



## THE PRESERVE AT ISLAND LAKE (PHASE 8) JSP13-69

### THE PRESERVE AT ISLAND LAKE (PHASE 8) JSP13-69

Public hearing at the request of Toll Brothers, Inc. for recommendation to City Council for approval to include the subject property in the existing Island Lake of Novi by amending the Residential Unit Development (RUD) Agreement and Plan and for Preliminary Site Plan, Wetland Permit and Stormwater Management Plan approval. The subject property is 48.95 acres in Section 19 of the City of Novi and located at the northeast corner of Ten Mile Road and Napier Road. The applicant is proposing a 45 unit development that would be Phase 8 of the existing Island Lake of Novi development. The applicant has also proposed to modify the number of units permitted in the RUD Agreement from 884 to 903 in order to allow for this development.

### Required Action

Recommend approval/denial of the amended Residential Unit Development (RUD) Agreement and Plan to the City Council and approval/denial of the Preliminary Site Plan, Wetland Permit, Woodland Permit and Stormwater Management Plan.

REVIEW	RESULT	DATE	COMMENTS
Planning	Approval recommended	12-02-13	<ul style="list-style-type: none"> <li>▪ <b>City Council modification of lot size and width requested</b></li> <li>▪ <b>City Council variances of location of pathways and sidewalks requested, direction from Planning Commission requested by staff</b></li> <li>▪ Items to be addressed on the Final Site Plan submittal</li> </ul>
Engineering	Approval recommended	12-02-13	Items to be addressed on the Final Site Plan submittal
Traffic	Approval recommended	12-02-13	<ul style="list-style-type: none"> <li>▪ <b>City Council variance of local street width standard for traffic calming chokers requested</b></li> <li>▪ Items to be addressed on the Final Site Plan submittal</li> </ul>
Landscaping	Approval recommended	11-25-13	<ul style="list-style-type: none"> <li>▪ <b>Planning Commission waiver for the discontinuation of berms in the locations of existing vegetation and wetlands requested, with the exception of lots 1, 2 and 45</b></li> <li>▪ Items to be addressed on the Final Site Plan submittal</li> </ul>
Wetland	Approval recommended	11-27-13	Items to be addressed on the Final Site Plan submittal
Woodland	Approval recommended	11-27-13	Items to be addressed on the Final Site Plan submittal
Fire	Approval recommended	12-02-13	No items need to be addressed

## Motion Sheet

### Approval – Amended RUD

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **recommend approval** of the Amended Residential Unit Development (RUD) Agreement and Plan subject to and based on the following findings:

- a. The site is appropriate for the proposed use;
- b. The development will not have detrimental effects on adjacent properties and the community;
- c. The applicant has clearly demonstrated a need for the proposed use;
- d. Care has been taken to maintain the naturalness of the site and to blend the use within the site and its surroundings;
- e. The applicant has provided clear, explicit, substantial and ascertainable benefits to the City as a result of the Amended RUD.
- f. Relative to other feasible uses of the site:
  1. All applicable provisions of Section 2402 of the Zoning Ordinance, other applicable requirements of the Zoning Ordinance, including those applicable to special land uses, and all applicable ordinances, codes, regulations and laws have been met;
  2. Adequate areas have been set aside for all schools, walkways, playgrounds, parks, recreation areas, parking areas and other open spaces and areas to be used by residents of the development;
  3. Traffic circulation features within the site and the location of parking areas have been designed to assure the safety and convenience of both vehicular and pedestrian traffic both within the site and in relation to access streets;
  4. The proposed use will not cause any detrimental impact in existing thoroughfares in terms of overall volumes, capacity, safety, travel times and thoroughfare level of service;
  5. The plan provides adequate means of disposing of sanitary sewage, disposing of stormwater drainage, and supplying the development with water;
  6. The Amended RUD will provide for the preservation and creation of open space and result in minimal impacts to provided open space and natural features;
  7. The Amended RUD will be compatible with adjacent and neighboring land uses;
  8. The desirability of conventional residential development within the City is outweighed by benefits occurring from the preservation and creation of open space and the establishment of school and park facilities that will result from the Amended RUD;
  9. Any detrimental impact from the Amended RUD resulting from an increase in total dwelling units over that which would occur with conventional residential development is outweighed by benefits occurring from the preservation and creation of open space and the establishment of school and park facilities that will result from the Amended RUD;
  10. The proposed reductions in lot sizes are the minimum necessary to preserve and create open space, to provide for school and park sites, and to ensure compatibility with adjacent and neighboring land uses;
  11. The Amended RUD will not have a detrimental impact on the City's ability to deliver and provide public infrastructure and public services at a reasonable cost;
  12. the applicant has made satisfactory provisions for the financing of the installation of all streets, necessary utilities and other proposed improvements;

13. The applicant has made satisfactory provisions for future ownership and maintenance of all common areas within the proposed development; and
  14. Proposed deviations from the area, bulk, yard, and other dimensional requirements of the Zoning Ordinance applicable to the property enhance the development, are in the public interest, are consistent with the surrounding area, and are not injurious to the natural features and resources of the property and surrounding area.
- g. City Council modification of proposed lot sizes to a minimum of 14,440 square feet and modification of proposed lot widths to a minimum of 91.22 feet as the requested modification will result in the preservation of open space for those purposes noted in Section 2402.3.B of the Zoning Ordinance and the Amended RUD will provide a genuine variety of lot sizes;
  - h. City Council variance from Section 11 Table 8-A of the City's Code of Ordinance to permit a local street reduction from 28 feet in width to 20 feet in width for traffic calming chokers as depicted in the proposed plans.
  - i. City Council variance from Section 11.278 (b)(5) of the City's Code of Ordinance to permit a sidewalk along Ten Mile Road to vary more than 1 foot from the right-of-way in order to protect natural resources while still maintaining a comprehensive non-motorized transportation system as depicted in the proposed plans.
  - j. Planning Commission to recommend one of the following:
    1. City Council variance from Section 11.258 (d) of the City's Code of Ordinance to permit a bicycle path along Napier Road to vary more than 1 foot from the right-of-way in order to protect natural resources while still maintaining a comprehensive non-motorized transportation system as depicted as **Option B** in the proposed plans. (APPLICANT'S PREFERENCE)  
**-OR-**
    2. City Council variance from Section 11.258 (d) of the City's Code of Ordinance to permit a bicycle path along the **northern** portion of Napier Road only to vary more than 1 foot from the right-of-way in order to protect natural resources while still maintaining a comprehensive non-motorized transportation system as depicted as **Option A** in the proposed plans. (STAFF RECOMMENDATION)
  - k. *(additional comments here if any)*

*(because the plan is otherwise in compliance with Article 3, Article 24 and Article 25 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)*

#### **Approval – Preliminary Site Plan**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **approve** the Preliminary Site Plan based on and subject to approval by City Council of the amended RUD Agreement and Plan and the following:

- a. Planning Commission waiver of the required berms in the locations of existing vegetation and wetlands with the exception of lots 1, 2 and 45; which is hereby granted;
- b. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- c. *(additional conditions here if any)*

*(This motion is made because the plan is otherwise in compliance with the approved 6<sup>th</sup> Amendment to the RUD, Article 3, Article 24 and Article 25 of the Zoning Ordinance and*

*all other applicable provisions of the Ordinance.)*

**Approval – Wetland Permit**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **approve** the Wetland Permit based on and subject to approval by City Council of the amended RUD Agreement and Plan and the following:

- a. The findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters being addressed on the Final Site Plan; and
- b. *(additional conditions here if any)*

*(This motion is made because the plan is otherwise in compliance with Chapter 12, Article V of the Code of Ordinances and all other applicable provisions of the Ordinance.)*

**Approval – Woodland Permit**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **approve** the Woodland Permit based on and subject to approval by City Council of the amended RUD Agreement and Plan and the following:

- a. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- b. *(additional conditions here if any)*

*(This motion is made because the plan is otherwise in compliance with the approved 6<sup>th</sup> Amendment to the RUD, Chapter 37 of the Code of Ordinances and all other applicable provisions of the Ordinance.)*

**Approval – Stormwater Management Plan**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **approve** the Stormwater Management Plan, based on and subject to approval by City Council of the amended RUD Agreement and Plan and the following:

- a. The conditions and items listed in the staff and consultant review letters being addressed on the Final Site Plan; and
- b. *(additional conditions here if any)*

*(This motion is made because it otherwise in compliance with the approved 6<sup>th</sup> Amendment to the RUD, Chapter 11 of the Code of Ordinances and all other applicable provisions of the Ordinance.)*

-OR-

**Denial – Amended RUD**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **recommend denial** of the Amended Residential Unit Development Agreement...(because the proposed Amended RUD would not satisfy the findings and conditions noted in Sections 2402.4, 2402.6, 2402.8.A and 2408.8.B of the Zoning Ordinance.)

**Denial – Preliminary Site Plan**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **deny** the Preliminary Site Plan...(because the plan is not in compliance with the approved 6<sup>th</sup> Amendment to the RUD, Article 3, Article 24 and Article 25 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

**Denial- Wetland Permit**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **deny** the Wetland Permit...(because the plan is not in compliance with the approved 6<sup>th</sup> Amendment to the RUD, Chapter 12, Article V of the Code of Ordinances and all other applicable provisions of the Ordinance.)

**Denial- Woodland Permit**

In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **deny** the Woodland Permit...(because the plan is not in compliance with the approved 6<sup>th</sup> Amendment to the RUD, Chapter 37 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

**Denial – Stormwater Management Plan**

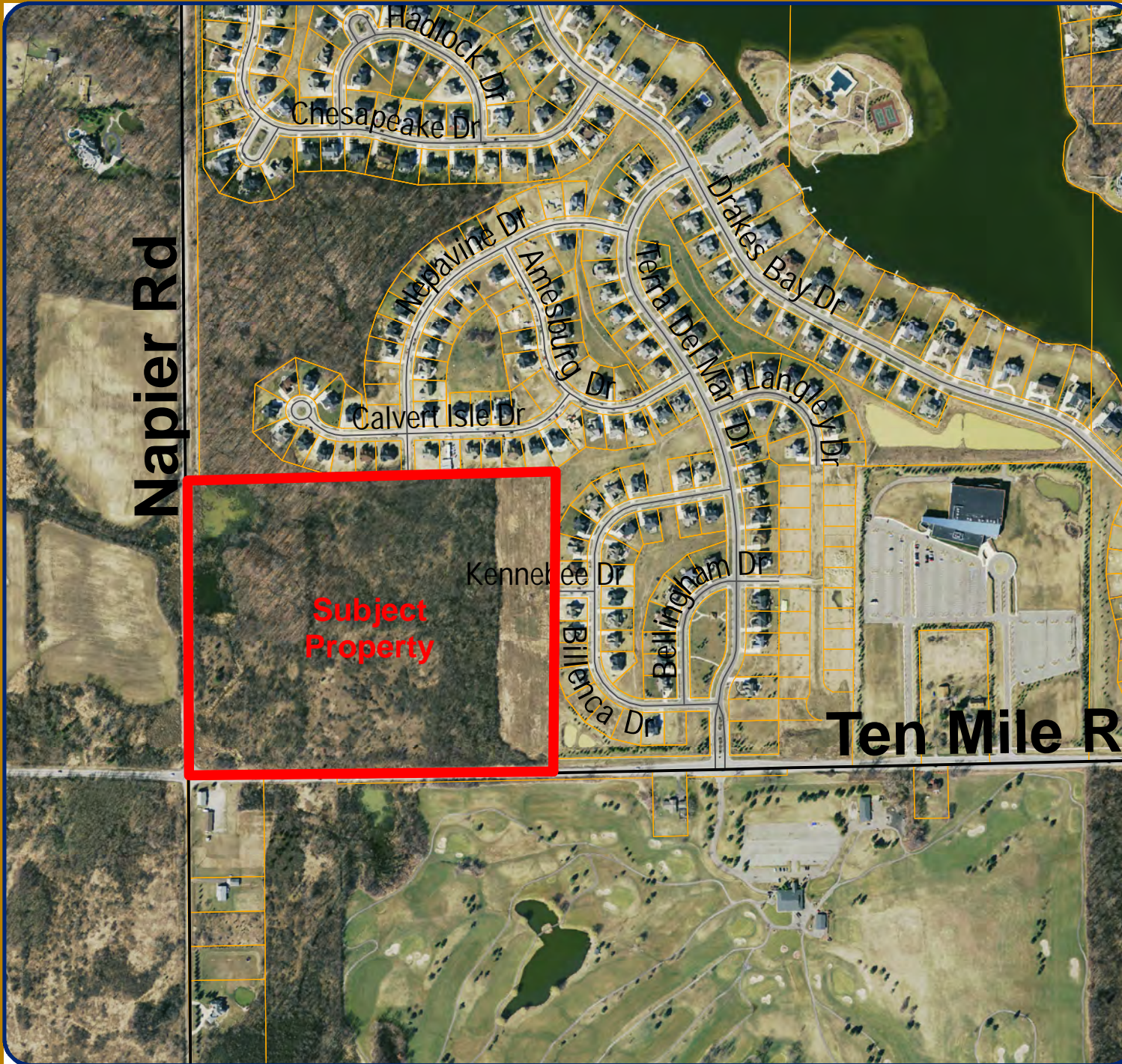
In the matter of The Preserve at Island Lake (Phase 8), JSP13-69, motion to **deny** the Stormwater Management Plan...(because the plan is not in compliance with the 6<sup>th</sup> Amendment to the RUD, Chapter 11 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

MAPS  
Location  
Zoning  
Future Land Use  
Natural Features

---

# JSP13-69 Preserve at Island Lake (Phase 8)

Location



## Map Legend

 Subject Property



**City of Novi**  
Planning Division  
Community Development Dept.  
45175 W Ten Mile Rd  
Novi, MI 48375  
cityofnovi.org

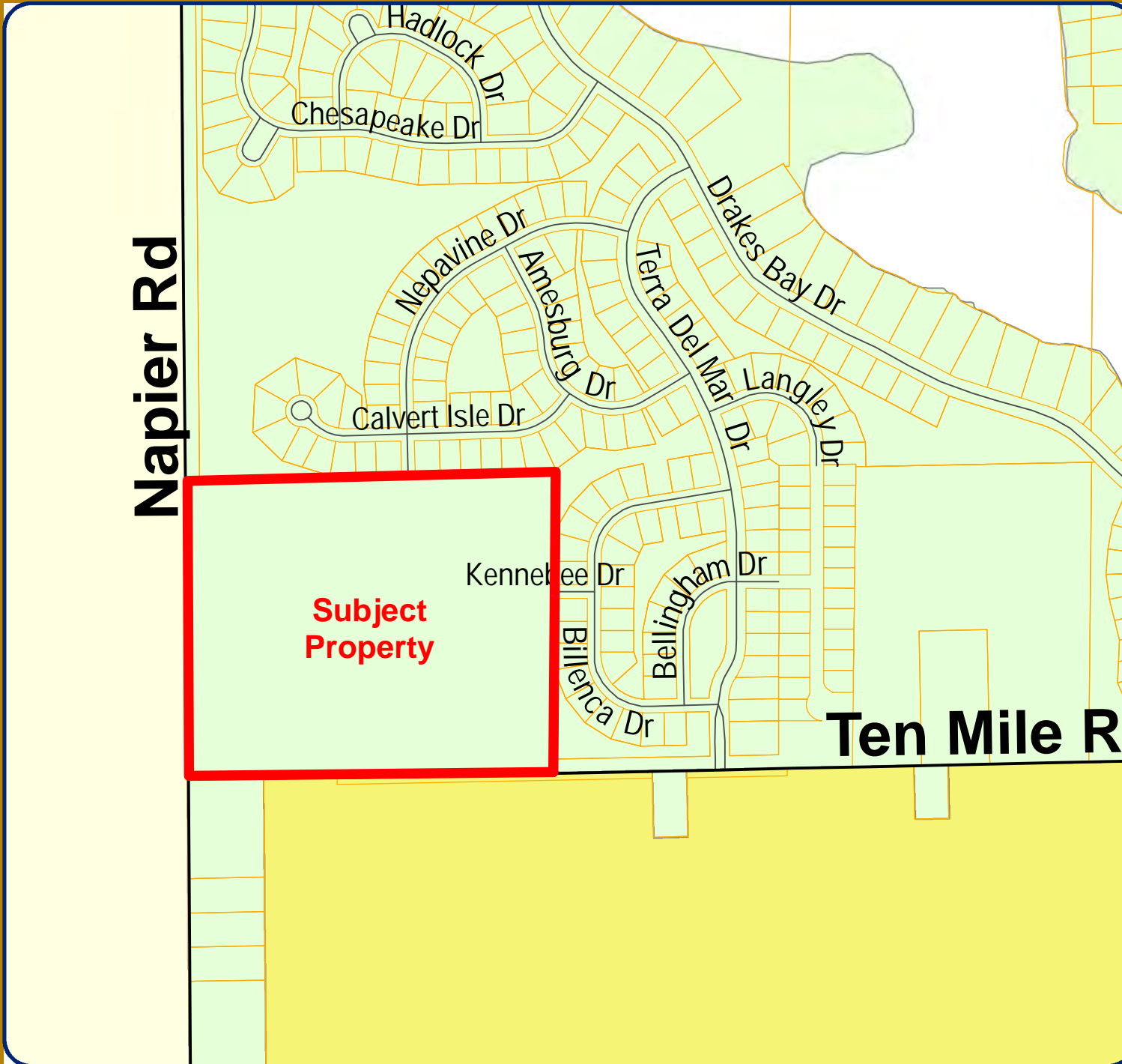
Map Author: Sara Roediger  
Date: 12-02-13

### MAP INTERPRETATION NOTICE




Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

# JSP13-69 Preserve at Island Lake (Phase 8)

Zoning



## Map Legend

-  Subject Property
-  R-A: Residential Acreage
-  R-1: One-Family Residential



**City of Novi**  
Planning Division  
Community Development Dept.  
45175 W Ten Mile Rd  
Novi, MI 48375  
cityofnovi.org

Map Author: Sara Roediger  
Date: 12-02-13

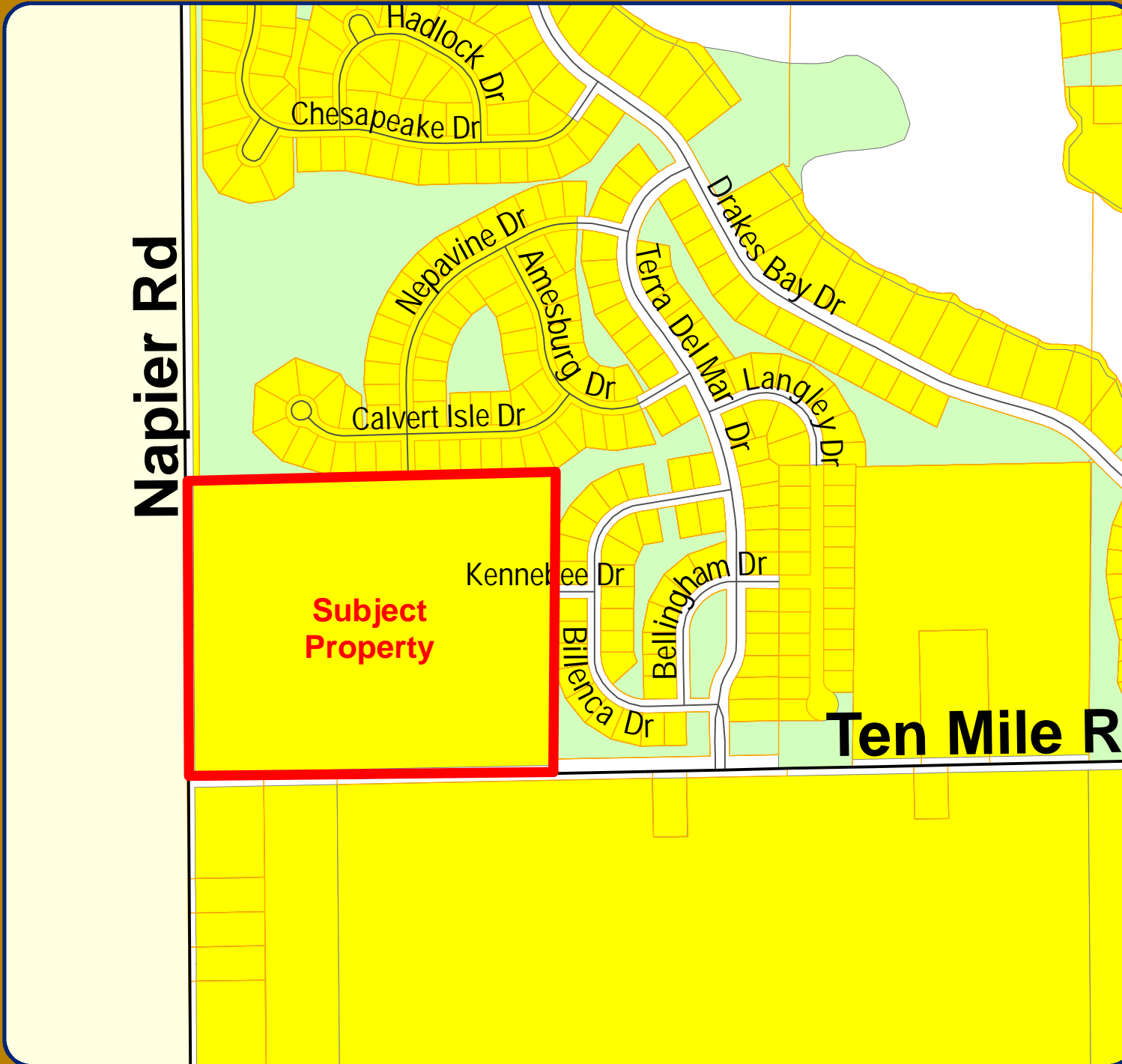
### MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.






# JSP13-69 Preserve at Island Lake (Phase 8)

Future Land Use



## Map Legend

-  Subject Property
-  Single Family
-  Private Park



**City of Novi**  
Planning Division  
Community Development Dept.  
45175 W Ten Mile Rd  
Novi, MI 48375  
cityofnovi.org

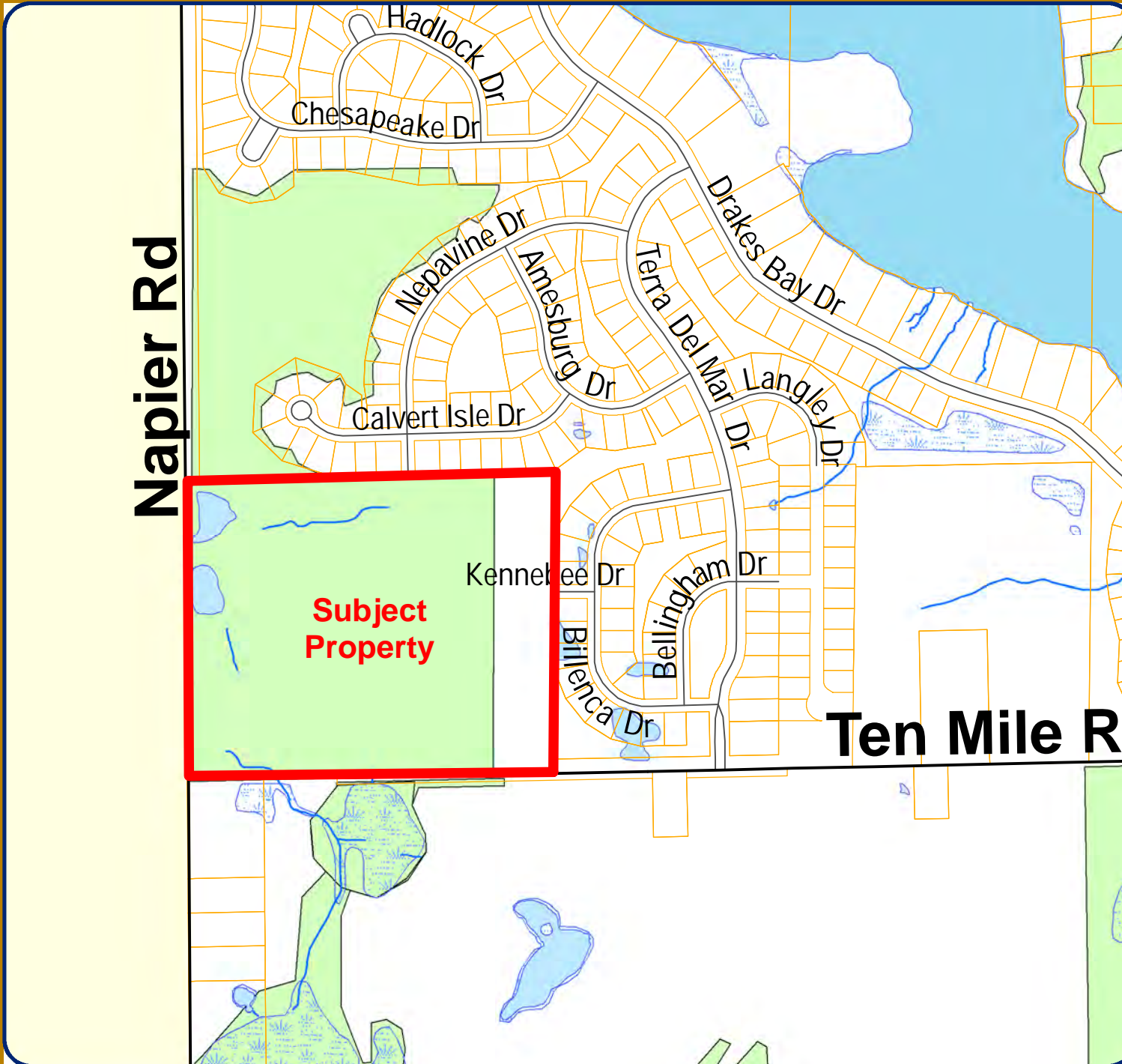
Map Author: Sara Roediger  
Date: 12-02-13

### MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

# JSP13-69 Preserve at Island Lake (Phase 8)

Natural Features



## Map Legend

-  Subject Property
-  Waterways
-  Lake
-  Pond
-  Wetlands
-  Woodlands



**City of Novi**  
Planning Division  
Community Development Dept.  
45175 W Ten Mile Rd  
Novi, MI 48375  
cityofnovi.org

Map Author: Sara Roediger  
Date: 12-02-13

### MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

SITE PLAN



Seal: \_\_\_\_\_

Title:  
**Site Plan**

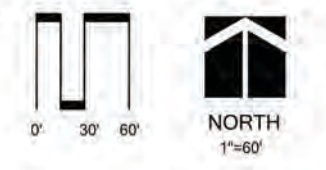
Project:  
**Island Lake Phase 8  
 Novi, Michigan**

Prepared for:  
 Toll Brothers  
 39665 William K. Smith Dr., Suite B  
 New Hudson, Michigan 48165

Revision:	Issued:
Pre-Application	September 23, 2013
Revised	October 17, 2013
Revised	November 22, 2013

Job Number:  
 13-022

Drawn By: jca      Checked By: jca



Sheet No. \_\_\_\_\_



Suggested Walk Alignment  
 Preferred Walk Alignment to Minimize Wetland Impact

## PLANNING REVIEW

---



# PLAN REVIEW CENTER REPORT

December 2, 2013

## Planning Review

The Preserve at Island Lake (Phase 8)

**JSP13-69**

---

### Petitioner

Toll Brothers, Inc.

