



TO: City Council
FROM: Lance Lang, Principal Planner
DATE: February 19, 2019
SUBJECT: **ARTIFICIAL TURF**

I. RECOMMENDED ACTION

Discuss and determine whether the City should allow installation of artificial turf in the City of Minot.

If the Council wants to allow installation of artificial turf, proceed with one or more of the following options:

1. Direct City staff to draft an amendment to the Zoning Ordinance to allow installation of artificial turf in the City of Minot; and/or
2. Direct City staff to draft a limited exception to the Zoning Ordinance to allow artificial turf to be installed in the City of Minot, and outline any quality standards, restrictions, and/or processes the Council wants the exception to address; and/or
3. Direct City staff to draft an amendment to the Zoning Ordinance to allow the City to create an artificial turf pilot program to evaluate the pros and cons of artificial turf; and/or
4. The Council could provide opinions on this topic, but continue and incorporate the discussion into the comprehensive zoning code amendments the City hopes to address in 2019; and/or
5. The Council could elect to leave the ordinance as written, and prohibit installation of artificial turf in the City of Minot.

II. DEPARTMENT CONTACT PERSONS

Lance Lang (701) 857-4108

III. DESCRIPTION

A. Background

In the fall of 2018, Tim Vallely met with City staff to discuss the installation of artificial turf at the newly constructed Vallely Sports and Marine building located at 2125 Elk Drive, Minot. The property is presently zoned C2.

The Valley proposal recommends substituting artificial turf for 178 plantings/perennial plants that were a part of the submitted site plan and subsequently approved as the Landscape Plan of record by city staff during the permit review process. Mr. Valley claims that perennial plants would not survive the plans he has for the property, which includes parking boats on the plantings and performing snow removal on and around the plantings. He stated that the artificial product would look good year-round and be much easier to maintain.

Chapter 24 of the Zoning Supplement to the City of Minot's Code of Ordinances (hereinafter, Zoning Ordinances) governs landscaping within the City, and sets forth the City's intent for all properties to be landscaped and maintained with great care. Section 24-3 lists the general landscape requirements that shall apply in all multiple-family residential, business, mixed-use, public, and industrial districts. Subsection (f)(1) prohibits the use of artificial trees, shrubs, plants, or turf to fulfill the minimum requirements for landscaping.

Based upon the information received, City staff cannot identify an exception in the Zoning Ordinances that would allow Mr. Valley to use artificial turf in lieu of organic landscaping materials. It is our understanding that the Valley landscaping plan contemplates using artificial turf to fulfill the minimum requirements for landscaping, which eliminates any plausible exception to Section 24-3(f)(1). A variance requires an identification of physical conditions, unique to the site, that create an unreasonable hardship in the development of the site for permitted uses. City staff, based upon the information received to date, has not found a physical condition that warrants a variance in this instance.

B. Proposed Project

If artificial turf is something the City wants to explore, the Zoning Ordinances will need to be amended to allow the same to be installed in lieu of natural plant material. City staff has identified five options the City may consider moving forward, and each are discussed in more detail below:

1. Direct City staff to draft an amendment to the Zoning Ordinance to allow installation of artificial turf in the City of Minot.

Under this option, the Council would direct City staff to review the Zoning Ordinance and prepare an amendment for the Council's consideration that removes any language prohibiting the installation of artificial turf. This option would allow property owners to install artificial turf with no regulation.

2. Direct City staff to draft a limited exception to the Zoning Ordinance to allow artificial turf to be installed in the City of Minot.

Under this option, the Council would direct City staff to review the Zoning Ordinance and prepare an amendment for the Council's consideration that permits the installation of artificial turf subject to certain quality standards, restrictions, and/or a review process as recommended by the City staff.

If the Council has any specific direction regarding quality standards, restrictions, and/or a review process that it would like City staff to implement, City staff would welcome that direction at this time. Examples of specific regulations and processes other cities across the nation have adopted are cited in Attachments B and C of this memo.

3. Direct City staff to draft an amendment to the Zoning Ordinance to allow the City to implement an artificial turf pilot program to evaluate the pros and cons of artificial turf.

