

FIRE STATION NO. 1 LONG TERM NEEDS ASSESSMENT

INTRODUCTION

The City of Novi, in continuing its efforts to monitor and evaluate the present facilities of the Department of Public Service and Department of Public Safety, commissioned the firm of Sidock Architects to conduct an inspection and evaluation of the conditions of those physical plant facilities. This inspection and evaluation included the physical assessment of each facility’s capability to accomplish the operational needs of the Department and to recommend short and long term improvements to further that mission.

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EXISTING FACILITY ASSESSMENT



SITE VISIT

On November 11, 2013, Sidock Architects conducted an on-site inspection and analysis of Fire Station No. 1 with the assistance of the Novi Fire Department administration and staff, and representatives from the City of Novi Facility Operations. The inspection included brief discussions with the fire fighters and staff at the station and a general inspection tour of the facility.

Brief Building History and Operations

Fire Station No. 1 was built in 1981 to serve the central portion of the City of Novi. The station is located in an active commercial district on the south side of Grand River Avenue just east of Novi Road. The original station consisted of 6,481 sq. ft. and was expanded in 1988 with an addition of 2,295 sq. ft. The station was the Headquarters for the Department and had offices for the Fire Chief, Deputy Chief and Fire Marshal in addition to administrative staff as well as the company of fire fighters. The Headquarters function was changed when the Department went to the Public Safety Administration organization model with the Director of Fire and EMS, the Fire Marshal and the associated staff moving to the Public Safety Department located in the Novi Police Building.

The station is currently staffed as follows:		Monday – Sunday	12 Hour Shifts
- Supervisor (Captain)	6-8 fire fighters	Monday - Friday	6 am to 6 pm
- Supervisor (Captain)	2 fire fighters	Monday - Sunday	6 pm to 6 am

Facility Description

Station No. 1 is a 3-bay drive through station with a one story area adjacent to the apparatus bay housing support spaces, administration and living quarters. The station is approximately 9,980 sq. ft. total area.

It is constructed with concrete masonry exterior bearing walls with a brick veneer. The apparatus bay walls are composed of 16" composite masonry walls composed of 12" concrete masonry units (CMU) with core-fill styrofoam insulation and a brick masonry veneer. The one story support and living area is composed of an 8" concrete masonry unit, a 2" rigid cavity insulation and 4" brick veneer. The roof is a single ply roof membrane over rigid insulation on metal roof decking on structural steel joist and beams bearing on the masonry walls with a pre-finished sheet metal coping on the entire perimeter.

- Interior living areas have painted walls of either CMU or metal stud with gypsum wallboard and 2' x 2' acoustical tile ceilings.
- Interior floor finishes include carpeting in the Offices, Watch Room, Dormitory, and Day Room, vinyl tile in the Kitchen/Dining area, ceramic tile in the Toilet/Shower/Locker Rooms areas and concrete floors in the Apparatus, Mechanical and Hose Drying/Work Area.
- Clear height to the underside of the metal decking in the Apparatus Bay is 19"-8", 12"-4" in the support areas and living areas.
- The floor slab in the Apparatus Bay is 6" lower than that of the Living Area and has cast-in-place trench drains with removable painted metal grating centered in each bay.
- Windows consist of two types of aluminum framed windows. The first is butt-glazed, insulated glass in fixed aluminum framing. The second is operable, aluminum framed awning window units.
- The station has limited fire protection sprinklers located only in the mechanical and storage rooms.

Summary of Areas

<u>EXISTING PROGRAM AREAS</u>	<u>APPROXIMATE AREA</u>
Apparatus Bays (3@17' x 74')	3,774
Mechanical Room	138
Hose Tower	64
Hose Storage/Hose Dryer	254
Tool Room	77
Office	76
Day Room/Kitchen/Dining/Watch Room	767
Lockers/Dormitory	651
Men's Toilet and Shower Room	224
Janitor's Closet	64
Women's Restroom	40
Former Chief's Office	236
Former Deputy Chief's Office	200
Former Account Clerk's Office	181
Corridor Space	235
Storage	344
Open Office (Former Fire Marshal's Office)	549
Training Room	560
Equipment Garage	<u>421</u>
Sub-Total	8,776 Sq. Ft.
Circulation Space/Walls	<u>1,204</u>
TOTAL AREA	9,980 Sq. Ft.

Site Description

Fire Station No. 1 is located on the south side of Grand River Avenue between Novi Road and Meadowbrook. The site is located in a commercial district. The site is relatively flat and no drainage problems are evident. The apparatus exit onto Grand River immediately adjacent to the Main Street/Grand River intersection. This location is influenced by a traffic congestion problem that has been increased by the commercial development to the north along Main Street. Traffic signals are controlled by the station to allow for egress, but are a defect in the value of this site.

The front and rear aprons at the Apparatus Bays are concrete and in good condition. The drives and parking have been re-paved except for the majority of the rear staff parking area. There is one (1) barrier free parking space in the five (5) adjacent to the front entry to the station. There are 25 staff

parking spaces in the southwest section of the site behind the station. Additional temporary parking is utilized adjacent to the south entrance of the Apparatus Bays.

There are landscaped areas to the north, east and south sides of the building which have been maintained in good condition. The transformer and generator are located on a concrete pad on the south side of the building and screened by landscape materials.

ARCHITECTURAL ASSESSMENT

A. Site and Access

1. Parking is adequate for the current staffing.
2. Apparatus return is accomplished from Main Street and appears to be adequate.
3. There is no public access to the rear of the building which hampers delivery of materials.

B. Exterior Building Envelope

1. Exterior Walls

- a. Brick veneer appears to be in fair to good condition, except for small area surrounding exhaust fan serving the Apparatus Bay on the west elevation and two areas on the Training Tower that need to be tuck pointed.



- b. Some signs of efflorescence on the brick on the south and west elevation of the Training Tower which indicates some water penetration. This may be taken care of at the same time the tuck pointing repairs are made.



- c. Steel angles and channels at overhead doors show some signs of rusting.



2. Exterior Doors and Windows

- a. Overhead doors are in fair to good condition. They should be replaced with insulated metal panel doors and vision panels.
- b. Steel angle sills at the overhead doors are rusty and should be sanded and painted. Some steel door jambs are also rusting at the overhead doors.



- c. Steel lintels over windows and doors show signs of rusting
- d. Exterior aluminum framed windows are in good condition. Screen needs to be replaced on the north elevation window in the Living Area.

3. Exterior Soffits and Lighting

- a. Exterior building soffits are in good condition, and require only paint touch-up.
- b. Some soffit lights are missing lenses.
- c. There are three (3) exterior pole-mounted site lights.

4. Roofing

- a. Roof appears to be in very good condition with no reported leaks.

C. Interior Construction

- 1. Interior masonry walls are in good condition with no major cracking.
- 2. Interior door hardware is not barrier free. Lever handles are required.

3. Carpeting in Living/Dining and in Office areas is worn and needs to be replaced.
4. Acoustic ceiling panels are in fair to good condition.

D. Functional Assessment

1. Apparatus Bays

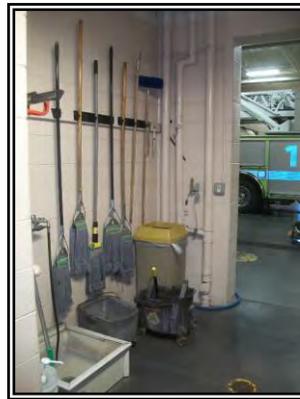
- a. Apparatus Bay overhead doors are 14 ft wide x 12 ft high with an 18” wide pier between them.
- b. There is an emergency vehicle exhaust system in place – by Plymovent. Two (2) additional drops are needed to complete the coverage for this station.
- c. The existing speaker system works is audible only when no vehicles or equipment are operating. Additional speakers are needed.
- d. The turnout gear is stored in wall-mounted gear racks located on the east side of the Apparatus Bay.
- e. The floor finish is sealed concrete and has no slip resistant finish.
- f. Currently there are one (1) Engine, one (1) Ladder, one (1) Squad, one (1) Tanker, one (1) command SUV, one (1) TAC F-250 Pick-Up. It was reported that there are plans to change the Tanker to a 4-person cab Engine within the next two years.

2. Hose Tower

- a. The tower is no longer used for drying hoses.
- b. The tower is currently being used for storage.

3. Work Room

- a. This space incorporates multiple activities:
 - (1) Laundry – washer, dryer and laundry tub
 - (2) SCBA tank storage
 - (3) Roof hatch ladder access
 - (4) Work counter
 - (5) Exercise space and equipment
 - (6) Miscellaneous storage
 - (7) Vending Machine



4. Tool Room
 - a. Location of air compressor
 - b. Contains work bench with grinder and storage of miscellaneous tools. The space is full.
5. Watch Room
 - a. Includes computer and communications equipment. There are many plug strips and extension cords in use for chargers and other equipment.



- b. Carpeted floor is worn and needs replacement.
- c. Viewing window into Apparatus Bay with fire shutter.
- d. Counter top edges and cabinets are worn and need replacement.



6. Report Office
 - a. Small area with one desk and one computer.
7. Day Room/Kitchen/Dining Area
 - a. The kitchen is in good condition and has new appliances, but is very small.
 - b. There is no pantry space and very limited base and wall cabinets.



- c. The Dining Room has a table with seating for 6-8 people.
 - d. Carpeted floor in the Day Room is worn and needs replacement. The space has one small couch.
 - e. Kitchen cabinets and counters are showing signs of wear and need replacement.
 - f. Need Kitchen exhaust fan.
 - g. Ceiling tiles are stained and require replacement.
8. Janitor's Closet
- a. There are multiple acoustic ceiling panels needing replacement.
9. Locker Rooms/Bunk Room
- a. The Auxiliary Fire Fighter Locker Room has six (6) 12" x 15" lockers in a 6' x 8' room.
 - b. The Men's Locker Room has 28 12" x 15" lockers.
 - c. The lockers are too small for fire fighter's equipment storage requiring the fire fighters to use multiple lockers.



- d. Ceiling tiles are stained and require replacement.
- e. Auxiliary Fire Fighter's Locker Room carpet is unraveling.
- f. There are bunks in an open space adjacent to the Men's Locker Room.



10. Men's Toilet/Shower Room
- a. Ceramic tiles are cracked and/or missing in multiple locations – both wall tile and base.
 - b. Overall condition is worn and requires updating of materials and finishes.
 - c. There is no Women's Toilet/Shower/Locker Room.

11. Former Chief's Office
 - a. Open office with furnishings. Used for occasional special projects/reports.
 - b. Only access is through adjacent office space.
12. Former Deputy Chief's Office
 - a. Open office with furnishings, filing cabinets. Used for filing reports and acts as an occasional meeting room.
13. Captain's Office
 - a. Former office of Account Clerk.
 - b. Fully furnished, but needs updating.
14. Entry/Corridor
 - a. No vestibule for control of temperature or security.
 - b. Former main public entry, but public now enters into Watch Room entry.
15. Storage
 - a. The main storage for the station, containing EMS storage, janitorial and office supplies, extra turnout gear, spare radio and telephone equipment.
16. Meeting Room
 - a. Former office of the Fire Marshal. Currently used for morning briefings, meetings and some training.
17. Old Training Room
 - a. Small space in direct exit route to rear entry door.
 - b. Currently holds limited amount of exercise equipment. More equipment can not be used due to maintaining exit route.
18. Outdoor Storage
 - a. Storage for seasonal and maintenance equipment.



- b. Access only through overhead door.
- c. Not conveniently accessible for deliveries as it is located off the drive access to the Apparatus Bay from Market Street.

E. Mechanical Assessment

1. The mechanical systems appear to be working properly.

F. Electrical Assessment

1. There is a shortage of power distribution in the station. The main electrical panels should be replaced and additional distribution added.

