THE CITY OF LAKE ELMO

STAFF REPORT

DATE: May 13, 2025
WORKSHOP

TO: City Council
FROM: Marty Powers, Public Works Director
AGENDA ITEM: UMN Low Input Grass Research
REVIEWED BY: Nicole Miller, City Administrator

CORE STRATEGIES:

☐ Vibrant, inclusive, connected community
☐ Responsive, transparent, adaptive governance
☒ Managed Growth
☐ Efficient, reliable, innovative services
☐ Balanced Finances now and future
☒ Resilient Infrastructure

BACKGROUND: The University of Minnesota is proposing to complete research on multi species of low input grass seeds in Lake Elmo. The drought resistant grasses being tested require less watering and fertilizer while still maintaining a desired appearance. The UMN is seeking four locations around the metro, one in the Lake Elmo area. The preferred site would be visible for the public viewing, have minimal slope, minimal foot traffic and have access to a water supply for irrigation. Irrigation requirements for this test plot may require additional irrigation outside of the city's irrigation restrictions if regular rain does not occur during the establishment period. The new Water Tower #3 site fits these search requirements.

ISSUE BEFORE COUNCIL: Does the City Council support the proposed UMN low-input grass research plot at the Water Tower #3 site and waive irrigation restriction during the establishment period?

PROPOSAL DETAILS/ANALYSIS: The U of M is proposing a low-input grass seed test plot at the Lake Elmo Water Tower #3 site located at 120 Lake Elmo Ave. This research is intended to help improve conservation by developing drought resistant grass that requires less fertilizer and irrigation water use, while still maintaining the appearance of a beautiful lawn. An irrigation waiver extending beyond the 15 days for new seed would be required to ensure grass establishment and growth if regular rainfall does not occur. The UMN would install the test plot, temporary irrigation system, and public informational signage, along with maintaining the grasses for the first year.

ATTACHMENTS:
Slide show presentation
Irrigation Ordinance

Lake Elmo - Lawn water conservation solutions

Identify optimum mixtures for Twin Cities lawns

Gary Deters
Lawn Water Conservation Educator

UNIVERSITY OF MINNESOTA
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METROPOLITAN COUNCIL

CLEAN WATER LAND & LEGACY AMENDMENT

Introduction

- We know there are lawn seed mixtures better for lawn water conservation, but residents struggle to find and use them
- Too much use of Kentucky bluegrass sod, which requires long-term high watering needs to be functional and aesthetically pleasing
- There are significant barriers to using the most well-adapted turfgrasses on Twin Cities lawns

Low-input mixture

Why are there barriers?

- **Expectations** - Homeowners often prefer the lush, green look of Kentucky bluegrass, but it requires a lot of water and fertilizer to look “good”
- **Resistant to change** - General resistance to changing lawn care practices
- **Availability** - Easy access to Kentucky bluegrass sod and a limited retail presence for drought-tolerant grass seed mixtures
- **Lack of public awareness** - Homeowners might not be fully aware of the benefits of drought-tolerant turfgrasses, such as reduced water needs

Project overview

- We are going to establish multi-species mixture studies at 4 metro sites in the summer of 2025
- Cultivars for each species will be selected based on relevant performance data
- We will work with the Minnesota Board of Water & Soil Resources (BWSR) and turfgrass seed vendors to develop a process to recommend best lawn water conservation species mixtures for Twin Cities lawns
- Seed vendors will be able to use approved cultivars (from other related trials) to fulfill mixture requirements

Benefits to the Lake Elmo and the Twin Cities

- Homeowners will be more easily able to access better turfgrass seed mixtures for their lawns
- Cities could recommend new lawns only use these mixtures, which will save water
- Similar to UMN research for MnDOT that led to new roadside turfgrass seed mixture recommendations