Under this option, the Council would direct City staff to review the Zoning Ordinance and prepare an amendment for the Council's consideration that adopts a pilot program allowing the installation of artificial turf in the City of Minot.

Pilot programs are generally experimental programs that allow organizations to test out a solution to a problem on a small scale. Generally, they begin with a proposal listing the program objectives, procedures, protocols, the timeline in which the program will run, and the metrics that will assist in determining the program's success or failure. Some communities use an agreement to launch the pilot, others adopt ordinances, and some use a combination of agreements and ordinances. Upon conclusion of the pilot program, communities can explore regulation through agreements, permits, or ordinances, if the program is to be implemented full-time. Regulations can then be updated at the conclusion of the pilot program.

If the Council elects this option, City staff would develop a proposal for the Council outlining the framework of the pilot program. The proposal would need to discuss the time frame in which the program would be conducted and establish a process by which to implement the program, including drafting a pilot program agreement, an ordinance allowing for the pilot program, the criteria to evaluate success, and the boundaries for the pilot program as well as any other considerations the Council may direct City staff to incorporate.

If at any time in the future the Council determines that they no longer want to allow artificial turf in the City, including as a pilot program, then the City can give notice to the program participants and any artificial turf approved for installation as part of a pilot program would need to be removed and replaced with organic plant materials by the owner of the property upon which the artificial turf was installed in accordance with the approved Landscape Plan of record.

4. The Council could provide opinions on this topic, but continue and incorporate the discussion into the comprehensive zoning code amendments the City hopes to address in 2019.

The Planning Department and Steering Committee have plans to prepare a comprehensive amendment to the Zoning Ordinance, and to that end is engaging in discussions with contractors to assist with the comprehensive code review and revision. The Council could elect to provide opinions on the topic, but ultimately direct City staff and the Steering Committee to incorporate this discussion into their comprehensive zoning code amendments.

5. The Council could elect to leave the ordinance as written, and prohibit installation of artificial turf in the City of Minot.

C. Consultant Selection

City staff has not retained a consultant to assist with this issue.

IV. IMPACT

a) Strategic Impact

Chapter 24 of the Zoning Supplement to the City of Minot's Code of Ordinances (hereinafter, Zoning Ordinances) governs landscaping within the City, and sets forth the City's intent for all properties to be landscaped and maintained with great care. The decision of whether or not to allow artificial turf in the City is a matter of personal preference when it comes down to installation, maintenance, and aesthetics. Whether or not the artificial turf could impact storm water runoff or cause other environmental concerns will largely depend upon the type of artificial turf or infill used, and City staff can research this issue more if the Council decides that it wants City staff to allow installation of artificial turf in the City of Minot.

b) Service/Delivery Impact

Attached to this memo as Attachment A is a document titled "Artificial Turf – The Pros and Cons." City staff created this document to help chart the advantages and disadvantages to artificial turf installation. In addition to the points set forth in Attachment A, the Council should keep in mind that allowing artificial turf to replace some of the City's present landscaping requirements has the potential to change the appearance of the City. As such, the City recommends giving City residents an opportunity to provide public comment on this issue.

c) Fiscal Impact

If no change to the Zoning Ordinance is requested, then there would be no fiscal impact to the City.

Additional staff study would be required in order to provide a comprehensive fiscal note on the effect allowing installation of artificial turf would have on the City. Initial fiscal impact would likely involve increased staff time to answer questions, review and discuss the changes, and monitor compliance with the ordinance. Property owners could initially achieve financial savings by installing artificial turf due to water conservation, time and money spent to mow the lawn, fertilize the lawn, etc., but it is difficult to determine if any cost savings would be offset by costs to maintain and replace artificial turf after their warranties expire.

Project Costs

N/A

Project Funding

N/A

V. ALTERNATIVES

If the Council does not want to proceed with one of City staff's recommended options, the Council could propose an alternative option.

