AGENDA

SPECIAL MEETING OF THE BIRMINGHAM PLANNING BOARD

MONDAY APRIL 17, 2023 – 7:30 PM

151 MARTIN ST., CITY COMMISSION ROOM 205, BIRMINGHAM MI*

The City recommends members of the public wear a mask if they have been exposed to COVID-19 or have a respiratory illness. City staff, City Commission and all board and committee members must wear a mask if they have been exposed to COVID-19 or actively have a respiratory illness. The City continues to provide KN-95 respirators and triple layered masks for attendees.

A. Roll Call
B. Review and Approval of the Minutes of the Regular Meeting of **March 22, 2023**
C. Chairpersons' Comments
D. Review of the Agenda
E. Unfinished Business
F. Rezoning Applications
G. Study Session
  1. **B1 Zoning District – Commercial Permitted Uses**
H. Community Impact Studies
  1. **34952 Woodward & 690 E. Maple – Request for Community Impact Study Review for new 6-9 story mixed use development**
I. Special Land Use Permits
J. Site Plan & Design Reviews
  2. **34952 Woodward & 690 E. Maple – Request for Preliminary Site Plan Review for new 6-9 story mixed use development**
K. Miscellaneous Business and Communications:
  3. Pre-Application Discussions
  4. Communications
    i. **Project Updates**
  5. Administrative Approval Correspondence
    i. **March 17, 2023 – April 14, 2023**
  6. Draft Agenda – **April 26, 2023**
  7. Action List –**2023**
  8. Other Business
L. Planning Division Action Items
  9. Staff Report on Previous Requests
  10. Additional Items from Tonight's Meeting
M. Adjournment

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*Please note that board meetings will be conducted in person once again. Members of the public can attend in person at Birmingham City Hall OR may attend virtually at:

Link to Access Virtual Meeting: **https://zoom.us/j/111656967**
Telephone Meeting Access: 877-853-5247 US Toll-Free
Meeting ID Code: 111656967

NOTICE: Due to Building Security, public entrance during non-business hours is through the Police Department—Pierce St. Entrance only. Individuals with disabilities requiring assistance to enter the building should request aid via the intercom system at the parking lot entrance gate on Henrietta St.

Persons with disabilities that may require assistance for effective participation in this public meeting should contact the City Clerk's Office at the number (248) 530-1880, or (248) 644-5115 (for the hearing impaired) at least one day before the meeting to request help in mobility, visual, hearing, or other assistance.

Las personas con incapacidad que requieren algún tipo de ayuda para la participación en esta sesión pública deben ponerse en contacto con la oficina del escribano de la ciudad en el número (248) 530-1800 o al (248) 644-5115 (para las personas con incapacidad auditiva) por lo menos un dia antes de la reunión para solicitar ayuda a la movilidad, visual, auditiva, o de otras asistencias. (Title VI of the Civil Rights Act of 1964).

City Of Birmingham
Regular Meeting Of The Planning Board
Wednesday, March 22, 2023
City Commission Room
151 Martin Street, Birmingham, Michigan

Minutes of the regular meeting of the City of Birmingham Planning Board held on March 22, 2023. Chair Clein convened the meeting at 7:30 p.m.

A. Roll Call

Present: Chair Scott Clein, Vice-Chair Bryan Williams; Board Members Robin Boyle, Stuart Jeffares, Bert Koseck, Janelle Whipple-Boyce (left at 8:39 p.m.); Alternate Board Members Jason Emerine, Nasseem Ramin (not voting); Student Representatives Asher Kaftan, Matthew Wiegand

Absent: Board Member Daniel Share

Staff: Planning Director Dupuis; Senior Planner Cowan, City Transcriptionist Eichenhorn

B. Approval Of The Minutes Of The Regular Planning Board Meeting of March 8, 2023

03-11-23

Motion by Mr. Williams
Seconded by Mr. Koseck to approve the minutes of the Regular Planning Board meeting of March 8, 2023 as submitted.

Motion carried, 7-0

VOICE VOTE
Yeas: Emerine, Clein, Koseck, Williams, Boyle, Whipple-Boyce, Jeffares
Nays: None

C. Chair's Comments

Chair Clein welcomed everyone to the meeting and reviewed the meeting's procedures.

D. Review Of The Agenda

The Chair noted that Item H1 on the evening's agenda would not be addressed since a Special Land Use Permit was no longer required based on the submitted plans.

E. Unfinished Business/Courtesy Review
F. Rezoning Applications
G. Community Impact Studies
H. Special Land Use Permits and Site Plan & Design Reviews
I. Site Plan & Design Review

DRAFT

1. **479 S. Old Woodward – Birmingham Tower – Request for Revised Final Site Plan & Design Review for New 5-Story Mixed-Use Building (Postponed from January 25, 2023)**

SP Cowan presented the item and answered informational questions from the Board.

Doraid Markus, co-owner of Birmingham Tower, spoke on behalf of the request.

Seeing no Board inquiry of Mr. Markus and no public comment, conversation returned to the Board for discussion.

Board members' comments regarding the plans were as follows:

- Extending the basement parking down to a second level was an improvement in the plans;
- The building would be beautiful and contextually appropriate;
- The plans needed to be revised for apartments nine, ten, and eleven on floors four and five so that an occupant would be able to get from the bedroom to the rest of the apartment; and,
- The architecture had been refined a bit from the prior proposal to positive effect.

Mr. Williams said he would support the project given the reduction of the parking space deficit and the project's overall value for the community. He also supported the Board of Zoning Appeals granting the parking variance.

Mr. Jeffares concurred, adding that the applicant's difficulties with parking were partially the City's responsibility. He noted this property was the only D4 property not included in the Parking Assessment District when it was created. He stated that the applicant put in extraordinary effort to reduce their parking deficit to ten spaces.

Mr. Boyle expressed hope that the proposal would receive approval.

The Chair said he saw no issue with the balconies extending a further two feet than would normally be allowed on Hazel and Old Woodward. He noted Woodward itself would be MDOT's jurisdiction regarding the balconies. He also offered his support for the variance given the constraints of the site and the small number of spaces requested.

In response to an inquiry from the Chair, the Board affirmed that it was unanimous in its support for the potential parking variance.

03-12-23

Motion by Mr. Williams
Seconded by Ms. Whipple-Boyce to approve the Final Site Plan and Design Review of 479 S. Old Woodward subject to the following conditions:

1. **The applicant revise the site plan to satisfy all off-street parking as required by the Zoning Ordinance or obtain one of the following:**
    a. **A parking variance from the Board of Zoning Appeals; or,**

   b. **A shared parking agreement approved by the Planning Board and recorded on the deed of each property involved;**
2. **The applicant coordinate with City staff to provide the required city standard streetscape elements including street trees, tree grates, street lights, benches and bike racks;**
3. **The applicant obtain approval for the balcony projections into the right-of-way from the City Commission through a lease agreement;**
4. **The applicant provide screening for the ground level transformer at the northeast corner of the building;**
5. **The applicant verify that the metal paneling does not exceed 10% of the buildings finish material; and,**
6. **The applicant comply with the requests of all City departments.**

Motion carried, 7-0

VOICE VOTE
Yeas: Emerine, Clein, Koseck, Williams, Boyle, Whipple-Boyce, Jeffares
Nays: None

2. **294 E. Brown – Brown St. Mixed Use – Site Plan Approval Extension Request**

The Chair recused himself from the item, citing a business relationship with the owner. He asked VC Williams to assume facilitation of the meeting and left the room.

PD Dupuis summarized the item.

Seeing no questions or comments from the Board or public, the Vice-Chair invited a motion.

03-13-23

Motion by Mr. Boyle
Seconded by Mr. Jeffares to extend the site plan approval request for 294 E. Brown for one year from March 22, 2023.

Motion carried, 6-0.

VOICE VOTE
Yeas: Emerine, Koseck, Williams, Boyle, Whipple-Boyce, Jeffares
Nays: None

J. Study Session
K. Miscellaneous Business and Communications

The Chair returned and resumed facilitation of the meeting.

1. **Pre-Application Discussions**

PD Dupuis introduced the pre-application discussions.

i. 34952 Woodward & 690 E. Maple

Toby Veit, VP of Development with Ryan Companies, and Matt Stevens, architect with Ryan Companies, presented the pre-application proposal and answered informational questions from the Board.

The Board provided brief feedback on the proposal and noted that one piece of correspondence regarding the proposal was received and filed.

ii. 380 S. Bates – Community House

Victor Saroki, architect, Bill Seklar, President & CEO of The Community House, and Richard Rassel, attorney, presented the pre-application proposal. PD Dupuis and members of the applicant team answered informational questions from the Board.

The Board provided brief feedback on the proposal.

The Board asked PD Dupuis to resolve any relevant legal questions with the City Attorney before the proposal returned for review.

Public Comment
Brian Manoogian, President of Townsend Park Condo Association, said he and the other members of the Townsend Park Condo Association were opposed to the proposed plans and proposed rezoning. He stated the Townsend Park Condo Association would be hiring an attorney to represent the Association's interests at future discussions of the Community House's plans.

2. **Communications**
3. **Administrative Approval Correspondence**
4. **Draft Agenda**
5. **Action List – 2023**
6. **Other Business**

L. Planning Division Action Items

a. Staff Report on Previous Requests
b. Additional Items from tonight's meeting

M. Adjournment

No further business being evident, the Chair adjourned the meeting at 9:23 p.m.

Nick Dupuis, Planning Director

Laura Eichenhorn, City Transcriptionist

DRAFT

MEMORANDUM

Planning Division

DATE: April 12th, 2023

TO: Planning Board Members

FROM: Brooks Cowan, Senior Planner

APPROVED: Nicholas Dupuis, Planning Director

SUBJECT: B1 Neighborhood Business Zoning Amendment Application – Study Session 3

The owner of 100 W 14 Mile is applying to amend the Zoning Ordinance for the B1 Neighborhood Business District to enable additional uses. The additional uses being proposed include Health Club/ Studio, Specialty Food Store, Boutique, Bank, Food & Beverage, and Fast Casual / Cafe. The applicant is the owner of the space where Grapevine Market used to be. The reason for requesting the zoning amendment is to provide additional tenant options.

There are eight areas in the City of Birmingham with B1 Neighborhood Business designations. Photos and a map of these zones are attached following the memo. Such B1 locations with notable tenants include the following:

1. Maple & Cranbrook (DFCU)
2. Maple & Chesterfield (Mills Pharmacy, Holiday Market Select, etc)
3. 151 N. Eton (Canelle Patisserie, Jets Pizza, Eton Market, etc)
4. 256 S. Eton (Beauty Collective)
5. 1213 Forest Hills Ln (Forest Hills Swim Club)
6. Lincoln & Grant (MUCU, Ginger Ground for Hair, Ortiz Educare)
7. 14 Mile & Southfield (Market Square, Birmingham Oil Change Center)
8. 14 Mile & Pierce (Blue Canary Confections, former Grapevine Market)

Study Session 1 – February 8th, 2023 (Agenda – Minutes)

City staff began by summarizing the intent of the B1 Neighborhood Business District, Article 2, Section 2.27(A) which states the following:

> The B1 (Neighborhood Business) District is established for the convenience of shopping for persons residing in adjacent residential areas to permit only such uses as are necessary

to satisfy those limited basic shopping and/or service needs which by their very nature are not related to the shopping pattern of the general business district.

City staff then discussed the proposed uses in relation to the district intent of the B1 zone. It was brought up that bank was indirectly allowed through the definition of office, but adding it to the list of permitted uses would make it easier for users to understand the Zoning Ordinance. It was also discussed how staff had no concerns regarding specialty food store, or boutique.

Given the wide variety of health club/studios, there was some concern regarding parking and fitness classes that could draw a large number of patrons for an hour session. Staff also discussed a potential new definition for cafés that limited the amount of indoor seating space. Doing so could help resolve issues for the city in having to make distinguishments between bakeries, food and drink establishments, and specialty food stores.

The Planning Board requested maps of where each use is permitted, as well as comparisions of how other cities regulate such uses, particularly parking requirements for small restaurants and gyms.

Study Session 2 – March 8th, 2023 (Agenda – Minutes)
City staff began the second study session by reviewing maps of where each use is permitted in the City in comparison to the B1 zone. Staff then reviewed other ways cities have regulated parking for smaller restaurants and fitness studios.

There appeared to be general consensus from the Planning Board that they were amenable to allowing the proposed uses of bank, specialty food store, and boutique as permitted uses in the B1 zone.

Upon discussion of creating terminology to enable smaller eating and drinking establishments, there was general consensus that adding "indoor dining" as an accessory permitted use would be beneficial. There was also general consensus that a new definition for Café should be reviewed.

In regards to health club / studio, it was discussed how the dificulty in this use is distinguishing between a 5 person class vs a 40 person class. A SLUP could be useful in regulating the various uses in this category, however the application requirements are more cumbersome and could deter potential tennants from trying.

Study Session 3 – April 17th, 2023
City staff has added "indoor dining*" to the list of accessory uses for the B1 District. A proposed amendment to Article 5, Section 5.09, Use Specific Standards has also been included to limit the space of indoor dining assembly area to 750 square feet for places where indoor dining may occur. For comparable spaces, Holiday Market has approximately 375 square feet of indoor dining space, and Canelle Patisserie has 500 square feet of indoor dining space. The recommended changes to the Zoning Ordinance for the B1 zone are attached below.

The applicant has proposed the addition of food and drink establishments to the B1 zone, however City staff is hesitant to include this use. There appeared to be a general consensus that this use incorporates a full service restaurant with a 1 parking space per 75 square feet parking requirement that incorporates a higher intensity of users. City staff recommends that a lighter

intensity food and drink category be created – this could be called a "café" which includes a small mix of carry-out and dine-in. Proposed regulations on the size of the indoor dining area would be associated with the café use. A parking amendment based on the size of the indoor dining area, and not the entire tenant space has also been proposed. Such changes to the Zoning Ordinance for Café use in the B1 zone could be the following:

> Article 9, Section 9.02 Definitions:
> *Cafe: an eating or drinking establishment where the business to consumer operation is predominantly through counter service provided for a combination of dine-in and carry-out, and does not offer full table service through a wait staff.*
>
> Article 5, Section 5.09 Use Specific Standards for the B1 District:
> *Indoor dining: Indoor dining is permitted as an accessory use to a bakery, specialty food store, grocery store, and* ***café*** *provided that the space for tables, seats, and patron circulation does not exceed 750 square feet.*
>
> Article 4, Table A: Off-Street Parking Spaces
> *Eating eatablishment – café use: 1 space per 75 square feet of indoor dining assembly area, plus 2 spaces for employees.*

In regards to health club/studio use, city staff is amenable to a SLUP for this use due to the variety of uses the category encompasses. An alternative to a SLUP could be to cap the amount of patrons for a fitness class through Use Specific Standards of Article 5.09, however this would be dificult to enforce.

Suggested Action:
City staff recommends that the Planning Board consider the proposed amendment language for the B1 Neighborhood Business District.

CITY OF BIRMINGHAM

ORDINANCE NO. _____

THE CITY OF BIRMINGHAM ORDAINS:

AN ORDINANCE TO AMEND THE ZONING ORDINANCE OF THE CITY OF BIRMINGHAM:

TO AMEND ARTICLE 2, SECTION 2.27, B1 (NEIGHBORHOOD BUSINESS) DISTRICT INTENT, PERMITTED USES, AND SPECIAL USES, TO ADD BANK, BOUTIQUE, CAFÉ, AND SPECIALTY FOOD STORE TO COMMERCIAL PERMITTED USES, INDOOR DINING TO ACCESSORY PERMITTED USES, AND HEALTH CLUB STUDIO TO USES REQUIRING A SPECIAL LAND USE PERMIT.

A. **Permitted Uses**

1. Institutional Permitted Uses
    a. community center
    b. government office
    c. government use
    d. religious institution
    e. school - private
    f. school - public
    g. social club
2. Recreational Permitted Uses
    a. recreational club
    b. swimming pool – semiprivate
3. Commercial Permitted Uses
    a. Bakery
    b. bank
    c. barber shop/beauty salon
    d. boutique
    e. café
    f. drugstore
    g. dry cleaning
    h. grocery store
    i. hardware store
    j. neighborhood convenience store
    k. office
    l. shoe store/shoe repair
    m. specialty Food Store
    n. tailor
4. Other Permitted Uses
    a. utility substation

B. **Other Use Regulations**

1. Accessory Permitted Uses
    a. alcoholic beverage sales*
    b. indoor dining*
    c. kennel*
    d. laboratory - medical/dental*
    e. loading facility - off-street*
    f. outdoor cafe
    g. outdoor display*
    h. parking facility - off-street*
    i. sign
2. Uses Requiring a Special Land Use Permit
    a. alcoholic beverage sales (off-premise consumption)
    b. alcoholic beverage sales (on-premise consumption)
    c. child care center
    d. continued care retirement community
    e. health club/studio
    f. independent hospice facility
    g. drive-in facility*
    h. gasoline full service station*
    i. skilled nursing facility

* = Use Specific Standards in Section 5.09 Apply

CITY OF BIRMINGHAM

ORDINANCE NO. _____

THE CITY OF BIRMINGHAM ORDAINS:

AN ORDINANCE TO AMEND THE ZONING ORDINANCE OF THE CITY OF BIRMINGHAM:

TO AMEND ARTICLE 5, SECTION 5.09, USE SPECIFIC STANDARDS, TO ADD LANGUAGE TO PERMIT INDOOR DINING AS AN ACCESSORY USE TO BAKERIES, SPECIALTY FOOD STORES, GROCERY STORES, AND CAFES.

ARTICLE 5: USE SPECIFIC STANDARDS
5.09 B1 District
This Use Specific Standards section applies to the following district:
B1
The following use specific standards apply:

A. Alcoholic Beverage Sales: Alcoholic beverage sales for consumption off the premises in conjunction with grocery stores and drugstores is permitted subject to special land use permit.
B. Drive-in Facility: A drive-in facility is permitted provided it is accessory to the permitted principal use.
C. Gasoline Full Service Station: A gasoline full service station is permitted provided any mechanized car wash systems shall be limited to 25 cars per hour.
D. Indoor Dining: Indoor dining is permitted as an accessory use to a bakery, specialty food store, grocery store, and café provided that the indoor dining area consisting of the space for tables, seats, and patron circulation does not exceed 750 square feet.
E. Kennel: A kennel is permitted in conjunction with veterinary clinics when completely enclosed within a building (see Sections 18-86, 18-87, 18-88 of the Birmingham City Code).
F. Laboratory: A laboratory is permitted when incidental to a medical or dental office located within the same building.
G. Loading Facility: A loading facility is permitted provided facilities are screened according to Section 4.54.
H. Parking Facility: A parking facility is permitted provide such facilities are screened according to Section 4.54.
I. Rooftop Use Standards:
    1. Rooftop amenities such as pergolas, trellises and other similar items are permitted on a rooftop, provided:
        i. They are set back at least 5 feet from the eave line.
        ii. They are of sufficient weight or anchored to the building to resist anticipated wind loads.
        iii. They do not have full enclosures.
        iv. They do not include eisenglass or similar enclosure materials.
    2. Rooftop structures and amenities may not contain habitable space.

CITY OF BIRMINGHAM

ORDINANCE NO. _____

THE CITY OF BIRMINGHAM ORDAINS:

AN ORDINANCE TO AMEND THE ZONING ORDINANCE OF THE CITY OF BIRMINGHAM:

TO AMEND ARTICLE 9, SECTION 9.02, DEFINITIONS, TO CREATE A DEFINITION FOR A CAFÉ USE.

