How could Madison Regulate Data Centers?

CITY OF MADISON PLAN COMMISSION MEETING

JUNE 29, 2026

Meeting Agenda

- Overview Presentation
  - City Zoning Moratorium
  - Data Center Basics
  - Regulatory Tools
  - Zoning Regulation Options

- Discussion

Why Now?

Madison passed 12-month moratorium on new data centers more than 10,000 square feet as the primary use.

Time needed to define "data center" as a use in City code and establish appropriate parameters for it.

http://www.cityofmadison.com/datacenters

Code development process

Research & Planning

- June 3 Public Information Meeting
- First Plan Commission discussion on June 11
- Future Commission meetings to shape policy

Draft Code Proposed

- Expected in September
- Future public input on draft

Legislative Process to Adoption

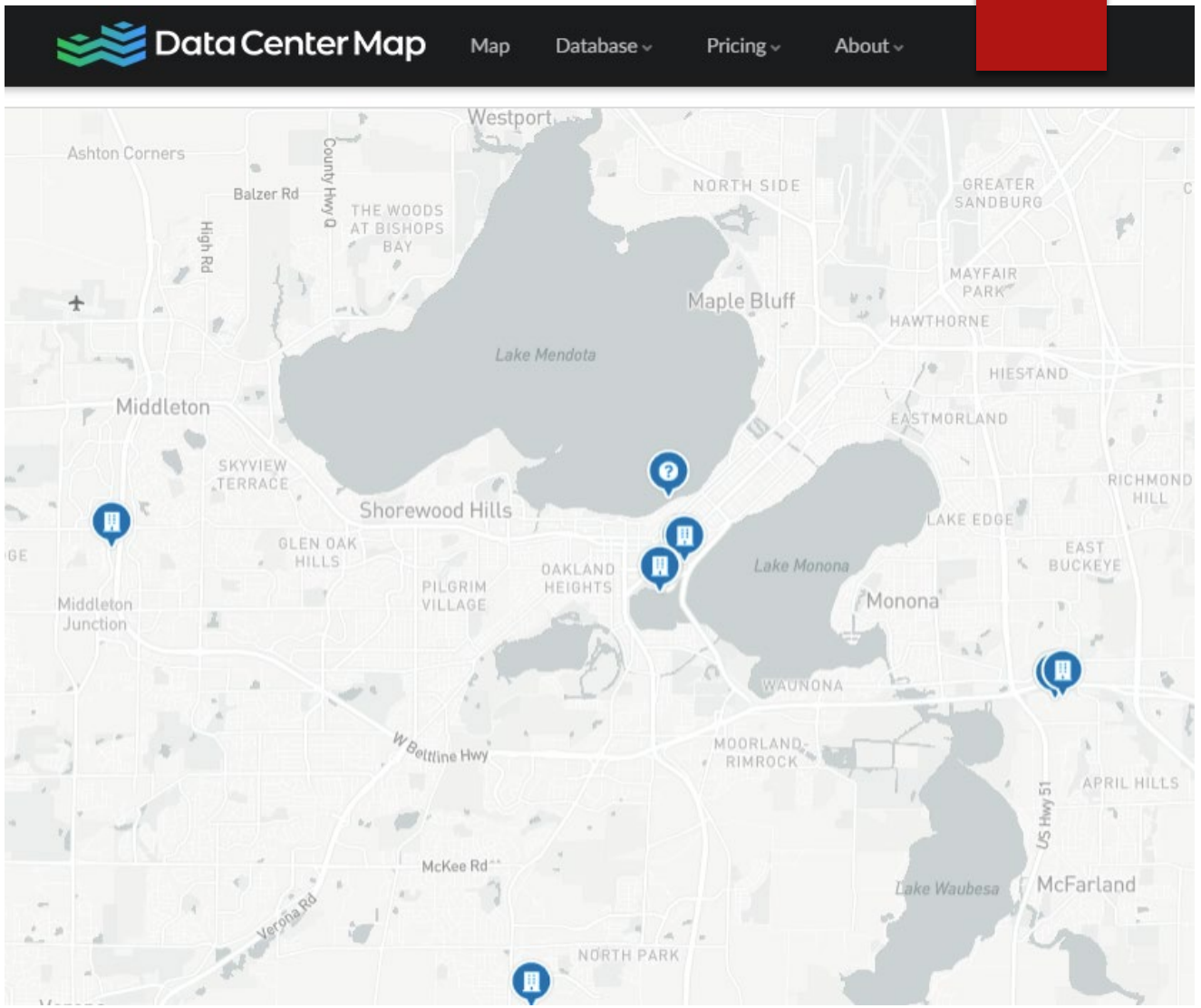
- Introduced Sept/Oct
- Committee & commission discussions
- Final decision in Nov/Dec

