



COMMERCE PARK JSP17-02

Commerce Park JSP 17-02 with Zoning Map Amendment 18.716

Public hearing at the request of Premier Realty for Planning Commission's recommendation to City Council for rezoning of property in Section 16, located on the southwest corner of Twelve Mile Road and Taft Road RA (Residential Acreage) to OST (Office Service Technology). The subject parcel is approximately 30.64 acres.

Required Action

Recommend to City Council approval or denial of rezoning request from RA to OST.

REVIEW	RESULT	DATE	COMMENTS
Planning	Approval recommended	01-20-17	
Engineering – Public Utilities	Approval recommended	01-24-17	<ul style="list-style-type: none">• Rezoning to OST will have no impact on utilities than anticipated
Traffic	Approval recommended	01-05-17	<ul style="list-style-type: none">• Additional updates on Traffic study may be required once a proposed development is determined for the subject property

MOTION SHEET

Approval

In the matter of the request of Commerce Park JSP 17-02 with Zoning Map Amendment 18.716, motion to **recommend approval** to City Council to rezone the subject property from RA (Residential Acreage) to OST (Office Service Technology) *for the following reasons:*

1. The rezoning request fulfills three objectives of the Master Plan for Land Use by fostering a favorable business climate, support development in OST district and maintain a competitive market place.
2. The proposed zoning is a recommended land use for the subject property by 2010 Master plan for Land Use and will be consistent with zoning to the west.
3. There is no negative impact expected on public utilities as stated in the Engineering memo.
4. The rezoning provides an opportunity for developing the subject property in conformance with Master Plan for Land Use recommendations and puts to use a vacant parcel, and
5. (additional reasons, if any)

-OR-

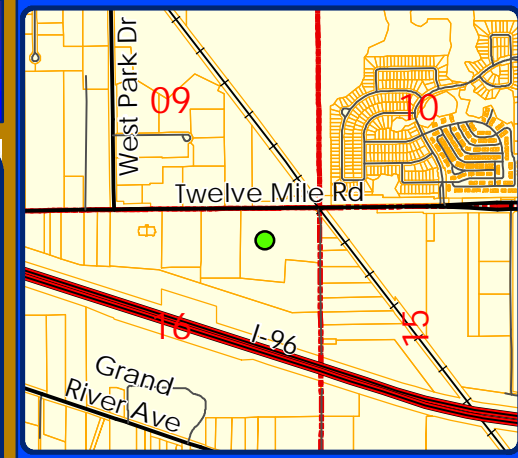
Denial

In the matter of the request of Commerce Park JSP 17-02 with Zoning Map Amendment 18.716, motion to **recommend denial** to City Council to rezone the subject property from RA (Residential Acreage) to OST (Office Service Technology) *for the following reasons ...*

MAPS

17-02 Commerce Park Zoning Map Amendment 18-716

Location Map



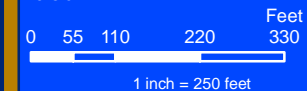
LEGEND

 Sections



City of Novi
Dept. of Community Development
City Hall / Civic Center
45175 W Ten Mile Rd
Novi, MI 48375
cityofnovi.org

Map Author: Sri Komaragiri
Date: 02/01/17
Project: 17-02 Commerce Park Zoning Map Amendment 18-716
Version #: 1

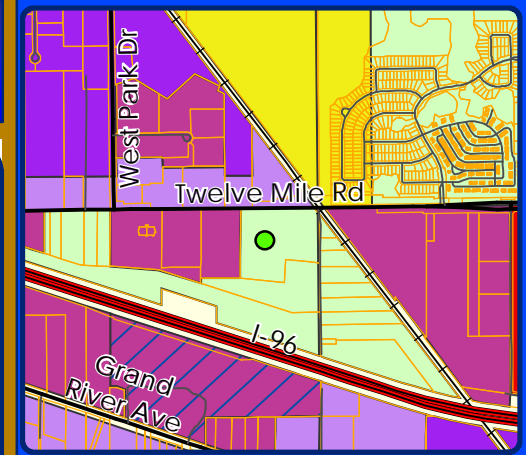
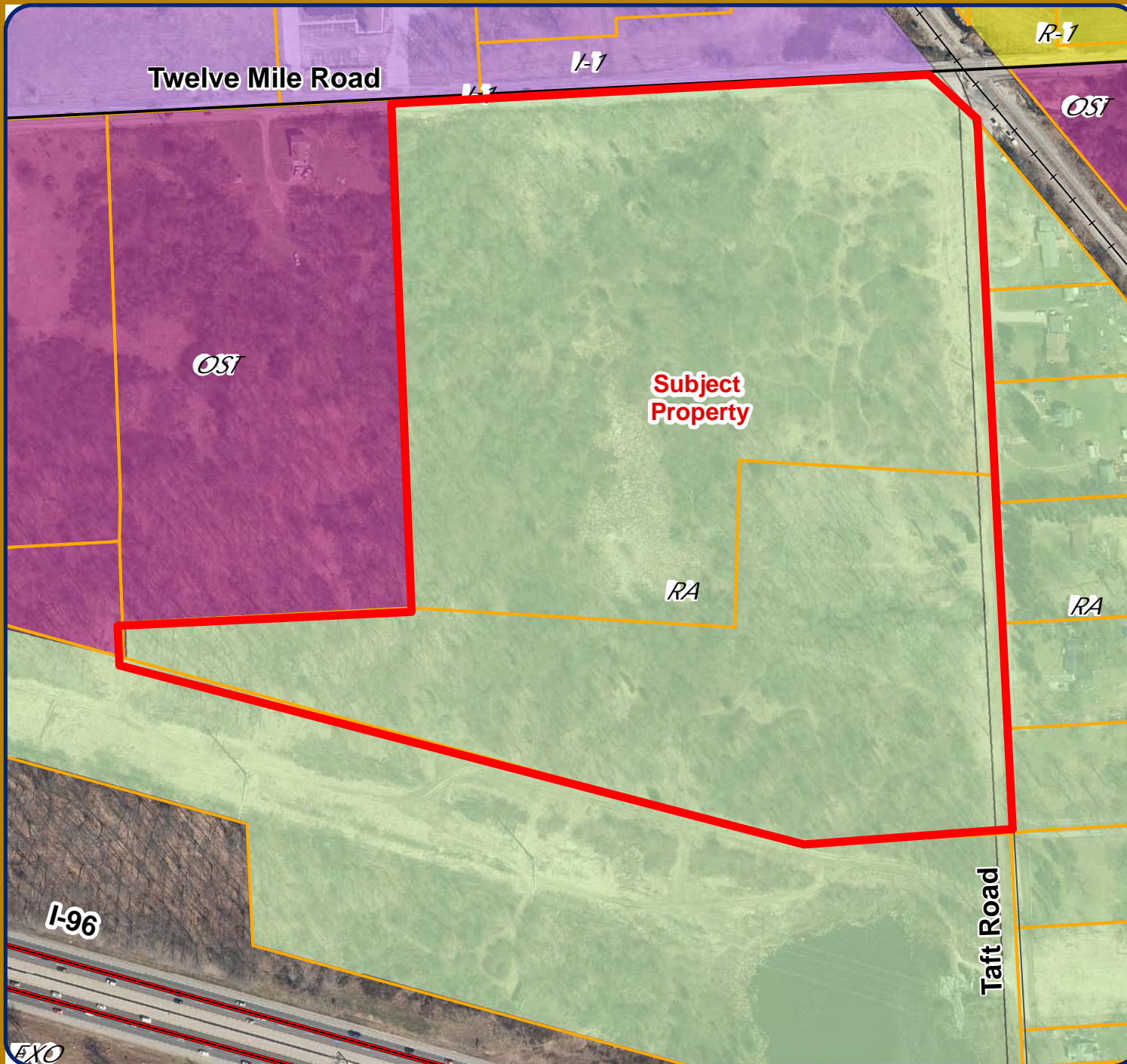


MAP INTERPRETATION NOTICE

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.

