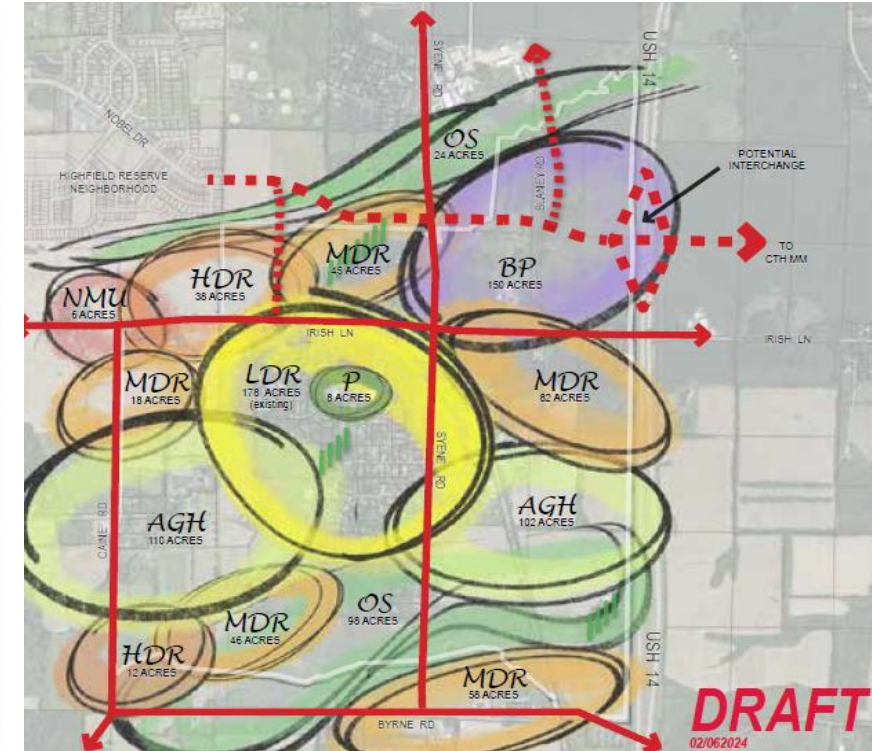
Option "A" (some interest)



Option "B" (preferred)

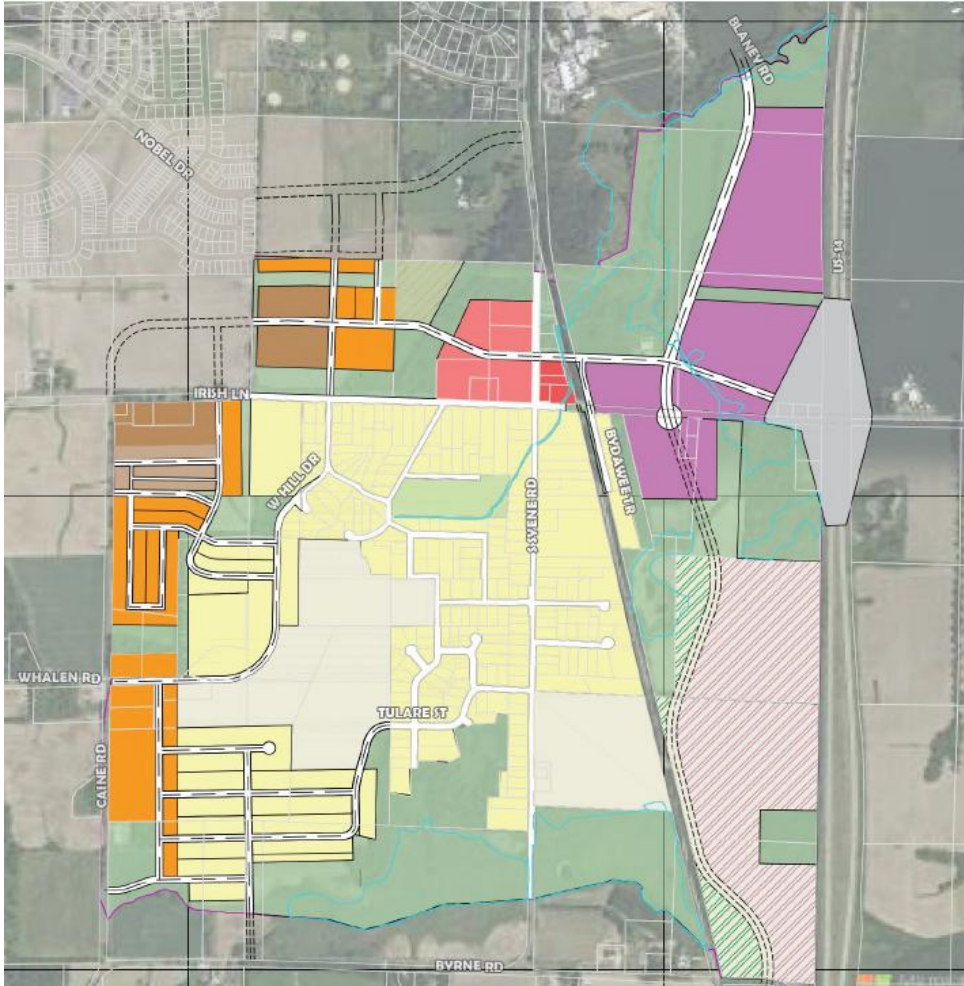


Option "C" (low interest)

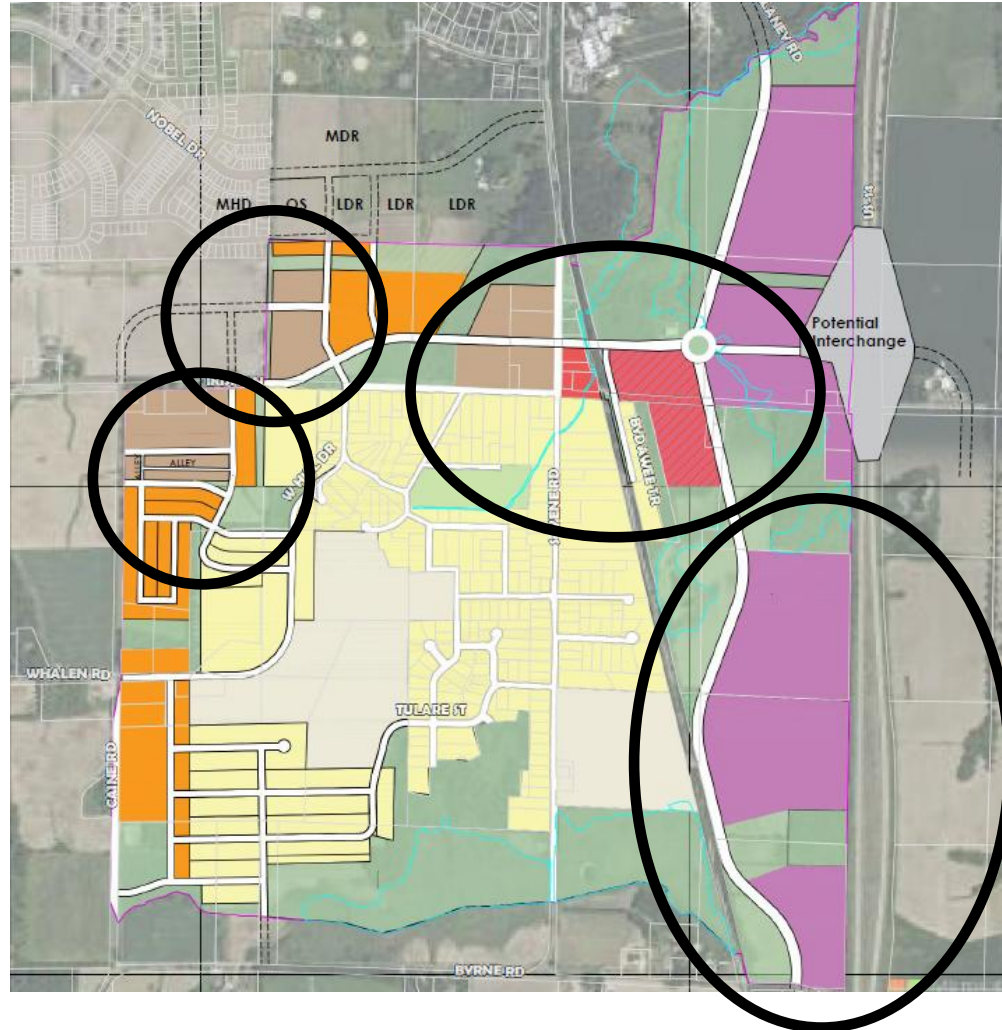


REFINED LAND USE (Scenario B)

Neighborhood Mtg – April 2024



SC Mtg June 2024 & Open House Aug 2024

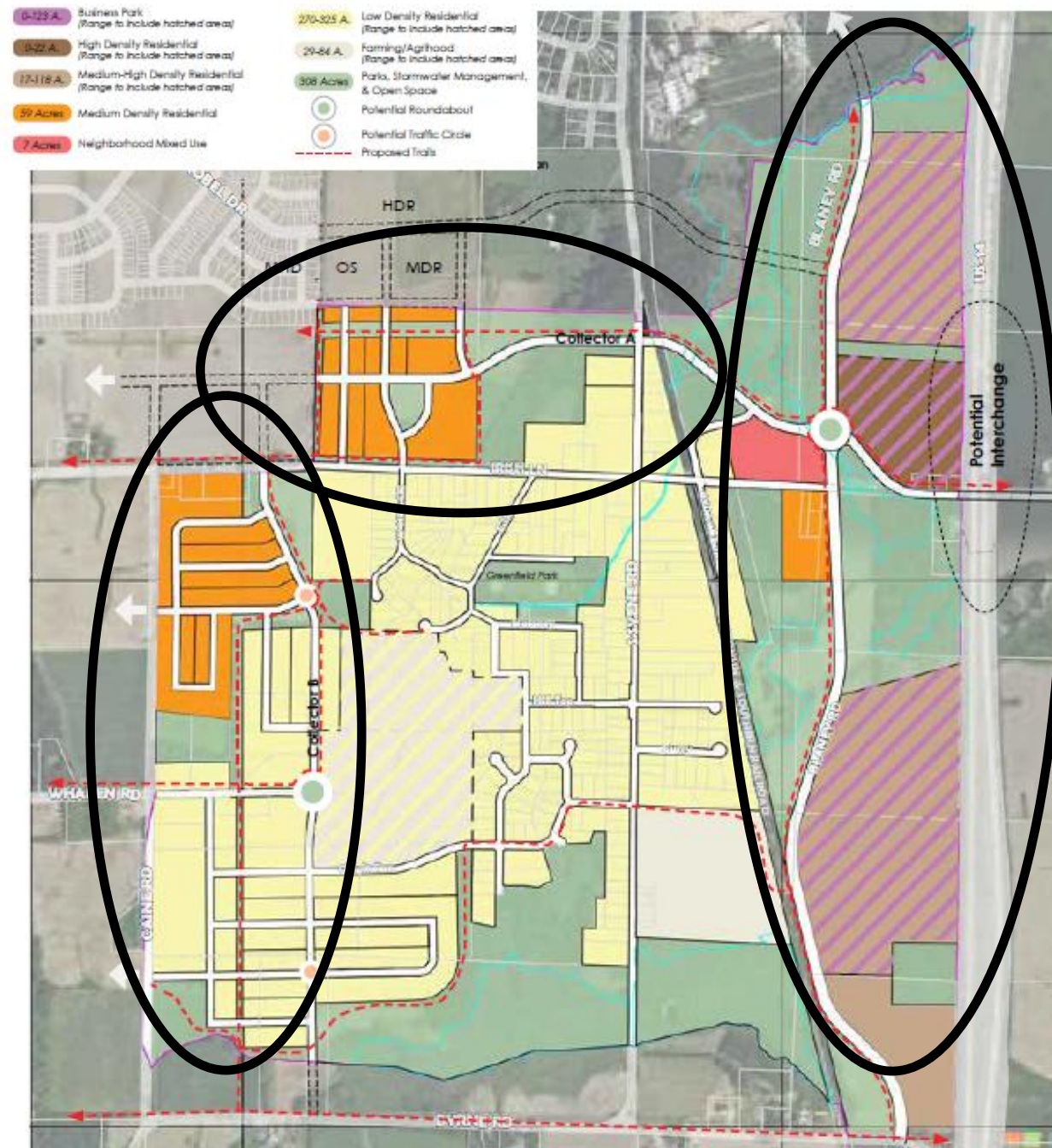


Preferred Concept

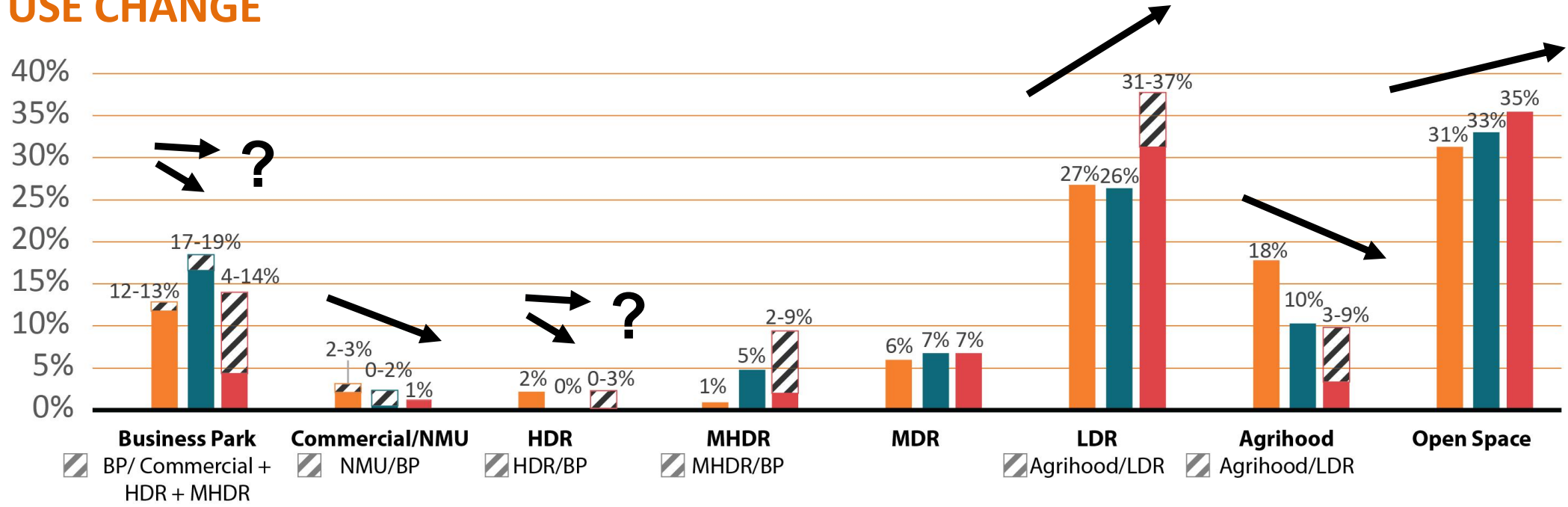
- 1,073-4,259 Housing Units (FLU Low to Mid Range)

