



CITY OF NORTH OAKS

Regular Planning Commission Meeting
Thursday, September 28, 2023
7:00 PM, Community Meeting Room, 100 Village Center Drive
MEETING AGENDA

Remote Access - *Planning Commission members will participate in person in Council Chambers (Community Room, 100 Village Center Drive, Suite 150, North Oaks, MN) during the meeting. Members of the public are welcome to attend. Any person wishing to monitor the meeting electronically from a remote location may do so by calling the following Zoom meeting videoconference number: 1-312-626-6799, Webinar ID: 830 6229 5758 or by joining the meeting via the following link: <https://us02web.zoom.us/j/83582425603>.*

1. Call To Order

2. Roll Call

3. Pledge

4. Citizen Comments - *Members of the public are invited to make comments to the Planning Commission during the public comments section. Up to four minutes shall be allowed for each speaker. No action will be taken by the Commission on items raised during the public comment period unless the item appears as an agenda item for action.*

5. Approval of Agenda

6. Approval of Previous Month's Minutes

6a. Approval of Planning Commission Meeting minutes of 8.31.2023
[Planning Commission Minutes 8.31.2023.pdf](#)

7. Business Action Items

7a. Public Hearing - Ordinance amending City Code Title XV, Chapter 151, regarding solar energy systems ordinance. Discussion and possible action on ordinance.
[2023-09-28 PC Packet_solar ordinance.pdf](#)

7b. Public Hearing - Regarding Ordinance amending Chapter 151 of the City Code regarding signs in the RSM-Residential Single-Family Medium Density District. Discussion and possible action regarding the Ordinance.
[2023-09-28 PC Packet_Sign ordinance.pdf](#)

7c. Discussion on amendments to Chapter 150 of the City Code regarding garage size
[2023-09-28 PC Packet_garage size ordinance.pdf](#)

8. Commissioner Report(s)

9. Adjourn

**North Oaks Planning Commission
Meeting Minutes
City of North Oaks Community Meeting Room
August 31, 2023**

1. CALL TO ORDER

Chair Cremons called the meeting to order at 7:01 p.m.

2. ROLL CALL

Present: Chair David Cremons, Commissioners Bob Ostlund, Stig Hauge, Joyce Yoshimura-Rank, Nick Sandell, Scott Weins, City Council Liaison Mark Azman

Absent: Grover Sayre III

Staff Present: Administrator Kevin Kress, City Attorney Bridget Nason, City Planner Kendra Lindahl (via Zoom)

Others Present: Videographer Kenny Ronnan

A quorum was declared present

3. PLEDGE OF ALLEGIANCE

Chair Cremons led the Council in the Pledge of Allegiance.

4. CITIZEN COMMENTS

There was no one present in the room, or online wishing to make comments.

5. APPROVAL OF AGENDA

MOTION by Cremons, seconded Sandell, to approve the agenda as submitted. Motion carried unanimously.

6. APPROVAL OF PREVIOUS MONTH'S MINUTES

a. Approval of July 27, 2023 Minutes

There were no changes noted.

MOTION by Yoshimura-Rank, seconded by Sandell, to approve the Planning Commission Meeting Minutes of July 27, 2023. Motion carried unanimously.

7. BUSINESS ACTION ITEMS

a. Public Hearing- Consider Conditional Use Permit for property located at 12 Columbine Lane for a garage exceeding 1,500 Square feet

- Kendra request to add additional stalls. Home built 1985 and expanded in 1987 to add swimming pool. Shoreland districted zoned RSL, and is not a ripian lot. Pool is a legal non-conforming structure.

- Septic site is to the North of the home, garage addition is to the south so there is no impact to septic site. Non-conforming lot as it doesn't show 2 septic sites, and it was not required to at that time.
- Garage addition to add 1 stall to south side, there is a slight step. Adding of 367 for the existing 908 square foot garage.
- Plans are consistent with code.
- Applicant Pat Henry stated extra room is for a garage and motorcycles. The extra garage space will be 7 feet from the well, with the building official stating 3 feet is the minimum. So it is good.
- Yoshimura-Rank stated it is a reasonable request.

MOTION by Sayre, seconded by Yoshimura-Rank, to open the public hearing at 7:09 p.m. Motion carried unanimously.

There were no members of the public in the Community Room or on zoom. No comments by the public.

MOTION by Hauge, seconded by Yoshimura-Rank, to close the public hearing at 7:09 p.m. Motion carried unanimously.

MOTION by Yoshimura-Rank, seconded by Hauge, to approved the CUP 23-5 for excess garage space at 12 Columbine Lane with the conditions listed by staff. Motion carried unanimously.

7b. Discuss Ordinance amending Chapter 151 of the City Code Regarding Sign Definitions and Signs in the RSM-Residential Single-Family Medium Density District

- Planner Lindall stated that Peace United Methodist Church came to the July City Council meeting to request allowance of a digital sign. Council directed Staff to proceed in reviewing an ordinance amendment. A sub-committee met to discuss the sign ordinance and bring it to the Planning Commission. The Shoreview signage ordinance was used as template and tweaked for North Oaks. Key points that would need to be met to allow digital signage:
 - Minimum lot size 3.5 acres,
 - Frontage on arterial or collector street
 - Display message is a minimum of 8 seconds (no flashing or animation)
 - Limit sign lighting to the hours of 6 a.m. – 11 p.m.
 - Max sign area of 32 sq. ft (with only 16 sq. ft. may be electronic message board)
 - Regulations must be consistent for all with the same zoning. This would impact about 22 parcels total which are primarily churches and schools, as well as a few in common open spaces.
 - Goal tonight is to get feedback from Planning Commission, and then bring to Council at the September meeting.
 - The overall sign ordinance for standard signs was also strengthened.

- Commissioner Hauge asked if Shoreview has been notified that we are looking to allow digital messaging. Kress stated the Shoreview City Manager is aware of what we are considering.
- Administrator Kress noted that the same vendor that did the sign at Incarnation Church is doing this one, and it doesn't seem intrusive. They would also ask for the Peace United sign be shifted out of the easement as their current plan showed.
- If our ordinance is changed to allow digital, Attorney Nason stated that Incarnation Church could apply for an after the fact permit to bring them into compliance since there is no permit on file for their current digital sign.
- Liaison Azman asked if there are any resident lots this new ordinance would apply to, that are not in NOHOA. It was thought the residential lots in question are part of NOHOA.
- Commissioner Ostlund wanted to make sure there was light density requirement and dimmer controls. Kress confirmed this technology is planned.
- City Planner Lindall stated the next step is for Planning Commission is to approve the draft, publish the Notice of Hearing for September 28th, if approved move onto Council, and publish ordinance in paper. The applicant would then apply for CUP.
- Administrator Kress stated Peace Church would potentially apply in the late fall with goal of Spring installation.
- The Commission felt the subcommittee did a good job flushing out the ordinance, and that it clearly defines size, brightness and timing of the sign lights.
- A public hearing will take place on September 28th regarding the proposed Ordinance amendments.
- Any additional comments or corrections should be sent to Administrator Kress.

7c. Discuss Ordinance amending Chapter 151 of the City Code Regarding Solar

- Chair Cremons stated that Incarnation Church is looking to install ground mounted solar array in the large back parking lot. The current ordinance does not address ground solar and could be clearer on roof solar.
- Planner Lindall stated Incarnation Church came to the July Council meeting to request ground mounted array. Subcommittee looked at other models and made draft for review in the packet. Key points include:
 - Limits it to RSM district
 - Must be in side or rear yard
 - Requires a CUP application
 - Drafts standards to buffer from adjacent land uses
 - Clarifies language for building rooftop mounted signs
 - Solar structures must be 30 feet from property line
 - Arrays are limited to 12 feet tall
 - Ground mounted solar can not be more than ½ the building footprint
 - Church wanted in their parking lot, and draft ordinance encourages native landscaping, but does not require it.
- The church has reviewed and did not have any changes to the ordinance.
- There are a significant number of homes in the RSM district. More often residents go for roof mounted to save yard space, but this provision would not allow ground mounted solar.

- Commissioner Ostlund stated he has seen fencing with barb wire to keep others off solar panels.
- The angle of the array should help prevent snow build up.
- Commissioner Weins noted concern that students from Chippewa Middle school could get into it.
- It was questioned why they just didn't use roof mounted system.
- Azman recalled Incarnation stating they would need a huge new expensive roof that is strong enough to hold solar panels. They don't have the funds for that at this time, but a solar array will save them a lot of money over the long term – and help provide a funds for a new roof in the long-term future.
- There are 20 RSM lots that are 3 ½ acres or larger. With 10 acres or more there are 3 RSM lots. Incarnation is 11 acres.
- Due to the concern of a significant number of homes being allowed to put large ground solar in backyards, Chair Cremons and others were more comfortable adding a 10-acre minimum to the conditions.
- A public hearing will take place on September 28th regarding the proposed Solar Ordinance amendments.

7d. **Discussion on CUP requirements for home height, and garages**

- Chair Cremons noted that currently allowed are homes with front height limit of 35 feet, with up to up to 45 feet height in the back with CUP and conditions. There is also reference to environmental and topographical conditions to be naturally suited to the design of the building with an egress or walkout.
- Kress stated that as homes get redeveloped, there is ambiguity in this language. The “naturally suited” terminology appears to reference the 1950-60’s original developments of empty lots. As homes are rebuilt nothing is “natural” conditions anymore.
- Could also change the language that requires an additional 2 feet of setback for each extra foot of height up to 45 feet. Should this be changed to a flat 10-15 setback increase if over 35 feet.
- The question is, does the Planning Commission need to review every home over 35 feet? If there is a mass grading site to allow walk-outs, Chair Cremons does not feel the owner has to come back again and request a CUP (like Red Forest Way). However, if there are current flat lots as part of neighborhoods, wants to be sure someone can not come in and dig large homes and change entire character.
- Commissioner Sandell would be in favor of being less restrictive than more restrictive to allow the homeowners more flexibility to building home if the conditions are right. There is now in place a calculation measurement that is difficult for home developers to discern.
- Chair Cremons noted the point of possible revisions is to determine if the applicants need to spend the extra money and time to go through the height CUP process.
- The additional 2 foot set back for each foot of height does need to be clarified to ensure the code is clear if the entire home needs to be setback, not just a corner of home that exceeds the 35 feet.
- Liaison Azman noted that we are seeing more homes with larger size garages that are integrated into the home. He feels there may be a compromise or ordinance adjustment that increases the allowed garage size, without over-shadowing the home.
- Chair Cremons noted if we went to 2,000 square feet as permitted, up to 3,000 with CUP review, four of the last seven permits would not have had to go through the CUP process.
- Commissioner Sandell asked how many items require a CUP in the City.
- Kress noted over 100 cubic yards also requires CUP. In the rebuilds, soil movement is not usually a problem, it is the removal of trees or impact on lake drainage that can be more impactful.
- There are 9 CUP’s in the RSL district, and about 15-20 in the RCM district.

- Commissioner Sandell noted the importance of maintaining character of property, but that updates can be made that still encourages residents to want to live and rebuild in North Oaks.
- Liaison Azman noted that he likes that the current Septic variance process as often adjustments are made during the review and process.
- Discussions will continue within the Ordinance working subgroup and brought back for further discussion.

7e. **Discussion on touring new development sites on September 6th**

Administrator Kress noted there are also alternate dates available on 14th, 24, 28th during parade of homes that would allow them to go in more homes.

Commission preference is for September 6th at 5:00 p.m. Kress will confirm with North Oaks Company the date and the desire to view each development and a model home in each if possible.

8. COMMISSIONER REPORT(S)

- Commissioner Weins mentioned that he will be vacating his seat within the next 45 days, as he is moving out of the country to China.
- Once he is gone, Commission will discuss whether to fill the position for the last few months of 2023, or just wait until a fresh start of 2024.

9. ADJOURN

Chair Cremons stated the next Planning Commission meeting would be September 28, 2023.

MOTION by Hauge, seconded by Yoshimura-Rank, to adjourn the Planning Commission meeting at 7:30 p.m. Motion carried unanimously by roll call.

Kevin Kress, City Administrator

David Cremons, Chair

Date approved_____

PLANNING REPORT

TO: North Oaks Planning Commission

FROM: Kendra Lindahl, City Planner
Kevin Kress, City Administrator
Bridget Nason, City Attorney

DATE: September 18, 2023

RE: PUBLIC HEARING. An Ordinance Amending City Code Title XV, Chapter 151, Regarding Solar Ordinance

BACKGROUND

At the July 13, 2023 City Council meeting representatives from Incarnation Lutheran Church spoke about the potential of installing a solar array in the northeast corner of their existing parking lot at 4880 Hodgson Road. The property is zoned RSM.

A subcommittee made up of Chair Cremons, Council member Azman and staff met to develop the ordinance amendments.

The Planning Commission reviewed a draft ordinance at the August 31st meeting. The Commission asked staff to provide additional information about how Gem Lake, Sunfish Lake and Grant address solar and staff has added those cities to the summary of other City standards attached to this report. The Commission directed staff to change the draft ordinance to require a minimum of 10 acres for any site proposing ground mounted solar. The draft ordinance reflects this change.

ISSUES AND ANALYSIS

Solar arrays are not currently permitted in the City. Section 151.022 of the City Code states that “In any zoning district whenever a use is neither specifically permitted nor denied, the use shall be considered prohibited.”

City staff have allowed building mounted solar arrays as part of a building permit because it is part of the structure. However, the Zoning Ordinance would need to be amended to allow this type of freestanding solar array. The City Council discussed this issue and directed staff to prepare an ordinance amendment for consideration in the RSM zoning district. The Council indicated that they supported this type of use as a conditional use accessory to a principal use if adequate screening can be provided.





The draft ordinance was prepared using information from the Minnesota Solar Model Ordinance and a number of individual cities. The model ordinance and a spreadsheet summarizing other ordinances is attached for reference. The ordinance formalizes the approval process for building-mount solar (which has been permitted) and adds ground-mount solar arrays as a conditional use.

The draft ordinances show underlined text for the proposed additions to the City Code and ~~struck through~~ text for the deletions.

The draft ordinance allows accessory ground-mount solar as a conditional use in the RSM zoning district only in the side or rear yard on parcels at least 10 acres in size. The parcels zoned RSM are located generally on the perimeter of the City.

The subcommittee intentionally left the landscape requirements less prescriptive so that the screening and buffering requirements could be evaluated on a case-by-case basis as part of the conditional use permit application.

The request tonight is to amend the ordinance to allow ground-mount solar arrays. If approved, Incarnation Lutheran Church could submit an application for a conditional use permit. The conditional use permit would require a public hearing at the Planning Commission and City Council action. While the specific request from Incarnation is not on the agenda this evening, a concept plan is included in this packet for informational purposes only.

Attached for reference:

- Exhibit A: Draft Ordinance amending Chapter 151
- Exhibit B: Zoning Map
- Exhibit C: Transportation Map
- Exhibit D: MN Solar Model Ordinance
- Exhibit E: Summary of Other City Standards
- Exhibit F: Concept from Incarnation Lutheran Church





PLANNING COMMISSION OPTIONS

The Planning Commission has the following options:

1. **Move to recommend approval** of the ordinance amendment as drafted.
2. **Move to recommend approval** of the ordinance amendment with modifications.
3. **Move to recommend denial** of the amendment with findings for denial.
4. **Recommend continuance** of the application based on the need for more information.



**CITY OF NORTH OAKS
RAMSEY COUNTY, MINNESOTA**

ORDINANCE NO. ____

**AN ORDINANCE AMENDING CITY CODE TITLE XV, CHAPTER 151, REGARDING
SOLAR ENERGY SYSTEMS**

THE CITY COUNCIL OF THE CITY OF NORTH OAKS ORDAINS AS FOLLOWS:

Section One. Title XV, Chapter 151, Section 151.051 Amendment: Title XV, Chapter 151, Section 151.051 of the North Oaks City Code is hereby amended to add Section 151.051(D)(3) as follows:

§ 151.051 RSM - RESIDENTIAL SINGLE-FAMILY MEDIUM DENSITY DISTRICT. (D) Conditional uses. The following conditional uses may be permitted, but only after securing a conditional use permit in accordance with § 151.076:

(3) Ground Mounted Solar Energy Systems that meet the performance standards found in § 151.035.

Section Two. Title XV, Chapter 151, Section 151.052 Amendment: Title XV, Chapter 151, Section 151.052 of the North Oaks City Code is hereby amended as follows. The underlined text shows the added language.

(D) Conditional uses. The following conditional uses may be permitted, but only after securing a conditional use permit in accordance with § 151.076: all uses that are permitted conditional uses in the Residential Single-Family Medium Density District in § 151.051(D), except for Ground Mounted Solar Energy Systems.

Section Three. Title XV, Chapter 151 Amendment Adding Section 151.035: Title XV, Chapter 151, of the North Oaks City Code is hereby amended to add § 151.035 as follows:

§151.035 Solar Energy Systems

(A) **Purpose.** The purpose of this section is to regulate the placement, construction and modification of solar energy systems in order to protect the health, safety and welfare of the public, while not unreasonably interfering with the development of the solar energy systems in the City. Specifically, the purposes of this section are:

(1) To meet the goals of the Comprehensive Plan and preserve the health, safety and welfare of the community by promoting the safe, effective and efficient use of solar energy systems.

- (2) To regulate the location of solar energy systems.
- (3) To protect residential areas and land uses from potential adverse impacts of solar energy systems.
- (4) To minimize adverse visual impacts of solar energy systems and facilities through design, siting, landscaping, and screening.
- (5) To avoid adverse impacts to adjacent properties caused by solar energy systems by ensuring that those structures are soundly and carefully designed, constructed, modified, maintained and promptly removed when no longer used.
- (6) To ensure that solar energy systems are compatible with surrounding land uses.

(B) **Definitions.**

BUILDING-INTEGRATED SOLAR ENERGY SYSTEM. A solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building-integrated systems include, but are not limited to, photovoltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.

GRID-INTERTIE SOLAR ENERGY SYSTEM. A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

GROUND MOUNTED SOLAR ENERGY SYSTEM. A solar energy system mounted on a rack or pole that rests on or is attached to the ground. Ground-mount systems are accessory to the principal use and allowed only with a conditional use permit.

PHOTOVOLTAIC SYSTEM. A solar energy system that converts solar energy directly into electricity.

ROOF MOUNTED SOLAR ENERGY SYSTEM. A solar energy system mounted on a rack that is fastened to or ballasted on the roof of a structure.

SOLAR ACCESS. Unobstructed access to direct sunlight on a lot or building through the entire year, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.

SOLAR COLLECTOR. The panel or device in a solar energy system that collects solar radiant energy and transforms it into thermal, mechanical, chemical, or electrical energy. The collector does not include frames, supports, or mounting hardware.

SOLAR ENERGY. Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

SOLAR ENERGY SYSTEM. A device, array of devices, or structural design feature, the purpose of which is to provide for generation or storage of electricity from sunlight, or the collection, storage and distribution of solar energy for space heating or cooling, daylight for interior lighting, or water heating.

(C) Permitted Accessory Use.

- (1) Roof-Mounted and Building-Integrated Solar Energy Systems are a permitted accessory use in all zoning districts where structures of any sort are allowed subject to the following standards:
 - (a) Such systems must comply with the building code and current City ordinances and regulations.
 - (b) Building-Integrated or Roof-Mounted Solar Energy Systems shall not exceed the maximum allowed height for a building or roof in any zoning district.
- (2) Solar Energy Collector devices less than two (2) square feet in area and generally used for garden decoration, exterior accent lighting, lawns, and flagpoles, are exempt from the requirements of this section.

(D) Ground-Mounted Solar Energy Systems. Ground Mounted Solar Energy Systems are a conditional use in the RSM zoning district, subject to the following standards:

1. **Location and Lot Size Requirements.**

- (a) The lot is a minimum of 10 acres in size.
 - (b) Ground Mounted Solar Systems must be located entirely in the side or rear yard of the lot.
 - (c) Ground Mounted Solar Systems may be located within a parking lot provided the applicant can provide evidence that adequate on-site parking is available to serve the property and the structure will not disrupt required parking lot spaces or drive aisles.
2. **Setbacks.** Ground Mounted Solar Energy Systems must comply with the required 30-foot minimum structure setback from all property lines. Ground Mounted Solar Energy

Systems may not extend into the side or rear yard setback when oriented at minimum design tilt.

3. **Height.** Ground Mounted Solar Energy Systems shall not exceed 12 feet in height. Height shall be measured from the top of the grade to the highest point of the structure at its maximum designed height.
4. **Visibility.** Ground Mounted Solar Energy Systems shall be designed to minimize visual impacts from the public right-of-way and adjacent property.
5. **Glare.** All solar energy systems shall minimize glare affecting adjacent or nearby properties. Where necessary, screening may be required to address glare.
6. **System Size.** The total collector area of Ground Mounted Solar Energy Systems shall not be larger than half the building footprint of the principal structure.
7. **Lot Coverage.** Ground Mounted Solar Energy Systems shall be exempt from lot coverage limitations if the soil under the Solar Collector is maintained in vegetation and not compact as described in subpart 9 below.
8. **Accessory Structure Exemption.** Ground Mounted Solar Energy Systems shall not be considered an accessory structure for the purpose of accessory structures size and number limitations.
9. **Landscaping.**
 - (a) Where possible, a mix of pollinator and native groundcover mix should be provided beneath the solar collectors to provide native perennial vegetation and foraging habitat beneficial to gamebirds, songbirds, and pollinators and reduce stormwater runoff and erosion at the solar generation site, subject to the standards of Minnesota State Statutes §216B.1642.
 - (b) A mix of deciduous and evergreen trees and shrubs shall be provided to buffer the panels from adjacent properties. Natural looking and effective screening is desired, however, as part of the conditional use permit, the City may permit fences in addition to or in lieu of landscaping to provide appropriate screening from adjacent public rights-of-way and neighboring properties.
10. **Conditional Use.** The conditional use permit shall be subject to the procedures and standards in Section 151.076 (Conditional Use Permits) of the City Code.

(E) **Plan Approval Required.** All Building-Integrated or Roof Mounted Solar Energy Systems shall require a building permit. All Ground Mounted Solar Energy Systems shall require a conditional use permit and a building permit.

- (1) **Plan Applications.** Plan applications for solar energy systems shall be accompanied by to-scale horizontal and vertical (elevation) drawings. The drawings must show the location of the system on the building Building-Integrated or Roof Mounted Solar Energy Systems and a site plan showing all property lines must be provided for Ground Mounted Solar Energy Systems.
- (2) **Plan Approvals.** Applications for building-mount or building-integrated systems that meet the design requirements of this section may be administratively approved by the City's zoning official provided such systems comply with all requirements of this section. A building permit is still required for all such systems.
- (3) **Approved Solar Components.** Electric solar energy system components must have a UL or equivalent listing and solar hot water systems must have an SRCC rating.
- (4) **Compliance with Building Code.** All solar energy systems shall meet approval of the City's building official, consistent with the State of Minnesota Building Code, and solar thermal systems shall comply with HVAC-related requirements of the Energy Code.
- (5) **Compliance with State Electric Code.** All photovoltaic systems shall comply with the Minnesota State Electric Code.
- (6) **Compliance with State Plumbing Code.** Solar thermal systems shall comply with applicable Minnesota State Plumbing Code requirements.
- (7) **Utility Notification.** All grid-intertie solar energy systems shall comply with the interconnection requirements of the electric utility. Off-grid systems are exempt from this requirement.
- (8) **Expiration.** If any solar energy system remains nonfunctional or inoperative for a continuous period of twelve (12) months, the system must be deemed to be abandoned and shall constitute a public nuisance. The owner must remove the abandoned system at their expense. Removal shall include the entire structure, including transmission equipment and footings.