What do we mean by data centers?

- Building or part of a building that contains a large number of computers that process and store digital data
- This use exists in Madison but is not defined in the Zoning Code

Local Context

- ~ 6+ stand-alone data centers in Madison area
- Numerous smaller data center spaces in larger buildings to serve that entity's needs
- Located throughout the city



Types of Data Centers: **Integrated**

Land area	NA
Building size	1,000 sq ft – 40,000 sq ft
Land use comparable	Office tenant
Energy demand	40 kw – 3 MW
Energy use comparable	40 – 2,880 WI homes daily energy

Types of Data Centers: **Medium**

Data Center, 4916 East Broadway, Madison WI

Land area	0.5-5 acres
Building size	5,000 sq ft – 40,000 sq ft
Land use comparable	Office or light industrial
Energy demand	500 kw – 3 MW
Energy use comparable	480 – 2,880 WI homes daily energy

Types of Data Centers: **Large**

H5 Data Center, Ashburn VA (via Google Street View)

Land area	10-30 acres
Building size	40,000 sq ft – 100,000 sq ft
Land use comparable	Heavy or general industrial
Energy demand	3 MW- 50 MW
Energy use comparable	2,880 – 48,000 WI homes daily energy

Types of Data Centers: **Hyperscale**

Google Data Center, Council Bluffs IA (datacenters.google)

Land area	200 – 1,000 acres
Building size	100,000 – 2,000,000 sq ft
Land use comparable	Depends / TBD
Energy demand	220 MW to >1.8 GW
Energy use comparable	100 MW can power 75,000-100,000 homes

Types of Data Centers: **Hyperscale**

- 24-30 feet per story
- Can be 2 to 3 stories
- Multiple buildings on one site
- On-site substations (5-30 acres)
- Back-up generators (diesel or natural gas)
- Rooftop or ground mounted mechanical equipment
  - Ground mounted equipment can be 60 feet tall

Local Context & Comparisons

Image credit: LJB Engineering

FedEx Distribution Center:
~ 385,000 sq ft building

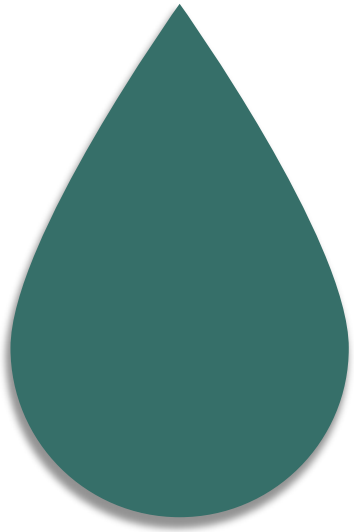
Image credit: GoogleMaps

Mendota Mental Health Institute:
~ 350 acres

Image credit: Isthmus

Former Oscar Mayer site:
~62 acres.