17-02 Commerce Park Zoning Map Amendment 18-716

Zoning Map



LEGEND

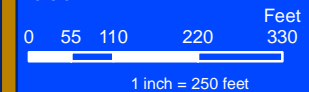
- R-A: Residential Acreage
- R-1: One-Family Residential District
- EXO: OST District with EXO Overlay
- I-1: Light Industrial District
- I-2: General Industrial District
- OST: Office Service Technology
- RC: Regional Center District



City of Novi

Dept. of Community Development
City Hall / Civic Center
45175 W Ten Mile Rd
Novi, MI 48375
cityofnovi.org

Map Author: Sri Komaragiri
Date: 02/01/17
Project: 17-02 Commerce Park Zoning Map Amendment 18-716
Version #: 1

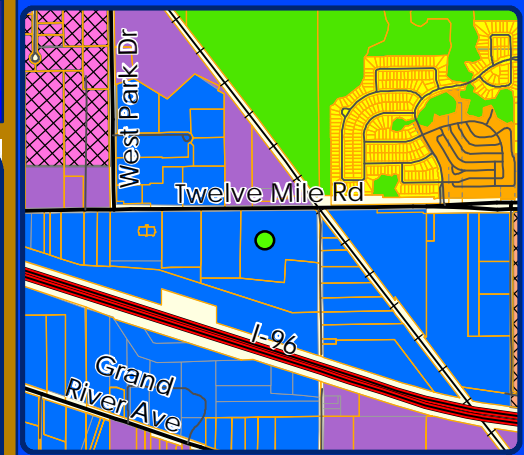
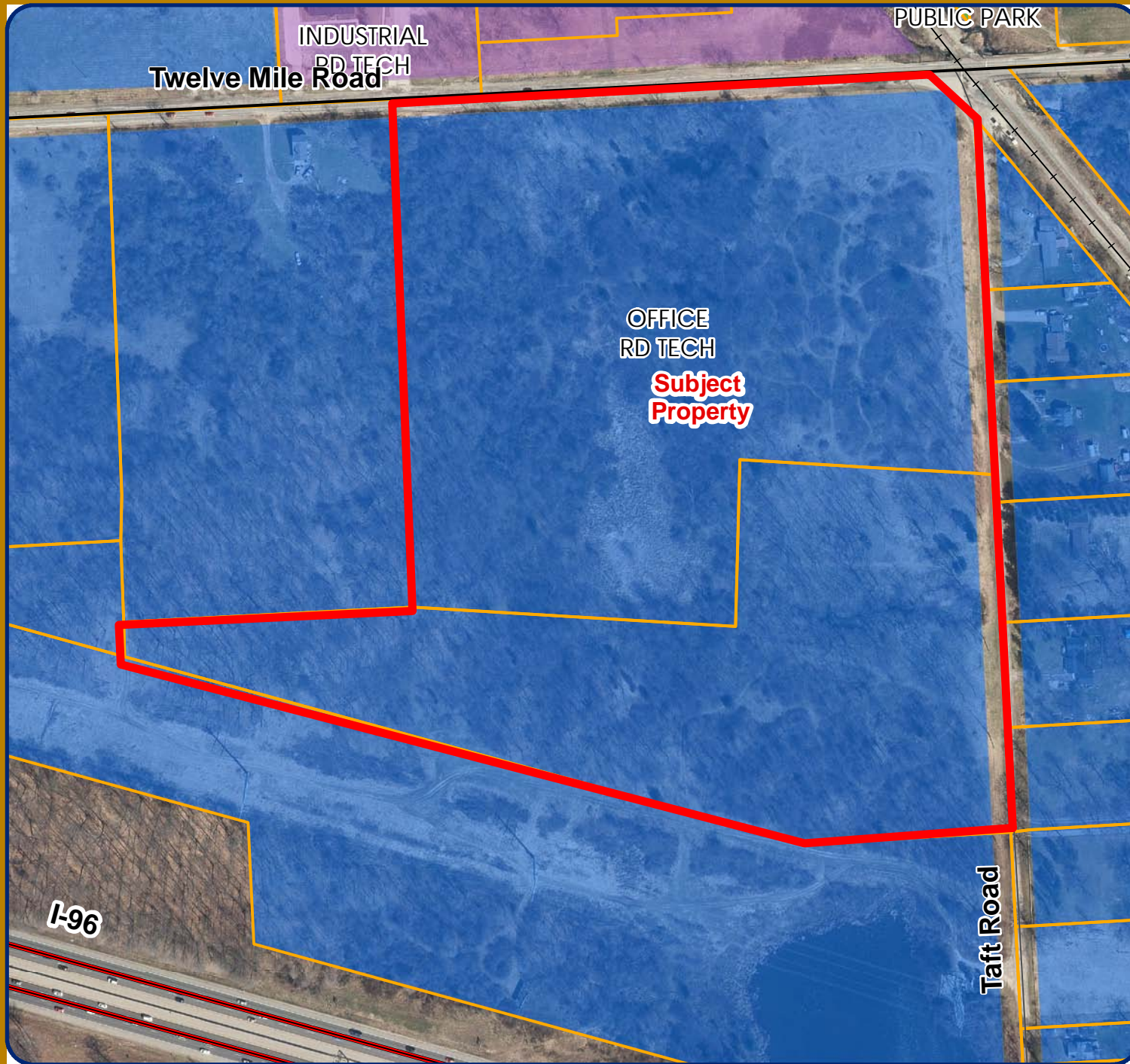


MAP INTERPRETATION NOTICE

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.

17-02 Commerce Park Zoning Map Amendment 18-716

Future Land Use



LEGEND

FUTURE LAND USE

- Single Family
- Multiple Family
- Office RD Tech
- Industrial RD Tech
- Heavy Industrial
- Regional Commercial
- Public Park



City of Novi

Dept. of Community Development
City Hall / Civic Center
45175 W Ten Mile Rd
Novi, MI 48375
cityofnovi.org

Map Author: Sri Komaragiri
Date: 02/01/17
Project: 17-02 Commerce Park Zoning Map Amendment 18-716
Version #: 1



1 inch = 250 feet

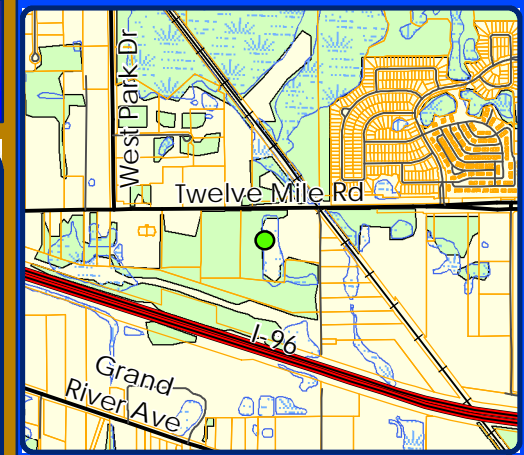


MAP INTERPRETATION NOTICE



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.

17-02 Commerce Park Zoning Map Amendment 18-716

Natural Features



LEGEND

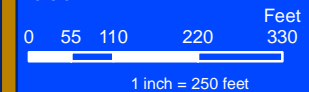
-  WETLANDS
-  WOODLANDS



City of Novi

Dept. of Community Development
City Hall / Civic Center
45175 W Ten Mile Rd
Novi, MI 48375
cityofnovi.org

Map Author: Sri Komaragiri
Date: 02/01/17
Project: 17-02 Commerce Park Zoning Map Amendment 18-716
Version #: 1



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.

SUBJECT PROPERTY ALTA SURVEY
(Full Plan available at the Community Development Department)

PLANNING REVIEW



PLAN REVIEW CENTER REPORT

January 20, 2017

Planning Review

Commerce Park

JSP17-02 with Rezoning 18.716

Petitioner

Premier Realty

Review Type

Rezoning Request from RA (One Family Residential) to OST (Office Service Technology)

Property Characteristics

Section	16	
Site Location	At the south west corner of Twelve Mile and Taft Road intersection	
Site School District	Novi Community School District	
Site Zoning	RA One Family Residential	
Adjoining Zoning	North	I-1 Light Industrial District
	East	RA One Family Residential
	West	OST: Office Service Technology
	South	RA One Family Residential
Current Site Use	Vacant	
Adjoining Uses	North	Office/outdoor storage/vacant
	East	Single Family Residences
	West	Vacant
	South	Vacant
Site Size	30.64 Acres	
Plan Date	December 27, 2016	

Project Summary

The petitioner is requesting a Zoning Map amendment for 30.64 acres of property located at the south west corner of Twelve Mile and Taft Road intersection (Section 16) from RA (One Family Residential) to OST (Office Service Technology). The applicant states that the rezoning request is necessary for a possible headquarters for research and warehouse facilities.