G. Summary/Evaluation

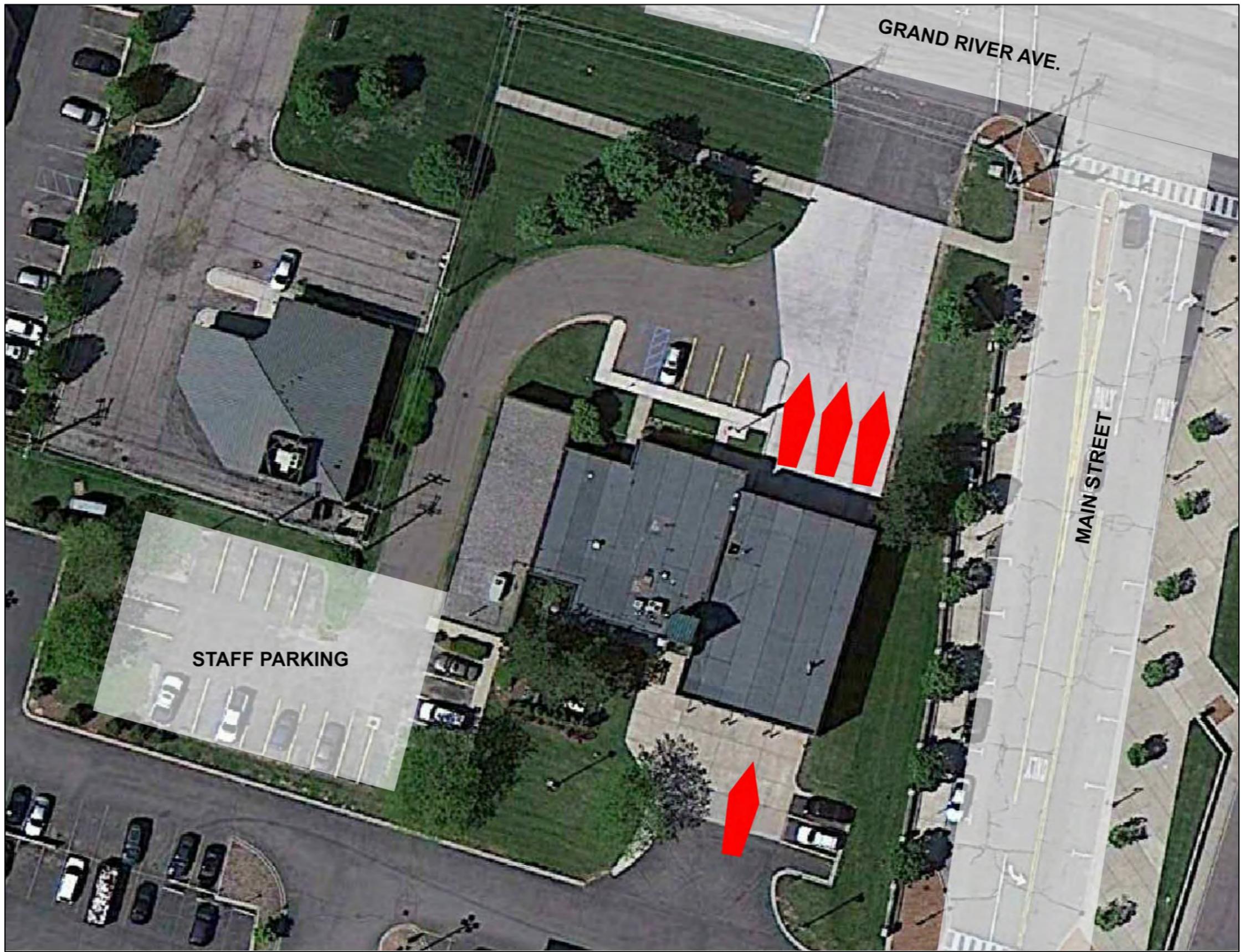
Station No. 1 is over 30 years old, but remains in relatively good physical condition. The mission of the station has changed with the adoption of the Public Safety Administration structure and the relocation of the Fire Department administrative offices to the Police Building. This move has freed up more than 10% of the original area for use in providing missing functions found in a typical fire station such as Women's Locker/Shower Room/Toilet facilities.

Cosmetic Flaws

- The cracked concrete steps at the rear concrete walk should be removed and replaced.
- The rusted steel angles and lintels and overhead door jambs should be cleaned and repainted.
- Minor brick tuck pointing is needed on the east and south elevations at the exhaust fan and the Training Tower.
- Counter tops and drawer fronts in Watch Room should be replaced.
- Acoustical ceilings should be replaced in the area of the Men's Locker Room.
- Carpeting should be replaced throughout the station.
- A dishwasher is needed in the Kitchen.
- .

Design/Functional Flaws

- The intersection at Main Street and Grand River is often congested with traffic back-ups. This makes the egress more difficult.
- A non-slip epoxy floor system should be applied in the Apparatus Bays.
- The Public Entry should now be shifted to the door adjacent to the Watch Room with some signage or indication of public entry.
- There needs to be a separate Women's Locker/Shower Room for female fire fighters.
- Lockers for male and female fire fighters should have larger lockers.
- The Kitchen/Dining/Day Room areas are small and inefficient for staff use.
- The Bunk Room is small and is a mixed-use area with storage and other functions.
- The Training Room can be better utilized with some allowance for increased exercise space out of the traffic flow to the rear entry door.
- Storage is at a premium and additional storage should be provided.
- The relocation of administrative personnel has created vacant spaces that should be re-configured to account for some of the shortfalls noted above.
- Electrical panel space is not available and a new panel with increased distribution is needed.



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Key Plan: NO SCALE

Client:
 CITY OF NOVI
 MICHIGAN

Project:
 NEEDS ASSESSMENT

Seal:

Date Issued For

Drawn: K. GILSON
 Checked: S. PETERSON
 Approved: S. PETERSON

Sheet Title:
 FIRE STATION #1
 AERIAL VIEW

Project Number: 13439

Sheet Number: FS1-AV

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FIRE STATION #1 - AERIAL VIEW

REPLACEMENT FIRE STATION SITE ANALYSIS

One of the alternatives for upgrading of the fire service from Fire Station No. 1, was to evaluate two (2) parcels located at or near the intersection of Eleven Mile Road and Lee BeGole Drive for the design and construction of a replacement fire station. The evaluation was also to include the review of the Town Center Study that was concurrently being prepared by Carlisle/Wortman Associates, Inc. and the potential land use recommendations for these parcels.

Parcel ID 22-14-451-002 is located on the north side of Eleven Mile Road east of Lee BeGole Drive and constitutes the entire Department of Public Services site of approximately 31 acres. Parcel ID 22-23-226-008 is located on the south side of Eleven Mile Road just west of Lee BeGole Drive and contains approximately 1.7 acres. See Appendix A, Parcel location map.

Planning Background

The existing Fire Station No. 1 is approximately 10,000 sq ft. Based on our experience, a comparable three-bay drive-through satellite fire station with sleeping quarters, male and female locker rooms, training room, watch room, day room and support spaces average approximately 10,500 sq ft of building area.

Site evaluation is based upon location, ingress/egress avenues, building orientation. Based on our experience with the design of fire stations, an ideal site would be relatively flat and approximately 5 acres in size. Smaller sites of 3-4 acres are still in the preferable category. Smaller sites of 1.5-2.5 acres are manageable, but require more expensive solutions for storm-water detention, potential 2-story building solutions, etc., and are not recommended.

Alternate Site Analysis

Again, the first site consideration is location – in terms of its area of responsibility, in terms of the demand within the area of responsibility and its access to major roads/streets for emergency response. In regards to the two parcels to be considered, both sites are close to the exact geographical center of the Fire Station No. 1 Fire District (see Appendix B - Fire District Map and 3-Station Fire District Map). The proposed sites are less responsive in terms of Runtime (the time required to respond to a call for service from location to arrival on scene) for incidents with a Runtime of 1-3 minutes as compared to the existing Station No. 1 locations (see Appendix C - Fire Station No. 1 and Proposed Site-Runtime Analysis diagrams and tables). The proposed sites result in longer response times within its Fire District areas of responsibility. Outside of its Fire District, when responding as back-up to one of the other stations, the response times are about equal.

It is apparent that the difference in Runtimes between the two locations is due to the time differential between the proposed site and the existing Fire Station No. 1 site in getting onto a major road.

In reviewing the proposed sites and in consultation with the Town Center Study, additional sites were discussed, site visits conducted and features evaluated (see Appendix A - Publicly Owned Lands and City of Novi Facility Operations Map). Each of the sites had detractions including location, size, availability, cost to purchase (if not currently owned by the City of Novi) or unique site characteristics.

In consideration of the above, the following is a summary of the Alternate Site Analysis:

1. Existing Fire Station No. 1 Site

PROS: In the center of Fire District on a major road. Adequate size. Structure in good condition and can be renovated/updated to meet current mission at less cost than new replacement station. Currently owned by the City.

CONS: Location adjacent to major intersection – concerns for entering emergency vehicles into traffic congestion. Property may have value for commercial use, but limited due to no direct access to Grand River. Fire station use not projected in Town Center Study.

2. Anglin Site

PROS: In the center of Fire District on a major road. Adequate size. Far enough away from congested intersections on Grand River, but close to major north-south Novi Road and Meadowbrook. Fire station use projected in Town Center Study.

CONS: Not currently owned by the City of Novi – cost to purchase may be a factor. Cost of construction of site improvements and new fire station greater than renovation costs of existing station.

3. Flint Street Site

PROS: Exits onto Novi Road – a major north-south artery – with existing traffic signal. Adjacent to major east-west Grand River Avenue, but far enough away to avoid congestion. Identified as part of future Ring Road development.

CONS: Not currently owned by the City of Novi. Cost of construction of site improvements and new fire station. Exits onto Grand River close to intersection of Novi Road with traffic back-ups common that may cause delays until final development of planned Ring Road. Fire station use not projected in Town Center Study.

4. DPS Site

PROS: Currently owned by the City of Novi and close to DPS facilities and services. Adequate size in portions of the site. Fire station use projected in Town Center Study.

CONS: Response times affected by location compared to other sites. Much of the remaining undeveloped site has wetland area or topography not suitable for construction of a fire station. Cost of construction of site improvements and new station.

5. Eleven Mile Rd. (south side)/Lee BeGole Drive Site

PROS: Currently owned by the City of Novi and close to DPS facilities and services. Fire station use projected in Town Center Study.

CONS: Response times affected by location. Narrow and very deep site not appropriate for constructing a new fire station effectively. It has been reported that additional parcel adjacent to this site is now City-owned which may mitigate constructability issues for this site.

RECOMMENDATIONS

Based on the analysis of the information received and evaluation of the existing facility, our recommendations rank the alternatives in the same order as the summary listed above. Our comments are:

1. Existing Fire Station No. 1

From a pure economic standpoint, the existing station presents the most cost-effective solution of renovation/upgrading the existing facility as compared to the construction of a new fire station. The site is centrally located and located on a major east-west road and near a major north-south intersection. A commercial development of the site may not be as attractive as access to the development would be limited, for a commercial use, to Main Street, not Grand River, due to its close proximity to the Grand River-Main Street intersection.

2. Anglin Site

The Anglin Site is the best alternative site in terms of location as it is located on a major road, Grand River Avenue, and near the major north-south access of both Novi Road and Meadowbrook. It is larger (10 acres) than needed for a fire station and that may result in the cost being prohibitive combined with the added construction cost of a new fire station compared to the renovation of the existing station. It is not currently under the control of the City.