Section Four. Effective Date. This Ordinance shall be in full force and effect upon its adoption and publication as provided by law.

Passed in regular session of the City Council on the ____ day of _____, 2023.

CITY OF NORTH OAKS

By: _____

Krista Wolter, Mayor

Attested:

By: _____

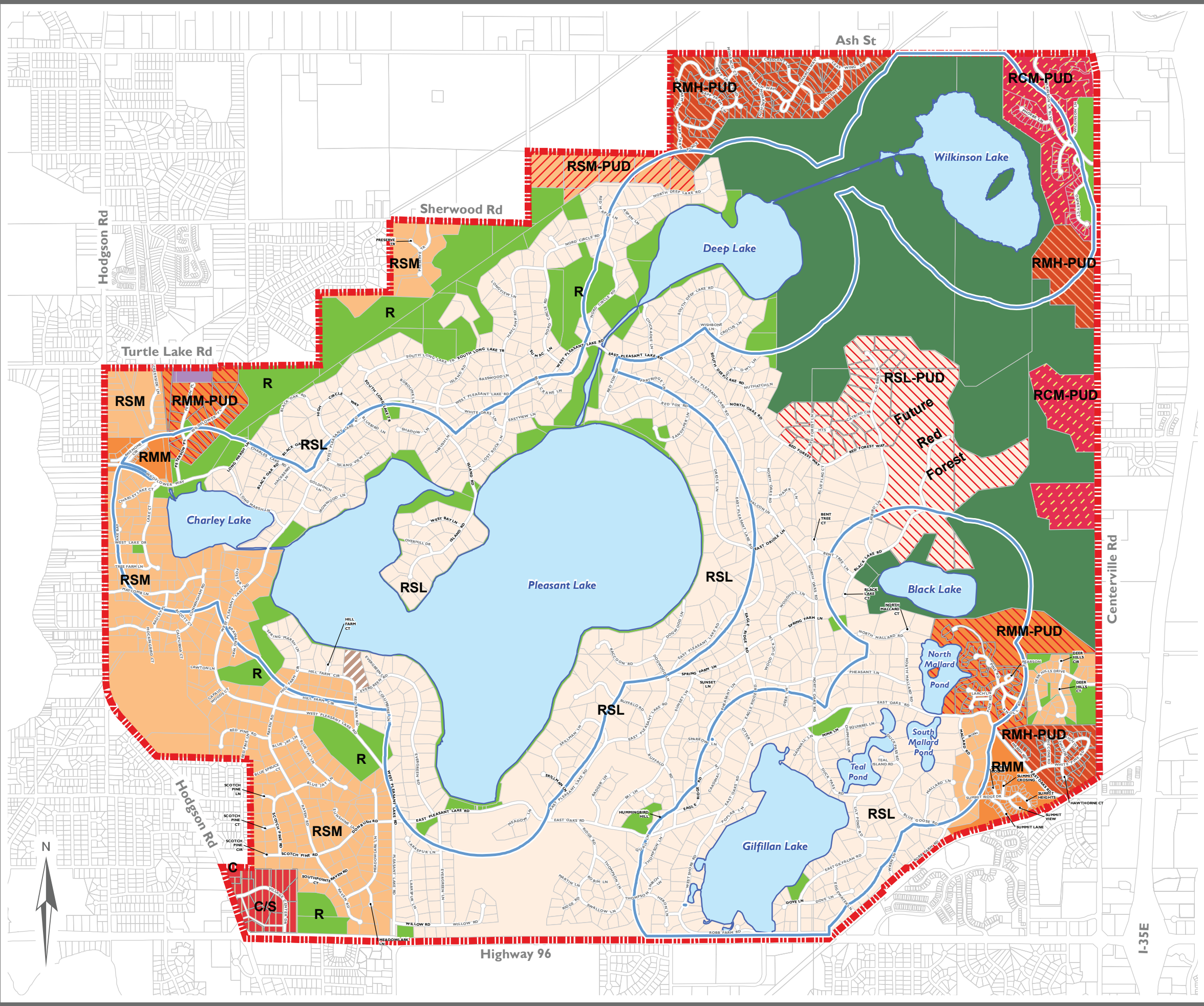
Kevin Kress
City Administrator/City Clerk

(Published in the Shoreview Press on September 12, 2023)



MAP 8

Existing Zoning Districts Map



- OS (Open Space)
- RSL (Residential Single Family - Low Density)
- RSL-PUD (Residential Single Family - PUD)
- RSM (Residential Single Family - Medium Density)
- RSM-PUD (Res. Single Fam. - Med. Density - PUD)
- RMM (Residential Multiple Family Medium Density)
- RMM-PUD (Residential Multiple Family Medium Density - PUD)
- RMH-PUD (Residential Multiple Family High Density - PUD)
- RCM-PUD (Residential-Commercial Mixed-PUD)
- C (Commercial)
- C/S (Commercial/Service)
- LI (Limited Industrial)
- R (Recreation)
- HP (Historic Preservation)
- Shoreland District Boundaries

North Oaks Boundary

Source: City Zoning Map as of 5 - 10 - 21





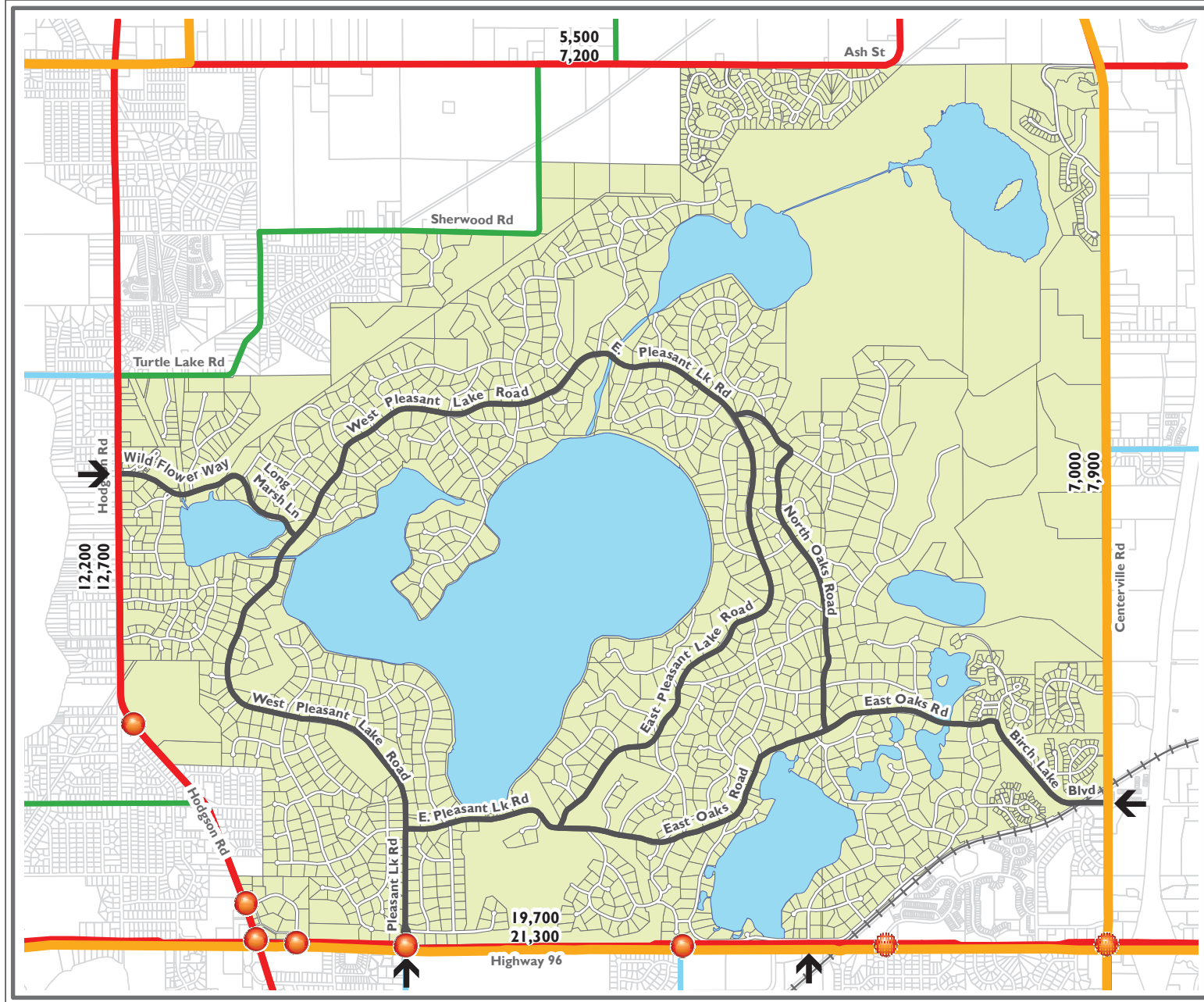
MAP 14 Transportation Features

- 'A' Minor Expander
- Collector
- Minor Collector
- Other Arterial
- Regional Bicycle Transportation Network (RBTN) Tier 2
- Rail Lines (Freight)
- Signalized Intersection
- Primary City Access Points

2040 Traffic Volumes
 Top number = current volumes
 Bottom number = 2040 projections



5-10-21



Minnesota Solar Model Ordinance



Photo by Katharine Chute

Prepared by Great Plains Institute with support from Sunshot and the Energy Foundation



**GREAT PLAINS
INSTITUTE**

Better Energy.
Better World.

Model Solar Ordinance – Minnesota

Introduction

Minnesota’s solar energy resources are high quality and cost effective—as good as many states to our south and consistently available across the entire state. As solar energy system components have become more efficient and less costly, an increasing number of solar energy systems have been installed in Minnesota. Market opportunities for solar development have dramatically increased in Minnesota over the last five years, such that communities must now address solar installations as land use and development issues. Solar energy components continue to improve in efficiency and decline in price; large-scale solar energy is expected to become the least expensive form of electric energy generation within a few years, surpassing wind energy and natural gas in leveled cost of energy.

Model Solar Energy Standards

This ordinance is based on the model solar energy ordinance originally created for Solar Minnesota, under a Million Solar Roofs grant from the U.S. Department of Energy. It has been substantially updated several times to reflect address additional issues and opportunities for Minnesota communities and the evolving solar industry, last updated May 2020

But solar energy is much more than just low-cost energy generation. Households and businesses seeking to reduce their carbon footprint see solar energy as a strong complement to energy efficiency. Agricultural producers see their solar energy as an economic hedge against price volatility in commodity crops. Utilities see solar’s declining cost, high reliability, and free fuel as a means to put downward pressure on electric rates. Corporate, institutional, and municipal buyers are actively acquiring carbon-free solar generation to meet climate and clean energy goals. And innovative solar site designs are capturing habitat and water quality co-benefits by using solar with habitat-friendly ground cover to restore eco-system functions.

Solar Energy Issues

Local governments in Minnesota are seeing increasing interest by property owners in solar energy installations and are having to address a variety of solar land uses in their development regulation. Given the continuing cost reductions and growing value of clean energy, solar development will increasingly be a local development opportunity, from the rooftop to the large-scale solar farm. Three primary issues tie solar energy to development regulations:

1. ***Land use conflicts and synergies.*** Solar energy systems have few nuisances. But solar development can compete for land with other development options, and visual impacts and perceived safety concerns sometimes create opposition to solar installations. Good design and attention to aesthetics can address most concerns for rooftop or accessory use systems. Good siting and site design standards for large- and community-scale solar can similarly resolve conflicts and create co-benefits from solar development, such as restoring habitat, diversifying agricultural businesses, and improving surface and ground waters.
2. ***Protecting access to solar resources.*** Solar resources are a valuable component of property ownership. Development regulations can inadvertently limit a property owner’s ability to access their solar resource. Communities should consider how to protect and develop solar resources in zoning, subdivision, and other development regulations or standards.
3. ***Encouraging appropriate solar development.*** Local government can go beyond simply removing regulatory barriers and encourage solar development that provides economic development, climate protection, and natural resources co-benefits. Local governments have a variety of tools to encourage appropriately sited and designed solar development to meet local goals.

Components of a Solar Standards Ordinance

Solar energy standards should:

1. *Create an as-of-right solar installation path for property-owners.* Create a clear regulatory path (an as-of-right installation) to solar development for accessory uses and - if appropriate - for principal uses such as large-scale solar and ground-mount community shared solar installations.
2. *Enable principal solar uses.* Define where community- and large-solar energy land uses are appropriate as a principal or primary use, set development standards and procedures to guide development, and capture co-benefit opportunities for water quality, habitat, agriculture.
3. *Limit regulatory barriers to developing solar resources.* Ensure that access to solar resources is not unduly limited by height, setback, or coverage standards, recognizing the distinct design and function of solar technologies and land uses for both accessory and principal uses.
4. *Define appropriate aesthetic standards.* Retain an as-of-right installation pathway for accessory uses while balancing design concerns in urban neighborhoods and historic districts. Set reasonable aesthetic standards for solar principal uses that are consistent with other principal uses that have visual impacts.
5. *Address cross-property solar access issues.* Consider options for protecting access across property lines in the subdivision process and in zoning districts that allow taller buildings on smaller (urban density) lots.
6. *Promote “solar-ready” design.* Every building that has a solar resource should be built to seamlessly use it. Encourage builders to use solar-ready subdivision and building design.
7. *Include solar in regulatory incentives.* Encourage desired solar development by including it in regulatory incentives: density bonuses, parking standards, flexible zoning standards, financing/grant programs, promotional efforts.

Different Community Types and Settings

The model ordinance language addresses land use concerns for both urban and rural areas, and thus not all the provisions may be appropriate for every community. Issues of solar access and nuisances associated with small or accessory use solar energy systems are of less consequence in rural areas, where lot sizes are almost always greater than one acre. Large-scale and community- scale solar (principal solar land uses) are much more likely to be proposed in rural areas rather than developed cities. However, urban areas should consider where community- or large-scale solar can add value to the community and enable economic development of a valuable local resource. Rural communities should address rooftop and accessory ground-mount development, although the standards used in this model are designed more for the urban circumstances.

This ordinance includes language addressing solar energy as an accessory use to the primary residential or commercial use in an urban area and language for principal solar uses more typically seen in rural communities. Communities should address both types of solar development.

Solar development is not one thing

Communities would not apply the same development and land use standards to an industrial facility and a single family home, merely because both are buildings. Community and large-scale solar development is a completely different land use than rooftop or backyard solar. Standards that are appropriate for large-scale solar may well be wholly inappropriate for rooftop solar and may unnecessarily restrict or stymie solar development opportunities of homes and business owners.

Model Ordinance

I. **Scope** - This article applies to all solar energy installations in Model Community.

II. **Purpose** - Model Community has adopted this regulation for the following purposes:

A. **Comprehensive Plan Goals** - To meet the goals of the Comprehensive Plan and preserve the health, safety and welfare of the community by promoting the safe, effective and efficient use of solar energy systems. The solar energy standards specifically implement the following goals from the Comprehensive Plan:

1. **Goal** – Encourage the use of local renewable energy resources, including appropriate applications for wind, solar, and biomass energy.
2. **Goal** – Promote sustainable building design and management practices to serve current and future generations.
3. **Goal** – Assist local businesses to lower financial and regulatory risks and improve their economic, community, and environmental sustainability.
4. **Goal** – Implement the solar resource protection element required under the Metropolitan Land Planning Act.

B. **Climate Change Goals** - Model Community has committed to reducing carbon and other greenhouse gas emissions. Solar energy is an abundant, renewable, and nonpolluting energy resource and its conversion to electricity or heat reduces dependence on nonrenewable energy resources and decreases the air and water pollution that results from the use of conventional energy sources.

C. **Infrastructure** - Distributed solar photovoltaic systems will enhance the reliability and power quality of the power grid and make more efficient use of Model Community’s electric distribution infrastructure.

D. **Local Resource** - Solar energy is an underused local energy resource and encouraging the use of solar energy will diversify the community’s energy supply portfolio and reduce exposure to fiscal risks associated with fossil fuels.

E. **Improve Competitive Markets** - Solar energy systems offer additional energy choice to consumers and will improve competition in the electricity and natural gas supply market.

Comprehensive Plan Goals

Tying the solar energy ordinance to Comprehensive Plan goals is particularly important for helping users (both Planning Commission and community members) understand why the community is developing and administering regulation.

The language here provides examples of different types of Comprehensive Plan goals, and other policy goals that the community may have that are served by enabling and encouraging solar development. The community should substitute its policy goals for these examples.

If the Comprehensive Plan does not include goals supporting local solar development, the community should consider creating a local energy plan or similar policy document to provide a policy foundation for solar development regulation (as noted in II.B) .

Metropolitan Land Planning Act

Minnesota local governments subject to the Metropolitan Land Planning Act are required in their comprehensive plans to plan for the protection and development of solar resources. Communities must then incorporate Plan goals in their local controls. This ordinance implements that required Comprehensive Plan element.

III. Definitions

Agrivoltaics – A solar energy system co-located on the same parcel of land as agricultural production, including crop production, grazing, apiaries, or other agricultural products or services.

Building-integrated Solar Energy Systems – A solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building-integrated systems include, but are not limited to, photovoltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.

Community-Scale Solar Energy System – A commercial solar energy system that converts sunlight into electricity for the primary purpose of serving electric demands off-site from the facility, either retail or wholesale. Community-scale systems are principal uses and projects typically cover less than 20 acres.

Community Solar Garden – A solar energy system that provides retail electric power (or a financial proxy for retail power) to multiple community members or businesses residing or located off-site from the location of the solar energy system, consistent with Minn. Statutes 216B.1641 or successor statute. A community solar garden may be either an accessory or a principal use.

Grid-intertie Solar Energy System – A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

Ground-mount – A solar energy system mounted on a rack or pole that rests or is attached to the ground. Ground-mount systems can be either accessory or principal uses.

Large-Scale Solar Energy System – A commercial solar energy system that converts sunlight into electricity for the primary purpose of wholesale sales of generated electricity. A large-scale solar energy system will have a project size greater than 20 acres and is the principal land use for the parcel(s) on which it is located.

Off-grid Solar Energy System – A photovoltaic solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to electric circuits that are served by an electric utility company.

Passive Solar Energy System – A solar energy system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.

Photovoltaic System – A solar energy system that converts solar energy directly into electricity.

Renewable Energy Easement, Solar Energy Easement – An easement that limits the height or location, or both, of permissible development on the burdened land in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to wind or sunlight passing over the burdened land, as defined in Minn. Stat. 500.30 Subd. 3 or successor statute.

Solar Definitions
Not all these terms are used in this model ordinance, nor is this a complete list of solar definitions. As a community develops its own development standards for solar technology, many of the concepts defined here may be helpful in meeting local goals. For instance, solar daylighting devices may change the exterior appearance of the building, and the community may choose to distinguish between these devices and other architectural changes.

Differentiating Solar Uses by Size
Community-scale and Large-scale systems are defined here as occupying less than 20 acres and greater than 20 acres respectively. Some communities will use a lower number (ten acres) and some a higher number (up to 50 acres). An ex-urban city would use a lower number and a rural county could use a higher number. Community-scale is generally a size that can fit into the land use fabric of the community without assembly of separate parcels. Some communities have chosen not to distinguish between community- and large-scale, but use a single large-scale designation.

Roof-mount – A solar energy system mounted on a rack that is fastened to or ballasted on a structure roof. Roof-mount systems are accessory to the principal use.

Roof Pitch – The final exterior slope of a roof calculated by the rise over the run, typically but not exclusively expressed in twelfths such as 3/12, 9/12, 12/12.

Solar Access – Unobstructed access to direct sunlight on a lot or building through the entire year, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.

Solar Carport – A solar energy system of any size that is installed on a carport structure that is accessory to a parking area, and which may include electric vehicle supply equipment or energy storage facilities.

Solar Collector – The panel or device in a solar energy system that collects solar radiant energy and transforms it into thermal, mechanical, chemical, or electrical energy. The collector does not include frames, supports, or mounting hardware.

Solar Daylighting – Capturing and directing the visible light spectrum for use in illuminating interior building spaces in lieu of artificial lighting, usually by adding a device or design element to the building envelope.

Solar Energy – Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

Solar Energy System – A device, array of devices, or structural design feature, the purpose of which is to provide for generation or storage of electricity from sunlight, or the collection, storage and distribution of solar energy for space heating or cooling, daylight for interior lighting, or water heating.

Solar Hot Air System (also referred to as Solar Air Heat or Solar Furnace) – A solar energy system that includes a solar collector to provide direct supplemental space heating by heating and re-circulating conditioned building air. The most efficient performance includes a solar collector to preheat air or supplement building space heating, typically using a vertically-mounted collector on a south-facing wall.

Solar Hot Water System – A system that includes a solar collector and a heat exchanger that heats or preheats water for building heating systems or other hot water needs, including residential domestic hot water and hot water for commercial processes.

Solar Mounting Devices – Racking, frames, or other devices that allow the mounting of a solar collector onto a roof surface or the ground.

Solar Resource – A view of the sun from a specific point on a lot or building that is not obscured by any vegetation, building, or object for a minimum of four hours between the hours of 9:00 AM and 3:00 PM Standard time on all days of the year, and can be measured in annual watts per square meter.

Solar Resource

Understanding what defines a “solar resource” is foundational to how land use regulation affects solar development. Solar energy resources are not simply where sunlight falls. A solar resource has minimum spatial and temporal characteristics, and needs to be considered not only today but also into the future. Solar energy systems are economic only if the annual solar resource (measured in annual watts per square meter) are sufficiently high to justify the cost of installation. The resource is affected by the amount of annual shading, orientation of the panel, and typical atmospheric conditions. Solar resources on a particular site can be mapped and quantified, similar to quantifying other site resources that enhance property value; mineral resources, prime soils for agriculture, water, timber, habitat.

IV. Permitted Accessory Use - Solar energy systems are a permitted accessory use in all zoning districts where structures of any sort are allowed, subject to certain requirements as set forth below. Solar carports and associated electric vehicle charging equipment are a permitted accessory use on surface parking lots in all districts regardless of the existence of another building. Solar energy systems that do not meet the following design standards will require a conditional use permit.

A. Height - Solar energy systems must meet the following height requirements:

1. Building- or roof- mounted solar energy systems shall not exceed the maximum allowed height in any zoning district. For purposes for height measurement, solar energy systems other than building-integrated systems shall be given an equivalent exception to height standards as building-mounted mechanical devices or equipment.
2. Ground- or pole-mounted solar energy systems shall not exceed 15 feet in height when oriented at maximum tilt.
3. Solar carports in non-residential districts shall not exceed 20 feet in height.

Height - Rooftop System

This ordinance notes exceptions to the height standard when other exceptions for rooftop equipment are granted in the ordinance. Communities should directly reference the exception language rather than use the placeholder language here.

B. Set-back - Solar energy systems must meet the accessory structure setback for the zoning district and primary land use associated with the lot on which the system is located, except as allowed below.