The applicant met with the planning staff to discuss the process and determined to apply for a straight rezoning as the proposed rezoning category is supported by the Future Land Use map recommendation for the subject property. As this is not a PRO (Planned Rezoning Overlay) rezoning, the applicant is not bound to develop a specific plan after rezoning has been approved.

Master Plan for Land Use

The Future Land Use Map of the 2010 City of Novi Master Plan for Land Use identifies this property and properties to east, west and south as Office Research Development and Technology. Property to north is identified as Industrial research development and technology.

The proposal would follow objectives listed in the Master Plan for Land Use including the following:

1. Objective: The City, working with the development community and partners, should continue to foster a favorable business climate.
2. Objective: Continue to promote and support development community in Novi's Office Service Technology (OST) district.
3. Objective: Attract and maintain quality businesses in a competitive market place.

Development Potential

Development under the current RA zoning could result in the construction of approximately up to 20 single-family homes under the allowable density (0.8 DUA) and net acreage of the site (80 percent of 30.64 acres). The actual number of units may be even less considering the amount of wetlands and woodlands on the property. It is not known whether the site could be developed with 20 lots that meet the dimensional requirements of the RA zoning district. The applicant's traffic consultant estimates about 28 homes based on the existing zoning and indicate that about 124,000 Square feet would be a reasonable development for this site.

Existing Zoning and Land Use

The following table summarizes the zoning and land use status for the subject property and surrounding properties.

Land Use and Zoning: For Subject Property and Adjacent Properties

	Existing Zoning	Existing Land Use	Master Plan Land Use Designation
Subject Property	RA One Family Residential	Vacant land	Office Research Development and Technology (uses consistent with Office Service and Technology, OST)
Northern Parcels (across Twelve Mile Ave.)	I-1 Light Industrial District	Office/outdoor storage/vacant (Part of a consent judgement)	Industrial research development and technology. (uses consistent with Light Industrial Districts, I-1)
Southern Parcels	RA One Family Residential	Vacant land	Office Research Development and Technology (uses consistent with Office Service and Technology, OST)
Eastern Parcels	RA One Family Residential	Single Family Residences	Office Research Development and Technology (uses consistent with Office Service and Technology, OST)
Western Parcels	Office Service and Technology, OST	Single Family Residences (Non-conforming)	Office Research Development and Technology (uses consistent with Office Service and Technology, OST)

Compatibility with Surrounding Land Use

The surrounding land uses are shown in the above chart. The compatibility of the proposed rezoning with the zoning and uses on the adjacent properties should be considered by the Planning Commission in making the recommendation to City Council on the rezoning request.

The properties directly **north** of the subject property are currently functioning as office and vacant land. The current zoning map indicates I-1 for the property.

Directly to the **south** of the subject properties is currently vacant and is used for the ITC transmission corridor and zoned RA.

The property to the **west** of the subject property along Twelve Mile Road has a single family house and is zoned OST.

To the **east** of the subject property are existing single family houses. Further east is the Office Technology Development east of the railroad tracks.

Future Land Use map indicates OST for the subject property and the surrounding properties south of Twelve Mile with intent to encourage development of Office research and warehousing kind of uses.



Existing Zoning



Future Land Use

Comparison of Zoning Districts

The following table provides a comparison of the current (RA) and proposed (OST) zoning classifications.

	RA Zoning (Existing)	OST Zoning (Proposed)
Principal Permitted Uses	<ol style="list-style-type: none"> 1. One-family dwellings 2. Farms and greenhouses 3. Publicly owned and operated parks 4. Cemeteries 5. Schools 6. Home occupations 7. Accessory buildings and uses 8. Family day care homes 	<ol style="list-style-type: none"> 1. Professional office buildings, offices and office sales and service activities 2. Data processing and computer centers 3. Laboratories 4. Research, testing, design and development, technical training, and design of pilot or experimental products 5. Hotels& and business motels 6. Colleges, universities, and other such postsecondary institutions of higher learning, public or private, offering courses in general, technical, or religious education 7. Motion picture, television, radio and

		photographic production facilities 8. Medical offices, including laboratories and clinics 9. Facilities for human care 10. Off-street parking lots 11. Publicly owned and operated parks, parkways and outdoor recreational facilities 12. Publicly-owned buildings, telephone exchange buildings, and public utility offices, but not including storage yards, transformer stations, substations or gas regulator stations 13. Financial institution uses with drive-in facilities as an accessory use only 14. Public or private indoor and private outdoor recreational facilities 15. Day care centers and adult day care centers 16. Secondary uses 17. Sit down restaurants 18. Other uses similar to the above uses and subject to the same conditions noted 19. Accessory buildings and uses customarily incidental and integral to any of the above permitted uses
Special Land Uses	1. Raising of nursery plant materials 2. Dairies 3. Keeping and raising of livestock 4. All special land uses in Section 402 5. Nonresidential uses of historical buildings 6. Bed and breakfasts	(None eligible for this site)
Minimum Lot Size	43,560 square feet (1 acre)	Determined by off-street parking, loading, greenbelt screening, yard setback or usable open space requirements
Minimum Lot Width	150 feet	Determined by off-street parking, loading, greenbelt screening, yard setback or usable open space requirements (80 feet for single-family dwellings)
Building Height	2 1/2 stories -or- 35 feet	46 ft or 3 stories, whichever is less
Building Setbacks	Front: 45 feet Side: 20 feet (aggregate 50 feet) Rear: 50 feet	Front: 50 feet Side: 50 feet Rear: 50 feet

Infrastructure Engineering

The Staff Engineer has reviewed the rezoning request and expressed no concerns regarding sanitary sewer capacity and available water capacity. The impacts of OST land use on the utilities in this area have been reviewed during the 2010 Master Plan for Land Use update.

Traffic

City Traffic consultants reviewed the Traffic Impact study provided by the applicant and indicated that the maximum amount of additional traffic that would be generated by the site is not expected

to degrade the existing roadway network levels of service below acceptable limits. Traffic supports the rezoning request. Traffic also noted that additional trip generation estimates should be performed at the time of site plan in order to determine if a full TIS is required once the proposed development has been defined in greater detail (i.e., building size, facility use, etc.). See the traffic review letter for additional information.

Natural Features

There is a significant area of regulated woodlands and wetland on the site. The applicants have performed a wetland survey of the property and have identified, which is yet to be confirmed by the City's wetland consultant, that the subject property has 2.44 acres of regulated wetlands on the site.

As this is not a PRO (Planned Rezoning Overlay) rezoning, the applicant is not bound to develop a specific plan after rezoning has been approved. Staff is unable to determine the extent of impact on wetlands or woodlands at this time. More thorough review will be performed at the time site plan submittal and necessary permits will have to be obtained. The applicant is encouraged to propose minimum or no impacts to the wetlands and wetland buffer areas.



Recommendation

Approval of the **Rezoning is recommended** because

- The rezoning request fulfills three objectives of the Master Plan for Land Use by fostering a favorable business climate, support development in OST district and maintain a competitive market place.
- The rezoning is a recommended land use for the subject property by 2010 Master plan for Land Use and will be consistent with zoning to the west.
- The rezoning provides an opportunity for developing the subject property in conformance with Master Plan for Land Use recommendations and puts to use a vacant parcel.
- The rezoning will not have impact on public utilities.

The rezoning is the first step in the process; the applicant will still need to seek the required approvals from Planning Commission for the Preliminary Site Plan, Wetland Permit, Woodland Permit, and Stormwater Management Plan depending on the requirements as determined at the time of site plan review.

Next Steps: Planning Commission Meeting

This Rezoning request is scheduled to go before the **Planning Commission** on **February 08, 2017** for recommendation to City Council. **Please provide the initial submittal packet in PDF format.**

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 skomaragiri@cityofnovi.org.

TRAFFIC STUDY REVIEW



AECOM
27777 Franklin Road
Southfield
MI, 48034
USA
aecom.com

Project name:
JZ17-01 Commerce Park TIS Review

From:
AECOM

Date:
January 5, 2017

To:
Barbara McBeth, AICP
City of Novi
45175 10 Mile Road
Novi, Michigan 48375

CC:
Sri Komaragiri, Kirsten Mellem, George Melistas,
Adrianna Jordan, Jeremy Miller, Richelle Leskun

Memo

Subject: Commerce Park RTIS Review

The preliminary rezoning TIS was reviewed to the level of detail provided and AECOM **recommends approval** for the applicant to move forward based upon the comments provided below.