3. Flint Street Site

Flint Street is a target area for continuation of the development of the Town Center Ring Road and is currently under-developed property. The value as a site for a new fire station is limited to the southeast end of Flint Street as it provides quick access through an existing, controllable traffic signal to Novi Road and the Grand River intersection, but far enough away from the intersection to overcome traffic congestion. The value is less to the northwest end of Flint Street as access to Grand River is in a location where traffic, by personal observation,

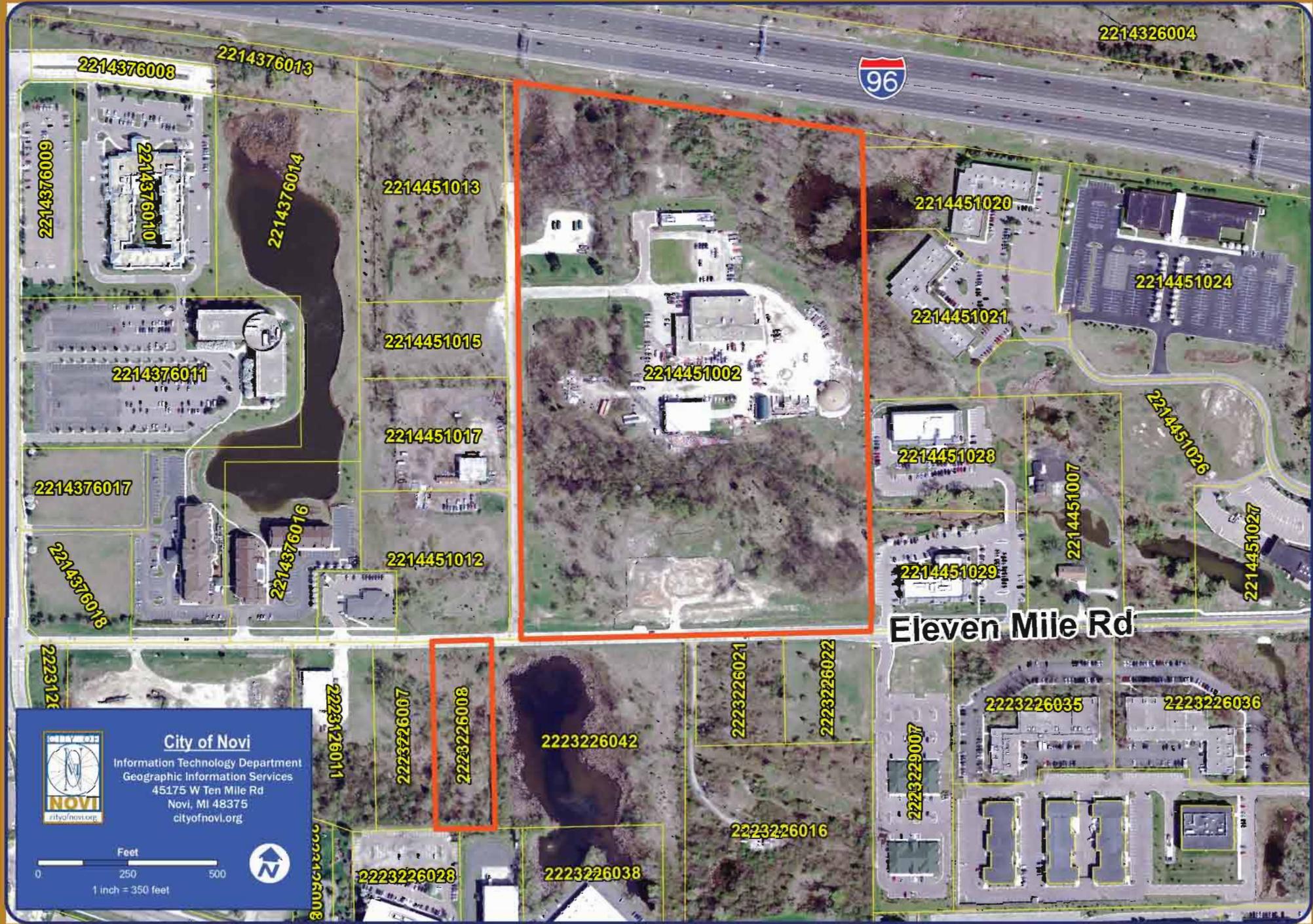
frequently backs up past the point where vehicles enter from Flint Street and does not have a traffic signal.

4. The Two Alternate Parcel Sites – Eleven Mile Road and Lee BeGole Drive

Both sites add response time for fire service in this Fire District. There is no direct access to a major road within one-half mile.

City of Novi

Parcel Locations: 22-14-451-002 & 22-23-226-008



City of Novi

Information Technology Department
Geographic Information Services
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Novi, MI 48375
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Publicly Owned Lands and City of Novi Facility Operations

- Civic Center/City Hall
- Historic Site
- Post Office
- DPS
- District Court
- Recycling
- Police Station
- Fire Station
- Hospital
- Library
- Ice Arena
- School
- Meadowbrook Activities Center
- Sanitary Lift Stations
- Water Booster Stations

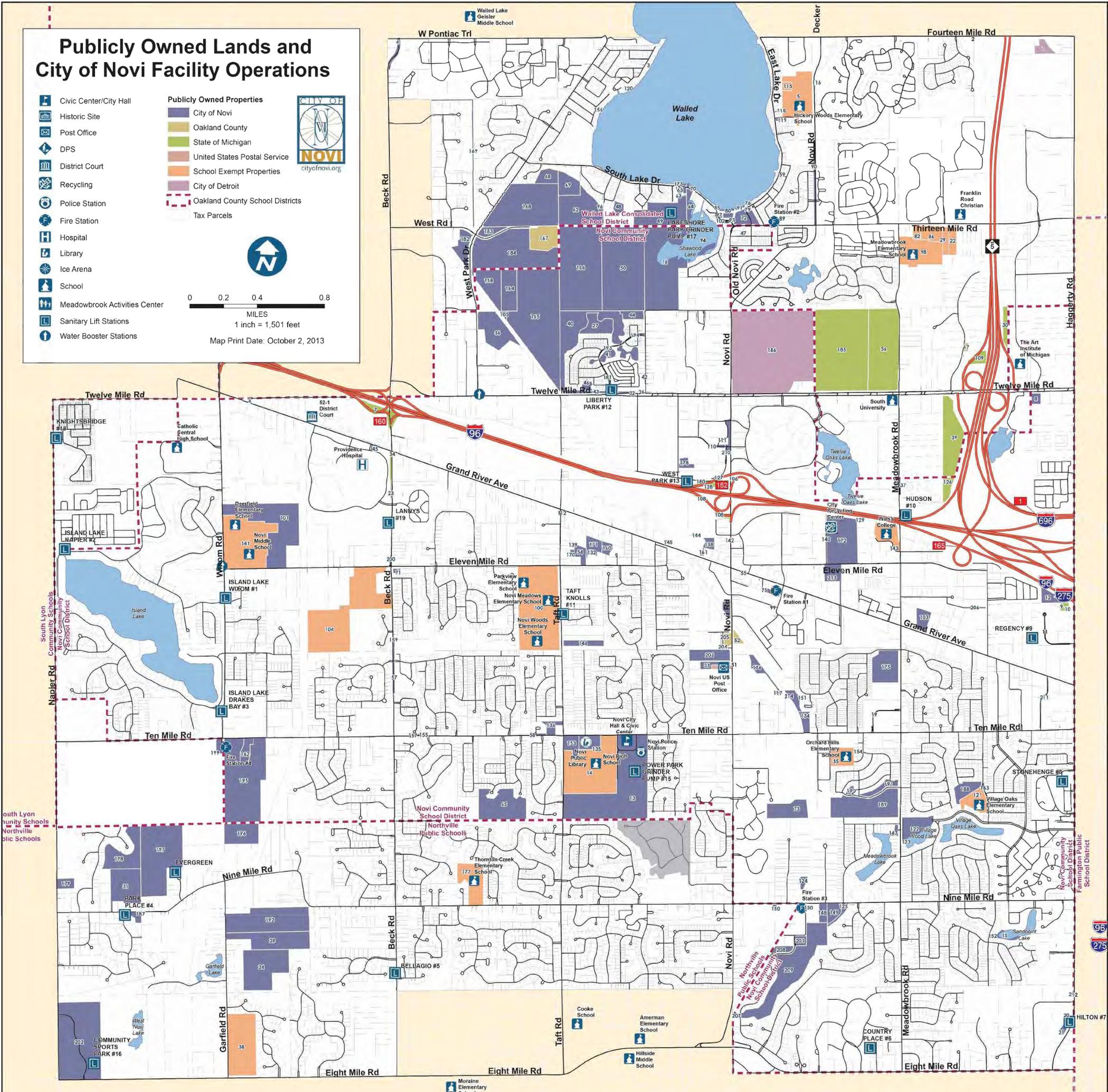
Publicly Owned Properties

- City of Novi
- Oakland County
- State of Michigan
- United States Postal Service
- School Exempt Properties
- City of Detroit
- Oakland County School Districts
- Tax Parcels