VI. TIME CONSTRAINTS

An ordinance requires two readings in order to be implemented/effective, and interested property owners would likely want to begin installation of artificial turf in early spring and continue through the summer. If the City wishes to implement ordinances to allow artificial turf, City staff recommends that the City strive to have the ordinance effective by April to allow property owners the opportunity to begin installation in May, weather permitting.

VII. LIST OF ATTACHMENTS:

- A. Natural v. Artificial Turf – “The Pros and Cons”**
- B. Survey of Other North Dakota Cities**
- C. Nationwide Examples**

Attachment A

Natural v. Artificial Turf – “The Pros and Cons”

There are advantages and disadvantages to both artificial turf and natural turf. Below is a compilation of opinions illustrating the pros and cons of each option.

City staff would note that the lists compiled below are merely a sampling of opinions that have been identifying by varying sources, including sales representatives and environmental groups. Many of the concerns expressed below may be addressed as the science behind natural and artificial turf products continues to evolve. The lists below should not be considered scientific or comprehensive, but simply a representative of the financial, environmental, and practical impacts staff discovered, along with representations from advocates and detractors on both sides.

NATURAL TURF

ADVANTAGES	DISADVANTAGES
Less expensive to install.	More expensive and laborious to maintain.
If maintained, never has to be replaced.	Must be mowed, trimmed, and watered regularly. Maintenance affected by droughts, flooding, and other irregular weather conditions.
Filters water – lowers run-off amount and recharges water tables.	Some fertilizers, pesticides, and herbicides can leach into run-off.
Can easily be repaired with patching and seeding/Easily interspersed and integrated with a range of planting materials.	Can become discolored due to disease and pet waste. Can become muddy without proper drainage.
Generally good for the environment – Cools the air on hot days; takes carbon out of the air and replenishes oxygen; provides habitat for insects (food for birds); microbial life enriches the soil, dead turf is compostable.	Mowers/trimmers can be noisy and throw pollen into the air which irritates many that suffer from seasonal allergies.

ARTIFICIAL TURF

ADVANTAGES	DISADVANTAGES
Less expensive and laborious to maintain.	More expensive to install.
Can withstand significantly more use (used in sports stadiums) and general wear and tear. Good for places with little natural light, or desert climates.	Must be replaced every 8-20 years depending upon quality and usage and typically is land-filled at the end of its useful life.
Conserves water.	When artificial turf is installed the subgrade soil must be compacted, which affects water filtration and drainage. The impervious surface created by the compaction will increase runoff. Compacted soil underneath creates more run-off and “water pillows” can form without proper drainage. Can absorb sunlight and create “heat islands” than can be much hotter than natural turf – which can be temporarily reduced by the application of water prior to use.
No mowing.	Needs occasional cleaning and/or antimicrobial treatments because pathogens are not broken down by natural processes in the same manner as in natural turf – some may also leech silver ions that are toxic to aquatic environments.
No pesticides or herbicides for pest or disease management required.	Reduces habitat for insects (food for birds) and microbial life that enriches the soil.
Recycled materials are often used as infill.	Production of the synthetic materials that makes up artificial turf generates greenhouse gas emissions. Granulated rubber infill can carry heavy metals that could leach into the water table.
No noise or emissions from mowers or trimmers, less allergens/pollen in the air to upset seasonal allergies.	Loss of organic matter can affect soil health by depleting healthy soil bacteria and organisms. Loss of soil dynamics can prevent soil from filtering and cleaning ground water.
No discoloration due to pet waste.	Seam breaks can result over time, which are hard to repair/patch without visual impact.
No dirt/mud to track indoors.	Infill can be tracked indoors.
No seasonal visual variation.	Not easily interspersed or integrated with a range of other landscape materials such as live flowers, shrubbery, and trees.

