



CITY of NOVI CITY COUNCIL

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Agenda Item 6
March 5, 2007

SUBJECT: Consideration of Ordinance No. 07-124.16, an amendment of the Novi Code of Ordinances Chapter 11, to allow the use of turf pavers for secondary access drives. First Reading.

SUBMITTING DEPARTMENT: Engineering B24

CITY MANAGER APPROVAL: [Signature]

Table with 2 columns: Category (EXPENDITURE REQUIRED, AMOUNT BUDGETED, APPROPRIATION REQUIRED, LINE ITEM NUMBER) and Value (N/A).

BACKGROUND INFORMATION:

Council requested that Administration evaluate the suitability of turf pavers as an alternate paving material to be used in the public right-of-way for secondary access drives (Rob Hayes' January 25, 2007 memorandum, attached). The Fire Department indicated its approval of turf pavers given that certain limitations be applied (Frank Smith's January 24, 2007 memorandum, attached). These limitations include: 1) pavers must have a compressive strength that will withstand loading of at least 35 tons; 2) pavers can only be used for access drives and not in areas where the pavers would serve as a platform for fire engine or ladder truck operations; 4) areas with pavers must be designated with landscaping or signage to be visible year-round; and, 5) turf pavers must be maintained year-round (mowed and cleared of snow).

The Engineering Division found that this particular use of turf pavers would be suitable given that additional limitations are applied: 1) used in areas with well-drained soils and slopes less than 3%; and 2) used in areas without a shallow water table to allow adequate storm water run-off percolation and treatment. Standard construction details depicting turf paver installation based on these soil and groundwater limitations will be prepared and submitted to Council for adoption at a later date.

The attached Chapter 11 (Design and Construction Standards) amendment includes provisions for and limitations to turf paver installation; defines the terms parking structure and surface or parking lot; and, adds language to make specific reference to parking structures under the requirements for driveways and parking areas.

The City Attorney's office has worked with Engineering Division staff in the preparation of this Chapter 11 text amendment (Secrest-Wardle letter dated February 5, 2007, attached).

RECOMMENDED ACTION: Approval of Ordinance No. 07-124.16, an amendment of the Novi Code of Ordinances Chapter 11, to allow the use of turf pavers for secondary access drives. First Reading.

Table with 5 columns (1, 2, Y, N) and 4 rows (Mayor Landry, Mayor Pro Tem Capello, Council Member Gatt, Council Member Margolis).

Table with 5 columns (1, 2, Y, N) and 3 rows (Council Member Mutch, Council Member Nagy, Council Member Paul).



**city of novi**  
FIRE DEPARTMENT

1-25-07

TO: Tom Schutte  
Pls work with Chief Smith  
to have new Design & Construction  
Standard language ready  
for 2-12 consideration.

TO: Clay Pearson, City Manager  
FROM: Chief Frank A. Smith *[Signature]*  
DATE: January 24, 2007  
RE: Landscape Pavers

*Clay*  
cc: R. B. H.  
Benny M. C.  
B. B. M. C.

I have had numerous discussions with Fire Marshal Evans and City Engineer Rob Hayes regarding the use of "landscape pavers" or "brick pavers" for Fire Department use.

There are several requirements intrinsic to the use of the pavers:

**Use:**

The Fire Marshal would evaluate the proposed use. Only secondary access driveway usage would be allowed. In no case would the use of pavers be a platform for fire engine or ladder truck operations.

**Design Requirements:**

The pavers must have a minimum design strength of 35 tons.

**Location:**

Areas of paver use must be designated by landscaping and signage to be visible year-round.

**Maintenance:**

Lawn-mowing and snow removal of the secondary access road is necessary.