### Review Type

RUD Plan and Agreement Amendment and Revised Preliminary Site Plan

### Property Characteristics

- Site Location: Northeast corner of Ten Mile Road and Napier Roads (Section 19)
- Site Zoning: RA, Residential Acreage
- Adjoining Zoning: North and East: RA with RUD; South: RA and R-1; West: Lyon Township R-2.5 Agricultural Residential
- Current Site Use: Vacant
- Adjoining Uses: North and East: Single-family residential/Existing RUD; South: Links of Novi golf course and church; West: Lyon Township Agricultural
- School District: South Lyon Community Schools
- Site Size: 48.95 acres
- Plan Date: 11-21-13

### Project Summary

The applicant is proposing to add a 48.95 acre parcel at the northeast corner of Ten Mile and Napier Roads to the existing Island Lake of Novi Residential Unit Development (RUD) Agreement in order to construct 45 single-family residential units. The existing agreement provides review standards for the development of the property where the terms of the development differ from the underlying ordinance standards.

There are currently 858 units constructed or approved in the existing Island Lake development. The addition of 45 units would bring the total number of units to 903 units, which is more than the amount permitted in the existing RUD Agreement (884 units). The applicant therefore needs to amend the current Island Lake RUD Agreement to reflect the additional units and acreage.

The ordinance states that an RUD shall include detached one-family dwelling units, as is proposed in this phase. The applicant has not proposed any attached units, clubhouses, churches, schools or other uses that may be permitted as a part of the proposed development phase. While a variety of housing types is expected in an RUD, the overall density generally shall not exceed the density permitted in the underlying zoning district. The applicant has provided a statement that the proposed density will decrease from 0.92 units/acre to 0.90 units/acre if the RUD Amendment is approved. The Island Lake Development is a combination of R-1, One Family Residential, and RA, Residential Acreage zoning.

### Recommendation

Staff **recommends approval of the Amended RUD Plan and Agreement and of the Preliminary Site Plan** to allow for The Preserve of Island Lake (Phase 8) to be added to the Island Lake of Novi development provided that the Planning Commission recommends and the City Council finds that the proposed plan meets the Zoning Ordinance standards for a major change to an approved RUD, as outlined in this letter.

### **RUD Standards**

Any amendment or revision constituting a major change in the approved RUD plan shall be reviewed as if it were a new RUD plan. An increase in the number of dwelling units is considered a major change. The Planning Commission and City Council should consider the following when evaluating the proposed RUD amendment. Staff comments are underlined and bracketed.

- a) The appropriateness of the site for the proposed use;
- b) The effects of the proposed use upon adjacent properties and the community;  
[Uses permitted in the single-family zoning districts are proposed or existing on the surrounding parcels.];
- c) The demonstrable need for the proposed use;
- d) The care taken to maintain the naturalness of the site and to blend the use within the site and its surroundings;  
[The site contains several wetlands and woodlands, and care has been taken to avoid impacts to these features when possible.];
- e) The existence of clear, explicit, substantial and ascertainable benefits to the City from the RUD.  
[The applicant has provided a narrative (attached) describing the benefits of the RUD.]

The Planning Commission and City Council shall consider the following factors noted in Section 2402.8 as part of their evaluation of the RUD Amendment. Staff comments are italicized and bracketed.

- a) Whether all applicable provisions of this Section [2402 of the Zoning Ordinance], other applicable requirements of this Ordinance, including those applicable to special land uses, and all applicable ordinances, codes, regulations and laws have been met.  
[The applicant has submitted the required application information.]
- b) Whether adequate areas have been set aside for all schools, walkways, playgrounds, parks, recreation areas, parking areas and other open spaces and areas to be used by residents of the development. The applicant shall make provisions to assure that such areas have been or will be committed for those purposes.  
[The applicant has set aside 20.4 acres or 45.3% of the proposed development area as open space, of which 12.98 acres are upland useable acres. Also proposed is walking path that connects the neighborhood to Napier and Ten Mile Roads. In addition, the applicant has offered to construct a new kiddie pool at the Island Lake Clubhouse. Staff recommends the addition of a bike rack at the Island Lake Clubhouse in keeping with the spirit of the newly adopted bicycle parking ordinance to improve access to this shared facility.]
- c) Whether traffic circulation features within the site and the location of parking areas are designed to assure safety and convenience of both vehicular and pedestrian traffic both within the site and in relation to access streets.  
[The applicant has provided for safe traffic flow as indicated in the traffic review letter.]
- d) Whether, relative to conventional one-family development of the site, the proposed use will not cause any detrimental impact in existing thoroughfares in terms of overall volumes, capacity, safety, travel times and thoroughfare level of service, or, in the alternative, the development will provide onsite and offsite improvements to alleviate such impacts.  
[The development will not have a detrimental impact on existing thoroughfares over and above development under the existing zoning as indicated in the traffic review letter.]
- e) Whether there are or will be, at the time of development, adequate means of disposing of sanitary sewage, disposing of stormwater drainage, and supplying the development with water.  
[The applicant has provided for adequate stormwater management and utilities.]

- f) Whether, and the extent to which, the RUD will provide for the preservation and creation of open space. Open space includes the preservation of significant natural assets, including, but not limited to, woodlands, topographic features, significant views, natural drainage ways, water bodies, floodplains, wetlands, significant plant and animal habitats and other natural features. Specific consideration shall be given to whether the proposed development will minimize disruption to such resources. Open space also includes the creation of active and passive recreational areas, such as parks, golf courses, soccer fields, ball fields, bike paths, walkways and nature trails.  
[The applicant has set aside 20.4 acres or 45.3% of the proposed development area as open space, of which 12.98 acres are upland useable acres. Also proposed is walking path that connects the neighborhood to Napier and Ten Mile Roads. In addition, the applicant has offered to construct a new kiddie pool at the Island Lake Clubhouse. Staff recommends the addition of a bike rack at the Island Lake Clubhouse in keeping with the spirit of the newly adopted bicycle parking ordinance to improve access to this shared facility.]
- g) Whether the RUD will be compatible with adjacent and neighboring land uses, existing and master planned.  
[Uses permitted in the single-family zoning districts are proposed or existing on the surrounding parcels.]
- h) Whether the desirability of conventional residential development within the City is outweighed by benefits occurring from the preservation and creation of open space and the establishment of school and park facilities that will result from the RUD.  
[Additional open space and a connected walking path is proposed with this phase. In addition, the applicant has offered to construct a new kiddie pool at the Island Lake Clubhouse. Residents of this phase would have access to the parks and open space created in earlier phases of the Island Lake Development.]
- i) Whether any detrimental impact from the RUD resulting from an increase in total dwelling units over that which would occur with conventional residential development is outweighed by benefits occurring from the preservation and creation of open space and the establishment of school and park facilities that will result from the RUD.
- j) Whether the proposed reductions in lot sizes and setback areas are the minimum necessary to preserve and create open space, to provide for school and park sites, and to ensure compatibility with adjacent and neighboring land uses.  
[A reduction in lot sizes below the Zoning Ordinance standards is proposed, however it is consistent with earlier phases of the Island Lake Development.]
- k) Evaluation of the impact of RUD development on the City's ability to deliver and provide public infrastructure and public services at a reasonable cost and with regard to the planned and expected contribution of the property to tax base and other fiscal considerations.
- l) Whether the applicant has made satisfactory provisions for the financing of the installation of all streets, necessary utilities and other proposed improvements.
- m) Whether the applicant has made satisfactory provisions for future ownership and maintenance of all common areas within the proposed development.  
[The new development area would be included in the amended Master Deed and By-laws for the Island Lake of Novi development.]



- n) Whether any proposed deviations from the area, bulk, yard, and other dimensional requirements of the zoning ordinance applicable to the property enhance the development, are in the public interest, are consistent with the surrounding area, and are not injurious to the natural features and resources of the property and surrounding area.

### **Ordinance Requirements**

This project was reviewed for conformance with the standards of the RUD Agreement. Where the agreement fails to address an item of review, the underlying ordinance standards govern the review of the site including standards in Article 3 (RA Residential Acreage District), Article 24 (Schedule of Regulations), Article 25 (General Provisions) and any other applicable provisions of the Zoning Ordinance. Items in **bold** below must be addressed by the applicant and or Planning Commission/City Council.

1. **RUD Intent**: As an optional form of development, the RUD allows development flexibility of various types of residential dwelling units (one-family, attached one-family cluster). It is also the intent of the RUD option to permit permanent preservation of valuable open land, fragile natural resources and rural community character that would be lost under conventional development. This is accomplished by permitting flexible lot sizes in accordance with open land preservation credits when the residential developments are located in a substantial open land setting, and through the consideration of relaxation of area, bulk, yard, dimensional and other zoning ordinance standards in order to accomplish specific planning objectives.

This flexibility is intended to reduce the visual intensity of development; provide privacy; protect natural resources from intrusion, pollution, or impairment; protect locally important animal and plant habitats; preserve lands of unique scenic, historic, or geologic value; provide private neighborhood recreation; and protect the public health, safety and welfare.

Such flexibility will also provide for:

- The use of land in accordance with its character and adaptability;
- The construction and maintenance of streets, utilities and public services in a more economical and efficient manner;
- The compatible design and use of neighboring properties; and
- The reduction of development sprawl, so as to preserve open space as undeveloped land.

Amendments and Revisions to an approved RUD plan shall require all procedures and conditions that are required for original submittal and review for amendments that are considered "major changes". The addition of land area and increase in the number of dwelling units are both considered "major changes", so full review of the ordinance standards is necessary at this time.

2. **Density**: The currently approved RUD Agreement allows up to 884 dwelling units. A total of 858 dwelling units have been approved for the development through existing site plan approvals. The applicant is seeking to add 45 units in this phase which would bring the total number of units to 903 and would decrease the permitted density from 0.92 units per acre to 0.90 units per acre for the entire Island Lake of Novi development as illustrated in the table on the following page.

Density Unit by Type Island Lake of Novi			
Unit Type	Approved in RUD Agreement	Approved to Date <sup>1</sup>	Currently Proposed <sup>2</sup>
Single-Family Attached Cluster	219	Combined 294	Combined 294
Waterfront/ Woodland Attached Cluster	158		
Single-Family Detached	464	518	563
Single-Family Detached Waterfront (1 acre+)	35-51	46	46
<b>TOTAL DWELLING UNITS</b>	<b>884</b>	<b>858</b>	<b>903</b>

<sup>1</sup> Approved to Date includes:

- Vineyards (Phase 2A)
- Arbors, Arbors East, North Woods, Shores North, & Vineyards (Phase 2B)
- Vineyards (Phase 3A, B & C)
- South Harbor (Phase 3D)
- Shores South (Phase 4A)
- Orchards (Phase 4B-1 & 2)
- Shores South (Phase 5A)
- Orchards (Phase 5B & C)
- North Bay (Phase 6)
- The Meadows (Phase 7A, B & C)

<sup>2</sup> Currently Proposed includes the 45 lots proposed as the Preserve at Island Lake (Phase 8)

3. Lot Size and Area: One-family detached dwellings are subject to the minimum lot area and size requirements of the underlying district. RA zoning requires 43,560 sq. ft. lots that are a minimum of 150 ft. wide. The applicant has proposed a minimum size of 14,440 sq. ft. and a minimum width of 91.22 ft., consistent with the currently approved RUD Agreement standards. **The City Council may modify lot size and width requirements where such modification will result in the preservation of open space for those purposes set forth in Section 2402.3B of the Zoning Ordinance and where the RUD will provide a genuine variety of lot sizes. The plans indicate that a total of 20.4 acres of open space will be maintained in this phase of development, which is approximately 45% of the area in this phase. The applicant has provided a summary of lot sizes throughout the entire development. Taken as a whole, there are a variety of lot sizes throughout Island Lake of Novi. In the proposed phase, lots range from 14,440 sq. ft. to 30,920 sq. ft., allowing for some variation in lot size. This is consistent with other phases of Island Lake of Novi.**
4. Private Parks and Recreation Areas: As part of this phase, the applicant is proposing to construct a new children's swimming pool at the Island Lake Clubhouse, which is the result of feedback gathered at a town hall meeting held with residents to discuss this project. In addition, the applicant has agreed to install a bike rack at the Island Lake Clubhouse in keeping with the spirit of the newly adopted bicycle parking ordinance.
5. Sidewalks/Pathways: Sidewalks proposed along all internal roads and a meandering 6 ft. sidewalk is proposed along Ten Mile Road and an 8 ft. pathway is proposed along Napier Road. Pathways and sidewalks are required to be located within 1 foot of the future right-of-way, unless otherwise directed by the City Engineer, for the enhancement of natural resources. **The City Council may grant variances to construct the path as proposed.** The Engineering Department is maintaining their recommendation to have a more direct path along the southern portion of Napier Road as depicted in Option A; however the applicant has indicated their preference to construct the path as illustrated in Option B.
6. Special Land Use: The Planning Commission shall also consider the standards for Special Land Use approval as a part of its review of the proposed RUD modification, per Section 2402.8.B.
7. Master Deed and By-laws: The amended Master Deed and By-laws must be submitted for review with the Final Site Plan submittal.
8. Signage: Exterior Signage is not regulated by the Planning Division or Planning Commission. Please contact Jeannie Niland (248.347.0438 or [jniland@cityofnovi.org](mailto:jniland@cityofnovi.org)) for information regarding sign permits.

### **Street and Project Name**

The proposed project and street names have been reviewed by the Street and Project Naming Committee. The names were approved as requested, with the exception of Napavine Court which was renamed to Denali Court. Please see the attached letter or contact Richelle Leskun (248.347.0579 or [rleskun@cityofnovi.org](mailto:rleskun@cityofnovi.org)) in the Community Development Department for additional information.

### **Site Addressing**

The applicant should contact the Building Division for an address prior to applying for a building permit. Building permit applications cannot be processed without a correct address. The address application can be found on the City's website at [www.cityofnovi.org](http://www.cityofnovi.org) under the forms page of the Community Development Department.

Please contact Jeannie Niland (248.347.0438 or [jniland@cityofnovi.org](mailto:jniland@cityofnovi.org)) in the Community Development Department with any specific questions regarding addressing of sites.

### **Pre-Construction Meeting**

Prior to the start of any work on the site, Pre-Construction (Pre-Con) meetings must be held with the applicant's contractor and the City's consulting engineer. Pre-Con meetings are generally held after Stamping Sets have been issued and prior to the start of any work on the site. There are a variety of requirements, fees and permits that must be issued before a Pre-Con can be scheduled. If you have questions regarding the checklist or the Pre-Con itself, please contact Sarah Marchioni (248.347.0430 or [smarchioni@cityofnovi.org](mailto:smarchioni@cityofnovi.org)) in the Community Development Department.

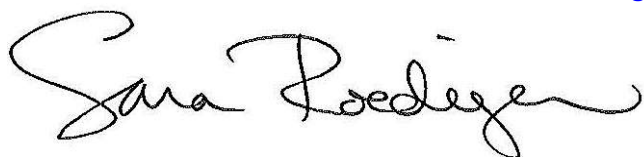
### **Chapter 26.5**

Chapter 26.5 of the City of Novi Code of Ordinances generally requires all projects be completed within two years of the issuance of any starting permit. Please contact Sarah Marchioni (248.347.0430 or [smarchioni@cityofnovi.org](mailto:smarchioni@cityofnovi.org)) for additional information on starting permits. The applicant should review and be aware of the requirements of Chapter 26.5 before starting construction.

### **Response Letter**

A letter from either the applicant or the applicant's representative addressing comments in this and other review letters is required prior to consideration by the Planning Commission.

If the applicant has any questions concerning the above review or the process in general, do not hesitate to contact me at 248.735.5607 or [sroediger@cityofnovi.org](mailto:sroediger@cityofnovi.org).



---

Sara Roediger, AICP – Planner

Attachments: Planning Review Chart

**Planning Review Summary Chart**

JSP13-69 The Preserve at Island Lake (Phase 8)  
 Revised Preliminary Site Plan and RUD Amendment  
 Plan Date: 11-21-13

Item	Proposed	Meet Requirements?	Comments
Property is master planned for single family residential use	No change	Yes	
Zoning is currently RA, Residential Acreage	Inclusion in the Island Lake of Novi RUD	Yes	
<b>Use</b> (Sec. 2402) single family detached homes, etc.	45 single-family, detached homes proposed	Yes	
<b>Density</b> (RUD term)  884 dwelling units permitted under current RUD agreement  Island Lake has 858 dwelling units under currently approved site plans	The applicant has proposed to add 45 units to the RUD, bringing the total number of units that could be constructed up to 903 units		The applicant has indicated the total density of the Island Lake of Novi development will be 0.90 units per acre, below the approved density of 0.92 units per acre  An amendment to the Island Lake RUD Agreement must be submitted reflecting the additional units to the number of dwelling units permitted in the current RUD
<b>RUD Ordinance Standards (Sec. 2402)</b>			
Required property size – 20 acres	48.95 acres	Yes	
Detached one-family dwellings permitted	Detached one-family dwellings	Yes	
<b>Minimum Lot Size</b> (Sec. 2402.4 & RUD term) One-family detached dwellings are subject to the min. lot area requirements of the RA zoning district: 43,560 sq. ft. lots  Non-waterfront lots in the RUD are required to be a min. of 12,000 sq. ft.	Range from min. lot size of 14,440 sq. ft. to a max. of 30,920 sq. ft.	<b>Does not meet ord. requirements but meets previous RUD Agreement terms</b>	The City Council may modify such lot area requirements where such modification will result in the preservation of open space for those purposes set forth in subpart 2402.3B and where the RUD will provide a genuine variety of lot sizes
<b>Minimum Lot Width</b> (Sec. 2402.4 & RUD term) One-family detached dwellings are subject to the min. lot width requirements of the RA zoning district: 150 ft. lot widths  Non waterfront lots in the RUD are required to be a min. of 90 ft. wide	Range from min. lot width of 91.22 ft. to a max. of 138.31 ft.	<b>Does not meet ord. requirements but meets previous RUD Agreement terms</b>	The City Council may modify such lot width requirements where such modification will result in the preservation of open space for those purposes set forth in subpart 2402.3B and where the RUD will provide a genuine variety of lot sizes

Item	Proposed	Meet Requirements?	Comments
<p><b>Building Setbacks</b>                      (Sec. 2402.5 &amp; RUD term)                      One-family detached dwellings shall be subject to the min. requirements of the RA zoning district:                      Front: 45 ft.                      Rear: 50 ft.                      Side: 20 ft.                      Side Combined: 50 ft.</p> <p>If lot sizes are reduced in accord. with Sec. 2402.4 yard requirements shall be governed by that zoning district which has min. lot area &amp; width standards that correspond to the dimensions of the particular lot, for 90 ft. wide lots:                      Front: 30 ft.                      Rear: 35 ft.                      Side: 10 ft.                      Side Combined: 30 ft.</p>	<p>Front: Min. 30 ft.                      Rear: 35 ft.                      Side: 10 ft.                      Side Combined: 30 ft.</p> <p>Entire building envelope shown on plans</p>	<p>Yes</p>	
<p><b>Minimum Floor Area</b>                      (Sec. 2400)                      Units must be greater than 1,000 sq. ft.</p>	<p>Min. unit size not shown or required at this point</p>	<p>N/A</p>	<p>Building size reviewed at plot plan phase</p>
<p><b>Building Height</b>                      (Sec. 2400)                      Buildings shall not exceed 2 ½ stories or 35 feet</p>	<p>No elevations provided at this time</p>	<p>N/A</p>	<p>Building height reviewed at plot plan phase</p>
<p><b>Sidewalks/Pathways</b>                      (RUD term, Sec. 11.258 (d) &amp; Sec. 11.278 (b)(5))                      A pedestrian network plan was approved as part of the RUD which requires sidewalks along all internal roads</p> <p>8 ft. pathway required along Napier Rd. &amp; a 6 ft. sidewalk required along Ten Mile Rd.</p>	<p>Sidewalks proposed along all internal roads</p> <p>Meandering 6 ft. sidewalk is proposed along Ten Mile Rd. &amp; 8 ft. pathway along Napier Rd.</p>	<p>Yes/No</p>	<p><b>Pathways &amp; sidewalks are required to be located within 1 ft. of future ROW, unless otherwise directed by the City Engineer, for the enhancement of natural resources. The City Council may grant variances to construct the path as proposed</b></p> <p><b>The Engineering Department is maintaining their recommendation to have a more direct path along the southern portion of Napier Road as indicated as Option A; however the applicant has indicated their preference to construct the path as illustrated in Option B</b></p>

Item	Proposed	Meet Requirements?	Comments
<b>Open Space</b> (RUD term) The RUD includes an open space plan, indicating certain areas to be set aside as community open space	The current plan does not encroach into those areas designated for open space	Yes	20.4 acres or 45.3% of the site has been preserved as open space, of which 12.98 acres are upland useable acres
<b>Bicycle Parking</b> (Sec. 2526)	A bike rack at the Island Lake clubhouse	Yes	<b>While no bicycle parking spaces are required, the applicant has agreed to install a bike rack at the Island Lake Clubhouse in keeping with the spirit of the newly adopted bicycle parking ordinance</b>
<b>Lighting</b> (Sec. 2511)	One 12 ft. tall street light in the Nepavine Dr. island at Ten Mile Rd.	Yes	

Prepared by Sara Roediger, AICP 248.735.5607 or [sroediger@cityofnovi.org](mailto:sroediger@cityofnovi.org)

<b>Density Unit by Type Island Lake of Novi</b>			
Unit Type	Approved in RUD Agreement	Approved to Date <sup>1</sup>	Proposed to Date <sup>2</sup>
Single-Family Attached Cluster	219	Combined 294	Combined 294
Waterfront/ Woodland Attached Cluster	158		
Single-Family Detached	464	518	563
Single-Family Detached Waterfront (1 acre+)	35-51	46	46
<b>TOTAL DWELLING UNITS</b>	<b>884</b>	<b>858</b>	<b>903</b>

<sup>1</sup> Approved to date includes:

- Vineyards (Phase 2A)
- Arbors, Arbors East, North Woods, Shores North, & Vineyards (Phase 2B)
- Vineyards (Phase 3A, B & C)
- South Harbor (Phase 3D)
- Shores South (Phase 4A)
- Orchards (Phase 4B-1 & 2)
- Shores South (Phase 5A)
- Orchards (Phase 5B & C)
- North Bay (Phase 6)
- The Meadows (Phase 7A, B & C)

<sup>2</sup> Proposed to date includes the 45 lots proposed as the Preserve at Island Lake (Phase 8)

# MEMORANDUM



**TO:** PLANNING COMMISSION  
**FROM:** SARA ROEDIGER, AICP, PLANNER  
**THROUGH:** BARBARA MCBETH, AICP, DEPUTY DIRECTOR  
OF COMMUNITY DEVELOPMENT  
**SUBJECT:** THE PRESERVE AT ISLAND LAKE (PHASE 8), JSP13-69  
PATHWAY ALIGNMENT ON NAPIER ROAD  
**DATE:** DECEMBER 5, 2013

---

## **Discussion Item: Pathway Alignment on Napier Road**

As discussed in the planning, engineering and wetland reviews, a meandering 6 ft. sidewalk is proposed along Ten Mile Road and an 8 ft. pathway is proposed along Napier Road. Pathways and sidewalks are required to be located within 1 foot of the future right-of-way, unless otherwise directed by the City Engineer, for the enhancement of natural resources. The City Council may grant variances to deviate from this requirement.