TRAFFIC IMPACT STUDY COMMENTS

General Comments:

1. The TIS references a proposed approximately 30-acre site, which is currently zoned RA (Residential Acreage), to be rezoned to OST (Office Service and Technology District).
2. The site is located on the southwest quadrant of the intersection of Twelve Mile Road and Taft Road. The intersection is a three-leg intersection with stop control on the minor approach.
3. There is an at-grade railroad crossing in the vicinity of the site.
4. AADT and peak-hour volume counts were obtained for Twelve Mile Road from the Southeast Michigan Council of Governments (SEMCOG). However, traffic data was not available for Taft Road at this location.
5. The City's Code of Ordinances restricts access to streets that are not major thoroughfare. Taft Road is not considered a major thoroughfare. Therefore, primary access should only be permitted by means of Twelve Mile Road.

Existing Conditions

1. The peak hour of Twelve Mile Road is 5:00-6:00PM with a corresponding bi-directional volume of approximately 2,025 vehicles per hour (vph).
2. According to data obtained from the applicant, under the current zoning (RA), a maximum of 28 homes could be built on the site when accounting for minimum lot size, the actual geometry of the property and providing area for roadways to fully access all potential residences on site.
3. If the maximum 28 homes were to be built on the property, the site would generate an estimated 326 daily trips per week day with 30 and 34 trips for the AM and PM peak hours, respectively. These approximations are based on land use 210 (single-family detached housing) in the ITE Trip Generation Manual.

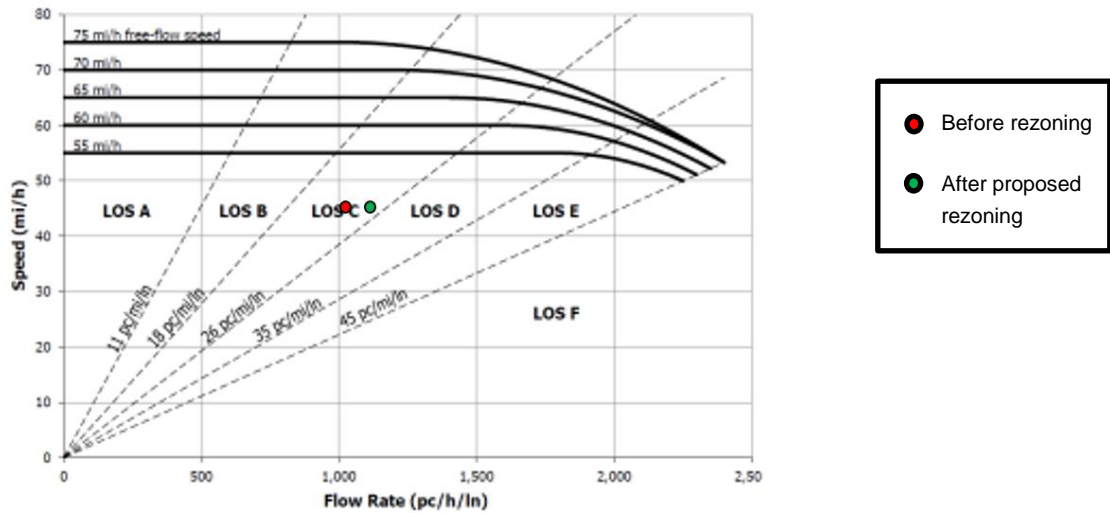
Proposed Rezoning Conditions

1. Under the proposed zoning (OST), a maximum building size of 240,000 square feet could be built.

2. If the maximum building size of 240,000 square feet were to be built on the property, the site would generate an estimated 1,947 daily trips per week day with 279 and 273 trips for the AM and PM peak hours, respectively. These approximations are based on land use 760 (research and development center) in the ITE Trip Generation Manual.
3. The proposed zoning change would generate a maximum of 1,621 daily trips with 249 trips and 239 trips during the AM and PM peak hours, respectively.

Conclusions

1. The rezoning traffic impact study performed by Tetra Tech fulfills the requirements required by the City of Novi and provides sound methodology for the estimation of trips for existing and proposed zonings.
2. Additional trip generation estimates should be performed in order to determine if a full TIS is required once the proposed development has been defined in greater detail (i.e., building size, facility use, etc.).
3. AECOM would support the rezoning application from a traffic standpoint. The maximum amount of additional traffic that would be generated by the site is not expected to degrade the existing roadway network levels of service below acceptable limits. The figure below estimates the increased level of service on Twelve Mile Road due rezoning with the maximum building size. The red circle indicates the existing level of service along Twelve Mile Road and the green circle indicates the estimated level of service along Twelve Mile Road with the proposed rezoning with the maximum building size during the peak hour of traffic.



Should the City or applicant have questions regarding this review, they should contact AECOM for further clarification.

Sincerely,

AECOM

Sterling J. Frazier, E.I.T.
Reviewer, Traffic/ITS Engineer

Matthew G. Klawon, PE
Manager, Traffic Engineering and ITS Engineering Services

ENGINEERING MEMO

MEMORANDUM



TO: BARBARA MCBETH, CITY PLANNER
FROM: DARCY RECHTIEN, STAFF ENGINEER *DRechtien*
SUBJECT: REVIEW OF REZONING IMPACT ON PUBLIC UTILITIES
COMMERCE PARK
DATE: JANUARY 24, 2017

The Engineering Division has reviewed the rezoning request for the 30 acre site located on the west side of Taft Road and south side of Twelve Mile Road. The applicant is requesting to rezone 30 acres from RA to OST. The Master Plan for Land Use indicates OST as the master planned land use for this site. The impact of OST land use on the utilities in this area has previously been reviewed and considered in light of the Master Plan for Land Use, with no concerns regarding sanitary sewer capacity and available water capacity. Therefore the Engineering Division recommends approval of this rezoning request.

cc: George Melistas, Engineering Senior Manager
Ben Croy, P.E., Water and Sewer Senior Manager

WETLAND AND WOODLAND DETERMINATION

February 2, 2017

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

Re: Commerce Park (12 Mile & Taft)
JSP17-0002
Wetland & Woodland Verification Inspection (PSP17-0001)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has conducted a wetland and woodland evaluation for a property located south of Twelve Mile Road and west of Taft Road, Section 16, Novi, Michigan. The subject property consists of the parcels 50-22-16-226-004 and 50-22-16-226-008. The proposed parcel consists of approximately 13.6 acres. Nowak & Fraus previously completed the on-site wetland delineation and tree survey.

WETLAND VERIFICATION

The site was reviewed for the presence of regulated wetlands as defined in the City of Novi Wetland and Watercourse Protection Ordinance. ECT completed an on-site wetland evaluation on Tuesday, January 31, 2017.

City of Novi Wetland Ordinance Requirements

The City of Novi Wetland and Watercourse Protection Ordinance (City of Novi Code of Ordinances, Part II, Chapter 12, Article V.; Division 2.) describes the regulatory criteria for wetlands and review standards for wetland permit applications. The City of Novi regulates wetlands that are: (1) contiguous to a lake, pond, river or stream, as defined in Administrative Rule 281.921; (2) two (2) acres in size or greater; or (3) less than two (2) acres in size, but deemed essential to the preservation of the natural resources of the city under the criteria set forth in subsection 12-174(b). Wetlands deemed regulated by the City of Novi require the approval of a use permit for any proposed impacts to the wetland.

The wetland essentiality criteria as described in the Wetland and Watercourse Protection Ordinance are included below.