Cafe: an eating or drinking establishment where the business to consumer operation is predominantly through counter service provided for a combination of dine-in and carry-out, and does not offer full table service through a wait staff.

CITY OF BIRMINGHAM

ORDINANCE NO. _____

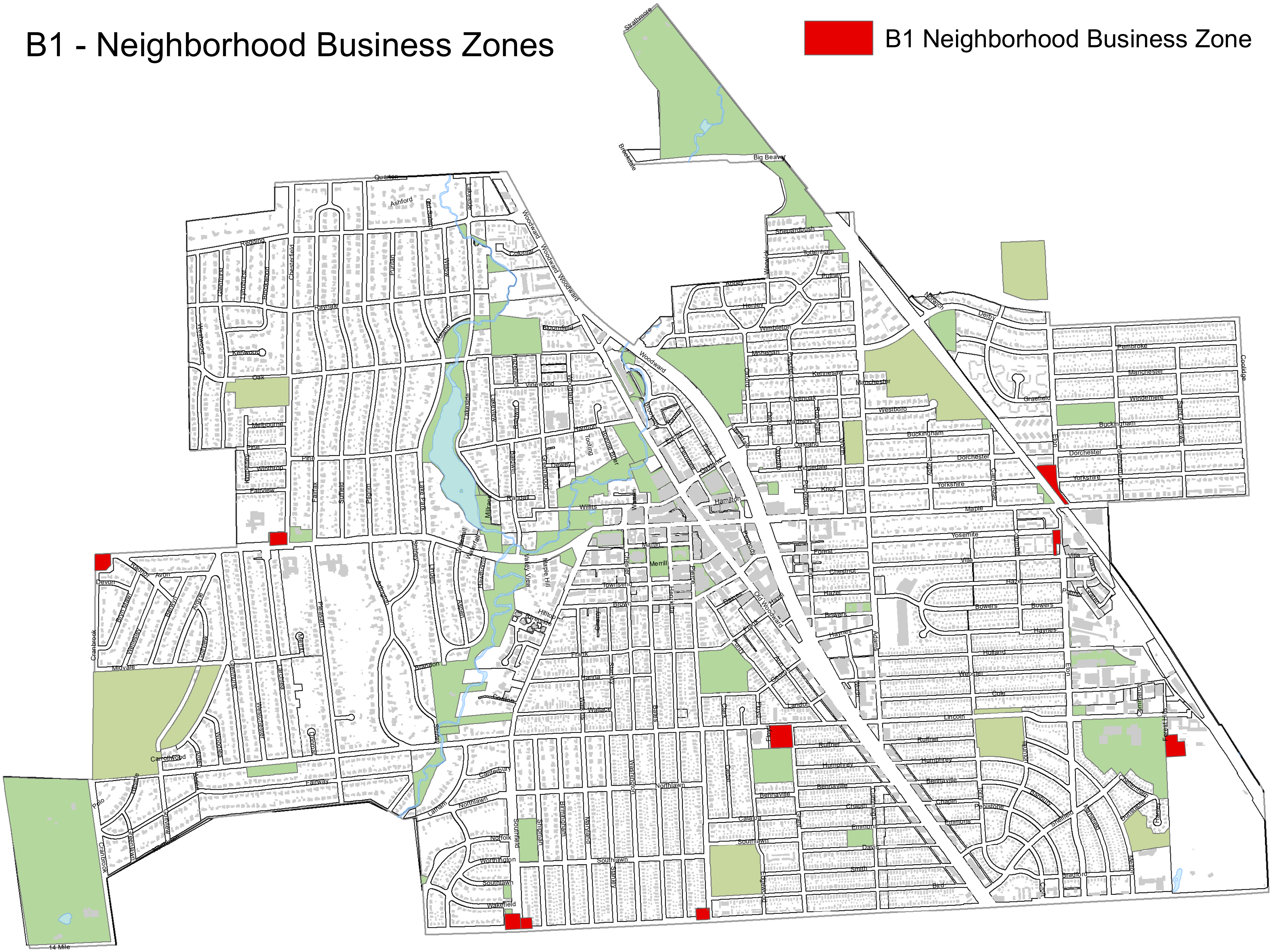
THE CITY OF BIRMINGHAM ORDAINS:

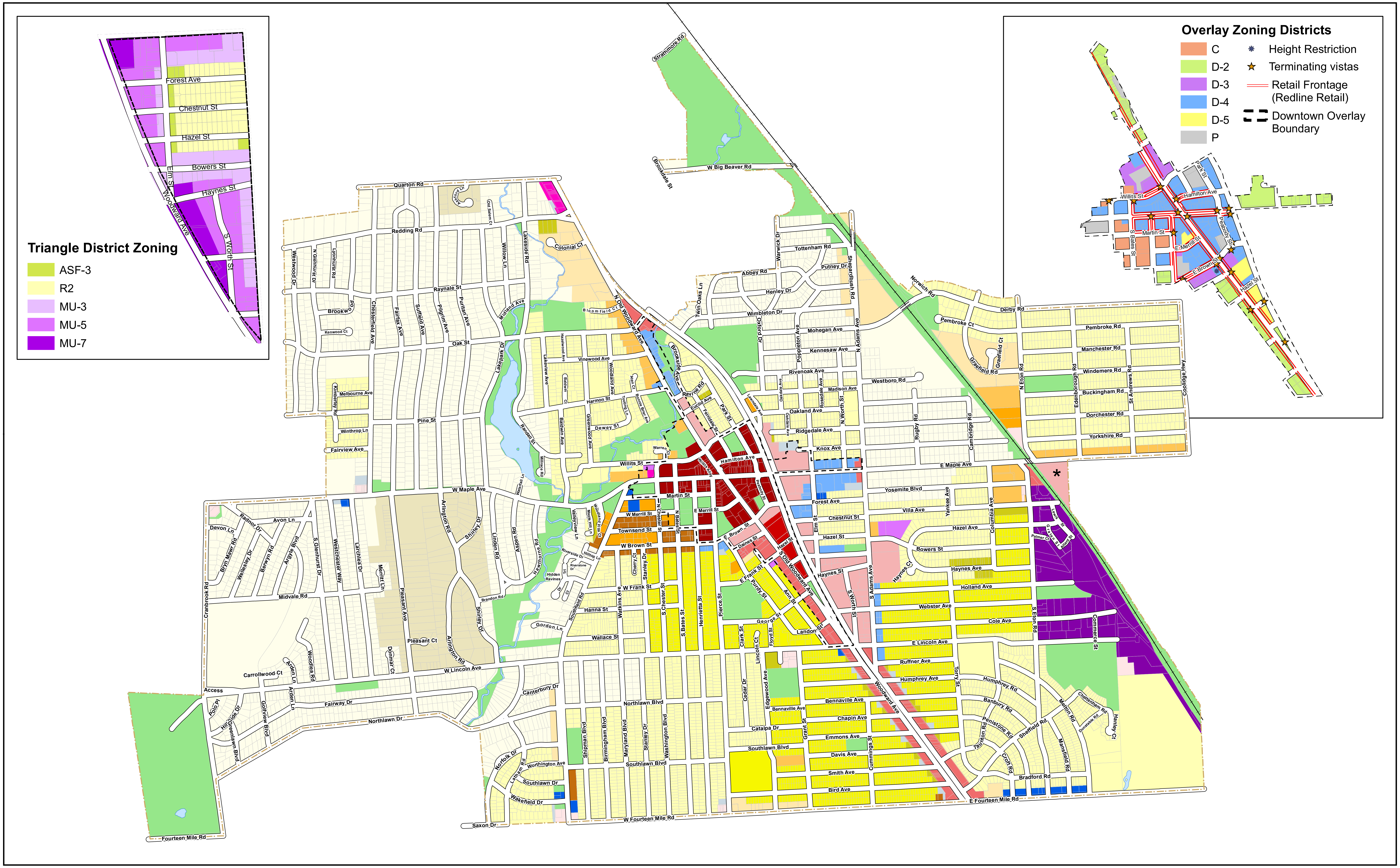
AN ORDINANCE TO AMEND THE ZONING ORDINANCE OF THE CITY OF BIRMINGHAM:

TO AMEND ARTICLE 4, TABLE A, TO CREATE A PARKING RATIO REQUIREMENT FOR A CAFÉ USE.

Eating establishment – café use: 1 space per 75 square feet of indoor dining assembly area, plus 2 spaces for employees

B1 - Neighborhood Business Zones





City of Birmingham
A Walkable Community

1,500 750 0 1,500 Feet

N

Coordinate System: State Plane Coordinate System Michigan South Zone 2113 Projection: Lambert Conformal Conic, Units: International Feet, Datum: NAD83
Data Sources: Oakland County GIS Utility, City of Birmingham
Updated: February 17, 2017

City Of Birmingham
Zoning Map

Zoning Districts

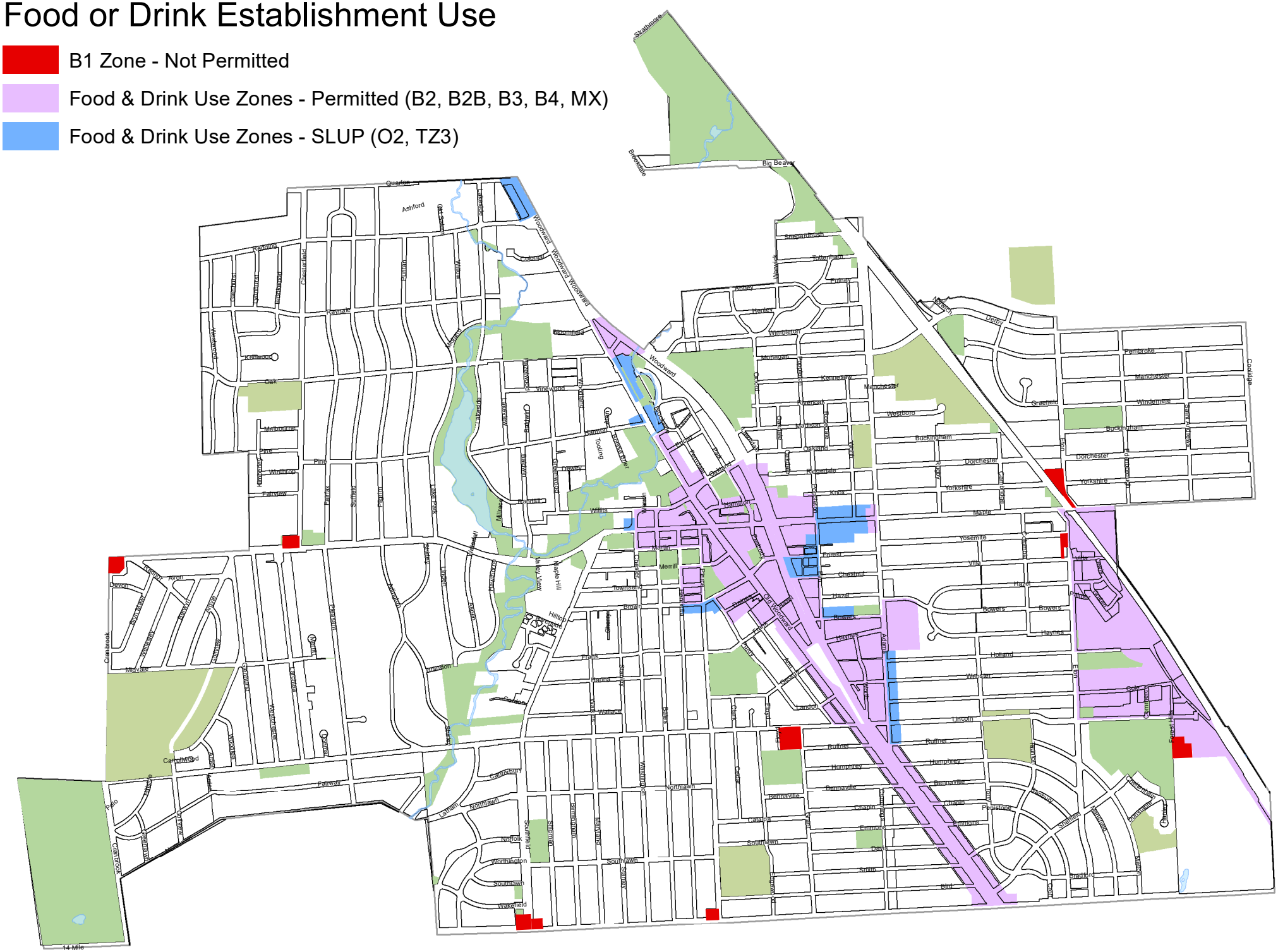
R1	Single-Family Residential	
R1-A	Single-Family Residential	
R2	Single-Family Residential	
R3	Single-Family Residential	
R4	Two-Family Residential	
R5	Multiple-Family Residential	
R6	Multiple-Family Residential	
R7	Multiple-Family Residential	
R8	Multiple-Family Residential	
TZ1	Transitional Zoning 1	
TZ3	Transitional Zoning	
MX	Mixed-Use	
B-1	Neighborhood Business	
B-2	General Business	
* B-2	General Business Limited to Grocery Story Use	
B-2B	General Business	
B-3	Office-Residential	
B-4	Business-Residential	
0-2	Office Commercial	
0-1	Office	
P	Parking	
PP	Public Property	
	Downtown Overlay Boundary	

Food or Drink Establishment Use

B1 Zone - Not Permitted

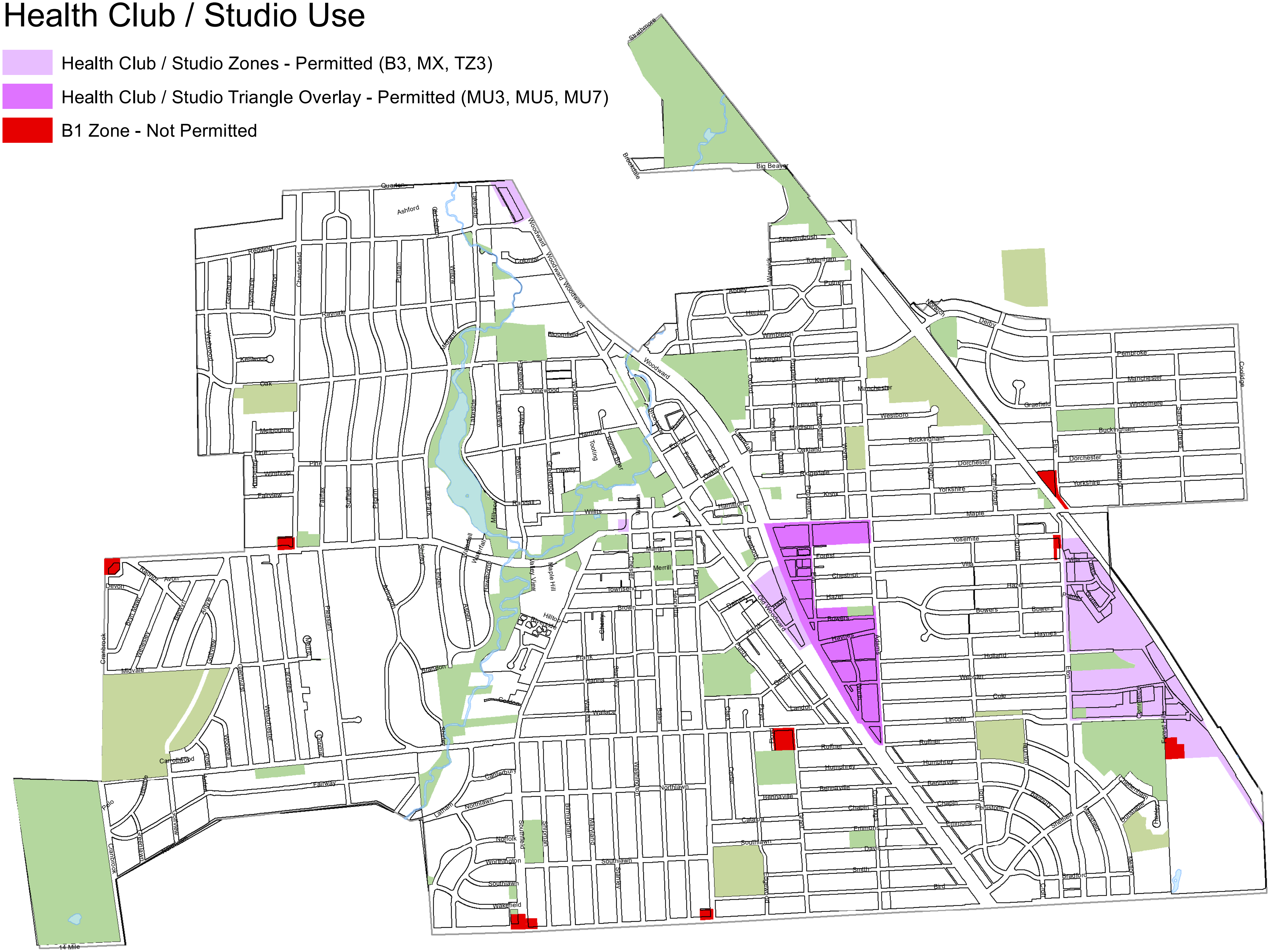
Food & Drink Use Zones - Permitted (B2, B2B, B3, B4, MX)

Food & Drink Use Zones - SLUP (O2, TZ3)



Health Club / Studio Use

- Health Club / Studio Zones - Permitted (B3, MX, TZ3)
- Health Club / Studio Triangle Overlay - Permitted (MU3, MU5, MU7)
- B1 Zone - Not Permitted

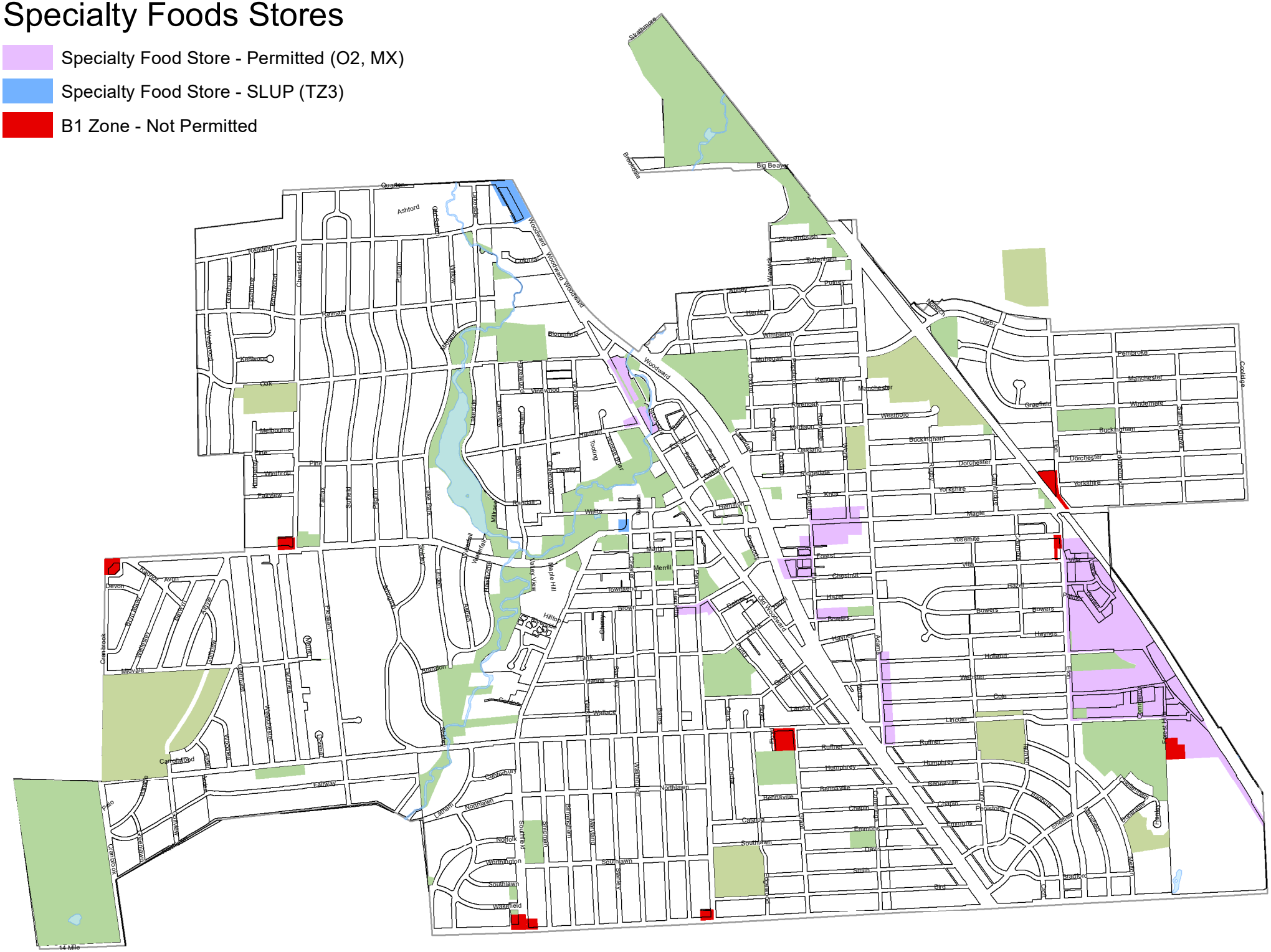


Specialty Foods Stores

Specialty Food Store - Permitted (O2, MX)