Design Themes

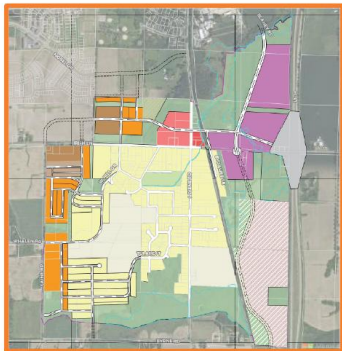
- **Moraine Edge Corridor** – intended to connect a string of parks via a greenway and paths.
- **Higher intensity uses east of the railroad** and lower intensity uses west of the railroad.
- Extending Blaney Road and additions of **Collectors 'A' – 'B'** to relieve traffic from Irish Lane and Syene Road.
- New connection into the established neighborhood at **Old Indian Trail**. Multi-use path connections at West Hill and/or East Hill Drive.
- **Potential Agrihood** integrates food production/garden into smaller residential clusters.
- **Potential Interchange** not directly tied to plan, but will have an impact on development & regional connections



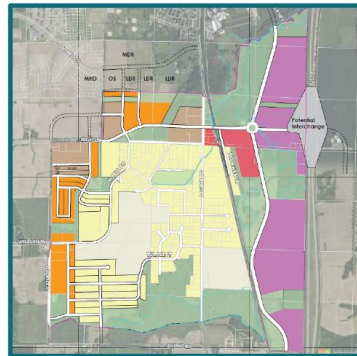
LAND USE CHANGE



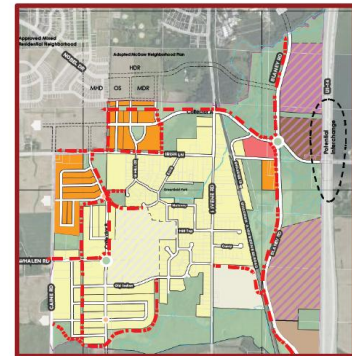
Refined Land Use



Updated Land Use



Preferred Concept

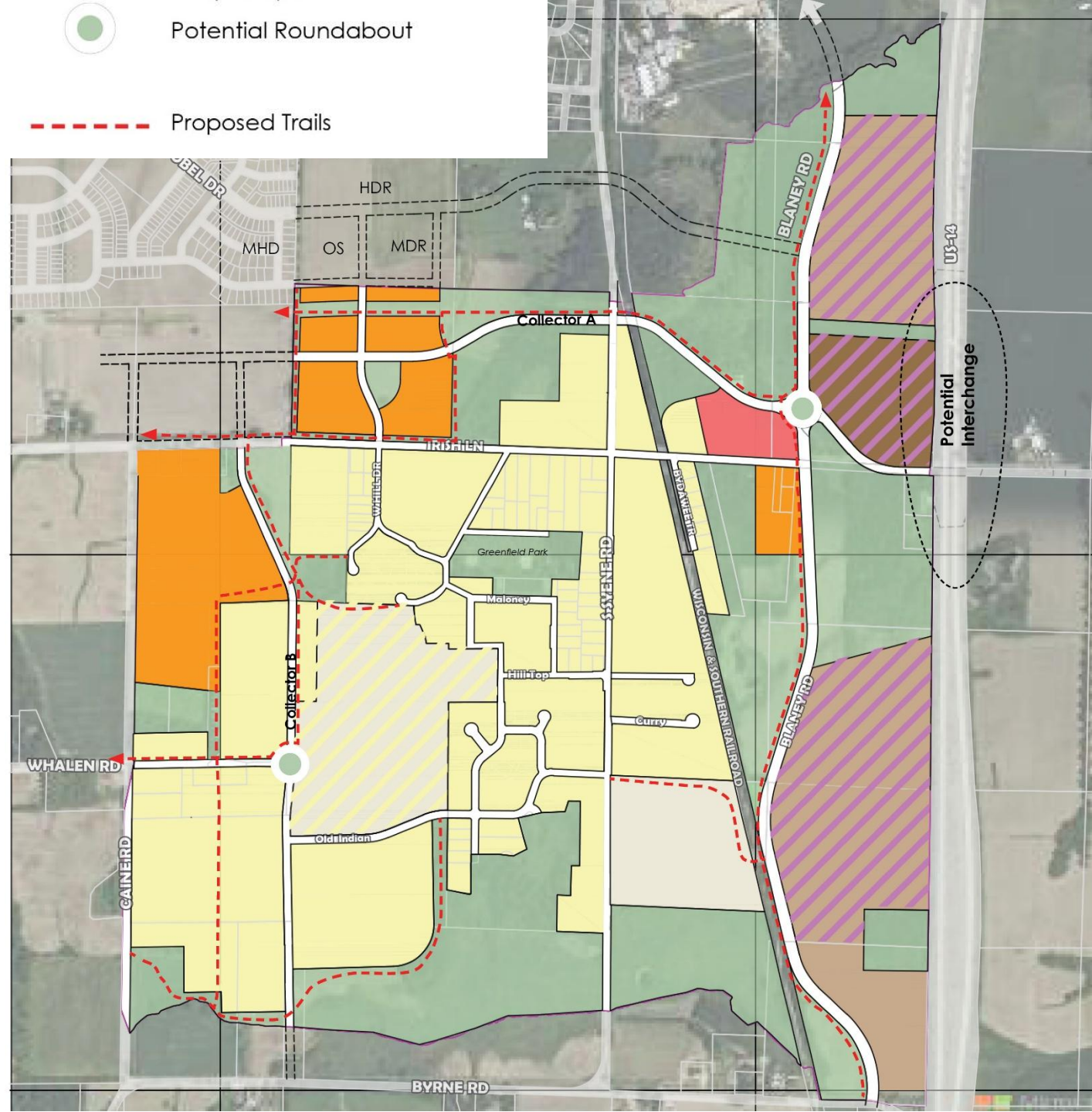


LAND USE SCENARIO

Future Land Use Map

- “Collector” roads are the connections that will be required as part of land division (i.e., dedicated for right-of-way). Road layout may be altered, but must connect Point 'A' to Point 'B'

- 0-123 A. Business Park
(Range to include hatched areas)
- 0-22 A. High Density Residential
(Range to include hatched areas)
- 17-118 A. Medium-High Density Residential
(Range to include hatched areas)
- 59 Acres Medium Density Residential
- 7 Acres Neighborhood Mixed Use
- 270-325 A. Low Density Residential
(Range to include hatched areas)
- 29-84 A. Farming/Agrihood
(Range to include hatched areas)
- 308 Acres Parks, Stormwater Management, & Open Space



ENGINEERING

DISTRIBUTION ANALYSIS –

NO INTERCHANGE

- Irish Lane (w. of tracks): 25% new trips
- **Collector 'A' will take 35% of the new trips**

- Syene Road (s. of Irish): 10% new trips
- Caine Road (s. of Irish): 5-20% new trips

- Syene Road (n. of Irish): **35% new trips**
- Byrne Road: 5% of new trips
- Irish Lane (e. of USH14): **15% of new trips**

WITH AN INTERCHANGE

- Irish Lane (w. of tracks): 25% new trips
- **Collector 'A' will take 40% of the new trips**

- Syene Road (s. of Irish): 10% new trips
- Caine Road (s. of Irish): 5-20% new trips

- Syene Road (n. of Irish): **10% new trips**
- Byrne Road: ~0% of new trips
- Irish Lane (e. of USH14): **~0% of new trips**
- **USH 14 (northbound) - 45% of new trips**
- **USH 14 (southbound – 20% of new trips**

TRAFFIC - Intersection Analysis

Caine Road & Whalen Road: Two way stop control adequate (no change).

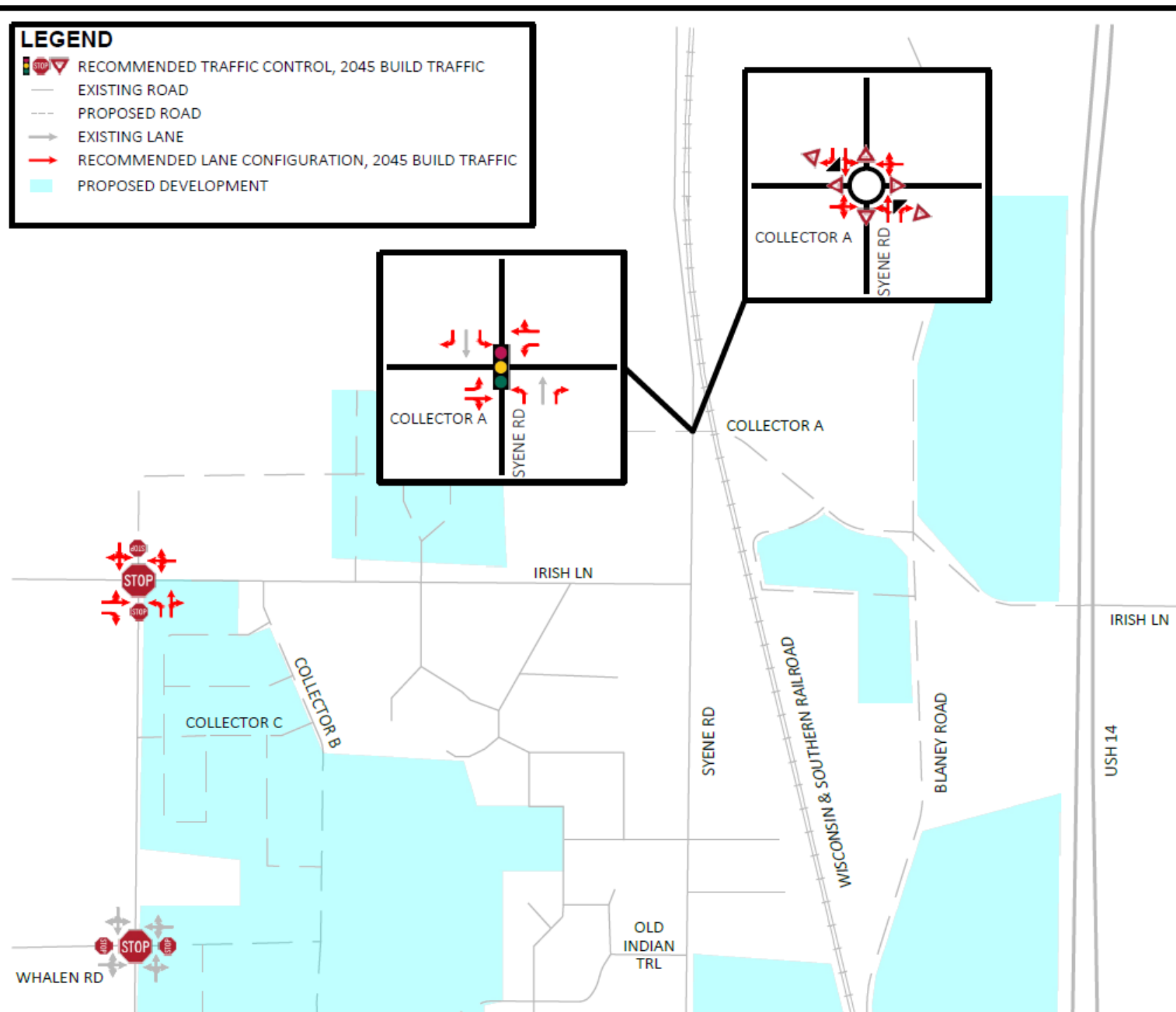
Irish Lane & Caine Road:

Assuming Caine Road continues north of Irish Ln. at full buildout,

- an eastbound right turn lane at the intersection of Irish Lane & Caine Road is warranted.

Syene Road & Collector 'A':

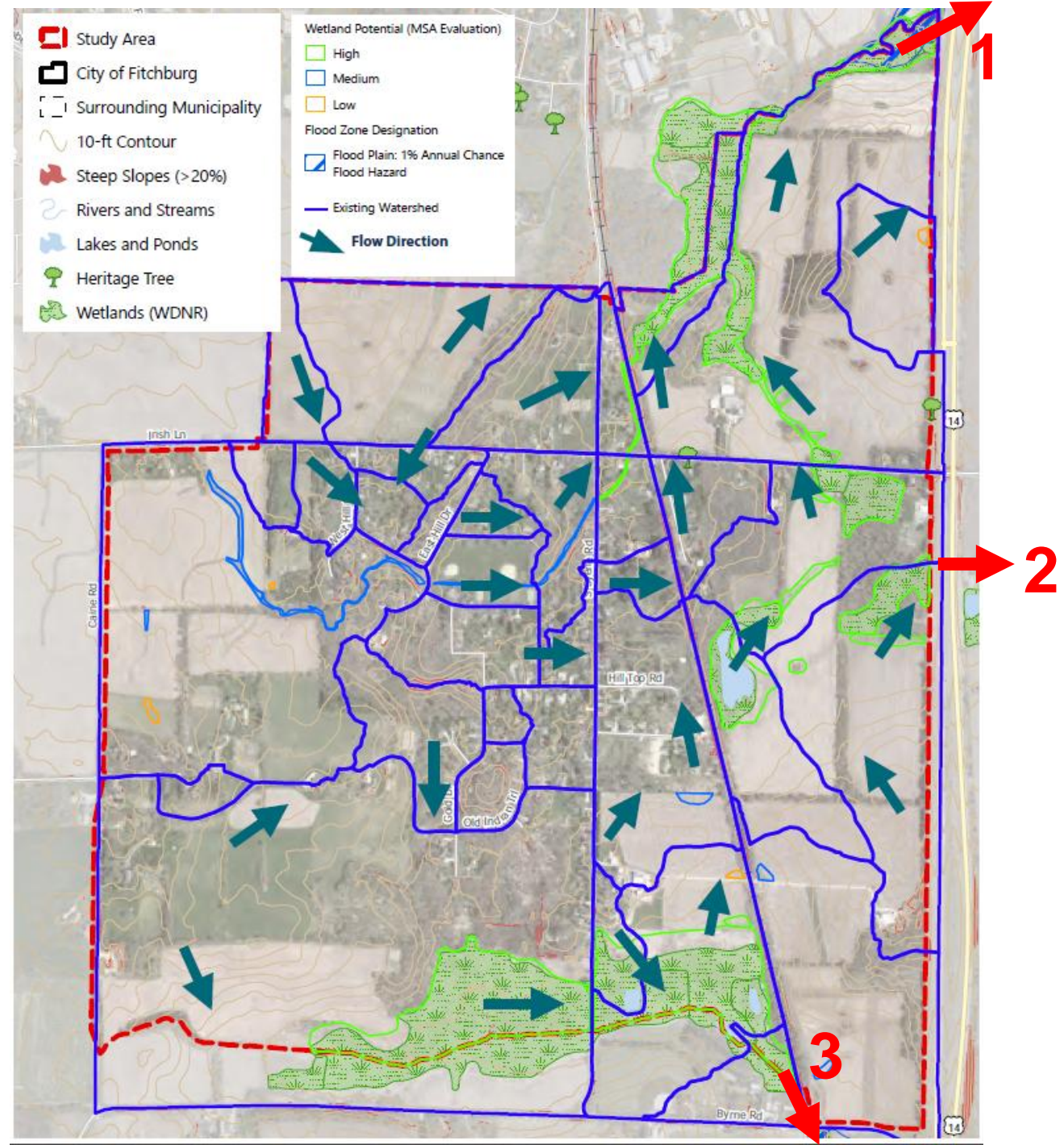
- It is **assumed traffic control warrants would be met.**



CONCEPTUAL STORMWATER MANAGEMENT PLAN

Key Points Considered:

- **High-quality wetlands** are present downstream in the Swan Creek and Murphy Creek watersheds, including the Waubesa Wetlands State Natural Area.
 - Resident/Public interest in preserving and restoring the wetlands in the neighborhood to protect the watershed quality and quantity.
- **Localized flooding** has been an issue:
 - near Curry Court and Old Indian Trail. Study done in 2021.
 - near Syene/Irish intersection, with occurrences of stormwater overtopping Syene Rd and flooding of homes.
- **Surface water runoff drains in 3 general directions.**
 1. North travels to an intermittent stream of Swan Creek.
 2. East flows into a closed depression outside study area.
 3. South flows into Murphys Creek.