Through the review process, two alternatives for the pathway along the southern portion of Napier Road have emerged as the result of two important yet sometimes competing interests to preserve natural features and to provide a comprehensive and efficient non-motorized pathway system in the City. A comparison of the pros and cons for each option is provided in the table below.

<b>Option A (Suggested Walk Alignment)</b>	<b>Option B (Applicant Preferred Walk Alignment)</b>
Minimize the amount of deviation requested from City Ordinances	Require a deviation of up to 200 ft. at the furthest point (which is consistent to the deviation being considered along the northern portion of Napier Road due to wetlands)
Direct connection to the intersection of Napier Rd. and Ten Mile Rd.	People traveling north/south on Napier Rd. would need to travel 200 ft. out of their way, may result in people traveling in the Napier Rd. right-of-way
Require construction of a 260 ft.+ boardwalk that would result in greater wetland impact and greater maintenance costs	Require construction of a 40 ft.+ boardwalk that would result in less wetland impact due to a shorter wetland crossing and less maintenance costs
May require additional tree removals	Minimize the amount of tree removal
Design is a linear path that abuts the street	Design may result in a more interesting path that may be more enjoyable to traverse

## **Recommendation**

Staff can see the merits of each of the options and suggest the Planning Commission review this matter and provide a recommendation to the City Council. Both options will result in a connected pathway system that respects the natural landscape, and as result staff continues to recommend Option A along the Napier Rd. frontage since this option most closely matches the ordinance standards.



Napier

Option A  
Suggested Walk Alignment

Option B  
Preferred Walk Alignment  
to Minimize Wetland  
Impact

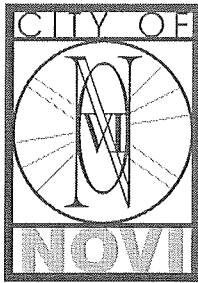


Know what's below.  
Call before you dig.



## ENGINEERING REVIEW

---



cityofnovi.org

## PLAN REVIEW CENTER REPORT

December 2, 2013

### Engineering Review

Island Lake Phase 8

JSP13-0069

#### Petitioner

Toll Bros. Inc., applicant

#### Review Type

Revised Preliminary Site Plan

#### Property Characteristics

- Site Location: N. of Ten Mile Rd. and E. of Napier Rd.
- Site Size: 48.95 acres
- Plan Date: November 21, 2013

#### Project Summary

- Construction of a 45 unit single family subdivision on approximately 48.95 acres. Site access would be provided by Ten Mile Rd, Nepavine Dr and Kennebe Dr.
- Water service would be provided by the existing 12-inch water mains on Ten Mile Rd that would be extended through the proposed development as an 8-inch public water main. This main connects to the existing 8-inch stubs at Nepavine Dr and Kennebe Dr, providing a looped system.
- Sanitary sewer service for units 25 through 39 would be provided by an 8-inch sewer extension from the existing 8-inch sanitary sewer stub at Nepavine Dr. Sanitary sewer service for units 1 through 24 and 40 through 45 is provided by an 8-inch sewer which discharges into the proposed sanitary pump station on Ten Mile Rd, west of the proposed extension of Nepavine Dr. The force main from the pump station discharges into the 8-inch sewer extension from Nepavine Dr.
- Storm water would be collected by a single storm sewer collection system and discharged into the wetland at the western development boundary, ultimately flowing into a series of culverts underneath Napier Rd.

#### Recommendation

**Approval of the Preliminary Site Plan and Preliminary Storm Water Management Plan is recommended.**

#### Comments:

The Preliminary Site Plan meets the general requirements of Chapter 11, the Storm Water Management Ordinance and the Engineering Design Manual with the following items to be addressed at the time of Final Site Plan submittal (further engineering detail will be required at the time of the final site plan submittal):

### General

1. The City standard detail sheets are not required for the Final Site Plan submittal. They will be required with the Stamping Set submittal.
2. Revise the plan set to clearly describe the public easement extents and widths for all sidewalks and pedestrian pathways outside of the right-of-way.
3. Note that all power and communication facilities shall be located in the rear yard of the proposed lots or approval by the Director of Public Services is needed for a variance from Appendix C – Subdivision Ordinance Article IV Section 4.06 – E.1 for the placement of franchise utilities outside of rear lot lines.
4. All requested variances from the Novi City Code must be clearly and specifically shown on the plan set. Blanket requests sought by using general language on the plan set for variances from the City Code are not permitted.

### Water Main

5. Provide a profile for all proposed water main with a note stating that a minimum cover of five and one-half (5½) feet shall be maintained at all times, with a cover of six (6) feet maintained at all water main crossings under paved streets or other traveled areas.
6. Revise the note on sheet 12 to state that hydrants must be spaced at intervals no greater than 500 feet versus 'generally at 500' intervals' as provided.
7. Three (3) sealed sets of revised utility plans along with the MDEQ permit application (1/07 rev.) for water main construction and the Streamlined Water Main Permit Checklist should be submitted to the Engineering Department for review, assuming no further design changes are anticipated. Utility plan sets shall include only the cover sheet, any applicable utility sheets and the standard detail sheets.

### Sanitary Sewer

8. The Water and Sewer Division has completed a flow analysis, which indicates that the Drakes Bay PS capacity needs to be upgraded to 1.38 cfs (620 gpm) to accommodate the flows from the proposed development. The "Drakes Bay System Capacity Analysis" tech memo is attached as reference.
9. The design engineer should demonstrate that an invert of 969.00 at the proposed pump station is sufficiently deep to provide sanitary sewer service to the 150 acre area south of 10 Mile Road.
10. Provide a profile for all proposed sanitary sewer with a note stating that a minimum cover of four (4) feet shall be maintained at all times for gravity sewers and five (5) feet for force mains. A minimum cover of eight (8) feet is required below finished road surface grades.
11. Provide a cross-section detail for the access drive servicing the proposed pump station off of Ten Mile Rd.

12. Seven (7) sealed sets of revised utility plans along with the MDEQ permit application (11/07 rev.) for sanitary sewer should be submitted to the Engineering Department for review, assuming no further design changes are anticipated. Utility plan sets shall include only the cover sheet, any applicable utility sheets and the standard detail sheets. The submitted application must meet all requirements listed in Wayne County's Sanitary Sewer Approval Checklist (8/28/2013) and is subject to any applicable review fees by the Wayne County Department of Public Services. For information regarding an expedited review by the MDEQ, please contact their office directly.

#### Storm Sewer

13. Provide a profile of the proposed storm sewer showing a minimum cover of 3 feet and all catch basin sumps. Any areas lacking sufficient cover must be identified for City review and will require a **Design and Construction Standards variance from Section 11-94(c)** for less than three (3) feet of cover to top of pipe.

#### Storm Water Management Plan

14. The Storm Water Management Plan for this development shall be designed in accordance with the Storm Water Ordinance and Chapter 5 of the new Engineering Design Manual.
15. Provide the detailed engineering for the "Typical Basin Outlet Control Structure" as shown on the plan set.
16. Revise the plan set to provide an access drive all structures associated with the basin equalization pipe. All maintenance access drives must be a minimum of fifteen (15) feet wide.
17. Consider revising the detention basin access drive from 21AA aggregate to a geosynthetic reinforced system.

#### Paving & Grading

18. Provide a **Design and Construction Standards Variance from Table VIII-A** of the Novi City Code for the reduced pavement width of 20 feet at the traffic calming device versus the standard 28 foot pavement width.
19. Provide a **Design and Construction Standards variance from Section 11-258(d) and Section 11-278(b)** for the segments of bicycle pathway on Napier Rd. and pedestrian safety path on Ten Mile Rd. located outside of right-of-way.
20. Revise note 8 on sheet to indicate a **maximum cross-slope** of 2% and a **maximum running slope** of 5%. Any running slope greater than 5% is considered a ramp and shall be treated as such.

**The following must be submitted at the time of Final Site Plan submittal:**

21. A letter from either the applicant or the applicant's engineer must be submitted with the Final Site Plan highlighting the changes made to the plans addressing each of the comments listed above and indicating the revised sheets involved.
22. An itemized construction cost estimate must be submitted to the Community Development Department at the time of Final Site Plan submittal for the determination of plan review and construction inspection fees. This estimate should only include the civil site work and not any costs associated with construction of the building or any demolition work. **The cost estimate must be itemized** for each utility (water, sanitary, storm sewer), on-site paving, right-of-way paving (including proposed right-of-way), grading, and the storm water basin (basin construction, control structure, pretreatment structure and restoration).

**The following must be submitted at the time of Stamping Set submittal:**

23. A draft copy of the maintenance agreement for the storm water facilities, as outlined in the Storm Water Management Ordinance, must be submitted to the Community Development Department with the Final Site Plan. Once the form of the agreement is approved, this agreement must be approved by City Council and shall be recorded in the office of the Oakland County Register of Deeds.
24. A draft copy of the 20-foot wide easement for the water main to be constructed outside of the right-of-way on the site must be submitted to the Community Development Department.
25. A draft copy of the 20-foot wide easement for the sanitary sewer to be constructed outside of the right-of-way on the site must be submitted to the Community Development Department.
26. A draft copy of the pathway and sidewalk easement for the facilities to be constructed outside of the right-of-way on the site must be submitted to the Community Development Department.
27. A 20-foot wide easement where storm sewer or surface drainage crosses lot boundaries must be shown on the Exhibit B drawings of the Master Deed.

**The following must be addressed prior to construction:**

28. A pre-construction meeting shall be required prior to any site work being started. Please contact Sarah Marchioni in the Community Development Department to setup a meeting (248-347-0430).
29. A City of Novi Grading Permit will be required prior to any grading on the site. This permit will be issued at the pre-construction meeting. Once determined, a grading permit fee must be paid to the City Treasurer's Office.
30. An NPDES permit must be obtained from the MDEQ because the site is over 5 acres in size. The MDEQ requires an approved plan to be submitted with the Notice of Coverage.

31. A Soil Erosion Control Permit must be obtained from the City of Novi. Contact Sarah Marchioni in the Community Development Department (248-347-0430) for forms and information.
32. A permit for work within the right-of-way of Ten Mile Rd. and Napier Rd. must be obtained from the City of Novi. The application is available from the City Engineering Department and should be filed at the time of Final Site Plan submittal. Please contact the Engineering Department at 248-347-0454 for further information.
33. A permit for work within the right-of-way of Ten Mile Rd. and Napier Rd. must be obtained from the Road Commission for Oakland County. Please contact the RCOC (248-858-4835) directly with any questions. The applicant must forward a copy of this permit to the City. Provide a note on the plans indicating all work within the right-of-way will be constructed in accordance with the Road Commission for Oakland County standards.
34. A permit for water main construction must be obtained from the MDEQ. This permit application must be submitted through the City Engineer after the water main plans have been approved.
35. A permit for sanitary sewer construction must be obtained from the MDEQ. This permit application must be submitted through the City Engineer after the sanitary sewer plans have been approved.
36. Construction Inspection Fees to be determined once the construction cost estimate is submitted must be paid prior to the pre-construction meeting.
37. A storm water performance guarantee, equal to 1.5 times the amount required to complete storm water management and facilities as specified in the Storm Water Management Ordinance, must be posted at the Treasurer's Office.
38. An incomplete site work performance guarantee, equal to 1.5 times the amount required to complete the site improvements (excluding the storm water detention facilities) as specified in the Performance Guarantee Ordinance, must be posted at the Treasurer's Office.
39. A street sign financial guarantee in an amount to be determined (\$400 per traffic control sign proposed) must be posted at the Treasurer's Office.

Please contact Adam Wayne at (248) 735-5648 with any questions.



cc: Matt Preisz, Engineering  
Brian Coburn, Engineering  
Time Kuhns, Water & Sewer  
Sara Roediger, Community Development Department  
Michael Andrews, Water & Sewer Dept.

# MEMORANDUM

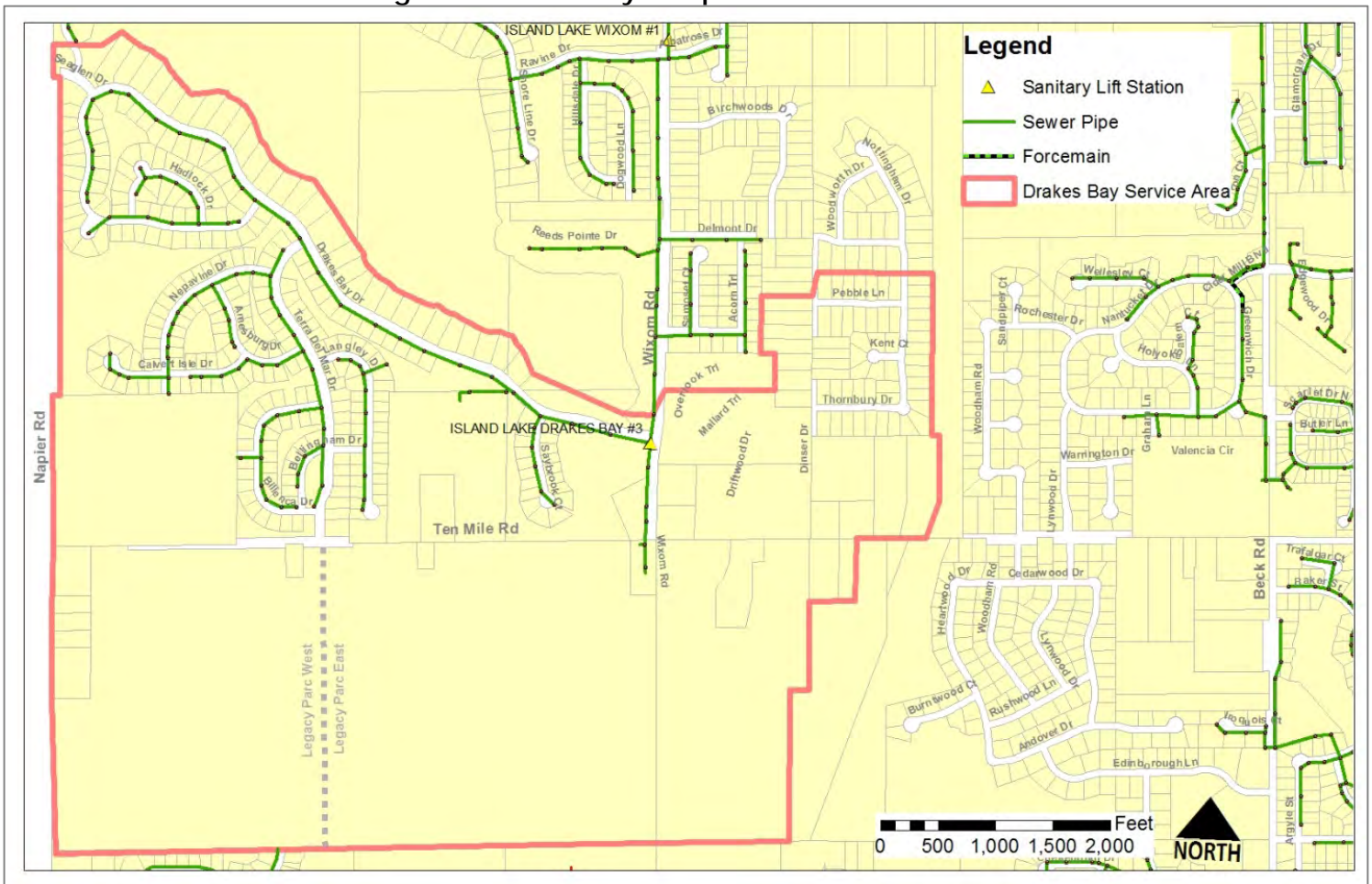


**TO:** ROB HAYES, DIRECTOR OF PUBLIC SERVICES/CITY ENGINEER  
**FROM:** TIM KUHNS, SENIOR WATER AND SEWER ENGINEER  
**SUBJECT:** DRAKES BAY SYSTEM CAPACITY ANALYSIS  
**DATE:** NOVEMBER 7, 2013

## Introduction

The City of Novi recognizes the importance of better managing its sanitary collection system in order to meet regulatory and customer expectations, including ensuring that adequate capacity is available for existing customers and new development. With this objective in mind, the Water and Sewer Division has performed an evaluation of the Drakes Bay pump station tributary area to evaluate the pump station performance for peak flow conditions during existing and future development scenarios. Figure 1 shows the location and layout of the Drakes Bay pump station study area.

**Figure 1: Drakes Bay Pump Station Service Area**



## Methodology

The evaluation of peak design flows for the study area used the following methodology:

1. **Perform Infiltration and Inflow (I/I) Analysis of System**

An analysis of the I/I levels within the system was performed to demonstrate how antecedent moisture (i.e., the level of soil saturation before a storm event) and rainfall conditions impact peak flows and hydrograph volumes.

2. **Evaluation of Existing Flows (Hydrologic Model Development)**

A hydrologic model was calibrated using rainfall, temperature, and flow measurements from the Drakes Bay pump station tributary area using the i3D antecedent moisture model during the monitoring period from 2009 to present to characterize the existing system flows during wet weather conditions. The hydrologic model calibration results are contained in the Appendix. Once the hydrologic model is calibrated such that it provides a good representation of system flows, the model is used to develop a long term simulation of flows to estimate the peak design flows to the station as defined by the Michigan Department of Environmental Quality (MDEQ).

3. **Evaluation of Future System Flows**

To evaluate future system flows, site plans were compiled from recent development site plan submittals to estimate additional planned development flows. For remaining vacant parcels, a development density was assumed based on land use master planning to estimate additional future development flows. The estimated flows based on these planned and future developments were then added to the existing flows to establish a future design flow condition.

4. **Recommended Upgrades for Existing and Future Design Flow Conditions**

Once the peak design flows were estimated as part of the frequency analysis, the pump station performance could be evaluated for existing and future flow conditions. System upgrades would be identified to accommodate design flows.

## I/I Analysis

An analysis of I/I levels within the system was performed at the Drakes Bay pump station to demonstrate how antecedent moisture and rainfall conditions impact peak flows. I/I levels were quantified by computing capture coefficients for several key storm events during the flow monitoring period from 2009 to present. The capture coefficient represents the percent of the total rainfall volume over the service area that enters the sanitary collection system. A summary of the I/I analysis for the Drakes Bay pump station is provided in Table 1.



**Table 1: I/I Analysis of the Drakes Bay Pump Station**

<b>Storm</b>	<b>Rain (in)</b>	<b>RDII Volume (Mcf)</b>	<b>Capture %</b>
8/8/2009	3.84	2	0.02%
6/4/2010	5.18	6.5	0.06%
4/27/2011	1.21	18.8	0.70%
5/15/2011	0.59	5.2	0.39%
5/24/2011	3.01	13.5	0.20%
7/27/2011	1.72	1.5	0.04%
3/2/2012	0.75	5.1	0.31%
7/27/2012	0.44	1.6	0.16%
4/11/2013	0.95	9	0.42%
4/17/2013	1.25	12.8	0.46%
4/23/2013	0.27	3.3	0.54%
	Highest C%		0.70%
	Lowest C%		0.02%
	AM Variability		3500.0%

Notes

1. RDII = Rainfall Dependent Inflow and Infiltration
2. Total Service Area = 612 acres.
3. Mcf = Thousands of cubic feet
4. RDII Volumes do not contain base groundwater flows

The I/I analysis indicates that the capture coefficients can vary by as much as 3,500% for different storm events. The analysis also shows that (per inch of rain) the capture coefficients are typically higher during the wet spring months and lower during the dry summer. These findings indicate that antecedent moisture conditions vary significantly between events and that a hydrologic model that takes into account varying antecedent moisture conditions is needed to analyze the system.

Evaluation of Existing Flows (Hydrologic Model Development)

The i3D Antecedent Moisture (AM) Model was calibrated and validated using hydrologic measurements for the Drakes Bay tributary area from 2009 to present to characterize the system flows during wet weather conditions. The i3D model uses rainfall and air temperature to continuously determine the surface and sub-surface soil moisture conditions and adjusts the hydrologic model to account for these varying antecedent moisture conditions. The calibration results for the Drakes Bay pump station are presented in Table 2.

Table 2: Summary of Calibration Results

Storm	Rain (in)	Observed Peak (cfs)	Model Peak (cfs)	Peak Flow Error (%)	Observed Vol (1000's cf)	Model Vol (1000's cf)	Volume Error (%)
08/08/09	3.84	0.14	0.16	19.2%	5	7	46.7%
06/04/10	5.18	0.22	0.25	14.4%	12	12	-2.6%
05/14/11	0.59	0.20	0.14	-31.2%	8	7	-10.7%
04/26/11	1.21	0.51	0.49	-3.1%	25	22	-10.5%
05/24/11	3.01	0.46	0.35	-22.2%	21	21	1.1%
06/17/12	0.44	0.06	0.05	-22.3%	1	1	-19.5%
02/28/12	0.75	0.18	0.20	11.7%	16	15	-3.5%
04/17/13	1.25	0.32	0.38	17.9%	20	21	7.4%
04/10/13	0.95	0.40	0.45	11.9%	18	19	3.7%
04/28/13	0.27	0.10	0.08	-27.6%	8	7	-18.7%
<b>Net Average Error</b>				-3.1%			-0.7%
<b>Total Average Error</b>				18.2%			12.4%

Both net error and total error were calculated in Table 2. Net error is the average of all the errors and allows positive and negative values to offset each other. The net error is a measure of the model bias and should be as close to zero as possible. Total error is the average of the absolute value of the errors and is a measure of the model's ability to predict volumes and flows for individual storm events. The detailed calibration and validation results are provided in the Appendix of this memo. A review of the net and total errors shown in Table 2 shows that the calibrated model has a net peak error of -3.1% and a net volume error of -0.7% indicating that the model has little or no bias. The net and total errors are considered excellent for a single, continuous model that simulates capture coefficients that can vary by as much as 3500% from wet and dry conditions, as tabulated in the I/I analysis. These findings indicate that the model is suitable for use in estimating design flow conditions.

The MDEQ policy statement on Sanitary Sewer Overflows (SSOs) provides guidance for estimating design flow conditions. The policy states that it does not authorize the discharge of raw or partially treated SSOs; however, enforcement discretion will be considered for collection systems that have capacity to handle the 25-year, 24-hour remedial design storm during growth season and normal soil moisture conditions. The MDEQ SSO policy indicates that systems that have capacity to handle the 25-year, 24-

hour remedial design condition will have on average less than one overflow per ten years. In effect, the policy allows for continuous simulation and frequency analysis to estimate the 10-year frequency design flow condition (less than one overflow per ten years).

In order to perform a frequency analysis of flows to estimate design flow conditions, the calibrated hydrologic model was used to simulate a long-term record of flow for the study area using rainfall and temperature measurements from Detroit City Airport (DCA) from 1949 to 2000 as inputs to the model. The simulated record of flows represents the predicted flows for the Drakes Bay pump station study area assuming that the DCA rainfall pattern (from 1949 to 2000) fell over the study area. The predicted flows should provide a good representation of study area flows as the model had good calibration results. The DCA gage was used as it was the nearest gage with long-term and reliable rainfall data for the purposes of a long-term simulation. The location of the rain gage is not as important as having a rain gage that provides a good representation of the regional long-term climate patterns of the study area. Examination of the intensity, duration and frequency (IDF) characteristics published in the Rainfall Frequency Atlas of the Midwest (Huff & Angel, 1992) shows very little difference in the IDF characteristics between the DCA gauge and the study area.

The top fifty-two (52) peak flow rates from the long-term flow simulation were summarized as a partial duration series and this series was used to perform a frequency analysis to estimate the 10-year frequency design flow condition. Figure 2 depicts the frequency analysis for the Drakes Bay pump station.

As the final check in the calibration process, a macro-level comparison was also performed with the frequency analysis by plotting the actual yearly maximum flow rates measured at the pump station from 2009 to 2013. The blue triangle data points represent the actual measured flows and show concurrence with the modeled data points indicating an overall good model fit.