Specialty Food Store - SLUP (TZ3)

B1 Zone - Not Permitted



Boutique Use

Maple and Cranbrook

Maple & Chesterfield

151 N. Eton

256 S Eton

1213 Forest Hills Lane

Lincoln and Grant

14 Mile and Southfield

14 Mile and Southfield

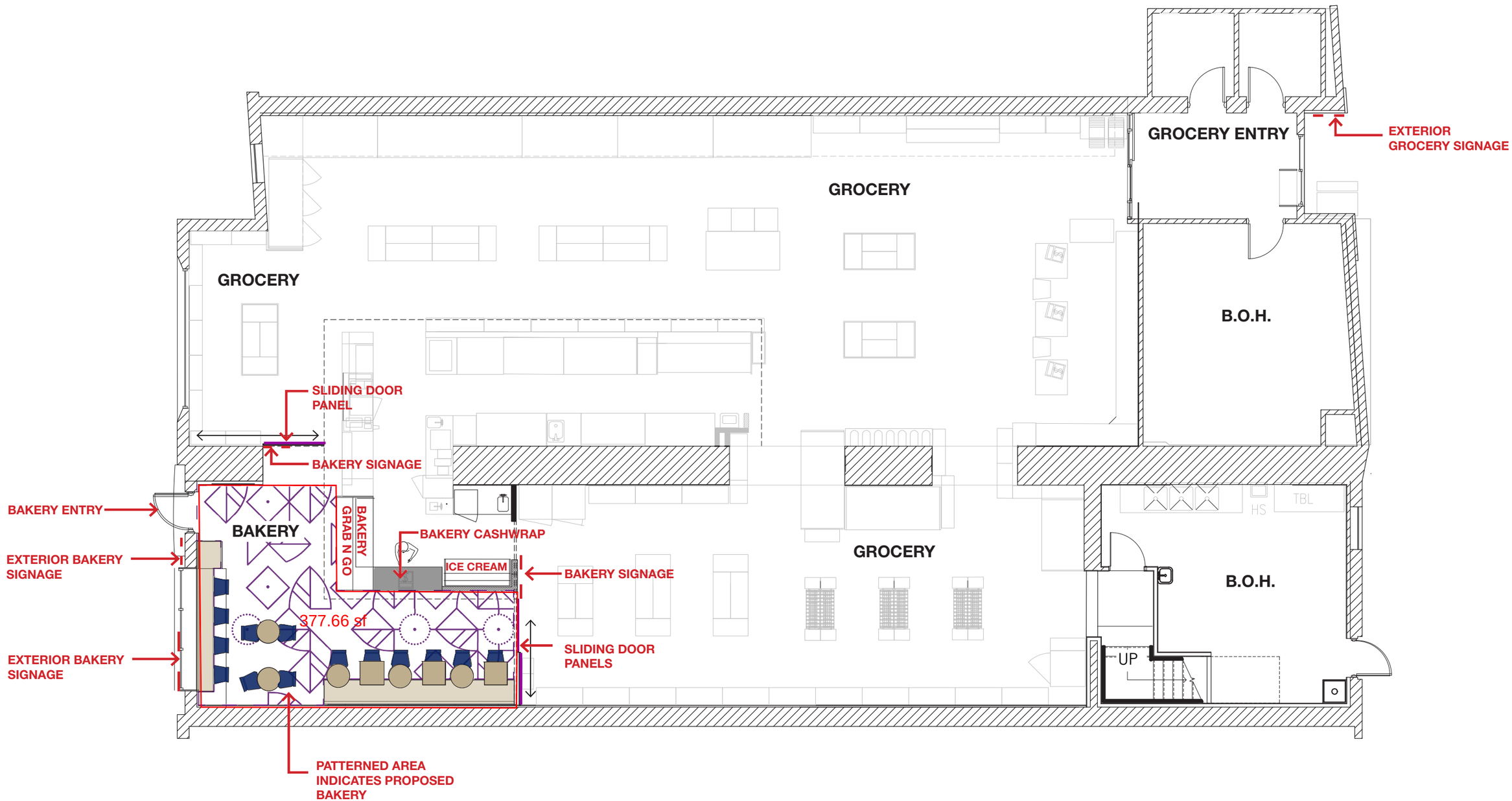
8. 14 Mile and Pierce

NOTE: EQUIPMENT SHOWN IS FOR DESIGN INTENT ONLY. COORDINATE ALL EQUIPMENT WITH ARCHITECT AND EQUIPMENT SUPPLIER. (TYP.)

NOTE: CEILING HEIGHTS ARE BASED ON AN ASSUMED 10'-6". DIMENSIONS TO BE VERIFIED. IF DIFFERENT CONTACT STUDIO H2G (TYP.)

NOTE: DIMENSIONS ARE FOR DESIGN PURPOSES ONLY (V.I.F.) SEE ARCHITECTURAL DRAWINGS. VERIFY EQUIP SIZES BEFORE STARTING ANY CONSTRUCTION

NOTE: DRAWINGS ARE FOR DESIGN PURPOSES ONLY. SEE ARCHITECT AND ENGINEERS DRAWINGS FOR NOTES DIMENSIONS AND DETAILS (TYP.)



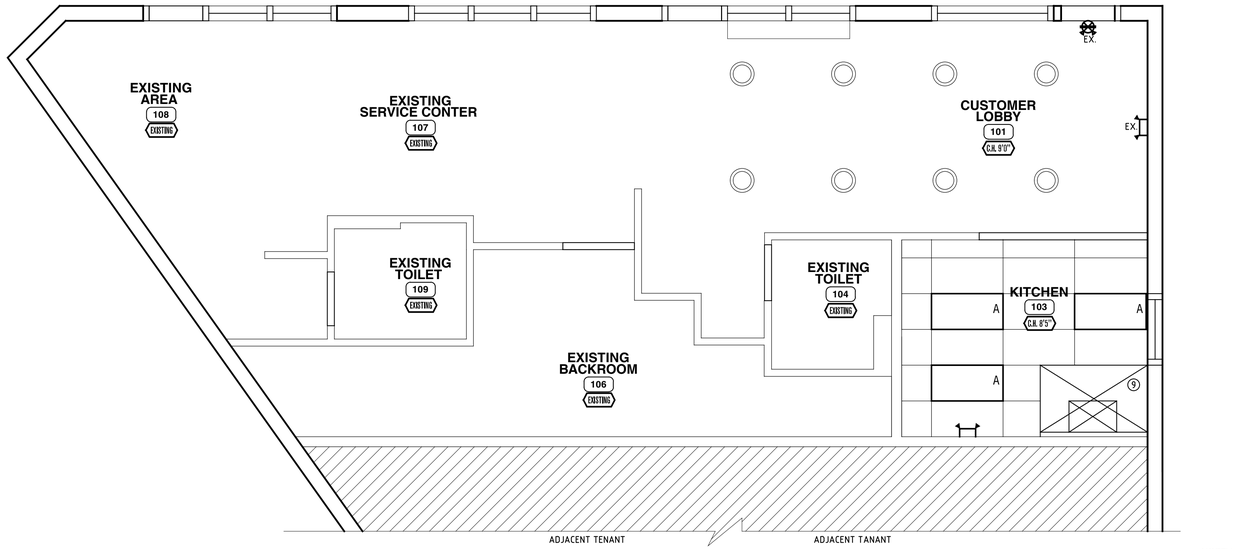
FLOOR PLAN
N.T.S. (NOT TO SCALE)

3

04/28/2021

studio H2G
headtogether, including gourmet.

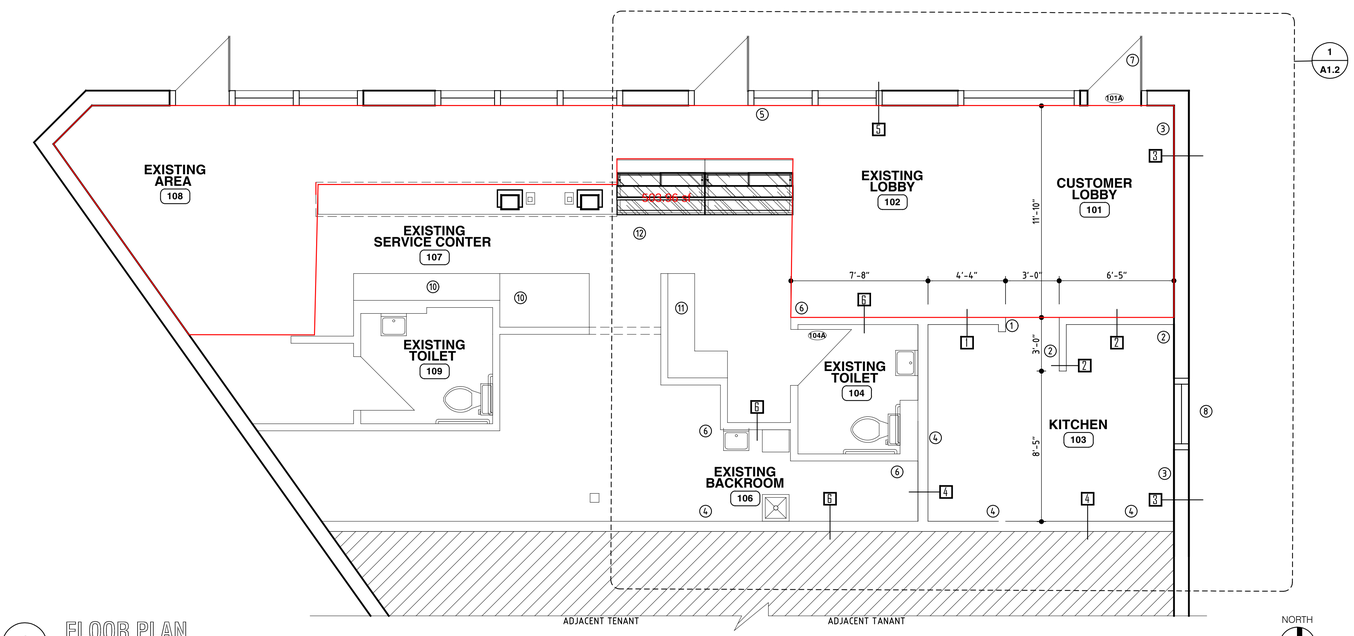
PRELIMINARY DESIGN (SEATING)



2 REFLECTED CEILING PLAN

SCALE: 1/4" = 1'

NORTH



1 FLOOR PLAN

SCALE: 1/4" = 1'

NORTH

DIMENSIONS

NEW INTERIOR PARTITIONS:
GYP. BD. TO GYP. BD.

EXISTING CMU & DEMISING WALLS:
FACE OF MASONRY / STUD

PLAN LEGEND

	EXISTING WALL - TO REMAIN SEE ASSEMBLY TYPES
	NEW WALL SEE ASSEMBLY TYPES
	EXISTING DOOR & FRAME - TO REMAIN SEE DOOR SCHEDULE
	NEW DOOR SEE DOOR SCHEDULE

CEILING LEGEND

	LAY-IN CEILING TILE SEE FINISH SCHEDULE
A	NEW 2x4 SUSPENDED CEILING GRID LAY-IN LIGHT FIXTURE
	WALL MOUNTED EMERGENCY LIGHT FIXTURE
	EXIT SIGN WITH EMERGENCY LIGHT
	PENDANT LIGHT TO MATCH EXISTING
	RECESSED CAN LIGHTS

ASSEMBLY TYPE

MARK	DESCRIPTION	DETAIL
1	TYP. INTERIOR PARITION W/ NEW FINISH GYP + 3-5/8" MTL STUD	1/A6.1
2	TYP. INTERIOR PARTITION W/ NEW FINISH WALL HEIGHT 5'-0"GYP + 3-5/8" MTL STUD	1/A6.1
3	EX. EXTERIOR WALL W/ NEW FINISH FIELD VERIFY + REBAR AS REQ'D	2/A6.1
4	EXIST. DEMISING W/ NEW FINISH FIELD VERIFY & REPAIR AS REQ'D	3/A6.1
5	EX. STORE FRONT GLAZING SYSTEM FIELD VERIFY & REPAIR AS REQ'D	4/A6.1
6	EX. INTERIOR PARTITION TO REMAIN FIELD VERIFY & REPAIR AS REQ'D	NO DETAIL
7	-	-

KEY NOTES

1. TYP. INTERIOR PARTITION W/ NEW FINISH SEE ASSEMBLY TYPES & FINISH SCHEDULE
2. TYP. 5'-0" INTERIOR PARTITION W/ NEW FINISH SEE ASSEMBLY TYPES & FINISH SCHEDULE
3. EXISTING EXTERIOR WALL W/ NEW FINISH SEE ASSEMBLY TYPES & FINISH SCHEDULE
4. EXISTING DEMISING WALL W/ NEW FINISH SEE ASSEMBLY TYPES & FINISH SCHEDULE
5. EXISTING STORE FRONT GLAZING SYSTEM SEE ASSEMBLY TYPES & FINISH SCHEDULE
6. EXISTING INTERIOR PARTITION TO REMAIN SEE ASSEMBLY TYPES & FINISH SCHEDULE
7. EXISTING STORE FRONT DOOR TO REMAIN
8. NEW 3'-0" X 5'-0" EXPO. WINDOW SEE ENLARGED ELEVATIONS
9. NEW HOOD VENT SEE EQUIPMENT PLAN & SCHEDULE
10. EXISTING BREAD & BAKED GOOD DISPLAY TO REMAIN
11. EXISTING ESPRESSO COUNTER
12. EXISTING REFRIGERATED PASTRY DISPLAY

1

REVISION #1:

PER BLDG DEPT. - REVIEW #1:
REVISED PLANS TO SHOW FULL LAYOUT OF EXISTING BAKERY. PER

DESIGNHAUS ARCHITECTURE
EST 1998
3300 AUBURN RD. SUITE 300
AUBURN HILLS, MI 48326
T:248.601.4422 F:248.453.5854
WWW.DESIGNHAUS.COM
INFO@DESIGNHAUS.COM

Revision/Issue	Date
Permits	08.20.21
Revision #1	10.20.21
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STATE OF MICHIGAN
PETER M. STUHLREYER
ARCHITECT
No. 1301014808
LICENSED ARCHITECT

Cannelle Bakery Addition

159 N. Eton St.
Birmingham, MI 48009

First Floor & Reflected Ceiling Plan

021103

A1.1

A1.1 First Floor & Reflected Ceiling Plan.dwg
10/20/2021
DH User 05

Michael R. Vogt
T (248) 530-6335
F (248) 530-9173
Email:MVogt@ClarkHill.com

Clark Hill PLC
151 S. Old Woodward Ave., Ste 200
Birmingham, MI 48009
T (248) 642-9692
F (248) 530-9173

February 3, 2023

VIA HAND DELIVERY

Birmingham City Commission
151 Martin St.
Birmingham, MI 48009

Re: **Application for Zoning Ordinance Change to Expand Permitted Uses Within B-1 Zoning District**

To Whom It May Concern:

Clark Hill PLC is legal counsel to Mura, LLC ("Mura"), who is the owner of the commercial development located at 100 W 14 Mile Rd., Birmingham, MI 48009. Mura is seeking to amend the City's Zoning Ordinance to expand the list of permitted uses in the B-1 (Neighborhood Business) Zoning District as stated in Section 2.27(B). On behalf of Mura, we respectfully ask that the enclosed Application be reviewed by the City's planning department and placed on the City Commission's agenda for consideration at the first available date.

Attached as **Exhibit A** to this letter is the proposed amendment to Section 2.27B(3), which would add the following low-intensity neighborhood uses to the list of permitted commercial uses in the B-1 district:

a. Health Club/Studio
b. Specialty Food Store
c. Boutique
d. Bank
e. Food or drink establishment
f. Fast casual/cafe

Each of these commercial uses would bring desired goods and services to Birmingham neighborhoods, furthering the stated intent of the B-1 zoning district to provide "convenience of shopping for residing in adjacent residential areas to

permit only such uses as are necessary to satisfy those limited basic shopping and/or service needs which by their very nature are not related to the shopping pattern of the general business district." Further, the addition of these similar commercial uses to Section 2.27(B)(3) will broaden the market for potential tenants at all B-1 properties, thereby increasing the variety of businesses that citizens have access to in their neighborhoods, and decreasing the risk that properties sit vacant for extended periods between tenancies.

The City's Zoning Map provides for only eight B-1 properties/areas in the City and those areas are relatively small in geographic footprint. Attached as **Exhibit B** is a list of the eight B-1 properties/areas on the Zoning Map and the businesses that currently operate thereon (according to Google). A review of Exhibit B reveals that the five proposed additional uses in Exhibit A are similar in nature and intensity to the businesses currently operating on B-1 properties. In fact, Exhibit B shows that two credit unions and a bank already operate harmoniously on B-1 property even though banks are neither permitted by right nor special land use approval in the B-1 district. There are also existing restaurants (Jet's Pizza) and businesses similar in use characteristics to health clubs/studios like dance studios and Forest Hills Swim Club. Accordingly, the addition of the proposed uses listed on Exhibit A will have no negative impact on properties adjacent to B-1 districts, but will provide a material benefit to B-1 property owners, and increase the convenience for the neighborhood residents who rely on these small businesses.

In conclusion, we respectfully request that the above analysis and the attached supporting materials be considered by the City Commission, and Mura's Application to modify the list of permitted commercial uses in Section 2.27(B)(3) be approved. On behalf of Mura, we thank you in advance for your timely attention to this Application and look forward to working with the City throughout the approval process.