These requirements would need to be included into the Design & Construction Standards, Section 11-194 (a) (19)



## MEMORANDUM

**To:** Clay Pearson, City Manager  
Pam Antil, Assistant City Manager

**From:** Rob Hayes, P.E., City Engineer *RH*

**Re:** Turf Pavers

**Date:** January 25, 2007

\*\*\*\*\*

### Background

During the past couple of months, the city has received two different site plans in which the developer has requested that an alternate paving material – turf pavers – be allowed in the public right-of-way for secondary (emergency) access driveways. In general, turf pavers are a concrete masonry block consisting of open cells that can be filled with stone, topsoil and seed so that turf can be established on the surface. Unlike concrete or asphalt, the developers who have proposed turf pavers cite two main benefits of using turf pavers: 1) aesthetically pleasing appearance; and, 2) environmentally-sensitive performance because the pavers allow storm water to infiltrate into and be filtered by underlying soils, instead of running-off to a traditional storm water collection system.



Turf pavers used for an emergency access drive

### Technical Advantages

- If properly installed, turf pavers will meet city's load bearing requirements (35 tons).
- Given suitable underlying soil conditions, turf pavers can effectively allow storm water to percolate into the ground as opposed to a storm sewer, thus reducing or potentially eliminating the need for a storm sewer system.
- Given a suitable depth to the groundwater table, turf pavers foster storm water pollutant removal (e.g., filtering) in the underlying soil column, and will subsequently recharge the groundwater.

### Technical Disadvantages

- Limited to areas with well-drained soils and slopes less than 3% to allow adequate infiltration time and to limit storm water run-off.

- Limited to areas without a shallow water table. The water table should be greater than three feet below the ground surface to allow sufficient contact time with the underlying soils for pollutant removal.
- Maintenance challenges:
  - Must be mown during the growing season.
  - Must be plowed in the winter, which may prove difficult in order to preserve turf.

Turf pavers are a part of a larger category of environmentally-sensitive pavement innovations referred to as porous pavement, and other types of porous pavement include pervious concrete and pervious asphalt. In turn, porous pavement is a subset of Low Impact Development (LID), which is a philosophy that is grounded in "green" development principles. Engineering Division staff members are becoming more familiar with LID concepts and green construction technologies. In fact, several staff will be attending a seminar on pervious concrete in February.

In his January 24th memorandum, Chief Smith indicated his approval of turf pavers for secondary access drives, and I agree with the limitations he stated in the memorandum. If City Council desires that turf pavers be allowed as an alternate pavement material for secondary access driveways, the Engineering Division will work with the city attorney's office to revise Chapter 11 "Design and Construction Standards" of the Ordinance to reflect this change. In addition, Engineering Division staff will develop standard details for construction based on the predominant soil types in Novi.

We will report our additional findings as we continue to evaluate other "green" construction materials in terms of their potential use in the City of Novi. Please let me know if you have any comments or questions in regards to this issue.

cc: Frank Smith, Fire Chief  
Benny McCusker, Director of Public Works  
Brian Coburn, Civil Engineer  
Ben Croy, Civil Engineer  
Aaron Staup, Construction Coordinator

February 5, 2007

30905 Northwestern Highway  
P.O. Box 3040  
Farmington Hills, MI 48333-3040  
Tel: 248-851-9500  
Fax: 248-851-2158  
[www.secretswardle.com](http://www.secretswardle.com)

KRISTIN BRICKER KOLB  
248-530-2837  
[kkolb@secretswardle.com](mailto:kkolb@secretswardle.com)

Pam Antil, Assistant City Manager  
City of Novi  
45175 West Ten Mile Road  
Novi, Michigan 48375

*Re: Design and Construction Standards Ordinance Amendment  
Our File No. 55142 NOV*

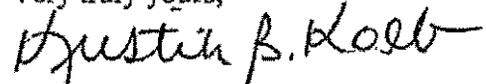
Dear Pam:

In accordance with the Attorney Transmittal from Clay dated January 25, 2007, attached please find two draft ordinances addressing the issues raised by the City Engineer concerning turf pavers and end islands. By copy of this letter, I am requesting review of the proposed language by the City Engineer to ensure we have adequately addressed the issues raised in his memos dated January 24 and 25, 2007, along with the Fire Chief's memo dated January 24, 2007.