cityofnovi.org

MILES
1 inch = 1,501 feet

Map Print Date: October 2, 2013



WAY REFERENCE NUMBER	OWNER	PROPERTY DESCRIPTION	CALCULATED ACRES	SECTION	PARCEL NUMBER	MAP REFERENCE NUMBER	OWNER	PROPERTY DESCRIPTION	CALCULATED ACRES	SECTION	PARCEL NUMBER	MAP REFERENCE NUMBER	OWNER	PROPERTY DESCRIPTION	CALCULATED ACRES	SECTION	PARCEL NUMBER	MAP REFERENCE NUMBER
1	CITY OF DETROIT	WATER STORAGE SITE	4.12	1	80-22-01-20-034	78	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	4.12	1	80-22-01-20-034	78	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	4.12	1	80-22-01-20-034	78
2	CITY OF DETROIT	WATER STORAGE SITE	0.66	1	80-22-01-20-035	79	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	0.66	1	80-22-01-20-035	79	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	0.66	1	80-22-01-20-035	79
3	CITY OF DETROIT	WALLED LAKE ACCESS	3.89	1	80-22-01-20-036	74	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	3.89	1	80-22-01-20-036	74	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	3.89	1	80-22-01-20-036	74
4	CITY OF DETROIT	BECK RD	7.73	4	80-22-01-20-023	75	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	7.73	4	80-22-01-20-023	75	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	7.73	4	80-22-01-20-023	75
5	WALLED LAKE CONSOLIDATED SCHOOLS DISTRICT	HICKORY WOODS ELEMENTARY	28.62	1	80-22-01-20-001	76	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	28.62	1	80-22-01-20-001	76	CITY OF NOVI	WALLED LAKE CONSOLIDATED SCHOOLS	28.62	1	80-22-01-20-001	76
6	STATE OF MICHIGAN	WALLED LAKE ACCESS	0.59	7	80-22-01-20-002	77	STATE OF MICHIGAN	WALLED LAKE ACCESS	0.59	7	80-22-01-20-002	77	STATE OF MICHIGAN	WALLED LAKE ACCESS	0.59	7	80-22-01-20-002	77
7	STATE OF MICHIGAN	WALLED LAKE ACCESS	8.65	7	80-22-01-20-003	78	STATE OF MICHIGAN	WALLED LAKE ACCESS	8.65	7	80-22-01-20-003	78	STATE OF MICHIGAN	WALLED LAKE ACCESS	8.65	7	80-22-01-20-003	78
8	SUPV OF NOVI	WALLED LAKE ACCESS	0.44	8	80-22-01-20-004	79	CITY OF NOVI	WALLED LAKE ACCESS	0.44	8	80-22-01-20-004	79	CITY OF NOVI	WALLED LAKE ACCESS	0.44	8	80-22-01-20-004	79
9	STATE OF MICHIGAN	WALLED LAKE ACCESS	0.16	24	80-22-01-20-005	81	CITY OF NOVI	WALLED LAKE ACCESS	0.16	24	80-22-01-20-005	81	CITY OF NOVI	WALLED LAKE ACCESS	0.16	24	80-22-01-20-005	81
10	STATE OF MICHIGAN	WALLED LAKE ACCESS	2.15	24	80-22-01-20-006	82	CITY OF NOVI	WALLED LAKE ACCESS	2.15	24	80-22-01-20-006	82	CITY OF NOVI	WALLED LAKE ACCESS	2.15	24	80-22-01-20-006	82
11	NOVI COMMUNITY SCHOOLS	NOVI HIGH SCHOOL	40.58	24	80-22-01-20-007	83	CITY OF NOVI	NOVI HIGH SCHOOL	40.58	24	80-22-01-20-007	83	CITY OF NOVI	NOVI HIGH SCHOOL	40.58	24	80-22-01-20-007	83
12	NOVI COMMUNITY SCHOOLS	CIVIC CENTER	9.52	24	80-22-01-20-008	84	CITY OF NOVI	CIVIC CENTER	9.52	24	80-22-01-20-008	84	CITY OF NOVI	CIVIC CENTER	9.52	24	80-22-01-20-008	84
13	STATE OF MICHIGAN	NORTHVILLE CONSOLIDATED SCHOOLS	72.62	8	80-22-01-20-009	87	STATE OF MICHIGAN	NORTHVILLE CONSOLIDATED SCHOOLS	72.62	8	80-22-01-20-009	87	STATE OF MICHIGAN	NORTHVILLE CONSOLIDATED SCHOOLS	72.62	8	80-22-01-20-009	87
14	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-010	88	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-010	88	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-010	88
15	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-011	89	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-011	89	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-011	89
16	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-012	90	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-012	90	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-012	90
17	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-013	91	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-013	91	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-013	91
18	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-014	92	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-014	92	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-014	92
19	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-015	93	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-015	93	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-015	93
20	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-016	94	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-016	94	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-016	94
21	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-017	95	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-017	95	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-017	95
22	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-018	96	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-018	96	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-018	96
23	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-019	97	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-019	97	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-019	97
24	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-020	98	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-020	98	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-020	98
25	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-021	99	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-021	99	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-021	99
26	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-022	100	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-022	100	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-022	100
27	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-023	101	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-023	101	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-023	101
28	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-024	102	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-024	102	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-024	102
29	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-025	103	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-025	103	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-025	103
30	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-026	104	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-026	104	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-026	104
31	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-027	105	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-027	105	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-027	105
32	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-028	106	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-028	106	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-028	106
33	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-029	107	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-029	107	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-029	107
34	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-030	108	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-030	108	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-030	108
35	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-031	109	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-031	109	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-031	109
36	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-032	110	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-032	110	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-032	110
37	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-033	111	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-033	111	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-033	111
38	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-034	112	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-034	112	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-034	112
39	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-035	113	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-035	113	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-035	113
40	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-036	114	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-036	114	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-036	114
41	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-037	115	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-037	115	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-037	115
42	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-038	116	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-038	116	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-038	116
43	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-039	117	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-039	117	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-039	117
44	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-040	118	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-040	118	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-040	118
45	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-041	119	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-041	119	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-041	119
46	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-042	120	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-042	120	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-042	120
47	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-043	121	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-043	121	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-043	121
48	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-044	122	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-044	122	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-044	122
49	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-045	123	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-045	123	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-045	123
50	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-046	124	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-046	124	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-046	124
51	STATE OF MICHIGAN	MANOR PARK	2.78	8	80-22-01-20-047	12												

City of Novi Street Map & Fire Districts

Map Legend

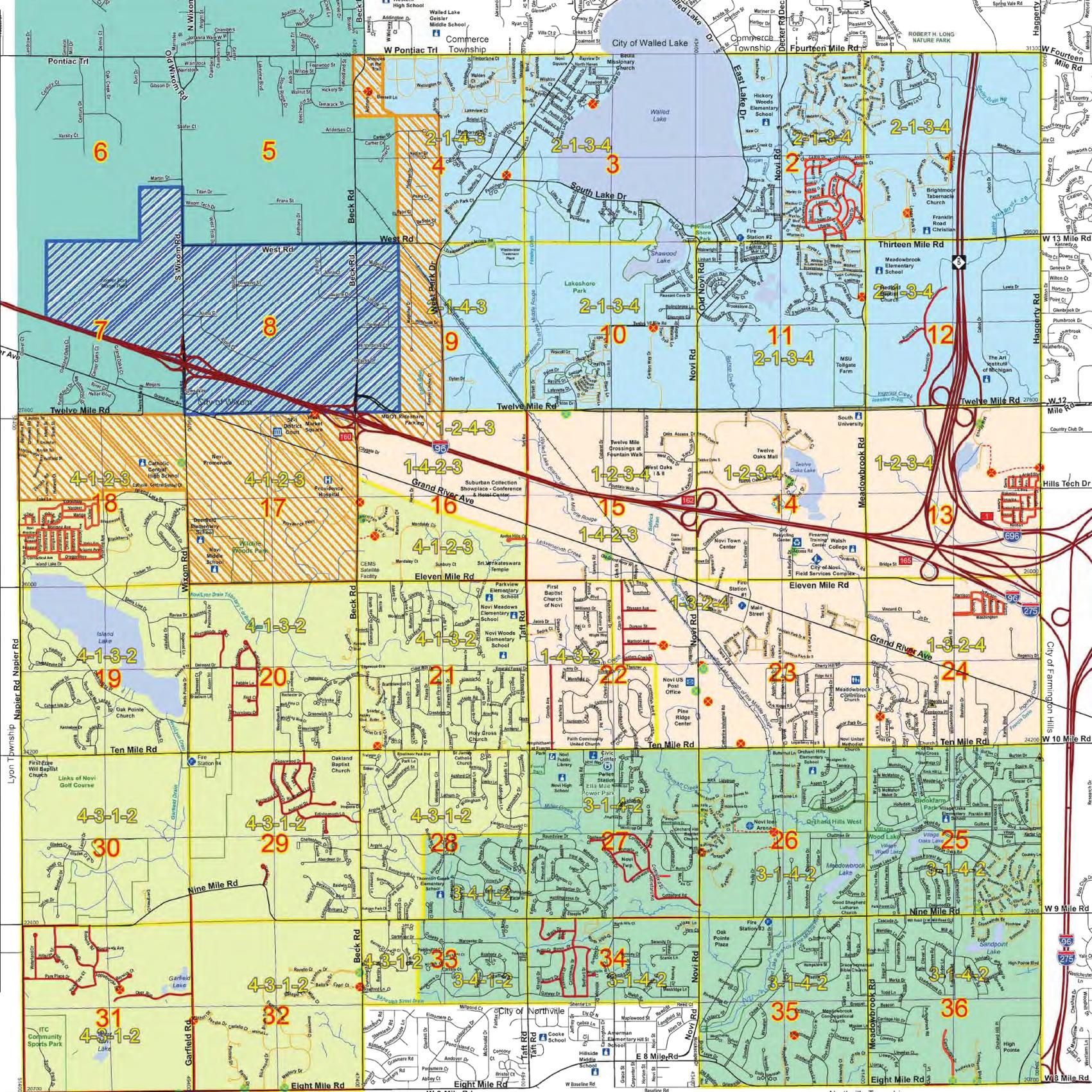
- Streets Key**
 - Freeways
 - Major Public Streets
 - Minor Public Streets
 - Private Minor Streets
 - Emergency Access Routes
 - Primary Access Gate
 - Secondary Access Gate
 - Burn Impasse
 - Routes Requiring Tanker
 - Railroad
- Landmark Locations**
 - Court
 - Civic Center
 - Dept. of Public Services
 - Fire Station
 - Hospital
 - Ice Arena
 - Library
 - Police Station
 - Post Office
 - Recycling
 - School
 - Senior Center
- Mutual Aid Response**
 - Wixom Area with Novi Response
 - Novi Area with Wixom Response
- Fire Station Districts**
 - Station #1
 - Station #2
 - Station #3
 - Station #4



Map Author: Matthew Peterson, GIS Support Technician
 Geographic Information Services
 Department of Information Technology
 Map Publication Date: January 18, 2013

Interpretation Note: Streets in developments under construction are depicted in their completed layout. Please reference the City Projects Map to identify the projects currently under development.

Scale: 1 inch = 1,800 feet



Abhey Dr - Aven Ct

Abhey Dr	21-NW
Aberdeen Dr	29-SE
Acorn Trl	24-SW
Acorn Trl	20-SW
Adams Dr	2-SE
Addington Ln	28-NE
Adrian Dr	1-NE
Aikenham	18-SW
Albans Dr	20-NW
Albans Dr	16-SW
Alcorn Dr	11-NW
Algonquin Dr	27-SW
Almali Ct	30-SW
Alton Ct	27-SW
Amelia Ln	24-SW
Ameliasburg Ct	28-SW
Amerusburg Dr	19-SW
Amy Dr	4-NW
Anchor Ct	16-SE
Anchor Ct	18-SE
Anchor Ct	2-SE
Anchor Ct	3-SE
Anchor Ct	33-NE
Anchor Ct	34-NE
Anchor Ct	35-NE
Anchor Ct	36-NE
Anchor Ct	37-NE
Anchor Ct	38-NE
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Anchor Ct	94-NE
Anchor Ct	95-NE
Anchor Ct	96-NE
Anchor Ct	97-NE
Anchor Ct	98-NE
Anchor Ct	99-NE
Anchor Ct	100-NE

City of Novi Streets:

Abhey Dr	21-NW	Bedford Dr	34-NW	C	Columbia Dr	1-NW	Freewood Dr	21-SE	Hayes Dr	16-SW	Kingsley Ct	1-NW	Loyola Ct	27-SE	Nantuckett Dr	20-SE	Petres Blvd	22-NW	Stratford Ln	33-NW	Venice Ct	31-SW	Willowbrook Rd	24-SW
Aberdeen Dr	29-SE	Bellevue Dr	1-NW	C	Cabard Dr	15-NW	E Bourne Ter	18-NW	Hickory Grove Ln	27-NW	Kingsley Blvd	1-NW	Lynwood Dr	20-SE	Pheasant Run	22-NW	Roselawn Ln	27-NW	Strath Haven Dr	21-NW	Venice Ct	31-SW	Willowbrook Rd	24-SW
Acorn Trl	24-SW	Bellevue Dr	32-NE	C	Cabot Dr	12-NE	El La Blvd Dr	11-NW	Hickory Grove Ln	27-NE	Kirkway Blvd	20-NE	Napier Dr	21-SW	Pheasant Run	12-SE	Roselawn Ln	12-SE	Strath Haven Dr	21-NW	Venice Ct	31-SW	Willowbrook Rd	24-SW
Addington Ln	28-NE	Bellevue Dr	33-NE	C	Cabot Dr	13-NE	El La Blvd Dr	12-NE	Hickory Grove Ln	28-NE	Kirkway Blvd	21-NE	Napier Dr	22-SW	Pheasant Run	13-SE	Roselawn Ln	13-SE	Strath Haven Dr	22-NW	Venice Ct	32-SW	Willowbrook Rd	25-SW
Adrian Dr	1-NE	Bellevue Dr	34-NE	C	Cabot Dr	14-NE	El La Blvd Dr	13-NE	Hickory Grove Ln	29-NE	Kirkway Blvd	22-NE	Napier Dr	23-SW	Pheasant Run	14-SE	Roselawn Ln	14-SE	Strath Haven Dr	23-NW	Venice Ct	33-SW	Willowbrook Rd	26-SW
Aikenham	18-SW	Bellevue Dr	35-NE	C	Cabot Dr	15-NE	El La Blvd Dr	14-NE	Hickory Grove Ln	30-NE	Kirkway Blvd	23-NE	Napier Dr	24-SW	Pheasant Run	15-SE	Roselawn Ln	15-SE	Strath Haven Dr	24-NW	Venice Ct	34-SW	Willowbrook Rd	27-SW
Albans Dr	20-NW	Bellevue Dr	36-NE	C	Cabot Dr	16-NE	El La Blvd Dr	15-NE	Hickory Grove Ln	31-NE	Kirkway Blvd	24-NE	Napier Dr	25-SW	Pheasant Run	16-SE	Roselawn Ln	16-SE	Strath Haven Dr	25-NW	Venice Ct	35-SW	Willowbrook Rd	28-SW
Albans Dr	16-SW	Bellevue Dr	37-NE	C	Cabot Dr	17-NE	El La Blvd Dr	16-NE	Hickory Grove Ln	32-NE	Kirkway Blvd	25-NE	Napier Dr	26-SW	Pheasant Run	17-SE	Roselawn Ln	17-SE	Strath Haven Dr	26-NW	Venice Ct	36-SW	Willowbrook Rd	29-SW
Alcorn Dr	11-NW	Bellevue Dr	38-NE	C	Cabot Dr	18-NE	El La Blvd Dr	17-NE	Hickory Grove Ln	33-NE	Kirkway Blvd	26-NE	Napier Dr	27-SW	Pheasant Run	18-SE	Roselawn Ln	18-SE	Strath Haven Dr	27-NW	Venice Ct	37-SW	Willowbrook Rd	30-SW
Algonquin Dr	27-SW	Bellevue Dr	39-NE	C	Cabot Dr	19-NE	El La Blvd Dr	18-NE	Hickory Grove Ln	34-NE	Kirkway Blvd	27-NE	Napier Dr	28-SW	Pheasant Run	19-SE	Roselawn Ln	19-SE	Strath Haven Dr	28-NW	Venice Ct	38-SW	Willowbrook Rd	31-SW
Almali Ct	30-SW	Bellevue Dr	40-NE	C	Cabot Dr	20-NE	El La Blvd Dr	19-NE	Hickory Grove Ln	35-NE	Kirkway Blvd	28-NE	Napier Dr	29-SW	Pheasant Run	20-SE	Roselawn Ln	20-SE	Strath Haven Dr	29-NW	Venice Ct	39-SW	Willowbrook Rd	32-SW
Alton Ct	27-SW	Bellevue Dr	41-NE	C	Cabot Dr	21-NE	El La Blvd Dr	20-NE	Hickory Grove Ln	36-NE	Kirkway Blvd	29-NE	Napier Dr	30-SW	Pheasant Run	21-SE	Roselawn Ln	21-SE	Strath Haven Dr	30-NW	Venice Ct	40-SW	Willowbrook Rd	33-SW
Amelia Ln	24-SW	Bellevue Dr	42-NE	C	Cabot Dr	22-NE	El La Blvd Dr	21-NE	Hickory Grove Ln	37-NE	Kirkway Blvd	30-NE	Napier Dr	31-SW	Pheasant Run	22-SE	Roselawn Ln	22-SE	Strath Haven Dr	31-NW	Venice Ct	41-SW	Willowbrook Rd	34-SW
Ameliasburg Ct	28-SW	Bellevue Dr	43-NE	C	Cabot Dr	23-NE	El La Blvd Dr	22-NE	Hickory Grove Ln	38-NE	Kirkway Blvd	31-NE	Napier Dr	32-SW	Pheasant Run	23-SE	Roselawn Ln	23-SE	Strath Haven Dr	32-NW	Venice Ct	42-SW	Willowbrook Rd	35-SW
Amerusburg Dr	19-SW	Bellevue Dr	44-NE	C	Cabot Dr	24-NE	El La Blvd Dr	23-NE	Hickory Grove Ln	39-NE	Kirkway Blvd	32-NE	Napier Dr	33-SW	Pheasant Run	24-SE	Roselawn Ln	24-SE	Strath Haven Dr	33-NW	Venice Ct	43-SW	Willowbrook Rd	36-SW
Amy Dr	4-NW	Bellevue Dr	45-NE	C	Cabot Dr	25-NE	El La Blvd Dr	24-NE	Hickory Grove Ln	40-NE	Kirkway Blvd	33-NE	Napier Dr	34-SW	Pheasant Run	25-SE	Roselawn Ln	25-SE	Strath Haven Dr	34-NW	Venice Ct	44-SW	Willowbrook Rd	37-SW
Anchor Ct	16-SE	Bellevue Dr	46-NE	C	Cabot Dr	26-NE	El La Blvd Dr	25-NE	Hickory Grove Ln	41-NE	Kirkway Blvd	34-NE	Napier Dr	35-SW	Pheasant Run	26-SE	Roselawn Ln	26-SE	Strath Haven Dr	35-NW	Venice Ct	45-SW	Willowbrook Rd	38-SW
Anchor Ct	18-SE	Bellevue Dr	47-NE	C	Cabot Dr	27-NE	El La Blvd Dr	26-NE	Hickory Grove Ln	42-NE	Kirkway Blvd	35-NE	Napier Dr	36-SW	Pheasant Run	27-SE	Roselawn Ln	27-SE	Strath Haven Dr	36-NW	Venice Ct	46-SW	Willowbrook Rd	39-SW
Anchor Ct	2-SE	Bellevue Dr	48-NE	C	Cabot Dr	28-NE	El La Blvd Dr	27-NE	Hickory Grove Ln	43-NE	Kirkway Blvd	36-NE	Napier Dr	37-SW	Pheasant Run	28-SE	Roselawn Ln	28-SE	Strath Haven Dr	37-NW	Venice Ct	47-SW	Willowbrook Rd	40-SW
Anchor Ct	3-SE	Bellevue Dr	49-NE	C	Cabot Dr	29-NE	El La Blvd Dr	28-NE	Hickory Grove Ln	44-NE	Kirkway Blvd	37-NE	Napier Dr	38-SW	Pheasant Run	29-SE	Roselawn Ln	29-SE	Strath Haven Dr	38-NW	Venice Ct	48-SW	Willowbrook Rd	41-SW
Anchor Ct	33-NE	Bellevue Dr	50-NE	C	Cabot Dr	30-NE	El La Blvd Dr	29-NE	Hickory Grove Ln	45-NE	Kirkway Blvd	38-NE	Napier Dr	39-SW	Pheasant Run	30-SE	Roselawn Ln	30-SE	Strath Haven Dr	39-NW	Venice Ct	49-SW	Willowbrook Rd	42-SW
Anchor Ct	34-NE	Bellevue Dr	51-NE	C	Cabot Dr	31-NE	El La Blvd Dr	30-NE	Hickory Grove Ln	46-NE	Kirkway Blvd	39-NE	Napier Dr	40-SW	Pheasant Run	31-SE	Roselawn Ln	31-SE	Strath Haven Dr	40-NW	Venice Ct	50-SW	Willowbrook Rd	43-SW
Anchor Ct	35-NE	Bellevue Dr	52-NE	C	Cabot Dr	32-NE	El La Blvd Dr	31-NE	Hickory Grove Ln	47-NE	Kirkway Blvd	40-NE	Napier Dr	41-SW	Pheasant Run	32-SE	Roselawn Ln	32-SE	Strath Haven Dr	41-NW	Venice Ct	51-SW	Willowbrook Rd	44-SW
Anchor Ct	36-NE	Bellevue Dr	53-NE	C	Cabot Dr	33-NE	El La Blvd Dr	32-NE	Hickory Grove Ln	48-NE	Kirkway Blvd	41-NE	Napier Dr	42-SW	Pheasant Run	33-SE	Roselawn Ln	33-SE	Strath Haven Dr	42-NW	Venice Ct	52-SW	Willowbrook Rd	45-SW
Anchor Ct	37-NE	Bellevue Dr	54-NE	C	Cabot Dr	34-NE	El La Blvd Dr	33-NE	Hickory Grove Ln	49-NE	Kirkway Blvd	42-NE	Napier Dr	43-SW	Pheasant Run	34-SE	Roselawn Ln	34-SE	Strath Haven Dr	43-NW	Venice Ct	53-SW	Willowbrook Rd	46-SW
Anchor Ct	38-NE	Bellevue Dr	55-NE	C	Cabot Dr	35-NE	El La Blvd Dr	34-NE	Hickory Grove Ln	50-NE	Kirkway Blvd	43-NE	Napier Dr	44-SW	Pheasant Run	35-SE	Roselawn Ln	35-SE	Strath Haven Dr	44-NW	Venice Ct	54-SW	Willowbrook Rd	47-SW
Anchor Ct	39-NE	Bellevue Dr	56-NE	C	Cabot Dr	36-NE	El La Blvd Dr	35-NE	Hickory Grove Ln	51-NE	Kirkway Blvd	44-NE	Napier Dr	45-SW	Pheasant Run	36-SE	Roselawn Ln	36-SE	Strath Haven Dr	45-NW	Venice Ct	55-SW	Willowbrook Rd	48-SW
Anchor Ct	40-NE	Bellevue Dr	57-NE	C	Cabot Dr	37-NE	El La Blvd Dr	36-NE	Hickory Grove Ln	52-NE	Kirkway Blvd	45-NE	Napier Dr	46-SW	Pheasant Run	37-SE	Roselawn Ln	37-SE	Strath Haven Dr	46-NW	Venice Ct	56-SW	Willowbrook Rd	49-SW
Anchor Ct	41-NE	Bellevue Dr	58-NE	C	Cabot Dr	38-NE	El La Blvd Dr	37-NE	Hickory Grove Ln	53-NE	Kirkway Blvd	46-NE	Napier Dr	47-SW	Pheasant Run	38-SE	Roselawn Ln	38-SE	Strath Haven Dr	47-NW	Venice Ct	57-SW	Willowbrook Rd	50-SW
Anchor Ct	42-NE	Bellevue Dr	59-NE	C	Cabot Dr	39-NE	El La Blvd Dr	38-NE	Hickory Grove Ln	54-NE	Kirkway Blvd	47-NE	Napier Dr	48-SW	Pheasant Run	39-SE	Roselawn Ln	39-SE	Strath Haven Dr	48-NW	Venice Ct	58-SW	Willowbrook Rd	51-SW
Anchor Ct	43-NE	Bellevue Dr	60-NE	C	Cabot Dr	40-NE	El La Blvd Dr	39-NE	Hickory Grove Ln	55-NE	Kirkway Blvd	48-NE	Napier Dr	49-SW	Pheasant Run	40-SE	Roselawn Ln	40-SE	Strath Haven Dr	49-NW	Venice Ct	59-SW	Willowbrook Rd	52-SW
Anchor Ct	44-NE	Bellevue Dr	61-NE	C	Cabot Dr	41-NE	El La Blvd Dr	40-NE	Hickory Grove Ln	56-NE	Kirkway Blvd	49-NE	Napier Dr	50-SW	Pheasant Run	41-SE	Roselawn Ln	41-SE	Strath Haven Dr	50-NW	Venice Ct	60-SW	Willowbrook Rd	53-SW
Anchor Ct	45-NE	Bellevue Dr	62-NE	C	Cabot Dr	42-NE	El La Blvd Dr	41-NE	Hickory Grove Ln	57-NE	Kirkway Blvd	50-NE	Napier Dr	51-SW	Pheasant Run	42-SE	Roselawn Ln	42-SE	Strath Haven Dr	51-NW	Venice Ct	61-SW	Willowbrook Rd	54-SW
Anchor Ct	46-NE	Bellevue Dr	63-NE	C	Cabot Dr	43-NE	El La Blvd Dr	42-NE	Hickory Grove Ln	58-NE	Kirkway Blvd	51-NE	Napier Dr	52-SW	Pheasant Run	43-SE	Roselawn Ln	43-SE	Strath Haven Dr	52-NW	Venice Ct	62-SW	Willowbrook Rd	55-SW
Anchor Ct	47-NE	Bellevue Dr	64-NE	C	Cabot Dr	44-NE	El La Blvd Dr	43-NE	Hickory Grove Ln	59-NE	Kirkway Blvd	52-NE	Napier Dr	53-SW	Pheasant Run	44-SE	Roselawn Ln	44-SE	Strath Haven Dr	53-NW	Venice Ct	63-SW	Willowbrook Rd	56-SW
Anchor Ct	48-NE	Bellevue Dr	65-NE	C	Cabot Dr	45-NE	El La Blvd Dr	44-NE	Hickory Grove Ln	60-NE	Kirkway Blvd	53-NE	Napier Dr	54-SW	Pheasant Run	45-SE	Roselawn Ln	45-SE	Strath Haven Dr	54-NW	Venice Ct	64-SW	Willowbrook Rd	57-SW
Anchor Ct	49-NE	Bellevue Dr	66-NE	C	Cabot Dr	46-NE	El La Blvd Dr	45-NE	Hickory Grove Ln	61-NE	Kirkway Blvd	54-NE	Napier Dr	55-SW	Pheasant Run	46-SE	Roselawn Ln	46-SE	Strath Haven Dr	55-NW	Venice Ct	65-SW	Willowbrook Rd	58-SW
Anchor Ct	50-NE	Bellevue Dr	67-NE	C	Cabot Dr	47-NE	El La Blvd Dr	46-NE	Hickory Grove Ln	62-NE	Kirkway Blvd	55-NE	Napier Dr	56-SW	Pheasant Run	47-SE	Roselawn Ln	47-SE	Strath Haven Dr	56-NW	Venice Ct	66-SW	Willowbrook Rd	59-SW
Anchor Ct	51-NE	Bellevue Dr	68-NE	C	Cabot Dr	48-NE	El La Blvd Dr	47-NE	Hickory Grove Ln	63-NE	Kirkway Blvd	56-NE	Napier Dr	57-SW	Pheasant Run	48-SE	Roselawn Ln	48-SE	Strath Haven Dr	57-NW	Venice Ct	67-SW	Willowbrook Rd	60-SW
Anchor Ct	52-NE	Bellevue Dr	69-NE	C	Cabot Dr	49-NE	El La Blvd Dr	48-NE	Hickory Grove Ln	64-NE	Kirkway Blvd	57-NE	Napier Dr	58-SW	Pheasant Run	49-SE	Roselawn Ln	49-SE	Strath Haven Dr	58-NW	Venice Ct	68-SW	Willowbrook Rd	61-SW
Anchor Ct	53-NE	Bellevue Dr	70-NE	C	Cabot Dr	50-NE	El La Blvd Dr	49-NE	Hickory Grove Ln	65-NE	Kirkway Blvd	58-NE	Napier Dr	59-SW	Pheasant Run	50-SE	Roselawn Ln	50-SE	Strath Haven Dr	59-NW	Venice Ct	69-SW	Willowbrook Rd	62-SW
Anchor Ct	54-NE	Bellevue Dr	71-NE	C	Cabot Dr	51-NE	El La Blvd Dr	50-NE	Hickory Grove Ln	66-NE	Kirkway Blvd	59-NE	Napier Dr	60-SW	Pheasant Run	51-SE	Roselawn Ln	51-SE	Strath Haven Dr	60-NW	Venice Ct	70-SW	Willowbrook Rd	63-SW
Anchor Ct	55-NE	Bellevue Dr	72-NE	C	Cabot Dr	52-NE	El La Blvd Dr	51-NE	Hickory Grove Ln	67-NE	Kirkway Blvd	60-NE	Napier Dr	61-SW	Pheasant Run	52-SE	Roselawn Ln	52-SE	Strath Haven Dr	61-NW	Venice Ct	71-SW	Willowbrook Rd	64-SW
Anchor Ct	56-NE	Bellevue Dr	73-NE	C	Cabot Dr	53-NE	El La Blvd Dr	52-NE	Hickory Grove Ln	68-NE	Kirkway Blvd	61-NE	Napier Dr	62-SW	Pheasant Run	53-SE	Roselawn Ln	53-SE	Strath Haven Dr	62-NW	Venice Ct	72-SW	Willowbrook Rd	65-SW
Anchor Ct	57-NE	Bellevue Dr	74-NE	C	Cabot Dr	54-NE	El La Blvd Dr																	