All noncontiguous wetland areas of less than two (2) acres which appear on the wetlands inventory map, or which are otherwise identified during a field inspection by the city, shall be analyzed for the purpose of determining whether such areas are essential to the preservation of the natural resources of the city....In making the determination, the city shall find that one (1) or more of the following exist at the particular site:

- (1) *The site supports state or federal endangered or threatened plants, fish or wildlife appearing on a list specified in Section 36505 of the Natural Resources Environmental Protection Act (Act 451 of 1994) [previously section 6 of the endangered species act of 1974, Act No. 203 of the Public Acts of 1974, being section 229.226 of the Michigan Compiled Laws].*
- (2) *The site represents what is identified as a locally rare or unique ecosystem.*
- (3) *The site supports plants or animals of an identified local importance.*

- (4) *The site provides groundwater recharge documented by a public agency.*
- (5) *The site provides flood and storm control by the hydrologic absorption and storage capacity of the wetland.*
- (6) *The site provides wildlife habitat by providing breeding, nesting or feeding grounds or cover for forms of wildlife, waterfowl, including migratory waterfowl, and rare, threatened or endangered wildlife species.*
- (7) *The site provides protection of subsurface water resources and provision of valuable watersheds and recharging groundwater supplies.*
- (8) *The site provides pollution treatment by serving as a biological and chemical oxidation basin.*
- (9) *The site provides erosion control by serving as a sedimentation area and filtering basin, absorbing silt and organic matter.*
- (10) *The site provides sources of nutrients in water food cycles and nursery grounds and sanctuaries for fish.*

After determining that a wetland less than two (2) acres in size is essential to the preservation of the natural resources of the city, the wetland use permit application shall be reviewed according to the standards in subsection 12-174(a).

Wetland Evaluation

ECT's in-office review of available materials included the City of Novi Regulated Wetland and Watercourse map, USGS topographic quadrangle map, NRCS soils map, USFWS National Wetland Inventory map, and historical aerial photographs. Based on historic aerial photos (1940 and 1963, available from the Oakland County Property Gateway; <https://gis.oakgov.com/PropertyGateway/Home.mvc>), the eastern half of parcel 50-22-16-226-004 had been agricultural land. The site includes areas indicated as City-regulated wetland on the official City of Novi Regulated Wetland and Watercourse Map (see *Figure 1*).

The focus of the wetland site inspection was to review site conditions in order to determine whether City-regulated wetlands are found on-site. Wetland boundary flagging was in place at the time of this site inspection. ECT reviewed the flagging and agrees that the wetland boundaries were accurately flagged in the field. A total of four (4) wetland areas are located on the property (see Site Photos):

- Wetland A (2.19 acres);
- Wetland B (0.10-acre);
- Wetland C (0.10-acre);
- Wetland D (0.04-acre).

Wetland A is an emergent wetland located on the south and west sides of the subject property. Many areas of the wetland contained standing water at the time of our site visit. The wetland contains the following species of vegetation: common buckthorn (*Rhamnus cathartica*), American elm (*Ulmus americana*), silky dogwood (*Cornus amomum*), green ash (*Fraxinus pennsylvanica*), narrow-leaved cattail (*Typha angustifolia*), dogbane (*Apocynum cannabinum*), and panicled aster (*Aster lanceolatus*). The upland fringe of Wetland A contains the following species of vegetation: common blackberry (*Rubus allegheniensis*), tall goldenrod (*Solidago altissima*), common buckthorn (*Rhamnus cathartica*), motherwort (*Leonurus cardiaca*), honeysuckle (*Lonicera spp.*), black walnut (*Juglans nigra*), and tick trefoil (*Desmodium canadense*).

Wetland B is a forested/open-water wetland located south of Twelve Mile Road on the north side of the subject site. This wetland contained a significant amount of standing water at the time of our site inspection; approximately 14-inches at the southern edge of the wetland. The wetland contains the following species of vegetation: cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), and silky dogwood (*Cornus amomum*). The upland fringe of Wetland B contains the following species of vegetation: common buckthorn (*Rhamnus cathartica*), black walnut (*Juglans nigra*), Amur honeysuckle (*Lonicera maackii*), and honeysuckle (*Lonicera spp.*).

Wetland C is an emergent wetland located in the northwest section of the subject site. This wetland contained approximately 4-inches of standing water in the area that was accessed during our site visit. The following species of vegetation were found within the wetland: broad-leaved cattail (*Typha latifolia*), pussy willow (*Salix discolor*), silky dogwood (*Cornus amomum*), water plantain (*Alisma plantago-aquatica*), and panicked aster (*Aster lanceolatus*). The upland fringe of Wetland C contains the following species of vegetation: black walnut (*Juglans nigra*), common buckthorn (*Rhamnus cathartica*), black cherry (*Prunus serotina*), and red cedar (*Juniperus virginiana*).

Wetland D is an open water/vernal pool wetland located in the central, northern section of the site. The wetland contained several inches of open water at the time of our inspection. The following species of vegetation were found within the wetland: silver maple (*Acer saccharinum*), green ash (*Fraxinus pennsylvanica*), and silky dogwood (*Cornus amomum*). The upland fringe of Wetland D contains common buckthorn (*Rhamnus cathartica*) and autumn olive (*Elaeagnus umbellata*).

Wetland Conclusion

Wetlands A through D all appear to be considered essential/regulated wetlands by the City of Novi as each wetland meets one or more of the essentiality criteria outlined in the City of Novi Wetland Ordinance (listed above).

Although not shown individually, these wetlands are generally depicted on the available mapping materials and are shown as regulated wetland on the official City of Novi Regulated Wetland and Watercourse map. Wetlands A, B, C and D all appear to be accurately flagged in the field.

The Michigan Department of Environmental Quality (MDEQ) generally regulates wetlands that are within 500 feet of a waterbody, regulated stream or are part of a wetland system greater than 5 acres in size. It is the applicant's responsibility to contact MDEQ in order to confirm the regulatory authority with respect to the on-site wetland areas. At a minimum, it appears as if Wetland B (located at the north end of the subject property) may be within 500 feet of the Walled Lake Branch of the Middle Rouge River (located east of the site).

Any proposed use of Wetlands A, B, C, or D will require a City of Novi *Wetland Use Permit* as well as an *Authorization to Encroach the 25-Foot Natural Features Setback* for any proposed impacts to the 25-foot wetland buffers.

WOODLAND VERIFICATION

Existing Conditions and Regulatory Assessment

ECT's in-office review of available materials included the City of Novi Regulated Woodland map and other available mapping. The subject property does include a significant area indicated as City-regulated woodland on the official City of Novi Regulated Wetland and Watercourse Map (see Figure 1). It is our understanding that any site plans submitted for the development of this site will likely include development in the northeast section of the site; area that is partially located outside of the mapped Regulated Woodland boundaries.

Any site plans submitted for development of the subject site will be reviewed for conformance with the City of Novi Woodland Protection Ordinance Chapter 37:

- 1) *Provide for the protection, preservation, replacement, proper maintenance and use of trees and woodlands located in the city in order to minimize disturbance to them and to prevent damage from erosion and siltation, a loss of wildlife and vegetation, and/or from the destruction of the natural habitat. In this regard, it is the intent of this chapter to protect the integrity of woodland areas as a whole, in recognition that woodlands serve as part of an ecosystem, and to place priority on the preservation of woodlands, trees, similar woody vegetation, and related natural resources over development when there are no location alternatives;*
- 2) *Protect the woodlands, including trees and other forms of vegetation, of the city for their economic support of local property values when allowed to remain uncleared and/or unharvested and for their natural beauty, wilderness character of geological, ecological, or historical significance; and*
- 3) *Provide for the paramount public concern for these natural resources in the interest of health, safety and general welfare of the residents of the city.*

The highest quality woodlands on site are found in the southern and western sections of the subject site. These areas are dominated by 8-inch to 20-inch diameter-at-breast-height (DBH) black walnut trees. In general, the on-site trees consist of black walnut (*Juglans nigra*), American elm (*Ulmus americana*), black cherry (*Prunus serotina*), box elder (*Acer negundo*), red maple (*Acer rubrum*), eastern red cedar (*Juniperus virginiana*), black willow (*Salix nigra*), sugar maple (*Acer saccharum*), black locust (*Robinia pseudoacacia*), Colorado blue spruce (*Picea pungens*), and eastern white pine (*Pinus strobus*).

In terms of habitat quality and diversity of tree species, the overall subject site consists of fair to good quality trees. In terms of a scenic asset, wildlife habitat, windblock, noise buffer or other environmental asset, the forested area located on the subject site is considered to be of good to high quality. As noted above, a portion of the northeastern section of the site is not mapped as Regulated Woodland on the City of Novi's Regulated Woodland Map.

The City of Novi regulates all trees 8-inches diameter-at-breast-height (DBH) and greater that are located within the areas delineated as regulated woodlands on the City-Regulated Woodlands Map. The City also regulates any individual tree greater than or equal to 36-inches DBH, irrespective of whether such tree is within a regulated woodland.