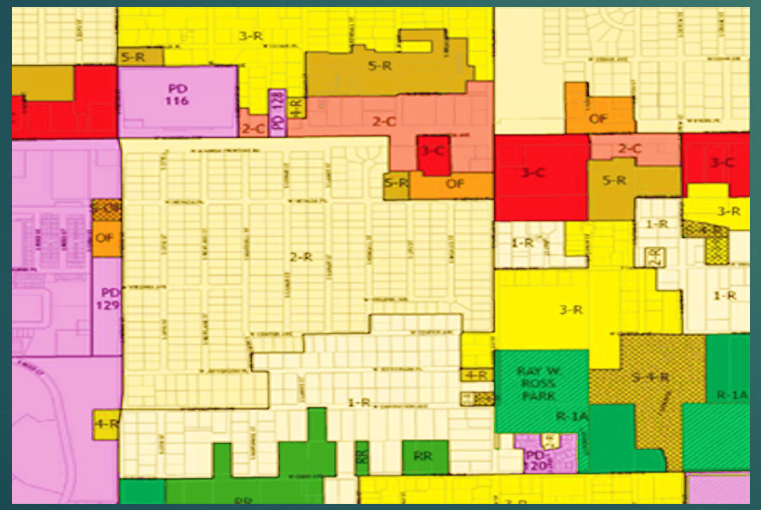
Water-Related Impacts



- Water use associated with the cooling needs of data centers
- Trends are toward closed loop systems that minimize direct on-site water draws.
  - Can require about 1,000,000 gallons of water to fill initially
  - Daily water consumption for WI data centers that use closed loop systems is 3,000-20,000 gallons per day of on-site water usage.
- Offsite water use for electricity generation can have a larger water impact at power plant locations
- Madison Water Utility must connect a new user and cannot regulate amount of water used

Zoning Overview

Zoning regulates where different uses can be to prevent negative impacts. E.g., we separate industrial uses from residential uses.



Step 1: Define a "use."

E.g. a restaurant, an auto body shop, a light manufacturing facility, a multifamily building

Step 2: Determine which zones this use is allowed in

This could vary by size of the "use"

Step 3: Determine parameters or conditions of approval for that use in that zone

E.g. "permitted" vs "conditional use" or use requiring "supplemental regulations"

What does the City regulate in Zoning?

- Allowed uses
- Building design and form
- Building size
- Building height
- Minimum stories
- Lot size
- Lot coverage
- Setbacks
- Landscaping
- Screening
- Parking

What else does the City regulate?

- Noise
- Lighting
- State building code compliance
- Tax assessments
- Construction traffic management
- Stormwater management
- Sewer discharge quality (not quantity)

What **CAN'T** the City regulate?

- Water usage
- Energy use or sources
- Community benefits as condition of approval
- Jobs unless via incentives

Other regulations in Wisconsin

- State of Wisconsin
  - Data Center Sales and Use Tax exemption
  - More regulation under discussion in State Legislature last session
- Public Service Commission of WI
  - Individual utility decisions – required special tariffs to ensure data centers cover own costs
- Dane County
  - Considering temporary moratorium.
  - Would apply outside our city limits. Our zoning applies inside city limits.