City of Novi Map & Fire Districts & Station Coverage

Map Legend

Streets Key

- Freeways
- Major Public Streets
- Minor Public Streets
- Private Minor Streets
- Railroad
- Routes Requiring Tanker
- Emergency Access Routes
- Primary Access Gate
- Secondary Access Gate
- Burn Impasse
- Box Alarm Boundaries
- Quarter Sections
- City of Northville
- City of Wixom
- Parks
- Lakes
- Watercourses

Landmark Locations

- Court
- Civic Center
- Dept. of Public Services
- Fire Station
- Hospital
- Ice Arena
- Library
- Police Station
- Post Office
- Recycling
- School
- Senior Center

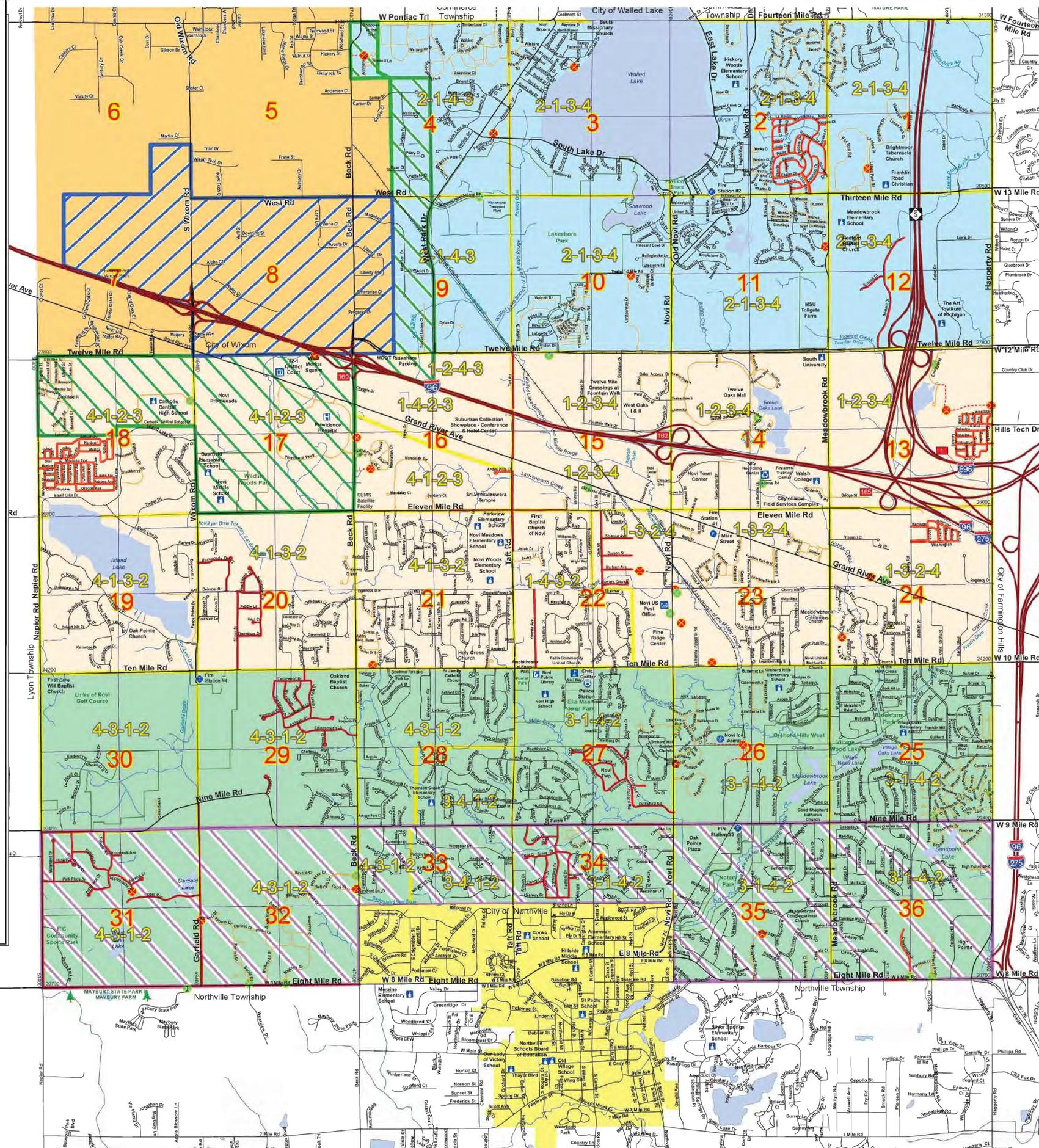
MutualAidResponse

- Novi Area with Northville Response
- Wixom Area with Novi Response
- Novi Area with Wixom Response
- Station #1
- Station #2
- Station #3



Map Author:
Christopher Blough, GIS Manager
Geographic Information Services
Department of Information Technology
Map Publication Date: January 30, 2013

Interpretation Note: Streets in developments under construction are depicted in their completed layout. Please reference the City Projects Map to identify the projects currently under development.

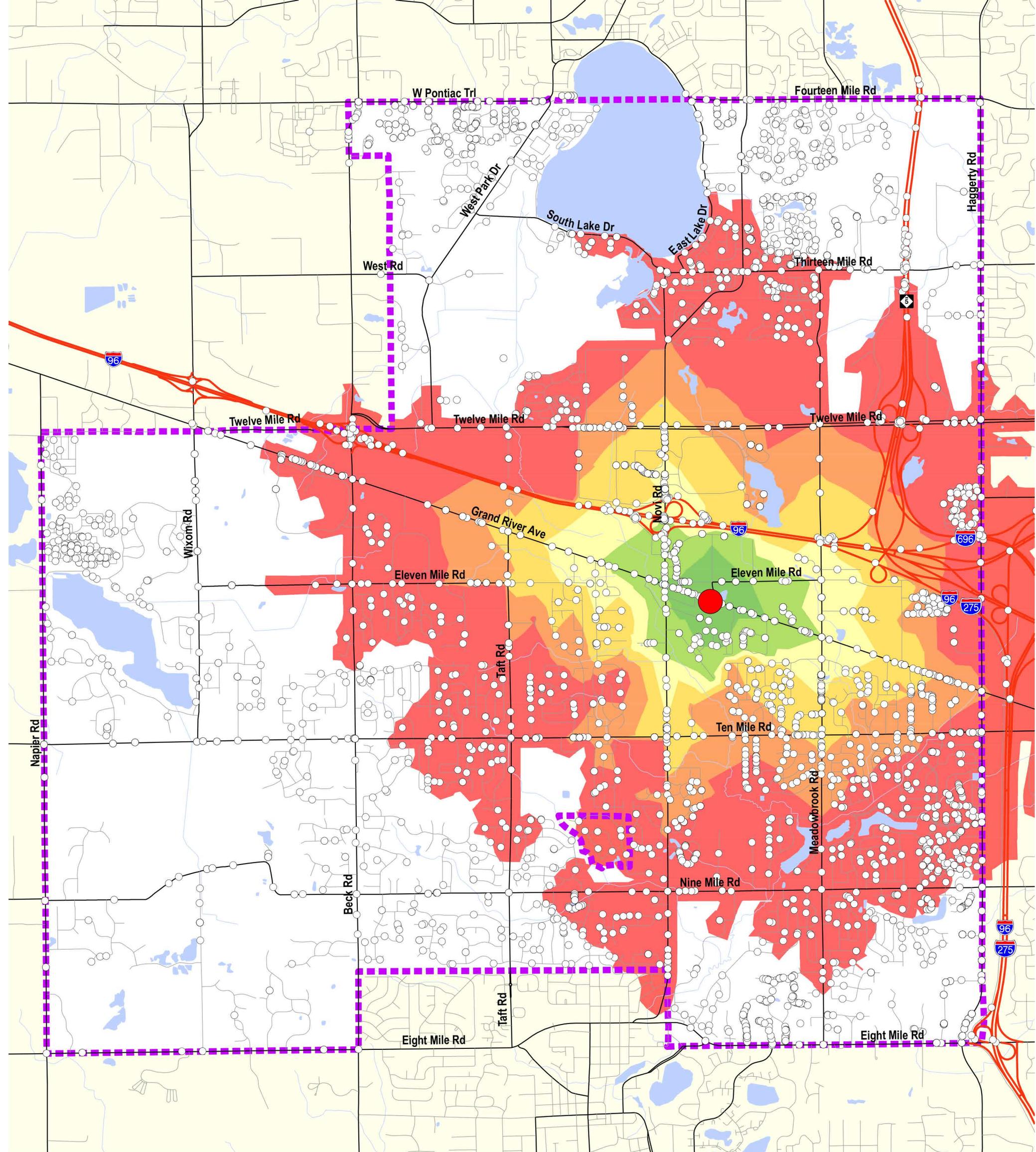


City of Novi Streets:

Abbey Dr 21-WW	Bedford Dr 34-WW	C Cabot Dr 15-WW	Chapman Dr 21-WW	Columbia Dr 1-AN	E Eglar Ter 18-WW	Freemont Dr 21-SE	Hayn Dr 16-SW	Kingstrey Ln 1-AN	Lodge Ct 27-SE	Nantucket Dr 20-SE	Petros Blvd 22-WW	Rushwood Ln 28-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW
Ackert Ct 24-SW	Bellevue Pl 18-WW	E Elison Ln 12-NE	Cherry Hill Rd 21-SE	Concord St 22-WW	F Eglon Ter 18-WW	Fulton Dr 11-NE	Hickory Grove Ct 18-WW	Kingwood Blvd 1-AN	Lynwood Dr 21-SW	Naples Dr 21-SW	Phelan Rd 21-SW	Roslyn Blvd 27-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW
Adams 24-NE	Belmont Dr 18-SW	E Elson Ln 12-NE	Cherry Hill Rd 21-SE	Concord St 22-WW	F Eglon Ter 18-WW	Fulton Dr 11-NE	Hickory Grove Ct 18-WW	Kingwood Blvd 1-AN	Lynwood Dr 21-SW	Naples Dr 21-SW	Phelan Rd 21-SW	Roslyn Blvd 27-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW
Adams 24-NE	Belmont Dr 18-SW	E Elson Ln 12-NE	Cherry Hill Rd 21-SE	Concord St 22-WW	F Eglon Ter 18-WW	Fulton Dr 11-NE	Hickory Grove Ct 18-WW	Kingwood Blvd 1-AN	Lynwood Dr 21-SW	Naples Dr 21-SW	Phelan Rd 21-SW	Roslyn Blvd 27-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW

City of Wixom Streets:

Alpha Ct 8-SW	Belmont Dr 18-SW	Cherry Hill Rd 21-SE	Concord St 22-WW	F Eglon Ter 18-WW	Fulton Dr 11-NE	Hickory Grove Ct 18-WW	Kingwood Blvd 1-AN	Lynwood Dr 21-SW	Naples Dr 21-SW	Phelan Rd 21-SW	Roslyn Blvd 27-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW
Alpha Ct 8-SW	Belmont Dr 18-SW	Cherry Hill Rd 21-SE	Concord St 22-WW	F Eglon Ter 18-WW	Fulton Dr 11-NE	Hickory Grove Ct 18-WW	Kingwood Blvd 1-AN	Lynwood Dr 21-SW	Naples Dr 21-SW	Phelan Rd 21-SW	Roslyn Blvd 27-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW
Alpha Ct 8-SW	Belmont Dr 18-SW	Cherry Hill Rd 21-SE	Concord St 22-WW	F Eglon Ter 18-WW	Fulton Dr 11-NE	Hickory Grove Ct 18-WW	Kingwood Blvd 1-AN	Lynwood Dr 21-SW	Naples Dr 21-SW	Phelan Rd 21-SW	Roslyn Blvd 27-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW
Alpha Ct 8-SW	Belmont Dr 18-SW	Cherry Hill Rd 21-SE	Concord St 22-WW	F Eglon Ter 18-WW	Fulton Dr 11-NE	Hickory Grove Ct 18-WW	Kingwood Blvd 1-AN	Lynwood Dr 21-SW	Naples Dr 21-SW	Phelan Rd 21-SW	Roslyn Blvd 27-NE	Stardford Ln 33-WW	Venice Ct 21-SW	Wilmette Rd 26-SW