Stormwater Recommendations and Improvements

Post-Development Performance Standards

Peak Discharge Control:

- Match **pre-development rates*** for the 1-, 2-, 10-, 100-, and 200-year, 24-hour storm events.

** Rates typically based on present conditions (which would be mostly cropland in this study area). To improve conditions, rates are considering pre-settlement conditions.*

Infiltration Volume:

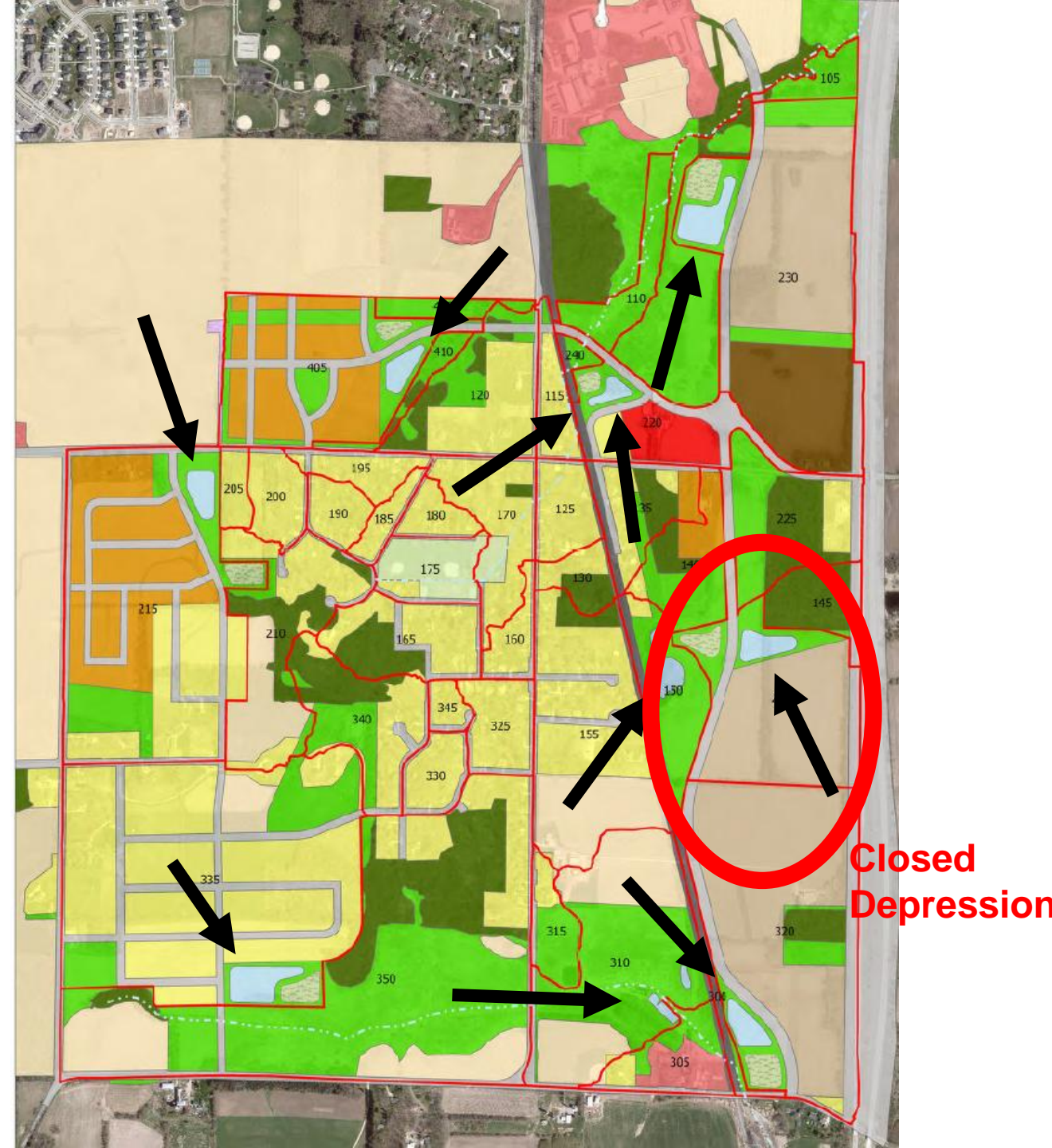
- Maintain **100%** of the pre-development infiltration volume

Water Quality:

- Retain **80%** of Total Suspended Solids, compared to no controls.

Closed Depressions:

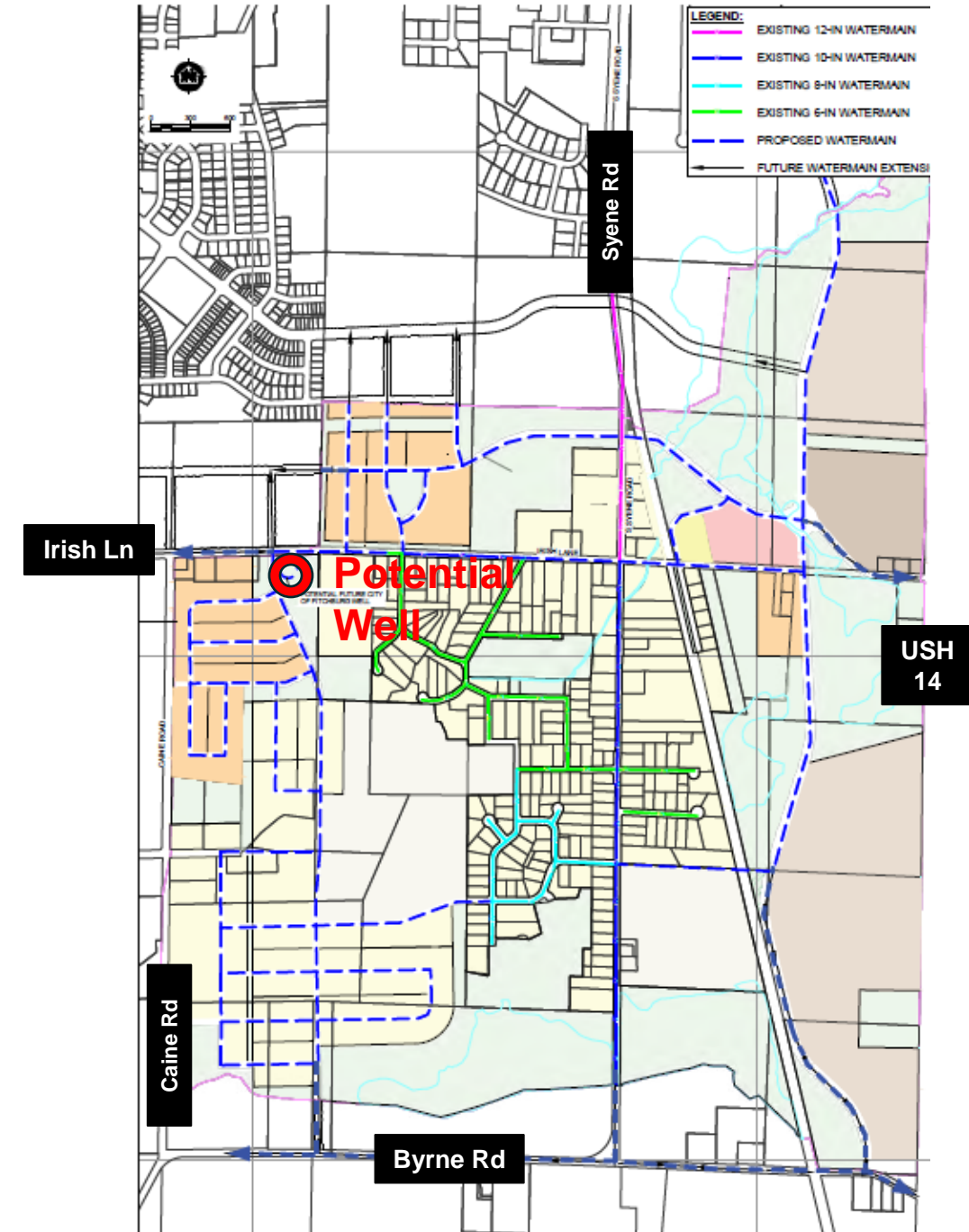
- Establish a flood protection elevation equivalent to standing water level that would result from back-to-back 100-year runoff events.



PRELIMINARY WATER DESIGN

- A **well** will be needed with possible location south of Irish Lane west of the established neighborhood. A new well would allow for decommissioning of existing shallow wells.
- **Water looping** is shown on Byrne Road, and on private land between Blaney Road and Syene Road (at Old Indian Tr.).

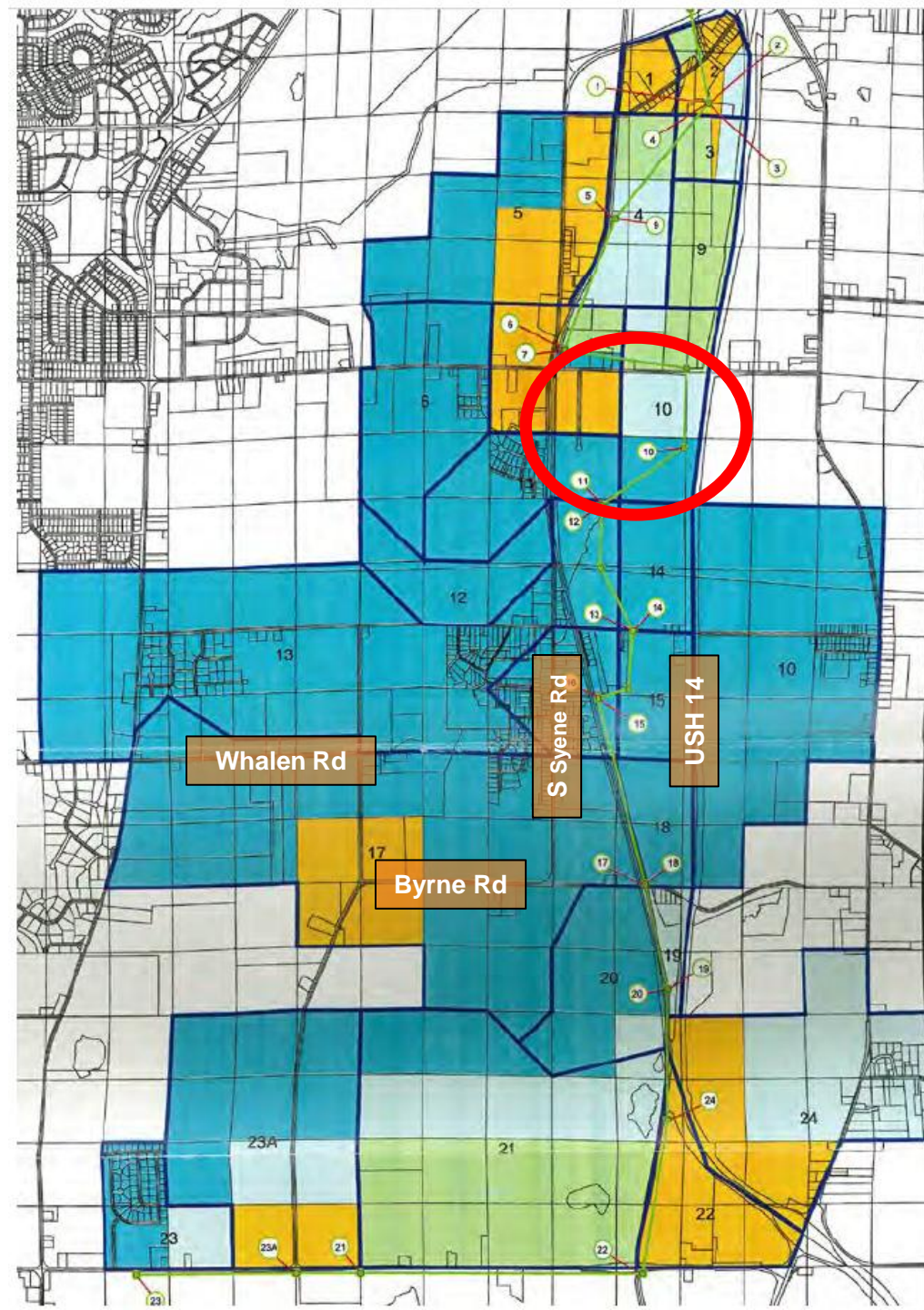
Figure 4.8: Proposed Watermain Layout



PRELIMINARY SANITARY DESIGN

FACTORS

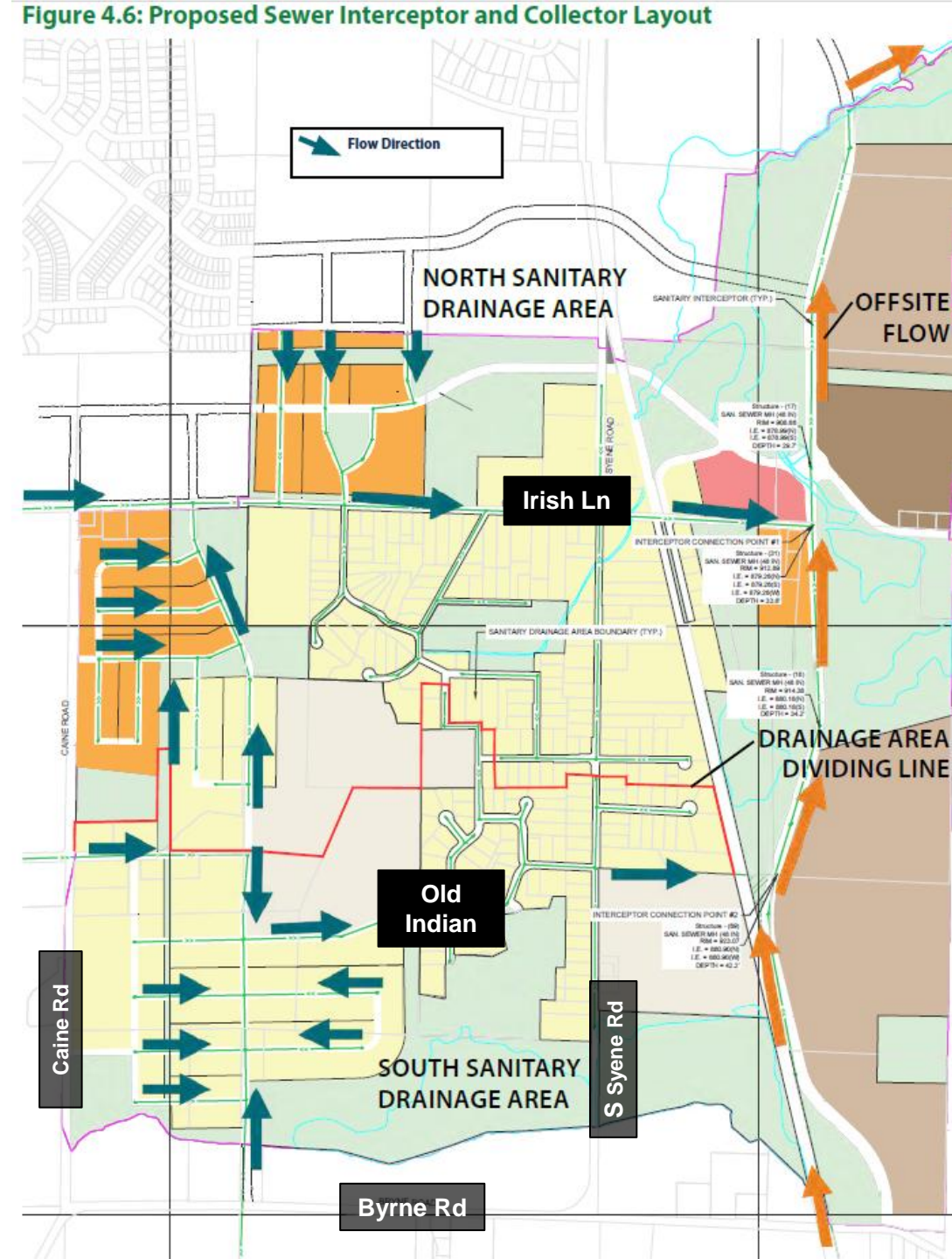
- 2000 Syene Interceptor Design Study identified areas that can be gravity served
- Current service is extended to '11' (red circle area)
- Average water usage of 80 gallons per day (GDP) per person (reduction from 100 GPD w/ efficiency of fixtures)
- Areas west and south are included as “off-site” development areas (at 60% at 8 units per acre) to ensure proposed infrastructure can accommodate potential development beyond Greenfield if City growth management strategies are amended in the future.