Please note that in order to fully implement the requested changes, a text amendment to the Zoning Ordinance will have to be approved. This will require consideration by and a recommendation from the Planning Commission prior to being presented to the City Council for adoption. Because this additional step is required, we would recommend holding off on the general ordinance amendment until the related Zoning Ordinance amendment has received a recommendation from the Planning Commission. Additionally, in his memo regarding turf pavers, Rob Hayes indicates that the Engineering Division staff will need to "develop standard details for construction based on the predominant soil types in Novi." In speaking with Rob Hayes on Friday, February 2, 2007, it is my understanding that those standards have not been completed. Assuming the standards will be adopted separately by resolution of the Council, such resolution will also need to be prepared after the standards have been developed.

If you have any questions on the draft ordinances, or if you need anything further on this matter, please do not hesitate to contact me or Tom Schultz.

Very truly yours,



Kristin Bricker Kolb

kbk

Enclosures

C: Maryanne Cornelius, City Clerk (w/Enclosures)  
Rob Hayes, P.E., City Engineer (w/Enclosures)  
Brian Coburn, Assistant City Engineer (w/Enclosures)  
Thomas R. Schultz, Esquire (w/Enclosures)

STATE OF MICHIGAN

COUNTY OF OAKLAND

CITY OF NOVI

ORDINANCE NO. 07-124.16

**AN ORDINANCE TO AMEND THE CITY OF NOVI CODE OF ORDINANCES, CHAPTER 11, "DESIGN AND CONSTRUCTION STANDARDS," ARTICLE VIII, "STREETS, ROADWAYS AND GENERAL RIGHT-OF-WAY REQUIREMENTS," SECTION 11-194 "DESIGN CONSIDERATIONS," IN ORDER TO ALLOW THE USE OF TURF PAVERS FOR SECONDARY ACCESS DRIVES; ARTICLE X, "PARKING LOT AND DRIVEWAY PAVEMENT," SECTION 11-237, "DRIVEWAYS AND PARKING LOTS," IN ORDER TO ADD A DEFINITION FOR 'PARKING STRUCTURES'; AND SECTION 11-239, "DRIVEWAYS AND PARKING LOTS," TO MAKE SPECIFIC REFERENCE TO PARKING STRUCTURES UNDER THE REQUIREMENTS FOR DRIVEWAYS AND PARKING AREAS.**

**THE CITY OF NOVI ORDAINS:**

**PART I.**

That Chapter 11, Design and Construction Standards, Article VIII, Section 11-194, of the City Code of the City of Novi is hereby amended as follows:

Sec. 11-194. Design considerations.

(a) Street and roadway right-of-way widths, curbed pavement widths and pavement thickness.

(1) – (18) [Unchanged.]

(19) Except as provided below, a secondary (emergency) access driveway is required where only one access point is provided. A secondary access driveway shall be a minimum of eighteen (18) feet in width and paved to provide all-weather access and shall be designed to support a vehicle of thirty-five (35) tons. Minimum easement width for secondary access driveways shall be twenty-five (25) feet. A permanent "break-away" gate shall be provided at the secondary access driveway's intersection with the public roadway in accordance with Figure VIII-K. Cellular pavers, with established and viable turf, known as "turf pavers," may be used for a secondary access *only*, subject to the requirements of subsection c. below.

a. In the case of residential development, when each dwelling unit is within eight hundred (800) feet of street distance from the nearest point of

external access; one thousand five hundred (1,500) feet in the RA district with conventional development; one thousand (1,000) feet in RA district with development option, e.g., RUD, preservation option, etc.

b. In the case of non-residential development, when the development is of a single building, and when the fire chief (or designee) determines, based upon the use and occupancy of the proposed building, the manner of construction of the proposed building, and the number of occupants for the proposed building, that there is a reduced risk of fire hazard such that the facility may be served by a single point of external access.

c. Turf pavers may be allowed for a secondary access drive, if all of the following are met:

1. The proposed use of turf pavers shall be evaluated by the Fire Marshal, which evaluation shall include a review of the standard details for construction established by the City Engineer and adopted by resolution of the City Council.