1. **Roof- or Building-mounted Solar Energy Systems** – The collector surface and mounting devices for roof-mounted solar energy systems shall not extend beyond the exterior perimeter of the building on which the system is mounted or built, unless the collector and mounting system has been explicitly engineered to safely extend beyond the edge, and setback standards are not violated. Exterior piping for solar hot water systems shall be allowed to extend beyond the perimeter of the building on a side-yard exposure. Solar collectors mounted on the sides of buildings and serving as awnings are considered to be building-integrated systems and are regulated as awnings.
2. **Ground-mounted Solar Energy Systems** - Ground-mounted solar energy systems may not extend into the side-yard or rear setback when oriented at minimum design tilt, except as otherwise allowed for building mechanical systems.

Height - Ground or Pole Mounted System

This ordinance sets a 15-foot height limit, which is typical for residential accessory uses. Some communities allow solar to be higher than other accessory uses in order to enable capture of the lot's solar resource when lots and buildings are closer together. An alternative is to balance height with setback, allowing taller systems if set back farther—for instance, an extra foot of height for every extra two feet of setback. In rural (or large lot) areas, solar resources are unlikely to be constrained by trees or buildings on adjacent lots and the lot is likely to have adequate solar resource for a lower (10-15 foot) ground-mount application.

C. Visibility - Solar energy systems in residential districts shall be designed to minimize visual impacts from the public right-of-way, as described in C.1-3, to the extent that doing so does not affect the cost or efficacy of the system. Visibility standards do not apply to systems in non-residential districts, except for historic building or district review as described in E. below.

Visibility and Aesthetics

Aesthetic regulation should be tied to design principles rather than targeted at a specific land use. If the community already regulates aesthetics in residential districts, this model language provides guidance for balancing between interests of property owners who want to use their on-site solar resources and neighbors concerned with neighborhood character. Substantial evidence demonstrates that solar installations have no effect on property values of adjacent properties. But where aesthetic regulation is used to protect community character, these standards provide balance between competing goals.

1. **Building Integrated Photovoltaic Systems** - Building integrated photovoltaic solar energy systems shall be allowed regardless of whether the system is visible from the public right-of-way, provided the building component in which the system is integrated meets all required setback, land use, or performance standards for the district in which the building is located.
2. **Aesthetic restrictions** – Roof-mount or ground-mount solar energy systems shall not be restricted for aesthetic reasons if the system is not visible from the closest edge of any public right-of-way other than an alley, or if the system meets the following standards.
 - a. Roof-mounted systems on pitched roofs that are visible from the nearest edge of the front right-of-way shall have the same finished pitch as the roof and be no more than ten inches above the roof.
 - b. Roof-mount systems on flat roofs that are visible from the nearest edge of the front right-of-way shall not be more than five feet above the finished roof and are exempt from any rooftop equipment or mechanical system screening.
3. **Reflectors** - All solar energy systems using a reflector to enhance solar production shall minimize glare from the reflector affecting adjacent or nearby properties.

D. Lot Coverage - Ground-mount systems total collector area shall not exceed half the building footprint of the principal structure.

1. Ground-mount systems shall be exempt from lot coverage or impervious surface standards if the soil under the collector is maintained in vegetation and not compacted.
2. Ground-mounted systems shall not count toward accessory structure limitations.
3. Solar carports in non-residential districts are exempt from lot coverage limitations.

E. Historic Buildings - Solar energy systems on buildings within designated historic districts or on locally designated historic buildings (exclusive of State or Federal historic designation) must receive approval of the community Heritage Preservation Commission, consistent with the standards for solar energy systems on historically designated buildings published by the U.S. Department of Interior.

F. Plan Approval Required - All solar energy systems requiring a building permit or other permit from Model Community shall provide a site plan for review.

Building Integrated PV
Building integrated solar energy systems can include solar energy systems built into roofing (existing technology includes both solar shingles and solar roofing tiles), into awnings, skylights, and walls.

Roof-Mounted Solar Energy Systems
This ordinance sets a threshold for pitched roof installations that they not be steeper than the finished roof pitch. Mounted systems steeper than the finished roof pitch change the appearance of the roof, and create additional considerations in regard to the wind and drift load on structural roof components. If the aesthetic impacts are not a concern to the community, the structural issues can be addressed in the building permit, as described in this Toolkit.

Reflectors
Unlike a solar collector, reflector systems do create a potential glare nuisance. While reflector systems are unusual, communities may want to include this reference as a precaution.

Impervious Surface Coverage
Rather than consider the solar panel for a ground-mount system as a roof, this provision recognizes that the ground under the panel can mitigate stormwater risks if it is kept in vegetation so that rain water can infiltrate. Any effects are de minimus for a small array if the lot is otherwise within coverage ratios.

Roof Coverage
National Fire Code standards recommend keeping solar arrays well away from roof edges and peak in order to enable some fire fighting access. Different fire departments have addressed this in different ways. Recommendations for solar friendly permitting that accommodate Fire Code recommendations can be found in the Solar America Board of Codes and Standards.

Plan Approval
This process is generally part of the process for obtaining a building permit. If the community does not issue building permits, it can be tied to a land use permit instead. For rural areas or cities without standards for rooftop systems, the plan approval section may be eliminated.

1. **Plan Applications** - Plan applications for solar energy systems shall be accompanied by to-scale horizontal and vertical (elevation) drawings. The drawings must show the location of the system on the building or on the property for a ground-mount system, including the property lines.
 2. **Plan Approvals** - Applications that meet the design requirements of this ordinance shall be granted administrative approval by the zoning official and shall not require Planning Commission review. Plan approval does not indicate compliance with Building Code or Electric Code.
- G. Approved Solar Components** - Electric solar energy system components must have a UL or equivalent listing and solar hot water systems must have an SRCC rating.
- H. Compliance with Building Code** - All solar energy systems shall meet approval of local building code officials, consistent with the State of Minnesota Building Code, and solar thermal systems shall comply with HVAC-related requirements of the Energy Code.
- I. Compliance with State Electric Code** - All photovoltaic systems shall comply with the Minnesota State Electric Code.
- J. Compliance with State Plumbing Code** - Solar thermal systems shall comply with applicable Minnesota State Plumbing Code requirements.
- K. Utility Notification** - All grid-intertie solar energy systems shall comply with the interconnection requirements of the electric utility. Off-grid systems are exempt from this requirement.

V. Principal Uses – Model Community encourages the development of commercial or utility scale solar energy systems where such systems present few land use conflicts with current and future development patterns. Ground-mounted solar energy systems that are the principal use on the development lot or lots are conditional uses in selected districts.

A. Principal Use General Standards

1. Site Design

a. **Set-backs** – Community- and large-scale solar arrays must meet the following setbacks:

1. Property line setback for buildings or structures in the district in which the system is located, except as other determined in 1.a.5 below.
2. Roadway setback of 150 feet from the ROW centerline of State highways and CSAHs, 100 feet for other roads, except as other determined in 1.a.5 below.
3. Housing unit setback of 150 feet from any existing dwelling unit, except as other determined in 1.a.5 below.
4. Setback distance should be measured from the edge of the solar energy system array, excluding security fencing, screening, or berm.
5. All setbacks can be reduced by 50% if the array is fully screened from the setback point of measurement.

b. **Screening** – Community- and large-scale solar shall be screened from existing residential dwellings.

1. A screening plan shall be submitted that identifies the type and extent of screening.
2. Screening shall be consistent with Model Community’s screening ordinance or standards typically applied for other land uses requiring screening.
3. Screening shall not be required along property lines within the same zoning district, except where the adjoining lot has an existing residential use.
4. Model Community may require screening where it determines there is a clear community interest in maintaining a viewshed.

Community-Scale Solar or Solar Gardens

Community solar systems differ from rooftop or solar farm installations primarily in regards to system ownership and disposition of the electricity generated, rather than land use considerations. There is, however, a somewhat greater community interest in community solar, and thus communities should consider creating a separate land use category.

This language limits the size of the garden to ten acres, which is an installation of no more than one MW of solar capacity. Communities should tailor this size limit to community standards, which may be smaller or larger.

Appropriate Setbacks

The community should consider balancing set-back requirements and screening requirements for principal use solar. Since the primary impact to neighbors of large-scale solar is visual, screening becomes less useful, as the setbacks get larger (and vice versa).

The setback distances provided here are general examples that should be modified to be consistent with other setbacks already in the ordinance. Excessive setbacks that are unique to solar land uses, or that are similar to high nuisance land uses such as industrial uses or animal agriculture, are unjustified given the low level of risk or nuisance posed by the system.

Screening

The community should consider limiting screening of community- or large-scale solar to where there is a visual impact from an existing use, such as adjacent residential districts or uses. Solar energy systems may not need to be screened from adjacent lots if those lots are in agricultural use, are non-residential, or have low-intensity commercial use.

c. **Ground cover and buffer areas** - The following provisions shall be met related to the clearing of existing vegetation and establishment of vegetated ground cover. Additional requirements may apply as required by Model Community.

1. Large-scale removal of mature trees on the site is discouraged. Model Community may set additional restrictions on tree clearing or require mitigation for cleared trees.
2. The project site design shall include the installation and establishment of ground cover meeting the beneficial habitat standard consistent with Minnesota Statutes, section 216B.1642, or successor statutes and guidance as set by the Minnesota Board of Water and Soil Resources (BWSR).
3. The applicant shall submit a planting plan accompanied by a completed “Project Planning Assessment Form” provided by BWSR for review by BWSR or the County SWCD.
4. Beneficial habitat standards shall be maintained on the site for the duration of operation, until the site is decommissioned. The owner of the solar array shall complete BWSR’s “Established Project Assessment Form” at year 4 and every 3 years after that, and allow the County SWCD to conduct a site visit to verify compliance.
5. Model Community may require submittal of inspection fee at the time of the initial permit application to support ongoing inspection of the beneficial habitat ground cover.
6. The applicant shall submit a financial guarantee in the form of a letter of credit, cash deposit or bond in favor of the Community equal to one hundred twenty-five (125) percent of the costs to meet the beneficial habitat standard. The financial guarantee shall remain in effect until vegetation is sufficiently established.

d. **Foundations** - A qualified engineer shall certify that the foundation and design of the solar panel racking and support is within accepted professional standards, given local soil and climate conditions.

e. **Power and communication lines** - Power and communication lines running between banks of solar panels and to nearby electric substations or interconnections with buildings shall be buried underground. Exemptions may be granted by Model Community in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines, or distance makes undergrounding infeasible, at the discretion of the zoning administrator.

Ground Cover Standards

Minnesota has created a “beneficial habitat” certification, administered by the Board of Soil and Water Resources (BWSR) to enable local governments and solar developers to certify principal use solar as having achieved the co-benefits of using the site as pollinator habitat.

Establishing and maintaining native ground cover creates important co-benefits to the community or the property owner. Native grasses can be harvested for forage and wildflowers and blooming plants can create pollinator and bird habitat, and maintaining the site in native vegetation will build soils that can be turned back into agriculture at the end of the solar farm’s life.

Site Design in Conditional Use Permit

Certain site design elements may be included in a community’s conditional use permit for community- and large-scale solar. Best practices for habitat-friendly solar site design include, for instance, that:

- panels be at least 36 inches off the ground to allow mowing and other maintenance,
- panels be spaced to allow vegetation to be self-sustaining,
- maintenance standards limit or prevent pesticide use.

Financial Surety

Communities frequently require bonds or similar financial guarantees when infrastructure improvements are required for a development project. The beneficial habitat installation can be considered in a similar light. Establishing a self-sustaining pollinator or native habitat ground cover requires maintenance over the first 2-3 years, and some maintenance over the life of the project.

2. **Stormwater and NPDES** - Solar farms are subject to Model Community's stormwater management and erosion and sediment control provisions and NPDES permit requirements. Solar collectors shall not be considered impervious surfaces if the project is certified as beneficial habitat solar, as described in A.1.c.2. of this ordinance.
3. **Other standards and codes** - All solar farms shall be in compliance with all applicable local, state and federal regulatory codes, including the State of Minnesota Uniform Building Code, as amended; and the National Electric Code, as amended.
4. **Site Plan Required** - A detailed site plan for both existing and proposed conditions must be submitted, showing location of all solar arrays, other structures, property lines, rights-of-way, service roads, floodplains, wetlands and other protected natural resources, topography, electric equipment, and all other characteristics requested by Model Community. The site plan should show all zoning districts and overlay districts.
5. **Aviation Protection** - For solar farms located within 500 feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.
6. **Agricultural Protection** - Solar farms must comply with site assessment or soil identification standards that are intended to identify agricultural soils. Model Community may require mitigation for use of prime soils for solar array placement, including the following:
 - a. Demonstrating co-location of agricultural uses (agrivoltaics) on the project site.
 - b. Using an interim use or time-limited CUP that allows the site to be returned to agriculture at the end of life of the solar installation.
 - c. Placing agricultural conservation easements on an equivalent number of prime soil acres adjacent to or surrounding the project site.
 - d. Locating the project in a Drinking Water Supply Management Area or wellhead protection area.

Stormwater and Water Quality Standards

Perennial grasses and wildflowers planted under the panels, between arrays, and in setback or buffer areas will substantially mitigate the stormwater risks associated with solar arrays, and result in less runoff than typically seen from many types of agriculture. The ground cover standards in Section A.3. will mitigate many stormwater risks, although soil type and slope can still affect the need for additional stormwater mitigation.

Solar with native perennial ground cover can provide multiple water quality benefits when converting from most agricultural crop uses. Both groundwater (limiting nitrate contamination) and surface waters (reducing phosphorus and sediment loading) can benefit if the system is appropriately designed.

Site Plan

Solar farm developers should provide a site plan similar to that required by the community for any other development. Refer to your existing ordinance to guide site plan submittal requirements.

Aviation Standards, Glare

This standard was developed for the FAA for solar installations on airport grounds. It can also be used for solar farm and garden development in areas adjacent to airports. This standard is not appropriate for areas where reflected light is not a safety concern.

Agricultural Protection

If the community has ordinances that protect agricultural soils, this provision applies those same standards to solar development. Communities should understand, however, that solar farms do not pose the same level or type of risk to agricultural practices as does housing or commercial development. Solar farms can be considered an interim use that can be easily turned back to agriculture at the end of the solar farm's life (usually 25 years.)

7. **Decommissioning** - A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life.

a. Decommissioning of the system must occur in the event the project is not in use for 12 consecutive months.

b. The plan shall include provisions for removal of all structures and foundations, restoration of soil and vegetation and assurances that financial resources will be available to fully decommission the site.

c. Disposal of structures and/or foundations shall meet the provisions of the Model Community Solid Waste Ordinance.

d. Model Community may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning.

B. Community-Scale Solar – Model Community permits the development of community-scale solar, subject to the following standards and requirements:

1. **Rooftop gardens permitted** - Rooftop community systems are permitted in all districts where buildings are permitted.

2. **Community-scale uses** - Ground-mount community solar energy systems must cover no more than ten acres (project boundaries), and are a permitted use in industrial and agricultural districts, and permitted with standards or conditional in all other non-residential districts. Ground-mount solar developments covering more than ten acres shall be considered large-scale solar.

3. **Dimensional standards** - All structures must comply with setback, height, and coverage limitations for the district in which the system is located.

4. **Other standards** - Ground-mount systems must comply with all required standards for structures in the district in which the system is located.

Prime Farmland and Agrivoltaics

Minnesota Admin. 7850.4400 Subd. 4 has provisions for the protection of prime farmland when large electric power generating plants are located on lands designated as prime farmland.

There are a number of mitigation opportunities for solar sited on prime farmland, such as co-locating agricultural uses within solar arrays (also called agrivoltaics). Groundcover that includes pollinator-friendly plantings may enhance surrounding agricultural opportunities, or in the case of protecting drinking water or wellhead protection areas as described below.

Defining Community-Scale Solar

The acreage size for community-scale solar garden written here (10 acres) is the high end of project size for a one megawatt system, which is the maximum size of community solar gardens within Xcel Energy's program. But other utilities have other size limitations, and community-scale could be defined as high as 10 megawatts (100 acre project size). Community-scale solar is the size that can fit in to the landscape.

Drinking Water Protection

In identifying preferred sites for solar principal uses the community should consider co-benefits of solar energy development. One such potential co-benefit is protection of drinking water supplies. Solar energy development may be intentionally sited within vulnerable portions of Drinking Water Supply Management Areas (DWSMAs) as a best management practice to restore and protect native perennial groundcover that reduces nitrate contamination of ground water supplies.

C. Large-Scale Solar - Ground-mount solar energy arrays that are the primary use on the lot, designed for providing energy to off-site uses or export to the wholesale market, are permitted under the following standards:

1. **Conditional use permit** – Solar farms are conditional uses in agricultural districts, industrial districts, shoreland and floodplain overlay districts, airport safety zones subject to A.1.5. of this ordinance, and in the landfill/brownfield overlay district for sites that have completed remediation.

Large-Scale Solar Conditional Uses

Large -scale solar should require a conditional use or interim use permit in order for the community to consider the site-specific conditions. The districts listed here are examples. Each community needs to consider where large scale solar is suitable in the context of its zoning districts and priorities.

Example Use Table

Use Type	Residential	Mixed Use	Business	Industrial	Agricultural, Rural, Landfill	Shoreland	Floodplain	Special (Conservation, Historic Districts)
Large-scale solar				C	C	C	C	C
Community-scale solar	C	C	C	P	P	PS	PS	PS
Accessory use ground-mounted solar	P	P	P	P	P	P	C	C
Rooftop solar	P	P	P	P	P	P	P	PS

P = Permitted

PS = Permitted Special (additional separate permit or review)

C = Conditional

Blank Cell = Prohibited

Solar as a Land Use

The above use table shows four types of solar development that are distinct types of land uses (two kinds of accessory uses, two principal uses), and a group of districts or overlays that are commonly used in Minnesota.

- *Rooftop system are permitted in all districts where buildings are permitted, with recognition that historic districts will have special standards or permits separate from the zoning permits.*
- *Accessory use ground-mount are conditional where potentially in conflict with the primary district or overlay goal.*
- *Community-scale solar principal uses are conditional where land use conflicts or opportunity conflicts are high, permitted where a 10 acre development can be integrated into the landscape, and requiring special consideration in shoreland and floodplain overlay districts.*
- *Large-scale is prohibited in higher density districts and conditional in all other districts.*

Both community- and large-scale solar is allowed in shoreland and floodplain overlay districts, because the site design standards requiring beneficial habitat ground cover not only ensure a low-impact development but in most cases result in a restoration of ecosystem services from the previous (usually agricultural) use.

VI. Restrictions on Solar Energy Systems Limited – As of (adoption date for this ordinance) new homeowners’ agreements, covenant, common interest community standards, or other contract between multiple property owners within a subdivision of Model Community shall not restrict or limit solar energy systems to a greater extent than Model Community’ solar energy standards.

VII. Solar Access - Model Community encourages protection of solar access in all new subdivisions.

A. Solar Easements Allowed - Model Community allows solar easements to be filed, consistent with Minnesota State Code 500. Any property owner can purchase an easement across neighboring properties to protect access to sunlight. The easement can apply to buildings, trees, or other structures that would diminish solar access.

B. Easements within Subdivision Process - Model Community requires new subdivisions to identify and create solar easements when solar energy systems are implemented as a condition of a PUD, subdivision, conditional use, or other permit, as specified in Section 8 of this ordinance.

Solar Easements

Minnesota allows the purchase and holding of easements protecting access to solar and wind energy. The easement must specify the following information:

Required Contents - Any deed, will, or other instrument that creates a solar or wind easement shall include, but the contents are not limited to:

(a) A description of the real property subject to the easement and a description of the real property benefiting from the solar or wind easement; and

(b) For solar easements, a description of the vertical and horizontal angles, expressed in degrees and measured from the site of the solar energy system, at which the solar easement extends over the real property subject to the easement, or any other description which defines the three dimensional space, or the place and times of day in which an obstruction to direct sunlight is prohibited or limited;

(more provisions, see Statute)

Source: Minnesota Stat. 500.30 Subd. 3.

VIII. Renewable Energy Condition for Certain Permits

A. Condition for Planned Unit Development (PUD) Approval

- Model Community may require on-site renewable energy systems, zero-net-energy (ZNE) or zero-net-carbon (ZNC) building designs, solar-synchronized electric vehicle charging or other clean energy systems as a condition for approval of a PUD permit to mitigate for:

1. Impacts on the performance of the electric distribution system,
2. Increased local emissions of greenhouse gases associated with the proposal,
3. Need for electric vehicle charging infrastructure to offset transportation-related emissions for trips generated by the new development,
4. Other impacts of the proposed development that are inconsistent with the Model Community Comprehensive Plan.

B. **Condition for Conditional Use Permit** - Model Community may require on-site renewable energy systems or zero net energy construction as a condition for a rezoning or a conditional use permit.

IX. Solar Roof Incentives - Model Community encourages incorporating on-site renewable energy system or zero net energy construction for new construction and redevelopment. Model Community may require on-site renewable energy or zero-net-energy construction when issuing a conditional use permit where the project has access to local energy resources, in order to ensure consistency with Model Community's Climate Action Plan.

A. **Density Bonus** - Any application for subdivision of land in the ___ Districts that will allow the development of at least four new lots of record shall be allowed to increase the maximum number of lots by 10% or one lot, whichever is greater, provided all building and wastewater setbacks can be met with the increased density, if the applicant enters into a development agreement guaranteeing at least three (3) kilowatts of PV for each new residence that has a solar resource.

B. **Financial Assistance** – Model Community provides financial assistance to certain types of development and redevelopment. All projects that receive financial assistance of \$ _____ or greater, and that have a solar resource shall incorporate on-site renewable energy systems.

Renewable Energy Conditions, Incentives

The community can use traditional development tools such as conditional use permits, PUDs, or other discretionary permits to encourage private investment in solar energy systems as part of new development or redevelopment. This model ordinance notes these opportunities for consideration by local governments. In most cases, additional ordinance language would need to be tailored to the community's ordinances.

For instance, a provision that PUDs (or other special district or flexible design standard) incorporate solar energy should be incorporated into the community's PUD ordinance rather than being a provision of the solar standards.

Conditional use permits generally include conditions, and those conditions can include renewable energy or zero net energy design, but only if the conditions are clearly given preference in adopted policy or plans. Explicit reference to climate or energy independence goals in the ordinance and explicit preference for such conditions will set a foundation for including such conditions in the permit.

Solar Roof Incentives

This section of the model ordinance includes a series of incentives that can be incorporated into development regulation. Most cities and many counties use incentives to encourage public amenities or preferred design. These same tools and incentives can be used to encourage private investment in solar energy. Communities should use incentives that are already offered, and simply extend that incentive to appropriate solar development.

Some of the incentives noted here are not zoning incentives, but fit more readily into incentive programs offered by the community (such as financing or incentive-based design standards).

- C. **Solar-Ready Buildings** – Model Community encourages builders to use solar-ready design in buildings. Buildings that submit a completed U.S. EPA Renewable Energy Ready Home Solar Photovoltaic Checklist (or other approved solar-ready standard) and associated documentation will be certified as a Model Community solar ready home, and are eligible for low-cost financing through Model Community’s Economic Development Authority. A designation that will be included in the permit home’s permit history.
- D. **Solar Access Variance** – When a developer requests a variance from Model Community’s subdivision solar access standards, the zoning administrator may grant an administrative exception from the solar access standards provided the applicant meets the conditions of 1. and 2. below:
1. **Solar Access Lots Identified** - At least ___% of the lots, or a minimum of ___ lots, are identified as solar development lots.
 2. **Covenant Assigned** - Solar access lots are assigned a covenant that homes built upon these lots must include a solar energy system. Photovoltaic systems must be at least three (3) KW in capacity.
 3. **Additional Fees Waived** - Model Community will waive any additional fees for filing of the covenant.