ECT recommends that the applicant indicate on any future site plans the existing regulated woodland boundary as indicated on the City map. In addition, the applicant should provide information on the Plan that identifies the locations, species and diameters of any trees greater than or equal to 8-inch DBH that are located on-site within the City-Regulated woodland boundary and within the overall proposed limits of disturbance. Tree information for any areas outside of the proposed overall limits of disturbance does not need to be provided.

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
≥ 30	4

In addition, 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. The applicant shall indicate on the Plan all regulated trees to be removed as well as the number of Woodland Replacement tree credits required for these removals.

City of Novi Woodland Review Standards and Woodland Permit Requirements

Based on Section 37-29 (*Application Review Standards*) of the City of Novi Woodland Ordinance, the following standards shall govern the grant or denial of an application for a use permit required by this article:

No application shall be denied solely on the basis that some trees are growing on the property under consideration. However, the protection and conservation of irreplaceable natural resources from pollution, impairment, or destruction is of paramount concern. Therefore, the preservation of woodlands, trees, similar woody vegetation, and related natural resources shall have priority over development when there are location alternatives.

In addition,

"The removal or relocation of trees shall be limited to those instances when necessary for the location of a structure or site improvements and when no feasible and prudent alternative location for the structure or improvements can be had without causing undue hardship".

Proposed woodland impacts will require a Woodland Permit from the City of Novi that allows for the removal of trees eight (8)-inch diameter-at-breast-height (d.b.h.) or greater within City-Regulated Woodland boundaries or for

any tree 36-inches DBH or greater. Such trees shall be relocated or replaced by the permit grantee. All deciduous replacement trees shall be two and one-half (2 ½) inches caliper or greater and will be counted at a 1:1 replacement ratio. All proposed coniferous replacement trees shall be 6-feet in height (minimum) and will be counted at a 1.5:1 replacement ratio. See the attached City of Novi Woodland Replacement Chart for acceptable woodland replacement species.

Woodland Comments

Please consider the following comments when submitting future site development plan submittals:

1. ECT recommends that the upland woods (mainly black walnut) located south of Wetland A near the southern section of the subject property be preserved by the Applicant during the site development process (see Photo 6).
2. ECT recommends that the applicant indicate on the Plan the existing regulated woodland boundary as indicated on the City Regulated Woodland map. In addition, the applicant should provide information on the Plan that identifies the locations, species and diameters of any trees greater than or equal to 8-inch DBH that are located on-site within the City-Regulated woodland boundary and within the overall proposed limits of disturbance.
3. The applicant shall indicate on the Plan all regulated trees to be removed as well as the number of Woodland Replacement tree credits required for these removals.
4. A Woodland Permit from the City of Novi would be required for proposed impacts to any trees 8-inch DBH or greater located within the regulated woodland boundaries or any tree greater than 36-inches DBH. Such trees shall be relocated or replaced by the permit grantee either through approved on-site replacement trees or through a payment to the City of Novi Tree Fund.
5. A Woodland Replacement Performance financial guarantee for the planting of replacement trees will be required. This financial guarantee will be based on the number of on-site woodland replacement trees (credits) being provided at a per tree value of \$400.
6. The Applicant will be required to pay the City of Novi Tree Fund at a value of \$400/credit for any Woodland Replacement tree credits that cannot be placed on site.
7. Based on a successful inspection of the installed on-site Woodland Replacement trees, the Woodland Replacement Performance Guarantee shall be returned to the Applicant. A Woodland Maintenance and Guarantee bond equal to twenty-five percent (25%) of the value of the original Woodland Replacement material will then be kept for a period of 2-years after the successful inspection of the tree replacement installation.
8. The Applicant shall provide preservation/conservation easements as directed by the City of Novi Community Development Department for any areas of remaining woodland and woodland replacement trees. The applicant shall demonstrate that the all proposed woodland replacement trees and existing regulated woodland trees to remain will be guaranteed to be preserved as planted with a conservation easement or landscape easement to be granted to the city. This language shall be submitted to the City

Commerce Park (12 Mile & Taft)
JSP17-0002
Wetland & Woodland Verification Inspection (PSP17-0001)
February 2, 2017
Page 7 of 13

Attorney for review. The executed easement must be returned to the City Attorney within 60 days of the issuance of the City of Novi Woodland permit.

9. Replacement material should not be located 1) within 10' of built structures or the edges of utility easements and 2) over underground structures/utilities or within their associated easements. In addition, replacement tree spacing should follow the *Plant Material Spacing Relationship Chart for Landscape Purposes* found in the City of Novi *Landscape Design Manual*.

As always, please feel free to contact our office if you have any questions.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Peter Hill, P.E.
Senior Associate Engineer



Matthew Carmer
Senior Scientist
Professional Wetland Scientist #1746

cc: Sri Komaragiri, City of Novi Planner
Richelle Leskun, City of Novi Planning Assistant
Barb McBeth, City Planner
Rick Meader, City of Novi Landscape Architect
Kirsten Mellem, City of Novi Planner

Attachments: Figure 1 – City of Novi Regulated Wetland and Woodland Map
Figure 2 – Overall Boundary Survey
Site Photos



Figure 1. City of Novi Regulated Wetland and Woodland Boundaries Map. Regulated Wetland Boundaries are shown in blue and Regulated Woodland boundaries are shown in green. The subject property boundary is shown in red.

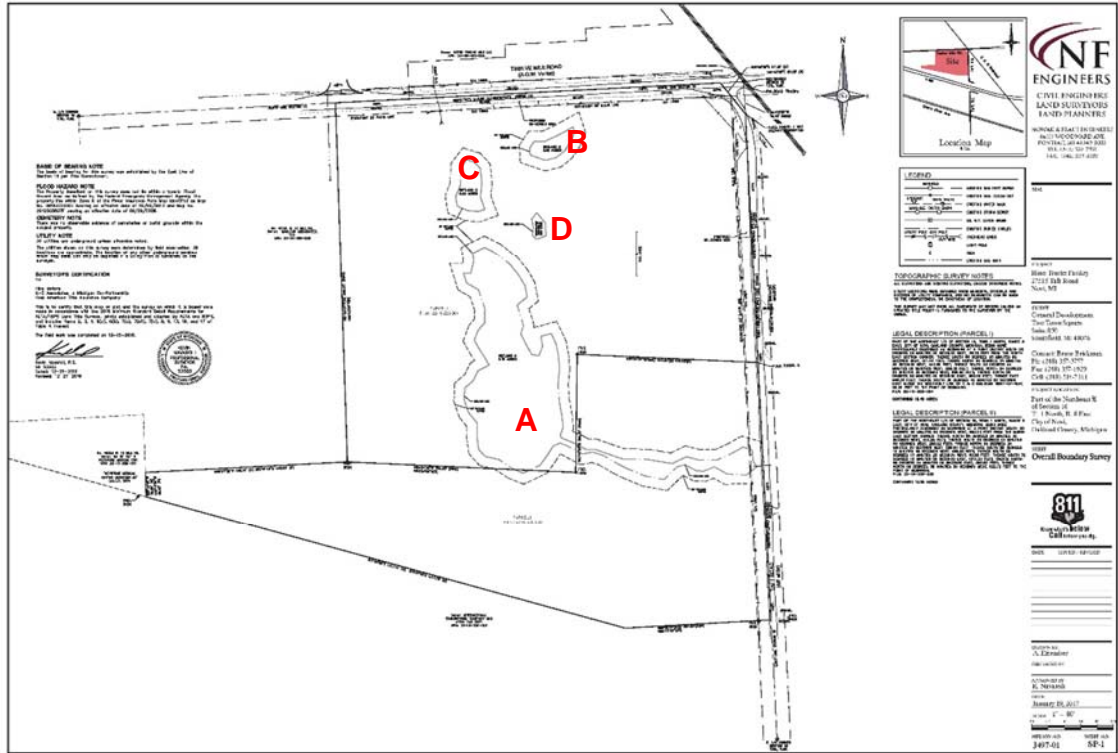


Figure 2. Overall Boundary Survey (provided by Nowak & Fraus Engineers). Wetlands A through D are indicated on this plan.

Site Photos



Photo 1. Looking south at east end of Wetland A adjacent to Taft Road (ECT, January 31, 2017).