**Figure 2: Drakes Bay Pump Station Frequency Analysis**

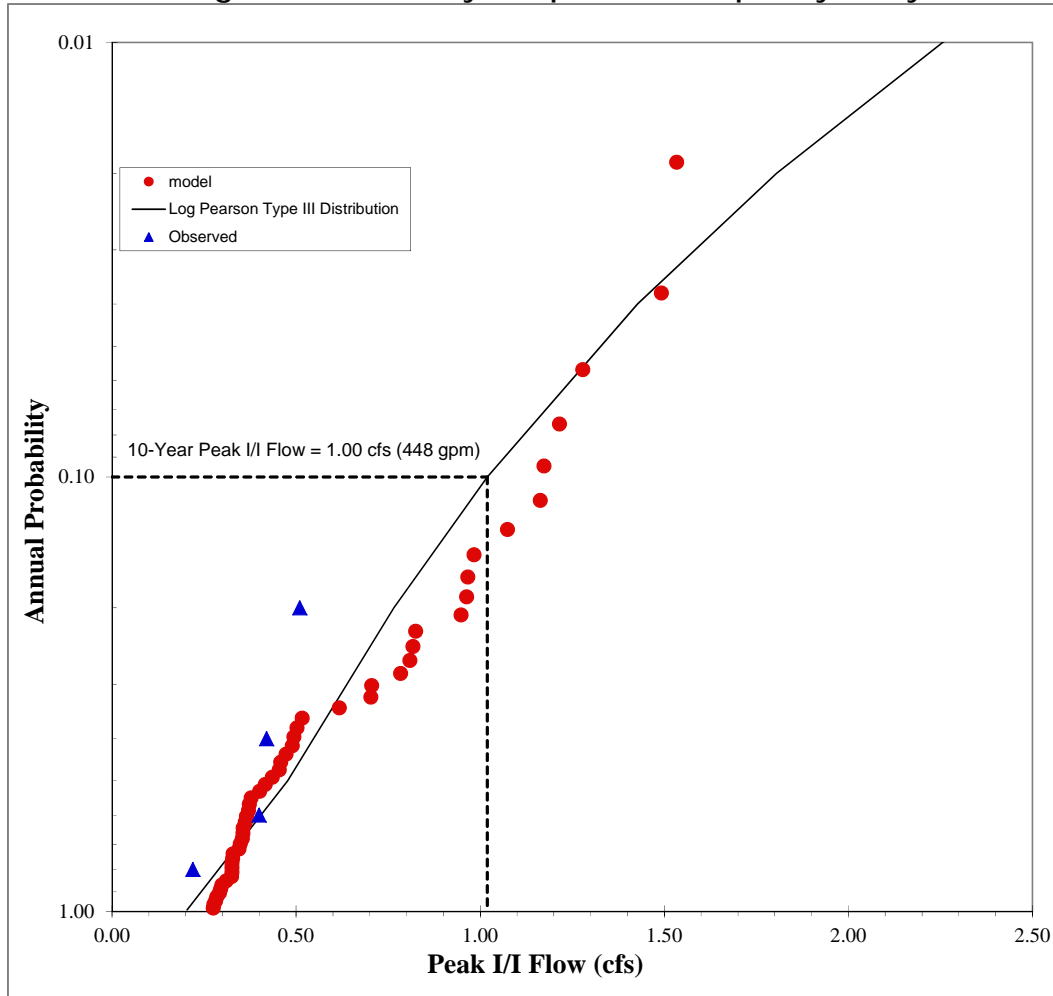


Table 3 summarizes the existing design flows to the Drakes Bay pump station. The evaluation of existing flows indicates that the current design flows to the pump station are close to exceeding of the pump station capacity.

**Table 3: Existing Design Flows to Pump Station**

Existing Base Flow	0.04	cfs	metered
Projected Design Wet Weather Flow	1.00	cfs	From Statistics
Existing Design Peak Flow	1.04	cfs	A + B
Current PS Capacity	1.11	cfs	From Pump Curves

Evaluation of Future System Flows

To evaluate future system flows, plans were compiled from recent development site plan submittals to estimate additional planned development flows. For remaining vacant parcels, a development density was assumed based on land use master

planning to estimate additional future development flows. Figure 3 provides a map depiction of the future users and associated residential equivalent units (REUs) for the Drakes Bay pump station district.

**Figure 3: Future Users and REUs**

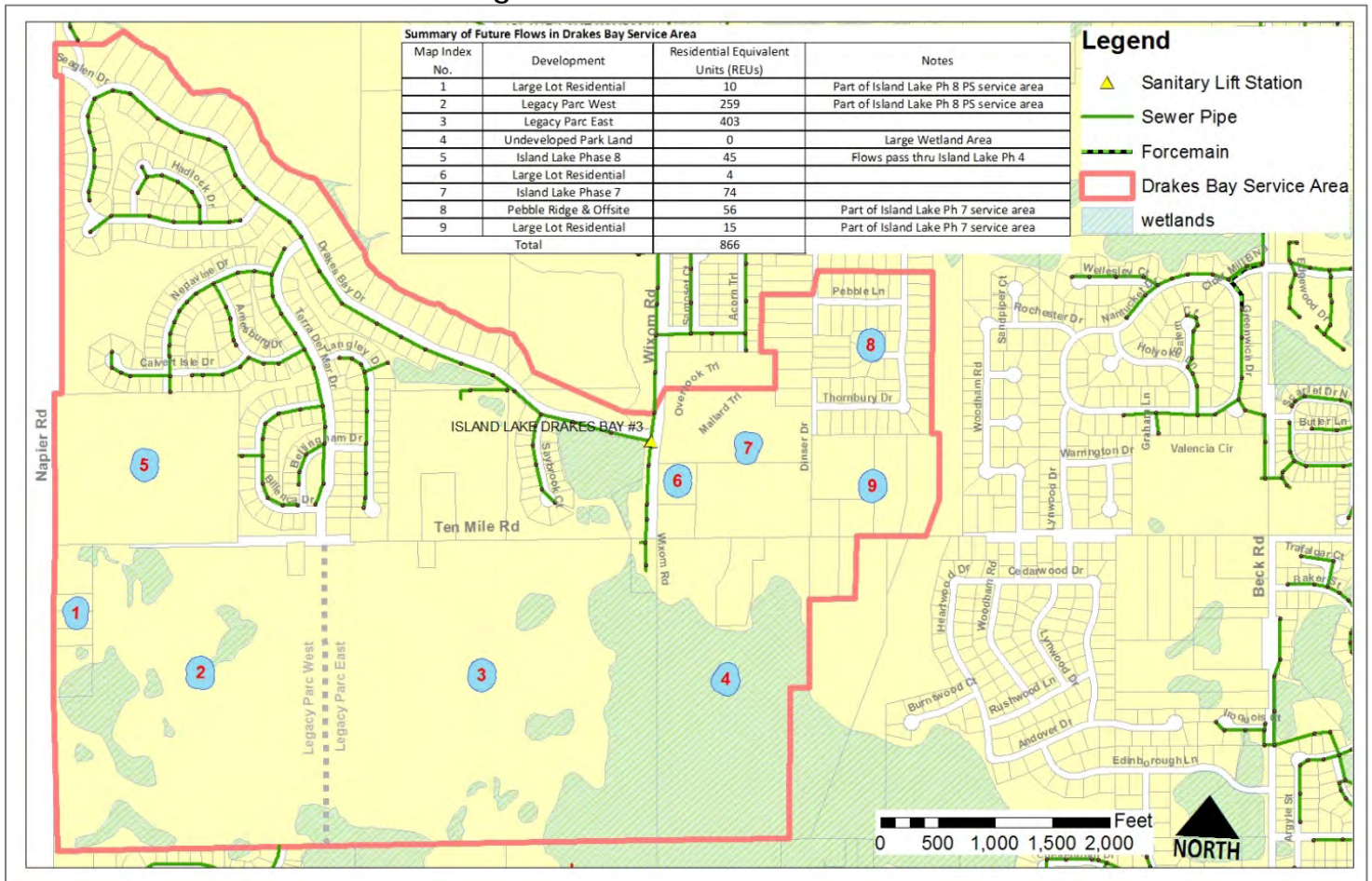


Table 4 provides a summary of the planned developments, which have pending site plan submittals or special assessment district (SAD) petitions that are likely to connect to the pump station within the next five years.

**Table 4: Planned Connections within the Drakes Bay Service Area**

Island Lake Phase 8	45	REU
Island Lake Phase 7	74	REU
Pebble Ridge & Offsite	56	REU
Additional Short-Term Development	175	REU
Estimated Short Term Population Growth	560	persons
Additional Short-Term Dry Weather Flows	0.09	cfs
<b>Additional Short-Term Peak Flows</b>	<b>0.34</b>	<b>cfs</b>

Notes

- 3.2 persons per REU assumed
- 100 gallons per person per day assumed
- 10 States Peaking Factor Equation Used:  $(18 + (P/1000)^{0.5}) / (4 + (P/1000)^{0.5})$

The analysis of planned connections indicates short-term capacity upgrades are needed to the Drakes Bay Pump Station to increase the station's capacity to 1.38 cfs to accommodate the existing (1.04 cfs) and planned (0.34 cfs) flows to the station.

Table 5 provides a summary of all future developments that would connect to the system based on full build-out.

**Table 5: Future System Flows**

Future Connections	866	REU
Estimated Population Growth for Pump Station	2771	Persons
Additional Average Dry Weather Flow at 100 gpcd	0.43	cfs
Additional Future Peak Flow	1.49	cfs

Notes

1. 3.2 persons per REU assumed
2. 100 gallons per person per day assumed
3. 10 States Peaking Factor Equation Used:  $(18+(P/1000)^{0.5})/(4+(P/1000)^{0.5})$

In Table 5, the future additional flows were computed based on the estimated number of additional users as presented in Figure 3. To evaluate the total future flows to the Drakes Bay pump station, the existing flows were added to the future additional flows. A summary of the total future flows is contained in Table 6.

**Table 6: Summary of Future Total Flows**

Existing Design Peak Flow	1.04	cfs
Additional Future Peak Flow	1.49	cfs
Total Future Design Peak Flow	2.53	cfs

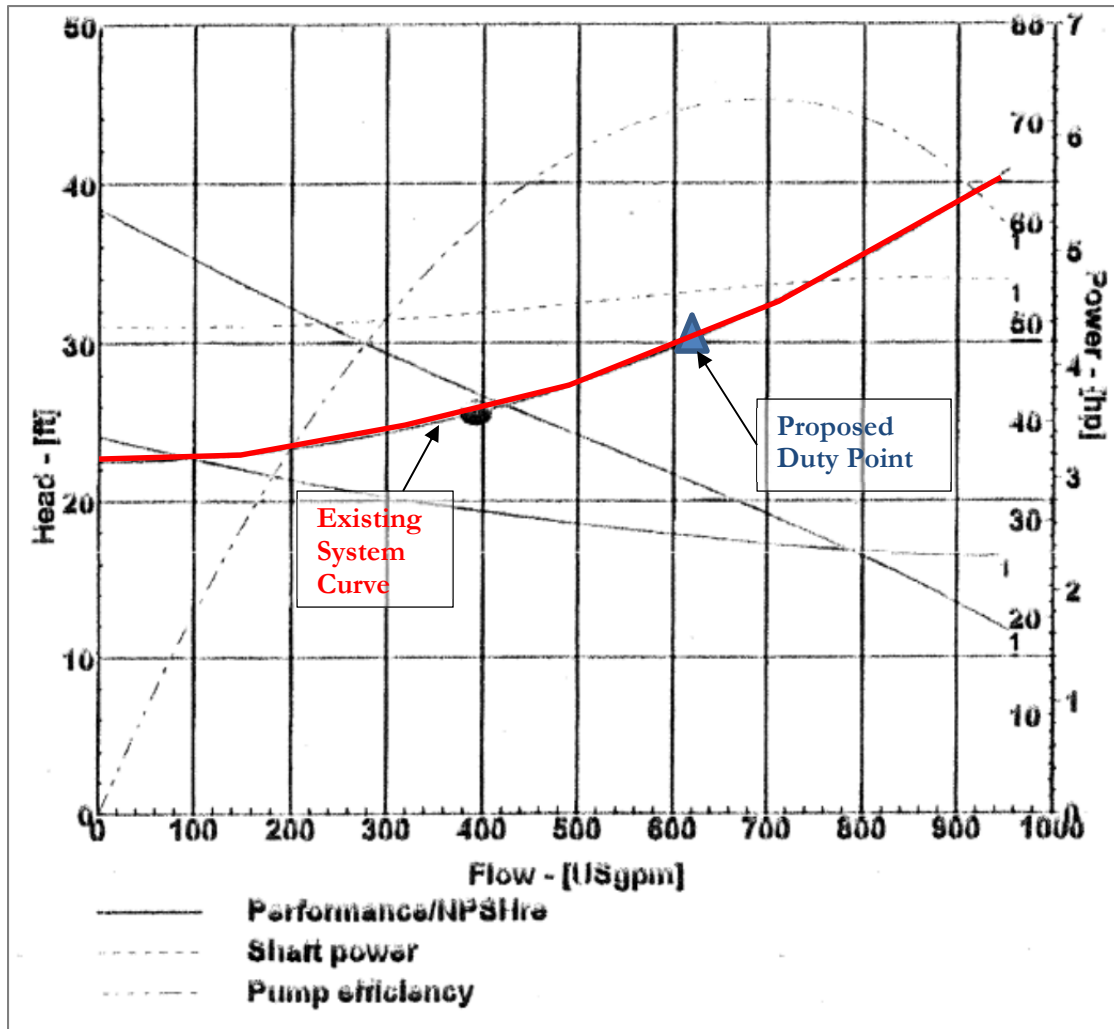
The existing capacity of the Drakes Bay Pump Station is 1.11 cfs, which will be exceeded during short-term (1.38 cfs) and full build-out (2.53 cfs) design flow conditions. Therefore, upgrades are required at the pump station to convey short-term and full build-out design flows.

### Recommended Upgrades for Existing and Full Build-Out Flow Conditions

Based on the flow analysis, short-term and full build-out design flow conditions required upgrades to the Drakes Bay Pump Station as follows:

1. Short-Term Upgrades are needed to the Station to increase the capacity to 1.38 cfs (620 gpm). The existing system curve for the Station is presented in Figure 4.

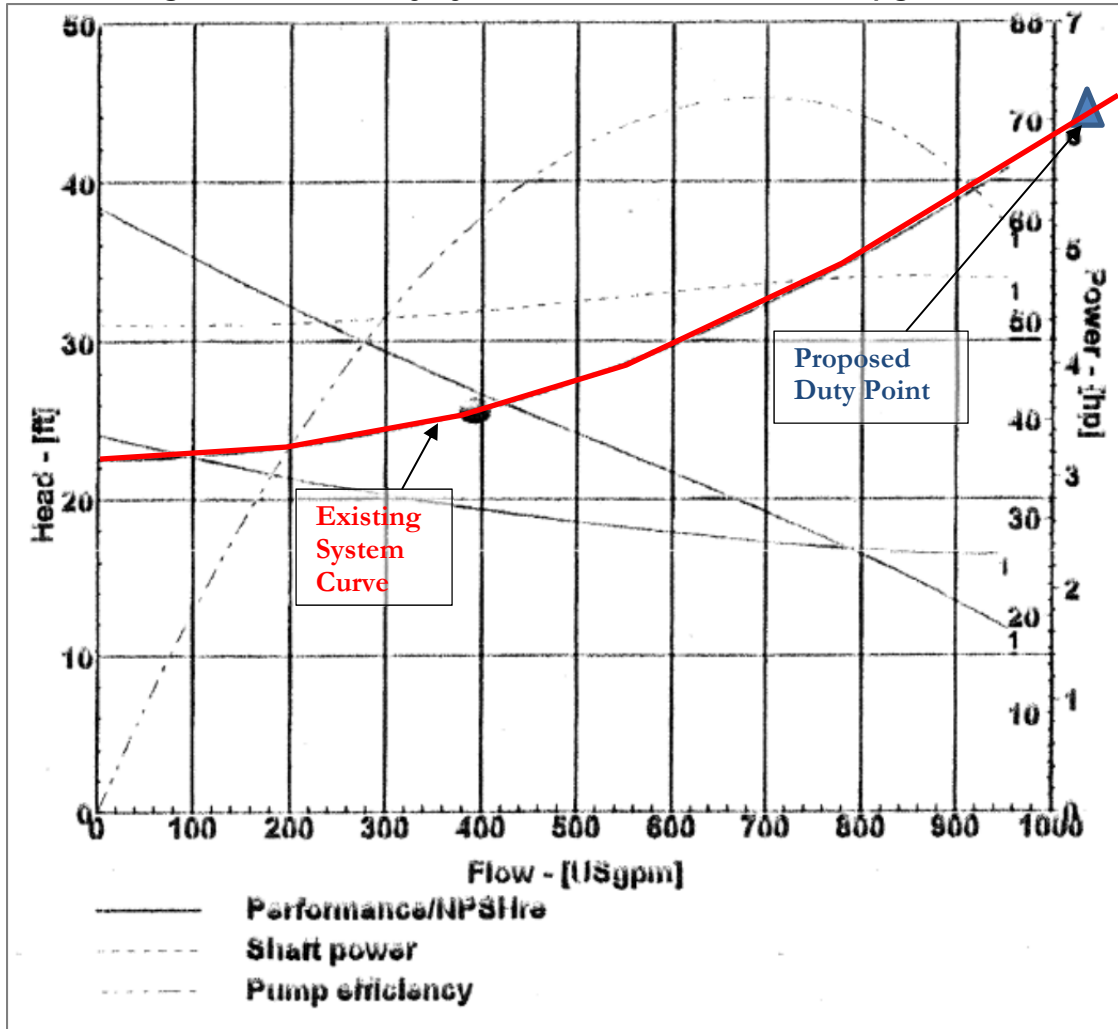
Figure 4: Drakes Bay System Curve – Short-Term Upgrades



The system curve calculations should be verified, but assuming that the original system curve was computed correctly, the proposed duty point for the upgrades is 1.38 cfs (620 gpm) @ 31 ft. TDH. It will be necessary to evaluate whether the existing pumps can be fit with a larger impeller, or if larger pumps are necessary to accommodate the new duty point. If larger pumps are needed, it will also be necessary to verify that the existing wet-well (6 ft. diameter) and electrical systems (including generator) are large enough to accommodate larger pumps.

2. Full Build-Out Upgrades are needed to the Station to increase the capacity to 2.53 cfs (1,135 gpm). The existing system curve for the Station is presented in Figure 5.

Figure 5: Drakes Bay System Curve – Full Build-Out Upgrades



Assuming that the original system curve was computed correctly, the proposed duty point for the upgrades is approximately 2.53 cfs (1,135 gpm) @ 45 ft. TDH. Larger pumps will be necessary to accommodate the full build-out duty point. It will be necessary to verify that the existing wet-well (6 ft. diameter) and electrical systems (including generator) are large enough to accommodate larger pumps. For future build-out conditions, a capacity analysis of the receiving sewer downstream of the Drakes Bay Pump Station should be performed to evaluate if upgrades are needed to this sewer. The existing 12-inch receiving sewer has a nominal capacity of 1.95 cfs and the future build-out design flow from the Drakes Bay Pump Station is 2.53 cfs. This finding indicates upgrades are needed to this portion of the collection system. The capacity analysis for this portion of the system will be summarized in a separate "Wixom Road System Capacity Analysis" technical memo.



Cc: Brian Coburn, Engineering Manager  
Adam Wayne, Staff Engineer  
Scott Roselle, Water and Sewer Asset Manager

# Appendix

## Model Calibration Results

Drakes Bay Pump Station  
Model Parameters  
Model version : i3dLab v. 2.8 r.30

The screenshot shows the 'i3D Lab: Model Portal' window. At the top, there are menu options: 'New Model', 'Duplicate Model', 'Delete Model', and 'Feedback'. Below the menu, the model name is 'DrakesBay No 4' and the primary model is selected. A 'Base Flow Constant' is set to 0.02.

The interface is divided into three main sections: Inflow, Infiltration, and Base Flow. Each section has a radio button to select it. The 'Inflow' section is selected. Each section contains several parameter input fields and a table for antecedent moisture.

**Inflow Parameters:**

- Shape Factor: 1
- Response Factor: 0.068
- Response Time: 0
- Delay: 2
- Antecedent Moisture: AM Retention (0.988), Temp Memory (240)

**Infiltration Parameters:**

- Shape Factor: 5
- Response Factor: 0.004
- Response Time: 0
- Delay: 0
- Antecedent Moisture: AM Retention (0.9), Temp Memory (240)

**Base Flow Parameters:**

- Shape Factor: 8
- Response Factor: 0.001
- Response Time: 0
- Delay: 0
- Antecedent Moisture: Temp Memory (240)

Each section also has an 'Alt Date' field set to 'October 01'.

The antecedent moisture tables are as follows:

show	temp	factor
low	30	2
high	70	0.0250
alt	30	0.7957

show	temp	factor
low	30	2
high	70	1
alt	30	2

show	temp	factor
low	30	0.0100
high	70	1.0000...
alt	30	0.0100

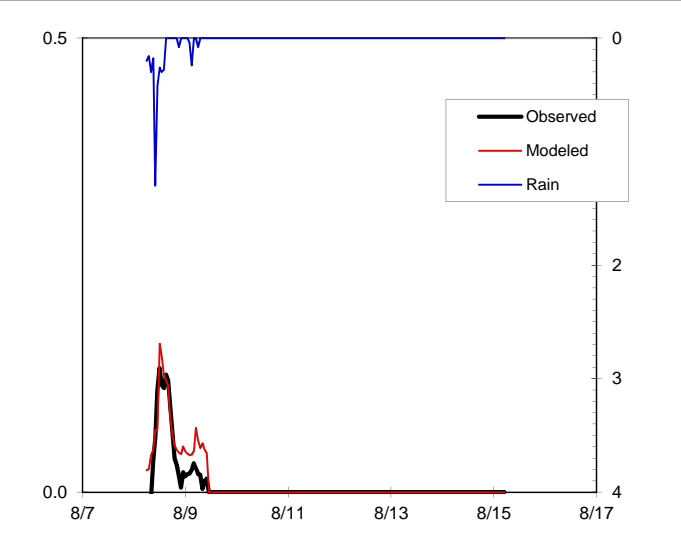
**Drakes Bay PS - Antecedent Moisture Model - Accuracy of Fit Analysis  
Calibration Events - 2008**

Storm	Rain (in)	Observed Peak (cfs)	Model Peak (cfs)	Peak Flow Error (%)	Observed Vol (1000's cf)	Model Vol (1000's cf)	Volume Error (%)	Notes
08/08/09	3.84	0.1	0.2	19.2%	5	7	46.7%	

<b>Net Average Error</b>	19.2%
<b>Total Average Error</b>	9.6%

46.7%
23.3%

Flow (cfs) on primary Y axis, Rain (in) on secondary Y axis



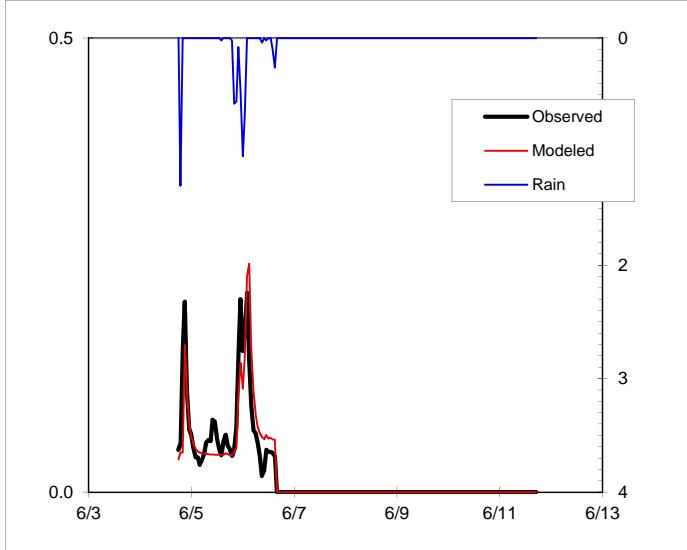

### Drakes Bay PS - Antecedent Moisture Model - Accuracy of Fit Analysis Calibration Events - 2008

Storm	Rain (in)	Observed Peak (cfs)	Model Peak (cfs)	Peak Flow Error (%)	Observed Vol (1000's cf)	Model Vol (1000's cf)	Volume Error (%)	Notes
06/04/10	5.18	0.2	0.3	14.4%	12	12	-2.6%	