Solar Ready Buildings

New buildings can be built “solar-ready” at very low cost (in some cases the marginal cost is zero). Solar energy installation costs continue to decline in both real and absolute terms, and are already competitive with retail electric costs in many areas. If new buildings have a rooftop solar resource, it is likely that someone will want to put a solar energy system on the building in the future. A solar ready building greatly reduces the installation cost, both in terms of reducing labor costs of retrofits and by “pre-approving” most of the installation relative to building codes.

A community’s housing and building stock is a form of infrastructure that, although built by the private sector, remains in the community when the homeowner or business leaves the community. Encouraging solar-ready construction ensures that current and future owners can take economic advantage of their solar resource when doing so makes the most sense for them.

Solar Access Subdivision Design

Some communities will require solar orientation in the subdivision ordinance, such as requiring an east-west street orientation within 20 degrees in order to maximize lot exposure to solar resources. However, many such requirements are difficult to meet due to site constraints or inconsistency with other requirements (such as connectivity with surrounding street networks). Rather than simply grant a variance, the community can add a condition that lots with good solar access actually be developed as solar homes.

SOLAR STANDARDS RESEARCH

DATE	9/5/23
PROJECT NAME	Ordinance Amendments - Solar Research
PROJECT NUMBER	CNO23005
PROJECT LOCATION	North Oaks, MN
PREPARED BY	Nicholas Ouellette

CITY	RESIDENTIAL DISTRICTS				COMMERCIAL/INDUSTRIAL DISTRICTS				STANDARDS		NOTES
	ROOF MOUNTED		GROUND MOUNTED		ROOF MOUNTED		GROUND MOUNTED		ROOF MOUNTED	GROUND MOUNTED	
Andover	R1, R2, R3, R4, R5, RR, M1, M2, M3	Permitted Accessory Use	RR, R-1	Permitted Accessory Use	NB, SC, GB, I	Permitted Accessory Use	NB, SC, GB, I	Prohibited Use	Comply with maximum height standards. Panels and equipment flush with roof. May not extend beyond perimeter of exterior walls. Visibility to commercial/industrial solar on flat roofs should be limited.	Not permitted in front yard. 30 ft. setback to interior side/rear lot lines. 15 ft. maximum height. Max. ground coverage limited based on parcel/lot area. Lots less than 3 acres may not exceed 400 sq. ft. ground cover. Lots 3 acres or more the max. coverage may not exceed the foundation area of the residence or 1,200 sq. ft. whichever is less.	
Chanhassen	A2, RR, RSF, R4, RLM, R8, R12, R16	Permitted Accessory Use	A2, RR, RSF, R4, RLM, R8, R12, R16	Accessory	BN, BH, CBD, CC, BG, BF, OI, IOP	Permitted Accessory Use	BN, BH, CBD, CC, BG, BF, OI, IOP	Permitted Accessory Use	Comply with district height standards. Orient glare away from neighboring windows. Mounted flush to roofs. Not to extend beyond perimeter of walls. Colors should be dark or blend with the building.	Comply with accessory structure height standards for district. Exterior lines shall be underground. Screen with walls, fences or landscaping. Setbacks: - Non-residential comply with district setbacks. - Residential only permitted in rear yards with a min. 10 ft. setback.	
Cottage Grove	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	Pitched roof panels must be flush, flat roof panels may be angled. Colors shall blend with building. Comply with max. height for zoning district. Glare away from neighboring windows. Systems may not extend beyond perimeter of building.	Only permitted on properties 5 or more acres in size. Not to exceed 15 ft. Prohibited in front yard of properties in MUSA. Comply with district setback standards.	Standards for decommissioning. Wall-mounted systems permitted. Heliostats prohibited.
Eagan	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	Must comply with zoning district regulations. Residential setback up to 1 ft. from edge of roof. Commercial/Ind./Inst. setback 10 ft. from edge of roof. Subject to district height standards. Reduce glare to other structures, screening may be required. Max 80% roof-surface coverage on south facing roof or entire surface of flat roof.	Must comply with zoning district regulations. Must comply with accessory structure standards. Ground coverage not to exceed: - 30% of residential lot area. - 70% of commercial/ind./inst. lot area. Landscape screening from ROW's and adjacent lots to soften view. Height limited to 12 ft. and may extend an addition 1 ft. in height for every additional 2 ft. of setback (up to 15 ft. total height).	Community solar standards. Color does not need to match.
Gem Lake											Solar not permitted
Grant	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	None specified	None specified	None specified	None specified	Must comply with structure setback (attached to principal or accessory buildings). Height not to extend 5 ft. above roof. Maximum 80% roof coverage. Reduce glare to adjacent properties and ROWs. Solar on pitched roofs facing roadways shall not have a pitch greater than 5% steeper than the roof.	Only allowed use on parcel with existing principal structure. Setback 100 ft. from property line with an adjacent home. Must meet all other applicable structure setbacks for district. Not allowed in wetland or shoreland overlay. Footprint not to exceed 1,000 sq. ft. Landscaping screening may be required. Minimize glare to traffic and other properties.	Certificate of compliance required. No commercial/industrial solar energy system standards are provided.

CITY	RESIDENTIAL DISTRICTS				COMMERCIAL/INDUSTRIAL DISTRICTS				STANDARDS		NOTES
	ROOF MOUNTED		GROUND MOUNTED		ROOF MOUNTED		GROUND MOUNTED		ROOF MOUNTED	GROUND MOUNTED	
Lake Elmo	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	All districts	Permitted Accessory Use	Permitted in all districts where buildings are permitted. Commercial rooftop solar shall be placed to limit visibility from the ROW or blend into roof design.	Permitted in all districts where buildings are permitted. Comply with accessory setback, height and lot coverage restrictions. Any foundation, compacted soil or component of solar resting on ground counts to impervious surface coverage. Solar systems 6 sq. ft. or less are exempt from zoning district setback requirements.	
Minnetonka	All districts	Permitted Accessory Use	All districts	Conditional Use Permit	All districts	Permitted Accessory Use	B1, B2, B3, I-1, PID	Permitted Accessory Use in parking lot	Must comply with all location, setback, size and height requirements of the attached structure.	Must follow parking lot setback requirements and not disrupt required parking lot design. Height: drive aisle clearance of 13.5 ft. not to exceed 20 ft. in height or the principal structure height. Structures may not have enclosed walls.	Glare should be minimized, may required plant materials. City owned solar may be installed within the ROW and are exempt from other standards in solar section. Abandonment standards.
St. Louis Park	All districts	Permitted Accessory Use	All districts	Permitted Accessory Structure	All districts	Permitted Accessory Use	All districts	Permitted Accessory Structure	Must comply with dimensional standards applicable to the attached structure. May extend no more than 3 ft. beyond height of roof. (10 ft. for flat roof). Setback 1 ft. from perimeter of roof (3 ft. for flat roof with no parapet).	Not permitted in front yard or side yard abutting public street, unless situated over parking areas. Setback 3 ft. from non-residential lot lines. Max. 20 ft. in height. Area for solar system to be included in max. allowed size for accessory structures. Frame shall be constructed of permanent materials.	Abandonment standards. Minimize glare to adjacent/nearby properties.

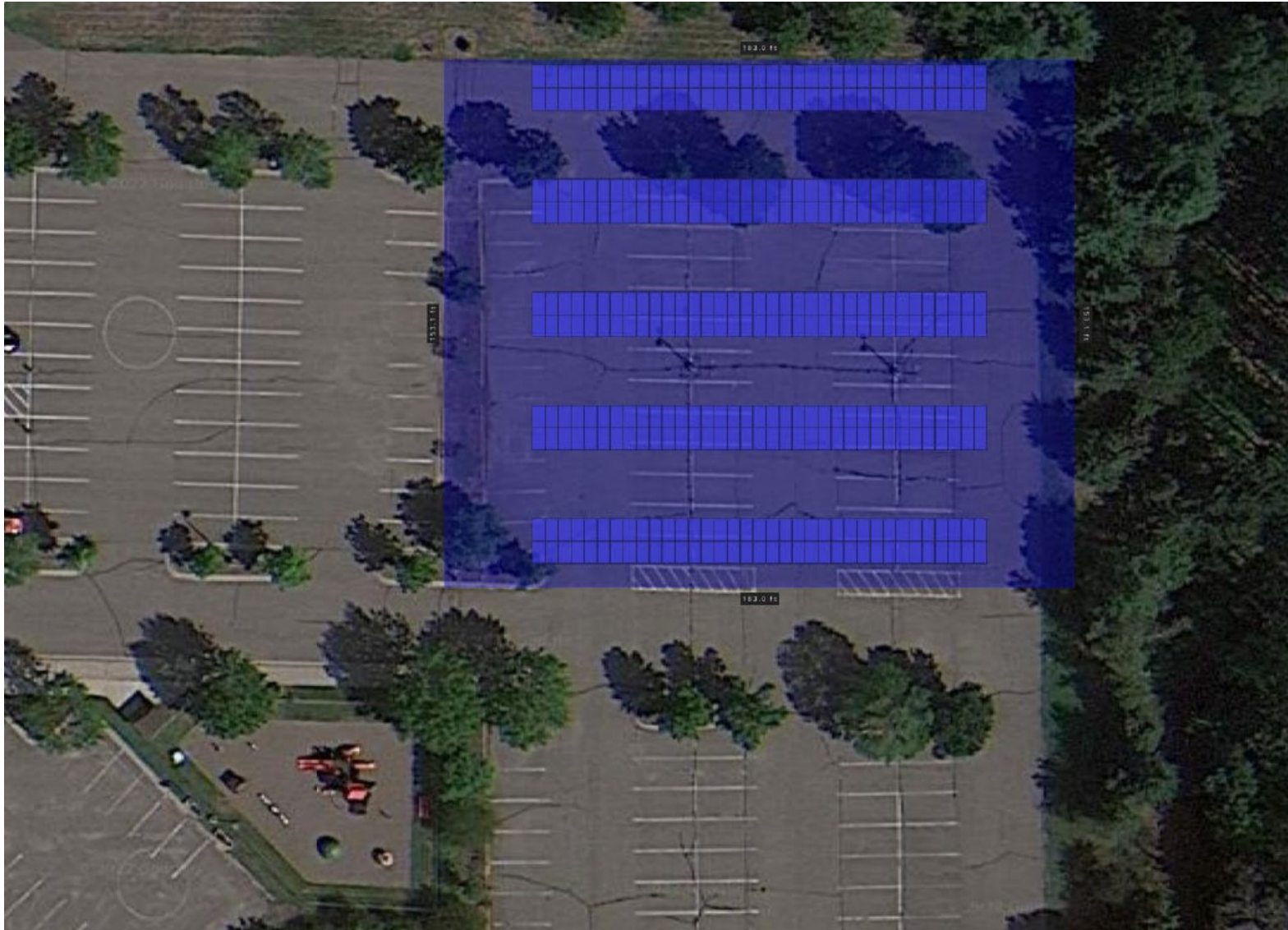


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PLANNING REPORT

TO: North Oaks Planning Commission

FROM: Kendra Lindahl, City Planner
Kevin Kress, City Administrator
Bridget Nason, City Attorney



DATE: September 18, 2023

RE: PUBLIC HEARING. An Ordinance Amending City Code Title XV, Chapter 151, Regarding Sign Definitions And Signs In The RSM- Residential Single-Family Medium Density District

BACKGROUND

At the July 13, 2023 City Council meeting representatives from Peace United Methodist Church at 5050 Hodson Road spoke about a request to replace their existing sign with a new electronic message sign. The property is zoned RSM.

The current sign is lit by external ground lights. They would like to install a monument sign with a digital display similar to the one at Incarnation Church. The Code prohibits moving or flashing parts on signs in the RSL district (and others), which prohibits electronic message center (ECM) signs. It is unclear how the Incarnation Church sign was permitted given these restrictions as the City has no record of a permit for that electronic message sign.

Existing Sign	Example Proposed sign
	

The City prohibits this type of sign and an ordinance amendment would be required to allow this type of sign. The Council directed staff to work with the subcommittee to draft



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an ordinance to allow this type of sign only in limited locations on the perimeter of the community.

A subcommittee made up of Chair Cremons, Council member Azman and staff met to develop the ordinance amendment.

The Planning Commission reviewed the draft ordinance at their August 31st meeting. The Commission was generally supportive of the draft language but asked for more information about how the sign brightness would be calculated and measured.

ISSUES AND ANALYSIS

Signs are very limited in the residential zoning districts of the City. The church is located in the RSM zoning district. The sign standards for the RSM zoning district refer back to the RSL – Residential Single-Family Low Density district, which allows the following signs by conditional use permit:

- (4) *Non-neon signs and non-neon informational visual communication devices, provided that:*
- (a) *The height of the sign or device does not exceed the height of the principal structure or the structure to which it is affixed;*
 - (b) *The architectural style and design shall not be so dissimilar to the surrounding buildings or area so as to adversely impact other land;*
 - (c) *There are no moving or flashing parts and any illumination shall be in compliance with § 151.031;*
 - (d) *The sign or device is permanently fixed to the land or to a building or structure;*
 - (e) *The sign or device is not a billboard and is associated with the principal use of the land; and*
 - (f) *Section 151.083 is complied with.*

Sign ordinances must be content-neutral, meaning cities can regulate the size, style and location of signs but not content. This means the code cannot say that churches in the RSM district can have one size or type of a sign that other uses in the district cannot. Therefore, we must establish standards based on the property itself and the zoning district.

The draft ordinance was prepared using ordinances from a number of individual cities. A spreadsheet summarizing other ordinances is attached for reference. In order to allow the type of sign requested, we have revised the RSM zoning district standards and added definitions to the definitions section of the chapter. The draft ordinances show underlined text for the proposed additions to the City Code and ~~struck through~~ text for the deletions.



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The draft ordinance allows electronic message centers (ECM) in the RSM district with a number of restrictions:

- (1) The parcel is a minimum of 3.5 acres in size. This limits the number of parcels in the RSM district that would be eligible for this type of sign.

There are 20 parcels zoned RSM in the City that are 3.5 acres or larger. The attached map and spreadsheet identify these parcels.

- (2) The parcel has frontage on an arterial or collector roadways, as designated by the Comprehensive Plan. This further limits the parcels that are eligible to have this type of sign to those on the perimeter of North Oaks.

Highway 96, Highway 49 (Hodgson Road), Centerville Road and County Road J (Ash Street) are classified as A Minor-Arterials Expanders. The Turtle Lake/Sherwood Road connection on the north side of the City are Collectors. All other streets are classified as Minor Collectors or local streets.

- (3) Display messages must be held for a minimum of 8 seconds to minimize distractions to residents and drivers.
- (4) Lighting standards must be met and signs are only allowed to be lit during certain hours.

The draft ordinance uses the lighting standards from the City of Shoreview and limits light level to a maximum of 0.3 footcandles based on a formula. For a 16 square foot sign ECM like the one proposed by Peace it would be: $\sqrt{(16 \times 100)} = 40$. Meaning the maximum brightness allowed would be 0.3 footcandles measured 40 feet from the sign.

While North Oaks does not establish a footcandle limit in the general lighting standards (Section 151.031), many cities have general lighting limits. For reference, the City of Corcoran ordinance says that any "Any light or combination of lights shall not exceed one foot-candle (meter reading) as measured from the property line or the centerline of a public street." The brightness of the sign under this ordinance would be less than some cities would allow for building or parking lot lighting.

Following the Planning Commission meeting, staff reached out to Matthew Duffy at Think Digital Signs. His firm provided the sign at Incarnation Church and is working with Peace United Methodist Church on their sign. He provided some



information from the International Sign Association (ISA) on night-time brightness and provided detailed information about the proposed church sign.

The information suggests that while the sign industry uses NIT (a photometric unit of measurement referring to luminance. One nit is equal to one candela per square meter) to measure brightness. Cities often use footcandles to measure brightness because it can account for ambient light and can be measured with less expensive equipment than the alternative. The ISA suggests using footcandles as the enforcement tool for those reasons and others summarized in the attached report.

- (5) The total sign area is limited to 32 sq. ft. and no more than ½ of that area can be EMC.

Staff reached out to the sign vendor to confirm that the Peace United Methodist sign would conform to the draft standards. He confirmed that it would.

Staff also asked for information about the existing non-conforming sign at Incarnation Lutheran Church. It appears that the sign is approximately 45 sq. ft. in area where 32 sq. ft. is permitted. The Church would need to provide information showing that the sign received City approval or apply for an after-the-fact conditional use permit for the electronic sign and provide detailed information to show that the sign complies with ordinance standards.

The Planning Commission should discuss the proposed standards in the draft ordinance. We believe this language balances the church's desire for signage while protecting North Oaks residents from unnecessary lighting.

Existing Uses at Peace United Methodist

Staff notes that our review of the proposed Peace United Methodist Church request brought to our attention that there appear to be several businesses and non-profits operating out of the church. Commercial operations are not permitted in the RSM zoning district and staff met with the pastor of the church to address that issue separately from the signage issue. The ordinance subcommittee has discussed potentially rezoning the church and school properties to a public-institutional zoning district to more accurately reflect the uses on those parcels. However, that is not part of this proposal and could be addressed in the future.

We note that only the name of the principal use or address is permitted to be displayed on the non-EMC portion of the sign (the different businesses would not be permitted to be listed as shown on the concept sign). Peace United Methodist had indicated that Musical Montessori Preschool and Childcare functions as a second principal use on site



and they would like to have the school listed on the static portion of the sign with the church. Preschools are a conditional use in the RSM district, but there is no record of approval for the preschool in either Peace United Methodist Church or Incarnation Lutheran Church (although the 1981 CUP for Incarnation suggested the possibility of a future preschool). Both churches have preschools currently operating and the existing sign at Incarnation includes the name of the preschool.

- The Commission may wish to discuss whether more than one principal use should be permitted on the static portion of the sign. If desired, the draft language could be changed as follows:
 - (3) *Electronic Message Center (EMC) signs accessory to a permitted use, provided that:*
 - (a) *Such signs shall be integrated into a free-standing monument sign. The non-message center portion of the sign shall include the name of the principal use or address. Where more than one principal use has been permitted on site, both uses may be on the non-message center portion of the sign, subject to the size limits in this ordinance. The name shall be displayed in an individual-letter format in letters that dominate all other names and graphics on said sign.*

Attached for reference:

- Exhibit A: Draft Ordinance amending Chapter 151
- Exhibit B: Zoning Map
- Exhibit C: Transportation Map
- Exhibit D: Map showing RSM parcels 3.5-acres or larger and ownership spreadsheet
- Exhibit E: Summary of other City Standards
- Exhibit F: Concept from Peace United Methodist Church
- Exhibit G: Concept from Incarnation Lutheran Church
- Exhibit H: September 13, 2023 email from Matthew Duffy
- Exhibit I: ISA Night-time Brightness Level Recommendations for On-Premise Electronic Message Centers





PLANNING COMMISSION OPTIONS

The Planning Commission has the following options:

1. Move to recommend approval of the ordinance amendment as drafted.
2. Move to recommend approval of the ordinance amendment with modifications.
3. Move to recommend denial of the amendment with findings for denial.
4. Recommend continuance of the application based on the need for more information.



**CITY OF NORTH OAKS
RAMSEY COUNTY, MINNESOTA**

ORDINANCE NO. ____

**AN ORDINANCE AMENDING CITY CODE TITLE XV, CHAPTER 151, REGARDING
SIGN DEFINITIONS AND SIGNS IN THE RSM- RESIDENTIAL SINGLE-FAMILY
MEDIUM DENSITY DISTRICT**

THE CITY COUNCIL OF THE CITY OF NORTH OAKS ORDAINS AS FOLLOWS:

Section One. Title XV, Chapter 151 Amendment: Title XV, Chapter 151, Section 151.005 of the North Oaks City Code is hereby amended as follows. The underlined text shows the proposed additions to the City Code and the ~~struck through~~ text shows the deletions:

§ 151.005 DEFINITIONS

CHANGEABLE SIGN. A sign with the capability of content change by means of manual or remote input, including signs that are manually or electrically activated.

1) MANUALLY ACTIVATED. Changeable sign whose message copy or content can be changed manually on a display surface. Not illuminated.

2) ELECTRICALLY ACTIVATED. Changeable sign whose message copy or content can be changed by means of remote electrically energized on-off switching combinations of alphabetic or pictographic components arranged on a display surface. Illumination may be integral to the components, such as characterized by lamps or other light-emitting devices; or it may be from an external light source designed to reflect off the changeable component display. See also: Electronic Message Center.

COMMERCIAL SIGN. Any sign which advertises or identifies a product, business, service, event, or any other matter of a commercial nature.

ELECTRONIC MESSAGE CENTER (EMC). An electrically activated changeable sign whose variable message and/or graphic presentation capability can be electronically programmed.

FREESTANDING SIGN. A sign principally supported by a structure affixed to the ground and not supported by a building. Pylon and monument signs are types of freestanding signs.

INTERIOR SIGN. Any sign placed within a building, but not including window signs. (Interior Signs are not regulated by this ordinance).

ILLUMINATED SIGN. A sign characterized by the use of artificial light, either projecting through its surface(s) (internally or trans-illuminated); or reflecting off its surface(s) (externally illuminated).

INTERNALLY ILLUMINATED SIGN. A sign characterized by the use of artificial light projecting outward through its surface.

MONUMENT SIGN. A freestanding sign which is architecturally designed and located directly at grade where the base width dimension is 75% or more of the greatest width of the sign. Monument signs are not supported by exposed posts or poles.

NON-CONFORMING SIGN. A sign that was legally installed by permit in conformance with all municipal sign regulations and ordinances in effect at the time of its installation, but which may no longer comply with subsequently enacted laws and ordinances having jurisdiction relative to the sign.

NON-COMMERCIAL SIGN. Any sign which is not a commercial sign which expresses a non-commercial message.

OBSOLETE SIGN. On-premise sign that no longer advertises or identifies a use conducted on the property on which the sign is erected.

OFF-PREMISE SIGN. A sign advertising products, goods, services, or places of business or services offered at a location other than the lot upon which the sign is maintained.

ON-PREMISE SIGN. A sign used for the purpose of displaying messages pertinent to the use of, products sold on, or the sale or lease of, the property on which it is displayed.

PYLON SIGN. Any permanent, freestanding sign whose sign face is mounted upon a sign base that is less than 40 percent of the width of the face and the height exceeds six feet.

SCROLL. A mode of message transition on an Electronic Message Sign in which the message appears to move vertically across the display surface.

SIGN. A display, illustration, structure, or device containing or displaying graphic information visible from the exterior which directs attention to an object, product, place, activity, person, institution, organization, or business.

SIGN COPY. The physical sign message including any words, letters, numbers, pictures, and symbols.

SIGN AREA. The area of the board(s) or module(s) containing the sign message, but not including the supporting structure. The area to be calculated is the area within the smallest rectilinear perimeter that contains the entire signboard or module. The area of a sphere shall be computed as the area of a circle.

SIGN FACE. The surface upon, against or through which the sign copy is displayed or illustrated, not including structural supports, architectural features of a building or sign structure, nonstructural or decorative trim, or any areas that are separated from the background surface upon which the sign copy is displayed by a distinct delineation, such as a reveal or border.