PRELIMINARY SANITARY DESIGN

HIGHLIGHTS

- TWO Drainage Areas split based on topography (red line) w/ main service on Irish Lane and Old Indian Trail with 24" pipes based on peak flows
- Service will be tied to development along the interceptor route (along USH 14/railroad)
- New development is required to be on sanitary sewer.
- New development **does not require connection from established neighborhood, except along Irish Lane and Old Indian.**



DEVELOPMENT PHASING

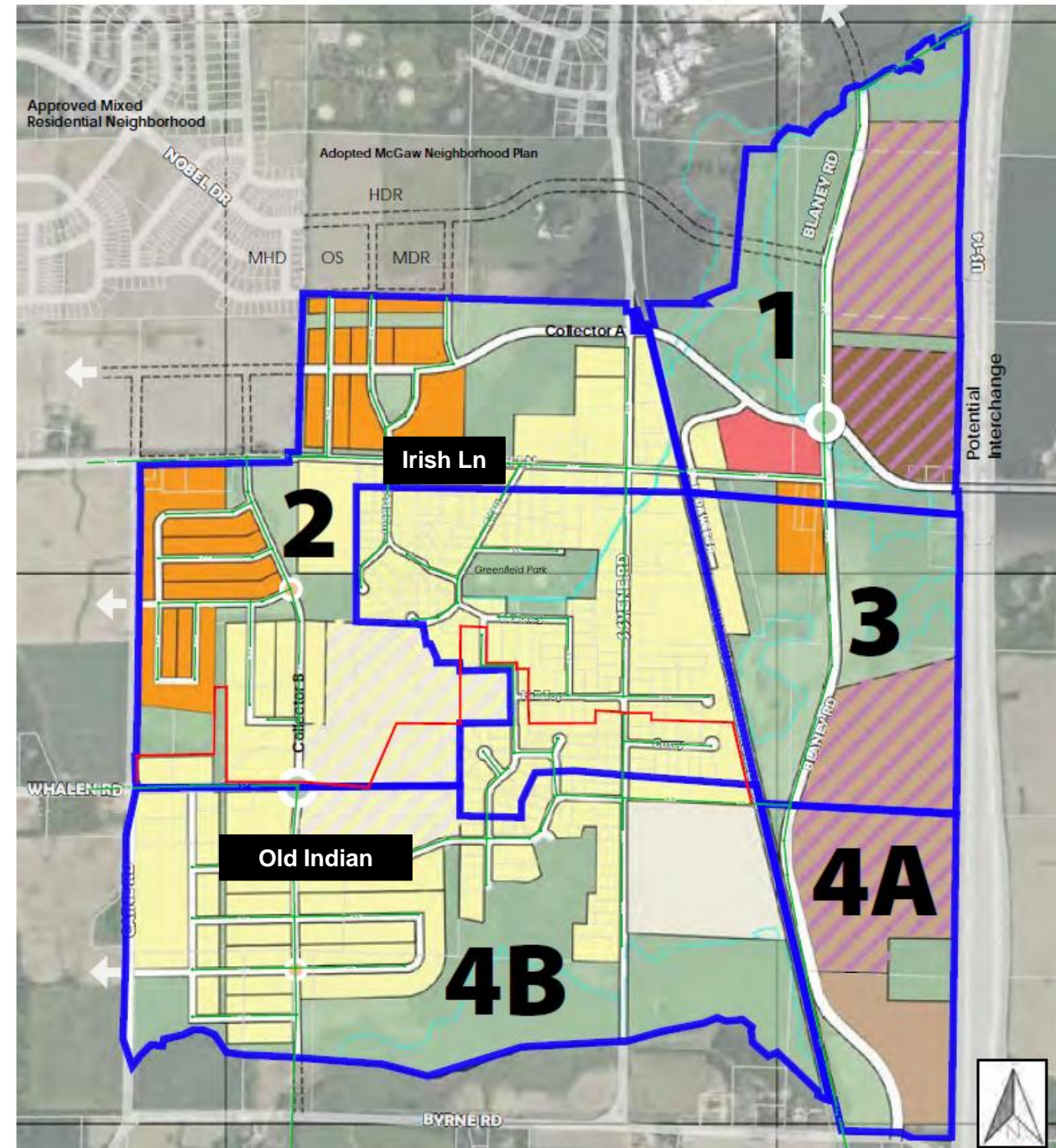
4 PHASES

- Phases are based on two factors (**no timetable**):
 - timing of necessary infrastructure
 - expected market demand for new lots

Established neighborhood is not needed to service these areas, except for properties along Irish Lane and Old Indian.

- **Phase 1:** Must be constructed first to enable servicing of Areas 2-4.
- **Phase 2:** area likely to develop after Area 1 due to proximity to sanitary interceptor.
- **Phase 3:** this area requires significant infrastructure improvements and offers limited development potential, which is why it is separated from Area 1 after Area 2.
- **Phase 4 (A/B):** this area is broken into two areas that can develop independently after Area 3 provides sanitary service to the area.

Figure 3.18: Development Phasing Map (Refer to Appendix D)



GREENFIELD PETITION & FRIENDS OF WAUBESA WETLANDS LETTER

Responses

Friends of Waubesa Wetlands Letter *RESPONSE*

Letter

- Kline study was utilized to identify potentially restorable wetlands, which were prioritized based on their value to the water resources system. *Wetland restoration in areas contiguous with Swan Creek and Murphy's Creek (priority 1) and existing high-quality wetlands (priority 2) were prioritized.*
- Low-density development with **properly designed and constructed stormwater BMPs will improve current conditions** and will convey the stormwater that is treated prior to releasing some of the stormwater (that is not infiltrated into the soil) to higher quality wetlands.
- Performance standard require **100% stormwater stay-on** as was done in the McGaw Park Neighborhood urban service area amendment.
- The conceptual SWMP also uses **pre-settlement conditions** as the baseline for the stormwater modeling, rather than the existing conditions (agriculture) that are typically used.
- **~308 acres of protected open space, compared to approximately 122 acres of currently protected open space in the Greenfield study area.**

Greenfield Neighborhood Petition *RESPONSE*

Petition

- This **plan is created as a guide for future development** – not a development plan. Professional engineers and planners have developed a preliminary hydrologic and environmental assessments to locate future land uses and stormwater facilities. *Appendix C has greater detail than in the base document.*
- Plan **does not propose C&G, sidewalks, or sanitary sewer for much of the existing neighborhood.** *Current practice is to install curb, gutter, sidewalk, and sanitary sewer where necessary due to new development, safety, stormwater, or sanitary issues*
- **Sanitary sewer in the existing developed area is proposed only where necessary to serve new development on the west side of the neighborhood** (i.e., Irish Lane and Old Indian Trail) and potentially further west toward Fish Hatchery Road. *However, City staff cannot ensure that infrastructure will never be installed in the neighborhood. At some point, for example due to failing septic systems, the neighborhood property owners may request sanitary sewer*
- **Housing Strategy #1.3 was added to establish mitigation techniques for new development adjacent to the established neighborhood,** *following allowed building heights as in the established neighborhood (3 Stories or 35 feet).*

Greenfield Neighborhood Petition *RESPONSE*

Petition

- **Path connections are still shown at both East Hill Drive and West Hill Drive**, but that doesn't necessarily mean both will be added, it provides multiple options depending on the feasibility of a path. *Gold Drive has water and terrain issues that make it difficult to connect.*
- **Old Indian Trail is the only street connection proposed between Irish Lane and Byrne Road.** The Old Indian Trail R.O.W. is public and it was clearly intended to continue to the west as the Greenfield Neighborhood continued to develop. Also, important to note:
 - There is 1 mile between Byrne Road and Irish Lane, which far exceeds the typical distance between street (e.g., *urban neighborhood: 200-1,000 feet between streets, suburban neighborhood 300-1,500 feet*).
 - **The proposed street connection at Old Indian Trail still leaves over 3,000 feet between Irish Lane and Old Indian Trail, and over 2,000 feet between Old Indian Trail and Byrne Road.**

Greenfield Neighborhood Petition *RESPONSE*

Petition

- **No further changes were made to the preferred concept.** These areas have been significantly reduced throughout the planning process. **The business park and higher density land uses were kept to the east side of the neighborhood to create a necessary buffer from the established neighborhood.**
 - Studies have repeatedly shown that low-density residential costs more in public services than it generates in tax revenue.
 - Land costs in the Dane County region are high and the initial investment in infrastructure is expensive, (i.e.,) low-density residential costs significantly more to build than higher densities.
 - **Initial cost is passed onto future occupants of the new homes; however, the long-term maintenance of streets and utilities is carried by all residents of the City, including Greenfield property owners.**
- **Agricultural property owners are free to preserve existing agricultural lands.** Nothing in the plan requires the agricultural areas to develop. **This plan helps guide decisions should a landowner decide to develop or sell their land for development.**
 - Densities have been reduced through this planning process, and areas have been identified for agrihood, allowing this use to continue and/or include clustered homes

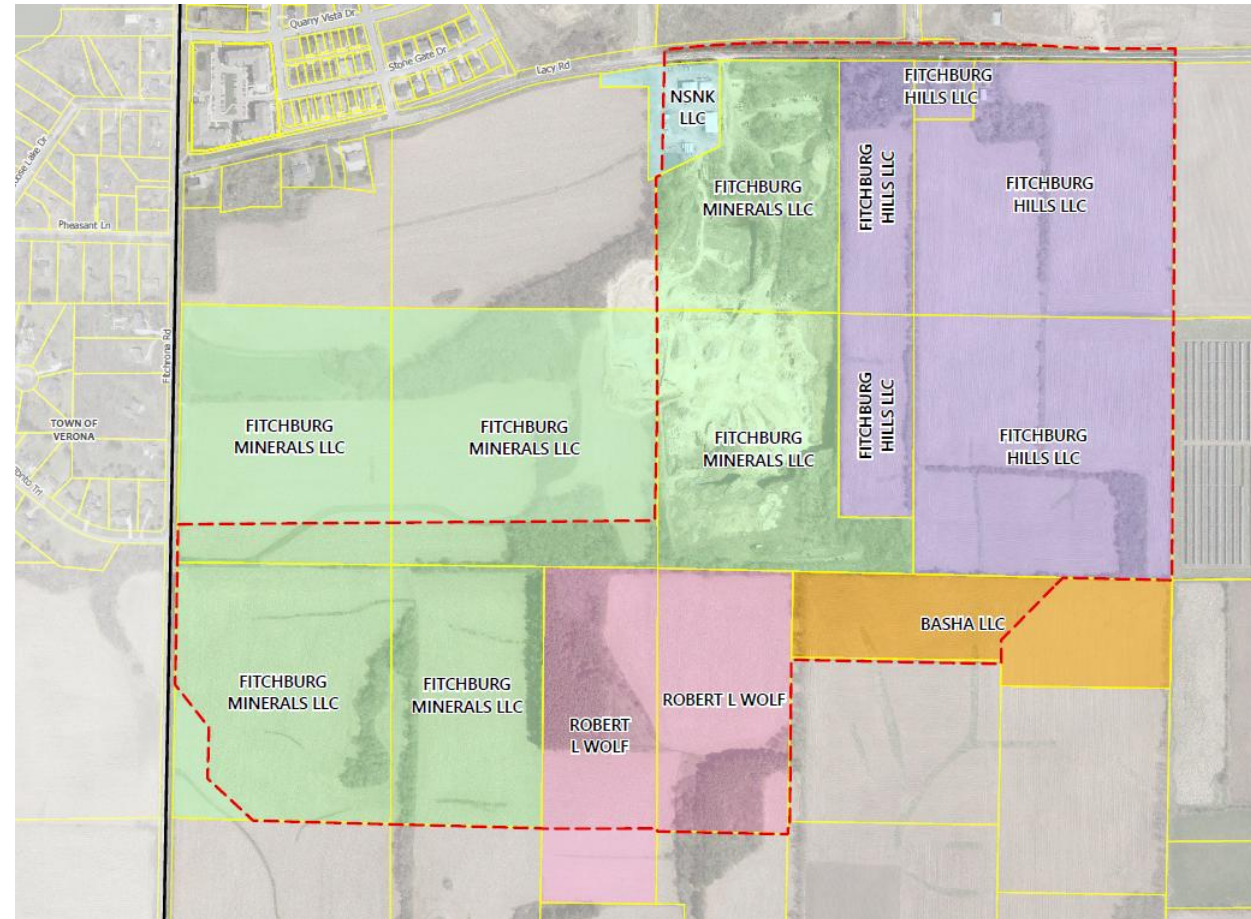
SOUTH STONER PRAIRIE

Engagement Feedback Impact

LANDOWNER INTERVIEWS

(property owners)

- Property owners all are interested in highest and best use for their land.
- Extraction will continue over the next 5-10+ years with transition to development
 - Neighborhood plan will be Reclamation Plan
- Most of the lands that will be extracted will be 40-60 feet below the current landscape
- Woodlands in Wolf property was planted in the 60s to reduce erosion, but this area will be transformed if quarried
- Extraction is unlikely in the **SW** and **SE** areas of the neighborhood; however, these areas are likely 15+ years from developing



LANDOWNER INTERVIEWS

(school district)