Zoning Regulations in other communities

Create data center use in conventional zoning districts

- Not Permitted
- Permitted Use
- Conditional Use

Regulate data centers based on size

Create use specific regulations

- Supplemental Regulations in the City's Zoning Code

Zoning Regulations in other communities

Planned Development District

- City is shifting away from Planned Development Districts

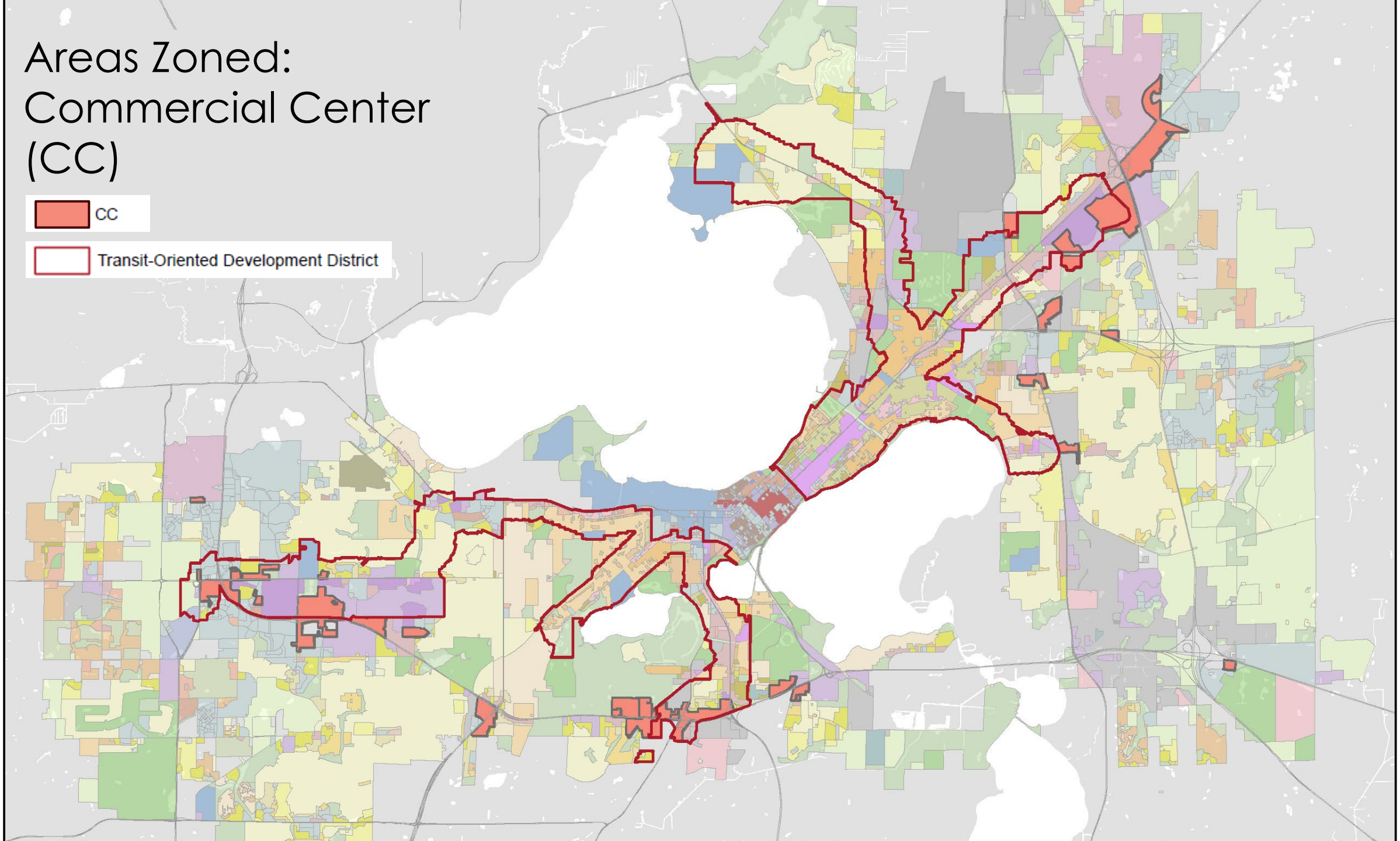
Data Center Zoning District

- City has a few of these (Mission Camp District, Nonmetallic Mineral Extraction District)