Section Two. Title XV, Chapter 151 Amendment: Title XV, Chapter 151, of the North Oaks City Code is hereby amended as follows. The underlined text shows the proposed additions to the City Code and the ~~struck through~~ text shows the deletions:

§ 150.051 RSM - RESIDENTIAL SINGLE-FAMILY MEDIUM DENSITY DISTRICT.

(A) *Purpose.* This District is established to provide for medium density single-family detached residential dwellings and directly related complimentary uses compatible with the natural environment and conforming to the level of services available and to provide the community facilities as will enhance the quality of the area.

(B) *Permitted uses.*

- (1) All uses that are permitted uses in the Residential Single-Family Low Density District in § 151.050(B); and
- (2) A single-family detached dwelling, planned unit development (PUD), or a phase of a PUD which has a maximum gross density of 1 unit per 1.1 acres and which is served by a central sanitary sewer collection system.

(C) *Permitted accessory uses.* All uses that are permitted accessory uses in the Residential Single-Family Low Density District in § 151.050(C).

(D) *Conditional uses.* The following conditional uses may be permitted, but only after securing a conditional use permit in accordance with § 151.076:

- (1) All uses that are permitted conditional uses in the Residential Single-Family Low Density District in § 151.050(D); and
- (2) The architectural appearance and functional plan of the buildings and site shall be
 - (a) compatible with the adjacent area;
 - (b) Screening is provided in compliance with § 151.034;
 - (c) Adequate off-street parking, loading, and service entrances are provided in compliance with § 151.028;
 - (d) All accessory equipment is completely enclosed in a permanent structure with no outside storage;
 - (e) The site of the principal use and related parking is served by a road or street of sufficient capacity to accommodate the traffic which will be generated; and

(f) Section 151.083 is complied with.

(3) Electronic Message Center (EMC) signs accessory to a permitted use, provided that:

(a) Such signs shall be integrated into a free-standing monument sign. The non message center portion of the sign may include the name of the principal use or address. The name shall be displayed in an individual-letter format in letters that dominate all other names and graphics on said sign.

(b) General provisions:

1. Location and Orientation. EMC signs are only permitted for lots that comply with the following standards:

- i. The parcel is a minimum of 3.5 acres in size.
- ii. The parcel has frontage on an arterial or collector roadways, as designated by the Comprehensive Plan.
- iii. The location and orientation of the sign shall be placed on the property in a manner that minimizes the visual impact on adjoining residential properties.

2. Display. The sign message shall be displayed to allow passing motorists to read the entire copy with minimal distraction. The minimum display period for any message shall be 8 seconds.

3. Audio. Audio speakers are prohibited.

4. No animation, flashing or blinking signs are permitted.

5. Brightness.

i. Lighting. Lighting shall be set at a minimum level for which the sign is intended to be read and shielded to minimize glare.

ii. The light level shall not exceed 0.3 foot candles above ambient light as measured from a pre-set distance depending on the sign size. Measuring distance shall be determined using the following equation: the square root of the message center sign area multiplied by 100. *Example: 12 square foot sign $\sqrt{(12 \times 100)} = 34.6$ feet measuring distance.*

iii. Dimmer Control. The sign must have a dimmer control that automatically adjusts the sign's brightness in direct correlation to ambient light conditions. Said sign shall be equipped with photo cell design to measure the ambient light conditions and adjust the sign brightness as needed so as to be in compliance with this ordinance.

iv. No portion of the message may flash, scroll, twirl, fade in or out in any manner to imitate movement.

v. Display of messages shall be limited to those services offered on the property and time/temperature display.

6. Only one message center sign is permitted per lot.

7. Sign area and size.

- i. One freestanding sign shall be allowed per parcel.
 - ii. The sign shall not be larger than 32 square feet.
 - iii. No pylon signs are allowed. All freestanding signs must be ground monuments with a height no greater than 8 feet.
 - iv. The monument signs cannot be placed on an earthen mound or berm which would raise the bottom of the sign more than 4 feet above the normal ground level. The base for monument signs shall be built out of matching masonry work for the building it serves.
 - v. All freestanding signs must be set back 15 feet from the property line.
 - vi. Maximum Area. The area of the electronic message center sign shall be included in the maximum sign area permitted. The area of the message center shall not exceed 50% of the total sign area for the sign on which it is displayed or 16 square feet, whichever is less.
8. Hours of display. The sign shall be turned off and shall not display messages between the hours of 11:00 pm and 6:00 am.
9. Landscaping. Landscaping is required around the base of each sign consisting of shrubs, flowers, ornamental trees, and evergreens in an area no less than 6 times the area of each sign face.

(4) Non-neon signs and non-neon informational visual communication devices, provided that:

- (a) The height of the sign or device does not exceed the height of the principal structure or the structure to which it is affixed;
- (b) The architectural style and design shall not be so dissimilar to the surrounding buildings or area so as to adversely impact other land;
- (c) There are no moving or flashing parts and any illumination shall be in compliance with § 151.031;
- (d) The sign or device is permanently fixed to the land or to a building or structure;
- (e) The sign or device is not a billboard and is associated with the principal use of the land; and
- (f) Section 151.083 is complied with.

Section Three. Title XV, Chapter 151, Section 151.052 Amendment: Title XV, Chapter 151, Section 151.052 of the North Oaks City Code is hereby amended as follows. The underlined text shows the added language.

(D) Conditional uses. The following conditional uses may be permitted, but only after securing a conditional use permit in accordance with § 151.076: all uses that are permitted conditional uses

in the Residential Single-Family Medium Density District in § 151.051(D), except for Electronic Message Center Signs.

Section Four. Effective Date. This Ordinance shall be in full force and effect upon its adoption and publication as provided by law.

Passed in regular session of the City Council on the ____ day of _____, 2023.

CITY OF NORTH OAKS

By: _____
Krista Wolter, Mayor

Attested:

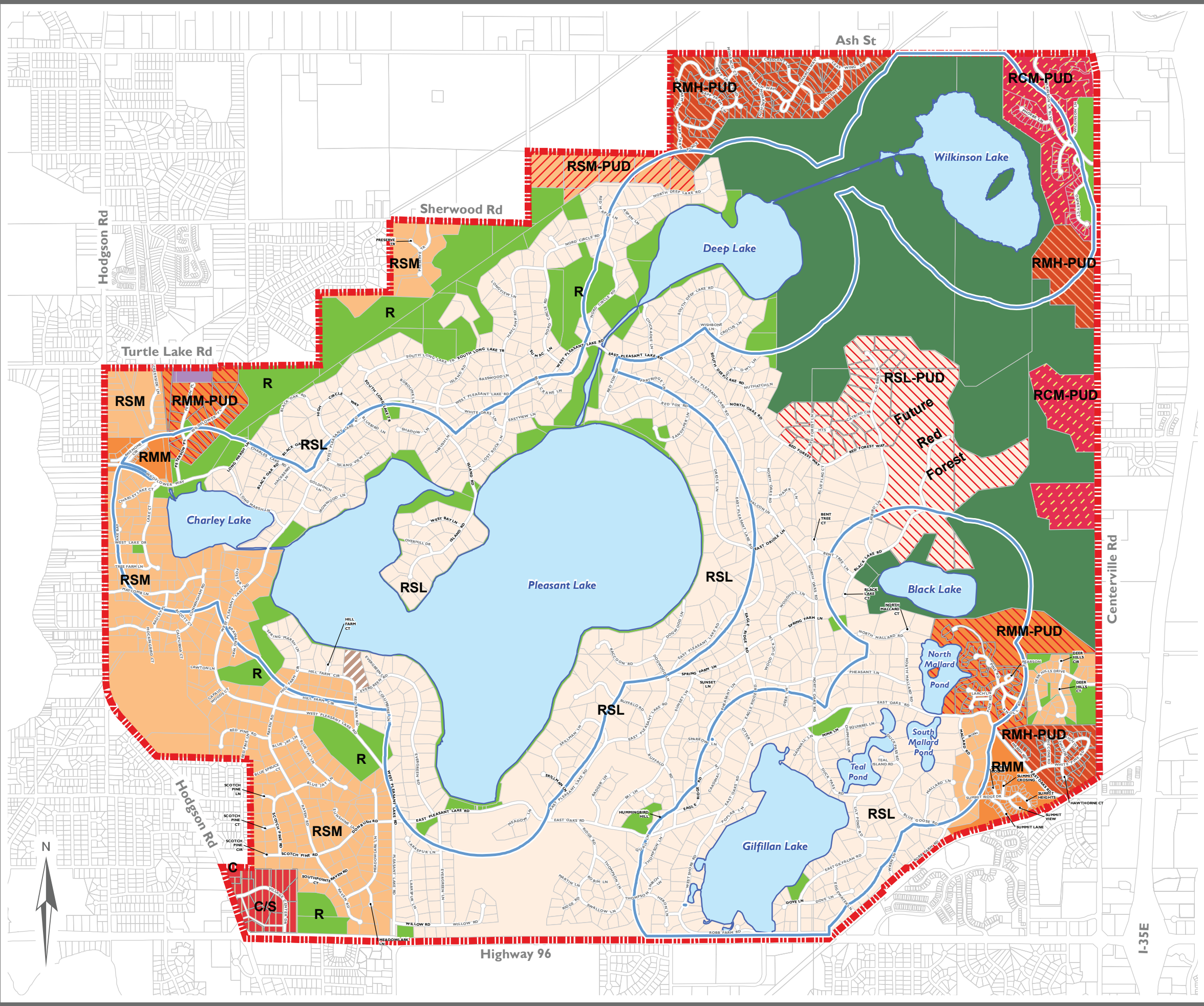
By: _____
Kevin Kress
City Administrator/City Clerk

(Published in the Shoreview Press on September 12, 2023)



MAP 8

Existing Zoning Districts Map



- OS (Open Space)
- RSL (Residential Single Family - Low Density)
- RSL-PUD (Residential Single Family - PUD)
- RSM (Residential Single Family - Medium Density)
- RSM-PUD (Res. Single Fam. - Med. Density - PUD)
- RMM (Residential Multiple Family Medium Density)
- RMM-PUD (Residential Multiple Family Medium Density - PUD)
- RMH-PUD (Residential Multiple Family High Density - PUD)
- RCM-PUD (Residential-Commercial Mixed-PUD)
- C (Commercial)
- C/S (Commercial/Service)
- LI (Limited Industrial)
- R (Recreation)
- HP (Historic Preservation)
- Shoreland District Boundaries

North Oaks Boundary

Source: City Zoning Map as of 5 - 10 - 21





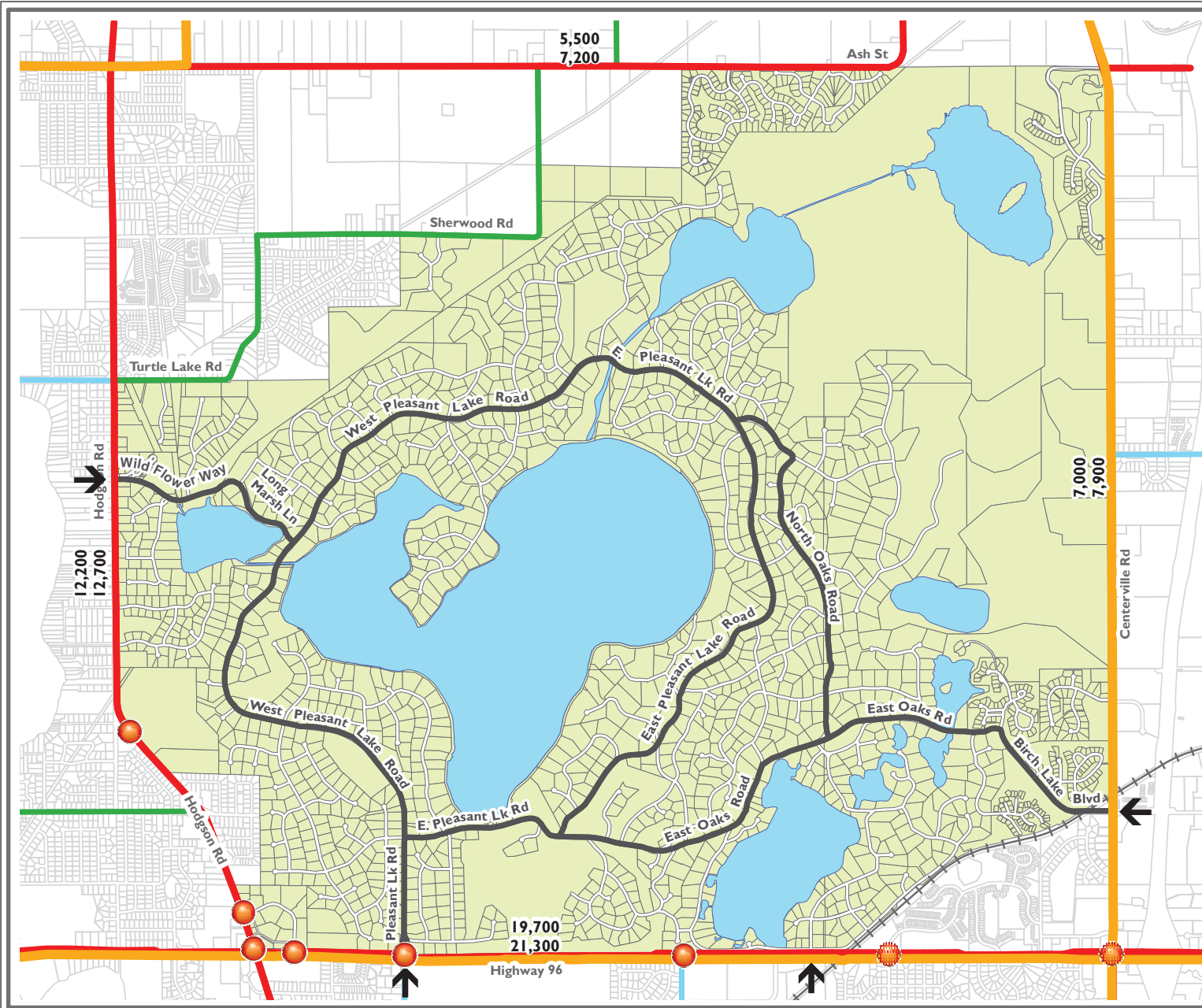
MAP 14 Transportation Features

- 'A' Minor Expander
- Collector
- Minor Collector
- Other Arterial
- Regional Bicycle Transportation Network (RBTN) Tier 2
- Rail Lines (Freight)
- Signalized Intersection
- Primary City Access Points

2040 Traffic Volumes
 Top number = current volumes
 Bottom number = 2040 projections



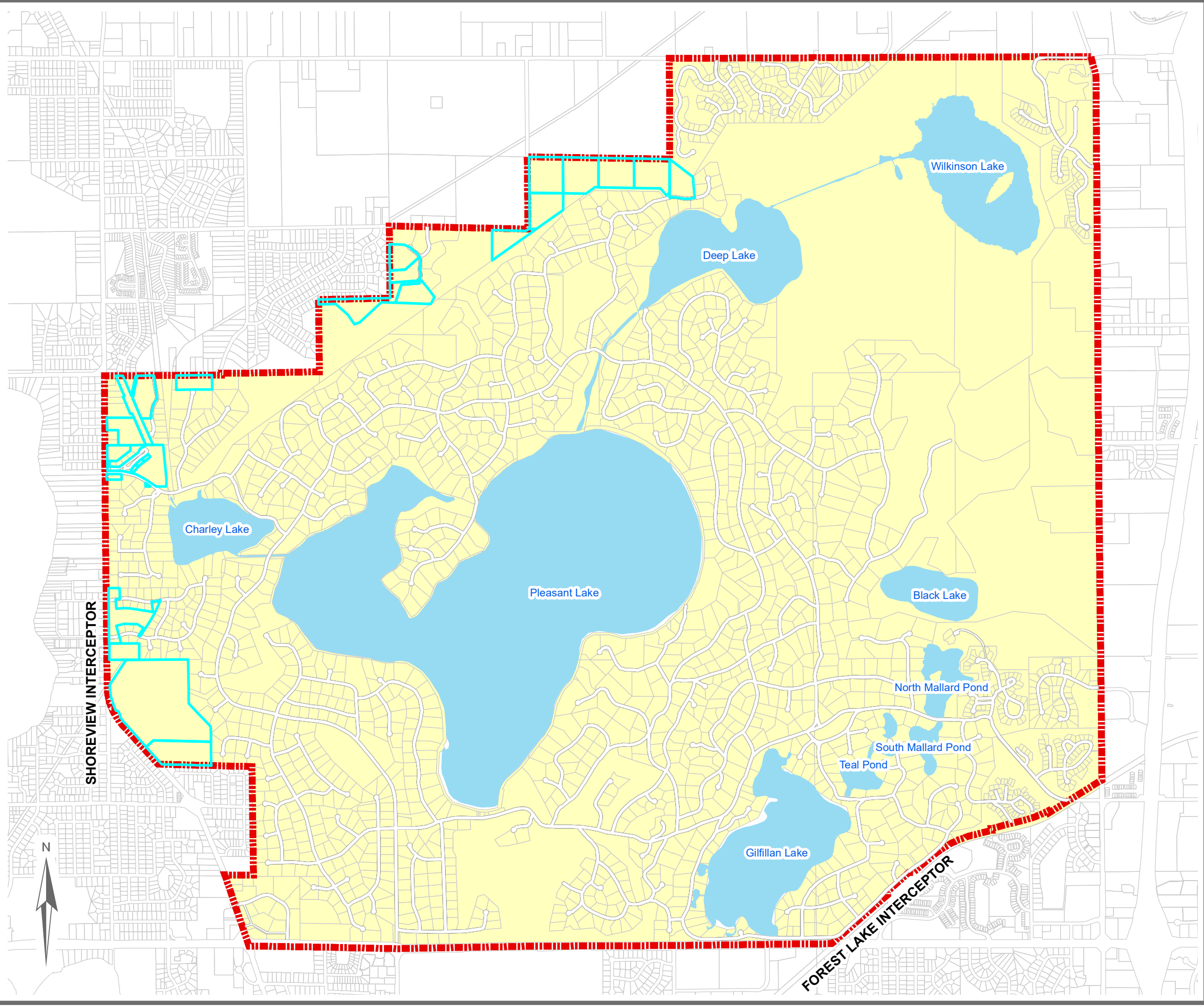
5-10-21



MAP

RSM Parcels Greater than 3.5 Acres

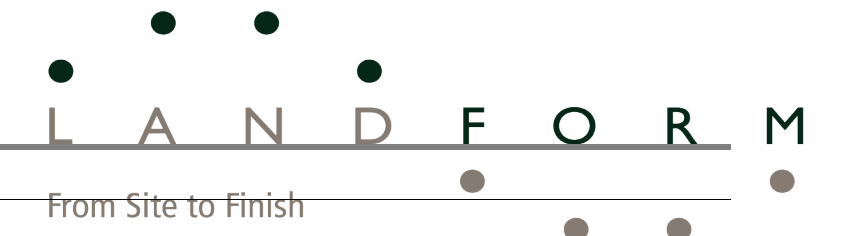
 Parcels



Parcels at least 3.5 acres in size and zone RSM

PIN	PLAT_NAME	BLOCK	LOT	ACRES_DEED	USE1_DESC	OWNER_MORE	OWN_ADD_L1	OWN_ADD_L2	TAX_EXEMPT	XUSE1_DESC	DWELL_TYPE	HOME_STYLE	sewered_name
123-063022130001	REGISTERED LAND SURVEY 268		M	9.5	Res V Land	North Oaks Farms Inc	5959 Centerville Rd Unit 200	St Paul MN 55127-6812	N				Nord
123-063022140001	REGISTERED LAND SURVEY 268		F	8.13	Res V Land	North Oaks Farms Inc	5959 Centerville Rd Unit 200	St Paul MN 55127-6812	N				Nord
123-063022130002	REGISTERED LAND SURVEY 268		G	9.57	Res V Land	North Oaks Farms Inc	5959 Centerville Rd Unit 200	St Paul MN 55127-6812	N				Nord
123-063022320011	REGISTERED LAND SURVEY 549		I	4.95	Res 1 unit	Kris L Nielsen	7 Preserve Trl	Shoreview MN 55126-4789	N		SINGLE FAMILY DWELLING	Two Story	
123-123023220030	CREEKSIDE ADDITION TO NORTH OAKS		Outlo	5.72	T E Misc Co D 10	North Oaks Homeowners Assn In	100 Village Center Dr Ste 240	North Oaks MN 55127-3014	Y	T E Misc Co D 10			
123-123023220033	SECTION 12 TOWN 30 RANGE 23			4.46	Muni Srvc Other	Board Of Water Comm St Paul	1900 Rice St	Maplewood MN 55113-6810	Y	Muni Srvc Other			
123-123023210031	REGISTERED LAND SURVEY 564		Ff	4.51	Commercial	North Oaks Homeowners Assn In	100 Village Center Dr Ste 240	North Oaks MN 55127-3014	N				
123-063022310001	REGISTERED LAND SURVEY 206		TRACT	4.86	Res V Land	North Oaks Farms Inc	5959 Centerville Rd Unit 200	St Paul MN 55127-6812	N				East Preserve
123-063022130003	REGISTERED LAND SURVEY 268		L	7.43	Res V Land	North Oaks Farms Inc	5959 Centerville Rd Unit 200	St Paul MN 55127-6812	N				Nord
123-063022140002	REGISTERED LAND SURVEY 268		A	8.46	Res V Land	North Oaks Farms Inc	5959 Centerville Rd Unit 200	St Paul MN 55127-6812	N				Nord
123-053022230020	REGISTERED LAND SURVEY 589		Kk	5.61	Res V Land	North Oaks Company Llc	5959 Centerville Rd Unit 200	North Oaks MN 55127-6812	N				Rapp Farm
123-123023220031	CREEKSIDE ADDITION TO NORTH OAKS		Outlo	6.08	T E Misc Co D 10	North Oaks Homeowners Assn In	100 Village Center Dr Ste 240	North Oaks MN 55127-3014	Y	T E Misc Co D 10			Creekside
123-063022320004	REGISTERED LAND SURVEY 549		B	3.56	Res 1 unit	Robert B Rock	8 Preserve Trl	North Oaks MN 55126-4789	N		SINGLE FAMILY DWELLING	One Story	
123-063022320005	REGISTERED LAND SURVEY 549		C	4.61	Res 1 unit	James B Hare	6 Preserve Trl	North Oaks MN 55126-4789	N		SINGLE FAMILY DWELLING	Two Story	
123-123023330035	CHARLEY LAKE PRESERVE		Outlo	8.81	Res V Land	Mattamy Minneapolis Partnership	7201 Washington Ave Ste 201	Edina MN 55439-2402	N				Charley Lake Preserve
123-013023440011	REGISTERED LAND SURVEY 549		A	8.08	Res V Land	North Oaks Company Llc	5959 Centerville Rd Unit 200	North Oaks MN 55127-6812	N				
123-123023230095	CONDOMINIUM NO. 219 CHARLEY LAKE CONDOMINIUM	1	24	12.47	T E Misc Co D 10	Charlie Lake Homeowners Assoc	Po Box 131053	Roseville MN 55113-0009	Y	T E Misc Co D 10			Charley Lake Condos
123-133023220005	SECTION 13 TOWN 30 RANGE 23			48.46	Schools-Public	Independent Schl Dist 621	350 Highway 96 W	Shoreview MN 55126-1951	Y	Schools-Public			Institutional District
123-133023240072	SECTION 13 TOWN 30 RANGE 23			11.1	Church	Incarnation Luth Ch	4880 Hodgson Rd	St Paul MN 55126-2037	Y	Church			Institutional District
123-123023330006	PEACE CHURCH ADDITION	1	1	3.8	Church	Peace Methodist Church Shorev	5050 Hodgson Rd	North Oaks MN 55126-1226	Y	Church			Charley Lake Preserve

DYNAMIC SIGN STANDARDS RESEARCH



DATE 9/18/23
 PROJECT NAME Ordinance Amendments - Solar Research
 PROJECT NUMBER CNO23005
 PROJECT LOCATION North Oaks, MN
 PREPARED BY Nicholas Ouellette

105 South Fifth Avenue Tel: 612-252-9070

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
Anoka	Electronic Variable Message Sign (EVM)	- Changes at reasonable intervals - Solid, colorless background - Engineered for legibility - Glare reducing screens and contact light level EVMs are permitted which provide public service information or advertise activities conducted on the premises on which the sign is located.	Residential	Canopy/Awning Freestanding EVM signs restricted to churches, schools, universities, colleges, sanitariums, clubs, libraries, apartment building complexes or other similar uses	1 Identification sign not to exceed 32 sq. ft. in area
			B-1 Highway Business District	Wall Business Nameplate Freestanding Integral roof signs Illuminated, no flashing	For office buildings, business sign not exceeding 40 sq. ft. or 4% of wall area (whichever is greater). For multi-tenant centers, freestanding nameplate not exceeding 60 sq. ft. in area. For single-tenant uses, limited to 200 sq. ft. in area, with not more than 150 sq. ft. of signage attached to the building, and not more than 60 sq. ft. of ground sign.
			B-2 Shopping Center Business District	Freestanding Business Nameplate - Marquee or covered walkway	Freestanding: - Shopping centers are permitted 2 signs not more than 200 sq. ft. in area. Nameplate: - Not to exceed the sum of 3 sq. ft. for each linear ft. of frontage.
			B-3 General Business District	Business Nameplate	Business signs: The total surface area shall not exceed the sum of 4 sq. ft. per linear foot of lot frontage. Nameplate Sign: - Surface area shall not exceed 200 sq. ft.
			B-4 Limited Business District	Wall Freestanding Ground-mounted	Wall signs limited to 40 sq. ft. or 4% of wall size, whichever is greater. Freestanding: - 60 sq. ft. for projects containing more than one building on sites greater than 1 acre. - Business signs which consolidate all tenants are restricted to 40 sq. ft. in area. - Any establishment may have 1 freestanding sign not exceeding 40 sq. ft. in area.
			M-1 Light Industrial District	Business Nameplate Monument	Business/Nameplate: - 2 sq. ft. per linear foot of frontage. - Wall signs not to exceed 4% of wall space or 100 sq. ft. (whichever is less) Monument: - 1 per business site. - No greater than 60 sq. ft. of building area.
			M-2 General Industrial District	Business Nameplate Billboards	Business Signs: - Total surface area not to exceed 3 sq. ft. for each linear foot of lot frontage. - No business sign shall exceed 200 sq. ft. of surface area. Monument/Pylon: - Each business site shall be permitted one sign not to exceed 80 sq. ft. in area. Billboards: - Prohibited within 200 ft. of parks or residential structures. - Shall not exceed 300 sq. ft. of area.