Research plots on UMN campus

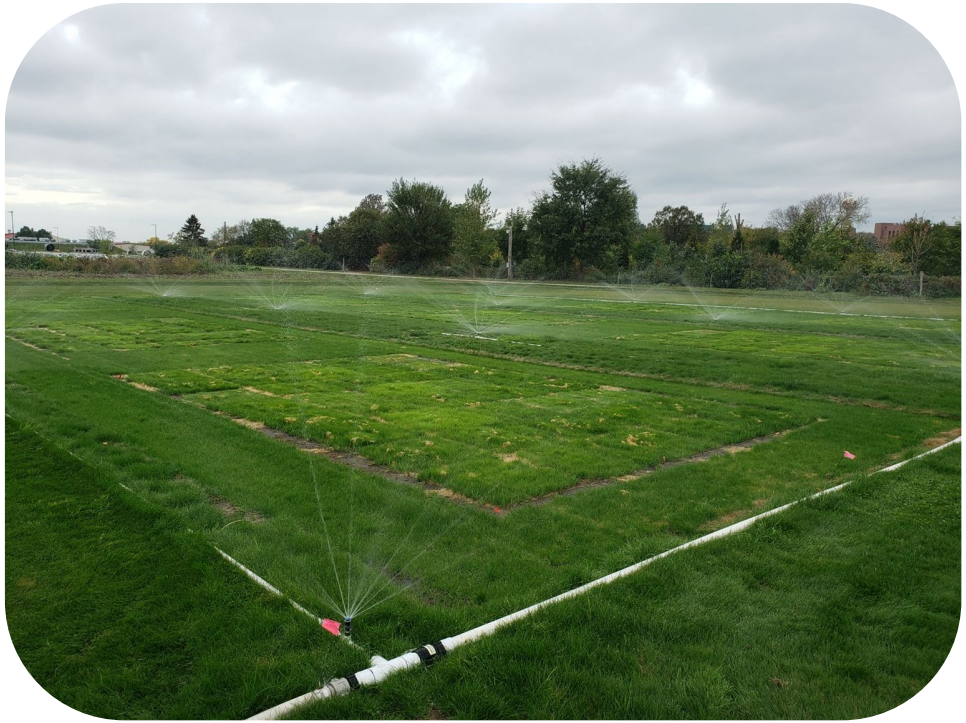
Establishing the site

- We will pay for water and hookups needed for fire hydrant conversion
- Use a seeding blanket to help hold moisture and increase establishment rate and prevent washouts
- Mowing and maintenance - City take over after year 1?

Seeding blanket

How will the site get watered?

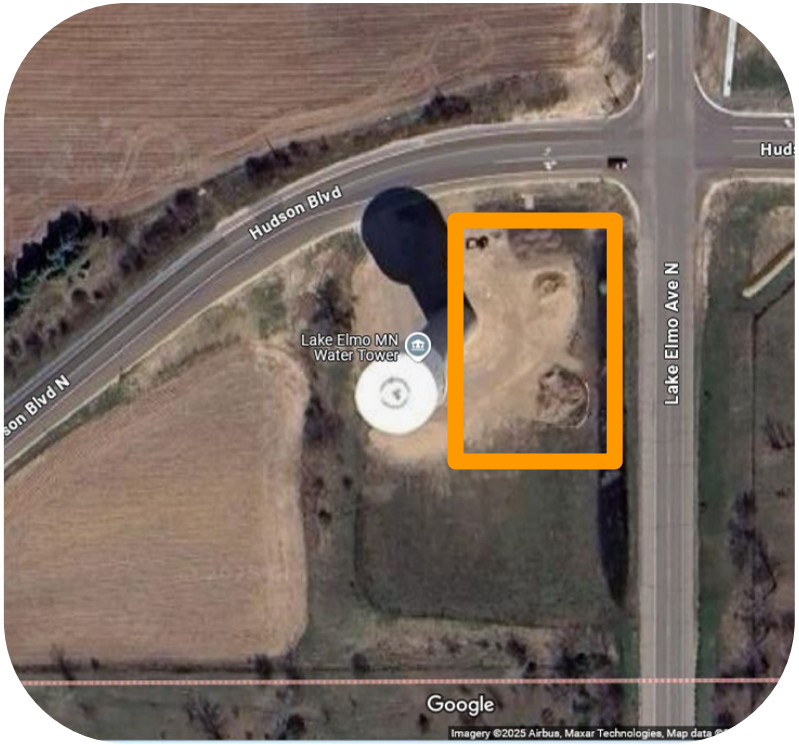
- We will use modular irrigation system
  - Complete with rain sensor
  - MP rotator nozzles which are EPA WaterSense approved
  - Lower water-use nozzle
- Water several times a day during initial establishment for optimal seed germination
- Irrigation will not be used once established during years 2026-27



Irrigation set-up

Establishing a Research Site for Drought-Tolerant Turfgrass Mixtures

- Next to the Lake Elmo water tower
- There is access to the site for public viewing, if needed
- Access to water for the establishment of the plots
- Lake Elmo is a city with water concerns, so it would be good to demonstrate the most well-adapted grasses



Research site

Timeline - With access agreement approved

- 2025 - Year 1 - Summer/Fall - Establish the turfgrass mixture plots
  - Seed around August 15th
- 2026 - Year 2 - Maintenance and data collection
- 2027 - Year 3 - Maintenance and data collection
- 2028 and beyond - either return the site to original or keep plots for continuous research (in consultation with the city)

Challenges: Watering restrictions and need for an extension

- We are requesting a waiver to water new seed and beyond the initial 15 days
  - Establishing a lawn from seed often requires more than 15 days because not all seed germinates and establishes at the same pace
  - Could lead to a failure due to lack of water on a hot, windy day with immature seedlings
  - Once this site is established no irrigation will be used to determine the best performing mixtures

Seeding failure

Signage - if desired

- We can post signage explaining the project to the public and create a landing page for homeowners to learn about drought tolerant grasses and water conservation.