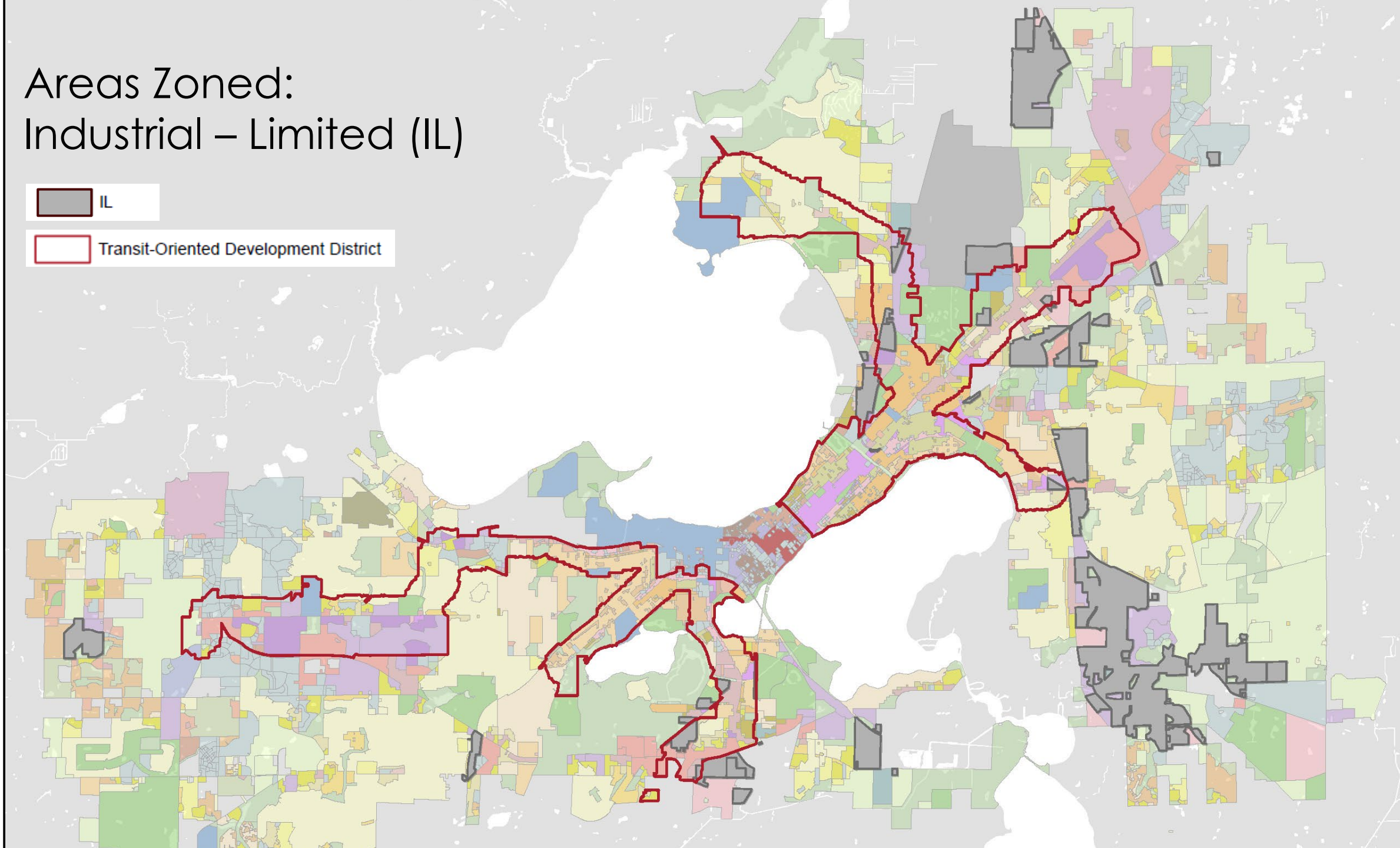
Where are data centers located in other communities?

- Integrated data centers are in mixed-use, office, commercial and industrial buildings.
- Medium data centers are in business parks and light industrial areas.
- Large data centers are in business parks, light industrial and heavy industrial areas.
- Hyperscale data centers are in light industrial and heavy industrial areas.
  - Sometimes industrial areas border residential areas.
  - Generally located near transmission lines