<b>Net Average Error</b>	14.4%
<b>Total Average Error</b>	7.2%

-2.6%
1.3%

Flow (cfs) on primary Y axis, Rain (in) on secondary Y axis



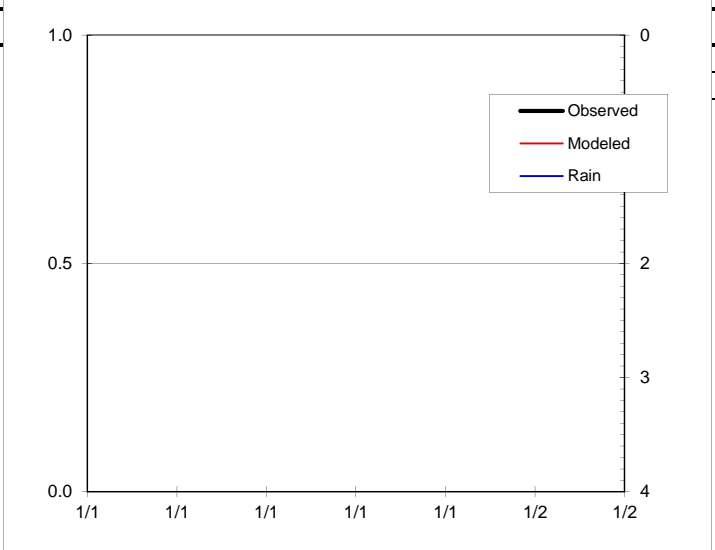
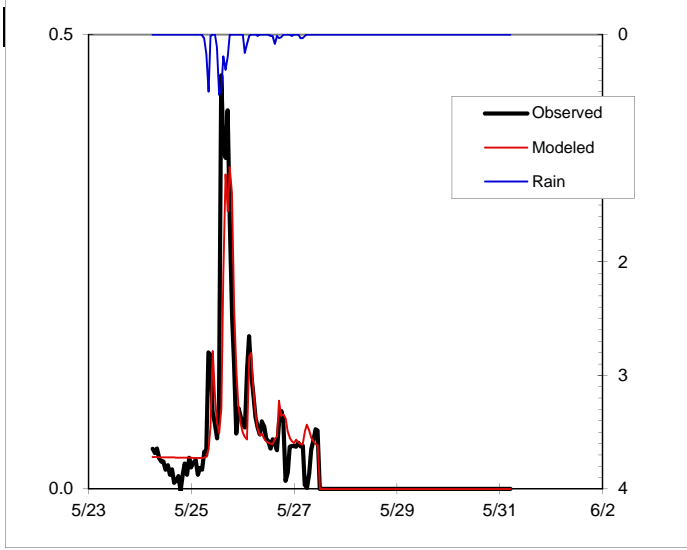
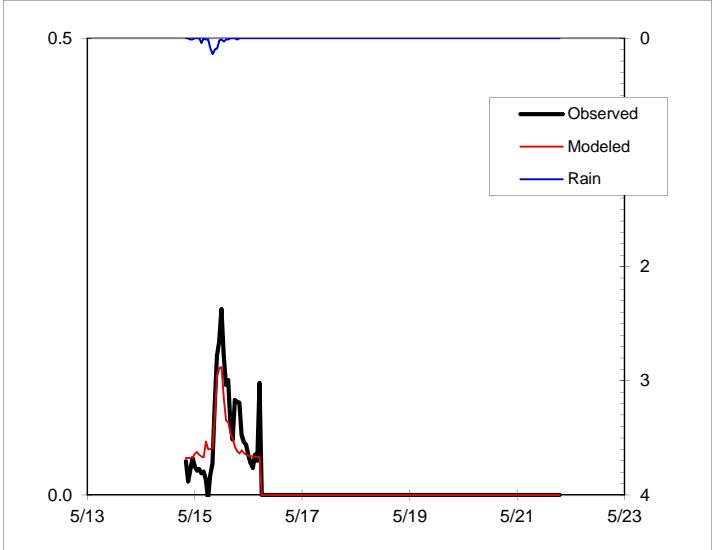
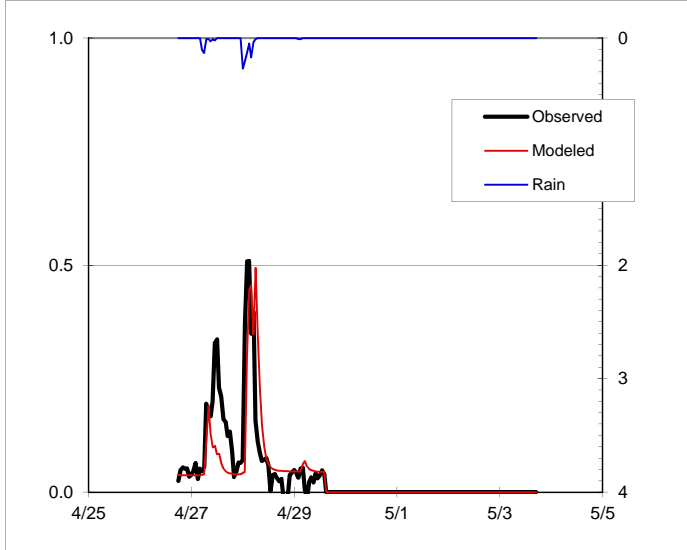

**Drakes Bay PS - Antecedent Moisture Model - Accuracy of Fit Analysis  
Calibration Events - 2008**

Storm	Rain (in)	Observed Peak (cfs)	Model Peak (cfs)	Peak Flow Error (%)	Observed Vol (1000's cf)	Model Vol (1000's cf)	Volume Error (%)	Notes
05/14/11	0.59	0.2	0.1	-31.2%	8	7	-10.7%	
04/26/11	1.21	0.5	0.5	-3.1%	25	22	-10.5%	
05/24/11	3.01	0.5	0.4	-22.2%	21	21	1.1%	

<b>Net Average Error</b>	-18.8%
<b>Total Average Error</b>	17.1%

-6.7%
10.6%

Flow (cfs) on primary Y axis, Rain (in) on secondary Y axis



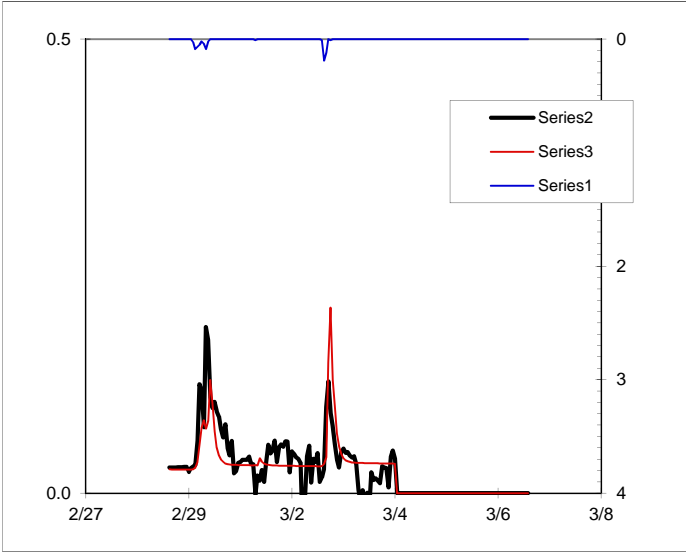
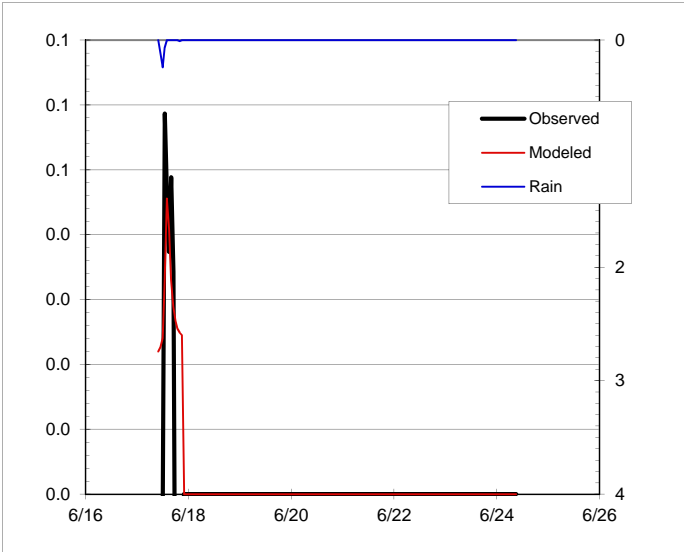
## Drakes Bay PS - Antecedent Moisture Model - Accuracy of Fit Analysis Calibration Events - 2008

Storm	Rain (in)	Observed Peak (cfs)	Model Peak (cfs)	Peak Flow Error (%)	Observed Vol (1000's cf)	Model Vol (1000's cf)	Volume Error (%)	Notes
06/17/12	0.44	0.1	0.0	-22.3%	1	1	-19.5%	
02/28/12	0.75	0.2	0.2	11.7%	16	15	-3.5%	

<b>Net Average Error</b>	-5.3%
<b>Total Average Error</b>	17.0%

-11.5%
11.5%

Flow (cfs) on primary Y axis, Rain (in) on secondary Y axis



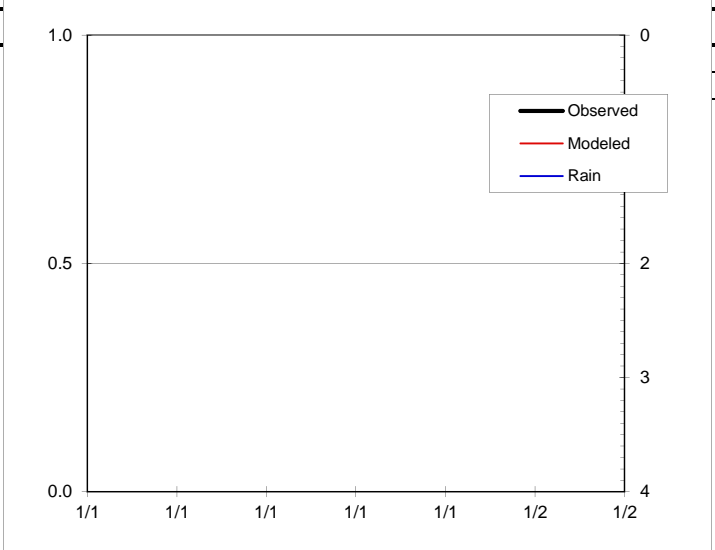
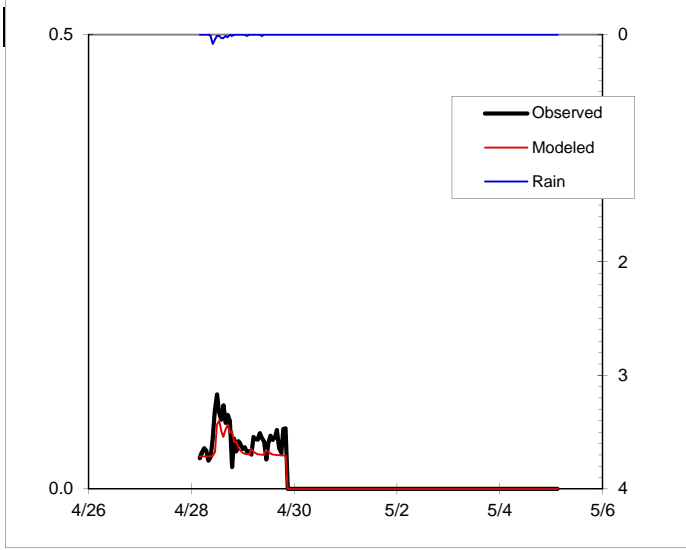
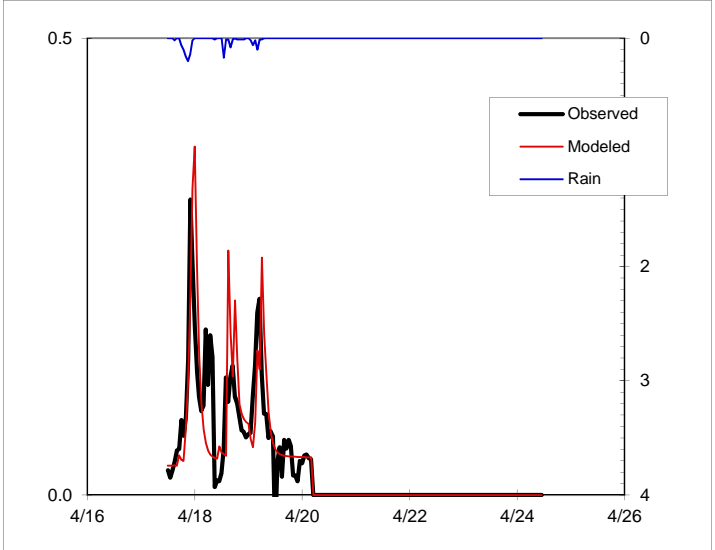
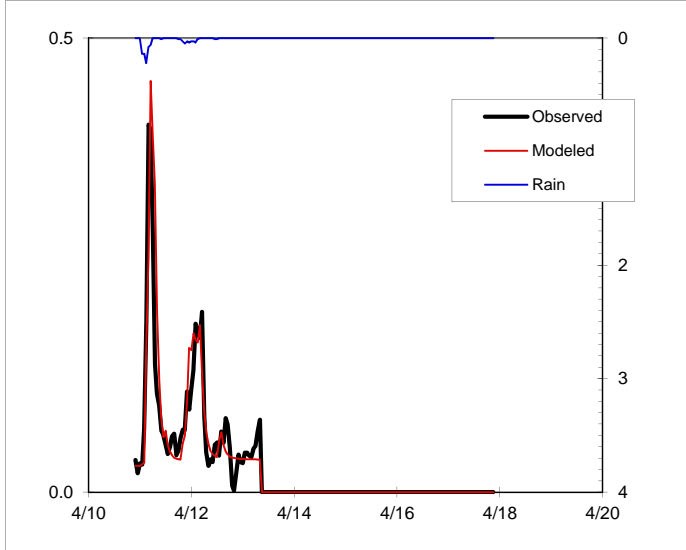

**Drakes Bay PS - Antecedent Moisture Model - Accuracy of Fit Analysis  
Calibration Events - 2008**

Storm	Rain (in)	Observed Peak (cfs)	Model Peak (cfs)	Peak Flow Error (%)	Observed Vol (1000's cf)	Model Vol (1000's cf)	Volume Error (%)	Notes
04/17/13	1.25	0.3	0.4	17.9%	20	21	7.4%	
04/10/13	0.95	0.4	0.5	11.9%	18	19	3.7%	
04/28/13	0.27	0.1	0.1	-27.6%	8	7	-18.7%	

<b>Net Average Error</b>	0.7%
<b>Total Average Error</b>	14.9%

-2.5%
5.5%

Flow (cfs) on primary Y axis, Rain (in) on secondary Y axis

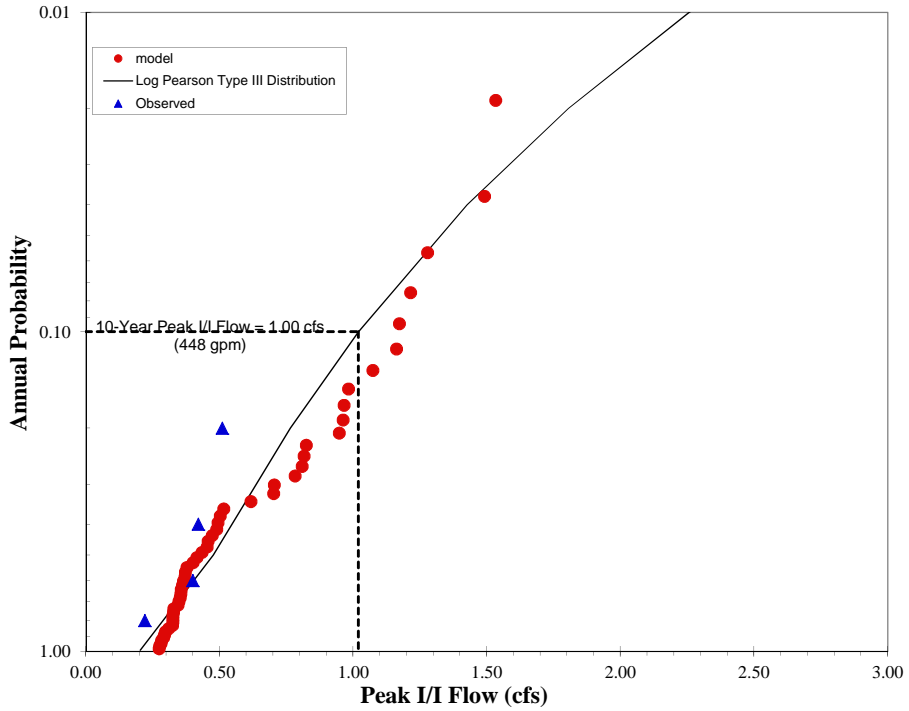




**Drakes Bay Pump Station Modeled**

Year	Max Flow (cfs)	Rank	Ranked Values	Log Max Flow (cfs)	Annual Probability	Return Period (yrs)
1949		1	1.53	0.19	0.019	53.0
1950		2	1.49	0.17	0.038	26.5
1951		3	1.28	0.11	0.057	17.7
1952		4	1.22	0.08	0.075	13.3
1953		5	1.17	0.07	0.094	10.6
1954		6	1.16	0.07	0.113	8.8
1955		7	1.07	0.03	0.132	7.6
1956		8	0.98	-0.01	0.151	6.6
1957		9	0.97	-0.01	0.170	5.9
1958		10	0.96	-0.02	0.189	5.3
1959		11	0.95	-0.02	0.208	4.8
1960		12	0.82	-0.08	0.226	4.4
1961		13	0.82	-0.09	0.245	4.1
1962		14	0.81	-0.09	0.264	3.8
1963		15	0.78	-0.11	0.283	3.5
1964		16	0.71	-0.15	0.302	3.3
1965		17	0.70	-0.15	0.321	3.1
1966		18	0.62	-0.21	0.340	2.9
1967		19	0.52	-0.29	0.358	2.8
1968		20	0.50	-0.30	0.377	2.7
1969		21	0.49	-0.31	0.396	2.5
1970		22	0.49	-0.31	0.415	2.4
1971		23	0.47	-0.33	0.434	2.3
1972		24	0.46	-0.34	0.453	2.2
1973		25	0.45	-0.34	0.472	2.1
1974		26	0.44	-0.36	0.491	2.0
1975		27	0.42	-0.38	0.509	2.0
1976		28	0.40	-0.40	0.528	1.9
1977		29	0.38	-0.42	0.547	1.8
1978		30	0.37	-0.43	0.566	1.8
1979		31	0.37	-0.43	0.585	1.7
1980		32	0.36	-0.44	0.604	1.7
1981		33	0.36	-0.44	0.623	1.6
1982		34	0.36	-0.45	0.642	1.6
1983		35	0.36	-0.45	0.660	1.5
1984		36	0.35	-0.45	0.679	1.5
1985		37	0.35	-0.46	0.698	1.4
1986		38	0.34	-0.46	0.717	1.4
1987		39	0.33	-0.48	0.736	1.4
1988		40	0.33	-0.48	0.755	1.3
1989		41	0.33	-0.49	0.774	1.3
1990		42	0.33	-0.49	0.792	1.3
1991		43	0.33	-0.49	0.811	1.2
1992		44	0.32	-0.49	0.830	1.2
1993		45	0.31	-0.51	0.849	1.2
1994		46	0.30	-0.53	0.868	1.2
1995		47	0.30	-0.53	0.887	1.1
1996		48	0.29	-0.54	0.906	1.1
1997		49	0.28	-0.55	0.925	1.1
1998		50	0.28	-0.55	0.943	1.1
1999		51	0.28	-0.56	0.962	1.0
2000		52	0.27	-0.56	0.981	1.0

**Frequency Analysis Statistics (Partial Duration) Drakes Bay PS**



Tr	0.70	0.60	Cw =	0.76				
	K(0.7)	K(0.6)	μ	σ	σ²	σ³	μ-σ	μ-2σ
0.99	1.0101	-1.806	-1.88	2	0.740	-1.7627	0.20	0.01
0.5	2	-0.116	-0.099	3	-0.170	-0.1259	0.48	0.5
0.2	5	0.79	0.8	4	-0.100	0.7842	0.77	0.8
0.1	10	1.333	1.328	5	0.050	1.3359	1.02	0.9
0.04	25	1.967	1.939	6	0.280	1.9834	1.43	0.96
0.02	50	2.407	2.359	7	0.480	2.4351	1.81	0.98
0.01	100	2.824	2.755	8	0.690	2.8644	2.26	0.99
0.005	200	3.223	3.132	9	0.910	3.2762	2.79	0.995

Skew Coeff<sub>1</sub> 0.67  
 Skew Coeff<sub>2</sub> 0.76  
 Average -0.29  
 Standard Deviation 0.23  
 Variance 0.01  
 Cm = -0.40 (determined from USGS skewness map)  
 V(Cm) = 0.30 standard coefficient  
 A = -0.33  
 B = 0.94  
 n = 52.00  
 V(Cs) = 0.10  
 W = 0.75  
 Cw = -0.09

**Drakes Bay Pump Station Observed**

Year	Max Flow (cfs)	Rank	Ranked Values	Log Max Flow (cfs)	Annual Probability	Return Period (yrs)
1993		1	0.51	-0.29	0.200	5.0
1994		2	0.42	-0.38	0.400	2.5
1995		3	0.40	-0.40	0.600	1.7
1996		4	0.22	-0.66	0.800	1.3
1997		5		#NUM!	1.000	1.0
1998		6		#NUM!	1.200	0.8
1999		7		#NUM!	1.400	0.7
2000		8		#NUM!	1.600	0.6
2001		9		#NUM!	1.800	0.6
2002		10		#NUM!	2.000	0.5
2003		11		#NUM!	2.200	0.5
2004		12		#NUM!	2.400	0.4
2005		13		#NUM!	2.600	0.4
2006		14		#NUM!	2.800	0.4
2007		15		#NUM!	3.000	0.3
2008		16		#NUM!	3.200	0.3
2009		17		#NUM!	3.400	0.3
2010		18		#NUM!	3.600	0.3
2011	11					

TRAFFIC REVIEW

---

December 2, 2013

Barbara McBeth, AICP  
Deputy Director of Community Development  
City of Novi  
45175 W. Ten Mile Rd.  
Novi, MI 48375

**SUBJECT: Island Lake Phase 8, JSP13-0069,  
Traffic Review of Revised Preliminary Site Plan, PSP13-0182**

Dear Ms. McBeth:

At your request, we have reviewed the above and offer the following recommendation and supporting comments.

**Recommendation**

We recommend approval, subject to the items shown below in **bold** being satisfactorily addressed by the final site plan.

**Site Description**

What is the applicant proposing, and what are the surrounding land uses and road network?

1. The applicant is proposing a 45-home expansion of the Island Lake RUD. This phase will provide a new access point on Ten Mile as well as have street connections to Phase 5B to the north and Phase 5C to the east. There is a large wetland between the proposed new home sites and Napier Road to the west.
2. Ten Mile Road is a 50-mph two-lane arterial under the jurisdiction of the Road Commission for Oakland County. Based on 2011 traffic counts, this section of Ten Mile is now carrying at least 10,000 vehicles per day.

**Traffic Study and Trip Generation**

Was a traffic study submitted and was it acceptable? How much new traffic would be generated?

3. Forty-five single-family homes can be expected to generate 504 daily one-way trips, 41 in the AM peak hour (10 entering and 31 exiting) and 51 in the PM peak hour (32 entering and 19 exiting). Given the proposed connection to Island Lake Phase 5B, additional traffic from/to that phase can be expected to use the new access point on Ten Mile Road (e.g., traffic generated by 65 Phase 5B homes going to and from points west).
4. A traffic study for Phase 8 is unwarranted. As noted in our pre-application comments, however, our analysis shows that a left-turn lane will be required to safely serve left turns into the development. In response, the applicant now proposes such a road improvement.

### Vehicular Access Locations

Do the proposed “driveway” locations meet City spacing standards?

5. Yes. The nearest existing driveway of any significance is Terra Del Mar Drive, approximately 1,050 ft to the east.

### Vehicular Access Improvements

Will there be any improvements to the abutting road(s) at the proposed access point(s)?

6. A 50-ft-long westbound right-turn lane has been proposed. This length appears appropriate given the speed limit and moderate volume of entering right-turn traffic in the PM peak hour.
7. **The proposed widening of Ten Mile for the required eastbound center left-turn lane is still designed incorrectly. As pointed out in our review letter of November 6, the new street’s effective centerline is the east curb of the boulevard island. The center lane should run from 150 ft west of that reference to 35 ft east (the revised plan under review references the island’s west curb rather than its east curb).**
8. **The final site plan should include a separate sheet showing MMUTCD-compliant pavement markings associated with the proposed widening of Ten Mile along the site frontage. RCOC should be consulted to see whether or not it wants any special treatment between the center-lane taper striping (e.g., crosshatching or a corrugated divider).**

### Access Drive Design and Control

Are the proposed design, pavement markings, and signage satisfactory?

9. The proposed boulevard island would be 100 ft long, the City-maximum length. The back-to-back island width would be 16 ft, more than the City standard of 10 ft but within the allowable range of 8-24 ft. **Per DCS Figure IX.3, the applicant must show cause for proposing an island width different than the City standard.**
10. **The final site plan should specify the striping of the proposed crosswalk at Ten Mile Road (assuming City Engineering approves its use at this location). The final site plan should also propose minimal signing – a STOP sign 4 ft in advance of the crosswalk and a diagrammatic Keep Right sign at each end of the boulevard island – and include such signing in the overall Signing Quantities Table (which will also include other signing internal to the site).**

### Pedestrian Access

Are pedestrians safely and reasonably accommodated?