Attachment B

Survey of Other North Dakota Cities

The City Planning Department conducted a survey of other Cities in North Dakota to determine what ordinances, if any, they had regarding installation of artificial turf. The table below provides a brief summary of this survey:

Bismarck	Bismarck City Code 14-03-11(6)(b) prohibits the use of artificial plants or vegetation for landscaping.
Dickinson	Dickinson City Code Section 39.08.004 states that artificial trees, shrubs, plants, or turf shall not be used to fulfill the minimum requirements for landscaping.
Fargo	Fargo City Ordinance §20-0705(E) states that plants must meet the standards of the most recent edition of the American Standard for Nursery Stock; Must be nursery-grown and adapted to the local area.
Grand Forks	Grand Forks does not appear to have a specific prohibition against using artificial turf, but in speaking with their department they noted that they do have a number of ordinances regarding “impervious surface areas” (I.e., surfaces that do not absorb water. Their zoning districts set limits on how much of a lot can be an impervious surface.
West Fargo	City Ordinance 4-449-A(6)(A)(3) states that all plant materials shall be living plants. Artificial plants are prohibited.
Williston	Williston Zoning Ordinance Section 25R (Ordinance No. 1007) requires that plans meet the quality standards of the American Standards for Nursery Stock. Turf, vegetative ground cover, and xeriscape is allowed. Xeriscape is defined as landscaping in which the plants require minimal water.

Attachment C

Nationwide Examples

The City Planning Department conducted a survey of other Cities to gauge the feasibility of an artificial turf pilot program. The information below was gathered in January, 2019 as a sample of ordinances around the county regulating use of artificial turf:

<u>City</u>	<u>Restrictions</u>	<u>Ordinance Language</u>
Yuma, AZ	Artificial Turf allowed with little to no restrictions	<p>Yuma City Code § 154-20.03 (B)(3)(c) Landscape Design Standards:</p> <p><i>Groundcover.</i> Required groundcover may be of two types, vegetative or inert.</p> <p>(a) <i>Purpose.</i> Groundcover serves to reduce dust, stabilize soils, cut glare, and prevent evaporative water loss.</p> <p>(b) Vegetative groundcover consists of living plant materials generally characterized by primary horizontal growth, as well as secondary vertical growth generally not exceeding 18 inches in height and includes turf/turf. Vegetative groundcover is not required, but groundcover plants of a one-gallon container size may be used to substitute required shrubs at a rate of three groundcover plants per one required shrub. Refer to the Recommended Plants List for groundcover plant species approved for use in City of Yuma rights-of-way.</p> <p>(c) Inert groundcover consists of landscape rock such as gravel, decomposed granite, or crushed rock, with a minimum size of one-quarter inch screened. Unscreened road base material is not an acceptable material. <i>Other materials, such as artificial turf, are also approved.</i></p>
Long Beach, CA	Percentage Restrictions	<p>Long Beach Municipal Code § 21.42.030 (A)(2) states:</p> <p>Non-permeable paving and non-permeable artificial turf shall not cover more than thirty percent (30%) of on-site area that is not covered by structures, driveways, and approved parking pads. To help with on-site stormwater retention and filtration along with reducing the urban heat island effect, the use of permeable and high reflectance paving materials is encouraged.</p> <p>Note: An “urban heat island” is an urban area or</p>

		metropolitan area that is significantly warmer than its surrounding rural areas due to human activities
Austin, TX	General requirement that the inorganic materials do not predominate over plants.	<p>Austin Land Development Code § 25-2-1003</p> <p>(A) In this article, landscape yard means the area of a lot between the street right-of-way and a line that coincides with the front wall of the building and extends from the building corners to the side property lines.</p> <p>(B) At least 20 percent of the area of the landscape yard of a lot must be landscaped area.</p> <p>(C) Each square foot of permeable landscaped area under the canopy of a tree that has a trunk diameter of at least two inches, counts as one and one-fourth square feet of landscaped area for calculating compliance with Subsection (A). This credit applies only if:</p> <p>(1) at least 50 percent of the area under the canopy of the tree is permeable; and</p> <p>(2) the provisions of the Environmental Criteria Manual are met.</p> <p>(D) A required landscaped area may include planters, brick, stone, natural forms, water forms, aggregate, and other landscape features, <i>if inorganic materials do not predominate over the plants</i>. Smooth concrete or asphalt may not be included in a required landscaped area.</p> <p>(E) For a capital improvement project involving right-of-way, landscaping may not be installed until construction is finished.</p>
Hartford, CA	Material Restrictions; Percentage Restrictions	<p>Hartford Zoning Code § 6.3.3 governs the use of Artificial Turf:</p> <p>6.3.3 ARTIFICIAL TURF</p> <p>A. Definitions (1) Artificial Turf. Any man-made surface manufactured from synthetic materials which simulate the appearance of live turf, turf, sod, or lawn. (2) Synthetic Infill Material. Any man-made infill from recycled or virgin materials including but not limited to ambient and cryogenic crumb rubber, coated crumb rubber, ethylene propylene diene monomer granules, thermoplastic elastomer granules, and recycled footwear. (3) Organic Infill Material. Any material utilizing organic components such as cork, coconut husks, rice husks, silica sand, or acrylic coated sand.</p>