2. The pavers proposed for such use shall have a minimum design compressive strength of thirty-five (35) tons.

3. A secondary access drive constructed of turf pavers shall be designated by landscaping and signage clearly indicating its function as a secondary access drive, and shall be mowed and kept clear of snow and ice as necessitated by the weather conditions.

4. Under no circumstances shall the secondary access drive permitted under this section be considered suitable or intended for use as a platform for fire engine or ladder truck operations.

(20) [Unchanged.]

(b) [Unchanged.]

(c) [Unchanged.]

(d) [Unchanged.]

## **PART II.**

That Chapter 11, Design and Construction Standards, Article X, Sections 11-237 and 11-239, of the City Code of the City of Novi is hereby amended as follows:

Sec. 11-237. Definitions.

\* \* \*

Parking structure means a multi-level building (at, above or below grade), the use of which requires location on the ground or attachment to something having location on the ground, the primary purpose of which shall be the parking of motor vehicles for short duration, and possessing the element of a vehicle in use, being temporarily parked until it is shortly to be again put into service, which structure contains loading spaces, parking spaces, and maneuvering lanes.

\* \* \*

Surface or parking lot means a designated area of property, whether paved or not, located on the ground, the primary purpose of which shall be the parking of motor vehicles for short duration, and possessing the element of a vehicle in use, being temporarily parked until it is shortly to be again put into service, which contains loading spaces, parking spaces, and maneuvering lanes.

Sec. 11-239. Driveways, and parking structures and lots.

(a) *Plan requirements.* All site plans proposing the construction of driveways and vehicle parking areas, including parking structures, shall provide but not be limited to the following dimensions and features:

- (1) [Unchanged.]
- (2) [Unchanged.]
- (3) [Unchanged.]
- (4) [Unchanged.]
- (5) [Unchanged.]
- (6) [Unchanged.]
- (7) [Unchanged.]

(b) *Design standards.*

- (1) [Unchanged.]
- (2) [Unchanged.]

(3) *Pavement layout and schematics.* Parking spaces, maneuvering lanes, and driveways, and end islands shall conform in size and configuration to the requirements of section 2506, Appendix A, "Zoning Ordinance." No parking areas shall be permitted in the future road right-of-way as designated in the city master plan for land use.

(4) [Unchanged.]

(5) [Unchanged.]

**PART III.**

**Savings Clause.** The amendment of the Novi Code of Ordinances set forth in this Ordinance does not affect or impair any act done, offense committed, or right accruing, accrued, or acquired or liability, penalty, forfeiture or punishment, pending or incurred prior to the amendment of the Novi Code of Ordinances set forth in this Ordinance.

**PART IV.**

**Severability.** Should any section, subdivision, clause, or phrase of this Ordinance be declared by the courts to be invalid, the validity of the Ordinance as a whole, or in part, shall not be affected other than the part invalidated.

**PART V.**

**Effective Date: Publication.** The provisions of this Ordinance shall become effective fifteen (15) days after its adoption and shall be published within 15 days of its adoption by publication of a brief notice in a newspaper circulated in the City, stating the date of enactment and the effective date of the ordinance, a brief statement as to the subject matter of this Ordinance and such other facts as the Clerk shall deem pertinent, and that a copy of the Ordinance is available for public use and inspection at the office of the City Clerk.

MADE, PASSED, AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF NOVI, OAKLAND COUNTY, MICHIGAN, ON THE \_\_\_ DAY OF \_\_\_\_\_, 2007.

\_\_\_\_\_  
DAVID LANDRY, MAYOR

\_\_\_\_\_  
MARYANNE CORNELIUS, CITY CLERK

Ayes:  
Nays:  
Abstentions:  
Absent:

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