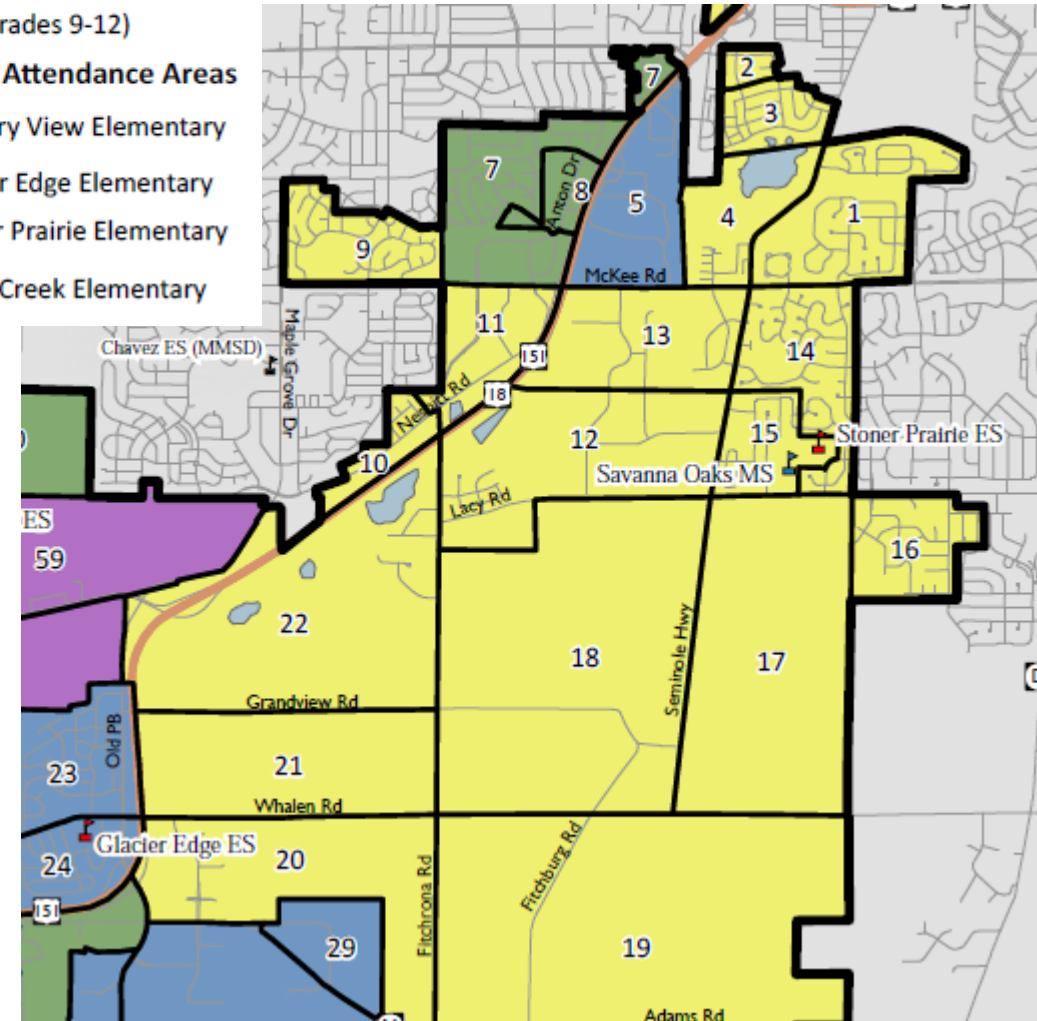
- 2021-2022 school projections have been updated with understanding in this neighborhood area (**ID: 18**)
- Stoner Prairie Elementary could see capacity issues, but there are strategies in place to manage this potential capacity issue
- Land is being considered east of the neighborhood for additional schools
- There is also an opportunity to consider an Elementary School or Middle School in the neighborhood (depending on land use density and other factors)

2021-22 VASD Schools

- 🏠 Elementary (grades K-5)
- 🏫 Middle (grades 6-8)
- 🏛️ High (grades 9-12)

2021-22 School Attendance Areas

- 🟢 Country View Elementary
- 🟡 Glacier Edge Elementary
- 🟠 Stoner Prairie Elementary
- 🟣 Sugar Creek Elementary



Public Feedback Summary

- Maintain/expand diversity of housing types to accommodate younger families, professionals, and seniors
- Increase density with a diverse range of more intense housing types closer to Lacy Rd (e.g. townhomes, condos, quadplexes, etc)
- Provide shared-use path connections into new neighborhood
- Consider traffic concerns with increased use of Lacy Rd west of Seminole to Fitchrona for more residential
- Capture views and appreciation for landscape
- Connection to natural features

VISION, GOALS, STRATEGIES & DESIGN GUIDELINES

Vision Statement

South Stoner Prairie will develop as a complete neighborhood that creates diverse and affordable housing options, expands job opportunities, facilitates sustainable design and development practices, and promotes social equity.

Goals

Goals and strategies will guide the development of the South Stoner Prairie Neighborhood.



Housing



Mobility



Economy



Quality of Life



Sustainability



1. Housing

Goal: *Integrate a diversity of housing types to accommodate a variety of lifestyles, age groups, and income levels.*

Strategies

1.1. Encourage a **variety of housing types, forms, price points, and tenures in the neighborhood.**

1.2. Encourage **building / site design** to transition between low-intensity residential and intensive multi-unit residential, office and mixed-use developments.

1.3. Concentrate **higher-density residential and mixed-use developments along primary corridors** to support future sustainable public transit route(s).

1.4. Encourage **Traditional Neighborhood Design (TND) developments** that allow for 'missing middle' and small-lot housing.



2. Mobility

Goal: Implement safe, convenient and attractive streets that are accessible for all ages, abilities, and modes of transportation (pedestrian, bicycle, vehicle, and mass transit).

Strategies

2.1. Develop a **convenient and connected multi-modal transportation system** that links the neighborhood to the City and greater Dane County area.

2.2. Require proposed **streets to connect to existing streets and intersections**, wherever practical.

2.3. **Discourage cul-de-sac** and dead-end streets in favor of connected streets that provide transportation flexibility.

2.4. **Design complete streets and utilize traffic calming and safety measures where appropriate** to create a better street environment for pedestrians and cyclists.



3. Economy

***Goal:** Locate employment options near residential areas, supporting the local and regional economy and providing job opportunities.*

Strategies

3.1. Attract businesses that meet local /regional needs, provide job opportunities / mix of uses, and expand property tax base.

3.2. Promote commercial / business park areas compatible with the density and scale of surrounding development or screened to the extent practical.

3.3. Incorporate safe and convenient pedestrian, bicycle, and motor vehicle connections within and through commercial, mixed-use, and business park developments.



4. Quality of Life

***Goal:** Maintain streetscapes and open spaces that are accessible to all residents for recreation and enhanced neighborhood character.*

Strategies

- 4.1. Design residential areas around community gathering places** (parks, schools, churches, community gardens, and other community facilities).
- 4.2. Plan parks that vary in size / facilities to fulfill ranging neighborhood recreation interests, including creating a large park to serve as an Area/Community Park,** consistent with the Fitchburg POSP.
- 4.3. Make intentional multi-modal connections between local and regional parks/open areas.**
- 4.4. Design attractive streetscapes** with street trees, lighting, and/or low maintenance landscaping clusters along major roadways.
- 4.5. Plan and design public infrastructure that is sustainable and low maintenance.**



5. Sustainability

Goal: Create an economically and environmentally sustainable development pattern, protecting existing natural features.

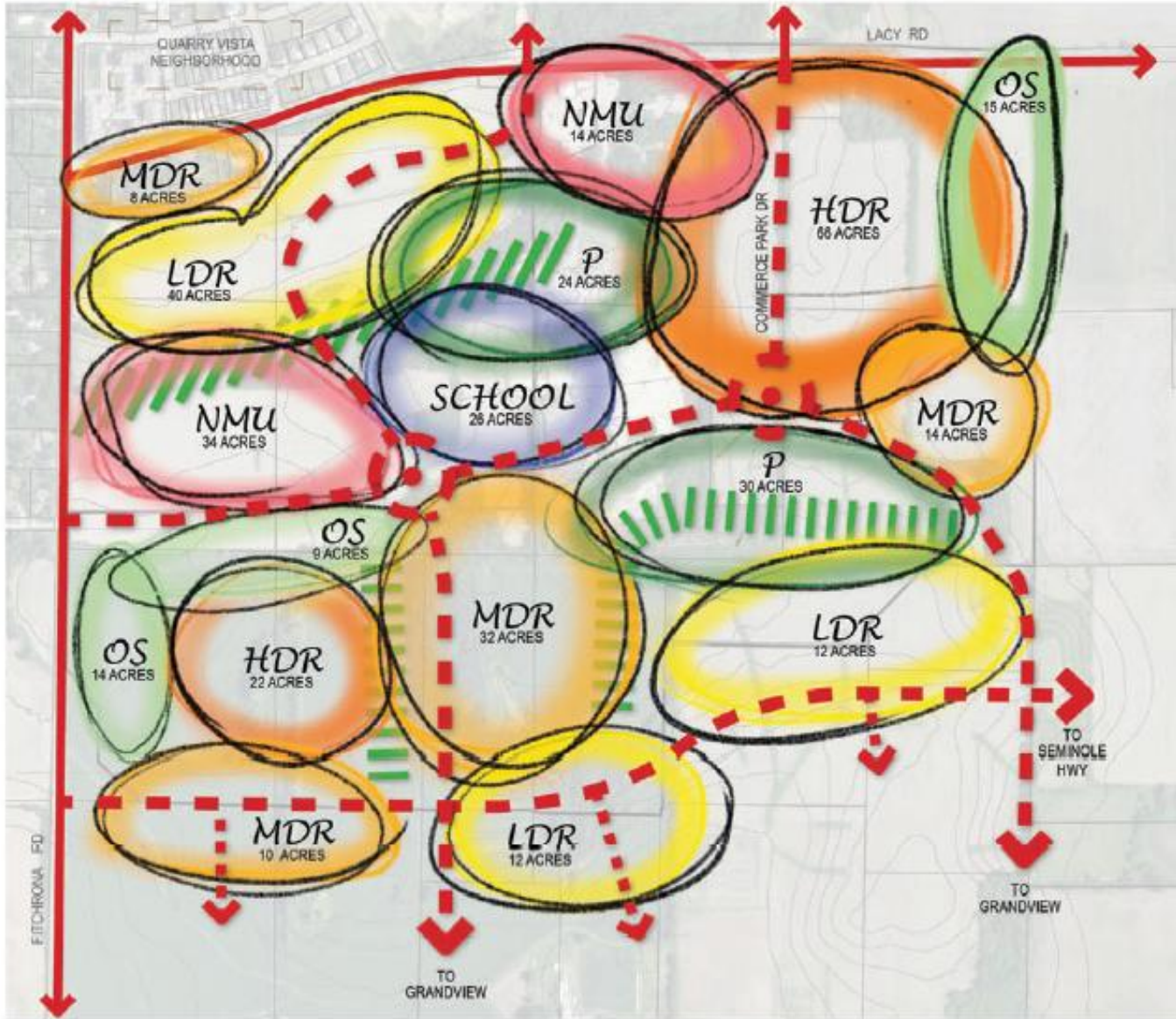
Strategies

- 5.1. Protect and restore environment** by integrating natural features into open spaces for active/passive recreation, public gathering, or flood protection / stormwater management.
- 5.2. Preserve existing tree canopy**, to the extent possible, to include woodlands that will not be quarried.
- 5.3. Encourage high-density residential development along collector / arterial roadways.**
- 5.4. Explore options to recycle quarry byproducts through site development.**
- 5.5. Encourage energy-efficient buildings** consistent with the city's energy targets.
- 5.6. Consider opportunities for alternative energy use** within neighborhood design.

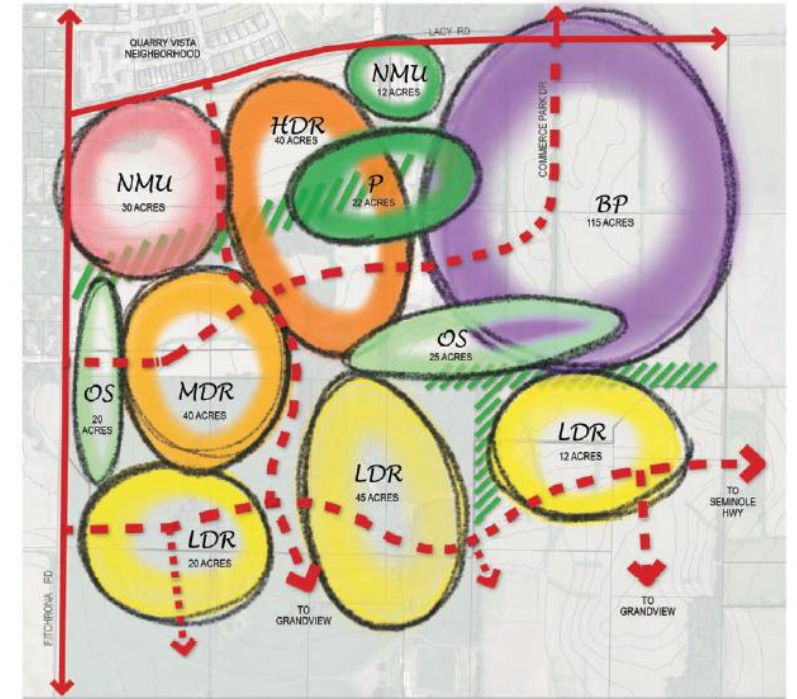
PREFERRED CONCEPT & FUTURE LAND USE

Development Process & Highlights

RECOMMENDED OPTION



NOT SELECTED OPTION

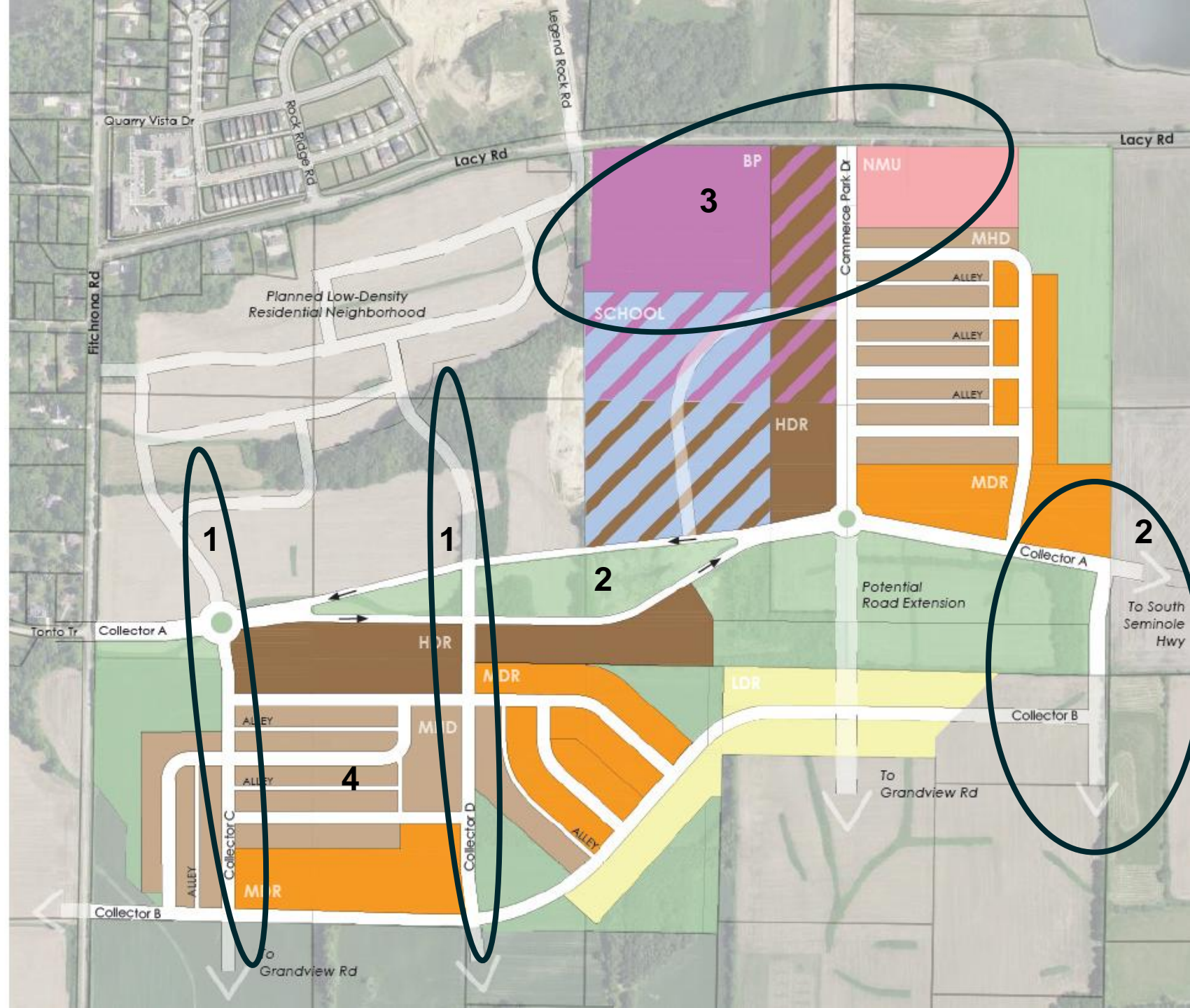


SC MTG - MAR 2024
recommended BP
east of Commerce
Park Rd.