		<p>B. Regulations (1) The use of artificial turf containing synthetic infill materials shall be prohibited. (2) The use of artificial turf containing organic infill materials or containing no infill material shall be permitted, provided that: (a) Such use is in compliance with all applicable environmental laws and regulations; and (b) Any infill is composed completely of organic materials; and (c) The use of artificial turf does not exceed the impervious coverage requirements.</p>
<p>Glendale, CA</p>	<p>Percentage Restrictions;</p> <p>Location Restrictions;</p> <p>Material Restrictions;</p> <p>Installation Restrictions;</p> <p>Drainage Restrictions;</p> <p>Maintenance Restrictions;</p> <p>Appearance Restrictions.</p>	<p>Glendale Municipal Code Title 30 (Zoning) § 30.31 Landscaping:</p> <p>Artificial turf may be used in the single family zones (ROS, R1R, and R1) as follows:</p> <ol style="list-style-type: none"> 1. Artificial turf shall be calculated toward the total lot area requirement for landscaping, but shall not be calculated toward the live plant material requirement. 2. Artificial turf shall not be permitted beneath the drip line of tree canopies. For purposes of this section, “drip line” is defined as the area beneath the extent of the tree canopy at mature growth plus two (2) feet. 3. A minimum three (3) foot wide live plant material landscape border shall be required at the street front and street side property line. 4. A minimum three (3) foot wide live plant material landscape border shall be required at the base of a building facing a street front or street side setback. 5. Artificial turf shall only be permitted on sloped areas less than twenty-five (25) percent. 6. Artificial turf shall imitate a natural turf-like appearance and require the following: <ol style="list-style-type: none"> a. A minimum blend of three (3) colors, predominately green. b. A minimum blade length of one and one half (1-1/2) inches, with spines and uneven tops. c. Infill material shall be a natural material, such as coconut fiber, cork, and sand. No crumb rubber shall be permitted. 7. Artificial turf shall be installed by a qualified state-licensed contractor with a valid landscaping contractors or synthetic products contractors