11. The proposed sidewalk stubs on both sides of the internal intersections are consistent with the “Complete Streets” philosophy and commendable. However, **ramps need to be shown in all sidewalk stubs as well as at the crosswalk at Ten Mile.**

### Circulation and Parking

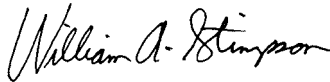
Can vehicles safely and conveniently maneuver through the site?

12. Overlook Court would be 1,000 ft long, the longest cul-de-sac allowed in a R-A zoning district having a zoning option decreasing lot size below the R-A minimum (e.g., within Island Lake).
13. It appears that all necessary plan-view dimensions related to the proposed street system (road widths, street centerline radii, and curb return radii) are included and meet City standards, with the exception of the two 20-ft-wide traffic calming chokers. **A City Council variance of the local-street width standard (28 ft) will be required for the chokers.**
14. **The final site plan will need to propose City-standard street-name signing at each intersection; a YIELD (R1-2) sign on each minor approach; City-standard Keep Right and No Parking signing on the cul-de-sac turnaround islands; and a 25-mph speed limit (R2-1(25)) sign on the property line between lots 44 and 45. All signing needs should be summarized in a Signing Quantities Table.**

Sincerely,  
CLEARZONING, INC.



Rodney L. Arroyo, AICP  
President



William A. Stimpson, P.E.  
Director of Traffic Engineering

## LANDSCAPE REVIEW

---



**PLAN REVIEW CENTER REPORT**  
November 25, 2013  
**Revised Preliminary Landscape Review**  
Island Lake Phase 8 - JSP13-69

**Petitioner**

Toll Brothers, Inc.

**Review Type**

RUD Amendment and Revised Preliminary Site Plan

**Property Characteristics**

Site Location: Northeast corner of Ten Mile Road and Napier Roads (Section 19)  
Site Zoning: RA, Residential Acreage  
Adjoining Zoning: North and East: RA with RUD; South: RA and R-1; West: Lyon Township R-2.5 Agricultural Residential  
Current Site Use: Vacant  
Adjoining Uses: North and East: Single-family residential/Existing RUD; South: Links of Novi golf course and church; West: Lyon Township Agricultural  
School District: South Lyon Community Schools  
Site Size: 48.95 acres  
Plan Date: 11-22-2013

**Recommendation**

**Approval of the RUD Plan and Preliminary Site Plan for Island Lake Phase 8 - JSP#13-69 is recommended.**

Please address the concerns noted below upon subsequent submittal. Please respond in writing to document any site plan revisions made in regard to the concerns listed below.

**Ordinance Considerations**

**Adjacent to Residential – Buffer (Sec. 2509.3.a.)**

1. The property is adjacent to residential properties on all sides. No buffer is required.

**Adjacent to Public Rights-of-Way – Berm (Wall) & Buffer (Sec. 2509.3.b.)**

1. A 3' tall landscape buffer berm is required along the Ten Mile and Napier Road frontages. However, due to the existing vegetation, wetlands and distance of the proposed lots from the roads, this may not be prudent for the entire frontages. Staff recommends that a landscaped berm only be provided along the Ten Mile frontage of lots 1, 2, and 45. **The Planning Commission may grant a waiver for the remainder of the frontages. Staff would support the waiver.**
2. One canopy tree per 35 l.f. is required along the berm area. This requirement has been met.

3. One subcanopy tree per 20 l.f. is required along the berm area. This requirement has been met.

**Street Tree Requirements (Sec. 2509.3.b.)**

1. One street tree is required per 35 l.f. of road frontage. This requirement has been met for the interior roadway. Vegetation along the exterior main roads will be maintained.

**Parking Landscape (Sec. 2509.3.c.)**

1. No parking areas are proposed.

**Building Foundation Landscape (Sec. 2509.3.d.)**

1. Only single family residences are proposed. No foundation landscape is required under the ordinance.

**Plant List (LDM)**

1. The Plant List meets the requirements of the Ordinance and Landscape Design Manual.

**Planting Details & Notations (LDM)**

1. Planting Details and Notations meet the requirements of the Ordinance and Landscape Design Manual.

**Storm Basin Landscape (Sec. 2509.3.e.(4)) & LDM)**

1. A total of 70% to 75% of storm basin rims are required to be planted with large shrubs. While the Applicant has placed trees around the basins, they must add groupings of shrubs to meet the requirement.

**Irrigation (Sec. 2509 3.f.(6)(b))**

1. All landscape areas are required to be irrigated.

**General**

1. Please see woodland and wetland reviews for additional comments.

Please follow guidelines of the Zoning Ordinance and Landscape Design Guidelines. This review is a summary and not intended to substitute for any Ordinance. For the landscape requirements, see the Zoning Ordinance landscape section on 2509, Landscape Design Manual and the appropriate items in the applicable zoning classification. Also see the Woodland and Wetland review comments.

Reviewed by: David R. Beschke, RLA



### Financial Requirements Review

To be completed at time of Final Site Plan Review.

Item	Amount	Verified	Adjustment	Comments
Full Landscape Cost Estimate	\$ 130,884			Includes street trees. Does not include irrigation costs.
Final Landscape Review Fee	\$ 1,963.26			1.5% of full cost estimate Any adjustments to the fee must be paid in full prior to stamping set submittal.

### Financial Requirements (Bonds & Inspections)

Item	Required	Amount	Verified	Comments
Landscape Cost Estimate	YES	\$ 69,684		Does not include street trees. Includes irrigation.
Landscape Financial Guaranty	YES	\$ 104,526		This financial guarantee is based upon 150% of the verified cost estimate. For Commercial, this letter of credit is due prior to the issuance of a Temporary Certificate of Occupancy. For Residential this is letter of credit is due prior to pre-construction meeting.
Landscape Inspection Fee (Development Review Fee Schedule 3/15/99)	YES	\$ 4,181.04		For projects up to \$250,000, this fee is \$500 or 6 % of the amount of the Landscape cost estimate, whichever is greater.  This cash or check is due prior to the Pre-Construction meeting.
Landscape Administration Fee (Development Review Fee Schedule 3/15/99)	YES	\$ 627.15		This fee is 15% of the Landscape Inspection Fee. This cash or check is due prior to the Pre-Construction meeting.
Transformer Financial Guarantee	NO	\$ 0		\$500 per transformer if not included above. For Commercial this letter of credit is due prior to the issuance of a Temporary Certificate of Occupancy. For Residential this is letter of credit is due prior to pre-construction meeting.
Street Tree Financial Guaranty	YES	\$ 61,200		\$400 per tree.
Street Tree Inspection Fee	YES	\$ 3,672		6% of the Street Tree Bond as listed above.
Street tree Maintenance Fee	YES	\$ 3,825		\$25 per tree.
Landscape Maintenance Bond	YES	\$ 6,968.40		10% of verified cost estimate due prior to release of Financial Guaranty.

WOODLAND REVIEW

---



**Environmental Consulting & Technology, Inc.**

November 27, 2013

Ms. Barbara McBeth  
Deputy Director of Community Development  
City of Novi  
45175 West Ten Mile Road  
Novi, MI 48375

Re: Island Lake Phase 8 (JSP13-0069)  
The Preserve at Island Lake  
Woodland Review of the Revised Preliminary Site Plan (PSP13-0182)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Revised Preliminary Site Plan (Plan) for the proposed *The Preserve at Island Lake - Phase 8* project prepared by Alpine Engineering, Inc. dated November 21, 2013 and stamped "Received" by the City of Novi on November 22, 2013. The Plan was reviewed for conformance with the City of Novi Woodland Protection Ordinance Chapter 37.

The proposed development is located northeast of the intersection of Ten Mile Road and Napier Road in Section 19. The proposed project involves the construction of a 45-unit site condominium development, associated roads and utilities and storm water detention basin.

What follows is a summary of our findings regarding on-site woodlands associated with the proposed project.

**Onsite Woodland Evaluation**

ECT has reviewed the City of Novi Official Woodlands Map and completed an onsite woodland evaluation on Wednesday, October 23, 2013.

The entire site is approximately 49 acres with regulated woodland mapped across the majority of the property (see Figure 1). The site contains sections of old field as well as relatively immature forest and forested wetlands on the west side of the site (along Napier Road). On-site woodland is dominated by black cherry, American basswood, silver maple, box elder, American elm and several other species.

The surveyed trees have been marked with either metal tags hung on fishing line, or with spray paint, allowing ECT to compare the tree diameters reported on the *Tree List* to the existing tree diameters in the field. ECT took numerous diameter-at-breast-height (d.b.h.) measurements and found that some of the data provided in the *Tree Lists* was at times inconsistent with the field measurements.

2200 Commonwealth  
Blvd., Suite 300  
Ann Arbor, MI  
48105

(734)  
769-3004

FAX (734)  
769-3164

A number of inconsistencies that were indicated in our Woodland Review of the Preliminary Site Plan dated November 13, 2013 have now been corrected by the Applicant's Landscape Consultant.

**Proposed Woodland Impacts**

Per the *Woodland Summary* calculations on Sheet L-6 the Plan proposes the removal of **235** regulated trees with d.b.h. greater than or equal to 8 inches, requiring a total of **343** replacement credits.

Discrepancies appear to exist between the information provided in the summary tables and that shown in the *Tree List* information provided on Sheets L-5 and L-6.

Assessment of the *Tree List* information by ECT indicates that a total of 328 Woodland Replacements are required (*i.e., this quantity has been calculated by ECT*). This result appears to be in conflict with the quantities provided by the Applicant in the summary tables. **ECT encourages the Applicant to provide a column on the *Tree List* (Sheets L-5 and L-6) that provides the Woodland Replacements Required for each proposed tree removal. ECT suggests that the Applicant review and revise the Woodland Replacement requirements as necessary. It should be noted that any individual stems of multi-stemmed trees that are less than 8 inches d.b.h. are not included in the calculation of required Woodland Replacements. This is likely leading to the discrepancy in the required Woodland Replacement quantity.**

Please note that the City of Novi requires replacements according to the following Table:

***Replacement Tree Requirements Table***

Removed Tree D.B.H. (In Inches)	Ratio Replacement/ Removed Tree
$\geq 8 \leq 11$	1
$> 11 \leq 20$	2
$> 20 \leq 29$	3
$\geq 30$	4

As noted in our previous woodland review letter, for multi-stemmed trees, Woodland Replacements required are calculated by summing the d.b.h. of each stem greater than or equal

to 8 inches and dividing the total by 8. All fractional Woodland Replacements required are rounded up to the nearest whole tree replacement. Again, stems less than 8-inches d.b.h. are not included.

#### **Woodland Impact Review**

Per summary calculations in the *Woodland Summary* (Sheet L-6), the Plan proposes the removal of **235** regulated trees with d.b.h. greater than or equal to 8 inches, requiring a total of **343** replacement credits.

After review of the *Tree List* (Sheets L-5 and L-6) as well as a spreadsheet provided by the Applicant's Landscape Consultant, ECT concurs with the total of 235 regulated trees to be removed. However, as noted above, ECT tallied a total of **328** Woodland Replacement Trees required. This number is not consistent with the number of Woodland Replacements required as indicated on the Plan.

#### **Comments**

1. A Woodland Permit from the City of Novi would be required for proposed impacts to any trees 8-inch d.b.h. or greater. Such trees shall be relocated or replaced by the permit grantee. All replacement trees shall be two and one-half (2 ½) inches caliper or greater.
  
2. There appear to be several items on the *Landscape Plan* (Sheet L-1) that appear to require revision:
  - a. The *Plant List – Woodland Replacement Trees* indicates a total of 392 Woodland Replacement Trees provided (98 evergreen trees and 294 deciduous trees). A tally of the deciduous trees in list appears to result in 293 deciduous trees. Please review and revise as necessary.

Island Lake Phase 8 (JSP13-0069)  
The Preserve at Island Lake  
Woodland Review of the Revised Preliminary Site Plan (PSP13-0182)  
November 27, 2013  
Page 4 of 5

**Recommendation**

ECT recommends conditional approval of the Revised Preliminary Site Plan with the condition that the Applicant address the items noted above under "Comments" in subsequent site plan submittals.

If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,

**ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.**



Pete Hill, P.E.  
Senior Associate Engineer

cc: David Beschke, City of Novi, Licensed Landscape Architect  
Kristen Kapelanski, AICP, City of Novi Planner  
Angela Pawlowski, City of Novi, Senior Customer Service  
Sara Roediger, City of Novi Planner

**Figure 1.** City of Novi Regulated Woodlands Map (Accessed October 31, 2013).  
Regulated Woodland areas shown in light green and approximate property boundary shown in red.



WETLAND REVIEW

---





**Environmental Consulting & Technology, Inc.**

November 27, 2013

Ms. Barbara McBeth  
Deputy Director of Community Development  
City of Novi  
45175 W. Ten Mile Road  
Novi, Michigan 48375

Re: Island Lake Phase 8 (JSP13-0069)  
The Preserve at Island Lake  
Wetland Review of the Revised Preliminary Site Plan (PSP13-0182)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Revised Preliminary Site Plan (Plan) for the proposed *The Preserve at Island Lake - Phase 8* project prepared by Alpine Engineering, Inc. dated November 21, 2013 and stamped "Received" by the City of Novi on November 22, 2013. The Plan was reviewed for conformance with the City of Novi Wetland and Watercourse Protection Ordinance and the natural features setback provisions in the Zoning Ordinance. ECT previously visited the site on Tuesday, July 16, 2013 with the Applicant's wetland consultant (King & MacGregor Environmental) for the purpose of a Wetland Boundary Delineation.

The proposed development is located northeast of the intersection of Ten Mile Road and Napier Road in Section 19. The proposed project involves the construction of a 45-unit site condominium development, associated roads and utilities and storm water detention basin.

During the Wetland Boundary Delineation, seven areas of on-site wetland were delineated and flagged. The wetlands include:

- Wetland "C" – (Flags C1 through C5);
- Wetland "D" – (Flags D1 through D5);
- Wetland "E" – (Flags E1 through E6);
- Wetland "F" – (Flags F1 through F10);
- Wetland "G" – (Flags G1 through G13);
- Wetland "H" – (Flags H1 through H152, with upland inclusion J-1 through J-30);
- Wetland "I" – (Flags I1 through I145).

The wetlands were clearly marked with survey tape flags at the time of our inspection. Wetlands C, D, E, F and G are emergent wetlands and Wetlands H and I are forested and scrub/shrub wetlands.

The wetland boundaries appear to be accurately depicted on the Plan.

2200 Commonwealth  
Blvd., Suite 300  
Ann Arbor, MI  
48105

(734)  
769-3004

FAX (734)  
769-3164

An Equal Opportunity/Affirmative Action Employer  
[www.ectinc.com](http://www.ectinc.com)

What follows is a summary of our findings regarding on-site wetlands associated with the proposed project.

**Wetland Impact Review**

As previously noted, seven (7) areas of wetland exist on this parcel totaling 7.21 acres of wetland (wetland locations are shown in Figure 1, attached). The following table summarizes the existing wetlands and the proposed wetland impacts as listed on the *Preliminary Site Plan Overall Grading Plan* (Sheet 9):

**Table 1. Proposed Wetland Impacts**

<b>Wetland Area</b>	<b>Wetland Area (acres)</b>	<b>City Regulated?</b>	<b>MDEQ Regulated?</b>	<b>Impact Area (acre)</b>	<b>Estimated Impact Volume (cubic yards)</b>
C	0.01	Yes City Regulated /Essential	No	0.01	60
D	0.02	Yes City Regulated /Essential	No	0.02	100
E	0.02	Yes City Regulated /Essential	No	0.02	110
F	0.04	Yes City Regulated /Essential	No	0.04	210
G	0.06	Yes City Regulated /Essential	No	0.06	290
H	6.48	Yes City Regulated /Essential	Yes	0.01	60
I	0.58	Yes City Regulated /Essential	Yes	0.14	690
<b>TOTAL</b>	<b>7.21</b>	--	--	<b>0.30</b>	<b>1,520</b>

The impacts to Wetlands C, D, E, F, and G are proposed for the purpose of constructing Lots and sections of proposed Nepavine Drive. The impacts to Wetland I are located within the Ten Mile Road right-of-way and are for the purpose of entrance drive/approach construction. The proposed impacts to Wetland H appear to be temporary and are for the purpose of boardwalk crossings.

Impacts to Wetland I have increased slightly from the previous plan submittal. The proposed area of impact has increased from 0.09-acre to 0.14-acre. The proposed fill volume has increased from 440 cubic yards to 690 cubic yards. The Applicant states that the impact values

were adjusted to account for road shoulder and backslope that may be required per the Road Commission of Oakland County (RCOC). It is also stated that the intent of the final impact will be to minimize impacts to wetland, subject to RCOC and City of Novi requirements for proposed lane widening along the entrance at 10 Mile Road.

It should also be noted that the Plan specifies temporary wetland Impacts for construction of water main along Ten Mile Road as well as two different proposed boardwalk/path options along the southwestern section of the site. Proposed Path Option A includes a 260+ foot wetland boardwalk along the Napier Road Right-of-Way through Wetland H. Proposed Path Option B includes a wetland boardwalk that is approximately 40 lineal feet long within Wetland H. From the standpoint of minimizing proposed (temporary) impacts to wetland, Proposed Path Option B would involve less wetland impact (i.e., shorter wetland crossing). In addition, due to the longer wetland span length, Proposed Wetland Path A may require additional tree removals within Wetland H.

In addition to wetland impacts, the Plan also specifies impacts to the 25-foot natural features setbacks. The following table summarizes the existing wetland setbacks and the proposed wetland setback impacts as listed on the *Preliminary Site Plan Overall Grading Plan* (Sheet 9):

**Table 1. Proposed Wetland Buffer Impacts**

<b>Wetland Setback/Buffer Area</b>	<b>Wetland Buffer Area (acres)</b>	<b>Impact Area (acre)</b>	<b>Estimated Impact Volume (cubic yards)</b>
C	0.11	0.11	350
D	0.12	0.12	390
E	0.12	0.12	400
F	0.16	0.16	510
G	0.18	0.18	600
H	2.89	0.13	150
I	0.76	0.45	1,270
<b>TOTAL</b>	<b>4.34</b>	<b>1.27</b>	<b>3,670</b>

**Comments**

Please consider the following comments when preparing the Final Site Plan:

1. Section 12-173 (*Review of applications*) of the Wetlands and Watercourse Protection Ordinance (Chapter 12 – *Drainage and Flood Damage Prevention*) states:

*When an activity results in the impairment or destruction of wetland areas of one-quarter acre or greater that are determined to be: (1) essential under subsection 12-174(b); (2) two (2) acres in size or greater; or (3) contiguous to a lake, pond, river or stream, mitigation shall be required, in accordance with section 12-176. Where an activity results in the impairment or destruction of wetland areas of less than one-quarter acre that are determined to be essential under subsection 12-174(b), are two (2) acres in size or greater or are contiguous to a lake, pond, river or stream, additional planting or other environmental enhancement shall be required onsite within the wetlands or wetland and watercourse setback where the same can be done within the wetland and without disturbing further areas of the site.*

Because the current Plan includes 0.30-acre of wetland impacts, wetland mitigation will likely be a requirement of the City of Novi Wetland and Watercourse Permit. The Applicant should prepare to address this requirement in future site plan submittals. The requirements for mitigation are outlined in Section 12-176 (*Mitigation*) of the Wetlands and Watercourse Protection Ordinance (Chapter 12 – *Drainage and Flood Damage Prevention*). Permanent impacts to emergent wetland and scrub/shrub wetlands shall be mitigated at a 1.5:1 ratio and impacts to forested wetlands shall be mitigated at a 2:1 ratio.

The Applicant states that wetland mitigation requirements will be determined during Final Site Plan. The location of mitigation areas, if required, are proposed to be located adjacent to Wetland H and may consist of several areas or one large area, subject to final alignment of walking path and available space for mitigation.

2. It should be noted that it is the Applicant's responsibility to confirm the need for a Permit from the MDEQ for any proposed wetland impact. Final determination as to the regulatory status of each of the on-site wetlands shall be made by MDEQ.

The Applicant should provide a copy of the MDEQ Wetland Use Permit application to the City (and our office) for review and a copy of the approved permit upon issuance. A City of Novi Wetland Permit cannot be issued prior to receiving this information. Based on a search of the MDEQ's Coastal and Inland Waters Permit Information System (CIWPIS), there does not appear to be an active file associated with this project location.

### **Permits & Regulatory Status**

All of the wetlands appear to be considered essential wetlands and regulated by the City of Novi. Wetlands H and I appear to be MDEQ regulated as well. Wetland H appears to be regulated due to its size (greater than 5 acres) and both Wetland H and Wetland I appear to be within 500 lineal feet of an unnamed stream or drain that is located in the southwest portion of the site.

All of the wetlands appear to be considered essential by the City as they appear to meet one or more of the essentiality criteria set forth in the City's Wetland and Watercourse Protection Ordinance (i.e., storm water storage/flood control, wildlife habitat, etc.). This information has been noted in the *Proposed Wetland Impacts* table, above.

The project as proposed will require a City of Novi *Wetland Non-Minor Use Permit* as well as an *Authorization to Encroach the 25-Foot Natural Features Setback*. This permit and authorization are required for the proposed impacts to wetlands and regulated wetland setbacks.

It appears that a MDEQ Wetland Permit is required for the proposed impacts to Wetland I along the Ten Mile Road entrance approach as well as for the proposed installation of boardwalks within Wetland H. In addition, the discharge of storm water to Wetland H may require a permit as well. Impacts to Wetland I have been revised

**Recommendation**

ECT recommends conditional approval of the Revised Preliminary Site Plan with the condition that the Applicant address the items noted above under "Comments" in subsequent site plan submittals.

If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,

**ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.**

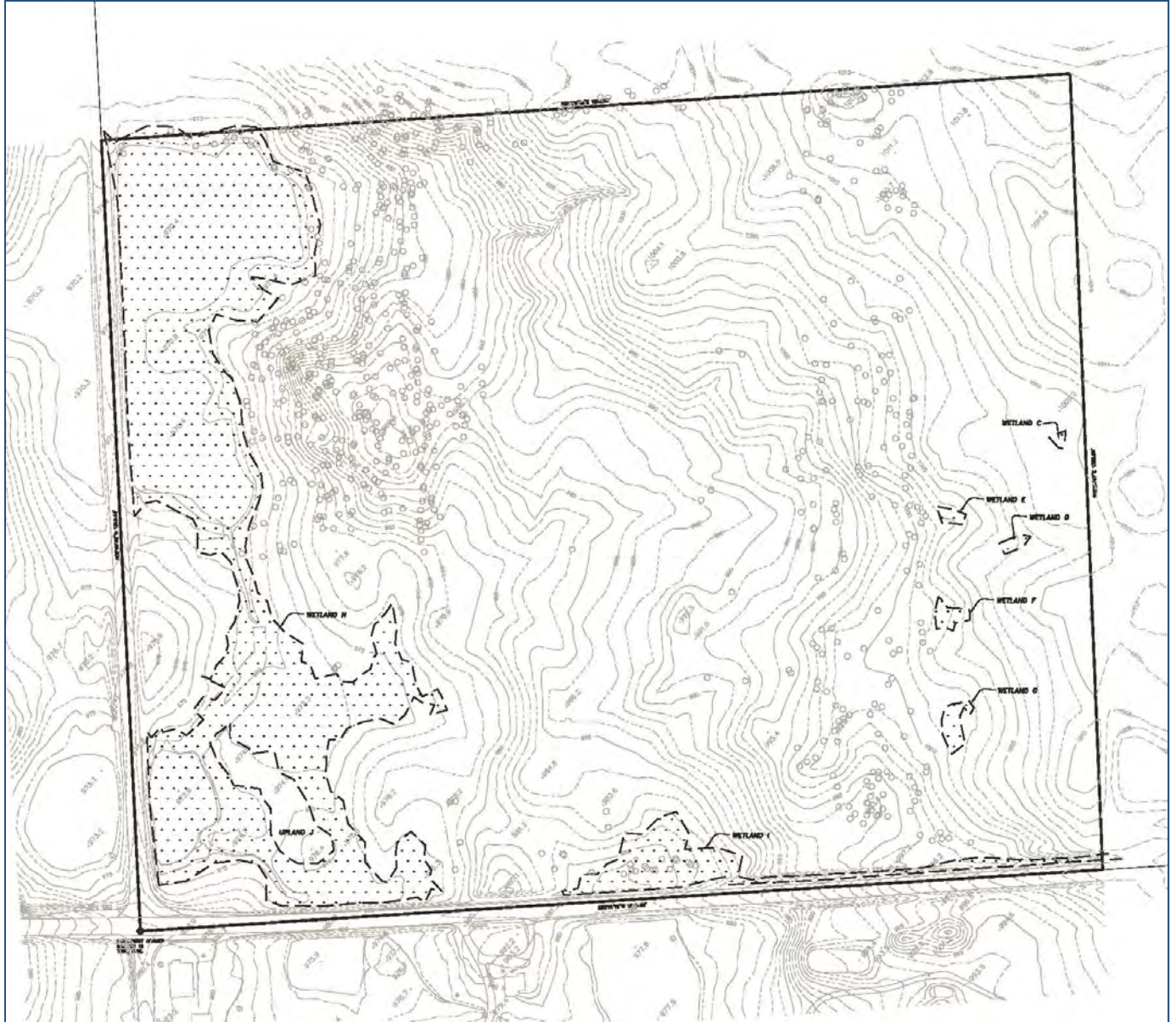


Pete Hill, P.E.  
Senior Associate Engineer

cc: David Beschke, City of Novi, Licensed Landscape Architect  
Kristen Kapelanski, AICP, City of Novi Planner  
Angela Pawlowski, City of Novi, Senior Customer Service  
Sara Roediger, City of Novi Planner

Attachments: Figure 1

**Figure 1. Approximate wetland locations (portion of Overall Topographic Survey, prepared by Alpine Engineering and dated September 23, 2013).**



**FIRE REVIEW**

---



October 28, 2013

December 2, 2013

TO: Barbara McBeth, Deputy Director of Community Development  
Kristen Kapelanski- Plan Review Center  
Sara Roediger- Plan Review Center

RE: The Preserves at Island Lake (Phase 8)

PSP#: 13-0172

**PSP#: 13-0182**

**CITY COUNCIL**

**Mayor**

Bob Gatt

**Mayor Pro Tem**

Dave Staudt

Terry K. Margolis

Andrew Mutch

Justin Fischer

Wayne Wrobel

Laura Marie Casey

**City Manager**

Clay J. Pearson

**Director of Public Safety**

**Chief of Police**

David E. Molloy

**Director of EMS/Fire Operations**

Jeffery R. Johnson

**Assistant Chief of Police**

Victor C.M. Lauria

**Assistant Chief of Police**

Jerrold S. Hart

**Project Description:**

Phase 8 at Island Lake consisting of 45 single family homes.