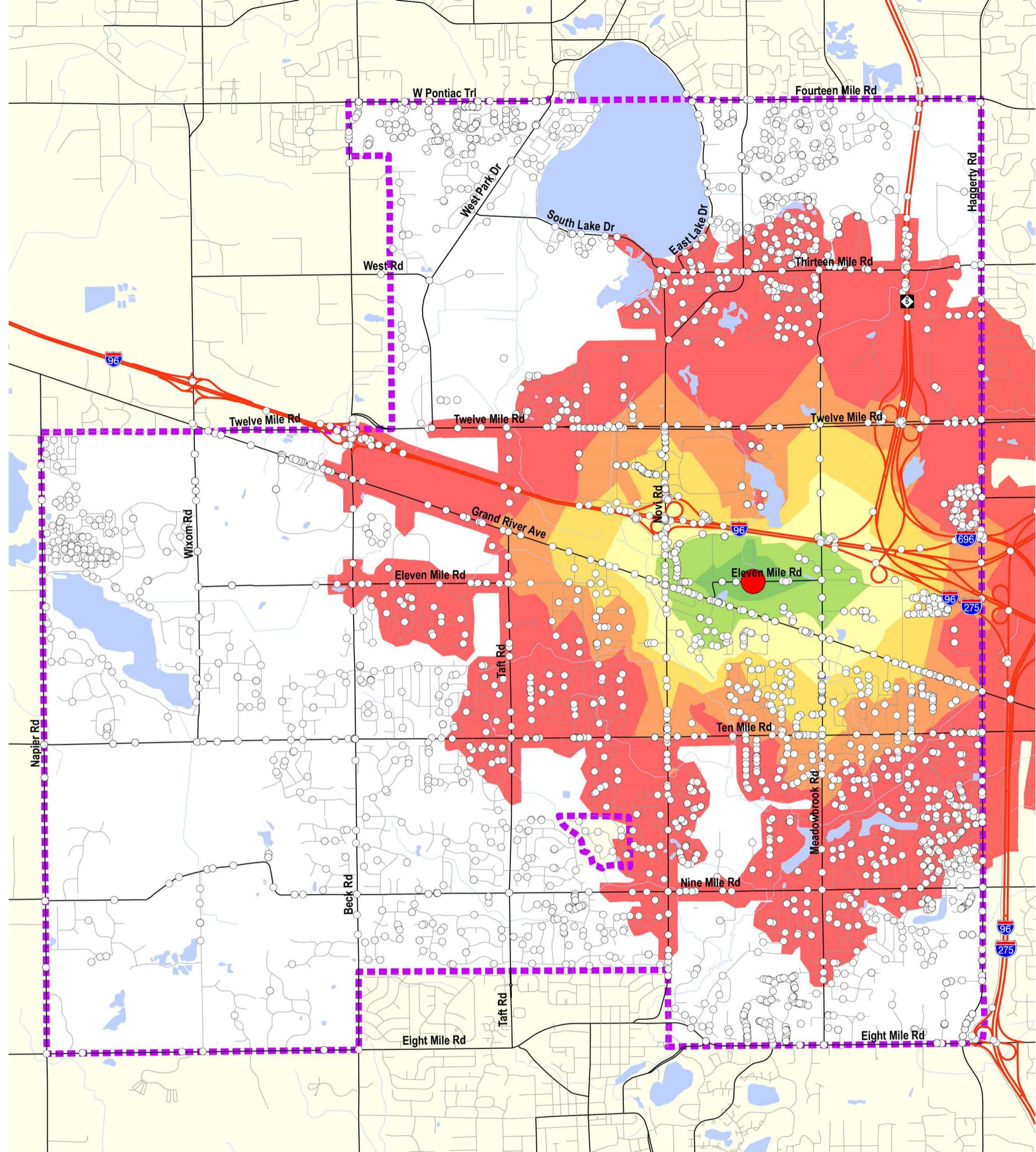
CITY OF NOVI

Fire Station #1 - 23mph Runtime Analysis

Data Sources: State of Michigan Geographic Data Library, City of Novi



*Within 8 Minutes



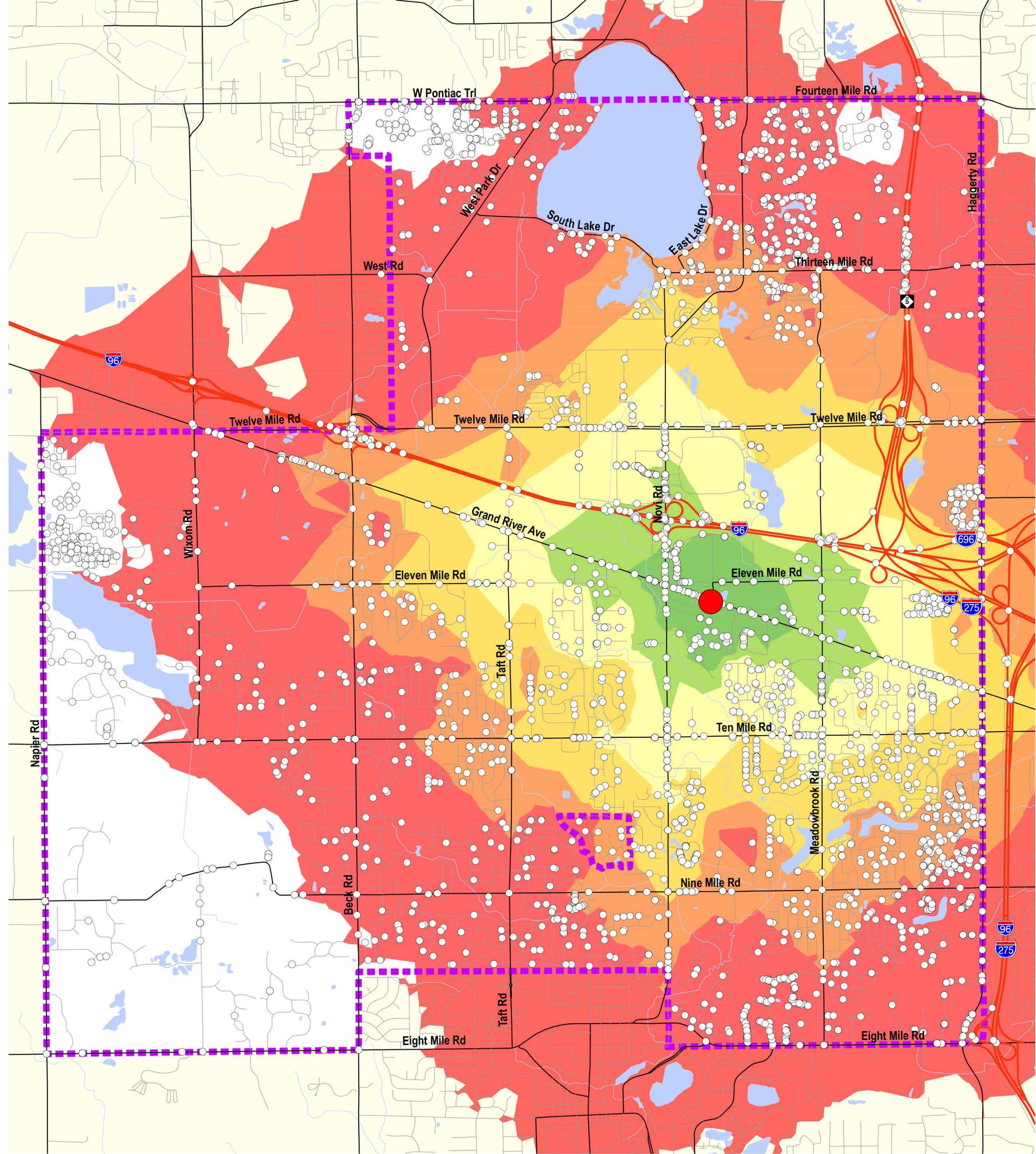
CITY OF NOVI

Proposed Site - 23mph Runtime Analysis

Data Sources: State of Michigan Geographic Data Library, City of Novi



*Within 8 Minutes



CITY OF NOVI

Fire Station #1 - 35mph Runtime Analysis

Data Sources: State of Michigan Geographic Data Library, City of Novi

- City of Novi
- Fire Station #1
- Fire Response Incident

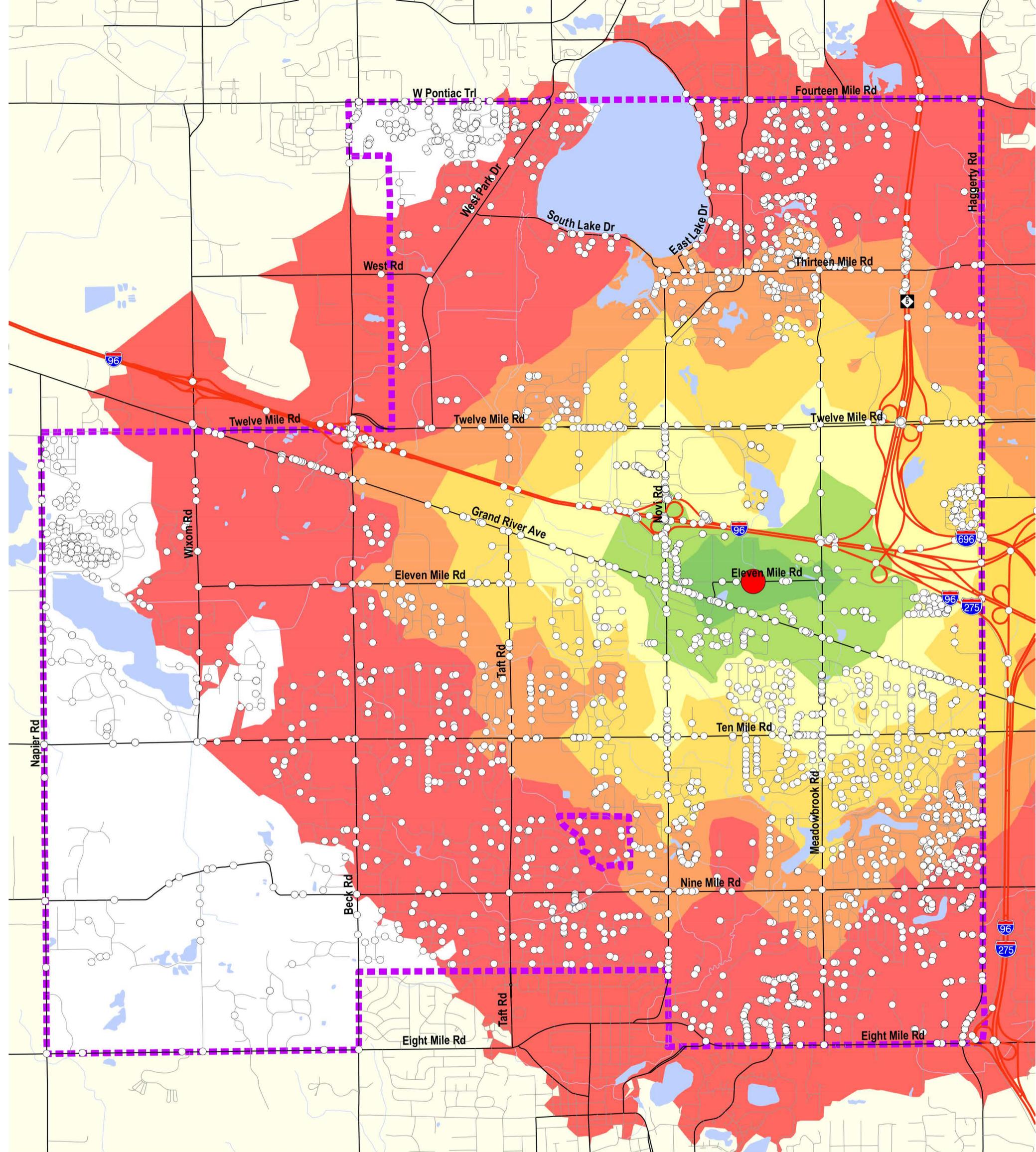
- Interstate
- Major Road
- Minor Road

Response Time (7094 Incidents*):

	0 - 1 Minute (315)		3 - 4 Minutes (1463)
	1 - 2 Minutes (764)		4 - 5 Minutes (983)
	2 - 3 Minutes (1064)		5 - 8 Minutes (2505)



*Within 8 Minutes



CITY OF NOVI

Proposed Site - 35mph Runtime Analysis

Data Sources: State of Michigan Geographic Data Library, City of Novi

- City of Novi
- Proposed Site
- Fire Response Incident

- Interstate
- Major Road
- Minor Road

Response Time (6990 Incidents*):

	0 - 1 Minute (163)		3 - 4 Minutes (1776)
	1 - 2 Minutes (834)		4 - 5 Minutes (966)
	2 - 3 Minutes (930)		5 - 8 Minutes (2321)



*Within 8 Minutes

**CITY OF NOVI
 RUNTIME AND RESPONSE ASSESSMENT - 23mph Response Times**

**REDSTONE ARCHITECTS, INC.
 PUBLIC SAFETY CONSULTANTS
 7-Feb-14**

Incident Type	Description
100s	Fire
200s	Overpressure rupture, explosion, or overheat
300s	EMS Call
400s	Hazardous Condition (i.e. gas leak, carbon monoxide, electrical, power lines down)
500s	Service Call
5000s	Lift Assist
600s	Good Intent Call
700s	False Alarm
7000s	Medical False Alarm

Fire Station #1

<i>RunTime</i>	<i>Incident Type (Provided by Novi FD)</i>										Total	Aggregate	Capture Percent
	100s	200s	300s	400s	500s	5000s	600s	700s	7000s				
1 Minute	4	0	113	7	1	0	7	32	0	164	164	3.25%	
2 Minutes	14	0	195	13	0	0	11	47	0	280	444	8.79%	
3 Minutes	9	0	465	9	3	5	22	29	49	591	1035	20.50%	
4 Minutes	14	0	572	12	6	0	18	49	18	689	1724	34.15%	
5 Minutes	19	1	1247	18	10	9	31	83	22	1440	3164	62.67%	
8 Minutes	62	1	1617	49	8	7	52	77	12	1885	5049	100.00%	
Total	122	2	4209	108	28	21	141	317	101	5049			

Proposed Site

<i>RunTime</i>	<i>Incident Type (Provided by Novi FD)</i>										Total	Aggregate	Capture Percent
	100s	200s	300s	400s	500s	5000s	600s	700s	7000s				
1 Minute	2	0	8	0	0	0	1	12	0	23	23	0.46%	
2 Minutes	6	0	176	12	1	0	9	57	0	261	284	5.72%	
3 Minutes	14	0	429	12	3	5	20	28	43	554	838	16.89%	
4 Minutes	15	0	588	13	3	1	27	41	22	710	1548	31.20%	
5 Minutes	17	1	751	16	6	4	24	77	21	917	2465	49.68%	
8 Minutes	61	1	2198	44	15	11	59	96	12	2497	4962	100.00%	
Total	115	2	4150	97	28	21	140	311	98	4962			

**CITY OF NOVI
 RUNTIME AND RESPONSE ASSESSMENT - 35mph Response Times**

**REDSTONE ARCHITECTS, INC.
 PUBLIC SAFETY CONSULTANTS
 7-Feb-14**

Incident Description

100s	Fire
200s	Overpressure rupture, explosion, or overheat
300s	EMS Call
400s	Hazardous Condition (i.e. gas leak, carbon monoxide, electrical, power lines down)
500s	Service Call
5000s	Lift Assist
600s	Good Intent Call
700s	False Alarm
7000s	Medical False Alarm

Fire Station #1

<i>RunTime</i>	<i>Incident Type (Provided by Novi FD)</i>										Total	Aggregate	Capture Percent
	100s	200s	300s	400s	500s	5000s	600s	700s	7000s				
1 Minute	10	0	207	12	1	0	13	72	0	315	315	4.44%	
2 Minutes	17	0	594	17	3	5	28	39	61	764	1079	15.21%	
3 Minutes	23	1	870	23	8	4	27	99	9	1064	2143	30.21%	
4 Minutes	32	0	1285	21	9	8	40	48	20	1463	3606	50.83%	
5 Minutes	27	1	832	27	7	2	24	55	8	983	4589	64.69%	
8 Minutes	63	0	2204	60	12	12	62	82	10	2505	7094	100.00%	
Total	172	2	5992	160	40	31	194	395	108	7094			

Proposed Site

<i>RunTime</i>	<i>Incident Type (Provided by Novi FD)</i>										Total	Aggregate	Capture Percent
	100s	200s	300s	400s	500s	5000s	600s	700s	7000s				
1 Minute	4	0	104	6	0	0	8	41	0	163	163	2.33%	
2 Minutes	20	0	649	19	4	5	27	64	46	834	997	14.26%	
3 Minutes	22	0	760	20	6	1	31	68	22	930	1927	27.57%	
4 Minutes	30	1	1553	26	10	8	38	87	23	1776	3703	52.98%	
5 Minutes	29	0	846	21	8	5	29	22	6	966	4669	66.80%	
8 Minutes	66	1	1985	65	12	12	58	112	10	2321	6990	100.00%	
Total	171	2	5897	157	40	31	191	394	107	6990			

NOVI FIRE DEPARTMENT
 RUN TIME ANALYSIS
 FIRE STATION NO. 1 VS 11 MILE RD. & LEE BEGOLE DRIVE

TABLE FOR "CAPTURE PERCENTAGE" BY LOCATION

	THREE MINUTE 23 MPH	FOUR MINUTE 23 MPH	FIVE MINUTE 23 MPH	THREE MINUTE 35 MPH	FOUR MINUTE 35 MPH	FIVE MINUTE 35 MPH
STATION NO. 1 CAPTURE PERCENTAGE	1035 20.50	1724 34.15	3164 62.67	2143 30.21	3606 50.83	4589 64.89
11 MILE ROAD-LEE BEGOLE DRIVE CAPTURE PERCENTAGE	838 16.89	1548 31.20	2465 49.68	1927 27.57	3703 52.98	4669 66.80

APPROACH: Two speeds, 35 mph and 23 mph, were used to calculate the run time analysis for Fire Station No. 1 and for the new proposed site in the City of Novi and the number of incident locations falling in each coverage area was calculated. 35 mph was used because the City contains several major roads and expressways where the speed limit is over 35 mph and this was deemed to be an acceptable average when considering the smaller minor roads within the City. An additional run time analysis was performed using 23 mph that factored in additional variables. This lower speed takes into account the time it takes for the Fire Fighters to leave the station and the delays they may encounter (traffic jams, slowing down at intersections, etc.) on their runs. 23 mph was calculated and used because the data included a call time and an arrival time, which allowed us to determine the total response time for each point. 35 points were selected at random (from the group of points that Fire Station No. 1 responded to) and the distance from Fire Station No. 1 was calculated for each of these points. Using the distance and the response time to each point, an average speed of 23 mph was calculated.

Source: Redstone Architects
 Public Safety Architects
 February 7, 2014