Initial Detailed Concept

Changes

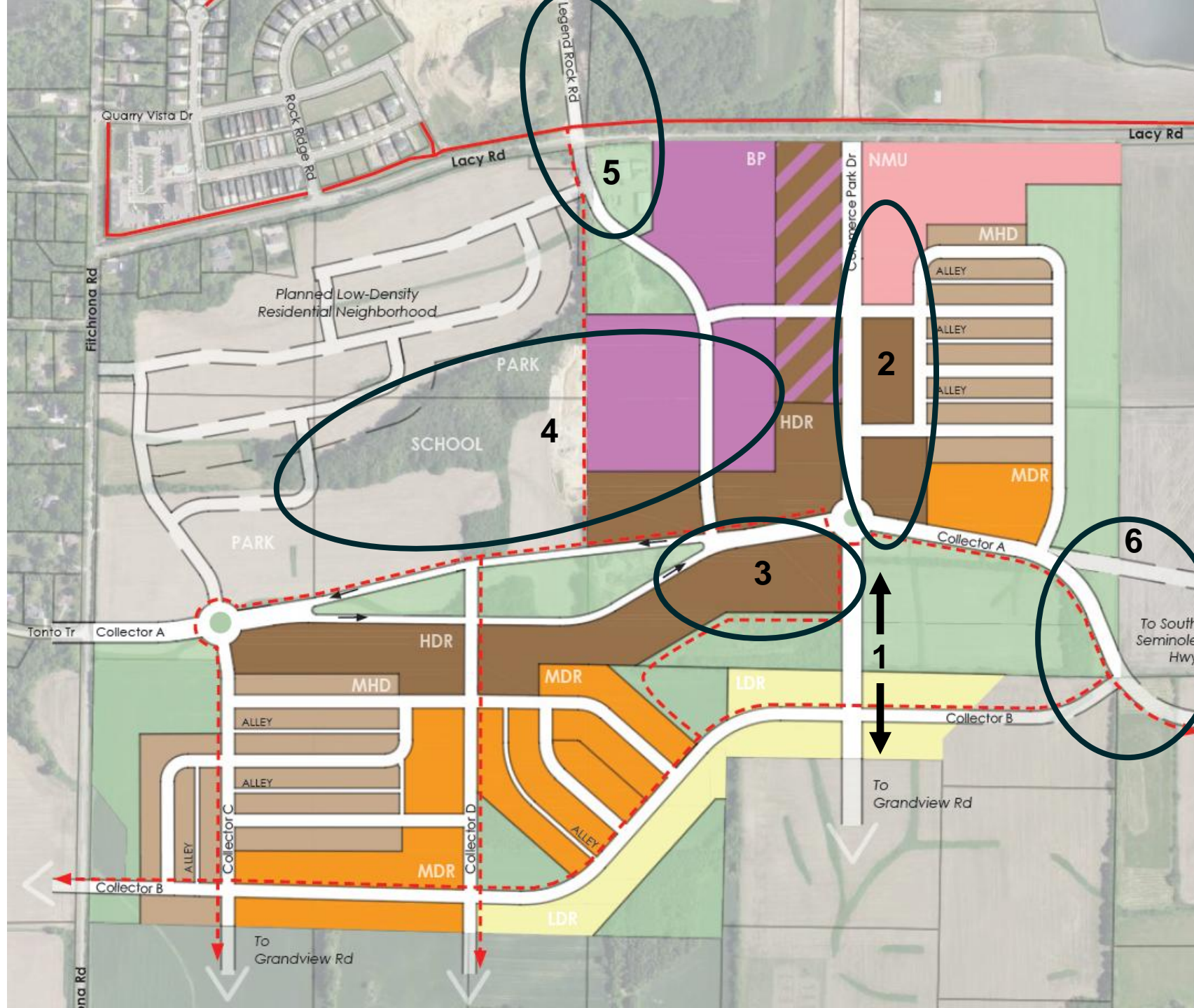
1. Identification of several collector roadways that connect through the development
2. Collector 'A' split into one-way with central SWM w/ future connection to Seminole Highway
3. Business Park is added and placed west of Commerce Park Dr. w/ NMU east of the road
4. Slight increases in density to the south w/ new Medium-High Density FLU Category



Revised Concept

Changes

1. Commerce Park extending through study area.
2. Inclusion of additional HDR/NMU along the east side of Commerce Park Drive. *Reduction in MDR to offset.*
3. Extension of HDR on the south side of Collector A.
4. Expansion of the BP with moving school site adjacent to study area. *Removal of extending Collector D north.*
5. New road connection into the study area at Lacy/Legend Rock
6. Collectors A and B realignment



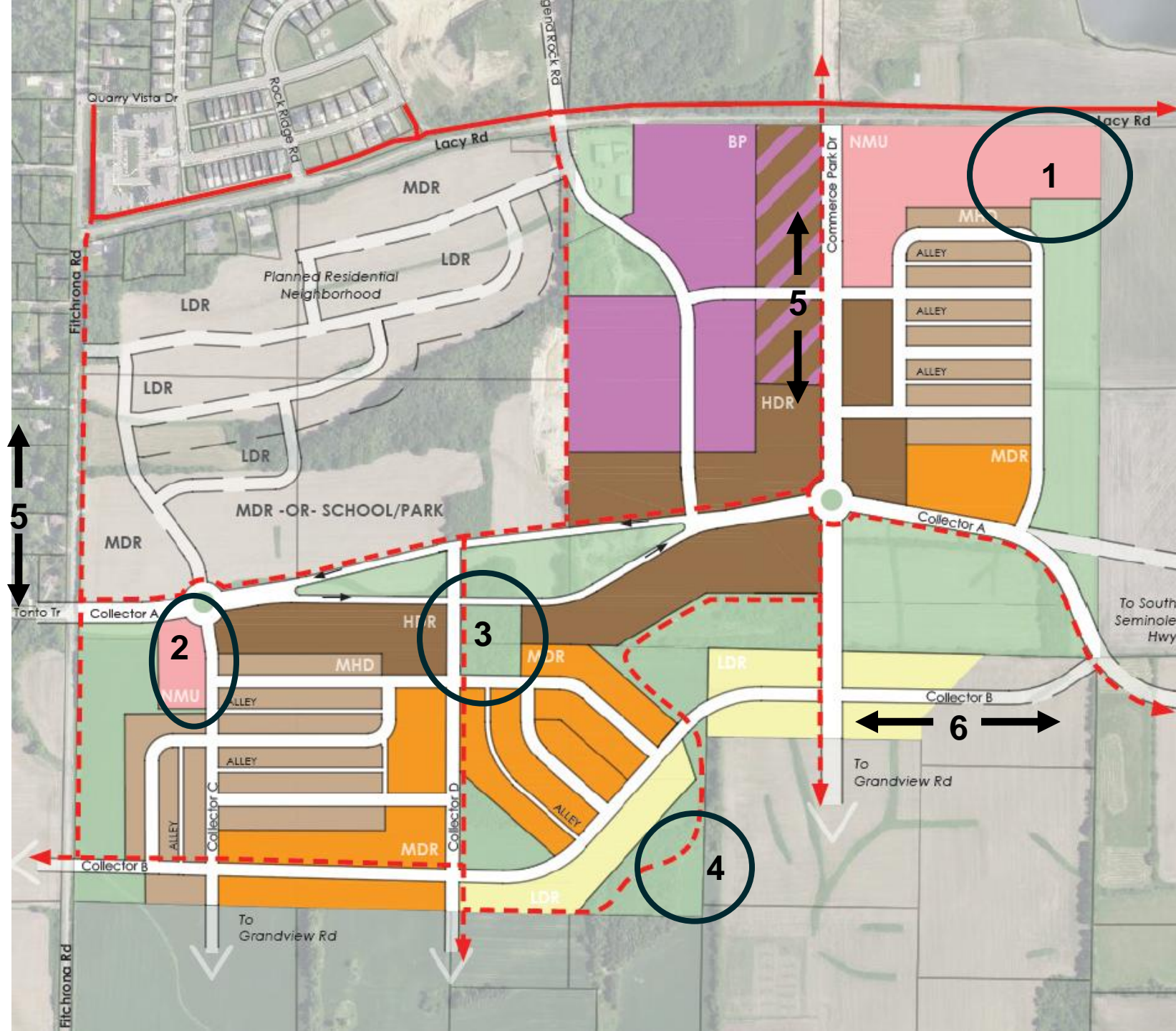
PREFERRED LAND USE CONCEPT

Preferred Concept

- 1,254 – 3,168 Housing Units

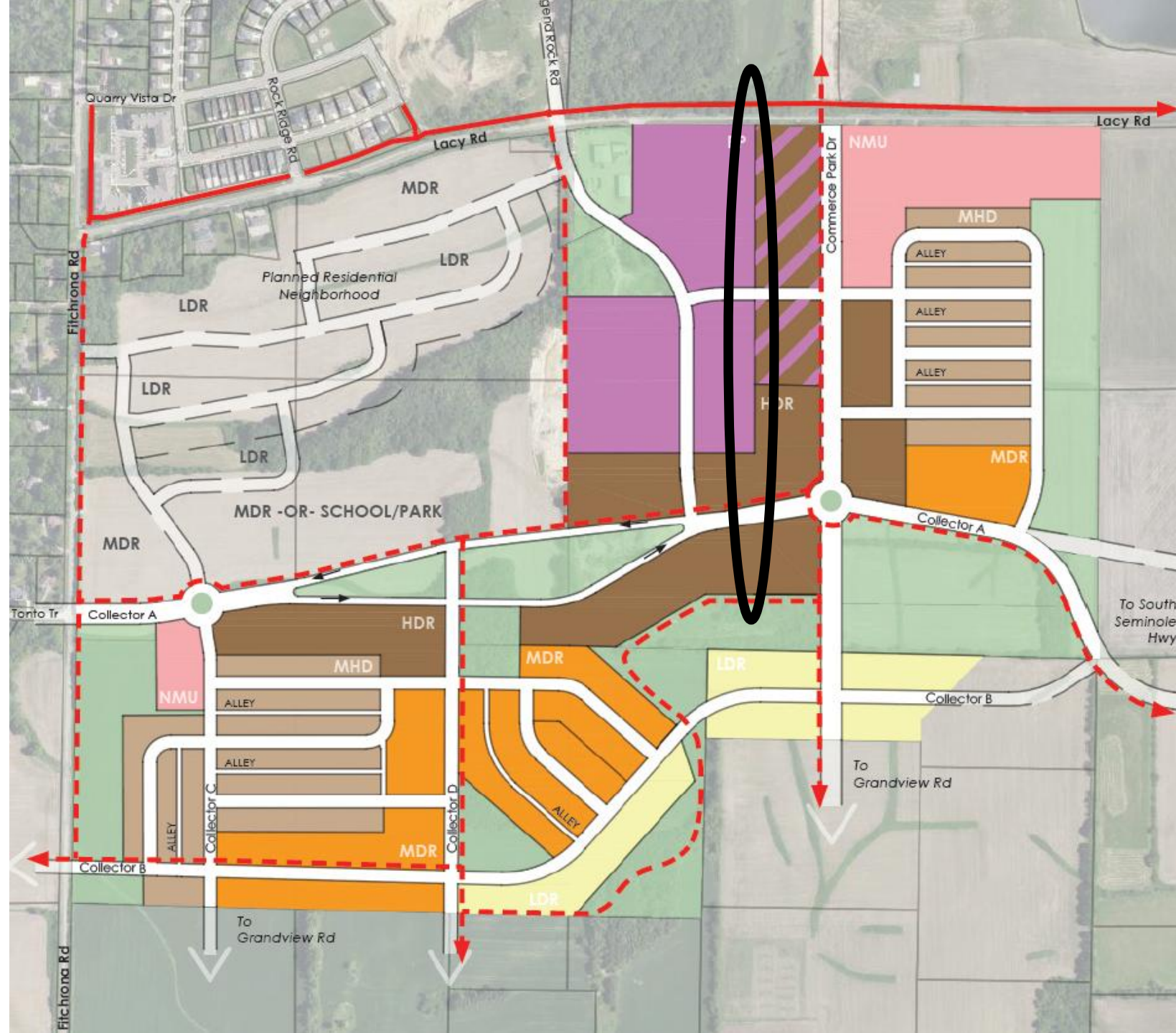
Changes

1. Increased NMU and MHD area
(reduction in SWM needed)
2. Added NMU block at Collector A /
Collector C *(reduction in SWM needed)*
3. Removed HDR to preserve mature
woodlands
4. Show potential extension of the
trail, connecting Commerce Park to
Collector D
5. Extended trail along Commerce
Park Drive and Fitchrona Road
6. Remove trail on Collector B from
Collector A to Collector D




DESIGN THEMES

- **Higher-Density** developments concentrated along the major collector roads.
- **Land Use Flex Area** to account for earth wall along Commerce Park Dr. **Preferred to have the earth wall at property line removed**, providing larger Business Park area; could develop as HDR if wall remains.
- **An Elementary School** could serve as a neighborhood focal point.
- **Parks and Open Spaces** are tailored to the unique terrain and connect through the neighborhood. Central boulevard with SWM and tree preservation along Collector A.
- **Street connections** are reserved through the neighborhood.