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
Champlin	Electronic Message Sign	<p>Electronic message signs are only permitted by conditional use permit in commercial or industrial districts or in residential districts occupied by a church or school, subject to the following standards: (condensed)</p> <ul style="list-style-type: none"> - May not constitute a traffic hazard (interferes with traffic signs/lights, distracted drivers) - Minimum display duration of 10 seconds - Brightness level based on ambient light conditions - Not to exceed 3,500 Nits between sunrise and sunset, not to exceed 500 Nits between sunset and sunrise - Must be 100 ft from any residential district boundary - Electronic message signs shall not exceed 40% of allowable sign area for a given wall or freestanding sign - Electronic signs must be placed below a minimum of 20 sq. ft. of permanent nonelectric signage on freestanding signs. - No more than 1 electronic sign may be permitted per property, except for gas/convenience stores are allowed one additional sign - Church and school electronic signs may only be illuminated from 7AM-9PM 	Commercial (Single Tenant)	Monument Marquee Wall	<p>For all buildings:</p> <ul style="list-style-type: none"> - 1 wall sign per public street frontage not to exceed two wall signs. - Wall signs shall not exceed 10% of front building facade and 5% of any other facade to which it is attached. <p>For buildings less than 50,000 sq. ft.:</p> <ul style="list-style-type: none"> - 1 freestanding monument sign, max height of 14 ft., max area of 80 sq. ft., minimum 10 ft. setback. <p>For buildings between 50,000-100,000 sq. ft.:</p> <ul style="list-style-type: none"> - 1 freestanding monument sign, max height of 20 ft., max area of 160 sq. ft., minimum 10 ft. setback. <p>For buildings greater than 100,000 sq. ft.:</p> <ul style="list-style-type: none"> - 1 freestanding monument, max height of 25 ft., max area of 250 sq. ft., minimum 10 ft. setback.
			Commercial (Multiple Tenant)	Monument Marquee Wall	<p>Wall signs for all buildings:</p> <ul style="list-style-type: none"> - End-cap tenants allowed wall signs on 3 building elevations. - Internal tenants allowed wall signs on 2 building elevations. - Wall signs not to exceed 10% of the front facade and 5% of any other facade to which it is attached. <p>Buildings less than 50,000 sq. ft.:</p> <ul style="list-style-type: none"> - One monument sign, max height of 20 ft. and 100 sq. ft. in area. - One monument sign allowed at each frontage, aggregate surface area not to exceed 100 sq. ft. <p>Buildings greater than 50,000 sq. ft.:</p> <ul style="list-style-type: none"> - One monument sign, max height of 25 ft. and 100 sq. ft. in area. - One monument sign allowed at each frontage, aggregate surface area not to exceed 200 sq. ft.
			Industrial	Monument Wall	<p>Single tenant building:</p> <ul style="list-style-type: none"> - One monument sign not to exceed 80 sq. ft. in area. - One wall sign not to exceed 10% of the building facade of 200 sq. ft., whichever is less. <p>Multiple tenant building:</p> <ul style="list-style-type: none"> - One monument sign not to exceed 100 sq. ft. in area. - Individual tenants may have wall signs, the aggregate surface area of the signs is not to exceed 10% of the building facade of 200 sq. ft., whichever is less/
			Residential - Electronic signs allowed only for church/school	Monument	<p>1 Permanent Monument</p> <ul style="list-style-type: none"> - Max area is 80 sq. ft. - Allowed only for churches/schools
Chanhassen	Electronic Message Center (EMC) Signs	<p>(Condensed)</p> <ul style="list-style-type: none"> - No EMC may interfere with traffic signals and signs or constitute a traffic hazard. - EMC space used on a sign shall not exceed the following display area: <ul style="list-style-type: none"> (a) Sign area of 0-24 sq. ft./EMC display area 50% (b) Sign area of 25-64 sq. ft./EMC display area 45% (c) Sign area of 65-84 sq. ft./EMC display area 40% - 5,000 Nits allowed between sunrise and sunset, 500 Nits allowed between sunset and sunrise. - Shall not cause glare or distraction due to excessive brightness. - Nits to be provided at time of application. - No EMC within 50 ft. of a street intersection. - No EMC within 125 ft. of a residential district. - No EMC in Agricultural or Residential districts. - EMC within 500 ft. of single-family residential homes limited to use between 6:00AM and 10:00PM. 	Neighborhood Business Fringe Business Office and Institutional	Ground Wall Monument	<p>Ground:</p> <ul style="list-style-type: none"> - 1 low profile sign not to exceed 24 sq. ft. in area and 5 ft. in height. <p>Wall:</p> <ul style="list-style-type: none"> - One sign permitted on the street frontage for each business occupant within a building. - Total wall mounted sign area shall not exceed: <ul style="list-style-type: none"> (a) 15% of a wall 0-600 sq. ft. in area (b) 13% of a wall 601-1,200 sq. ft. in area (c) 11% of a wall 1,201-1,800 sq. ft. in area (d) 9% of a wall 1,801-2,400 sq. ft. in area (e) 7% of a wall 2,401-3,200 sq. ft. in area (f) 5% of a wall 3,201-4,500 sq. ft. in area (g) 3%, max of 275 sq. ft., of a wall 4,500+ sq. ft. in area <p>Monument:</p> <ul style="list-style-type: none"> - 1 monument sign for each frontage, not to exceed 8 ft. in height and 120 sq. ft. in area. - restricted to public/community signs on property owned/leased and operated by a governmental unit.
			Highway General Business Central Business	Ground Wall Pylon	<p>Ground:</p> <ul style="list-style-type: none"> - 8 ft. in height and 64 sq. ft. in area allowed for a structure less than 50,000 sq. ft. in area. - 10 ft. in height and 80 sq. ft. in area allowed for a structure greater than 50,000 sq. ft. in area. <p>Wall:</p> <ul style="list-style-type: none"> - Same as wall standards above. <p>Pylon:</p> <ul style="list-style-type: none"> - 16 ft. in height and 64 sq. ft. in area allowed for a structure less than 50,000 sq. ft. in area. - 20 ft. in height and 80 sq. ft. in area allowed for a structure greater than 50,000 sq. ft. in area.

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
			Industrial Office Park	Pylon Ground Wall	Pylon: - 1 pylon sign not to exceed 20 ft. in height and 80 sq. ft. in area. Ground: - 1 sign per site for each street frontage. - Not to exceed 8 ft. in height and 64 sq. ft. in area. Wall: - Same as wall standards above.
Corcoran	Dynamic Display	84.04 (7) - 1 dynamic display sign allowed per lot. - Only allowed on freestanding signs. - Dynamic display may occupy no more than 60% of sign area. - 6 second minimum time display. - Instant or faded image transition allowed. - Must be equipped to freeze screen in one position if malfunction occurs. - Must comply with brightness standards in this section.	RSF-1 (Single Fam.) RSF-2 (Single Fam.) RSF-3 (Single & Two Fam.) RMF-1 (Medium Density) RMF-2 (Mixed Residential) RMF-3 (High Density) TCR (Transitional Rural Commercial)	Freestanding	Freestanding: - 1 freestanding sign allowed - Max sign area of 32 sq. ft. - Max sign height of 6 ft.
			MP (Manufactured Home Park)	Freestanding	Freestanding: - 1 freestanding sign allowed - Max sign area of 32 sq. ft. - Max sign height of 6 ft.
			CR (Rural Commercial) C-1 (Neighborhood Commercial) C-2 (Community Commercial) GMU (General Mixed Use)	Freestanding (Non-residential use)	Freestanding: - 1 freestanding sign allowed - Max sign area of 64 sq. ft. - Max sign height of 16 ft.
			P-1 (Public/Institutional) BP (Business Park) I (Industrial)	Freestanding	Freestanding: - 1 freestanding sign allowed - Max sign area of 64 sq. ft. - Max sign height of 16 ft.
Elk River	Digital Changeable Copy Signs	Section 30-864 - Changeable Copy Signs: - Any sign larger than 30 sq. ft. requires a CUP. - May only display advertising information for on-site businesses, public service announcements, or non-commercial copy. Digital Changeable Copy Signs: - Must be static, and the transition from static display to another must be no more than 2 seconds. The images and messages displayed must be complete in themselves and without continuation in content to the next image, message, or any other sign. - May not change more often than every 8 seconds. - Displays must be equipped with automatic dimming technology based on ambient light conditions. - Display must be equipped to freeze the device in one position if a malfunction occurs.	C-1 Central Business	Wall Freestanding Changeable Copy	Wall: - Not to exceed 15% of facade area. - Not permitted on any façade directly adjacent to a residential zone. Freestanding: - One, not to exceed 64 sq. ft. in area and 20 ft. in height. - The area of freestanding signs may be increased by 25% if the sign is constructed as a monument sign. Pre-order Board for Drive-Thru - One, not to exceed 20 sq. ft. in area
			C-2 Office District	Wall Monument Changeable Copy	Wall: - Not to exceed 15% of facade area. - Not permitted on any façade directly adjacent to a residential zone. Monument: - One, not to exceed 40 sq. ft. and 7 ft. in height.
			C-3 Highway Commercial	Wall Freestanding On-Premises Menu & Pre-Order Board Changeable Copy Advertising (Billboards)	Wall: - Not to exceed 15% of facade area. - Not permitted on any façade directly adjacent to a residential zone. Freestanding: - One, not to exceed 150 sq. ft. in area and 30 ft. in height. - One sign permitted for every 300 ft. of street frontage along a single street. - The area of freestanding signs may be increased by 25% if the sign is constructed as a monument sign. Menu-Boards: - One menu board per drive-up or walk-up lane. - Max area allowed is 32 sq. ft. each. - One pre-order board is allowed, up to 20 sq. ft. Billboards: - Prohibited by proximity to highway ROW and other billboards. - Shall be erected with a single pole or mono-pole and wired underground. - Shall not exceed 400 sq. ft. in area and 35 ft. in height. - Shall be considered the principal use of the property until it is devoted to another principal use. - Only allowed in property adjacent to ROWs for Highways 10 and 160

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
			C-4 Community Commercial	Wall Monument Changeable Copy	Wall: - Not to exceed 15% of facade area. - Not permitted on any façade directly adjacent to a residential zone. Monument: - One, not to exceed 125 sq. ft. and 10 ft. in height along collector streets and 20 ft. in height along arterial streets.
			DD Downtown District	Wall Monument Changeable Copy	Wall: - One wall sign per each primary façade and one secondary façade. - One sq. ft. of sign area per linear foot of unit width allowed. Monument: - One sign permitted for each multi-tenant facility. - Height limited to one half the average height of the primary structure, not to exceed 20 ft. - Sign area shall be limited to, in sq. ft., one-third of the primary structure width, not to exceed 80 sq. ft.
			I-1 Light Industrial I-2 Medium Industrial I-3 General Industrial	Wall Freestanding Advertising (Billboard) Changeable Copy	Wall: - Not to exceed 15% of facade area. - Not permitted on any façade directly adjacent to a residential zone. Freestanding: - One, not to exceed 150 sq. ft. in area and 30 ft. in height. - One sign permitted for every 300 ft. of street frontage along a single street. - The area of freestanding signs may be increased by 25% if the sign is constructed as a monument sign. Billboards: - Prohibited by proximity to highway ROW and other billboards. - Shall be erected with a single pole or mono-pole and wired underground. - Shall not exceed 400 sq. ft. in area and 35 ft. in height. - Shall be considered the principal use of the property until it is devoted to another principal use. - Only allowed in property adjacent to ROWs for Highways 10 and 169.
Hopkins	Dynamic Signs	Location - must be used on the site of the use identified or advertised by the sign. Orientation - must be positioned to limit impact on adjacent residential uses. Type - Limited to ground signs. Text size and legibility - dependent on speed limit of adjacent road: - 25-34 MPH = 7 in. text size - 35-44 MPH = 9 in. text size - 45-54 MPH = 12 in. text size - 55+ MPH = 15 in. text size Mode - only allowed to operate in static mode. Size and Number - size shall not exceed the maximum sign area of a single sign applicable to the zoning district in which the sign is placed. Minimum display time - The minimum display time shall be 20 minutes before changing. Time, temperature, and date are allowed to change more frequently. Brightness - shall not exceed a maximum illumination of 5,000 nits during daylight hours and 500 nits during dusk to dawn. Color - multiple colors allowed, provided they are not a distraction or hazard to public safety. Operation - All dynamic signs shall be equipped with a means to immediately discontinue use if it malfunctions. Existing signs - standards shall apply to all existing and future dynamic signs. Any existing dynamic signs that cannot meet the minimum text size as required by speed limit must use the	B-1 B-2	Dynamic Ground Sign	Dynamic signs must be located along a principal arterial or minor reliever road as designated by the comprehensive plan. Max sign area of 60 sq. ft.
			B-3 B-4	Dynamic Ground Sign	Dynamic signs must be located along a principal arterial or minor reliever road as designated by the comprehensive plan. Max sign area of 80 sq. ft.
			I-1 I-2	Dynamic Ground Sign	Dynamic signs must be located along a principal arterial or minor reliever road as designated by the comprehensive plan. Max sign area of 250 sq. ft.
			Institutional	Dynamic Ground Sign	Dynamic signs must be located along a principal arterial or minor reliever road as designated by the comprehensive plan. Max sign area of 60 sq. ft.
Ramsey	Dynamic Display	Sec. 117-463 General Restrictions (f) Dynamic Display and Illumination Regulations. Dynamic displays on signs are subject to the following conditions: (a) Size. On-premise signs may include dynamic displays. Dynamic display signs shall not exceed the size allowed by this chapter. Dynamic displays are not in addition to the size allowed for static signs. (b) Frequency of display change. A dynamic display may not change more often than once every three seconds, and no part of the display may include flashing or scrolling text. The images display must be static, and the transition from one display to another must be instantaneous without special effects. The dynamic display shall not be allowed to project full-motion video. Subtle transition animations shall be allowed. (c) Brightness. No sign may be brighter than is necessary for clear and adequate visibility, or that it interferes with the effectiveness of a traffic sign or signal, or that it distracts a driver from		Temporary Signs	Temporary signs may consist of dynamic display, provided all the standards of section 117-463(f) are complied with.

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
		motor vehicle operation. (d) Troubleshooting. Dynamic displays must be designed and equipped to freeze the device in one position if a malfunction occurs. The display must also be equipped with a means to immediately discontinue the display if it malfunctions, and the sign owner must immediately stop the dynamic display when notified by the city that it is not complying with the standards of this section.		Unified Development Signs	A unified development is a development that consists of multiple parcels of similar zoning district and bound by major roadways consisting of arterial or collector designation or higher. Signs for multi-tenant commercial and employment developments may be erected to include off-premise copy under the following conditions: (1) The sign must identify the development at the top of the sign and may include provisions for individual users within the development. (2) The sign must be located within 500 ft. of the development and may not be separated from the development by an arterial road. (3) The sign must not exceed 250 square ft. per face (500 square ft. aggregate) and 30 ft. in height. (4) The sign may include dynamic display not to exceed 100 square ft. per face (200 square ft. aggregate). (5) The sign will not be included in the total signage permitted for the property in which it is located. (6) The general location of area identification signs for commercial and employment districts must be approved by the planning commission as part of a master sign plan approved as part of site plan approval.
			Residential	Area Identification Temporary	Area Identification: - 1 sign per vehicle access to a development, not to exceed 32 sq. ft. in area. Temporary signs permitted in accordance with section 117-465
			Business	Wall, Canopy, or Marquee Ground Fuel Pump Island Menu Board Shopping Center Signs	Wall, Canopy, or Marquee - Sign area may not exceed 15% of the front building façade. - Sign height shall not exceed the top parapet wall, or height of eaves in absence of a parapet. Ground signs - 1 sign for each parcel or per road frontage on one parcel not to exceed 2 signs. - Gross surface area of 100 sq. ft. for each exposed face. - For parcels with 2 signs, the second sign shall not exceed 509 sq. ft. for each exposed face. - Max height of 12.5 ft. allowed. Menu Board: - 50 sq. ft. of total signage for walk-up or drive-in businesses. Shopping Center Signs - Developer to submit sign plan for approval.
			E-1 and E-2 Employment Districts	Wall, Canopy, or Marquee Ground Window	Wall, Canopy, or Marquee - Sign area may not exceed 15% of the front building façade. - Sign height shall not exceed the top parapet wall, or height of eaves in absence of a parapet. Ground signs - 1 sign for each parcel or per road frontage on one parcel not to exceed 2 signs. - Gross surface area of 100 sq. ft. for each exposed face. - For parcels with 2 signs, the second sign shall not exceed 509 sq. ft. for each exposed face. - Max height of 12.5 ft. allowed. Window - Window signs shall not exceed 30% of the area of the window in which the sign is proposed to be displayed.
			Business and Industrial Parks	Wall Ground	All Business and Industrial Park signs shall be wall or ground signs. Park Identification Sign - Not more than 1 sign for each point of vehicular access to the office or industrial park. - Gross area of 1 sign shall not exceed 100 sq. ft. and gross surface area for each exposed face shall not exceed an aggregate of 200 sq. ft. - Ground signs may not project higher than 10 ft as measured from the base of the sign or grade of adjacent roadway, whichever is higher. Park Member Identification Signs - 1 wall sign for each principal building or tenant or use within a building. - 1 sign allowed for, and to be oriented to, each abutting street. - 1 ground sign allowed for each building. - Gross surface area of a wall sign not to exceed 15% of the occupants proportionate share of the building wall to which the sign is affixed. - Gross surface area of a ground sign shall not exceed 100 sq. ft. per face or gross aggregate surface area of 200 sq. ft. - Ground signs may not project higher than 10 ft as measured from the base of the sign or grade of adjacent roadway, whichever is higher.