Sincerely,

CLARK HILL PLC

/s/ Michael R. Vogt

Michael R. Vogt

EXHIBIT A

2.27 B1 (Neighborhood Business) District Intent, Permitted Uses, and Special Uses B1

A. **District Intent**

1. The B1 (Neighborhood Business) District is established for the convenience of shopping for persons residing in adjacent residential areas to permit only such uses as are necessary to satisfy those limited basic shopping and/or service needs which by their very nature are not related to the shopping pattern of the general business district.

B. **Permitted Uses**

1. Institutional Permitted Uses
   a. community center
   b. government office
   c. government use
   d. religious institution
   e. school - private
   f. school - public
   g. social club
2. Recreational Permitted Uses
   a. recreational club
   b. swimming pool – semiprivate
3. Commercial Permitted Uses
   a. bakery
   b. barber shop/beauty salon
   c. drugstore
   d. dry cleaning
   e. grocery store
   f. hardware store
   g. neighborhood convenience store
   h. office
   i. shoe store/shoe repair
   j. tailor
   k. Health Club/Studio
   l. Specialty Food Store
   m. Boutique
   ~~j.~~n. Bank
   o. Food or drink establishment
   p. Fast casual/café
4. Other Permitted Uses
   a. utility substation

C. **Other Use Regulations**

1. Accessory Permitted Uses

a. alcoholic beverage sales*
b. kennel*
c. laboratory - medical/dental*
d. loading facility - off-street*
e. outdoor cafe
f. outdoor display*
g. parking facility - off-street*
h. sign

2. Uses Requiring a Special Land Use Permit
   a. alcoholic beverage sales (off-premise consumption)
   b. alcoholic beverage sales (on-premise consumption)
   c. child care center
   d. continued care retirement community
   e. independent hospice facility
   f. drive-in facility*
   g. gasoline full service station*
   h. skilled nursing facility

* = Use Specific Standards in Section 5.09 Apply

( ) = Subject to Regulations of the Specified District

EXHIBIT B

B-1 Locations Per Zoning Map and Existing Business Per Google

1. **SE Corner of Maple and Cranbrook**
    a. DFCU Financial

2. **NW Corner of Maple and Chesterfield**
    a. Mills Pharmacy;
    b. Holiday Market;
    c. Detroit Barber Co.; and
    d. First Merchant's Bank

3. **151 N. Eton**
    a. Jet's Pizza;
    b. Cannelle Patisserie;
    c. Spa Mariana; and
    d. Zack's Alteration Shop

4. **256 S. Eton**
    a. Beauty Collective

5. **1213 Forest Hills Ln**
    a. Forest Hills Swim Club

6. **SE Corner of Lincoln and Gran**t
    a. MUCU;
    b. Ginger Group for Hair;
    c. STARZ Performing Arts;
    d. Kramm & Associates Dental Lab;
    e. Birmingham Laundromat

7. **NW and NE Corner of Southfield Rd. and 14 Mile Rd.**
    a. Market Square (NW Corner) and
    b. Birmingham Oil Change Center (NE Corner)

8. **NW Corner of 14 Mile Rd. and Pierce**
    a. Blue Canary Confections;
    b. Birmingham Dance Academy; and
    c. Beauty Collective Hair Salon.

MEMORANDUM

Planning Division

DATE: April 17, 2023

TO: Planning Board Members

FROM: Leah Blizinski, City Planner

APPROVED: Nicholas Dupuis, Planning Director

SUBJECT: 34952 Woodward & 690 E. Maple – Community Impact Study & Preliminary Site Plan Review

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The subject properties are located at 34592 Woodward and 690 E. Maple. Both parcels are zoned B-2 (General Business) and both are in the Triangle Overlay District. 34952 Woodward is zoned MU-7 in the Triangle Overlay District while 690 E. Maple is zoned MU-5 in the Triangle Overlay District.

The applicant has submitted an application for Community Impact Study and Preliminary Site Plan Review for a new 6- 9-story mixed-use building. The proposed building spans approximately half a block, which is bound by Woodward (west), private property (east), Maple (north) and a public alley (south) and presently contains 2 separate parcels. The proposed development will combine the two parcels, which currently contain a vacant office building and surface parking (690 E. Maple) and vacant land and surface parking (34952 Woodward).

Community Impact Study

Article 7, Section 7.27 (E) states that a Community Impact Study (CIS) shall be required for a new structure and/or building of 20,000 square feet of gross floor area or greater, to be prepared by the petitioner, for review by the Planning Board at the Preliminary Site Plan Review. As the proposed development is greater than 20,000 sq. ft. gross floor area, a CIS has been submitted. The Zoning Ordinance recognizes that buildings of a certain size may affect community services, the environment, and neighboring properties. The CIS acts as a foundation for discussion between the Planning Board and the applicant, beyond the normal scope of information addressed in the preliminary site plan review application. The Planning Board "accepts" the CIS prior to taking action on a Preliminary Site Plan.

1.0 Planning & Zoning Issues

1.1 **Use:** The proposed use as a mixed-use building with retail along Woodward and Maple and 174 residential units is a permitted use in the B-2, MU5 and MU7 zoning districts.

1.2 **Triangle District Urban Design Plan:** Article 3, Section 3.05 of the Zoning Ordinance states that the purpose of the Triangle Overlay District is to:

1. Develop a fully integrated, mixed-use, pedestrian-oriented environment with buildings containing commercial, residential and office uses, similar to the downtown character west of Woodward Avenue.

2. Create a synergy of uses within the Triangle Overlay District to support economic development and redevelopment in accordance with the recommendations of the Triangle District Urban Design Plan.

3. Minimize traffic congestion, inefficient surface parking lots, infrastructure costs and environmental impacts by promoting a compact, mixed-use, pedestrian-friendly district.

4. Regulate building height to achieve appropriate scale along streetscapes to ensure proper transition to nearby residential neighborhoods.

5. Create a definable sense of place for the Triangle Overlay District with a pedestrian oriented, traditional urban form with bold innovations in architecture.

The proposed development appears to conform to the Triangle District Urban Design Plan (the "Plan") in a number of ways. In terms of bulk, placement, design and size, the proposed building will replace one existing building and surface lots/ vacant land that do not offer a vibrant presence at street level. The proposed building is designed with large windows, canopies, and a material variety that offers an enhanced pedestrian experience. These features are part of an overall design of the building that is a contemporary style, as is recommended by the Plan. Furthermore, the building's height is highest towards the center of the building and it maintains the "stepdown" effect from Woodward east along Maple at the start of the MU-5 District. The proposed development maximizes the permissible height of each applicable zoning district.

In terms of the mix of uses, the composition of the building is weighted heavily towards residential. The remaining area is dedicated to building service functions and 10,000 sq. ft. of ground floor retail along Maple and at the corner of Woodward and Maple. **The applicant has not yet provided total building square footage. Once the applicant provides the total building square footage, commercial square footage will be calculated as a percent of the building total and provided to the Planning Board.**

The entry/lobby for the residential units is located mid-block on Maple at street-level as well as one of the amenity spaces for the residential units. The Plan describes a vision where "Woodward Avenue is a grand, tree-lined boulevard, lined with distinctive buildings and a streetscape that welcomes both vehicles and pedestrians." The plan also states that the area should become a self-sufficient neighborhood with mutually supportive residential and commercial uses and that commercial uses along Woodward could be more general, community services. Both the uses and the streetscape proposed along Woodward align with The Triangle District Plan recommendations as well as the mixed-use nature of the proposed building and residential which includes a diversity of unit sizes.

Perhaps one of the more prominent aspects of the proposed development that congeals well with the Plan is the removal of two large surface parking facilities in favor of a 3-level parking deck containing 341 off-street parking spaces. This facility is located at the rear of the development along the alley, with access to the deck located on Maple as well as from the alley South of the project site. The parking deck does provide parking for the 10,000 sq. ft. retail space and residential lobby on the ground level of the deck. The ground level of the parking deck will be fully accessible to the public, while the upper and lower levels will have restricted access for residents only. A full review of the parking conditions proposed is provided in the Preliminary Site Plan Review below.

Finally, the Plan places emphasis on sustainable design to encourage optimal use of natural or existing features in architectural and site design such that a building's energy use is reduced, and the natural environment is thereby enhanced. The proposed development contains several sustainable elements including adherence to LEED design standards, electric vehicle charging, greenspace on amenity decks, and new trees on site. **The Planning Division will work with the applicant to encourage them to broaden their impact by considering other sustainable features to work into the site and/or building design.**

1.3 Land Development Issues

The applicant has submitted a 'draft' Phase 1 Environmental Site Assessment (ESA), as well as an initial soils investigation. Within the supplemental information provided by the applicant, the results of both studies indicate that there are no recognized environmental conditions (REC's) on either site. The applicant has indicated that a final Phase 1 Environmental Site Assessment will be produced and shared with the City prior to closing on the property. In addition, there are no steep slopes to consider, however, the CIS indicates that during construction of the development, care will be taken to prevent any sediment laden soils from leaving the site and to stabilize any steep slopes by employing soil erosion best management techniques. Finally, the applicant has indicated the site will be excavated to accommodate foundations immediately below grade only and that the approximate projected volume of excavated soils to be removed from the site is 33,000 cubic yards. A map has been provided for construction staging, but does not appear to show any haul routes. **The applicant should provide a map showing haul routes for excavation soils.**

The 'draft' Phase 1 ESA submitted for 34952 Woodward and 690 E. Maple is dated February, 2023 and was prepared by Barr Engineering Co. The 'draft' ESA explores records dating back to 1937, which included a review of federal, state, county, and municipal information, a review of a database file search from EDR, review of information provided by DNRES and SHPO, a Walk-Over survey, review of documents furnished to Barr by Ryan; an interview with representatives of Ryan and site representative DeAndre Glenn, and a review of historical data including three previous Phase I ESAs and a Phase II ESA (2011). Barr Engineering Co. also performed an inspection of the subject property and provided observations for the surface lots and interior of the office building. Small amounts of residential-grade cleaning products were observed in the utility rooms in the vacant office building along with evidence of mold and suspected lead-based paint. No indications of hazardous substances or petroleum were observed. The Phase I ESA did not include a complete compliance analysis with local, state or federal environmental laws, rules or regulations.

In the executive summary, Barr noted the following deviations from ASTM Standard Practice E1527-13: they did not check the zoning/land-use "because in Barr's past experiences, information from this source is not likely to be sufficiently useful in providing historical site information beyond those sources which were already checked by Barr." Additionally, a review of Recorded Land Title Records, other than Barr's review of the Title Commitment, "was deemed unnecessary as other, more relevant historical sources were available."

Based on Barr's assessment and a review of information obtained, no recognized environmental conditions (RECs), or historical RECs were identified for the Property. Although not constituting RECs, the following items of environmental note described below were observed for the property.

The report notes that "by 1960, all residential buildings had been cleared and replaced by the Birmingham House Motel and a filling station" which "operated until the mid-1960's," however, "no information was available for the closure and/or removal of the filling station on the Property." Impacts from the filling station were not detected in soil and groundwater samples collected during a previous Phase II investigation (2011).

Additionally, historical use of nearby properties included a coal yard adjoining the Property to the west and several gasoline service stations adjoined the Property to the west and northwest. Nearby properties have reported leaking underground storage tank (LUST) sites, some of which are still open and a former dry cleaner adjoined the Property to the north from 1959-1998. Soil and groundwater data gathered during a previous Phase II investigation did not indicate any contamination from the nearby sites.

Based on the information collected for the Phase 1 ESA, Barr does not believe further environmental assessment of the Property is necessary at this time.

As far as the soils investigation, a Report of Preliminary Geotechnical Investigation dated March 29, 2023 was submitted by G2 Consulting Group. The report

described 2 soil test borings to a depth of 135 ft. below grade. Soil borings showed: gravel fill at surface, medium compact sand fill, stiff to hard silty clay fill and sandy clay fill with debris and organic matter. Native very stiff to hard silty clay underlies the fill. Then medium to stiff silty clay and clayey silt to an approximate depth of 52 ft. Groundwater was encountered at depths of 39 and 53 ft.

G2 recommended that the static, long-term groundwater level be verified with piezometers prior to construction.

The existing medium to stiff silty clay anticipated at the foundation bearing elevation will not provide adequate support for conventional spread footings. As such deep foundations or ground improvement techniques will be required to support the proposed structure. The applicant has indicated in the CIS that they intend to utilize ground improvement techniques.

Finally, the applicant has indicated that no hazards or nuisances will be created by the proposed development. Pedestrian and traffic control will be clearly marked and identified. The site will be secured with construction fencing and will be locked when not in use. Signage for street and pedestrian sidewalk closures will be clearly identified. Scaffolding and pedestrian protection will be used as needed. There is no indication in the CIS of a plan to mitigate other hazards such as dust, noise and other construction debris. **The applicant must submit details as to how they plan to mitigate noise, dust, debris, and other nuisances during the construction process.**

1.4 **Utilities, Noise & Air Issues**

The CIS indicated that the proposed development will utilize DTE Energy and Consumers for electric and natural gas. Presently, the site contains overhead lines and electrical poles that are proposed to be removed and relocated underground. Electrical service is proposed to be delivered at the southeast corner of the site, where a ground-mounted transformer is proposed. The existing poles running along the boundary of the site will be relocated or removed. The gas service is proposed to come from E. Maple Road. Gas meters are located along the east side of the northeast corner next to the parking garage. The CIS goes on to describe a fire suppression and water service line connection from Woodward Ave via the alley as well.

A Noise Impact Assessment dated January 29th, 2023 was prepared by Kolano and Saha Engineers, Inc. (K & S) for the proposed development, which concludes that the development can be designed to meet the noise limits and have reasonable protections to limit noise to the local residential community. The Noise Impact Assessment notes that HUD guidelines consider outdoor noise levels between 65dB and 75dB as "normally unacceptable" for residential land use. The results of on-site sound level measurements showed a measured sound level of DNL 69 dB and DNL 70dB currently at the two positions measured. K & S states that these sound levels are due to the high volume of traffic on Woodward Ave. and Maple Rd. K & S also identified 6 potential sources of proposed development noise impact that must be addressed and designed to meet the City of Birmingham noise standards: parking structure, individual residential and building wide heating

and cooling systems, exhaust fans emergency power generator, and loading dock/delivery vehicles. In general, K & S seemed to indicate that only the parking structure fans and ventilation equipment would require special design considerations to minimize the impact on both the residential use proposed on the site and also the adjacent community. Additionally, K & S concluded that the site is subject to significant noise from the Maple and Woodward roadways and that the building shell and fenestration should be constructed in such a way to minimize the impact of traffic noise on the proposed development.

The subject site is located within the Southeast Michigan Air Quality District, with monitoring stations in Pontiac, Rochester, Oak Park and Allen Park. The district has attained and surpassed the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide and particulate matter less than 10 microns. The air quality is expected to remain high and will not establish a trend which may lead to a violation of air quality standards. The CIS indicates that the development will not significantly impact air pollution levels; newer buildings are built with cleaner, more sustainable materials and equipment, which should mitigate some of these effects. The CIS states the building will be equipped with electric car charging stations to encourage the use of electric vehicles. The building will also be LEED certified.

1.5 **Environmental Design & Historic Values**

As noted above, the sites were previously developed and the buildings on the 34952 parcel were leveled and turned into a gravel parking lot, while the building and asphalt parking lot on 690 E. Maple are still standing. Thus, there are no concerns over the loss of natural areas on the property. In addition, it would be difficult to perform an adaptive reuse of the building on 690 E. Maple or include it in the new design to try and minimize material that is introduced to the landfill. However, the CIS does indicate that all of the existing streetscape will be removed and replaced, including the street trees. Although the City endeavors to prevent existing, healthy trees from being removed due to new construction, the Department of Public Services has stated (see comments below) they would allow for removal of the four existing street trees on Maple to allow for the proposed eight street trees on each right-of-way. The applicant states the proposed development will greatly enhance the built environment including landscaping and walks and that they will make the four trees available to the city to transplant if so desired.

The CIS acknowledges the proposed building is taller than contiguous buildings but is similar in size, mass, height and scale to properties in the City along Woodward Avenue. The size, mass, height and scale of the building is consistent with the existing zoning, master plan and overlay district. Design elements such as entrance patterns, materials, colors and styles will be subject to the City's development standards and will be consistent with the surrounding properties. The CIS continues to explain that the proposed building will create a continuous streetscape oriented toward Woodward and Maple, the primary streets. The project will change the skyline as a 6-9 story building that will replace an existing parking lot and single-story office building. The CIS states the design will not introduce any elements that are out of character or scale with the existing physical

environment, and that the development will not bring any visual pollution as all onsite parking will be enclosed with façade treatments and access to loading will be contained within the building. Trash receptacles will also be inside the building, hidden from view. The only surface parking on site will be the existing angled parking along the Woodward façade. There will be no interference with the ambient conditions necessary for the enjoyment of the physical environment.

Furthermore, the applicant has expressed that there are no historic elements on the site, and that the subject sites do not appear on the National Register of Historic Places. In addition, the applicant suggests that the buildings on site do not appear to be historic (or eligible for designation), and that there are no designated historic resources on the adjacent properties. The Planning Division is in agreement with the assertions provided.

Finally, the applicant has indicated that the development will be designed to achieve LEED certification.

1.6 **Refuse, Sewer & Water**

The CIS and site plans submitted indicate there will be a refuse area off the loading dock that will have adequate space for separation of recyclable materials. There will be trash/recycling enclosed chutes for the residents' use. There are no indications of the type or quantity of refuse containers noted in the plans. In terms of screening, the receptacles are all proposed inside the building envelope, thus fully screened by the building. The applicant has not indicated where or how trash/recycling would exit the building and be taken off site or how items would be sorted. The CIS states that waste generated from this development can be handled via standard practices by local waste management.

A public combined gravity sanitary sewer exists within the Woodward Ave right-of-way and E. Maple right-of-way along the frontage of the proposed development. The proposed development will plan to utilize the sewer within the Woodward right-of-way for wastewater discharge. It is anticipated that the existing sanitary sewer will have the capacity to adequately service the proposed development. The proposed development anticipates an 8-inch service lead for the building that will connect to the existing sewer main in the right-of-way. The planned sewer service flow basis of design capacity of the existing sewer will be reviewed and confirmed by the City Engineer prior to final site plan approval.

The applicant has made clear that the City Engineer will be engaged throughout the design and all proposals will be confirmed prior to site plan approvals. The applicant also indicated they may use utilize low flow toilets and restricted flow faucets and/or shower heads. These elements reduce the amount of water used, and, in turn, discharged into the sewer system. The building design will also incorporate vegetation on amenities decks and/or terraces. The applicant intends to also connect the stormwater system from the development to discharge into the same combined sewer within the Woodward Ave right-of-way with a 12-inch lead from the building. **The Planning Division suggests that the applicant review any and all opportunities on site to provide stormwater detention in the form of green infrastructure.**

Finally, the CIS explains that it is anticipated that the existing water mains within the Woodward Avenue right-of-way and along the Maple Road right-of-way will have the capacity to adequately service the proposed development. The proposed development currently anticipates a proposed 4-inch domestic service line and a 6-inch fire suppression line for the building that will connect to the existing water main within the right-of-way. The planned water usage design and capacity of the existing water main will be reviewed and confirmed by the City Engineer prior to site plan approvals. Birmingham's annual water quality report indicates that the public water supply surpasses EPA and MDEQ water quality standards.