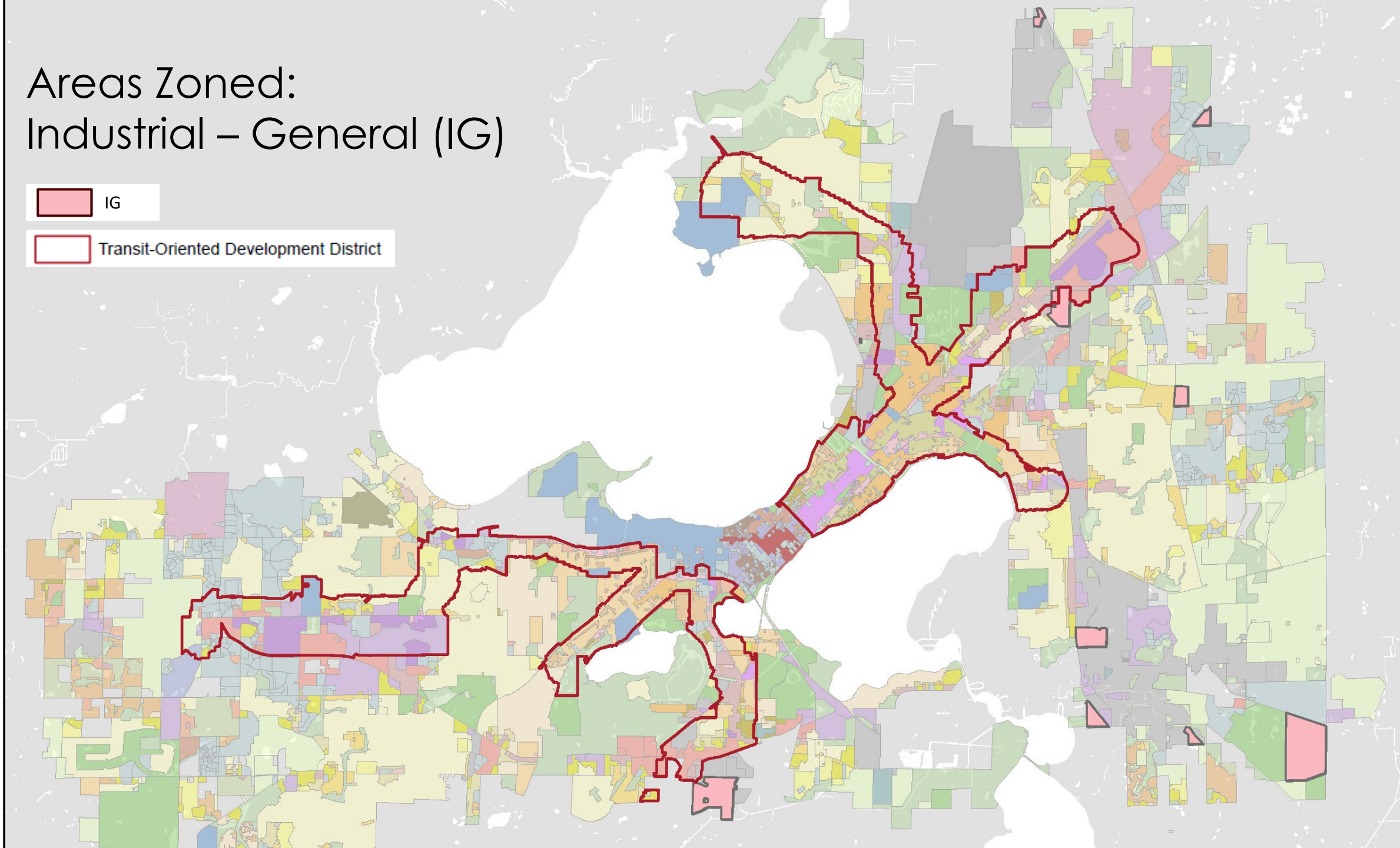
Areas Zoned: Commercial Center (CC)



Areas Zoned:
Industrial – Limited (IL)