FUTURE LAND USE

FUTURE LAND USE MAP

- 33 - 43 A. Business Park (BP)
(Range to include hatched areas)
- 40 - 50 A. High Density Residential (HDR)
(Range to include hatched areas)
- 41 ACRES Medium-High Density Residential (MHD)
- 41 ACRES Medium Density Residential (MDR)
- 17 ACRES Low Density Residential (LDR)
- 17 ACRES Neighborhood Mixed Use (NMU)
- 47 ACRES Parks, Open Space, & Stormwater Management
-  Roundabout

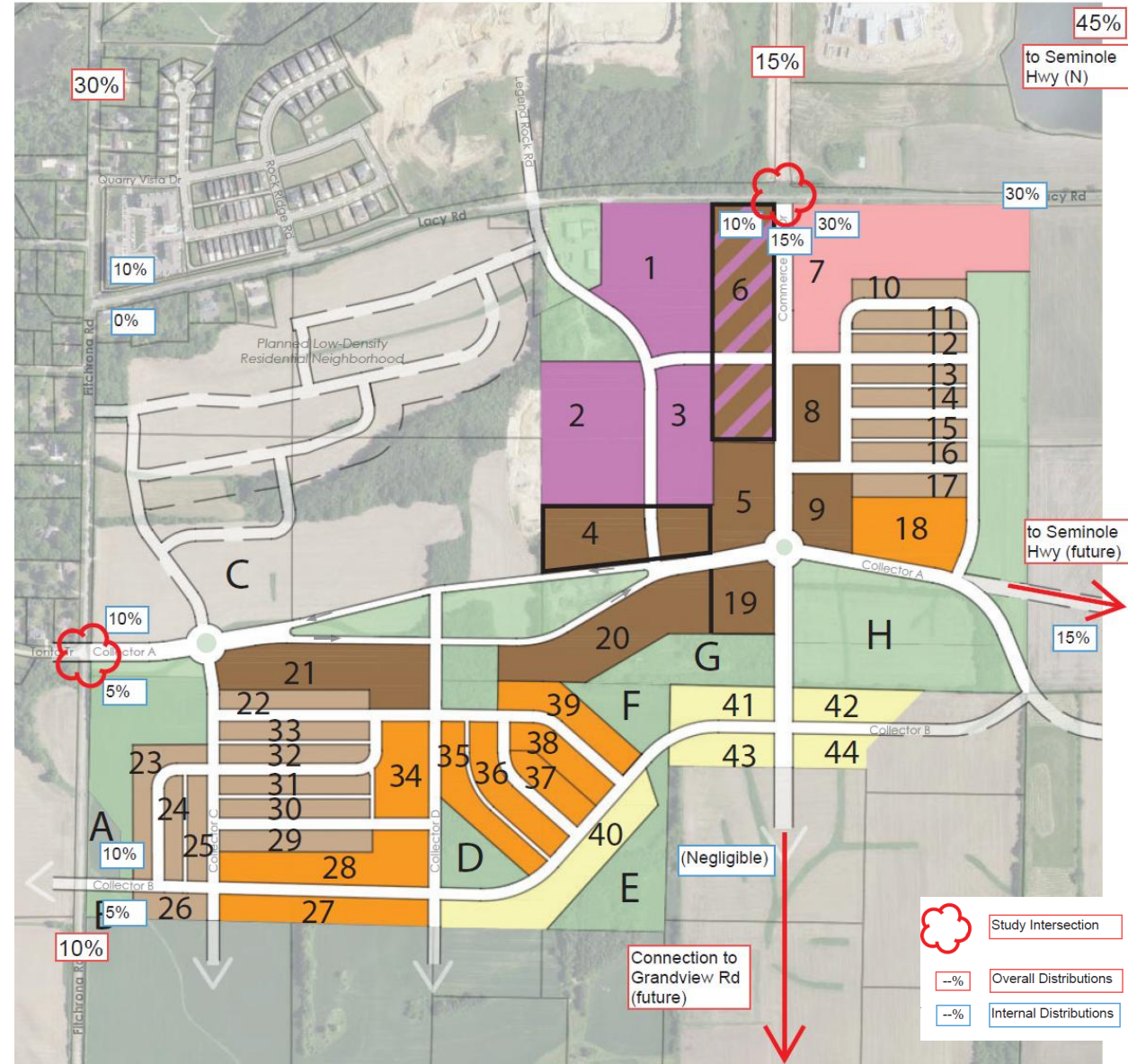


ENGINEERING

Conceptual Stormwater Management Plan

MOBILITY NEEDS

- Potential roundabout or signal at Lacy and Commerce Park Drive when warranted by delay or safety concerns.
- Collector A intersection lines up with Tonto Trail. Intersection controls not needed during planning timeline.
- Commerce Park Drive and Collectors 'A' - 'D' should be built as development is proposed
 - potentially extending to Grandview Road
 - If/when development takes place to the south



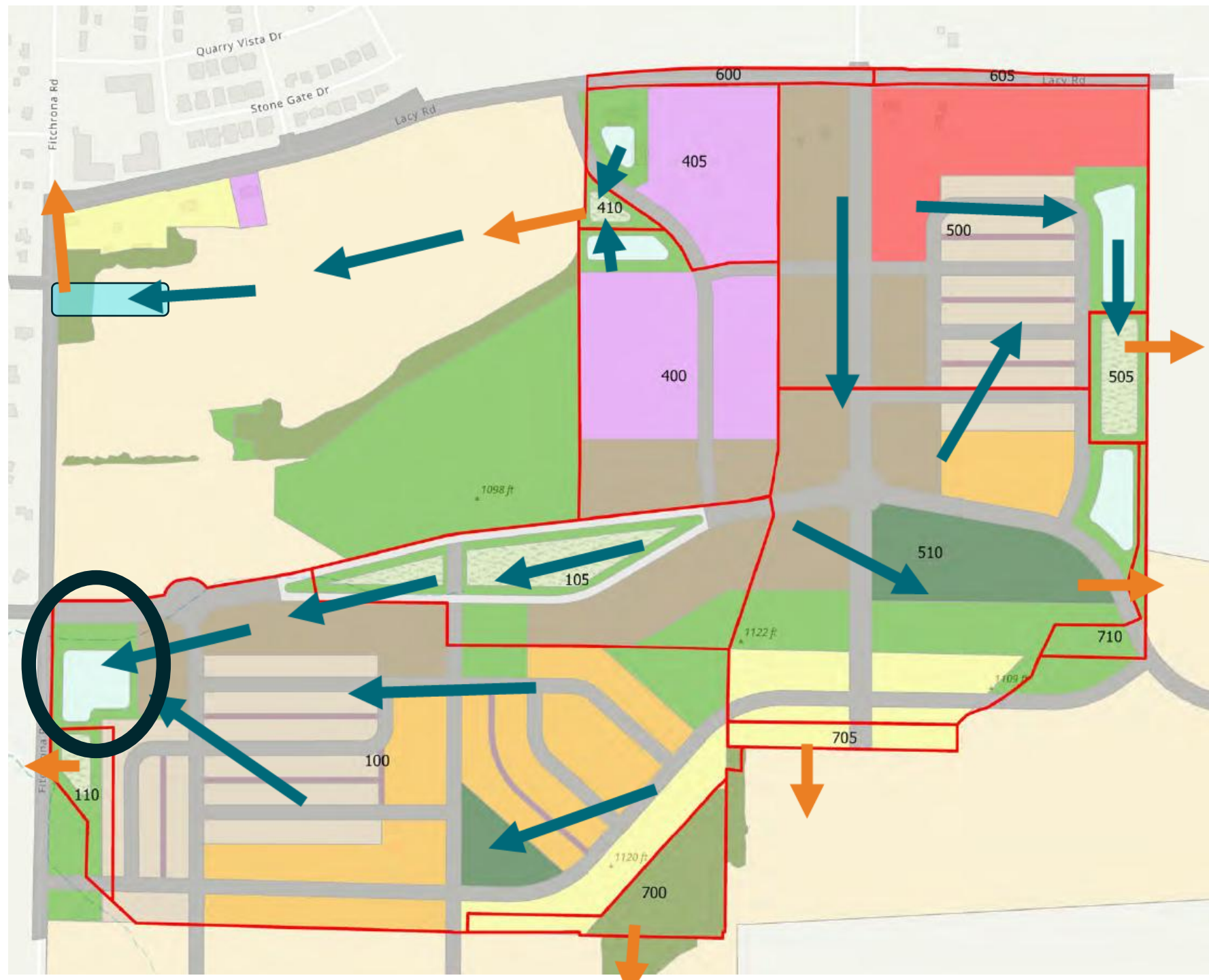
ENGINEERING REVIEW

CONCEPTUAL SWMP (WEST SECTION)

- Drains to Badger Mill Creek (W)/Planned Subdivision (NW)

Performance Standards

- **Peak Discharge Control** – Control post-development peak discharge to pre-development rates for the 1-, 2-, 10-, 100-, and 200-year, 24-hour storm events.
- **Infiltration** – Maintain **90% of the pre-development infiltration volume** under post-development conditions.
- **Volume Control** – **100% pre-development runoff volume**
- **Water Quality** – Retain **80% of Total Suspended Solids** post-development



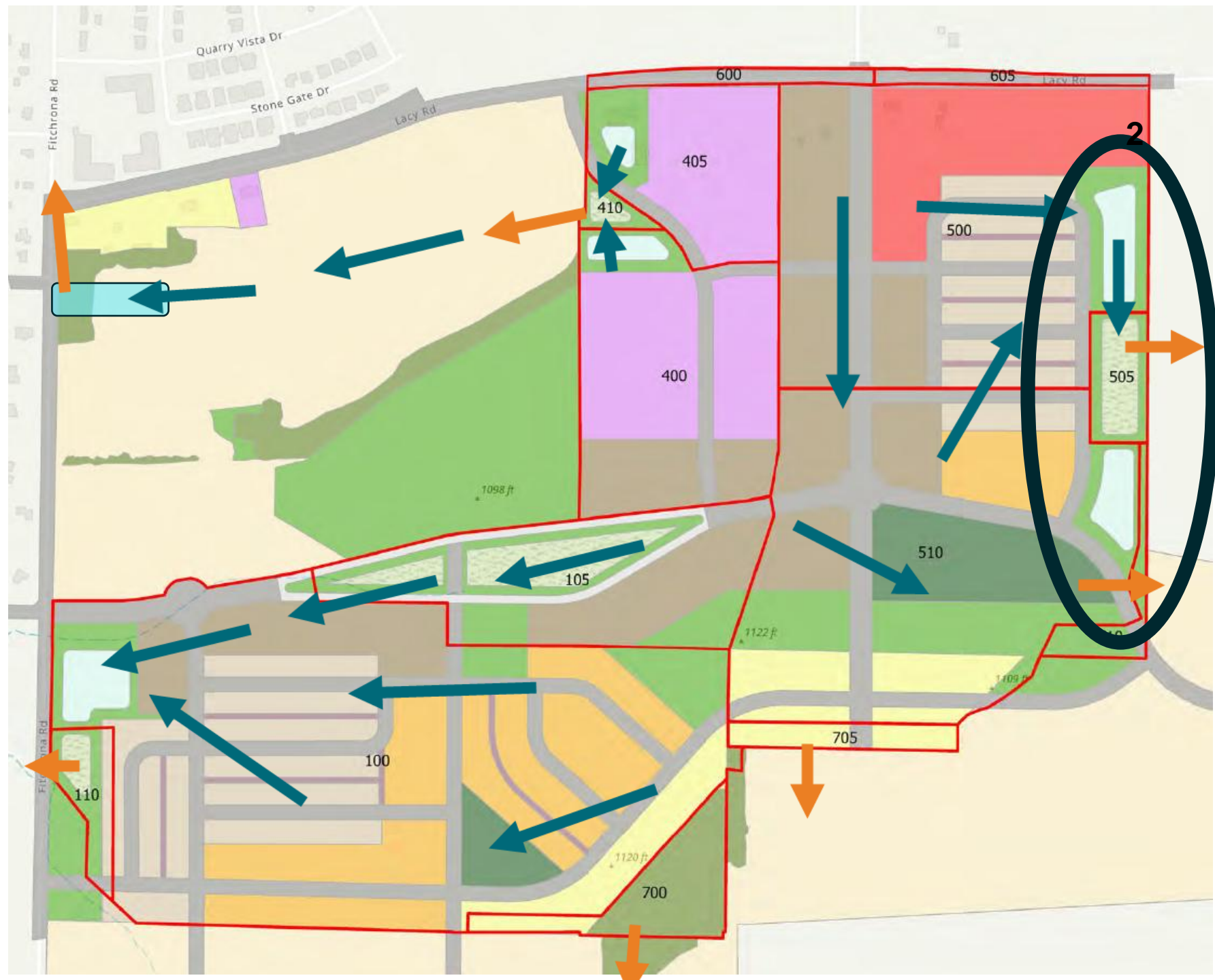
ENGINEERING REVIEW

CONCEPTUAL SWMP (WEST SECTION)

- Drains to a closed depression results increased performance standards

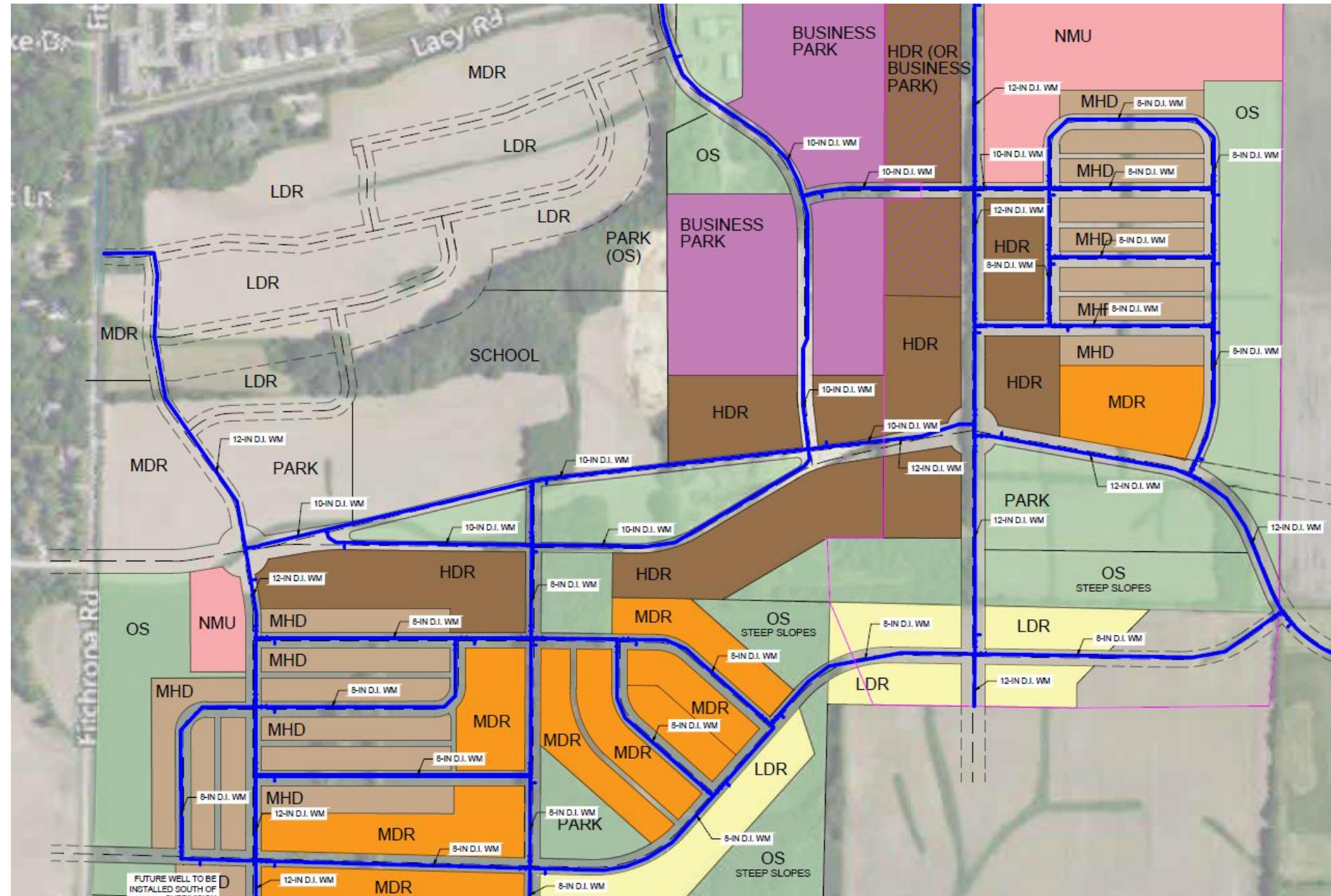
Performance Standards

- **Peak Discharge Control and Water Quality – same**
- **Infiltration** – Maintain **100%** of the pre-development infiltration volume under post-development conditions.
- **Volume Control** – Post-development runoff volumes for the 1-year, 2-year, 10-year, 100-year, and 200-year, 24-hour storm event **will be 10% less than predevelopment runoff volumes.**