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
Vadnais Heights	Animated Sign Dynamic Sign	(i) Dynamic signs. (1) The signs are maintained as prescribed in this article. (2) The sign does not have displays which move, rotate, stream, scroll, flash or contain movement, or the appearance of movement, unless specifically provided for under subsections (i)(7) and (8) of this section. (3) The sign illumination levels are reasonable and compatible with the adjacent properties. (4) The signs do not create distractions which are considered detrimental to the public health, welfare and safety. (5) The signs comply with the height, size, arrangement, setback, location, and other applicable provisions of this article and the district in which the sign is located. (6) The signs may be used as the principal business sign or for tenant signs within the districts, where permitted, provided that the sign display element changes in its entirety and does not change more frequently than once every 24 hours. (7) A portion of the principal sign or a separate subsidiary sign to the principal business or tenant signs within the districts, where permitted, may be used as a temporary single or multiple message board only, provided that the temporary message sign display element does not change more frequently than once every 15 seconds . A change in dynamic sign means any alteration, addition, or deletion to any part of the text or graphics. (8) A portion of a dynamic sign used as the principal sign or a separate subsidiary sign to the principal business or tenant signs within the districts, where permitted, may be allowed as a moving or streaming text message board sign as set forth under section 38-693(dd), and only if specifically allowed by the underlying zoning district.	C-1 and C-1A (Neighborhood Commercial) C-2 and C-2A (Community Commercial) O (Office) OB (Office-Business) I (Industrial)	Dynamic Sign (Permitted)	Sec. 38-693 includes general regulations by sign type.
			CC (City Center)	Dynamic Sign (CUP required)	Billboard - Max allowable size is 700 sq. ft. - Max allowable height is 35 ft. - Minimum distance allowed between billboards is 1,500 ft. - Billboards 700 sq. ft. or larger must be 100 ft. away from any building. Setback reduced by 10 ft. for every 100 sq. ft. less of sign area. - No moving parts or flashing lights. Dynamic Sign Billboard Additional Requirements: - No animation or moving parts. - Minimum duration of an image is 8 seconds. - Image must contain complete message. - Shall provide to the city a minimum of 5 hours per month per dynamic display sign in the city for community and public service messages at such times as shall be determined by the city.
Rogers	Dynamic Signs Flashing Signs	<u>Section 113-11 Special Sign Types:</u> (e) <i>Dynamic signs</i> . Electronically or other technologically controlled signs where the message is formed by electronic or other digital or dynamic media, and when not static for more than one hour are considered flashing signs, except when used to provide primarily time and temperature or other public service information and not to exceed 25 percent of the area of the sign face when located as an on-premises sign. On-premises dynamic signs may not change more than once per hour, except as required to update time, temperature and public service announcements. Transition between time, temperature and public service announcements must be instantaneous and have no special effects of any kind. <u>Section 113-6 Prohibited Signs:</u> (2) Flashing signs, except when used to provide primarily time and temperature or other public service information and not to exceed 25% of the area of the sign face.	<u>CB Community Business</u> - All properties zoned B-1 and fronting on CR 81 or located between CR 81 and I-94.	Wall Freestanding	Dynamic Display allowed per regulations in Section 113-11(e). Wall - Max Area: 2 sq. ft. per linear ft. up to a max. of 100 sq. ft. - Max Height: N/A - Lighting: Internal/External - For parcels with frontage on more than one street, the permitted wall sign area shall be allowed on each wall fronting on a street. Freestanding: - Max Area: 60 sq. ft. - Max Height: 12 ft. - Lighting: Internal/External - One sign permitted on any site. - Setback must be 1 ft. from property line - Signage on a single pole is prohibited. - Signs with bottoms less than 10 ft. off the ground must be located so as to preserve clear vision of approaching traffic. - Parcels that abut Interstate 94 may construct freestanding signs to a max. height of 30 ft. The sign may only be located in the yard which directly abuts the freeway or frontage road.
			<u>RB Regional Business</u> - All properties zoned B-1, B-2, B-3, or B-C and located north of I-94.	Wall Freestanding	Dynamic Display allowed per regulations in Section 113-11(e). Wall - Max Area: 2 sq. ft. per linear ft. up to a max. of 80 sq. ft. - Max Height: N/A - Lighting: Internal/External - For parcels with frontage on more than one street, the permitted wall sign area shall be allowed on each wall fronting on a street. Freestanding - Max Area: 100 sq. ft. - Max Height: 15 ft. - Lighting: Internal/External - Special provision: All freestanding signs in this district must be designed to be ground signs. - One sign permitted on any site. - Setback must be 1 ft. from property line - Signage on a single pole is prohibited. - Signs with bottoms less than 10 ft. off the ground must be located so as to preserve clear vision of approaching traffic. - Parcels that abut Interstate 94 may construct freestanding signs to a max. height of 30 ft. The sign may only be located in the yard which directly abuts the freeway or frontage road.

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
			<u>RMI Multifamily and Institutional</u> - All properties zoned AG or AG-PUD; and all nonresidential uses in any R-2 through R-4 zoning districts; and all residential properties zoned R-3 and R-4 and all city parks and facilities.	Wall Freestanding	Dynamic Display not permitted except for Institutional uses fronting on County Roads (CSAH), Highway 101 and Interstate 94. Wall - Max Area: 60 sq. ft. - Max Height: External - Lighting: (blank) - For parcels with frontage on more than one street, the permitted wall sign area shall be allowed on each wall fronting on a street. Freestanding - Max Area: 36 sq. ft. - Max Height: 8 ft. - Lighting: External - Special provision: All freestanding signs in this district must be designed to be ground signs. - One sign permitted on any site. - Setback must be 1 ft. from property line - Signage on a single pole is prohibited. - Signs with bottoms less than 10 ft. off the ground must be located so as to preserve clear vision of approaching traffic. - Parcels that abut Interstate 94 may construct freestanding signs to a max. height of 30 ft. The sign may only be located in the yard which directly abuts the freeway or frontage road.
North St. Paul	Electronic Message Center (EMC) Signs	1. General: (a) EMC's are only permitted on freestanding signs. (b) Non-conforming signs shall not be eligible for conversion to an EMC. 2. EMC's shall adhere to the height standards for freestanding signs. 3. One EMC sign structure may be allowed per street frontage, not to exceed two EMC sign structures per site. 4. Display regulations: (a) EMC's shall maintain no less than an 8 second dwell time for any images/messages. (b) Any change from one static display to another must be instantaneous (no effects, dissolving, spinning, fading, animation or motion permitted). (c) Images shall be complete and not require continuation in content to the next image or message. (d) No EMC shall have a brightness exceeding 0.3 footcandles above ambient light measured at the property line. (e) EMC's shall be certified by manufacturers and be protected from end user's manipulation by password protected software. (f) EMC's may use multiple colors permitted they do not cause a distraction or create a public hazard. 5. EMC Text Size and Legibility based on the speed limit of the adjacent road: (a) 25 - 34 mph road = 7" minimum text size. (b) 35 - 44 mph road = 9" minimum text size. (c) 45 - 54 mph road = 12" minimum text size. (d) 55 mph or more = 15" minimum text size. 6. Operation: (a) All EMC's shall be equipped with a means to immediately discontinue the display if it malfunctions. (b) Owner of an EMC must immediately cease operation of the sign if notified by the City the sign is noncompliant.	Permitted in all districts, only for non-residential uses	Freestanding	Freestanding sign dimensional standards for non-residential uses by district: R-1 (single family) district = 60 sq. ft. R-2 (mix residential) district = 60 sq. ft. R-3 (multifamily residential) district = 60 sq. ft. MU-1 (downtown mix use) district = 250 sq. ft. MU-2 (transitional mix use) district = 250 sq. ft. MU-3 (corridor mix use) district = 300 sq. ft. Freestanding sign standards: 1. Total area of one freestanding sign not to exceed 1 sq. ft. of surface area for every lineal foot of street frontage. 2. Height: (a) Post arm signs shall not exceed 5 feet. (b) Monument signs shall not exceed 8 feet. (c) Pylon signs shall not exceed 25 feet. (d) EMC signs shall not exceed 8 feet above existing grade.

CITY	DYNAMIC SIGN TERMS	DYNAMIC SIGN RULES	DISTRICTS PERMITTED	SIGN TYPE	NUMBER, SIZE and OTHER REGULATIONS
Shoreview	Sign, Message Center Sign, Dynamic Display Billboard Sign, Video Display	<p>Message Center Signs:</p> <ul style="list-style-type: none"> - Shall be integrated into a freestanding sign (monument or ground), except as otherwise permitted for gas price display and incidental signs. - Non-message portion of the sign shall display the name of the building or facility. <p>(a) General provisions:</p> <ul style="list-style-type: none"> - Display period for any sign message shall be 8 seconds. - Audio speakers and pyrotechnics are prohibited. - Brightness: lighting shall be set to the minimum level necessary to read the sign, not to exceed 0.3 footcandles above ambient light, and signs shall include automatic dimmer controls. - No portion of the sign may flash, scroll or imitate movement in any manner. - Display of information is limited to those services being offered on the property (time and temperature are allowed). - only one message center is permitted for each principal structure. 	Commercial, Business and Industrial Districts	Shall be integrated into a freestanding sign (monument or ground), except as otherwise permitted for gas price display and incidental signs.	<p>Maximum message center display:</p> <ul style="list-style-type: none"> - 50% of sign area or 50 sq. ft. (whichever is less) in retail, general commercial, office park, business park and industrial districts. - 35% of sign area or 30 sq. ft. (whichever is less) in limited retail service district. - Maximum sign area may be exceeded to comply with the minimum sign area required <p>Minimum sign area required = 20 sq. ft.</p> <p>A comprehensive sign plan is required for message center signs abutting or adjacent to property with established residential land uses.</p> <p>Location and orientation shall be designed to minimize visual impact on adjoining residential properties.</p> <p>Hours of display:</p> <ul style="list-style-type: none"> - When adjacent to residential, message center signs must be turned off and not display messaged between 11PM-6AM
			Residential Districts	Shall be integrated into a freestanding sign (monument or ground), except as otherwise permitted for gas price display and incidental signs.	<p>Message center signs are permitted when displayed on the site of an approved public or quasi-public land use.</p> <ul style="list-style-type: none"> - A Comprehensive Sign Plan is required. <p>Maximum area:</p> <ul style="list-style-type: none"> - not to exceed 35% of the sign area or 30 sq. ft., whichever is less. <p>Minimum area:</p> <ul style="list-style-type: none"> - 20 sq. ft. <p>Location and orientation shall be designed to minimize visual impact on adjoining residential properties.</p> <p>Hours of display:</p> <ul style="list-style-type: none"> - Message center signs must be turned off and not display messaged between 11PM-6AM. <p>Color:</p> <ul style="list-style-type: none"> - Full color displays are permitted upon finding that the display will not have an adverse effect on adjoining residential land uses.



Peace UMC

5050 Hodgson Road
North Oaks, MN 55126

Sign Design_1
May – 2023

PEACE A UNITED METHODIST COMMUNITY

SUNDAY SERVICES | 10:00AM | WWW.PEACEUMC.COM

reconciling & growing for everyone

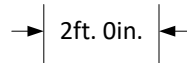
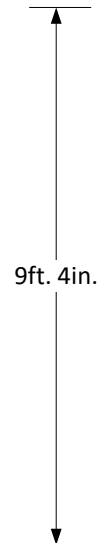
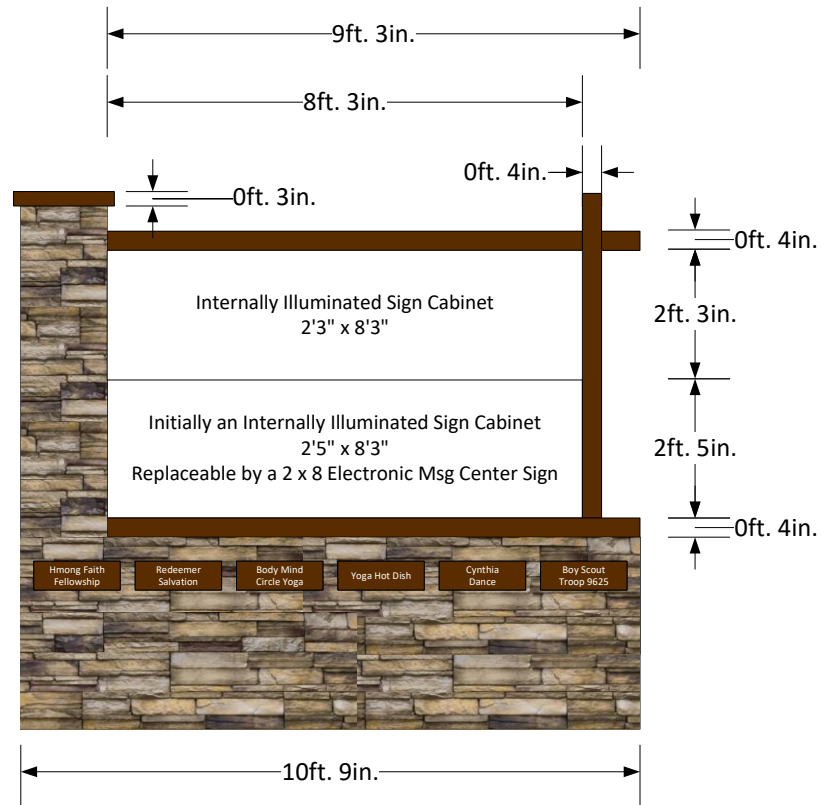
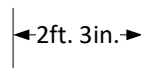
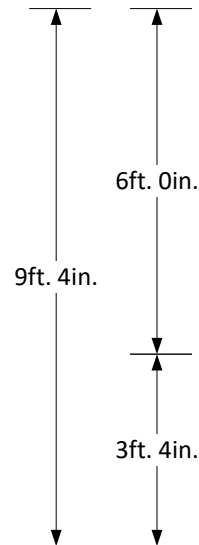
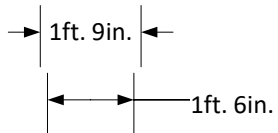
 **Musical Montessori Preschool and Childcare**

Hmong Faith Fellowship	Redeemer Salvation	Body Mind Circle Yoga	Yoga Hot Dish	Cynthia Dance	Boy Scout Troup 9625
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PEACE A UNITED METHODIST COMMUNITY

SUNDAY MORNINGS at 10:00am | www.peaceumc.com

Musical Montessori	Shaila Dance	Hiyala Yoga	Prayer Labyrinth
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4880 Hodgson Road
North Oaks, MN 55126

Sign Permit Supporting Documents
April – 2018

Incarnation Lutheran Church: 4880 Hodgson Road, North Oaks, MN 55126



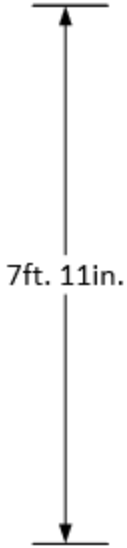
Current Signage



Proposed New Signage



Proposed New Signage



Internally Illuminated Cabinet
Routed Aluminum Face
Acrylic Backed

From: [Matthew Duffy](#)
To: [Kendra Lindahl, AICP](#)
Cc: [Doan "Van" Trinh](#)
Subject: RE: North Oaks Sign Ordinance
Date: Wednesday, September 13, 2023 9:56:45 AM
Attachments: [image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[Incarnation Sign Permit Supporting Documents 1.pdf](#)

Kendra,

See my [answers](#) below.

Please let me know if you need/want anything else from me. I am happy to provide whatever information I can to help.

Thank you and regards - Matt.

=====

They asked me for additional information from you to include in my packet:

1. Can you confirm that the proposed sign for Peace Methodist will be able to comply with the ordinance standards, including brightness?

The Watchfire electronic message center (EMC) dynamic sign being installed for Peace UMC will comply with the following:

- 8 Second minimal message hold time
- No audio speakers
- No animation, flashing or blinking. Message changes will be instantaneous.
- Brightness
 - The software allows the brightness to be set using NIT values.
 - The maximum daytime brightness setting is 7,000 NITs.
 - This value can be lowered to whatever value is required.
 - Some cities regulate that the daytime brightness max value is 5,000 NITs.
 - The maximum nighttime brightness level is 700 NITs.
 - This value can be controlled/lowered through the sign's software.
 - The sign has a photocell that automatically adjusts the sign's brightness in direct correlation to the ambient light conditions.
 - Foot candles
 - I have seen foot candle referenced in some city sign code.
 - The sign's software uses NITs.
 - If neighbors or the city believe the sign is too bright – we can continue to lower the NIT values in the sign's

software until it is no longer a problem.

- I am not sure how to measure foot candles. I can say that we have never had an issue that wasn't resolved by lowering the sign's default brightness levels until it hit a level that satisfied all involved parties.

- Hours of display: The sign software can be set to automatically turn off between the hours of 11pm and 6am.

2. They did discuss the Immanuel Lutheran Church sign and wondered how that got installed. I know you said you don't have any permit or variance information in your files, but do you still have the plans for that sign? Can you confirm whether or not that sign will comply with the new ordinance standards for size and brightness?

Permit Documentation:

- I couldn't find any documentation for the actual sign permit application.
- A document I created for the church is attached.
 - It shows the dimensions of the old sign.
 - It also shows the dimensions of the new sign match exactly the old sign.
- My memory from the time is that because the sign was the same size – the city approved their request for a new sign.

Dynamic Sign meets the new North Oaks Sign Code:

- The Incarnation digital sign can meet all the sign code requirements except the Ambient Light Photocell. It does not have a photocell.
- The sign's brightness is controlled by time of day.
 - The sign's controller knows the longitude/latitude of the sign's location – sunset and sunrise times are maintained in the sign.
 - The brightness dims with the changing sunset/sunrise times throughout the year.
- I don't believe the church has received complaints. If the brightness is a problem – default brightness levels can be lowered.

Sign Size:

- Incarnations digital sign is 2x7 (14 sf).
- It complies with the maximum allowance of 16 sf.
- The dynamic percentage is less than 50% of the total sign area.
- The total sign area = approx. 45 sf.

3. The subcommittee wanted to use the brightness formula that the City of Shoreview uses. I have never used this formula for brightness in any City, but the City of Shoreview says that they use it because it is a standard that the sign industry uses. Unlike other cities that measure lumens or nits. Is that accurate? I have that included in the draft: *The light level shall not exceed 0.3 foot candles above ambient light as measured from a pre-set distance depending on the sign size. Measuring distance shall be determined using the following equation; the square root of the message center sign area multiplied by 100. Example: 12 square foot sign $\sqrt{12 \times 100} = 34.6$ feet measuring distance.*

See my description above regarding NITs and Foot Candles.

- The Watchfire software controls brightness using NITs.
- I believe there are meters that can measure foot candles. I am not sure how they

- work and how ambient light affects the measurement.
- If the sign's brightness is an issue with neighbors or the city, we can continue to lower the brightness default levels until it is no longer an issue.

From: Kendra Lindahl, AICP <KLindahl@landform.net>
Sent: Friday, September 8, 2023 1:54 PM
To: Matthew Duffy <mattduffy@thinkdigitalsigns.com>; Doan "Van" Trinh <van@thinkdigitalsigns.com>
Subject: North Oaks Sign Ordinance

Matthew and Doan,

The city of North Oaks scheduled a public hearing on the draft sign ordinance for September 28th.

They asked me for additional information from you to include in my packet:

1. Can you confirm that the proposed sign for Peace Methodist will be able to comply with the ordinance standards, including brightness?
2. They did discuss the Immanuel Lutheran Church sign and wondered how that got installed. I know you said you don't have any permit or variance information in your files, but do you still have the plans for that sign? Can you confirm whether or not that sign will comply with the new ordinance standards for size and brightness?
3. The subcommittee wanted to use the brightness formula that the City of Shoreview uses. I have never used this formula for brightness in any City, but the City of Shoreview says that they use it because it is a standard that the sign industry uses. Unlike other cities that measure lumens or nits. Is that accurate? I have that included in the draft: *The light level shall not exceed 0.3 foot candles above ambient light as measured from a pre-set distance depending on the sign size. Measuring distance shall be determined using the following equation; the square root of the message center sign area multiplied by 100. Example: 12 square foot sign $\sqrt{(12 \times 100)} = 34.6$ feet measuring distance.*

I appreciate your feedback.
Kendra Lindahl, AICP
LANDFORM, Principal Planner
Direct: 612-638-0225



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Night-time Brightness Level Recommendations for On-Premise Electronic Message Centers

Updated August 2016

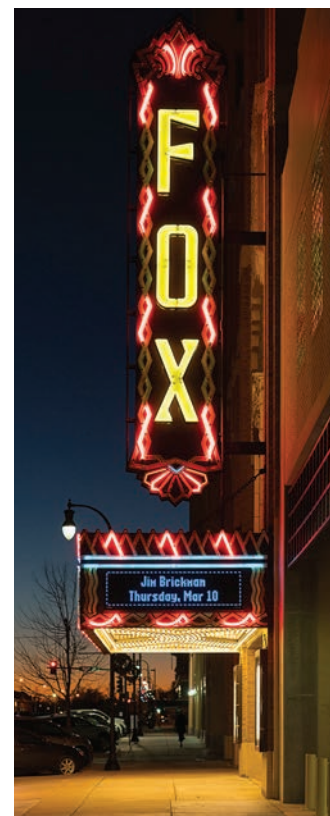
PRODUCED BY:



INTERNATIONAL SIGN ASSOCIATION

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SIX STEPS: EMC BRIGHTNESS LEVELS	
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LEARN MORE ABOUT EMCS

The International Sign Association offers an Electronic Message Center (EMC) Resource Center, with resources on:

- EMCs and traffic safety
- A framework for developing EMC sign code language
- The differences between EMCs and digital billboards

www.signs.org/local

ADDITIONAL SIGN CODE RESOURCES

The International Sign Association has developed numerous tools to help communities develop better sign codes. All are housed at www.signs.org/local, including:

- The Supreme Court ruling, *Reed v. Town of Gilbert*
- Model sign codes
- Best practices in regulating temporary and wayfinding signs
- The Economic Impact of On-Premise Signs

ISA's advocacy team is available to provide complimentary assistance on sign codes and sign-related issues.

Contact SignHelp@signs.org or 703.836.4012.

INTRODUCTION

ELECTRONIC MESSAGE CENTERS (EMCs)

Electronic message centers, or EMCs, continue to grow in popularity for business and community use. You may have heard EMCs being referred to as changeable message displays or digital signs.

EMCs are *not* digital billboards, which advertise a good or service that is located away from the sign. Rather, EMCs are digital signs that are located *on the premises*, and that advertise goods and services that are available at the location.



Electronic Message Center (EMC)/on-premise sign advertising a bank that is located on the same premises as the sign



Digital billboard/off-premise sign advertising an automobile business in another location

There is often confusion regarding on- and off-premise digital signs. However, EMCs and digital billboards have very distinct capabilities and purposes, each targets a specific audience and each has traditionally been treated under separate legal and regulatory regimes, a zoning practice which was noted in the 2015 U.S. Supreme Court ruling in *Reed v. the Town of Gilbert*. For the purposes of this publication, we are focusing solely and exclusively on EMCs.

EMCs that are too bright at night can be offensive and ineffective. Night-time EMC brightness is an issue where sign users, the sign industry, and local offices have a common goal: ensuring that EMCs are appropriately legible. We know the messages that these signs convey can be rendered unattractive and perhaps even unreadable if they are programmed too bright.

That's why many sign companies recommend to their customers that in order for these signs to be most effective, their brightness be set at such a level to be visible, readable and conspicuous.



The International Sign Association (ISA) retained noted lighting expert Dr. Ian Lewin of Lighting Sciences to help the industry develop scientifically-researched, understandable recommendations for EMC brightness. Dr. Lewin was a past chair of the Illuminating Engineering Society of North America (IES), and was greatly respected within the lighting field. His work for ISA was conducted with the input of experts within the sign industry.

*As a result of his research, Dr. Lewin recommended two different brightness settings based on whether the EMC was located in an area of high or low ambient light. After field testing and utilizing Dr. Lewin's recommendations, it was determined that using the more conservative recommendation is appropriate in areas of both low and high ambient light. In order to simplify Dr. Lewin's recommendations, and to take a more reasonable approach to ensure that EMCs are sufficiently visible but not overly bright, **it is recommended that EMCs not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.***

The research and the recommendations contained in this report pertain only to EMCs, not traditionally internally illuminated signs, such as these channel letter and neon signs below. EMCs use a different lighting technology than most of these types of signs, and as such the scientific approach differs.

Community leaders should understand that, while it is recommended that brightness measurements be taken perpendicular to the sign, sign viewers rarely see the sign at that same perpendicular approach. At any viewing point away from or off the forward angle, the apparent brightness will be reduced. In other words, the measurements will capture the recommended brightness levels, but, unless viewers are looking at the sign directly perpendicular, they will not perceive the brightness at the full level.

We have provided recommended statutory language and tips to measure brightness with and without control of the EMC. If you need further assistance, feel free to contact ISA, signhelp@signs.org or at (703) 836-4012 to answer any of your EMC questions.



FOOTCANDLES VS. NITS: WHICH MEASUREMENT IS BETTER?

This document recommends communities adopt illumination measurements in footcandles as compared to nits. Here are a few reasons why more than 200 localities and many state departments of transportation have adopted the footcandle measurement for EMCs:

FOOTCANDLES

- Measures illuminance
- Accounts for ambient light conditions
- Luxmeter measuring device \$ 100
- "Twilight" measurement possible
- Measures light impact and appearance
- Works with roadway lighting standards
- Easier to check and enforce

NITS

- Measures luminance
- Measures only the amount of brightness emitted
- Luminance spectrometer (nit gun) - \$ 1,000
- Does not allow adjustment based on ambient light
- Does not measure appearance
- Difficult to measure accurately
- Difficult to enforce

* While the main advantage of using nits as compared to footcandles is that daytime measurement is possible, EMC brightness is typically more of an issue at night.