1.7 **Public Safety**

The CIS does not indicate that they expect to have any public safety concerns as a part of the proposed development. The CIS states the site has direct access for emergency personnel from points on three sides of the building (Woodward Ave, Maple Rd, public alley). Furthermore, the building will have a security system and the applicant has stated that the building will be fully suppressed, and will be designed to meet all applicable City and National fire codes. Fire access to both the proposed building and site will be provided via existing R.O.W.s surrounding the parcel. Access off of Maple St., Woodward Ave, & the public alley at the south side of the site. Existing fire hydrants are noted in the application. The proposed building will have multiple elevators at least one of which will accommodate a medical cart.

1.8 **Transportation Issues**

The applicant has submitted a completed Transportation Impact Study (TIS) as required by the City's transportation consultants. A review of the submission will be performed by the City's transportation consultants and furnished to the Planning Board prior to CIS and Preliminary Site Plan Review.

Aside from passenger vehicle transportation, the CIS indicates that several other modes of transportation are available close by as well. There are SMART bus stations in close proximity to the site, bicycle facilities, and complete pedestrian connections to existing sidewalks. There is one SMART bus stop within the building's frontage along Maple and one on Woodward close to the Maple/Woodward intersection. The applicant states that they are working with SMART on a potential relocation and upgrade to the existing SMART bus stop, but does not specify which one. The proposed site plans show only one bus stop. In addition, the proposed development provides 2 bike racks in the public right-of-way. The CIS also states that the project will include a bike storage room with racks and adhere to all ADA requirements. **The applicant should provide documentation from SMART of permission to relocate the bus stop(s) at Final Site Plan review.**

In addition, the Triangle District Overlay requires all parking structures and parking lots for commercial uses, recreational uses and institutional uses to include sufficient bike racks to allow the parking of a minimum of one bike for every 10 automobiles or one bike for every 3,000 square feet of building floor area, whichever is greater. The applicant has not demonstrated the location or quantity

of bike racks to meet this requirement. **The applicant must provide bike racks to meet the standards of Article 3, Section 3.12.**

1.9 **Parking Issues**

Based on a review of the site plans submitted, the applicant is proposing an off-street parking facility with 341 parking spaces where 274 are required, leaving a surplus of 67 spaces. As noted above, the ground level garage will have space available for public parking for the commercial use. A full review of the parking conditions proposed is provided in the Preliminary Site Plan Review below.

1.10 **Natural Features**

As noted in several places above, the site does not contain any natural features that will be lost as a result of this development. In addition, the gravel lot that exists does not provide any significant storm water detention properties. The development proposes 8 new street trees along each frontage for a total of 16 as well as some potential plantings in the amenity spaces and a small 'lawn area' at the southeast corner of the property.

1.11 **Departmental Reports**

1. **Engineering Division** – Please see attached Engineering Division comments dated 4/5/2023.

2. **Department of Public Services** – Please see attached Department of Public Services comments dated 4/11/23.

3. **Fire Department** – Please see the attached Fire Department comments from 4/4/23.

4. **Police Department** – The Police Department has no concerns at this time.

5. **Building Division** – Please see the attached Building Division comments dated 3/22/2023.

6. **Parking Manager** – The Parking Manager has no concerns at this time. The Parking Manager indicated that he was pleased to see that the site is proposing a good amount of parking.

1.12 **Summary of CIS**

The following is a list of outstanding or unresolved issues relating the CIS information provided:

1. The applicant provides the total building square footage;
2. The applicant submits details as to how they plan to mitigate noise, dust, debris, and other nuisances during the construction process including haul routes for excavation soils;
3. The applicant must satisfy all recommendations of the CIS;

4. The applicant must provide documentation from SMART of permission to relocate and upgrade the bus stop(s) at Final Site Plan review.
5. The applicant must resolve all issues related to the Transportation Impact Study as requested by the City's traffic consultants;
6. The applicant must provide bike racks that meet the requirements of Article 3, section 3.12; and
7. The applicant must comply with the requests of all departments.

1.13 **Suggested Action**

Based on a review of the CIS documents provided and the standards outlined in Article 7, Section 7.27 of the Zoning Ordinance, the Planning Division recommends that the Planning Board **ACCEPT** the Community Impact Study as provided by the applicant for the proposed development at 34952 Woodward and 690 E. Maple with the following condition(s):

1. The applicant provides the total building square footage;
2. The applicant submits details as to how they plan to mitigate noise, dust, debris, and other nuisances during the construction process including haul routes for excavation soils;
3. The applicant must satisfy all recommendations of the CIS;
4. The applicant must provide documentation from SMART of permission to relocate and upgrade the bus stop(s) at Final Site Plan review.
5. The applicant must resolve all issues related to the Transportation Impact Study as requested by the City's traffic consultants;
6. The applicant must provide bike racks that meet the requirements of Article 3, Section 3.12; and
7. The applicant must comply with the requests of all departments.

1.14 **Sample Motion Language**

Motion to **ACCEPT** the Community Impact Study as provided by the applicant for the proposed development at 34952 Woodward and 690 E. Maple with the following condition(s):

1. The applicant provides the total building square footage;
2. The applicant submits details as to how they plan to mitigate noise, dust, debris, and other nuisances during the construction process including haul routes for excavation soils;
3. The applicant must satisfy all recommendations of the CIS;
4. The applicant must provide documentation from SMART of permission to relocate and upgrade the bus stop(s) at Final Site Plan review.
5. The applicant must resolve all issues related to the Transportation Impact Study as requested by the City's traffic consultants;
6. The applicant must provide bike racks that meet the requirements of Article 3, Section 3.12; and
7. The applicant must comply with the requests of all departments.

OR

Motion to **POSTPONE** the Community Impact Study as provided by the applicant for the proposed development at 34952 Woodward and 690 E. Maple pending receipt of the following:

1. _____
2. _____
3. _____

OR

Motion to **REJECT** the Community Impact Study as provided by the applicant for the proposed development at 34952 Woodward and 690 E. Maple for the following reason(s):

1. _____
2. _____
3. _____

Preliminary Site Plan Review

The applicant has submitted an application for Preliminary Site Plan review for the construction of a 6-9 story mixed-use building in the B2 (General Business) and MU5/MU7 Zoning Districts. The proposed development spans two parcels that are currently separate. The subject sites currently contain 2-story office/commercial buildings and surface parking. The proposed new building spans the better half of a block running from Woodward (west) to the public alley (south).

1.0 Land Use & Zoning

1.1 **Existing Land Use** – The existing land use is commercial, and currently contains a vacant office building and off-street surface parking facilities.

1.2 **Zoning** – The subject site exists within the B2 (General Business), MU5 (Mixed-Use 5), and MU7 (Mixed-Use 7) Zoning Districts.

1.3 **Summary of Adjacent Land Use & Zoning** – The following chart summarizes existing land use and zoning classifications of the adjacent and/or nearby properties:

	North	South	East	West
Existing Land Use	Commercial/ Office	Commercial/ Office	Commercial/ Office	Commercial
Existing Zoning District	B2 (General Business)	B2 (General Business)	B2 (General Business)	B4 (General Business)
Overlay Zoning District	D2	MU5	MU5	D4

2.0 Setback & Height Requirements

The attached zoning compliance summary analysis provides the required and proposed bulk, area, and placement regulations for the proposed project. The applicant appears to meet the bulk, area and placement requirements of the Triangle District.

In terms of the additional height permissions within Article 3, Section 3.08 (E) of the Zoning Ordinance, the applicant is required to provide 2 or more of the following with the proposed development:

1. Structured public parking, or a payment in lieu to the City for construction of a public parking structure at an offsite location.
2. Dedication of an improved public plaza.
3. Mixed use building with a minimum 50% residential use.
4. LEED building design accredited based upon the rating system of the United States Green Building Council.

5. Transfer of development rights for additional floor area that zoning would permit on a site containing an historic building or resource designated under Section 127 of the Birmingham Code.

The applicant is proposing bonus stories for each of the MU5 and MU7 Zoning Overlay Districts for a total of 6 stories and 9 stories respectively. The applicant meets the requirements for the bonus story by providing a mixed use, as well as proposing LEED building design. Both proposals meet the requirements of the Triangle District Overlay Standards, and no additional measures are required to receive the extra story. As has been discussed in previous projects, the completed LEED checklist/certification must be furnished to the City before and certificates of occupancy will be issued. The City will also request an update at the building permit stage to ensure that the applicant is making progress toward LEED accreditation.

3.0 Screening & Landscaping

3.1 Dumpster Screening – The applicant is proposing one trash room on the first floor, within the back-of-house (BOH)/loading area. The BOH/loading area (approximately 3,340 sq. ft.) is located on the southwest side of the building adjacent to the south end of the commercial space, within the first (ground) level of the parking deck. There are no indications of the type or quantity of refuse containers noted in the plans. In terms of screening, the receptacles are all proposed inside the building envelope, thus fully screened by the building.

Although the receptacles will all be fully screened, the site plans do not currently include access doors from the commercial space to BOH/loading or from the BOH/loading area to the alley. **The applicant should clarify how trash collection will happen; whether collection vehicles will need to enter the parking deck to access trash/recycling or whether and how receptacles will be brought out for collection.**

3.2 Parking Lot Screening – The applicant is proposing a 3-level, 341 space (plus 4 compact spaces) above ground parking facility. The facility is located one level underground, at ground level behind the retail and residential lobby/amenity uses on Woodward and Maple and on the majority of the second level with one row of residential units lining the second floor frontage along Maple. There is a vehicular entrance to the parking facility from Maple at the Northeast corner of the property, as well as a separate mid-block pedestrian entrance between the commercial space and the residential lobby. There is an additional vehicle ingress/egress off of the public alley to the south.

Article 3, Section 3.08 requires parking lots visible from a street to be screened by a 3 foot tall screenwall located between the parking lot and the sidewalk, meeting the requirements of Section 4.50. In addition, parking structures shall only be permitted where there is usable building space for a portion of the ground level along the street frontage. Where a parking structure is provided or parking is located on the ground level below the building, usable building space to a depth of at least 20 feet shall be provided in front of the parking for the minimum required building length. For a multi-level parking structure, the Planning Board

may allow the parking structure above the first floor of the building to occupy the frontage; provided the façade of the parking structure is integrally designed with the architecture of the overall building, utilizes the same building materials and has wall openings that provide proportions, and rhythm that are compatible with building upper story fenestration.

Due to the proposed parking facilities location within the building envelope, the parking facility appears to be fully screened by the building and will require no additional screening at the ground level. The site plans submitted appear to show that the parking structure will be enclosed with façade treatments that meet the aforementioned requirements.

3.3 Mechanical Equipment Screening – The site plans proposed demonstrate that all rooftop mechanical appear to be screened from view. The proposed rooftop units (RTU's) are all centrally located (in terms of depth) on the roof in various locations. The applicant has indicated extensive screening enclosures on the elevation drawings, and has included the location of such on the roof plan. The applicant has not submitted specification sheets on the proposed RTU's, and has not provided explicit dimensions of the proposed RTU screening on the elevation drawings. **The applicant will be required to provide a clear dimension of the proposed screen wall and specification sheets for the RTU's to ensure full screening at Final Site Plan review.**

In terms of the ground-mounted mechanical units, Sheet P-2.0 of the PEA Civil Package 4.10 indicates that a ground-mounted transformer will be located at the southeast corner of the building along the public alley within a small 'lawn area.' The applicant has not indicated any screening for the mechanical unit. **The applicant must provide details for screening of the ground-mounted mechanical unit at Final Site Plan review.**

To clarify the ordinance requirements in Article 4, Section 4.54, ground mechanical unit screening is required to be placed in a manner which *obscures* the receptacle and equipment from public view. In addition, the screen wall is required to be a masonry screen wall with wood gates. The screen wall shall match the material of the principal building. However, flexibility in the materials, size, height and placement of walls is permitted in order to allow architectural harmony and usable open space and to accomplish a unified design. Due to the lack of greenspace and plantings on site, the Planning Division would suggest that arborvitae screening is appropriate and would be an improvement over masonry.

In summary, the applicant must provide dimensions and details for screening of all rooftop and ground-mounded mechanical, as well as specifications of the proposed units at Final Site Plan review.

3.4 Landscaping – The applicant is not proposing to install any significant landscaping on-site outside of potential amenity landscaping and a slim lawn area at the southeast corner of the building along the public alley. The applicant submitted a preliminary landscaping plan showing the placement of street trees, but it does not include species or details for any other plantings onsite. Article 4, Section 4.20

of the Zoning Ordinance does not require the applicant to provide landscaping on-site due to its location in a commercial zoning district.

The applicant must submit a landscaping plan to include species and locations of all proposed plant material at final site plan review.

3.5 Streetscape Elements – The applicant has provided 16 street trees, street lights, 4 benches, 4 trash receptacles, and 2 bike racks on the site plans submitted. In terms of street trees, Article 3, Section 3.12 (C) requires at least 1 canopy tree for each 40 feet of frontage planted within tree grates in the sidewalk. A breakdown of the required and proposed street trees is provided below:

Street	Linear Frontage (ft.)	Required	Provided
Maple	308	8	8
Woodward	297	7*	8
Total	**605**	**15**	**16**

*The applicant was encouraged to plant street trees along Woodward Ave. to improve the streetscape and meet the intent of the Triangle Plan. The proposed 8 trees along Woodward are located on private property, but remain a major enhancement of the streetscape along the Woodward frontage of this development. The Planning Board may wish to discuss the location of the trees in relation to the streetscape.

The applicant is expected to clarify the proposed species of street trees across the entire site plan submittal at Final Site Plan. The Planning Division recommends the applicant work with DPS to determine appropriate canopy tree species.

As far as streetlights, the applicant appears to be proposing 5 street lights along Woodward, 4 along Maple, and 5 that appear to be located in the sidewalk along the building frontage on the east side of the Maple frontage. Streetlights along Woodward appear to be spaced approximately 24 ft. apart while streetlights along Woodward appear to be spaced 42 ft. apart and set in between street trees. All streetlights proposed are expected to meet the streetscape standards for the Triangle District. Like street trees, street lights are not required along Woodward. However, **the applicant will be required to clarify the streetlight proposal and should work with the Planning Division to ensure that the placement and design meets City standards.**

The Triangle District Overlay District requires sidewalks in the Triangle District to be 12 ft. wide, with sidewalks along Woodward at 7 ft. wide. **The applicant must provide sidewalk dimensions at Final Site Plan to demonstrate compliance with the sidewalk requirements.**

Finally, the applicant has proposed what appear to be 4 total benches: 2 along Woodward and 2 along Maple. There is 1 bike rack area proposed on Haynes and one on Woodward, and 4 trash receptacles located adjacent to the benches on the site plans submitted. **The Planning Board may wish to require the applicant**

to include additional benches, bike racks, or trash receptacles along each street frontage.

4.0 Parking, Loading & Circulation

4.1 Parking – Article 4, Section 4.46 of the Zoning Ordinance requires the applicant to provide the following off-street parking for the uses proposed in the site plans submitted:

Proposed Use	Requirements	Area or Units	Spaces
Retail	1 per 300 sq. ft.	10,000	33
Other Commercial	1 per 550 sq. ft.	1,754	3
2 or less room unit	1 space per unit	97	97
3 or more room unit	1.25 spaces per unit	113	141
Total Required	-	-	274
Total Proposed	-	-	341

In the above calculations, the "Other Commercial" area consists of the leasing lobby/concierge space on the north side of the building. The other areas within the building that are amenities strictly for the residents of the building such as storage rooms, workshare space, package area, fitness center and other areas were not considered as area requiring additional off-street parking spaces, as these areas will be used by residents only and thus the parking is already accounted for.

Based on the site plans submitted, which are color coded, the applicant appears to be proposing 113 three or more room units and 97 two or less room units. **The applicant will be expected to provide room layouts to confirm the parking requirements at Final Site Plan.**

Based on the calculations above, the applicant meets the parking requirements for the proposed development. As noted across this report, the underground level (approximately 151 spaces) and second floor level (approximately 109 spaces) of the parking facility are only available for the residential users of the building (access via gate system). The ground level of the parking facility (approximately 81 spaces) will be accessible and usable to the public for the commercial uses. However, the applicant has not indicated whether any portion of the ground level parking will be assigned to residential users. Additionally, the proposed development provides 24 EV charging parking spaces, some located on each level. **The applicant should clarify if the ground level EV charging spaces will be available for public use.**

4.2 Loading – Based on the commercial space within the proposed development (11,754 sq. ft.), the applicant is required to provide one off-street loading space with the following minimum dimensions: 40 feet long, 12 feet wide and 14 feet high. The applicant has indicated that loading will take place in the BOH/loading room enclosed within the ground level parking facility on the site plans. However, the site plans do not have marked the loading area dimension on the plans, to

ensure there is ample space within the 3,340 sq. ft. BOH/loading room on the southwest side of the building. Additionally, the elevation drawings do not indicate that the entrance to the loading and receiving room is 14 ft. high. **Thus, the applicant must submit revised plans showing a loading space that meets the requirements of Article 4, Section 4.24 (C) of the Zoning Ordinance.**

4.3 Vehicle Circulation & Access – The site plans submitted indicate that the main vehicle access to the site will be through an opening on the north side of the building off of Maple that leads to the interior parking structure. The applicant has not yet provided measurements for the opening and has indicated that the ground level of the parking facility will not be gated. Vehicles will also be able to enter/exit the site from an opening from the parking facility located on the public alley at the south end of the site.

4.4 Pedestrian Circulation & Access **–** Pedestrian access is varied with a main lobby entrance for the residential units located at the northeast corner of the building. A through passage to the parking facility for pedestrians from Maple is located towards the Northwest corner of the site (between the commercial space and the residential lobby). The commercial space appears to have pedestrian access only from the Woodward frontage and from within the parking facility, but not directly from the Maple street front. There is a building egress pathway from the residential units on the east side of the building. There does not appear to be any pedestrian access to the residential units from the Woodward Ave frontage or from the public alley. The site plans do not indicate that there will be pedestrian connectivity to the parking facility through either of the vehicular entrances. The building egress pathway at the east end of the site does not appear to connect through the site, only to Maple and does not appear to provide ingress to the building.