Photo 2. Looking northwest at widest part of Wetland A (ECT, January 31, 2017).



Photo 3. Looking northeast at Wetland B, south of 12 Mile Road (ECT, January 31, 2017).



Photo 4. Looking northeast at Wetland C (ECT, January 31, 2017).



Photo 5. Looking northeast at Wetland D (ECT, January 31, 2017).



Photo 6. Looking south at regulated woodland area south of Wetland A, on the south side of the subject property (ECT, January 31, 2017).



Photo 7. Tree No. 710; 37-inch black walnut located on the southern portion of the site (ECT, January 31, 2017).



Photo 8. Looking northwest towards area of mapped regulated woodland north of Wetland B on the north side of the subject site (ECT, January 31, 2017).

APPLICANT COVER LETTER



**PREMIER
REALTY, L.L.C.**

560 Kirts Boulevard • Suite 100
Troy, Michigan 48084
(248) 362-4666
Fax (248) 362-0546

City of Novi
45175 West 10 Mile Road
Novi, MI 48375

Re: 12 Mile and Taft Commerce Park

To whom it may concern:

I hereby give Teresa Bruce of General Development Company to submit the Application for Site Plan and Land Use approval on my behalf.

Sincerely,
Premier Novi, LLC

Michael Kahan
Member

TRAFFIC IMPACT STUDY



December 27, 2016

Ms. Teresa Bruce
General Development Company
Two Towne Square, Suite 850
Southfield, Michigan 48076

**Re: Rezoning Traffic Impact Study Letter
Proposed Twelve Mile and Taft Roads OST Rezoning Application
City of Novi, Michigan
200-163821-17001**

Dear Ms. Bruce:

Tetra Tech (Tt) has reviewed the information provided by your office regarding your existing RA Residential Acreage property, and have completed our assessment of the trip generation forecast for the proposed rezoning of the site to OST Office Service Technology District as it compares to the existing zoning for the site. As we understand it, the approximately 30 acre site is located on the southwest quadrant of Twelve Mile Road and Taft Road. This letter has been prepared as part of your rezoning application and in accordance with the requirements of the City of Novi, as specified in their Community Development Department Site Plan and Development Manual.

In the vicinity of your property, Twelve Mile Road is a two-lane arterial road with shoulders under the jurisdiction of the Road Commission for Oakland County (RCOC), and has a posted speed limit of 45 MPH. Taft Road is two lane residential road without shoulders under the jurisdiction of the City of Novi, and has an unposted speed limit of 25 MPH. Twelve Mile Road has pavement markings, such as edge and centerlines, while Taft Road does not have any pavement markings. The intersection of Twelve Mile Road and Taft Road is currently unsignalized, with stop control for only the northbound Taft Road approach (the intersection is a three-legged or "T" intersection, and does not have a southbound approach). There is also an at-grade railroad crossing with automatic gates adjacent to the intersection of Twelve Mile Road and Taft Road (just east of the intersection).

A recent Average Daily Traffic (ADT) count obtained from the SouthEast Michigan Council Of Governments (SEMCOG) website indicates that the daily traffic volume on Twelve Mile Road in the vicinity of your property is approximately 17,500 vehicles per day, with the peak hour being between 5:00 – 6:00 p.m., with a bi-directional volume of approximately 2,025 vehicles per hour. Information on traffic counts for Taft Road near your development are not available. A copy of the Twelve Mile Road count from the SEMCOG website is attached to this letter for reference.



To the north of your property, across Twelve Mile Road, the current zoning is a mix of Residential Zonings (R-1 and RA) to the east, and to the west the current zoning is I-1. To the east of your property (across Taft Road) and to the west of your property (adjacent to), the current zoning is OST (identical to the zoning you are seeking under this rezoning application). To the south of your property, the current zoning is RA.

Currently the site is undeveloped, and consists of woodland and wetland areas that would require extensive clearing and/or remediation to fully develop the site. Based on information provided by your office, under the current RA Residential Acreage zoning, you estimated a maximum of 28 homes could be built on the site, accounting for the minimum lot size, the actual geometry of the property, and providing area for roadways to fully access all potential residences on the site.

Under the proposed OST Office Service Technology District zoning, which is the use indicated under the current City of Novi’s Master Plan for Land Use, a maximum building size of approximately 240,000 sq. ft. could be built on the site with the required parking. Again, this size development could only be built if the previously mentioned extensive clearing and remediation were performed for the woodland and wetland areas on the site. Discussions with your office indicated that this site work would be very costly, and that a building closer to half the maximum size, or approximately 124,000 sq. ft., would be a more reasonable development for the site. However, for the purposes of this study, the maximum sizes possible under the existing and proposed zoning were considered.

Using the information and methodologies specified in the latest version of *Trip Generation (9th Edition)* published by the Institute of Transportation Engineers (ITE), Tt forecast the total weekday, weekday AM peak hour and weekday PM peak hour trips associated with the site specified above for uses under the existing and proposed zoning for the site.

Following are tables that summarize our findings.

**Table 1
ITE Trip Generation for Twelve Mile and Taft Roads Site, Existing RA Zoning**

Land Use	Land Use Code	Size (units)	AM Peak Hour			PM Peak Hour			Week Day
			In	Out	Total	In	Out	Total	
Single-Family Detached Housing	210	28	7	23	30	21	13	34	326
MAXIMUM TRIPS – EXISTING ZONING			7	23	30	21	13	34	326



Table 2


ITE Trip Generation for Twelve Mile and Taft Roads Site, Proposed OST Zoning

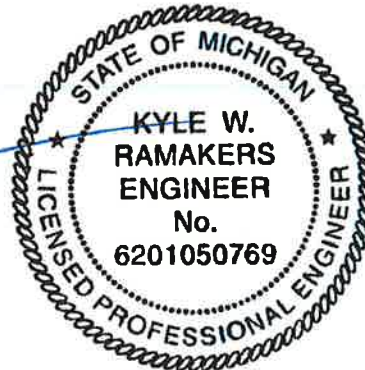
Land Use	Land Use Code	Size (sq. ft.)	AM Peak Hour			PM Peak Hour			Week Day
			In	Out	Total	In	Out	Total	
Research and Development Center	760	240,000	232	47	279	41	232	273	1,947
MAXIMUM TRIPS – PROPOSED ZONING			232	47	279	41	232	273	1,947

Under the existing RA Residential Acreage zoning, the site is forecast to generate a maximum of 30 trips during the AM peak hour, 34 trips during the PM peak hour, and 326 total weekday trips. Under the proposed OST Office Service Technology District zoning, the site is forecast to generate a maximum of 279 trips during the AM peak hour, 273 trips during the PM peak hour, and 1,947 total daily trips. The proposed zoning would generate a maximum of 249 additional trips during the AM peak hour, 239 additional trips during the PM peak hour, and 1,621 additional daily trips.

We trust that this letter fulfills your current transportation needs regarding your proposed development. If you have any questions, please feel free to call our office at (810)-220-2112.

Sincerely,


 Kyle W. Ramakers, P.E., PTOE
 Transportation Engineer



12/27/2016

200-163821-17001

P:\NER\163821\200-163821-17001\SupportDocs\Cals\Traffic\Deliverables\Taft-Road_RTIS.docx

Location Info	
Location ID	2049
Type	LINK
Functional Class	-
Located On	12 Mile
Between	TAFT AND DIXON
Direction	2-WAY
Community	Novi
MPO_ID	297
HPMS ID	
Agency	Road Commission for Oakland County

Count Data Info	
Start Date	8/27/2012
End Date	8/28/2012
Start Time	12:00 PM
End Time	12:00 PM
Direction	
Notes	
Count Source	FO380_____
File Name	counttemp1143.mdb
Weather	
Study	
Owner	rcoc

Interval: 60 mins	
Time	Hourly Count
00:00 - 01:00	79
01:00 - 02:00	38
02:00 - 03:00	24
03:00 - 04:00	20
04:00 - 05:00	34
05:00 - 06:00	145
06:00 - 07:00	455
07:00 - 08:00	1240
08:00 - 09:00	1357
09:00 - 10:00	775
10:00 - 11:00	777
11:00 - 12:00	927
12:00 - 13:00	1176
13:00 - 14:00	995
14:00 - 15:00	1034
15:00 - 16:00	1130
16:00 - 17:00	1713
17:00 - 18:00	2022
18:00 - 19:00	1222
19:00 - 20:00	798
20:00 - 21:00	627
21:00 - 22:00	464
22:00 - 23:00	271
23:00 - 24:00	118
TOTAL	17441



Mr. Ramakers has been involved in numerous facets of traffic and transportation engineering. He has performed numerous traffic operation and impact studies to evaluate the impacts of proposed improvements and developments on the surround roadway network. As part of these evaluations, Mr. Ramakers performs Level of Service (LOS) evaluations, determine traffic signal operational improvements (timing and coordination improvements), roadway and intersection geometry requirements, the need for turn treatments based on roadway agency requirements, safety reviews, signal warrant analyses, and sight distance evaluations. He is knowledgeable in Synchro/SimTraffic, HCS, Rodel, Sidra, Vissim, TSIS/CORSIM, AutoCAD and MicroStation.