CASE STUDY: Columbus, Ohio



COMMUNITY	Columbus, Ohio
POPULATION	836,000
LOCATION	As Ohio’s largest city and state capitol, Columbus is the country’s 15th largest city.
SPECIFIC EMC ISSUE	Crafting a reasonable, enforceable code that addresses complaints while preserving the ability for businesses to use what it termed automatic changeable copy signs.

As automatic changing copy signs—as Columbus refers to EMCs—grew in use, so did community complaints.

By 2011, city planners began to edit the graphics codes to limit special effects. The goal was to continue to allow for a variety of commercial graphics, “but not at the expense of neighborhoods,” said Lisa Russell, the city’s Planner II who facilitated the code development project.

The city had in place certain limits on automatic changing copy signs, aka EMCs, in the graphics code, limiting their use to commercial and manufacturing zoning districts and requiring that only half of the sign could be used for the changeable copy. But signs lacked brightness limits and a hold time.

Russell led a team to draft the new code, which incorporated a brightness limit for both on-premise and off-premise signs. The testing method also is included in the code.

It was the result of much scientific discussion. “I believe that the best answer is revealed if you have enough information,” Russell said. The committee included a community group leader who was an architect specializing in lighting and representatives from the sign and graphics industry.

“When we started exploring brightness, it appeared the footcandle method was the way to go,” Russell said. “However, some group members wanted us to explore the luminance method. ISA believed so strongly that the luminance method was problematic that they brought a demonstration to us.”

The demonstration included a field trip to visit a sign to show the impact of the two measurement methods. “They wanted to make sure that we didn’t go down the wrong path. They rented a lift and showed us that with the luminance method you’d have to get up in the lift, raise it and shine the nit gun at the sign. With the footcandle meter, you can stand on the ground.”

Russell helped the group to see that the “members of the professional sign and graphics industry are not the same as end-users of signs, such as an owner of a carryout who wants to draw attention to his shop over others. We all had an interest in developing reasonable regulations instead of just banning these signs. We also did not want to take away the rights that businesses had to display electronic signs.”

The new code has significantly lessened complaints about sign brightness. And when a complaint is received, the code enforcement officers have a verifiable process for determining whether the sign complies with the code.

CASE STUDY: Kitsap County, Washington



COMMUNITY	Kitsap County, Washington
POPULATION	260,000
LOCATION	Across the Puget Sound from Seattle and bordered by rural communities on the west. It is the third most densely populated county in the state.
SPECIFIC EMC ISSUE	Existing codes did not cover electronic signs.

As a “transition” county between rural Washington and the metropolitan city of Seattle, Kitsap County had the challenges of creating regulations for electronic signs that fit the county’s dual personalities.

“The first step was to identify where these signs would be allowed,” said Darren Gurnee, a planner with the county. “We wanted to make sure these were restricted to areas of increased density and primarily non-residential use such as industrial zones and commercial zones within the urban growth area.”

Previously, the county had allowed electronic signs “as a matter of interpretation,” Gurnee said. Crafting more defined electronic sign regulations would provide a measure of stability—and help business owners know what was allowed and where. An added bonus: Gurnee felt the signs would be more attractive than the block letters signs that had to be changed manually.

While the county wanted to make it easier for businesses to convert existing static monument signs into electronic signs, it also wanted to ensure that the regulations were not written in a way that would allow billboards to convert.

“We were able to craft our regulations in a way that required signs be brought into conformance before any change could be made,” Gurnee said. “Billboards were non-conforming, so that would not be an issue.”

ISA provided Gurnee with industry standards—contained in this publication—and some background on the technology that today’s electronic signs offer, such as automatic dimming. It also incorporated some of the recommended language on animation, hold times and transitions.

“The regulation is written in a way that it would be easy to enforce,” Gurnee said, and easy to understand, without the ambiguities contained in the previous method. The ending code created a perfect fit for both of the community’s personalities.

CASE STUDY: SPARKS, NEVADA



COMMUNITY	Sparks, Nevada
POPULATION	93,500
LOCATION	A rapidly growing community, Sparks is located near Lake Tahoe, California, and Reno, Nevada, and is Nevada’s fifth largest city.
SPECIFIC EMC ISSUE	Existing regulations were difficult to enforce and outdated.

Sparks, Nevada had existing regulations of electronic message centers—or electronic variable signs as the community deemed them. But “it wasn’t very explicit,” said senior planner Karen Melby. “The brightness standards were in lumens, which we didn’t even know how to measure.”

The regulations were outdated as well—having been drafted in 2002. Technology had changed dramatically and the costs of EMCs had dropped, putting them in the range of more businesses’ budgets. “We felt we could see more coming and felt that we needed to get a handle on it.”

As a first step, planners required that those seeking an EMC permit meet their standards before approval was granted, but nothing was written into the code. That method can create problems.

So Melby led the city through the code revision process. She sought out industry expertise from both the planning community and the sign and graphics industry. For industry insight, she turned to ISA. ISA provided feedback on how other communities were regulating electronic message centers, and recommendations on what was working for these communities.

One outside group felt strongly that the standards should be regulated in nits, not footcandles. They brought in an expert who opposed the proposed regulations. But Melby held strong on the issue of footcandles. “In my research, it seems like footcandle is what you can see with your eyes while a nit is pinpointing a spot on a sign. When you look at a sign, you’re looking at the whole thing, not just one small spot.”

The city adopted the widely recognized standard of 0.3 footcandles above ambient light, using the distance measurements outlined in this publication. Melby took that table, determined the formula and wrote the formula into the code.

The community allows smaller signs—those under 32 square feet—to include scrolling, while those larger do not.

The result has been a city that has successfully navigated the balance between business interests and community aesthetics. “We’ve had very few complaints,” Melby said. “When we do get a complaint about a sign being too bright, we go out and measure it. When they bring it down to standards, we don’t get complaints.”

Being able to use a simple light meter to measure brightness is far easier than simply guessing whether the sign is in compliance, Melby said. “The other method (measuring nits) was really based on opinion. What may seem bright to me may not seem bright to you. Now, we can say, ‘This is what the meter says.’”

By having clear standards that are easier to enforce, both community and business win.

EXECUTIVE SUMMARY

ISA ELECTRONIC MESSAGE CENTER NIGHT-TIME BRIGHTNESS RECOMMENDATIONS

This summary has been developed with an understanding that EMCs that are unreasonably bright are not effective for the communities or end users. This intends to help communities and stakeholders develop brightness standards for on-premise EMCs. The summary comprises:

- 1) *An overview of the importance of ensuring appropriate brightness,*
- 2) *Technology utilized to ensure appropriate brightness, and*
- 3) *Recommended brightness standards*

1. Overview of the importance of ensuring appropriate night-time brightness.

EMCs that are too bright at night can be offensive and ineffective. There are significant advantages to ensuring than an electronic display is not overly bright. These advantages include:

- » Conservation of energy
- » Increased life expectancy of the electronic display components
- » Building goodwill with the community
- » Ensuring the legibility of the display

It is in the best interest of all stakeholders to ensure that EMCs are sufficiently bright to ensure clear legibility, while at the same time avoiding a display that is overly bright.

2. Technology utilized to ensure appropriate brightness.

Most EMCs are designed to produce sufficient brightness to ensure clear legibility during daylight hours. However, daytime brightness settings are usually inappropriate for night-time viewing. The following general methods are used to dim an EMC for appropriate night-time viewing:

1. **Manual Dimming.** Using this method, the sign operator dims the display in response to changing ambient light conditions.
2. **Scheduled Dimming.** Sunset-sunrise tables allow an EMC to be programmed to dim at the same time that the sun sets and rises. This method is generally acceptable, but is more effective when used as a backup to automatic dimming controls capability, such as photocell technology.
3. **Photocell Technology.** An EMC that utilizes photocell technology can automatically dim as light conditions change. A photocell sensor alerts the display to adjust brightness according to ambient light conditions.

3. Recommended night-time brightness standards.

Dr. Lewin recommended the development of brightness criteria based on the Illuminating Engineering Society's (IES) well-established standards pertaining to light trespass, IES Publication TM-11-00. The theory of light trespass is based on the concept of determining the amount of light that can spill over (or "trespass") into an adjacent area without being offensive.

In order to simplify Dr. Lewin's recommendations, and to take a more reasonable approach to ensure that EMCs are sufficiently visible but not overly bright, **it is recommended that EMCs not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.**

Email signhelp@signs.org to receive Dr. Lewin's original research.



...it is recommended that EMCs not exceed 0.3 footcandles over ambient lighting conditions when measured at the recommended distance, based on the EMC size.

RECOMMENDED LEGISLATIVE LANGUAGE



Electronic Message Center (EMC) Criteria: The night-time illumination of an EMC shall conform with the criteria set forth in this section.

A. EMC Illumination Measurement Criteria: The illuminance of an EMC shall be measured with an illuminance meter set to measure footcandles accurate to at least two decimals. Illuminance shall be measured with the EMC off, and again with the EMC displaying a white image for a full color-capable EMC, or a solid message for a single-color EMC. All measurements shall be taken as close as practical to a perpendicular plane of the sign at the distance determined by the total square footage of the EMC as set forth in the accompanying Sign Area of a Sign versus Measurement Distance table.

B. EMC Illumination Limits: The difference between the off and solid-message measurements using the EMC Measurement Criteria shall not exceed 0.3 footcandles at night.

C. Dimming Capabilities: All permitted EMCs shall be equipped with a sensor or other device that automatically determines the ambient illumination and programmed to automatically dim according to ambient light conditions, or that can be adjusted to comply with the 0.3 footcandle measurements.

D. Definition of EMC: A sign that utilizes computer-generated messages or some other electronic means of changing copy. These signs include displays using incandescent lamps, LEDs, LCDs or a flipper matrix.



SIGN AREA VERSUS MEASUREMENT DISTANCE

AREA OF SIGN sq. ft.	MEASUREMENT (ft.)
10	32
15	39
20	45
25	50
30	55
35	59
40	63
45	67
50	71
55	74
60	77
65	81
70	84
75	87
80	89
85	92
90	95
95	97
100	100
110	105
120	110
130	114
140	118
150	122
160	126
170	130
180	134
190	138
200	141
220	148
240	155
260	161
280	167
300	173

* For signs with an area in square feet other than those specifically listed in the table (i.e., 12 sq ft, 400 sq ft, etc), the measurement distance may be calculated with the following formula: Measurement Distance = $\sqrt{\text{Area of Sign Sq. Ft.} \times 100}$

HOW TO MEASURE THE NIGHT-TIME BRIGHTNESS OF AN EMC WITH OPERATIONAL CONTROL

(Note: This method can be completed by one individual, but requires operational control to shutoff the EMC)

STEP 1

OBTAIN AN ILLUMINANCE METER.

Purchase or otherwise procure an illuminance meter. Most city/county traffic departments have an illuminance meter, which are also referred to as lux or footcandle meters (lux is the metric measure of illuminance; footcandles is the English measure of illuminance). The illuminance meter must have the ability to provide a reading up to two decimal places and must be set to read footcandles. It is preferred to have an illuminance meter with a screw-mount that allows the sensor to be mounted on a tripod. A tripod ensures that the highly sensitive sensor is held perfectly still; otherwise it may be difficult to obtain an accurate reading.

STEP 2

DETERMINE SQUARE FOOTAGE.

Determine the square footage of the face of the electronic message sign (EMC) by multiplying the height and width of the EMC. This information may be available in a permit application, or can be determined by physically measuring the height and width of the EMC. Do not include the sign face square footage attributable to any additional static signs associated with the EMC (if applicable).



STEP 3

DETERMINE THE MEASUREMENT DISTANCE.

Using the total square footage found in Step 2, look up the measurement distance in the table provided in the Recommended Legislative Language on page 8, to determine the distance to measure the brightness of the EMC. The distance should be measured perpendicular to the EMC sign face. The use of a measuring wheel, laser finder or a smartphone app are the most convenient ways to measure the distance.



STEP 4

PREPARE THE DISPLAY FOR TESTING.

Ensure that the EMC is programmed to alternate between a solid white (or in the case of a monochrome display – the solid color of the display) message and a blank message. The community may require that the sign owner cooperate with testing by programming the EMC for testing upon written notice.

STEP 5

USE AN ILLUMINANCE METER TO MEASURE THE BRIGHTNESS OF THE EMC.

Mount the sensor of your illuminance meter to a tripod and orient the sensor directly towards the face of the EMC at the measurement distance determined in Step 2.

Ensure that the illuminance meter is set to measure footcandles up to two decimal places. As the display alternates between a solid white message and an “off” message, note the range of values on the illuminance meter. If the difference between the readings is less than 0.3 footcandles, then the brightness of the display is in compliance. If not, the display will need to be adjusted to a lower brightness level using the manufacturer’s recommended procedures.



STEP 6

ENSURE THAT THE DISPLAY CAN ADJUST TO DIFFERENT AMBIENT CONDITIONS.

Inspect the sign to ensure that it incorporates a photocell or other technology to ensure that the display can adjust according to ambient lighting conditions.



As the display alternates between a solid white message and an “off” message, note the range of values on the illuminance meter.

If the difference between the readings is less than 0.3 footcandles, then the brightness of the display is in compliance.

HOW TO MEASURE THE NIGHT-TIME BRIGHTNESS OF AN EMC—WITHOUT CONTROL OF THE SIGN

(Note: This method requires two individuals, but does not require operational control of the EMC.)

There will be instances where the EMC illumination needs to be evaluated to ensure that it does not exceed the brightness levels established in the municipal sign ordinance. If the municipality is unable to obtain access to the sign controls or attempting to take the measurement after business hours, this method should be followed.

Unlike the six-step process described previously, this process measures the difference in brightness between the sign in operation and when the sign is completely blocked from the illuminance meter. This procedure is extremely simple and requires only an illuminance meter and a piece of painted cardboard cut to the proper size.

STEP 1

OBTAIN AN ILLUMINANCE METER.

(See previous Step 1)

STEP 2

DETERMINE SQUARE FOOTAGE.

(See previous Step 2)

STEP 3

DETERMINE THE MEASUREMENT DISTANCE.

(See previous Step 3 or use $\sqrt{(\text{Area of Sign in Sq. Ft.} \times 100)}$)

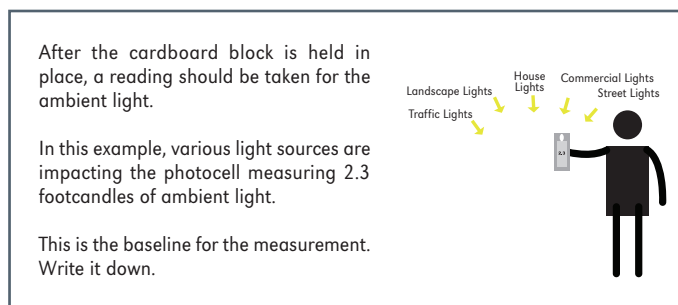
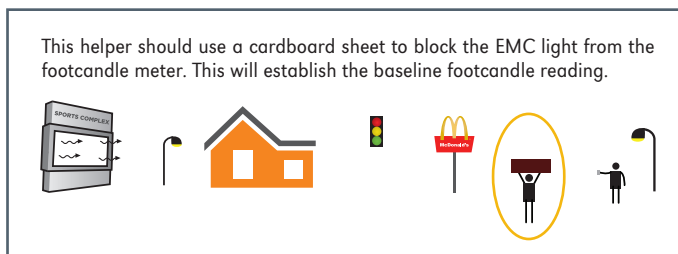
STEP 4

POSITION THE TESTERS.

Based on the size of the digital display, the person conducting the test should position themselves as close to directly in front of the digital display as practical, at the appropriate distance (calculated in Step 3).

A helper should position themselves about 7 ft. to 10 ft. in front of the light meter and hold up an opaque, black sheet of material that is roughly 12 in. high by 40 in. wide. (Regular cardboard painted matte black works well for this.) The sheet should be positioned so it blocks all light from the EMC, but still allows the remaining ambient light to register on the illuminance meter.

EMC Area	Measurement Distance
24 ft ²	49 ft
32 ft ²	57 ft
50 ft ²	71 ft
100 ft ²	100 ft



STEP 5

USE AN ILLUMINANCE METER.

The illuminance meter should be held at a height of about 5 ft. (which is approximately eye level) and aimed directly at the EMC. The illuminance meter will account for surrounding sources of light or the absence thereof.

In this case our ambient light reading was 2.3 fc. The new light reading with the LED displaying a full white frame cannot read above 2.6 fc or 2.3 (ambient) + 0.3 (threshold). If a full white frame cannot be arranged, watch the meter to see if any ad exceeds 2.6 fc.



At this point, readings should be taken from the illuminance meter to establish a baseline illumination level. (ISA recommends that the illuminance meter is capable of levels to 2 decimal places 0.00).

Once the baseline level is established, add 0.3 footcandles to the baseline level to calculate the max brightness limit. (For example: Baseline reading is 3.15 footcandles. The max brightness level is 3.45 footcandles.)

STEP 6

DETERMINE THE BRIGHTNESS LEVEL.

Remove the opaque sheet from blocking the EMC. Watch the foot-candle meter for 3 to 5 minutes to see if the max brightness level is exceeded by any of the images on the sign. If the readings do not exceed the max brightness levels, then the EMC illumination is in compliance.

If any of readings consistently exceed the max brightness level, the lighting level is not in compliance. In this scenario, the municipality will need to inform the sign owner of noncompliance and take appropriate steps to ensure that the EMC be adjusted to a lower brightness level using the manufacturer's recommended procedures.



If any of readings consistently exceed the max brightness level, the lighting level is not in compliance.



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PLANNING REPORT

TO: North Oaks Planning Commission

FROM: Kendra Lindahl, City Planner
Kevin Kress, City Administrator
Bridget Nason, City Attorney

DATE: September 19, 2023

RE: Amendment to Chapter 150 of the City Code Regarding Garage Size

BACKGROUND

A subcommittee made up of Chair Cremons, Council member Azman and staff is meeting monthly to address a number of ordinance amendments that have been identified by staff, the Planning Commission and City Council. Staff will bring individual items to the Planning Commission on a regular basis to present amendments for consideration. This month we are bringing garage size forward for discussion.

ISSUES AND ANALYSIS

The City requires a conditional use permit for garages exceeding 1,500 sq. ft.

City Code Section 151.005 defines a garage as “An accessory building or accessory portion of the main building which shall not exceed 1,500 square feet.”

Since 2015, the City has received 15 applications for a conditional use permit to exceed this limit. Only one of those applications has been denied as shown on the following table:

ADDRESS	TOTAL SQUARE FOOTAGE OF ALL GARAGE SPACE	EXCESS OVER 1,500 SQUARE FEET	NOTES
23 Phoebe Lane	1,800	300	2015
33 Hill Farm Circle	2,100	600	2017 - Detached garage requested of 1,428. Denied due to excess F.A.R.
9 Red Forest Way	1,969	469	2018 - CUP Detached garage of 1,080



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ADDRESS	TOTAL SQUARE FOOTAGE OF ALL GARAGE SPACE	EXCESS OVER 1,500 SQUARE FEET	NOTES
2 Eagle Ridge	1,548	48	2018 - CUP Detached garage of 1,020
26 Evergreen Rd	2,636	1,136	2019 - New construction
33 Mallard	1,826	326	2019 - Converted lower exercise room to garage space
17 Evergreen Rd	1,806	306	2021 - New construction (excess space for RV)
12 Cherrywood	1,627	127	2021 -New construction
3 Eastview	1,916	416	2021 - New construction
14 Cherrywood	1,994	494	2021 - New construction
1 South Deep Lake	2,077	577	2022 - Detached garage
70 west Pleasant Lake	2,302	802	2022 - New Detached garage of 1,152
9 Sandpiper Lane	2,312	812	2023 - Demo / rebuild of new home
8 Cherrywood Circle	2,736	1,236	2023 - New Home. Submitted CUP 5/30/23 - still pending receipt of materials to deem complete
12 Columbine	1,667.5	167.5	2023 - Enlarge existing garage. Scheduled for Council action on 9/21/23

Of the 15 conditional use permit applications received since 2015, only one has been denied (two are currently pending). If the City is comfortable with larger garages (as the table suggests), it may be time





to consider modifying the standards to reflect the current market and the City's comfort with larger garages.

It is important to ensure that garages are in scale with the home to avoid the appearance of a garage with an attached house. There are a number of tools available to manage garage size including limits to the square footage or front elevation.

Chair Cremons proposed the following amendments for consideration. The draft ordinances show underlined text for the proposed additions to the City Code and ~~struck through~~ text for the deletions.

Section 151.050(C)(1) of the City Code (permitted accessory uses):

Attached or detached private garage and private carport facilities, provided the structures are constructed in the same architectural style as the principal building or structure. The allowable square footage of the combined facilities shall not exceed the following:

- (a) 1,500 square feet for homes 3,000 square feet or less and*
- (b) The lesser of 2,000 square feet or 50% of the square footage of the structure for homes exceeding 3,000 square feet.*

Section 151.050 (D)9 of the City Code (conditional uses) would be revised as follows:

(9) Garage which exceeds 1,500 square feet for homes 3,000 square feet or less and garages exceeding 2,000 square feet or 50% of the square footage of homes exceeding 3,000 square feet, provided that:

- (a) The garage shall not exceed 3,000 square feet;*
- (b) The garage shall be constructed in the same architectural style as the principal building or structure;*
- (c) The floor area ratio shall not exceed 0.12;*
- (d) No use of the garage shall be permitted other than for private residential noncommercial use; and*
- (e) The factors set forth in § 151.076(C) shall be considered.*

Some additional items to consider:

- Staff recommends that condition (c) of the garage conditional use permit standards related to FAR be revised. Some of the subdivisions in the East Oaks PUD are permitted a FAR of 0.20 and we recommend broader language that would require compliance with the FAR standards for the applicable FAR requirement for the specific property.
- The Code says all accessory structures (attached or detached) are considered garages and we recommend some language to further clarify that and recommend eliminating the performance standard (sq. ft.) from the definition.



- Additionally, the current City Code does not define floor area and we may wish to think about adding a definition or consider using a different term to clarify how the garage area limits will be measured.

Attached for reference:

Exhibit A: Zoning Map

REQUESTED ACTION

The Planning Commission should review the draft ordinance and provide feedback for staff to make edits to the draft for a public hearing at the October meeting.





MAP 8

Existing Zoning Districts Map

- OS (Open Space)
- RSL (Residential Single Family - Low Density)
- RSL-PUD (Residential Single Family - PUD)
- RSM (Residential Single Family - Medium Density)
- RSM-PUD (Res. Single Fam. - Med. Density - PUD)
- RMM (Residential Multiple Family Medium Density)
- RMM-PUD (Residential Multiple Family Medium Density - PUD)
- RMH-PUD (Residential Multiple Family High Density - PUD)
- RCM-PUD (Residential-Commercial Mixed-PUD)
- C (Commercial)
- C/S (Commercial/Service)
- LI (Limited Industrial)
- R (Recreation)
- HP (Historic Preservation)
- Shoreland District Boundaries

North Oaks Boundary

Source: City Zoning Map as of 5 - 10 - 21