5.0 Lighting

The applicant has indicated streetlights on a Preliminary Landscape Plan on Sheet L-1.0 of the PEA Civil Package and a specification sheet including streetlights on Sheet L-2.0. The CIS indicates that there will be illumination along walks and entries for safety and security. However, an exterior lighting design concept, specification sheets for proposed light fixtures and a photometric plan detailing the illuminance level across the property pursuant to Article 4, Section 4.21 (C) has not yet been submitted. The are no details for exterior lighting concepts of the building other than the streetlight details mentioned above. **The Planning Division will work with the applicant to provide a photometric plan and a full review of the lighting proposal at Final Site Plan review.**

6.0 Departmental Reports

6.1 Engineering Department – Please see the attached Engineering Division comments dated 4/5/2023.

6.2 Department of Public Services **–** Please see the attached Department of Public Services comments dated 4/11/23.

6.3 Fire Department – Please see the attached Fire Department comments dated 4/4/2023.

6.4 Police Department – The Police Department has no concerns at this time.

6.5 Building Department – Please see the attached Building Division comments dated 3/22/2023.

6.6 Parking Manager – The Parking Manager has no concerns at this time.

7.0 Design Review

The applicant has submitted elevation drawings with material notes, but has not yet submitted any detailed material specifications for the proposed building. Specification sheets and samples for all façade materials, windows & doors, railings, and other proposed materials are required at Final Site Plan to complete the Design Review. Additionally, the applicant has not yet submitted glazing calculations for the proposed building, a full review of which will be provided at Final Site Plan. **The applicant must submit material specifications, samples and all other required information for the proposed building to complete the Design Review at Final Site Plan.**

Article 3 Section 3.09 (A) (3) states that for buildings longer than 100 ft., there shall be a minimum of one usable entrance every full 50 ft. of frontage along the public sidewalk and shall provide architectural variation to visually break the building up. The plans submitted do not appear to meet the standard. Additionally, Article 3.09 (F) states "that buildings situated at a corner shall possess a level of architectural design that incorporates accents and details that accentuate its prominent location, particularly at intersections created by the angle of Woodward Avenue and the grid street network" – such as Maple and Woodward. The ordinance goes on to say that "this can be accomplished through height projections incorporated into a design feature such as a building peak, tower, or similar accent with the highest point located at the intersecting corner, which may be up to an additional 10 feet above the height limit. The building architecture can be designed to focus on accentuating the geometry of the corner location. Alternatively, a pedestrian plaza may be provided at the corner of the intersecting streets. A main entrance must be on a street-facing wall and either at the corner of within 25 feet of the corner." **The applicant will be required to provide revised site plans that meet all development standards of the Triangle Overlay District in Article 3.09 at Final Site Plan Review or to request the Planning Board approve deviations to the architectural requirements laid out in Article 3.09 by following the process outlined in Article 3.11**

8.0 Required Attachments

(*see next page*)

	Submitted	Not Submitted	Not Required
Existing Conditions Plan	☒	☐	☐
Detailed and Scaled Site Plan	☒	☐	☐
Certified Land Survey	☒	☐	☐
Interior Floor Plans	☐	☐	☒
Landscape Plan	☐	☐	☒
Photometric Plan	☐	☐	☒
Colored Elevations	☒	☐	☐
Material Specification Sheets	☐	☐	☒
Material Samples	☐	☐	☒
Site & Aerial Photographs	☒	☐	☐

9.0 Approval Criteria

In accordance with Article 7, section 7.27 of the Zoning Ordinance, the proposed plans for development must meet the following conditions

9.1 The location, size and height of the building, walls and fences shall be such that there is adequate landscaped open space so as to provide light, air and access to the persons occupying the structure.

9.2 The location, size and height of the building, walls and fences shall be such that there will be no interference with adequate light, air and access to adjacent lands and buildings.

9.3 The location, size and height of the building, walls and fences shall be such that they will not hinder the reasonable development of adjoining property and not diminish the value thereof.

9.4 The site plan, and its relation to streets, driveways and sidewalks, shall be such as to not interfere with or be hazardous to vehicular and pedestrian traffic.

9.5 The proposed development will be compatible with other uses and buildings in the neighborhood and will not be contrary to the spirit and purpose of this chapter.

9.6 The location, shape and size of required landscaped open space is such as to provide adequate open space for the benefit of the inhabitants of the building and the surrounding neighborhood.

10.0 Recommendation

Based on a review of the site plans submitted and the requirements outlined in Article 7, Section 7.27 of the Zoning Ordinance, the Planning Division recommends that the Planning Board **APPROVE** the Preliminary Site Plan for 34952 Woodward and 690 E. Maple with the following conditions:

1. The applicant must provide full screening details for all proposed roof-top and ground-mounted mechanical units at Final Site Plan;
2. The applicant must revise the landscaping plan to include locations and species of all plant material;
3. The applicant work with DPS to determine appropriate canopy tree species for the street trees and provide a revised landscape plan including species at Final Site Plan;
4. The applicant must submit lighting and material specifications, samples, photometric plan and all other required information for the proposed building to complete the Design Review at Final Site Plan; and
5. The applicant must comply with the requests of all City Departments.

11.0 Sample Motion Language

Motion to **APPROVE** the Preliminary Site Plan for 34952 Woodward and 690 E. Maple with the following conditions:

1. The applicant must provide full screening details for all proposed roof-top and ground-mounted mechanical units at Final Site Plan;
2. The applicant must revise the landscaping plan to include locations and species of all plant material;
3. The applicant work with DPS to determine appropriate canopy tree species for the street trees and provide a revised landscape plan including species at Final Site Plan;
4. The applicant must submit lighting and material specifications, samples, photometric plan and all other required information for the proposed building to complete the Design Review at Final Site Plan; and
5. The applicant must comply with the requests of all City Departments.

OR

Motion to **POSTPONE** the Preliminary Site Plan for 34952 Woodward and 690 E. Maple pending receipt of the following:

1. _____
2. _____
3. _____

OR

Motion to **DENY** the Preliminary Site Plan for 34952 Woodward and 690 E. Maple for the following reasons:

1. _____
2. _____
3. _____

Zoning Compliance Summary Sheet
Final Site Plan Review
34952 Woodward & 690 E. Maple

Existing Site: 2 story office building (vacant) and surface parking

Zoning: B2 (General Business) & MU5/MU7 (Triangle District Overlay)

Land Use: Surface Parking/Commercial

Existing Land Use and Zoning of Adjacent Properties:

	North	**South**	**East**	**West**
Existing Land Use	Commercial/ Office	Commercial/ Office	Commercial/ Office	Commercial
Existing Zoning District	B2 (General Business)	B2 (General Business)	B2 (General Business)	B4 (Business Residential)
Overlay Zoning District	D2	MU5	MU5	D4

Land Area: Existing: .30 ac & 1.25 ac
Proposed: 1.55 ac

Dwelling Units: Existing: 0 units
Proposed: 210 units

Minimum Lot Area/Unit: Required: N/A
Proposed: N/A

Min. Floor Area /Unit: Required: 600 sq. ft. (efficiency and one bedroom)
800 sq. ft. (two or more bedroom)
Proposed: 600-800 sq. ft. (studio)
600-1000 sq. ft. (one bedroom)
900-1200 (two bedroom)
1200-1800 (three bedroom)

Max. Total Floor Area: Required: N/A
Proposed: N/A

Min. Open Space: Required: N/A
Proposed: N/A

Max. Lot Coverage: Required: N/A

	Proposed:	N/A
Front Setback:	Required: Proposed:	0 ft. minimum, 5 ft. maximum 0-5 ft.
Side Setbacks	Required: Proposed:	0 ft. with walls facing side lot line w/ no windows 10 ft.
Rear Setback:	Required: Proposed:	NA 5 ft.
Min. Front+Rear Setback	Required: Proposed:	N/A N/A
Max. Bldg. Height:	Permitted: Proposed:	78 ft., 6 stories (MU5) 114 ft., 9 stories (MU5) 78 ft., 6 stories (MU3) 114 ft., 9 stories (MU5)
Min. Eave Height:	Required: Proposed:	N/A N/A
Floor-Floor Height:	Required: Proposed:	14 ft. minimum (1st story) Detail not provided
Front Entry:	Required:	Main entrance that is located on at least one (1) street front. w/ design details that enhance the appearance and prominence of the entrance so that it is recognizable from the street and parking areas. For buildings longer than 100 feet, there shall be a minimum of one (1) usable entrance every full 50 feet of frontage along the front public sidewalk and shall provide architectural variation to visually break the building up The front entranceway shall be inset 3 feet from the front building wall.
	Proposed:	One (main) entrance on frontage line
Absence of Bldg. Façade:	Required: Proposed:	N/A N/A
Opening Width:	Required:	Upper Stories. Openings above the first story shall be a maximum of 50% of the total façade area. Windows shall be vertical in proportion.
	Proposed:	Detail not provided

Parking:	Required:	274 off-street spaces
	Proposed:	341 off-street spaces
Min. Parking Space Size:	Required:	180 sq. ft.
	Proposed:	180 sq. ft.
Parking in Frontage:	Required:	Along Woodward Avenue, a single row of parking shall be permitted along the entire front of the building, which may be located within the road right-of-way. The parking may be angled or parallel with a one-way circulation aisle only. There shall be a minimum 7-foot wide sidewalk between the parking and the building.
	Proposed:	A single row of parking is proposed along the Woodward frontage with angled parking, one-way circulation aisle and a minimum 7-foot wide sidewalk between the parking and the building.
Loading Area:	Required:	1 off-street loading space 40 ft. x 12 ft. x 14 ft.
	Proposed:	Detail not provided.

Screening:

Parking:	Required:	3 ft. masonry screen wall
	Proposed:	Screened by building facade
Loading:	Required:	Screened from view
	Proposed:	Interior loading area screened by building
Rooftop Mechanical:	Required:	Screened from view
	Proposed:	Screened from view
Elect. Transformer:	Required:	Obscured from public view
	Proposed:	Detail not provided.
Dumpster:	Required:	Masonry screen wall with wood gates
	Proposed:	Interior trash rooms fully screened by building facade

City of Birmingham Fire Department

572 South Adams • Birmingham, Michigan 48009 • 248.530.1900 Fax 248.530.1950

April 4th, 2023

Preliminary Site Plan
34952 Woodward and
690 E. Maple

- Follow International Fire Code 2015 for reference on submitted plans.
- Knox padlocks required on construction fencing access gates. Multiple gates will be required on the site.
- During the construction phase of the project install a standpipe system with access to all floors.
- Size of fire suppression line to be determined by fire flow requirements.
- Pump and riser room size shall provide adequate working space.
- A KNOX-VAULT 4500 Series Power Shutdown device. Sec. 54-32. - Emergency Power Shutdown Device
- Follow all IFC 2015 requirements for a high-rise building
  -Emergency standby power system (generator) is required.
  -A fire command Room is Required.
  -Bi-Directional amplifier may be required. Emergency responder radio signal strength will be assessed at the end of the construction phase.
  -Stairway access to roof.
  -Smoke control system
- Multiple Knox Boxes will be required. Coordinate placement with the Fire Department.
- Air monitoring system for parking garage.
- All life safety requirements listed in International Fire Code and NFPA documents and standards shall be followed and enforced.

Matthew J. Bartalino
Assistant Chief / Operations

Paul A. Wells
Fire Chief

Alan G. Soave
Fire Marshal

March 22, 2023

RE: Preliminary Site Plan Review Comments
34952 Woodward, New Mixed Use Building

As requested, the Building Department has examined the plans for the proposed project referenced above. The plans were provided to the Planning Department for site plan review purposes only and present conceptual elevations and floor plans. Although the plans lack sufficient detail to perform a code review, the following comments are offered for Planning Design Review purposes and applicant consideration:

Applicable Building Codes:

- **2015 Michigan Building Code.** Applies to all buildings other than those regulated by the *Michigan Residential Code.*

- **2015 Michigan Mechanical Code.** (Residential requirements for mechanical construction in all detached one and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures are contained in the Michigan Residential Code)

- **2018 Michigan Plumbing Code.** (Residential requirements for plumbing construction in all detached one and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures are contained in the Michigan Residential Code)

- **2017 National Electrical Code** ***along with the Michigan Part 8 Rules.*** (Residential requirements for electrical construction in all detached one and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures are contained in the Michigan Residential Code)

Review Comments:

1. A review of the preliminary plans did not reveal any major building code concerns with the overall conceptual design at this point.

BIRMINGHAM
A WALKABLE CITY

MEMORANDUM

Engineering Department

DATE: **April 5, 2023**

TO: **Nicholas J. Dupuis, Planning Director**
Leah Blizinski, City Planner

FROM: **Melissa A. Coatta, City Engineer**

SUBJECT: **Preliminary Site Plan Review – 34952 Woodward and 690 E. Maple**

The Engineering Department has completed a review of the Preliminary Site Plan dated February 3, 2023, with respect to conformance with City ordinances and engineering standards, and has the following comments:

GENERAL:

- The Topographic Survey needs to show and label all existing utilities servicing the buildings, including what is located within the right of way.
- The existing sidewalk, curb, and parking spaces along Woodward Ave. will require removal and replacement.
- The alley approach off Woodward Ave needs to include the removal and replacement of the south curb radius, including the pavement.
- The City needs documentation from SMART to relocate the bus stop to private property.
- The proposed traffic drop-off lane on E. Maple Road needs to be included in the traffic impact study for this project. This area will be reviewed in more detail after the traffic impact study is submitted.

SEWER:

- The existing sewer servicing 690 E. Maple needs to be shown and removed.
- The city will review the proposed sanitary sewer flow to the existing manhole to see if any capacity improvements are required to the City's sanitary sewer.

STROM WATER RUNOFF:

- There are several existing catch basins located on 34952 Woodward and 690 E. Maple. If these are connected to the City's system on Woodward Ave., E. Maple, and Alley, information needs to be provided for removal/bulkhead in the MDOT's or the City's right of way.

WATER SYSTEM:

- The existing water servicing 690 E. Maple needs to be shown and removed.
- The proposed size of the water main needs to be labeled domestic lead and fire suppression lines

PERMIT FOR CONSTRUCTION:

- MDOT:
    - An MDOT permit will be required for any work located in Woodward Ave. right of way. The City will approve Engineering permits after the MDOT permit is approved.
- City:
    - Right-of-Way Permit for any excavations or work in the road right-of-way.
    - Street Obstruction Permit for any temporary traffic interference on any surrounding road, or pedestrian traffic interference on public sidewalks.
    - Sidewalk/Drive Approach Permit for any pavement installed in the public right-of-way.

GENERAL CONSTRUCTION:

- Inspections will be required for planned utility work within the right of way, and streetscape work including sidewalk preparation and concrete placement.

Please note these are our initial comments and the City should be provided an opportunity to review engineered drawings prior to final submission. Engineering comments could impact design requirements.

BIRMINGHAM
A WALKABLE CITY

MEMORANDUM

Department of Public Services

DATE: **April 12, 2023**

TO: **Leah Blizinski, City Planner**

FROM: **Brendan McGaughey, Parks and Forestry Foreman**

SUBJECT: **DPS Forestry Plan Review**

The Department of Public Services has completed a review of the 34952 Woodward and 690 E. Maple (Ryan AE_Arch Package - Birmingham Mixed-Use) preliminary site plans dated February 3, 2023, with respect to conformance with City ordinances and the Birmingham Tree Manual and Standards of Practice. Our comments are as follows:

Existing Forestry:

- There are currently (4) City trees within the proposed project limits, all of which are in decline and ranging from fair to poor condition. DPS would allow for removal of all 4 trees to accommodate this project and have them replaced with 16 healthy trees (as well as select a more suitable species).

Proposed Forestry on Woodward:

- (8) trees proposed in Woodward ROW with restricted growth space (proposed 8-10'). DPS would require an approved species with a columnar growth habit, as well as recommend a salt tolerant species (Zelkova serrata 'Musashino'). Appropriate tree spacing guidelines should be followed.

Proposed Forestry on E. Maple:

- (8) trees proposed in E. Maple ROW with less restricted growth space. DPS would require an approved species, as well as recommend a salt tolerant species (Ulmus 'Frontier'). Appropriate tree spacing guidelines should be followed.

BIRMINGHAM
A WALKABLE CITY

Leah Blizinski <lblizinski@bhamgov.org>

Review Requested - 34952 Woodward & 690 E. Maple - Preliminary Site Plan

Aaron Ford <aford@bhamgov.org> Mon, Mar 20, 2023 at 9:51 AM
To: Leah Blizinski <lblizinski@bhamgov.org>

Leah -

No comments from the Parking Department. This would be an exciting development. And they are providing a decent amount of parking for the development, which is nice.

On Thu, Mar 16, 2023 at 4:34 PM Leah Blizinski <lblizinski@bhamgov.org> wrote:
[Quoted text hidden]

--
Aaron Ford
Parking Systems Manager
151 Martin Street
Birmingham, MI 48009
City of Birmingham
248-530-1257
[Quoted text hidden]

BIRMINGHAM
A WALKABLE CITY

Leah Blizinski <lblizinski@bhamgov.org>

Review Requested - 34952 Woodward & 690 E. Maple - Preliminary Site Plan

Scott Grewe <Sgrewe@bhamgov.org> Fri, Mar 17, 2023 at 12:36 PM
To: Leah Blizinski <lblizinski@bhamgov.org>
Cc: Bruce Johnson <Bjohnson@bhamgov.org>, Scott Zielinski <szielinski@bhamgov.org>, Melissa Coatta <mcoatta@bhamgov.org>, Paul Wells <Pwells@bhamgov.org>, Aaron Ford <aford@bhamgov.org>, Nicholas Dupuis <ndupuis@bhamgov.org>

No concerns from the PD.

On Thu, Mar 16, 2023 at 4:34 PM Leah Blizinski <lblizinski@bhamgov.org> wrote:
[Quoted text hidden]

--
Scott A. Grewe
Chief of Police
Birmingham Police Department
151 Martin St.
Birmingham, MI. 48009
Dispatch: (248) 644-3405
Office: (248) 530-1867

Session #283

[Quoted text hidden]

BIRMINGHAM
A WALKABLE CITY

Nicholas Dupuis <ndupuis@bhamgov.org>

Fwd: slight rewrite fixed fewer typos…

1 message

Tom Markus <tmarkus@bhamgov.org> Tue, Mar 21, 2023 at 9:58 AM
To: Nicholas Dupuis <ndupuis@bhamgov.org>
Cc: Jana Ecker <Jecker@bhamgov.org>, Melissa Fairbairn <mfairbairn@bhamgov.org>

---------- Forwarded message ---------
From: **Therese Longe** <tlonge@bhamgov.org>
Date: Tue, Mar 21, 2023 at 9:33 AM
Subject: Fwd: slight rewrite fixed fewer typos…
To: Tom Markus <tmarkus@bhamgov.org>, Jana Ecker <Jecker@bhamgov.org>

Updated version.

---------- Forwarded message ---------
From: **Scot Beaton** <scotbeaton@gmail.com>
Date: Tue, Mar 21, 2023 at 1:19 AM
Subject: slight rewrite fixed fewer typos…
To: Therese Longe <tlonge@bhamgov.org>

slight rewrite fixed fewer typos…

https://cms7files1.revize.com/birmingham/Document_Center/Department/Planning/Master%20Plan%20&%20Guidelines/Triangle_Distirct_Plan.pdf
https://cms7files1.revize.com/birmingham/PB%20Agenda%20FULL%20(REDUCED)%20-%203-22-23.pdf

AGENDA
REGULAR MEETING OF THE BIRMINGHAM PLANNING BOARD
WEDNESDAY MARCH 22, 2023 – 7:30 PM
Miscellaneous Business and Communications:
Pre-Application Discussions
34952 Woodward & 690 E. Maple
preliminary site plan application
Birmingham Mixed-Use Development
Woodward Avenue & Maple Street Birmingham, Michigan

An open letter to the architect/developer, the planning board and the citizens of Birmingham MI

Let's all celebrate first there is an interest in the development of this very important corner. It has been vacant for years… It has been the focus of many planning studies… Triangle District Urban Design Plan | Birmingham MI etc. and the city of Birmingham has been quite generous in the density allowable at this corner. Up to 9 stories of mixed-use. All I can say is wow that's a tall building for Birmingham MI. So because this corner is of such great importance to the citizens of Birmingham we should take the time to do something even more inspiring then what is being presented to the planning board. My only complaint… does this corner deserve better than a mixed-use c-shape apartment building with a 'safe* building facade' a building that has already been done thousands of times all over America. Does this corner deserve better; even if more is spent upfront and in the long run a bigger profit for the developer. My answer and everyone in the room's answer should be YES!

Let's start with a hopeful 'given'… over time… hopefully sooner than later Woodward Avenue will become less of an 8 lane big truck and car highway. Woodward Avenue will become more of a linear park from Maple all the way to the Detroit river… less lanes for cars and trucks and more room for walking, biking, a streetcar transit

infrastructure like you see on the streets in Europe. More room for green and trees. Woodward Avenue will become a place to live, work, shop and play without the need for car ownership; and as cars and big trucks become more electric, the air will be cleaner… less road noise etc. note: This concept could also go north to Pontiac, but I think the city of Bloomfield would be a tough sell.