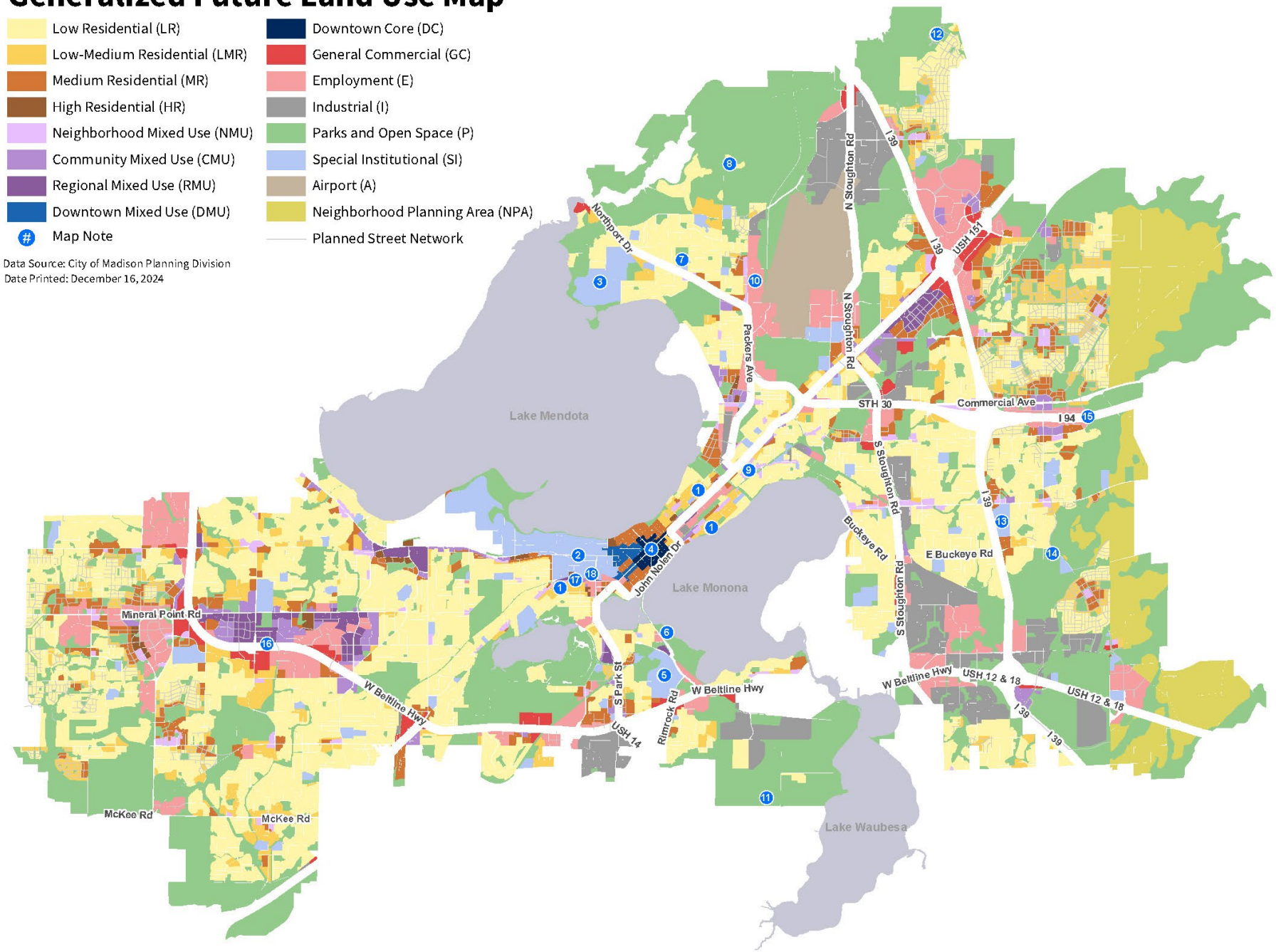
Areas Zoned:
Industrial – General (IG)