Signage example

Expected outcomes because of the mixture research

- **Water conservation** - Overall less water used with new mixtures
- **Cost savings** - for residents and city infrastructure
- **Environmental impact** - less watering, less runoff and pollution
- **Aesthetic appeal** - Attractive lawns with less water
- **Educational value** - Opportunities for community education on using lower input grasses

Tall fescue and Kentucky bluegrass mixture study

Thank you!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AMENDMENT

City irrigation ordinance

https://lakeelmo.municipalcodeonline.com/book?type=ordinances#name=5.04.180_Water_Use_Restrictions

5.04.180 Water Use Restrictions

1. *Emergency authority*. To protect the health and safety of the consumers, as well as the general welfare, the mayor or city council may impose emergency regulations pertaining to city water use. Whenever the city shall determine that a critical water deficiency prevails, it may limit the times and hours during which water may be used from the city water system for lawn and garden sprinkling, irrigation, car washing, air conditioning, and other nonessential uses. It is unlawful for any water consumer to cause or permit water to be used in violation of such determination after public announcement thereof has been made through publication or by posting in the city hall and city website specifically indicating the restrictions thereof.
    1. The mayor or city council may declare a critical water deficiency to prevail within the city whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the city to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.
    2. The mayor or city council shall thereupon enact such regulations and restrictions on the delivery of water and the consumption within the city to conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection.
    3. When the governor declares a critical water deficiency, the mayor or city council will enact and enforce water conservation restrictions in accordance with M.S.A. § 103G.291.
    4. Water use regulations and restrictions may include the right to deny applications for new or additional service connections, and provisions for their enforcement by discontinuing service to customers willfully violating the regulations and restrictions.
2. *Permanent water use restrictions*. To ensure the availability of essential water and fire protection, encourage water conservation and allow flexibility in the city's water system in meeting peak demands, and to reduce the required water supply and storage capacity requirements allowing for a lower cost water system, certain limitations must be placed on the city's water supply.
    1. *Water Irrigation Zones*. Property owners in Zone A may water, sprinkle, or irrigate on Mondays and Fridays. Property owners in Zone B may water, sprinkle, or irrigate on Tuesdays and Fridays. Property owners in Zone C may water, sprinkle, or irrigate on Wednesdays and Saturdays. Property owners in Zone D may water, sprinkle, or irrigate on Thursdays and Sundays. A map depicting the zones will be maintained by the Public Works Department and appear on the City's website.
    2. *Time of day sprinkling ban*. All property owners are prohibited from watering, sprinkling, or irrigating their lawns between the hours of 5:00 a.m. and 5:00 p.m. daily.
    3. *Exceptions*. The permanent water use restrictions do not apply in the following situations:
        1. Private wells.
        2. Recently established lawns if permission is granted through a watering restriction waiver form, allowing daily watering for up to 15 days after installation. Watering must still adhere to the restricted hours for the time of day sprinkling ban. New sod or seeded lawns or other landscaping requiring watering, sprinkling, or irrigation, shall not be installed during a water shortage emergency.
        3. Attended hand-watering of plants, shrubs, trees, and gardens.

3. *Lawn watering, sprinkling, and irrigation*. All lawn sprinkler systems and irrigation systems connected to the municipal water system, whether such systems are aboveground or underground, shall require a permit for connection and shall be installed in accordance with the state plumbing code. To conserve water, all lawn sprinkler systems and irrigation systems which are automatic or are equipped to operate automatically and which are connected to the municipal water system, shall be equipped with a rain-detection device such to prevent the system from operating when it rains (per M.S.A. § 103G.298). All lawn sprinkler systems and irrigation systems connected to the municipal water system shall be constructed and operated to prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff, low head drainage, over spray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures.
4. *Enforcement*. Failure to comply with restrictions or prohibitions imposed under this section shall result in a surcharge for water service for each violation in an amount determined by resolution of the city council, which shall be added to the water bill for the property on which such violation occurs. Each day of violation shall be deemed a separate violation. Continued violation shall be cause for discontinuing water service.