Preliminary Watermain Layout

- **Connected and Looped System**
- **Connections**
 - No extensions to Fitchrona
 - Connect to planned neighborhood to the north
- **No need for other water infrastructure** (e.g., well or reservoir)



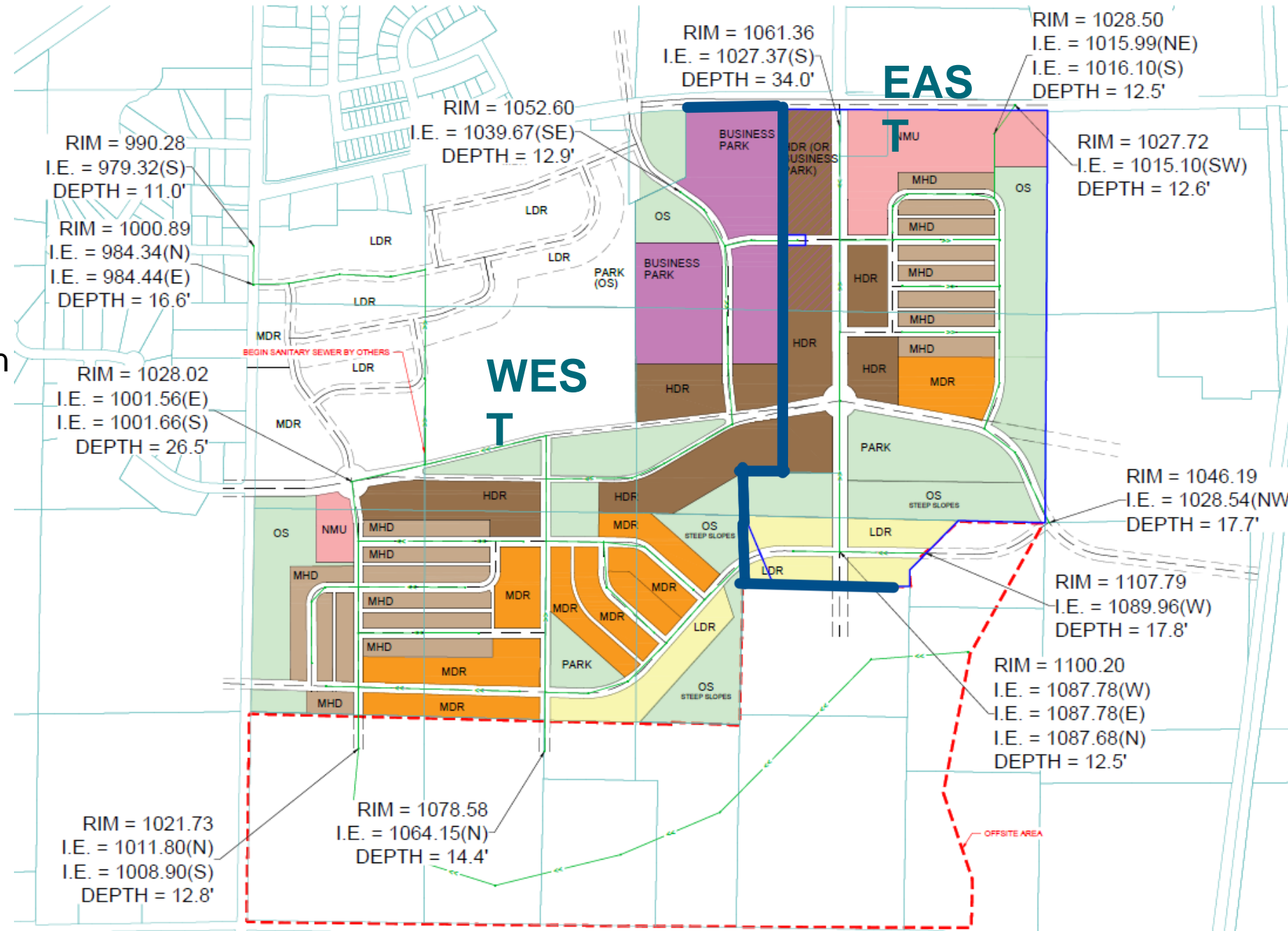
Sanitary Design

Assumptions

- Average water usage of 80 gallons per day per person
- Gravity serve sanitary service with preferred design to not exceed 30-ft depth
- Potential alternative connection to reduce pipe depth

Design

- East and West sides of development will not rely on extensions from each other
- Includes potential offsite development south of study area (in red dash area) for pipe sizing



Sanitary Design

East side will connect to Lacy

- **Allowable capacity of 0.961 cfs** (reserving 30% for additional development along Lacy Rd)
- **Lowest density ranges** (530-690 units) throughout the east will be **slightly below the capacity.**
- At the **midpoint of density ranges** (~1,200-1,650 units), **the peak flow will be above the capacity** even if this development were allowed to use the reserved 30%.
- **Another pipe needed** to allow much higher than the lowest density range for the preferred land uses. (e.g., along Collector A, through neighboring lands, or along Lacy parallel to existing pipe)

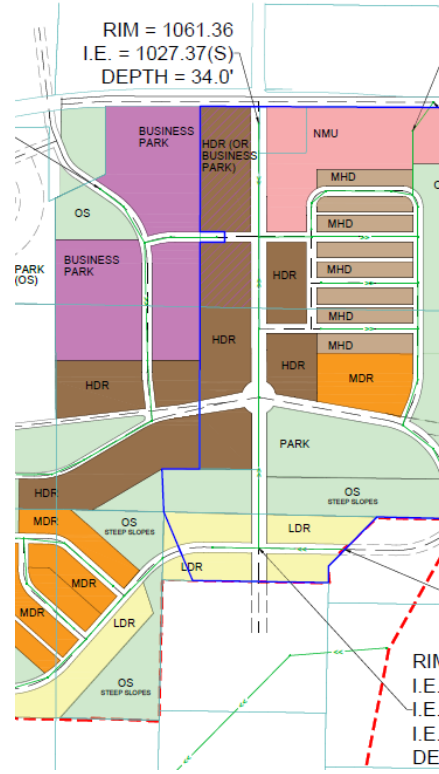


Table 4.2: Average and Peak Wastewater Flow Rates - Eastern Lands

Eastern Lands (OPTION A - HDR Flex Area)							
Land Use	Metrics			Average Flows (GPD)	Average Flows (cfs)	Peaking Factor	Peak Flow (cfs)
Low Density Residential	80 GPD/person	18 units	2.8 people/unit	4,032	0.006	4	0.025
Medium Density Res.	80 GPD/person	24 units	2.5 people/unit	4,800	0.007	4	0.030
Med-high Density Res.	80 GPD/person	102 units	2.3 people/unit	18,768	0.029	4	0.116
High Density Residential	80 GPD/person	428 units	2.0 people/unit	68,480	0.106	4	0.424
Neighborhood Mixed	80 GPD/person	137 units	2.0 people/unit	21,920	0.034	4	0.136
	1,500 GPD/acre	6.9 acres	-	10,275	0.016	2.5	0.040
Business Park	1,500 GPD/acre	0.0 acres	-	0	0.000	2.5	0.000
Offsite	80 GPD/person	0 units	2.3 people/unit	0	0.000	4	0.000
Total							0.770

Eastern Lands (OPTION B - Business Park Flex Area)							
Land Use	Metrics			Average Flows (GPD)	Average Flows (cfs)	Peaking Factor	Peak Flow (cfs)
Low Density Residential	80 GPD/person	18 units	2.8 people/unit	4,032	0.006	4	0.025
Medium Density Res.	80 GPD/person	24 units	2.5 people/unit	4,800	0.007	4	0.030
Med-high Density Res.	80 GPD/person	102 units	2.3 people/unit	18,768	0.029	4	0.116
High Density Residential	80 GPD/person	250 units	2.0 people/unit	40,000	0.062	4	0.248
Neighborhood Mixed	80 GPD/person	137 units	2.0 people/unit	21,920	0.034	4	0.136
	1,500 GPD/acre	6.9 acres	-	10,275	0.016	2.5	0.040
Business Park	1,500 GPD/acre	8.9 acres	-	13,350	0.021	2.5	0.052
Offsite	80 GPD/person	0 units	2.3 people/unit	0	0.000	4	0.000
Total							0.645

Sanitary Design

West side will connect to Fitchrona Rd and/or MMSD

- **Allowable capacity of 0.716 cfs** (with reserves for planned dev.)
- **Lowest density ranges** throughout the west will be **below the capacity at around 0.915 cfs (~720 units)**
- **At the midpoint of density ranges (~1,520 units), the peak flow increase to 1.736 cfs**
- **If development planned for comes lower than is anticipated, SSPN is possible from Fitchrona pipe. Otherwise, services from another pipe (e.g., MMSD) or upsizing Fitchrona will be necessary.**

Table 4.1: Average and Peak Wastewater Flow Rates - Western Lands

Western Lands							
Land Use	Metrics			Average Flows (GPD)	Average Flows (cfs)	Peaking Factor	Peak Flow (cfs)
Low Density Residential	80 GPD/person	11 units	2.8 people/unit	2,464	0.004	4	0.015
Medium Density Res.	80 GPD/person	123 units	2.5 people/unit	24,600	0.038	4	0.152
Med-high Density Res.	80 GPD/person	155 units	2.3 people/unit	28,520	0.044	4	0.177
High Density Residential	80 GPD/person	410 units	2.0 people/unit	65,600	0.101	4	0.406
Neighborhood Mixed	80 GPD/person	22 units	2.0 people/unit	3,520	0.005	4	0.022
	1,500 GPD/acre	1.1 acres	-	1,650	0	0	0
Business Park	1,500 GPD/acre	24.6 acres	-	36,900	0.057	2.5	0.143
Offsite	80 GPD/person		2.5 people/unit	0	0.000	4	0.000
Total							0.915

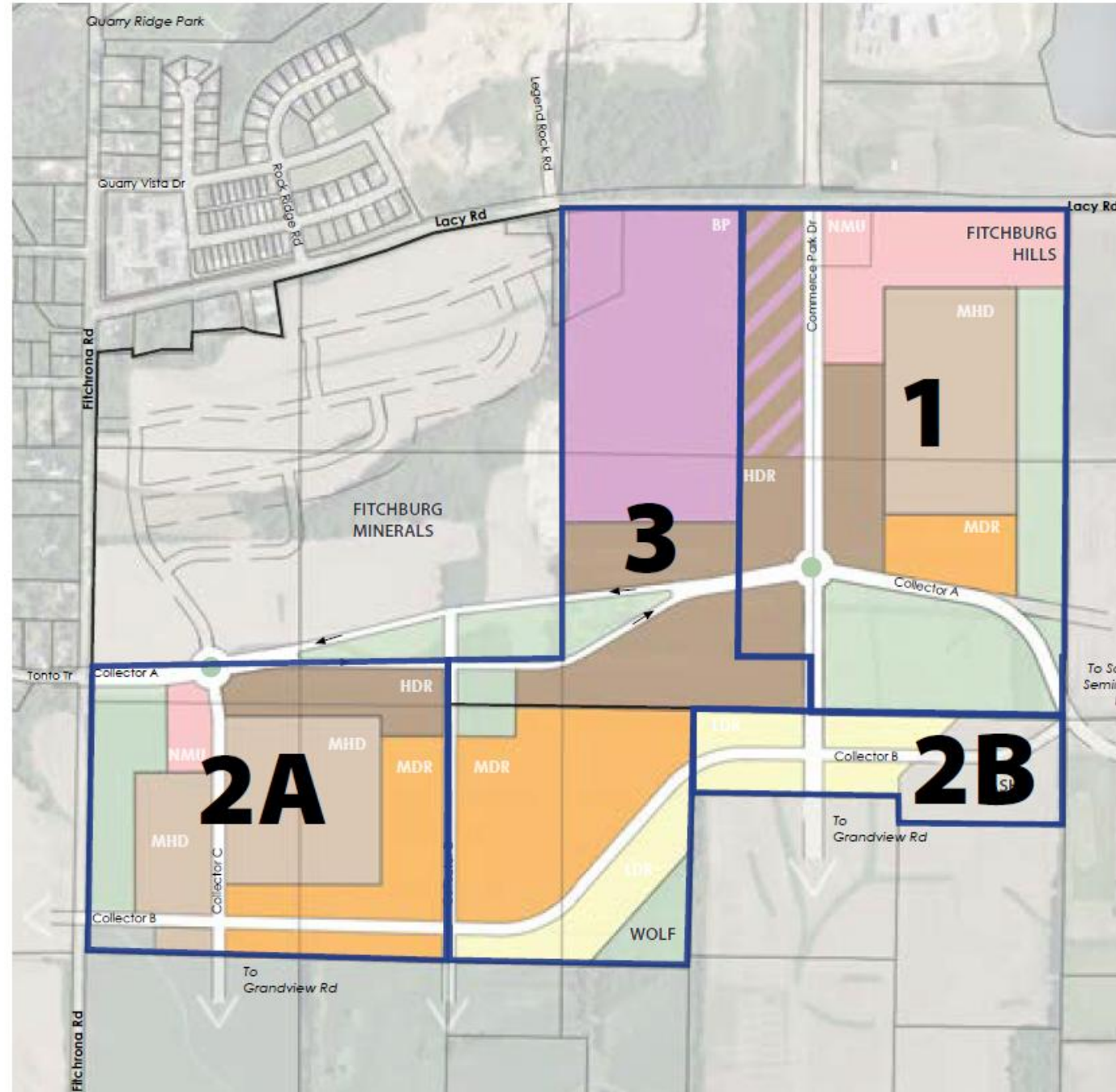
* 1.163 cfs current capacity of pipe.

DEVELOPMENT PHASING

4 PHASES

- **5-20 years** to buildout
- **Phases is based on three factors:**
 - projects offered by landowners,
 - timing of necessary infrastructure
 - expected market demand for new lots
- **Phase 1:** CUP expiring Dec 31, 2028; transitioning to active development
- **Phase 2A:** Not planned to be quarried, but tied to extension of utilities service along Fitchrona Road
- **Phase 2B:** Tied to extension of utilities from the north (Phase 1)
- **Phase 3:** Lands closest to Lacy Road include equipment and facilities for the quarry operation and are long-term development; and Wolf property is a potential quarry site before development

Figure 3.11: Development Phasing Map



THANK YOU!