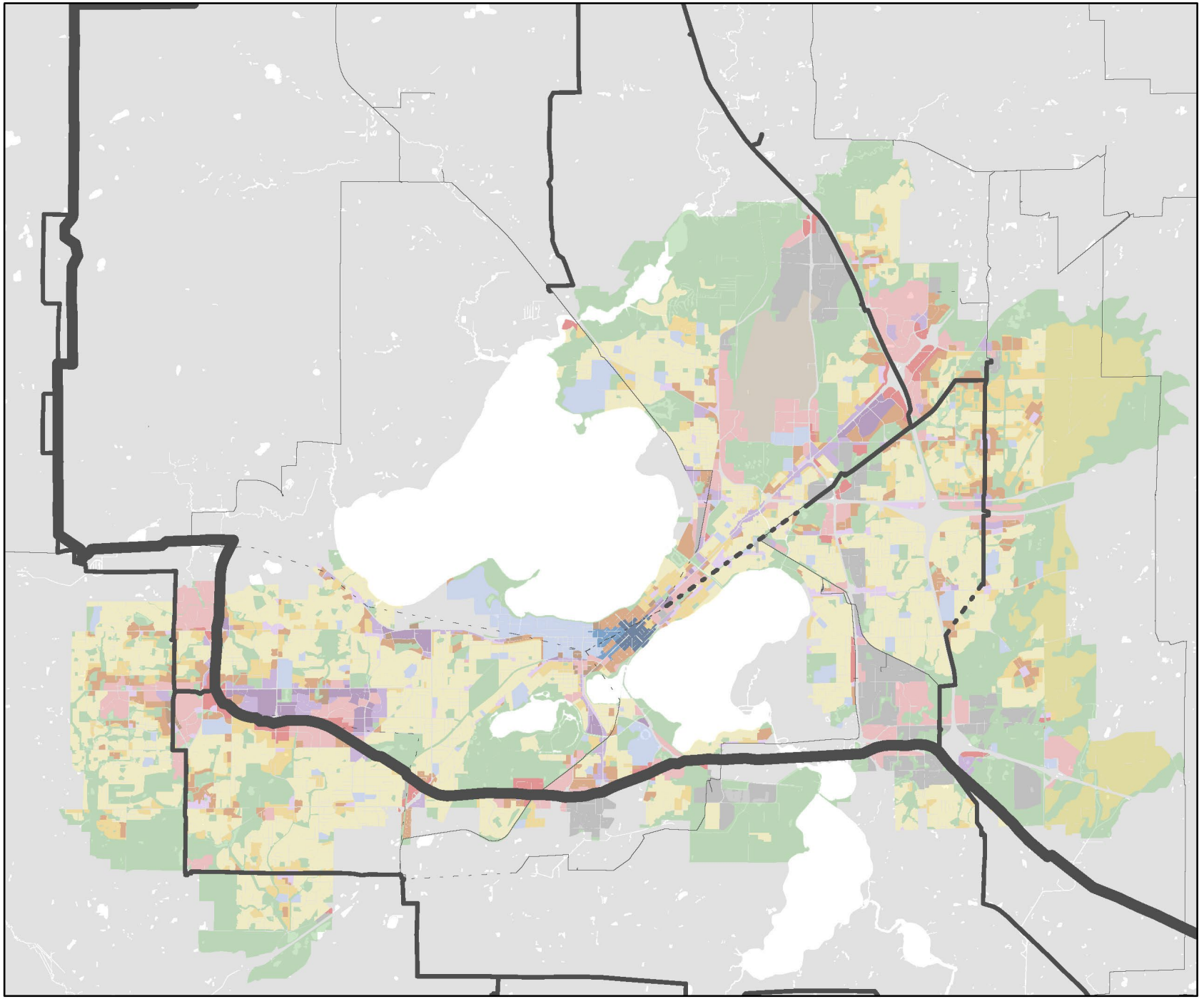


Generalized Future Land Use Map

- Low Residential (LR)
- Low-Medium Residential (LMR)
- Medium Residential (MR)
- High Residential (HR)
- Neighborhood Mixed Use (NMU)
- Community Mixed Use (CMU)
- Regional Mixed Use (RMU)
- Downtown Mixed Use (DMU)
- # Map Note
- Downtown Core (DC)
- General Commercial (GC)
- Employment (E)
- Industrial (I)
- Parks and Open Space (P)
- Special Institutional (SI)
- Airport (A)
- Neighborhood Planning Area (NPA)
- Planned Street Network

Data Source: City of Madison Planning Division
Date Printed: December 16, 2024





Electric Transmission Lines and GFLU Map

Electric Transmission Lines

Aboveground	Underground	
		<100 kV
		+/- 138 kV
		345 kV

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0 0.7 1.4 2.1 2.8 3.5 Miles

N

Questions and Discussion

- What questions do you have about data centers?
- What types of data centers should Madison allow?
- What aspects of data centers are most important for the City to manage?
- What land use considerations are important to focus on (both to capture opportunities and/or mitigate conflicts)?

Questions and Discussion

- How should the City regulate data centers in the Zoning Code?
  - Should the City establish data center types based on size?
  - Should data center types be permitted or conditional ?
  - Should the City establish supplemental regulations for data centers ?