This 'given' makes the corner even more valuable and easier to connect to the beautiful walkable downtown Birmingham to the west. So why can't we think even more out of the box… more to what the future holds, than what is there today. Let's do something; may sound a bit old fashion; but let's put architecture there that is as grand as the Guardian Building, as grand as the Book Tower or the Fisher Building. Identical twin slender 9 story residential buildings, and not atop a retail and parking lot podium that covers the entire site. Let them stand free and tall in a sea of green and reflecting water. No surface parking, no retail, but maybe the first 3 floors could be an office use. Live and work in the same building. All parking and loading would be underground. The upper floors would be 380 degree view homes with the two most expensive penthouses in all of Michigan. 'The Pinnacles of Birmingham MI' would hold the title as the most prestigious high-rise residential address in the entire state. 'The Pinnacles' could have very few amenities, maybe just a concierge/security and valet parking. Individual homes would have their own lap pools and exercise rooms etc… each building would have one hell of a lobby.

And why; I ask this question over and over again… why can't these twin towers be pretty? Why is architecture not pretty anymore? Birmingham actually has many very human scale pretty buildings, why is what is being presented by the architect/developer for this corner so nondescript; why safe* seen it, been done before? The new building on the southwest corner is absolutely beautiful. Why can't these twin towers beyond the 9 stories have a additional 30 foot steep copper roofline like the Fisher Building or the Book Tower? Why can't the penthouse have an open floor plan with 35 foot ceilings and windows overlooking straight down Woodward Avenue to the Detroit skyline and beyond? The price tag for this home could easily exceed $15,000,000… (real estate is only about location, location, location) If the architect/developer goal is to build only the very best at this location there will be a buyer, and probably there will be a bidding war for those two penthouses, if not all the units. And finally why can't the buildings reflect a true architectural style… build Art Deco or Art Nouveau… build in a way that they look like if they were built in the 1920's, they are not office buildings they are upscale residential buildings. Build a work of art!

Hate to see such a beautiful location in such a beautiful city be wasted on a mundane building that has been done so many times before. I'm an advertising creative director not an architect. When I design a unmemorable looking ad that's OK it will be gone in a year. Whatever we put at this corner it will be there for a 150 plus years… let's build architecture, not an unmemorable looking apartment building.

Always thanks for your time
Scot Beaton
https://www.linkedin.com/in/scot-beaton-474a7b51

note: Please share this open letter with friends, family and business associates.

*safe is code for really boring.

What Makes Buildings Beautiful (And Why Beauty Does Matter)
https://www.youtube.com/watch?v=C9pg2j2oGy0 a good watch on youtube… :)

Time Sensitive Please Post/Share

FLEIS&VANDENBRINK
DESIGN. BUILD. OPERATE.

MKSK
Planning
Urban Design
Landscape Architecture

April 12, 2023

VIA EMAIL ndupuis@bhamgov.org

Mr. Nicholas Dupuis
Planning Director
City of Birmingham
151 Martin Street, P.O. Box 3001
Birmingham, MI 48012

RE: Birmingham Mixed Use Development-Maple & Woodward
34952 Woodward Ave. Birmingham, MI
Transportation Impact Study Review

Dear Mr. Dupuis:

Fleis & VandenBrink (F&V) and MKSK have completed our review of the Transportation Impact Study prepared by Rowe PSC dated March 31, 2023. Based on our review of the traffic study provided **we find that the Transportation Impact Study needs revisions.** There are several items that need further review and clarification that should be provided by the applicant prior to final site plan approval**.**

We offer the following comments for the City's consideration:

1. The Synchro/SimTraffic models need modifications to review the simulations. The models provided do not meet the Sim Traffic calibration and validation requirements as outlined in the MDOT Electronic Traffic Control Guidelines. Additionally, the simulation settings show traffic on Maple Road at the site driveway should be set to permit through traffic to queue in front of the proposed site driveway.
2. The proposed primary site access driveway is provided on Maple Road, with secondary access provided via the Alleyway on the south side of the building. There are concerns regarding the potential conflicts at the Maple Road access driveway and the conflicting traffic volumes and vehicle queues on Maple Road. Revisions to the Synchro/SimTraffic models should be performed and the analysis revised to include an evaluation of the queueing impacts to the proposed site driveway operations.
3. The projected trip generation for this site shows that only one site access driveway is necessary to accommodate the projected traffic volumes. Additional information should be provided to demonstrate that the driveways proposed demonstrate the fewest necessary to accommodate this site.
4. The analysis should include a summary of the existing and future pedestrian and bike traffic volumes at the study intersections. The distribution of future pedestrian and bike trips should be consistent with the existing pedestrian and bike trips collected at the study intersections.
5. This parking area does not meet current MDOT access management requirements. The proposed development has public parking adjacent to Woodward Ave and the study indicated that additional parking is proposed within the parking structure to accommodate the retail users. Additional information from MDOT regarding the permitting of the parking as shown should be provided. It is recommended that this parking is eliminated, and a pedestrian area created with an enhanced bus shelter consistent with City Planning documents.
6. Describe any proposed transit enhancements to accommodate transit users at the bus stop adjacent to the property. Provide documentation of communications with SMART regarding bus stop relocations or any amenities to make transit more convenient shall be provided.
7. The crash analysis should include an evaluation in accordance with the most recent version of the SEMCOG Crash Analysis Process as outlined in the SEMCOG Traffic Safety Manual. Provide a

27725 Stansbury Boulevard, Suite 195
Farmington Hills, MI 48334
P: 248.536.0080
F: 248.536.0079
www.fveng.com

summary of generally related causes and potential countermeasures for crash patterns, including specific countermeasures to address pedestrian and bicycle safety.

8. It is unclear from the site plan provided if the parking garage will have gated access or if the access will be open. If gated, there must be sufficient on-site storage to accommodate at least three (3) queued vehicles waiting to park or exit without using a portion of the public right-of-way obstructing exiting vehicle sight distance, or otherwise interfering with street traffic.

We hope that this report addresses the City's needs regarding this project. If you have any questions, please do not hesitate to contact us at your convenience.

Sincerely,

FLEIS & VANDENBRINK ENGINEERING, INC.

Julie M. Kroll, PE, PTOE
Traffic Services Manager

MKSK

Brad Strader, AICP, PTP
Principal, Transportation Planning Studio Leader

Links to CIS Sections for 34952 Woodward & 690 E. Maple

- **Application & Checklist**
- **Ownership Information**
- **Architectural Site Plan Package**
- **Zoning Analysis**
- **Noise Study**
- **Transportation Impact Study**
- **Draft Phase I ESA**
- **Geotechnical Report**
- **Air Quality Report**
- **Construction Staging & Haul Routes**
- **Surveys & Landscape Plans**

*Note: The full Community Impact Study document has been reduced to facilitate ease of review. A full version of the Community Impact Study including all its supplementary data and appendices is available in the Community Development Department.

WE BUILD STORIES

RYAN

PRELIMINARY SITE PLAN APPLICATION

BIRMINGHAM MIXED-USE DEVELOPMENT

WOODWARD AVENUE & MAPLE STREET
BIRMINGHAM, MICHIGAN

FEBRUARY 3, 2023

Ryan Companies Woodward + Maple

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Section 3 CIS Checklist Supplemental Information

Section 4 Appendix

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- **4.2** Ryan A+E Site Plan & Drawings
- **4.3** Zoning Analysis
- **4.4** Noise Impact Study
- **4.5** Transportation Impact Study
- **4.6** Phase 1 Environmental Assessment
- **4.7** Geotechnical Report
- **4.8** Air Quality Report
- **4.9** Construction Phasing Plan
- **4.10** Civil Package

Section 1

Combined CIS and Site Plan Application

Ryan Companies US, Inc.

Combined CIS & Site Plan Review Application
Planning Division

Form will not be processed until it is completely filled out.

1. Applicant
Name: Ryan Companies US, Inc.
Address: 224 N Des Plaines Street, Suite 100
Chicago, IL 60661
Phone Number: (630) 328 - 1400
Fax Number:
Email address: chicago@ryancompanies.com

2. Property Owner
Name: Maryko Hospitality, LLC c/o Grouip 10 Management, Inc. attn: Mr. Alan Baskins
Address: 29200 Northwestern Highway, Suite 450
Southfield, MI 48034
Phone Number: (248) 855 - 2100 , ext 131
Fax Number: (248) 855 - 1080
Email address: abaskins@group10.net

3. Applicant's Attorney/Contact Person
Name: Toby Veit
Address: 224 N Des Plaines Street, Suite 100
Chicago, IL 60661
Phone Number: (630) 328 - 1107
Fax Number:
Email address: toby.veit@ryancompanies.com

4. Project Designer/Developer
Name: Ryan A+E, Inc. / Brett Bunke
Address: 224 N Des Plaines Street, Suite 100
Chicago, IL 60661
Phone Number: (630) 328 - 1152
Fax Number:
Email address: brett.bunke@ryancompanies.com

5. Required Attachments
I. Two (2) paper copies and one (1) digital copy of all project plans including:
   i. A detailed Existing Conditions Plan including the subject site in its entirety, including all property lines, buildings, structures, curb cuts, sidewalks, drives, ramps and all parking on site and on the street(s) adjacent to the site, and must show the same detail for all adjacent properties within 200 ft. of the subject site's property lines;
   ii. A detailed and scaled Site Plan depicting accurately and in detail the proposed construction, alteration or repair;
   iii. A certified Land Survey;
   iv. Interior floor plans;
   v. A Landscape Plan;
   vi. A Photometric Plan;
   vii. Colored elevation drawings for each building elevation;

II. Specification sheets for all proposed materials, light fixtures and mechanical equipment;
III. Samples of all proposed materials;
IV. Photographs of existing conditions on the site including all structures, parking areas, landscaping and adjacent structures;
V. Current aerial photographs of the site and surrounding properties;
VI. Warranty Deed, or Consent of Property Owner if applicant is not the owner;
VII. Any other data requested by the Planning Board, Planning Department, or other City Departments.

6. Project Information
Address/Location of the property: 34952 Woodward Avenue and 690 East Maple Road, Birmingham, MI
Name of development: Ryan Companies Woodward/Maple
Sidwell #:
Current Use: Vacant parking lot and vacant office building
Current zoning: B-2 within the Triangle District Overlay (MU-7 and MU-5)
Is the property located in the floodplain? No

Name of Historic District Site is Located in: NA
Date of HDC Approval: NA
Date of DRB Approval: NA
Area of Site in Acres: 1.55
Proposed Use: Mixed Use - Mutifamily, Retail and Structured Parking
Will proposed project require the division of platted lots? No
Will proposed project require the combination of platted lots? Yes. PIN 19-36-226-002 and 19-36-226-003

7. Details of the Proposed Development (attach separate sheet if necessary)

The proposed project is a 6, 8 and 9-story multifamily building with 210 units, approximately 10,000 square feet of ground floor retail and 348 structured parking stalls.

8. Buildings and Structures

Number of Buildings on Site: 1

Use of Buildings: Multifamily, retail and structured parking

Height of Buildings & # of Stories: 105 feet (to top of roof) and 9 stories

Height of Rooftop Mechanical Equipment: NA

9. Floor Use and Area (in Square Feet)

Proposed Commercial Structures:

Total basement floor area: NA

Office Space: NA

Number of square feet per upper floor: NA

Retail Space: 10,000sf

Total floor area: 10,000sf

Industrial Space: NA

Floor area ratio (total floor area ÷ total land area): 0.148

(10,000sf ÷ 67518sf)

Assembly Space: NA

Seating Capacity: NA

Open space: NA

Maximum Occupancy Load: NA

Percent of open space: NA

Note the proposed project will have 24 studios ranging between 500 to 800 square feet

Proposed Residential Structures:

Total number of units: 210

Rental units or condominiums? Rental

Number of one bedroom units: 98

Size of one bedroom units: 600 to 1,000

Number of two bedroom units: 70

Size of two bedroom units: 900 to 1,200

Number of three bedroom units: 18

Size of three bedroom units: 1,200 to 1,800

Open space: NA

Seating Capacity: NA

Percent of open space: NA

Maximum Occupancy Load: NA

Proposed Additions:

Total basement floor area, if any, of addition: NA

Use of addition: NA

Number of floors to be added: NA

Height of addition: NA

Square footage added per floor: NA

Office space in addition: NA

Total building floor area (including addition): NA

Retail space in addition: NA

Floor area ratio (total floor area ÷ total land area):

NA

Industrial space in addition: NA

Assembly space in addition: NA

Open Space: NA

Maximum building occupancy load (including addition):

NA

Percent of open space: NA

10. Required and Proposed Setbacks

Required front setback: 0' Min, 5' Max

Proposed front setback: 0' to 5'

Required rear setback: NA (Per Triangle District Overlay)

Proposed rear setback 0' to 5'

Required total side setback: NA

Proposed total side setback: NA

Side setback: 0' Min, 10' Min. for walls with windows

Second side setback: 0' to 10'

11. Required and Proposed Parking

Required number of parking spaces: 84 Retail, 239 Residential

Proposed number of parking spaces: 360

Typical angle of parking spaces: 90 degrees

Typical size of parking spaces: 9 x 20

Typical width of maneuvering lanes: 22 feet

Number of spaces <180 sq. ft.: 15-20

Location of parking on site: Structured Parking, Interior

Number of handicap spaces: 11

Location of parking off site: NA

Shared parking agreement? NA

Number of light standards in parking area: NA, Interior Parking

Height of light standards in parking area: NA

Screenwall material: NA, Interior Parking

Height of screenwall: NA

12. Landscaping

Location of landscape areas: NA

Proposed landscape material:

13. Streetscape

Sidewalk width: Varies - 5-10 feet

Number of benches: NA

Number of planters: NA

Number of existing street trees: 3

Number of proposed street trees: Per Zoning Rq's

Streetscape Plan submitted?

Description of benches or planters: Per Zoning Req's

Species of existing trees: Per Zoning Req's

Species of proposed trees: Per Zoning Req's

14. Loading

Required number of loading spaces: 1

Typical angle of loading spaces: 90 Degrees

Screenwall material: NA, Inside Building

Location of loading spaces on site: Inside Building, off of south alley

Proposed number of loading spaces: 1

Typical size of loading spaces: Per Zoning Req's

Height of screenwall: NA, Inside Building

Typical time loading spaces are used: NA

15. Exterior Waste Receptacles

Required number of waste receptacles: NA

Location of waste receptacles: NA

Screenwall material: NA

Proposed number of waste receptacles: NA

Size of waste receptacles: NA

Height of screenwall: NA

16. Mechanical Equipment

Utilities and Transformers:

Number of ground mounted transformers: NA

Size of transformers (L•W•H): NA

Number of utility easements: NA

Screenwall material: NA

Location of all ground mounted utilities: NA

Height of screenwall: NA

Ground Mounted Mechanical Equipment:

Number of ground mounted units: NA

Size of ground mounted units (L•W•H): NA

Screenwall material: NA

Location of all ground mounted units: NA

Height of screenwall: NA

Rooftop Mechanical Equipment:

Number of rooftop units: NA

Type of rooftop units: NA

Screenwall material: NA

Location of screenwall: NA

Location of all rooftop units: NA

Size of rooftop units (L•W•H): NA

Percentage of rooftop covered by mechanical units: NA

Height of screenwall: NA

Distance from rooftop units to all screenwalls: NA

17. Accessory Buildings

Number of accessory buildings: None

Location of accessory buildings: NA

Size of accessory buildings: NA

Height of accessory buildings: NA

18. Building Lighting

Number of light standards on building: NA

Size of light fixtures (L•W•H): NA

Type of light standards on building: NA

Height from grade: NA

Maximum wattage per fixture: NA
Proposed wattage per fixture: NA
Light level at each property line: NA

19. Site Lighting

Number of light fixtures: NA, Street Lights per Zoning Req's
Type of light fixtures: NA
Size of light fixtures (L•W•H): NA
Height from grade: NA
Maximum wattage per fixture: NA
Proposed wattage per fixture: NA
Light level at each property line: NA
Holiday tree lighting receptacles: NA

20. Adjacent Properties

Number of properties within 200 ft.: 21

Property #1

Number of buildings on site: Reference CIS Checklist Supplemental Info
Property Description:
Zoning district:
Use type:
Square footage of principal building:
Square footage of accessory buildings:
Number of parking spaces:
North, south, east or west of property?

Property #2

Number of buildings on site:
Property Description:
Zoning district:
Use type:
Square footage of principal building:
Square footage of accessory buildings:
Number of parking spaces:
North, south, east or west of property?

Property #3

Number of buildings on site:
Property Description:
Zoning district:
Use type:
Square footage of principal building:
Square footage of accessory buildings:
Number of parking spaces:
North, south, east or west of property?

Property #4

Number of buildings on site:
Property Description:
Zoning district:
Use type:
Square footage of principal building:
Square footage of accessory buildings:
Number of parking spaces:
North, south, east or west of property?

Property #5

Number of buildings on site:
Property Description:
Zoning district:
Use type:
Square footage of principal building:
Square footage of accessory buildings:
Number of parking spaces:
North, south, east or west of property?

Property #6

Number of buildings on site:
Property Description:
Zoning district:
Use type:
Square footage of principal building:
Square footage of accessory buildings:
Number of parking spaces:
North, south, east or west of property?

The undersigned states the above information is true and correct, and understands that it is the responsibility of the applicant to advise the Planning Division and / or Building Division of any additional changes made to an approved site plan. The undersigned further states that they have reviewed the procedures and guidelines for Site Plan Review in Birmingham, and have complied with same. The undersigned will be in attendance at the Planning Board meeting when this application will be discussed.

By providing your e-mail to the City, you agree to receive news notifications from the City. If you do not wish to receive these messages, you may unsubscribe at any time.

Signature of Owner: _____ Date: 1/30/23

Print Name: ALAN BASKINS

Signature of Applicant: _____ Date: 2/3/23

Print Name: Toby Veit - VP Development

Signature of Architect: _____ Date: 2/3/23

Print Name: BRETT BUNKE

Office Use Only

Application #: _____ Date Received: _____ Fee: _____

Date of Approval: _____ Date of Denial: _____ Accepted by: _____

Section 2

CIS Checklist

Ryan Companies US, Inc.

COMBINED SITE PLAN REVIEW & COMMUNITY IMPACT STUDY APPLICATION CHECKLIST-PLANNING DIVISION

Applicant: Ryan Companies US, Inc. Case #: _____ Date: 2/3/2023

Address: 34952 Woodward / 690 E Maple Project: Ryan Companies Woodward + Maple

All site plans and elevation drawings prepared for approval shall be prepared in accordance with the following specifications and other applicable requirements of the City of Birmingham. If more than one page is used, each page shall be numbered sequentially. All plans must be legible and of sufficient quality to provide for quality reproduction or recording. Plans must be no larger than 24" x 36", and must be folded and stapled together. The address of the site must be clearly noted on all plans and supporting documentation.