EXPERIENCE

Traffic Engineering Consultant, City of Brighton, Livingston Co., MI

As part of overall civil engineering consulting services for the City of Brighton, performed as-needed traffic engineering services consisting of collecting and reviewing traffic counts, reviewing spot speed studies, determine scope for and review of traffic impact studies for commercial and residential developments, attend council meetings to provide recommendations and comments on various traffic engineering related issues, safety reviews of intersections and corridors, interacting with other local agencies in determining recommendations on developments and improvement projects, signal timing and operation recommendations, and other various duties as required.

Traffic Engineering Consultant, Genoa Township, Livingston Co., MI

As part of overall civil engineering consulting services for Genoa Township, performed as-needed traffic engineering services primarily consisting of determining scope and review traffic impact studies for various commercial and residential developments around the community, attending council meetings to provide comment and recommendations on various traffic engineering related issues, interacting with other local agencies in determining recommendations on developments and improvement projects, and other various duties as required.

Traffic Impact Studies, Various Locations, MI

Traffic Engineer for traffic impact studies around southeast Michigan, requiring operational analyses and safety reviews as part of the study evaluations. Included reviewing traffic counts, developing trip generation forecasts, performing operational analyses of existing, future No Build and Build conditions utilizing Synchro and HCS, and developing recommended geometric and operational mitigation measures, as required, including for traffic signal installations and signal timing improvements.

Grand Region Signal Optimization, Grand Region, MI

Project Manager for the operational analysis and optimization of 35 signalized intersections within Ionia, Mecosta and Montcalm Counties in the MDOT Grand Region. As part optimization services performed, a full safety review was performed, collection of intersection field inventories, simultaneous collection of turning movement and ADT counts, timing plan preparation and simulation of optimized conditions. A final report was prepared documenting all data collected, findings, and recommendations.

E. Grand River Avenue Corridor Study, Brighton, MI

Traffic Engineer for the East Grand River Corridor Study undertaken to perform a traffic analysis of existing and future traffic levels and operations within the study corridor using Synchro, and to develop preliminary conceptual design alternatives to improve the City's east gateway. Traffic projections, level of service and corridor safety analyses (intersection crash reviews and development

Project Role:

Project Manager\Lead Traffic Engineer

Education:

MS, Construction Engineering and Management, University of Michigan, 1997

BS, Civil and Environmental Engineering, University of Michigan, 1996

VISSIM Training Courses, 2014

ODOT Focused Highway Safety Manual Training, 2013

ODOT Highway Safety Manual Safety Studies Training, 2013

Ohio DOT/Ohio Rail Development Commission Railroad Preempted Traffic Signal Training, 2012

Ohio DOT Interchange Justification Studies, 2010

Ohio DOT Safety Studies Training, 2010

FHWA Road Safety Audits/ Assessments, 2010

Synchro/SimTraffic, 2002

Highway Capacity Analysis Training, 2001

Registrations/Certifications:

Professional Traffic Operations Engineer, ITE, 2006, No. 1843

Professional Engineer:
Michigan, 2003, No. 50769
Ohio, 2010, No. 74462
Florida, 2011, No. 73180
Kentucky, 2012, No. 28594
Oklahoma, 2014, No. 27026
Texas, 2014, No. 117792

Professional Affiliations:

Institute of Transportation Engineers, Associate

Office:

Brighton, Michigan

Years of Experience:

18

Years at Tetra Tech:

12



of mitigation measures), access management initiatives, and conceptual roadway design were performed to enhance safety and operations of the gateway and to provide an economic stimulus for redevelopment in the eastern corridor.

US-24 Bloomfield Park Traffic Impact Study Review, Bloomfield Township, MI

Traffic Engineer that assisted Bloomfield Township with the review of the multi-jurisdictional traffic impact study and associated Synchro models, along with reviewing the shared parking analysis prepared for the proposed development. Tasks included reviewing study requirements from MDOT, Bloomfield Township and the City of Pontiac, checking consultant adherence to those requirements, checking Synchro models for adherence to analysis standards and providing appropriate analysis of standards, checking assumptions and reviewing mitigation recommendations as appropriate and adequate to maintain safe and efficient flow of traffic in and around the proposed development. For the shared parking analysis, checked for adherence to standards, the study recommendations were appropriate and adequate, and ensuring that parking findings and recommendations were consistent with site plans prepared for the proposed development. Provided written review comments and recommendations to Bloomfield Township regarding the need for revisions to the studies as required.

M-59 Wal-Mart Traffic Impact Study, Hartland Twp., MI

Traffic Engineer for the multi-jurisdictional traffic impact study performed to determine the required intersection geometry and traffic control improvements required for acceptable operation of the proposed retail development utilizing the analysis program Synchro. Study requirements included coordination between the various reviewing agencies, traffic forecasts, distribution of traffic from the proposed development, and evaluation of traffic operations and development of recommendations, including signalization and coordination, all in accordance with MDOT traffic study requirements. A final analysis model was prepared, which included all required mitigation measures for the proposed development, and approved by both the Livingston County Road Commission and MDOT.

M-10 Northwestern Highway Retail Development Traffic Impact Study, Farmington Hills, MI

Traffic Engineer for the multi-jurisdictional traffic impact study performed to determine if a proposed signalization of the site driveway could result in acceptable operation within the proposed Northwestern Connector project utilizing the analysis program Synchro. Study requirements included coordination between the various reviewing agencies, traffic forecasts, distribution of traffic from the proposed development, and evaluation of traffic operations in accordance with MDOT traffic study requirements. A final analysis model was approved by RCOC and MDOT.

M-150, South Blvd to Auburn Road, Oakland Co., MI

Traffic Engineer for a traffic signal operational study that included signal warrant analysis, safety reviews, data collection, intersection layout, and operational reviews with progression analyses within the existing traffic signal system utilizing Synchro. Collision diagrams were prepared and crash analyses performed along with crash rates and trends. Geometric improvements and access management modifications were recommended.

M-53, 34 Mile Road to Boardman Road, Macomb County, MI

Signal warrant analysis of five unsignalized intersections. Tasks included collecting turning movement and 24-hour counts, obtaining and reviewing crash data, performing gap analyses, stopped vehicle delay studies, and reviewing all requirements for signalization per the 2005 MMUTCD. Synchro was used to determine the level of service (LOS) for both signalized and unsignalized control. A summary report was prepared with all findings and recommendations.

Grand River Avenue and I-96 Ramp / Hilton Road Intersection Study, Brighton, MI

Traffic Engineer for a complex intersection evaluation / preliminary interchange study for a poorly operating intersection at the city limit. Project tasks included evaluations of existing operations, determining future No-Build operating conditions, development of potential intersection improvements including preliminary traffic signal design, determining future build operating conditions, and comparative construction cost estimates. Analysis of existing conditions and mitigation alternatives was performed utilizing Synchro, Rodel, and Sidra software.

City of Lansing CSO Maintenance of Traffic and Mobility Analysis, City of Lansing, Michigan

Traffic Engineer that assisted with the development of Maintenance of Traffic schemes and performed the Mobility analysis for the various stages of construction of new sewer and water mains under major MDOT arterials within the City of Lansing. The Mobility analysis, performed to Michigan DOT standards and requirements, consisted of determining traffic pattern diversions due to construction activities and the effect on operations of various intersections within the construction zone and along the detour route. Travel time estimates were determined based on Synchro and SimTraffic results, and mitigation measures were recommended to reduce traveler delay and improve operations. A final report was prepared documenting all assumptions, finding and recommendations.