**Comments:**

Site plan consistent with FD standards

**Recommendation:**

Recommended for Approval.

Sincerely,

Joseph Shelton- Fire Marshal  
City of Novi – Fire Dept.

cc: file

**Novi Public Safety Administration**

45125 W. Ten Mile Road

Novi, Michigan 48375

248.348.7100

248.347.0590 fax

cityofnovi.org



APPLICANT RESPONSE LETTER

---

December 3, 2013

Sara Roediger, AICP  
City of Novi Community Development Department  
45175 West 10 Mile Road  
Novi, Michigan 48375

Re: **Island Lake RUD Expansion "The Preserve at Island Lake"**  
**Response to Preliminary Site Plan Comments**  
**City of Novi, Oakland County**  
**(AEI Project #13-260; Novi Project #JSP13-69)**

Dear Sara:

We offer the below comments, on behalf of our client, to several key topics with regards to the Novi review package dated December 2, 2013. Additional plan revisions will be made to satisfy City Departments at a later date during the Final Site Plan process as indicated in the review package.

**Planning Review (December 2, 2013)**

Review recommends approval of the Amended RUD Plan and Agreement and of the Preliminary Site Plan. Items listed in the review letter will be addressed at Final Site Plan.

1. Page 5, Item #5: A City Council variance is respectfully requested for public pathways proposed outside of the Ten Mile Road and Napier Road right-of-way due to the significant amount of wetland impacts that would result from construction of a pathway within the right-of-way. In addition to the City engineering department requested alignment (parallel to Napier Road, shown as Option 'A'), a second alignment is shown for City consideration (Option 'B') that requires less wetland impacts and boardwalk construction.

**Engineering Review (December 2, 2013)**

Review recommends approval of the Preliminary Site Plan and Preliminary Storm Water Management Plan. Items listed in the review letter will be addressed at Final Site Plan.

2. Page 2, Item #3: A variance is requested to locate power and communication facilities in front yards to preserve rear yard woodlands and or wetlands. Proposed power and communication facility easements will be shown on the Final Site Plan for review and consideration.
3. Page 3, Item #13: Storm sewer profiles will be provided on the Final Site Plan. If there are areas where 3 feet of minimum cover to the top of pipe cannot be obtained, they will be identified for City review.
4. Page 3, Item #18: Variance request for reduced pavement width of 20 feet at the traffic calming device versus standard 28 foot pavement width is listed in the RUD Agreement and on page 3, Preliminary Site Plan. Additional information will be provided at Final Site Plan stage as requested in the City Engineering review letter.
5. Page 3, Item #19: Variance request for public pathways proposed outside of the Ten Mile Road and Napier Road right-of-way due to the significant amount of wetland

impacts that would result from construction of a pathway within the right-of-way are listed in the RUD Agreement and on page 3, Preliminary Site Plan. Additional information will be provided at Final Site Plan stage as requested in the City Engineering review letter.

**Memorandum – Drake’s Bay System Capacity Analysis (Nov. 7, 2013)**

6. It is noted that per the Drake’s Bay System Capacity Analysis, improvements to the pumps at Drake’s Bay are required to accommodate the proposed development to which extent will be determined during the Final Site Planning process.

**ClearZoning Review (December 2, 2013)**

Review recommends approval of the Preliminary Site Plan, subject to several items being addressed at the time of Final Site Plan. Items listed in the review letter will be addressed at Final Site Plan.

**Preliminary Landscape Review (November 25, 2013)**

Review recommends approval of the RUD Plan and Preliminary Site Plan. Items listed in the review letter will be addressed at Final Site Plan.

Planning Commission waiver is requested that a landscape berm only be provided along the Ten Mile frontage of lots 1, 2, and 45.

**Wetlands Review (ECT; November 27, 2013)**

Review recommends approval of the Preliminary Site Plan. Items listed in the review letter will be addressed at Final Site Plan.

**Woodlands Review (ECT; November 27, 2013)**

Review recommends approval of the Preliminary Site Plan. Items listed in the review letter will be addressed at Final Site Plan.

**Fire Marshal Review (December 2, 2013)**

Review recommends approval of the Preliminary Site Plan.

If you have any questions please feel free to call our office at (248) 926-3701.

Regards,  
Alpine Engineering, Inc.

  
Tom Gizoni, PE

Enclosures:

cc: Mike Noles, Toll Bros., Inc.  
Jason Minock, Toll Bros., Inc.

7<sup>th</sup> AMENDMENT TO RUD AGREEMENT WITH EXHIBITS

Exhibit A Parcel Descriptions

Exhibit B Subject Property Description

Exhibit C Area Plan

Exhibit D Revised Open Space Summary, Revised Land Use Summary and Summary of  
Proposed Amendment

---

**SEVENTH AMENDMENT TO  
RESIDENTIAL UNIT DEVELOPMENT AGREEMENT**

**ISLAND LAKE OF NOVI (FORMERLY KNOWN AS "HARVEST LAKE OF NOVI")**

This Seventh Amendment to Residential Unit Development Agreement (this "Seventh Amendment") is made and entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 2013, by and between the CITY OF NOVI, a Michigan municipal corporation (the "City"), whose address is 45175 W. Ten Mile Road, Novi, Michigan 48375, and TOLL MI II LIMITED PARTNERSHIP, a Michigan limited partnership ("Toll"), whose address is 29655 William K. Smith Dr., Suite B, New Hudson, Michigan 48165.

R E C I T A L S :

A. On or about February 9, 1998, the City entered into a certain Residential Unit Development Agreement (the "Original RUD Agreement") with Harvest Land Company, L.L.C., a Michigan limited liability company ("Harvest Land"), with respect to a certain development established and approved as a residential unit development pursuant to Section 2404 of the City of Novi Zoning Ordinance under the name "Harvest Lake of Novi". The Original RUD Agreement was recorded on March 31, 1998 at Liber 18279, Pages 716 through 855, both inclusive, Oakland County Records. The land included in the Harvest Lake of Novi Residential Unit Development (now known as the "Island Lake of Novi Residential Unit Development" and hereinafter referred to as the "RUD") is legally described in the attached Exhibit "A".

B. On or about July 22, 1999, the City entered into a certain First Amendment of Residential Unit Development Agreement (the "First Amendment") with Harvest Land pursuant to Section 2404.17 of the City of Novi Zoning Ordinance to amend certain aspects of the area plan for the RUD. The First Amendment was recorded at Liber 20818, Pages 15 through 40, both inclusive, Oakland County Records.

C. On or about November 1, 1999, Toll acquired the land then included in the RUD, except for approximately 104.2 acres located east of Wixom Road acquired by the City and the Novi Community School District for development as a city park and as elementary and middle schools. Toll also accepted all of the rights, interests and obligations granted and imposed on the owners of land in the RUD with the execution of the Original RUD Agreement and the First Amendment by Harvest Land.

D. After acquiring title to the residential development portions of the RUD and the rights of the property owners under the Original RUD Agreement, as amended, Toll secured the City's approval of a change in the name of the RUD to "Island Lake of Novi" as permitted by paragraph 2 of the aforesaid First Amendment.

E. On or about April 7, 2003, the City and Toll entered into a certain Second Amendment to the Residential Unit Development Agreement (the "Second Amendment") to reflect the addition of certain land to the RUD and certain other aspects of the RUD related to the configuration of the roads and walkways and related improvements. The Second Amendment was recorded at Liber 29801, Pages 7 through 23, both inclusive, Oakland County Records. The land added to the RUD pursuant to the Second Amendment is also legally described in the attached Exhibit "A".

F. On or about July 21, 2003, the City and Toll entered into a certain Third Amendment to the Residential Unit Development Agreement (the "Third Amendment") to reflect the amendment to the Phasing Plan set forth in the Original RUD Agreement. The Third Amendment was recorded at Liber 30402, Pages 1 through 15, both inclusive, Oakland County Records.

G. On or about February 11, 2005, the City and Toll entered into a certain Fourth Amendment to the Residential Unit Development Agreement (the "Fourth Amendment") to provide for the removal, reconstruction and rehabilitation of an existing 1860's era barn from its original site within the open park area located near the southwest corner of the lake known as "Island Lake" to a new site within Maybury State Park in Northville Township or to another site acceptable to both the City and Toll.

H. On or about March 5, 2005, the City and Toll entered into a certain Fifth Amendment to the Residential Unit Development Agreement (the "Fifth Amendment") to reflect the addition of certain land, approximately ten (10) acres in area located on Ten Mile Road and immediately adjacent to a portion of Phase 4 of the RUD, to the RUD and certain other aspects of the RUD related to the configuration of the roads and walkways and related improvements. The Fifth Amendment was recorded at Liber 35126, Pages 773 through 794, both inclusive, Oakland County Records.

I. On or about April 16, 2013, the City and Toll entered into a certain Sixth Amendment to the Residential Unit Development Agreement (the "Sixth Amendment") to reflect the addition of certain land, approximately forty (40) acres in area located north of Ten Mile Road and east of Wixom Rd. and immediately adjacent to Phase 3C of the RUD, to the RUD and certain other aspects of the RUD related to the configuration of the roads and walkways and related improvements. The Sixth Amendment was recorded at Liber 45833, Pages 95 in the Oakland County Records.

J. Since undertaking the development of the RUD, Toll has acquired a parcel of land measuring approximately forty-nine (49) acres in area located north of Ten Mile Road and east of Napier Rd. and immediately adjacent to Phases 4B-1 and 5B of the RUD. The portion of Phases 4B-1 and 5B located adjacent to the forty-nine (49) acre parcel (referred to herein as the "Additional Parcel") has been developed as site condominium units and related open space as part of an established condominium project known as "Island Lake Orchards" and identified as Oakland County Condominium Subdivision Plan 1552. The Additional Parcel is legally described in the attached Exhibit "B".

K. Upon determining that including the Additional Parcel in the RUD would further the objectives of the RUD, Toll applied for and obtained the approval of the Novi City Council for the addition of the Additional Parcel to the RUD as documented by the minutes of the \_\_\_\_\_, 2013 meeting of the Novi City Council.

L. Toll and the City now wish to further amend the Original RUD Agreement to include the Additional Parcel in the Original RUD Agreement, as amended, consistent with the revised RUD and to document the terms and conditions applicable to the revised RUD.

NOW, THEREFORE, in consideration for the mutual covenants provided herein, the parties agree as follows:

NOW, THEREFORE, IT IS AGREED AS FOLLOWS.

1. Inclusion of the Additional Parcel in the RUD. The Additional Parcel described in Exhibit "B" attached hereto is hereby added to the RUD and the legal description of the RUD set forth in Exhibit "A" is hereby revised to include the land legally described in the attached Exhibit "B" (the "Revised RUD"). The location of the Additional Parcel in relation to the original RUD is depicted on the attached Exhibit "C".

2. Development of the Additional Parcel. The Additional Parcel shall be developed as the site of up to forty-five (45) site condominium units, each of which shall comprise the site of a single family home, consistent with the approved final site plan.

3. In requesting the Revised RUD Plan, Toll has expressed its intent to develop the Additional Parcel in conformance with the following undertakings and forbearances by Toll:

- a. Except as expressly set forth herein, Toll shall develop the Additional Parcel in accordance with all applicable ordinances and regulations. More specifically, except for the following deviations, no deviations from the provisions of the City's ordinances are contemplated;
  - i. The minimum lot size for the Additional Parcel shall be 12,000 sq. feet;
  - ii. The minimum lot width for the Additional Parcel shall be 90 feet;
  - iii. Building setbacks shall be consistent with the approved minimum lot sizes, as follows:
    - Front: 30 feet
    - Rear: 35 feet
    - Side: 10 feet
  - iv. Toll shall be permitted to discontinue the installation of berms in those locations that include existing mature vegetation and protected trees, as shown in the approved site plan and landscape plan for the Additional Parcel.
  - v. Toll shall be permitted to construct the walking path within the Additional Parcel as shown in the approved site plan, which will be subject to an easement for access by the general public.

- vi. Although power and communication facilities shall generally be located in the rear yard of the proposed lots, if necessary to preserve natural features (such as trees and/or wetlands), these facilities will be located across the lot's frontage.
- vii. Toll shall be permitted to install storm sewer with less than three feet of cover where necessary due to site constraints.
- viii. Toll shall be permitted to vary the standard road width dimension in order to install traffic calming measures at the connections to the existing stub roads. A 'choker' type calming measure shall be allowed where the road width is reduced for a short distance to encourage drivers to reduce speeds to negotiate the narrower roadway.
- ix. Toll shall be permitted to forego the requirement that an access point for every 1,300 feet of perimeter be constructed because of the presence of a significant wetland body limits road access from Napier Road.

Toll's right to develop the Additional Parcel shall be subject to and in accordance with all applications, reviews, approvals, permits, and requirements under applicable laws, ordinances, and regulations, including but not limited to, site plan approval, storm water management plan approval, woodland and wetland permit requirements, landscape plan approval, and engineering plan approval.

- b. The following conditions and undertakings shall be completed by Toll:
  - i. Toll shall set aside 45.3% of the Additional Parcel for the creation of open space, a portion of which shall be comprised of a passive recreation area, as shown in the approved landscape plan and final site plan for the Additional Parcel. Furthermore, Toll shall provide an appropriate easement or mechanism for ensuring the perpetual preservation and maintenance of the open space and recreation areas within the Master Deed for the Additional Parcel;
  - ii. Toll shall contribute to the amenities of Island Lake of Novi by constructing a new children's swimming pool and bike rack at the Island Lake of Novi clubhouse;
  - iii. Toll shall construct a sidewalk connection to the proposed Nepavine Drive Sidewalk and Kennebee Drive Sidewalk as shown in the approved final site plan; and
  - iv. Toll shall construct an extension to the existing pathway system through the internal open space parks as shown in the approved final site plan.

4. Amendment to Area Plan. The Area Plan for the RUD is hereby amended as described in the Summary of Proposed Amendment to the RUD (Island Lake of Novi Residential



Unit Development Draft Report Addendum October 17, 2013) to reflect the inclusion of the Additional Parcel as set forth herein; said Summary of Proposed Amendment being attached hereto as Exhibit "D". The Revised Open Space Summary per Revised Area Plan, October 17, 2013 and the Revised Land Use Summary by Phase per Revised Area Plan included in the attached Exhibit "D" hereby supersede all previous versions of those summaries to reflect the Area Plan as hereby amended.

5. Continuing Effect of Original RUD, as Amended. Except for the revisions described herein, the Original RUD Agreement, as amended by the First Amendment, Second Amendment, Third Amendment, Fourth Amendment, Fifth Amendment and Sixth Amendment thereto, shall remain in full force and effect.

[END OF DOCUMENT, SIGNATURES FOLLOW]

IN WITNESS WHEREOF, the parties hereto have executed this Seventh Amendment on the date first written above.

WITNESSES:

"CITY"

CITY OF NOVI, a Michigan municipal corporation

\_\_\_\_\_

By: \_\_\_\_\_  
Robert J. Gatt, Mayor

\_\_\_\_\_

By: \_\_\_\_\_  
Maryanne Cornelius, Clerk

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF OAKLAND    )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2013 by Robert J. Gatt, the Mayor, and Maryanne Cornelius, the Clerk, of the City of Novi, a Michigan municipal corporation, on behalf of the municipal corporation.

\_\_\_\_\_

\_\_\_\_\_

NOTARY PUBLIC  
County of \_\_\_\_\_, State of Michigan  
My Commission Expires:  
Acting in \_\_\_\_\_ County

[signature continue on next page]

"TOLL"

TOLL MI II LIMITED PARTNERSHIP, a Michigan limited partnership

By: Toll MI GP Corp., a Michigan corporation, General Partner

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_

STATE OF MICHIGAN     )  
  ) ss.  
COUNTY OF OAKLAND    )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2013 \_\_\_\_\_ of Toll MI GP Corp., a Michigan corporation, General Partner of Toll MI II Limited Partnership, a Michigan limited partnership, on behalf of the limited partnership.

\_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC  
County of \_\_\_\_\_, State of Michigan  
My Commission Expires:  
Acting in \_\_\_\_\_ County

THIS INSTRUMENT DRAFTED BY:

WHEN RECORDED RETURN TO:

Maryanne Cornelius, Clerk  
City of Novi  
45175 Ten Mile  
Novi, MI 48375

**EXHIBIT "A"**

**LAND INCLUDED IN THE ISLAND LAKE OF NOVI  
RESIDENTIAL UNIT DEVELOPMENT (FORMERLY KNOWN AS  
THE HARVEST LAKE OF NOVI RESIDENTIAL UNIT DEVELOPMENT)**

LAND LOCATED IN SECTIONS 17, 18, 19 AND 20, CITY OF NOVI, OAKLAND COUNTY, MICHIGAN AND COMPRISED OF TEN (10) PARCELS IDENTIFIED AS PARCELS "A" THROUGH "J", BOTH INCLUSIVE, AND LEGALLY DESCRIBED BY DESCRIPTIONS SET FORTH ON THE FOLLOWING FIVE (5) PAGES.

PARCEL "A"

A PARCEL OF LAND LOCATED IN PART OF THE N.E. 1/4 OF SECTION 18, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT A POINT DISTANT N. 89°23'05" W. 990.00 FEET ALONG THE EAST AND WEST 1/4 LINE OF SECTION 18 FROM THE EAST 1/4 CORNER OF SECTION 18; THENCE FROM SAID POINT OF BEGINNING AND CONTINUING ALONG SAID EAST AND WEST 1/4 LINE OF SECTION 18 N. 89°23'05" W. 1,658.14 FEET TO THE CENTER OF SECTION 18; THENCE N. 00°22'24" W. 312.35 FEET ALONG THE NORTH AND SOUTH 1/4 LINE OF SECTION 18; THENCE S. 89°23'05" E. 2,646.45 FEET; THENCE ALONG THE EAST LINE OF SECTION 18 AND CENTERLINE OF WIXOM ROAD (66 FEET WIDE) S. 00°41'00" E. 180.35 FEET; THENCE N. 89°23'05" W. 990.00 FEET; THENCE S. 00°41'00" E. 132.03 FEET TO THE POINT OF BEGINNING CONTAINING 15.98 ACRES OF LAND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OR ANY GOVERNMENTAL AGENCY OVER WIXOM ROAD.

PARCEL "B"

A PARCEL OF LAND LOCATED IN PART OF THE S.W. 1/4 OF SECTION 17, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT THE SOUTHWEST CORNER OF 17 AND PROCEEDING ALONG THE WEST LINE OF SECTION 17 AND CENTERLINE OF WIXOM ROAD (66 FEET WIDE) N. 00°40'10" W. (500.00 FEET RECORD), 500.10 FEET MEASURED; THENCE N. 89°59'55" E. 800.00 FEET; THENCE N. 00°40'10" W. 610.00 FEET; THENCE S. 89°59'55" W. 800.00 FEET; THENCE ALONG SAID WEST LINE OF SECTION 17 AND WIXOM ROAD CENTERLINE N. 00°40'10" W. 899.93 FEET; THENCE S. 89°57'24" E. 2,422.42 FEET; THENCE S. 00°29'32" W. 1,330.22 FEET; THENCE N. 89°57'12" W. 422.53 FEET; THENCE S. 00°13'05" W. 678.19 FEET; THENCE ALONG THE SOUTH LINE OF SECTION 17 AND CENTERLINE OF ELEVEN MILE ROAD (66 FEET WIDE) S. 89°59'55" W. 1,962.40 FEET TO THE POINT OF BEGINNING CONTAINING 93.03 ACRES OF LAND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OR ANY GOVERNMENTAL AGENCY OVER WIXOM AND ELEVEN MILE ROADS.

PARCEL "C"

A PARCEL OF LAND LOCATED IN PART OF THE S. 1/2 OF SECTION 18, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT THE SOUTHWEST 1/4 CORNER OF SAID SECTION 18 AND PROCEEDING ALONG THE WEST LINE OF SECTION 18 AND CENTERLINE OF NAPIER ROAD (33 FEET WIDE, 1/2 WIDTH), N. 00°20'46" E. 726.63 FEET; THENCE S. 89°48'18" E. 2,670.92 FEET; THENCE ALONG THE NORTH AND SOUTH 1/4 LINE OF SECTION 18 (AS DESCRIBED), N. 00°53'02" W. 1,977.53 FEET TO THE CENTER OF SECTION 18; THENCE ALONG THE EAST AND WEST 1/4 LINE OF SECTION 18 S. 89°23'05" E. 2,648.14 FEET TO THE EAST 1/4 CORNER OF SECTION 18; THENCE ALONG THE EAST LINE OF SECTION 18 AND CENTERLINE OF WIXOM ROAD (66 FEET WIDE) S. 00°40'10" E. 2,638.71 FEET TO THE SOUTHEAST CORNER OF SECTION 18; THENCE ALONG THE SOUTH LINE OF SECTION 18 S. 88°58'37" W. 2,637.37 FEET TO THE SOUTH 1/4 CORNER OF SECTION 18; THENCE CONTINUING ALONG SAID SOUTH LINE OF SECTION 18 N. 89°35'23" W. 2,686.73 FEET TO THE SOUTHWEST CORNER OF SECTION 18 AND THE POINT OF BEGINNING CONTAINING 207.35 ACRES OF LAND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OR ANY GOVERNMENTAL AGENCY OVER WIXOM AND NAPIER ROADS.

PARCEL "D"

A PARCEL OF LAND LOCATED IN PART OF THE N. 1/2 OF SECTION 19, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT THE WEST 1/4 CORNER OF SAID SECTION 19 AND PROCEEDING ALONG THE WEST LINE OF SECTION 19 AND CENTERLINE OF NAPIER ROAD (33 FEET WIDE, 1/2 WIDTH), N. 00°24'29" E. 2,631.46 FEET TO THE NORTHWEST CORNER OF SECTION 19; THENCE ALONG THE NORTH LINE OF SAID SECTION 19 S. 89°35'23" E. 2,686.73 FEET TO THE NORTH 1/4 CORNER OF SECTION 19; THENCE N. 88°58'37" E. 2,637.37 FEET TO THE NORTHEAST CORNER OF SECTION 19; THENCE ALONG THE EAST LINE OF SECTION 19 AND CENTERLINE OF WIXOM ROAD (66 FEET WIDE) S. 00°17'45" W. 2,310.99 FEET; THENCE S. 89°48'12" W. 1,347.14 FEET; THENCE S. 01°01'19" E. 330.03 FEET; THENCE ALONG THE EAST AND WEST 1/4 LINE OF SECTION 19 S. 89°48'12" W. 3,989.19 FEET TO THE WEST 1/4 CORNER OF SECTION 19 AND POINT OF BEGINNING CONTAINING 310.11 ACRES OF LAND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OR ANY GOVERNMENTAL AGENCY OVER WIXOM AND NAPIER ROADS.