		<p>license.</p> <p>8. Artificial turf shall be directed to drain on-site to a permeable area.</p> <p>9. Artificial turf shall be maintained in a clean and orderly condition and shall not contain holes, tears, stains, discoloration, seam separations, uplifted surfaces, heat degradation, or excessive wear.</p> <p>Artificial turf shall not be permitted in any portion of a property located in a commercial, industrial, or special purpose zones (C1, C2, C3, CPD, CR, CH, CA, IND, MS, CEM, SR and CE). Artificial turf shall be permitted on property located in a mixed use zone (IMU, IMU-R, SFMU and DSP) only when not visible from the public street immediately adjacent to the property. Artificial turf shall be permitted in the multi-family zones (R-3050, R-2250, R-1650 and R-1250) as follows:</p> <ol style="list-style-type: none"> a. Artificial turf shall be calculated toward the total lot area requirement for landscaping, but shall not be calculated toward the live plant material requirement. b. Artificial turf shall not be permitted beneath the drip line of tree canopies. For purposes of this section, “drip line” is defined as the area beneath the extent of the tree canopy at mature growth plus two (2) feet. c. A minimum three (3) foot wide live plant material landscape border shall be required at the street front and street side property line. d. A minimum three (3) foot wide live plant material landscape border shall be required at the base of a building facing a street front or street side setback. e. Artificial turf shall only be permitted on sloped areas less than twenty-five (25) percent. f. Artificial turf shall imitate a natural turf-like appearance and require the following: <ol style="list-style-type: none"> i. A minimum blend of three (3) colors, predominately green. ii. A minimum blade length of one and one half (1-1/2) inches, with spines and uneven tops.
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		<p>iii. Infill material shall be a natural material, such as coconut fiber, cork, and sand. No crumb rubber shall be permitted.</p> <p>g. Artificial turf shall be installed by a qualified state-licensed contractor with a valid landscaping contractors or synthetic products contractors license.</p> <p>h. Artificial turf shall be directed to drain on-site to a permeable area.</p> <p>i. Artificial turf shall be maintained in a clean and orderly condition and shall not contain holes, tears, stains, discoloration, seam separations, uplifted surfaces, heat degradation, or excessive wear.</p> <p>Artificial turf shall not be permitted in any area where landscaping is required between adjacent residential zones.</p>
Anaheim, CA	<p>Setback Restrictions;</p> <p>Type Restrictions;</p> <p>Material Restrictions;</p> <p>Installation Restrictions;</p> <p>Appearance Restrictions;</p> <p>Maintenance Restrictions.</p>	<p>Anaheim Municipal Code § 18.46.055 sets forth the City’s Artificial Turf Standards and states:</p> <p>The use of artificial turf, as defined in Section 18.92.040, shall be permitted as follows:</p> <p>.010 Setback and percentage requirements. The design and installation of all new turf and artificial turf areas shall comply with the following requirements:</p> <p>.0101 Single-Family and Multiple-Family Zones. Artificial turf may be used in lieu of natural turf in front, side, and rear yards for up to 100% coverage or in combination with all other natural non-turf materials.</p> <p>.0102 Commercial, Industrial, and Public and Special Purpose Zones. Artificial turf may be used in lieu of natural turf in front, side, and rear yards for up to 100% coverage or in combination with all other natural non-turf materials.</p> <p>.020 Artificial Turf Design/ Quality Standards.</p> <p>.0201 Materials. Artificial turf shall be of a type known as cut pile infill and shall be manufactured from polypropylene, polyethelene, or a blend of polypropylene and polyethleyene fibers stitched onto a polypropylene or polyurethane meshed or hole-punched backing. Hole-punched backings shall have holes spaced in a uniform grid pattern with spacing</p>

		<p>not to exceed four inches by six inches on center.</p> <p>.0202 Installation. Artificial turf shall be installed over a compacted and porous road base material and shall be anchored at all edges and seams. Seams shall be glued and not sewn. An infill medium consisting of clean sand or other approved mixture shall be brushed into the fibers to insure that the fibers remain in an upright position and to provide ballast that will help hold the turf in place and provide a cushioning effect. Artificial turf must consist of pile fibers a minimum height of 1-3/4" and a proper drainage system shall be installed underneath the turf to prevent excessive run-off or pooling.</p> <p>.0203 Slope Restrictions. The installation of artificial turf on slopes greater than six point six percent (6.6%) shall require the approval of the City Engineer and shall meet requirements of the Public Works Department.</p> <p>.0204 General Appearance. Artificial turf shall be installed and maintained to effectively simulate the appearance of a well-maintained lawn. The Planning Department shall maintain and make available for public inspection a sample of various artificial turf products that meet this standard of appearance.</p> <p>.030 Prohibited uses. The use of indoor or outdoor plastic or nylon carpeting as a replacement for artificial turf or natural turf shall be prohibited. (Ord. 6101 § 42; April 22, 2008: Ord. 6112 § 1; September 30, 2008: Ord. 6317 § 17; March 3, 2015.)</p> <p>Section 18.92.040 defines “Artificial Turf” as Man-made synthetic material manufactured from polypropylene, polyethylene, or a blend of polypropylene and polyethleyene fibers which simulates the appearance of live turf, organic turf, turf, sod, or lawn.</p>
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