PARCEL "E"  
LESS 2.93 ACRE PARCEL

A PARCEL OF LAND LOCATED IN PART OF THE S. 1/2 OF SECTION 19, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT A POINT DISTANT S. 89°50'26" W. 230.64 FEET ALONG THE SOUTH LINE OF SAID SECTION 19 AND CENTERLINE OF 10 MILE ROAD FROM THE SOUTHEAST CORNER OF SECTION 19; THENCE FROM SAID POINT OF BEGINNING AND CONTINUING ALONG SAID SOUTH LINE OF SECTION 19 AND 10 MILE ROAD CENTERLINE S. 89°50'26" W. 1,088.56 FEET; THENCE N. 01°16'58" E. 1,317.25 FEET; THENCE N. 89°36'35" W. 1,038.10 FEET; THENCE S. 89°52'13" W. 334.24 FEET; THENCE S. 00°58'36" W. (1,326.96 FEET) RECORD, 1,327.27 FEET MEASURED; THENCE ALONG SAID SOUTH LINE OF SECTION 19 AND TEN MILE ROAD CENTERLINE S. 89°46'54" W. 985.50 FEET; THENCE N. 00°58'36" E. 1,326.96 FEET; THENCE S. 89°29'07" W. 1,615.78 FEET; THENCE ALONG THE WEST LINE OF SECTION 19 AND CENTERLINE OF NAPIER ROAD (33 FEET WIDE) N. 00°36'10" E. 1,315.36 FEET TO THE WEST 1/4 CORNER OF SECTION 19; THENCE ALONG THE EAST AND WEST 1/4 LINE OF SECTION 19 N. 89°48'12" E. 5,285.72 FEET TO THE WEST RIGHT-OF-WAY LINE OF WIXOM ROAD (86 FEET WIDE); THENCE THE FOLLOWING FIVE (5) COURSES AND DISTANCES ALONG SAID WEST LINE OF WIXOM ROAD S. 01°43'29" W. 1,545.25 FEET, 74.16 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 607.00 FEET, A CENTRAL ANGLE OF 06°59'59", A CHORD LENGTH OF 74.11 FEET AND A CHORD BEARING OF S. 05°13'21" W., S. 08°43'28" W. 273.33 FEET, 84.66 FEET ALONG THE ARC OF A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 693.00 FEET, A CENTRAL ANGLE OF 06°59'59", A CHORD LENGTH OF 84.61 FEET AND A CHORD BEARING OF S. 05°13'45" W. AND S. 01°43'29" W. 112.17 FEET; THENCE N. 88°16'27" W. 17.00 FEET; THENCE S. 62°28'04" W. 345.32 FEET; THENCE S. 22°30'38" E. 423.30 FEET TO THE POINT OF BEGINNING CONTAINING 223.67 ACRES OF LAND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OF ANY GOVERNMENTAL AGENCY OVER 10 MILE ROAD AND NAPIER ROADS.

PARCEL "F"

A PARCEL OF LAND LOCATED IN PART OF THE N.W. 1/4 OF SECTION 20, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 20 AND PROCEEDING ALONG THE NORTH LINE OF SECTION 20 AND CENTERLINE OF ELEVEN MILE ROAD (66 FEET WIDE) N. 89°59'55" E. 233.00 FEET; THENCE S. 00°00'05" E. 233.00 FEET; THENCE N. 89°59'55" E. 100.00 FEET; THENCE S. 00°00'05" E. 133.00 FEET; THENCE N. 89°59'55" E. 357.00 FEET; THENCE N. 01°06'10" E. 366.07 FEET; THENCE ALONG SAID NORTH LINE OF SECTION 20 AND ELEVEN MILE ROAD CENTERLINE N. 89°59'55" E. 49.60 FEET; THENCE S. 00°58'40" W. 1,323.61 FEET; THENCE N. 89°47'42" W. 730.90 FEET ALONG THE NORTH LINE "BIRCHWOODS SUBDIVISION" RECORDED IN LIBER 166, PAGE 16, OAKLAND COUNTY RECORDS; THENCE ALONG THE CENTERLINE OF WIXOM ROAD (66 FEET WIDE) N. 00°17'45" E. 1,320.80 FEET TO THE POINT OF BEGINNING CONTAINING 18.86 ACRES BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OR ANY GOVERNMENTAL AGENCY OVER WIXOM ROAD.

PARCEL "G"

A PARCEL OF LAND LOCATED IN PART OF THE S.W. 1/4 OF SECTION 20, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT A POINT DISTANT S. 89°34'55" E. 43.01 FEET ALONG THE EAST AND WEST 1/4 LINE OF SAID SECTION 20 AND CENTERLINE OF OLD WIXOM ROAD (86 FEET WIDE) FROM THE WEST 1/4 CORNER OF SECTION 20; THENCE FROM SAID POINT OF BEGINNING AND CONTINUING ALONG SAID EAST AND WEST 1/4 LINE AND OLD WIXOM ROAD CENTERLINE S. 89°34'55" E. 814.97 FEET; THENCE S. 00°45'16" W. 1,002.50 FEET; THENCE N. 89°26'50" W. 831.91 FEET; THENCE ALONG THE EAST RIGHT-OF-WAY LINE OF WIXOM ROAD N. 01°43'29" E. 1,000.79 FEET TO THE POINT OF BEGINNING CONTAINING 18.93 ACRES AND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OR ANY GOVERNMENTAL AGENCY OVER OLD WIXOM ROAD.

PARCEL "H"

A PARCEL OF LAND LOCATED IN PART OF THE S.W. 1/4 OF SECTION 17, T. 1 N., R. 8 E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN DESCRIBED AS BEGINNING AT A POINT DISTANT N 00°40'10" W. (500.00 FEET RECORD), 500.10 FEET MEASURED ALONG THE WEST LINE OF SECTION 17 AND CENTERLINE OF WIXOM ROAD (66 FEET WIDE) FROM THE SOUTHWEST CORNER OF SECTION 17; THENCE FROM SAID POINT OF BEGINNING AND CONTINUING ALONG SAID WEST LINE OF SECTION 17 AND WIXOM ROAD CENTERLINE N. 00°40'10" W. 610.00 FEET; THENCE N. 89°59'55" E. 800.00 FEET; THENCE S. 00°40'10" E. 610.00 FEET; THENCE S. 89°59'55" W. 800.00 FEET TO THE POINT OF BEGINNING CONTAINING 11.20 ACRES OF LAND BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD AND THE RIGHTS OF THE PUBLIC OR ANY GOVERNMENTAL AGENCY OVER WIXOM ROAD.

PARCEL "I"

A PARCEL OF LAND LOCATED IN THE CITY OF NOVI, OAKLAND COUNTY, MICHIGAN AND LEGALLY DESCRIBED AS FOLLOWS:

A PART OF NORTHEAST 1/4 OF SECTION 19, TOWN 1 NORTH, RANGE 8 EAST, CITY OF NOVI, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 19, FOR A POINT OF BEGINNING, THENCE SOUTH 86°22'40" WEST, 1338.16 FEET, ALONG THE EAST AND WEST 1/4 LINE OF SAID SECTION 19; THENCE NORTH 02°42'01" WEST, 164.88 FEET; THENCE NORTH 86°22'40" EAST, 1336.91 FEET, TO THE EAST LINE OF SAID SECTION 19 AND THE CENTERLINE OF WIXOM ROAD; THENCE SOUTH 03°08'01" EAST, 164.87 FEET, ALONG THE EAST LINE OF SAID SECTION 19 AND THE CENTERLINE OF SAID WIXOM ROAD, TO THE POINT OF BEGINNING. ALL OF THE ABOVE CONTAINING 5.062 ACRES. ALL OF THE ABOVE BEING SUBJECT EASEMENTS, RESTRICTIONS AND RIGHT-OF-WAYS OF RECORD. ALL OF THE ABOVE BEING SUBJECT TO THE RIGHTS OF THE PUBLIC IN WIXOM ROAD.

PARCEL "J" (SOMETIMES REFERRED TO AS ISLAND LAKE PHASE 5C)

A PART OF THE SOUTHEAST 1/4 AND THE SOUTHWEST 1/4 OF SECTION 19, TOWN 1 NORTH, RANGE 8 EAST, CITY OF NOVI, OAKLAND COUNTY, MICHIGAN; BEING MORE PARTICULARLY DESCRIBED AS COMMENCING AT THE SOUTH 1/4 CORNER OF SAID SECTION 19 FOR A POINT OF BEGINNING; THENCE SOUTH 86°21'12" WEST 38.00 FEET (PREVIOUSLY DESCRIBED AS SOUTH 89°18'00" WEST), ALONG THE SOUTH LINE OF SAID SECTION 19 AND THE CENTERLINE OF TEN MILE ROAD, TO THE SOUTHEAST CORNER OF "ISLAND LAKE ORCHARDS", OAKLAND COUNTY CONDOMINIUM PLAN NO. 1552, AS RECORDED IN LIBER 30468, PAGE 611 THROUGH 689, AS AMENDED, (SAID POINT BEING NORTH 86°21'12" EAST, 2592.36 FEET, FROM THE SOUTHWEST CORNER OF SAID SECTION 19); THENCE NORTH 02°20'47" WEST, 1326.96 FEET, ALONG THE EASTERLY LINE OF SAID "ISLAND LAKE ORCHARDS", (PREVIOUSLY DESCRIBED AS NORTH 00°33'20" EAST); THENCE NORTH 86°21'12" EAST, 38.00 FEET, ALONG THE SOUTHERLY LINE OF SAID "ISLAND LAKE ORCHARDS", (PREVIOUSLY DESCRIBED AS NORTH 89°18'00" EAST), TO A POINT ON THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 19, (SAID POINT BEING SOUTH 02°20'47" EAST, 1306.18 FEET, FROM THE CENTER OF SAID SECTION 19); THENCE NORTH 86°25'23" EAST, 297.38 FEET, ALONG THE SOUTHERLY LINE OF SAID "ISLAND LAKE ORCHARDS", (PREVIOUSLY DESCRIBED AS NORTH 89°24'00" EAST, 296.21 FEET); THENCE SOUTH 01°52'19" EAST, 1327.19 FEET, ALONG THE SOUTHERLY LINE OF SAID "ISLAND LAKE ORCHARDS" AND AN EXTENSION THEREOF, (PREVIOUSLY DESCRIBED AS SOUTH 00°58'48" WEST), TO A POINT ON THE SOUTH LINE OF SAID SECTION 19, (SAID POINT BEING SOUTH 86°24'49" WEST, 2360.31 FEET, FROM THE SOUTHEAST CORNER OF SAID SECTION 19); THENCE SOUTH 86°24'49" WEST, 286.39 FEET, (PREVIOUSLY DESCRIBED AS SOUTH 89°24'00" WEST), ALONG THE SOUTH LINE OF SAID SECTION 19 AND THE CENTERLINE OF SAID TEN MILE ROAD, TO THE POINT OF BEGINNING. ALL OF THE ABOVE CONTAINING 10.047 ACRES. ALL OF THE ABOVE BEING SUBJECT TO THE RIGHT OF THE PUBLIC IN TEN MILE ROAD. ALL OF THE ABOVE BEING SUBJECT TO EASEMENTS, RESTRICTIONS AND RIGHT-OF WAYS OF RECORDS.

PARCEL "K" (SOMETIMES REFERRED TO AS THE RESERVE OF ISLAND LAKE)

A PART OF THE SOUTHWEST 1/4 OF SECTION 20, TOWN 1 NORTH, RANGE 8 EAST, CITY OF NOVI, OAKLAND COUNTY, MICHIGAN; BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 20; THENCE N01°42'13"W 658.30 FEET ALONG THE WEST LINE OF SAID SECTION 20 AND THE EAST RIGHT OF WAY LINE OF WIXOM ROAD TO THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID EAST RIGHT OF WAY LINE THE FOLLOWING FIVE COURSES: (1) N01°42'13"W 1.68 FEET; (2) 74.16 FEET ALONG THE ARC OF A 607.00 FOOT RADIUS CURVE TO THE RIGHT, CHORD BEARING N01°47'47"E 74.11 FEET; (3) N05°17'47"E 273.33 FEET; (4) 84.67 FEET ALONG THE ARC OF A 693.00 FOOT RADIUS CURVE TO THE LEFT, CHORD BEARING N01°47'47"E 84.61 FEET AND (5) N01°42'13"W 546.24 FEET TO THE SOUTHWEST CORNER OF ISLAND LAKE VINEYARDS, OAKLAND COUNTY CONDOMINIUM PLAN NO. 1271 AS RECORDED IN LIBER 37695, PAGE 523, OAKLAND COUNTY RECORDS; THENCE N87°07'28"E (RECORDED AS N87°07'49"E) 955.70 FEET ALONG THE SOUTH LINE OF SAID ISLAND LAKE VINEYARDS CONDOMINIUM; THENCE S02°34'33"E 471.53 FEET PARALLEL TO THE CENTERLINE OF DINSER ROAD; THENCE N86°56'30"E 323.41 FEET; THENCE S02°34'33"E 1151.04 FEET ALONG SAID CENTERLINE OF DINSER ROAD; THENCE S86°33'46"W 1018.99 FEET ALONG THE SOUTH LINE OF SAID SECTION 20 AND THE CENTERLINE OF 10 MILE ROAD; THENCE N01°42'13"W 657.15 FEET PARALLEL TO THE WEST LINE OF SAID SECTION 20; THENCE S86°45'47"W 328.12 FEET TO THE POINT OF BEGINNING. ALL OF THE ABOVE CONTAINING 40.677 ACRES. ALL OF THE ABOVE BEING SUBJECT TO THE RIGHTS OF THE PUBLIC OVER THE SOUTH 60 FEET THEREOF FOR TEN MILE ROAD AND THE EAST 33 FEET THEREOF FOR DINSER ROAD. ALL OF THE ABOVE BEING SUBJECT TO EASEMENTS, RESTRICTIONS AND RIGHT-OF-WAYS OF RECORD.








**EXHIBIT "B"**

**The "Additional Parcel" (Now Part of the Land Included in  
the Island Lake of Novi Residential Unit Development)**

A PART OF THE SOUTHWEST ¼ OF SECTION 19, TOWN 1 NORTH, RANGE 8 EAST, CITY OF NOVI, OAKLAND COUNTY, MICHIGAN; BEING MORE PARTICULARLY DESCRIBED AS COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 19, FOR A POINT OF BEGINNING; THENCE NORTH 02°49'46" WEST, 1318.44 FEET, (SAID POINT BEING SOUTH 02°49'46" WEST, 1315.42 FEET FROM THE WEST 1/4 CORNER OF SAID SECTION 19), ALONG THE WEST LINE OF SAID SECTION 19 AND THE CENTERLINE OF NAPIER ROAD, TO THE SOUTHWEST CORNER OF "ISLAND LAKE ORCHARDS", OAKLAND COUNTY CONDOMINIUM PLAN NO. 1552, MASTER DEED RECORDED IN LIBER 30468, PAGES 611 THROUGH 689, OAKLAND COUNTY RECORDS, AS AMENDED; THENCE NORTH 86°03'33" EAST, 1618.18 FEET, ALONG A SOUTHERLY LINE OF SAID "ISLAND LAKE ORCHARDS"; THENCE SOUTH 02°20'47" EAST, 1326.96 FEET, ALONG A WESTERLY LINE OF SAID "ISLAND LAKE ORCHARDS", TO THE SOUTH LINE OF SAID SECTION 19 AND THE CENTERLINE OF TEN MILE ROAD, (SAID POINT BEING SOUTH 86°21'12" WEST, 1023.50 FEET FROM THE SOUTH ¼ CORNER OF SAID SECTION 19); THENCE SOUTH 86°21'12" WEST, 1606.86 FEET, ALONG THE SOUTH LINE OF SAID SECTION 19 AND THE CENTERLINE OF SAID TEN MILE ROAD, TO THE POINT OF BEGINNING. ALL OF THE ABOVE CONTAINING 48.953 ACRES. ALL OF THE ABOVE BEING SUBJECT TO THE RIGHTS OF THE PUBLIC IN NAPIER ROAD AND TEN MILE ROAD. ALL OF THE ABOVE BEING SUBJECT TO EASEMENTS RESTRICTIONS AND RIGHT-OF-WAYS OF RECORD.



**Lot Size Comparison**

	Lots 12,000 s.f. - 14, 999 s.f.	187 Lots
	Lots 15,000 s.f. - 21,779 s.f.	335 Lots
	Lots 21,800 s.f. - 43,559 s.f.	41 Lots
	Lots 1 Acre or Larger	46 Lots
	Attached Units	294 Units

"Exhibit C"

**Island Lake of Novi**  
Novi Michigan



EXHIBIT "D"

Island Lake of Novi  
Residential Unit Development Amendment

Revised Open Space Summary, October 17, 2013

Common Open Space Category	*Approximate Acreage per March 15, 2013 Open Space Summary	*Acreage Applicable for Open Space Credit per March 15, 2013 Open Space Summary	Revised Open Space Summary October 17, 2013	Acreage Applicable for Open Space Credit October 17, 2013
Wetlands	107 ac.	2 ac.	115 ac.	2 ac.
Wetland Setbacks	5 ac.	5 ac.	7.1 ac.	7.1 ac.
Upland Woods	65 ac.	54 ac.	71.5 ac.	60.5 ac.
City Park	52 ac.	0 ac.	52 ac.	0 ac.
Resident Parks	22.3 ac.	18 ac.	22.3 ac.	18 ac.
Secondary Conservation Zone	18 ac.	16 ac.	18 ac.	16 ac.
Internal Greenbelts, Passive Recreation	19 ac.	18 ac.	21.4 ac.	20.4 ac.
Entrances, Perimeter Landscape	25.7 ac.	0 ac.	27.6 ac.	0 ac.
Lake (169 ac. 16,450 LF of Shoreline)	169 ac./17,545 LF 4,387 LF=25% of new shoreline	169 ac. 4,387 LF	169 ac./17,545 LF 4,387 LF=25% of new shoreline	169 ac. 4,387 LF
<b>Grand Total</b>	<b>483 ac.</b>	<b>282 ac.</b>	<b>503.9 ac.</b>	<b>293 ac.</b>

Notes:

\*Acreage shown per previous revised Open Space Summary Table, March 15, 2013.

Combined open space comprises 50.1% of total site area.

Proposed Open Space for "The Preserve at Island Lake" is 45.3%

Island Lake of Novi  
Residential Unit Development Amendment

\*Revised Land Use Summary, October 17, 2013

Category	Approved in RUD Agreement	Proposed to Date	Revised RUD Agreement
<b>Proposed Residences By Unit Type:</b>			
Single-Family Attached Cluster	219	Combined	Combined
Waterfront/Woodland Att. Cluster	158	294	294 (33%)
Single-Family Detached Homes	464	563	563 (62%)
Single-Family Waterfront Homes	35-51	46	46 (5%)
Total Residences (dwelling units)	884	903	903
Total RUD Acreage	956.7	1005.7	1005.7
Average Gross Density (du/ac)	0.92	0.90	0.90
<b>Non-Residential Uses:</b>			
A. Schools	52.06 ac.		
B. City Park	52.17 ac.		
C. Waterfront Parks	min. 14.0 a.c		
D. Neighborhood Play Lot	min. 1.0 ac.		

\*Revised from Land Use Summary, March 15, 2013 RUD Amendment

The Preserve at Island Lake  
Summary of the Proposed Amendment to the R.U.D.  
Island Lake of Novi (*formerly Harvest Lake of Novi*)

Introduction

Toll Brothers, Inc. ("Toll Bros.") is contract purchaser for a 49.0 acre parcel fronting Ten Mile and Napier Roads, immediately adjacent to the Island Lake of Novi Residential Unit Development (the RUD). Toll Bros. wishes to incorporate this parcel into the RUD for Island Lake of Novi, and seeks an amendment to the RUD with this submittal. On Wednesday September 18, 2013, the Island Lake Master Association Board approved inclusion of this property in the Master Island Lake Homeowner's Association.

Description of Site

The parcel is a 49.0 acre site of partially wooded land which slopes towards Napier Road. Several wetlands exist on the site. The main wetland is approximately 7.7 acres in size, located along the westerly portion of the site. Other existing wetlands are along the south and easterly portions of the property and total approximately 0.7 acres.

The site has 1,547 feet of frontage on Ten Mile Road and 1,259 feet of frontage on Napier Road. There are good sightlines on Ten Mile Road for primary access with secondary access points provided to the existing Island Lake Orchards (PH 5B) to the north and Island Lake Orchards (PH 4B-1) to the east.

The current zoning of the site is RA, Residential Acreage, allowing a maximum of 0.8 dwelling units per acre. It is contiguous with Island Lake of Novi, on the north property line and east property line.

RUD Amendment Request

Toll Bros. requests an amendment to the RUD agreement. The request is as follows:

- 1) Toll Bros. proposes the addition of the 49.0 acre parcel described above to the 956.7 acres within the Residential Unit Development. This would bring the total acreage of the RUD for Island Lake of Novi up to 1005.7 acres.
- 2) The 49.0 acre parcel is zoned RA which allows 0.8 dwelling units per acre. The total number of units permitted for the Island Lake of Novi RUD is 884 homes. As part of this RUD amendment, Toll Bros. is proposing to add 19 units to its development total of 884 homes, for a new total of 903 residential units permitted with the RUD.

- 3) Toll Bros. intends to build Single Family Detached homes on this parcel, described as part of the "Executive Collection" which will be compatible with the existing adjacent Island Lake residences that are also part of the "Executive Collection". The proposed lots are slightly larger than the existing lots that they back up against. Based on these lot sizes, Toll Bros. estimates development of approximately 45 new lots on The Preserve at Island Lake parcel, but will not exceed the total of 903 residential homes permitted in the RUD agreement.

Inclusion of this property into the Island Lake of Novi RUD will benefit the City of Novi and its Island Lake residents for many reasons:

A pathway system is provided within the open space park areas which allows shared use for the existing Island Lake neighbors and expands the existing Island Lake pathway system. The pathways at Napier Road and Ten Mile Road will be extended and connected internally through the parcels open space parks. The pathway is strategically located to preserve wetlands and woodlands.

Toll Bros. will contribute to the expansion of the Island Lake Amenities by constructing a New Kiddie Pool at the Island Lake Clubhouse. This is based on feedback received at the "Town Hall" meeting held to discuss this project, which was open to all current Island Lake residents.

Toll Bros. will add a bike rack at the Island Lake Clubhouse in keeping with the spirit of the newly adopted bicycle ordinance to improve access to this shared facility.

Primary access to this property will be via a new entrance along Ten Mile Road. Secondary access to the property will be via existing stub roads, with traffic calming measures proposed to encourage slower driving speeds within the development. The new Ten Mile Road entrance and traffic calming measures are proposed to address feedback received from current Island Lake residents who are concerned with minimizing traffic volume and speeds within the existing Island Lake road system.

There will be a greater amount of open space and perimeter landscape along the Ten Mile Road and Napier Road corridor than if developed separately, with homes and lot sizes visually compatible with the adjacent homes of Island Lake of Novi. A 50 foot buffer is provided between the proposed lots and existing Island Lake lots, which is only a portion of the overall 45% open space proposed for the new development. 50.1% of total Island Lake of Novi acreage will still be preserved as open space and the majority of residential units are single family detached homes. With Island Lake, its waterfront parks, trails and preservation zones, home buyers will have access to a significantly greater amount of privately maintained recreational facilities and open space as part of the Island Lake of Novi Homeowners Association than possible as a separate subdivision. Island Lake of

Novi will continue as a high quality, planned residential development set within a generous natural environment of woods and wetlands surrounding Island Lake.

Toll Bros. proposes to increase the land area of the RUD to 1005.7 acres which will decrease the density for the Island Lake R.U.D. from 0.92 units per acre to 0.90 units per acre. Single-family detached lots (including waterfront sites) will still comprise the majority of units at 67% of the total, or approximately 609 units. Over half of the site will still be preserved as permanent dedicated open space, per the original categories of the R.U.D. The Open Space Summary Table and Land Use Summary by Phase have been updated to reflect the revised acreage and units.

In order to support the proposed modifications, this report addendum includes the revision to the Area Plan, Open Space Plan, Open Space Summary Table, Pedestrian Network, Land Use by Phases, and Phasing Plan of the previously amended RUD report addendum submitted July 9, 2004. These revisions are intended to amend those same pages of July 9, 2004 Island Lake of Novi Residential Unit Development Report.

#### Proposed Variances and/or Waivers

- Due to the significant amount of wetland impacts that would result from construction of a walking path along Napier Road and the westerly portion of Ten Mile Road frontage, the proposed walking path alignment is located within the proposed development and will be subject to easement for access by the general public.
- Power and communication facilities shall generally be located in the rear yard of the proposed lots except where necessary to preserve natural features (such as trees and/or wetlands), in which case these facilities will be located across the lot frontage.
- Discontinue the installation of berms in those locations that include existing mature vegetation, protected trees and wetlands, as shown in the approved site plan and landscape plan for the additional parcel.
- Installation of storm sewer with less than three feet of cover, only where necessary due to site constraints.
- A variance to the standard road width dimension is requested in order to install traffic calming measures at the connections to the existing stub roads. A 'choker' type calming measure is proposed where the road width is reduced for a short distance to encourage drivers to reduce speeds to negotiate the narrower roadway.
- Per the City Design and Construction Standards, an access point for every 1,300 feet of perimeter is required. The presence of a significant wetland body limits road access from Napier Road.