Site Plan

A full Site Plan detailing the proposed changes for which approval is requested shall be drawn at a scale no smaller than 1" = 100' (unless the drawing will not fit on one 24" X 36" sheet) and shall include:

- ☑ 1. Name and address of applicant and proof of ownership;
- ☑ 2. Name of Development (if applicable);
- ☑ 3. Address of site and legal description of the real estate;
- ☑ 4. Name and address of the land surveyor;
- ☑ 5. Legend and notes, including a graphic scale, north point, and date;
- ☑ 6. A separate location map;
- ☑ 7. A map showing the boundary lines of adjacent land and the existing zoning of the area proposed to be developed as well as the adjacent land;
- ☑ 8. Aerial photographs of the subject site and surrounding properties;
- ☑ 9. A detailed and scaled Site Plan depicting accurately and in detail the proposed construction, alteration or repair;
- ☑ 10. A detailed Existing Conditions Plan including the subject site in its entirety, including all property lines, buildings, structures, curb cuts, sidewalks, drives, ramps and all parking on site and on the street(s) adjacent to the site, and must show the same detail for all adjacent properties within 200 ft. of the subject site's property lines;
- ☑ 11. Interior floor plans;
- ☑ 12. A chart indicating the dates of any previous approvals by the Planning Board, Board of Zoning Appeals, Design Review Board, or the Historic District Commission ("HDC");
- ☑ 13. Existing and proposed layout of streets, open space and other basic elements of the plan;
- ☑ 14. Existing and proposed utilities and easements and their purpose;

- ☑ 15. Location of natural streams, regulated drains, 100-year flood plains, floodway, water courses, marshes, wooded areas, isolated preserve-able trees, wetlands, historic features, existing structures, dry wells, utility lines, fire hydrants and any other significant feature(s) that may influence the design of the development;
- ☑ 16. General description, location, and types of structures on site;
- ☑ 17. Location of sidewalks, curb cuts, and parking lots on subject site and all sites within 200 ft. of the property line;
- ☑ 18. Details of existing or proposed lighting, signage and other pertinent development features;
- ☑ 19. Elevation drawings showing proposed design;
- ☑ 20. Screening to be utilized in concealing any exposed mechanical or electrical equipment and all trash receptacle areas;
- ☑ 21. Location of all exterior lighting fixtures;
- ☑ 22. A Photometric Plan depicting proposed illuminance levels at all property lines;
- ☑ 23. A Landscape Plan showing all existing and proposed planting and screening materials, including the number, size, and type of plantings proposed and the method of irrigation; and
- ☑ 24. Any other information requested in writing by the Planning Division, the Planning Board, or the Building Official deemed important to the development.

Elevation Drawings

Complete elevation drawings detailing the proposed changes for which approval is requested shall be drawn at a scale no smaller than 1” = 100’ (unless the drawing will not fit on one 24” X 36” sheet) and shall include:

- ☑ 25. Color elevation drawings showing the proposed design for each façade of the building;
- ☑ 26. List of all materials to be used for the building, marked on the elevation drawings;
- ☑ 27. Elevation drawings of all screenwalls to be utilized in concealing any exposed mechanical or electrical equipment, trash receptacle areas and parking areas;
- ☑ 28. Details of existing or proposed lighting, signage and other pertinent development features;
- ☑ 29. A list of any requested design changes;
- ☑ 30. Itemized list and specification sheets of all materials, light fixtures and mechanical equipment to be used, including exact size specifications, color, style, and the name of the manufacturer;
- ☑ 31. Location of all exterior lighting fixtures, exact size specifications, color, style and the name of the manufacturer of all fixtures, and a photometric analysis of all exterior lighting fixtures showing light levels to all property lines; and
- ☑ 32. Any other information requested in writing by the Planning Division, the Planning Board, or the Building Official deemed important to the development.

City of Birmingham
A Walkable Community

COMMUNITY IMPACT STUDY CHECKLIST

PLANNING DIVISION

Applicant: Ryan Companies US, Inc. Case #: _____ Date: 2/3/2023

Address: 34952 Woodward / 690 E Maple Project: Ryan Companies Woodward + Maple

All Community Impact Studies prepared for approval must contain the following information:

General Information

- ☑ 1. Name and address of applicant and proof of ownership;
- ☑ 2. Name of Development (if applicable);
- ☑ 3. Address of site and legal description of the real estate;
- ☑ 4. Name and address of the land surveyor;
- ☑ 5. Legend and notes, including a graphic scale, north point, and date;
- ☑ 6. A separate location map;
- ☑ 7. A map showing the boundary lines of adjacent land and the existing zoning of the area proposed to be developed as well as the adjacent land;
- ☑ 8. Details of all proposed site plan changes;

Planning & Zoning Issues

- ☑ 9. Recommended land use of the subject property as designated on the Future Land Use Map of the City's Master Plan;
- ☑ 10. Goals and objectives of the city's Master Plans that demonstrate the City's support of the proposed development;
- ☑ 11. Whether or not the project site is located within an area of the City for which an Urban Design Plan has been adopted by the Planning Board in which special design criteria or other supplemental development requirements apply;
- ☑ 12. The current zoning classification of the subject property;
- ☑ 13. The zoning classification required for the proposed development;
- ☑ 14. The existing land uses adjacent to the proposed project;
- ☑ 15. Complete the attached "Zoning Requirements Analysis" chart;

Land Development Issues

- ☑ 16. A Survey and Site Drainage Plan;
- ☑ 17. Identify any sensitive soils on site that will require stabilization or alteration in order to support the proposed development;
- ☑ 18. Whether or not the proposed development will occur on a steep slope, and if so, the measures that will be taken to overcome potential erosion, slope stability and runoff;

☑ 19. The volume of excavated soils to be removed from the site and /or delivered to the site, and a map of the proposed haul routes;

☑ 20. Identify the potential hazards and nuisances that may be created by the proposed development and the suggested methods of mitigating such hazards;

Private Utilities

☑ 21. Indicate the source of all required private utilities to be provided;

☑ 22. Provide verification that all required utility easements have been secured for necessary private utilities;

Noise Levels

☑ 23. Provide a reading of existing ambient noise and estimated future noise levels on the site;

☑ 24. Indicate whether the project will be exposed to or cause noise levels which exceed those levels prescribed in Chapter 50, Division 4, Section 50-71 through 50-77 of the Birmingham City Code, as amended;

☑ 25. Indicate whether the site is appropriate for the proposed activities and facilities given the existing ambient noise and the estimated future noise levels of the site;

Air Quality

☑ 26. Indicate whether the project is located in the vicinity of a monitoring station where air quality violations have been registered and, if so, provide information as to whether the project will increase air quality problems in the area;

☑ 27. Indicate if the nature of the project or its potential users would be particularly sensitive to existing air pollution levels and, if so, indicate how the project has been designed to mitigate possible adverse effects;

☑ 28. Indicate whether the proposal will establish a trend which, if continued, may lead to violation of air quality standards in the future;

☑ 29. Indicate whether the proposed project will have parking facilities for more than 75 cars and indicate percentage of required parking that is proposed;

Environmental Design and Historic Values

☑ 30. Indicate whether there will be demonstrable destruction or physical alteration of the natural or human-made environment on site or in the right-of-way (i.e. clearance of trees, substantial regrading etc.);

☑ 31. Indicate whether there will be an intrusion of elements out of character or scale with the existing physical environment (i.e. significant changes in size, scale of building, floor levels, entrance patterns, height, materials, color or style from that of surrounding developments);

☑ 32. Indicate all elements of the project that are eligible for LEED points if the building were to be LEED certified (i.e. extensive use of natural daylight, use of low VOC paint, use of renewable/recycled resources, energy efficient mechanical systems, use of wind and solar power, geothermal heating etc.);

☑ 33. Indicate whether the proposed structure will block or degrade views, change the skyline or create a new focal point;

☑ 34. Indicate whether there will be objectionable visual pollution introduced directly or indirectly due to loading docks, trash receptacles or parking, and indicate mitigation measures for same;

☑ 35. Indicate whether there will be an interference with or impairment of ambient conditions necessary for the enjoyment of the physical environment (i.e. vibration, dust, odor, heat, glare etc.);

☑ 36. Indicate whether the project area and environs contain any properties listed on the National Register of Historic Places or the City's inventory of historic structures;

☑ 37. Provide any information on the project area that the State Historic Preservation Office (SHPO) may have;

☑ 38. Indicate whether there will be other properties within the boundaries or in the vicinity of the project that appear to be historic and thus require consultation with the SHPO as to eligibility for the National Register;

☑ 39. Indicate whether the Department of the Interior has been requested to make a determination of eligibility on properties the SHPO or HDC deems eligible and affected by the project;

☑ 40. Provide proof that the HDC has been given an opportunity to comment on properties that are listed on or have been found eligible for the National Register and which would be affected by the project;

Refuse

☑ 41. Indicate whether the existing or planned solid waste disposal system will adequately service the proposed development including space for separation of recyclable materials;

☑ 42. Indicate whether the design capacity of the existing or planned solid waste disposal system will be exceeded as a result of the project;

Sanitary Sewer

☑ 43. Indicate whether existing or planned waste water systems will be able to adequately service the proposed development;

☑ 44. Indicate whether the design capacity of these facilities will be exceeded as a result of the project;

☑ 45. Indicate the elements of the project that have been incorporated to reduce the amount of water entering the sewer system (such as low flush toilets, EnergyStar appliances, restricted flow faucets, greywater recycling etc.);

Storm Sewer

☑ 46. Indicate whether existing or planned storm water disposal and treatment systems will adequately serve the proposed development;

☑ 47. Indicate whether the design capacity of these facilities will be exceeded as a result of the project;

☑ 48. Indicate the elements of the project that have been incorporated to reduce the amount of storm water entering the sewer system (such as the use of pervious concrete, rain gardens, greywater recycling, green pavers etc.);

Water Service

☑ 49. Indicate whether either the municipal water utility or on-site water supply system is adequate to serve the proposed project;

☑ 50. Indicate whether the water quality is safe from both a chemical and bacteriological standpoint;

☑ 51. Indicate whether the intended location of the service will be compatible with the location and elevation of the main;

Public Safety

☑ 52. Whether or not the project location provides adequate access to police, fire and emergency medical services;

☑ 53. Whether or not the proposed project design provides easy access for emergency vehicles and individuals (ie. are there obstacles to access, such as one-way roads, narrow bridges etc.);

☑ 54. Whether or not there are plans for a security system which can be expanded, and whether approval for same has been granted by the police department;

☑ 55. Detailed description of all fire access to the building, site, fire hydrants and water connections;

☑ 56. Whether or not there are plans for adherence to all city and N.F.P.A. fire codes;

☑ 57. Proof that one elevator has been designed to accommodate a medical cart;

☑ 58. Detailed specifications on all fire lanes/parking lot surfaces/alleys/streets to demonstrate the ability to accommodate the weight of emergency / fire vehicles;

☑ 59. Detailed description of all fire suppression systems;

Transportation issues

☑ 60. Provide completed FORM A – Transportation Study Questionnaire (Abbreviated);

☑ 61. Provide completed FORM B – Transportation Study Questionnaire if required by the city's transportation consultant;

☑ 62. Indicate whether transportation facilities and services will be adequate to meet the needs of all users (i.e. access to public transportation, bicycle accommodations, pedestrian connections, disabled, elderly etc.);

☑ 63. Indicate how the project will improve the mobility of all groups by providing transportation choices;

☑ 64. Indicate how the users of the building will be encouraged to use public transit and non-motorized forms of transportation;

☑ 65. Indicate the elements that have been incorporated into the site and surrounding right-of-way to encourage mode shift away from private vehicle trips;

☑ 66. Indicate the elements of the project that have been provided to improve the comfort and safety of cyclists (such as secured or covered bicycle parking, lockers, bike lanes/paths, bicycle share program etc.);

☑ 67. Indicate the elements of the project that have been provided to improve the comfort and safety of pedestrians (such as wheelchair ramps, crosswalk markings, pedestrian activated signal lights, bulb outs, benches, landscaping, lighting etc.);

☑ 68. Indicate the elements of the project that have been provided to encourage the use of sustainable transportation modes (such as receptacles for electric vehicle charging, parking for scooters/Smart cars etc.);

Natural Features

☑ 69. Indicate whether there are any visual indicators of pond and / or stream water quality problems on or near the site;

☑ 70. Indicate whether the project will involve any increase in impervious surface area and, if so, indicate the runoff control measures that will be undertaken;

☑ 71. Indicate whether the project will affect surface water flows on water levels of ponds or other water bodies;

☑ 72. Indicate whether the project may affect or be affected by a wetland, flood plain, or floodway;

☑ 73. Indicate whether the project location or construction will adversely impact unique natural features on or near the site;

☑ 74. Indicate whether the project will either destroy or isolate a unique natural feature from public access;

☑ 75. Indicate whether any unique natural feature will pose safety hazards for the proposed development;

☑ 76. Indicate whether the project will damage or destroy existing wildlife habitats; and

Other Information

☑ 77. Any other information as may reasonably be required by the City to assure an adequate analysis of all existing and proposed site features and conditions.

Professional Qualifications

The preparer(s) of the CIS must indicate their professional qualifications, which must include registration in the state of Michigan in their profession where licensing is a state requirement for the practice of the profession (i.e. engineer, surveyor, architect etc.). Where the state does not require licensing (ie. planner, urban designer, economist etc.), the

preparer must demonstrate acceptable credentials including, but not limited to, membership in professional societies, university degrees, documentation illustrating professional experience in preparing CIS related materials for similar projects.

Section 3

CIS Checklist — Supplemental Information

Ryan Companies US, Inc.

Section 3

CIS Checklist Supplemental Information

Ryan Companies Woodward + Maple
34952 Woodward Avenue + 690 East Maple Road
Birmingham, MI 48009

Combined CIS & Site Plan Review Application
Planning Division

GENERAL INFORMATION

1. Name and Address of applicant and proof of ownership

   Ryan Companies US, Inc.
   Attn: Toby Veit
   224 N. Des Plaines Street, Suite 100
   Chicago, IL 60661
   (630) 328-1400

   The land parcels in the proposed development are owned by Maryko Hospitality, LLC. Refer to Appendix 4.1 for Proof of Ownership.

2. Name of Development

   Ryan Companies Woodward + Maple

3. Address of site and legal description of the real estate

   34952 Woodward Ave + 690 East Maple Rd
   Birmingham, MI 48009
   (Refer to Survey for Legal Description)

4. Name and address of the surveyor

   PEA Group
   Attn: John Thompson
   2430 Rochester Court, Suite 100
   Troy, MI 48083
   (844) 813-2949

5. Legend and notes, including a graphic scale, north point, and date

   Refer to site plan and drawings by Ryan A+E in Appendix 4.2

6. A separate location map

   See location map by Ryan A+E in Appendix 4.2

7. A map showing the boundary lines of adjacent land and the existing zoning of the area proposed to be developed as well as the adjacent land.

   Refer to zoning map in Appendix 4.2

8. Details of all proposed site plan changes.

   Refer to site plan and drawings by Ryan A+E in Appendix 4.2

PLANNING AND ZONING ISSUES

9. Recommended land use of the subject property as designated on the future land use map of the city's master plan.

   Zoned B-2 within the Triangle Overlay District and within the MU-7 and MU-5 zones.

   Reference Triangle District Urban Design Plan pages 4-5

   - **Development Plan Summary - The area should become a self-sufficient neighborhood with mutually supportive residential and commercial uses. While commercial uses along Woodward Avenue could be more general, community service, commercial uses in the heart of the Triangle and along Adams should be oriented more towards serving the immediate neighborhood. Residences and offices should be located in the upper floors above the shops and offices at street-level. Attached single-family, live-work, and other residential uses should also comprise a portion of street-level uses, especially along Elm Street and adjacent to existing single-family residences. First-floor retail, especially restaurants, bistros, and cafés, should be encouraged but not required in the heart of the District.**
   - **Building Design and Placement - Buildings should be designed in a contemporary style and oriented toward their primary street. Designs should incorporate sustainable building elements for the site and the structures. Scale and size should be compatible with adjacent structures, and facades and rooflines should vary to create relief from continuous surfaces. Pedestrian friendly features should be incorporated.**
   - **Building Height - Varied building heights are recommended to properly frame the streets and provide the massing necessary to relate to the scale of the streetscapes. The hierarchy of height ranges from taller mixed-use buildings along Woodward Avenue that are seven stories and higher, medium height mixed-use buildings of four-to-five stories in the District's interior and along Maple to create a more intimate urban neighborhood, and structures at a smaller scale of three stories when abutting existing residential neighborhoods. Buildings should step back from the street at the higher stories.**
   - **Parking - Parking needs to be provided more efficiently than the current configuration of disjointed surface parking lots. Redevelopment should incorporate multi-level parking structures and maximize the use of on-street parking. More efficient use of shared parking facilities will allow for redevelopment that is more pedestrian oriented and less dominated by parking lots.**

10. Goals and objectives of the city's master plan that demonstrates the city's support of the proposed development.

    The proposed project is to be constructed within the boundaries of the Triangle District Urban Design Plan.

    The proposed use is as specified by The Birmingham Plan (updated Dec. 2022) and the regulations of the Triangle Overlay District. The proposed project encourages a form of development that will achieve the physical qualities necessary to enhance the economic vitality of the Triangle District Urban Design Plan.

    The proposed project will be in the Maple and Woodward Mixed Use District Fabric (map on pages 9-10 of The Birmingham Plan) and will be consistent with the intentions for this district as noted in the Birmingham Plan and related overlays.

11. Whether or not the project site is located within an area of the city for which an Urban Design Plan has been adopted by the Planning Board in which special design criteria or other supplemental development requirements apply.

    The proposed project is a mixed-use building that is primarily residential with ground-level retail and supporting structured parking. It is located in the Triangle District which does have an Urban Design Plan and unique zoning characteristics. The project follows the Design Plan and Triangle District zoning and details as well as the MU-5 and MU-7 zones which recommends mixed-use. The project will seek approval for height bonuses for achieving the following 2 of 5 bonus requirements:

    - **A mixed-use building that provides residential dwelling units above first-floor commercial where a minimum of 50% of the building floor area is residential**

    - **Leadership in Energy and Environmental Design (LEED) building design, accredited based upon the rating system of the United States Green Building Council**

    The additional bonus levels will be stepped back at a 45-degree angle from the street view as required by zoning.

12. The current zoning classification of the subject property.

    The property is zoned B-2 within the Triangle Overlay District and within the MU-7 and MU-5 zones. Most of the subject property is within the MU-7 zone (including all along the Woodward frontage). A small portion of the eastern portion of the subject property (the parcel with the address of 690 E Maple) is within the MU-5 zone.

13. The zoning classification required for the proposed development.

    No new zoning classification is required for the proposed development. The current zoning classification for the subject property is B-2 within the Triangle Overlay District and within the MU-7 and MU-5 zones. These zoning classifications permit the proposed uses. The project aims to maintain the zoning, will meet all the

requirements of the zoning classifications, and is encouraged by the Triangle District Urban Plan.

14. The existing land used adjacent to the proposed project.

The immediately adjacent property to the East is zoned B-2 and is an office building and surface parking lot.

All other adjacent properties are separated by public rights-of-way including streets and alleys and are zoned B-2 or B-4.

Adjacent Properties within 200' = 21 (also shown on Site Plan and Survey)

Property 1

700 E Maple	Taunt Law Firm & Offices
Zoning:	B-2/MU-5
Use Type:	Office Building & Surface Parking

Property 2

746 E Maple	Love & Buttercream
Zoning:	B-2/MU-5
Use Type:	Bakery

Property 3

772 E Maple	Law Firm of Victoria
Zoning:	B-2/MU-5
Use Type:	Law Offices

Property 4

795 E Maple	Citizens Bank
Zoning:	B-2/D-2
Use Type:	Bank

Property 5

765 E Maple	Formerly The Tutoring Center
Zoning:	B-2/D-2
Use Type:	Vacant Retail

Property 6

755 E Maple	Elements Massage
Zoning:	B-2/D-2
Use Type:	Massage Parlor

Property 7

745 E Maple	Pelvic Rehabilitation Medicine
Zoning:	B-2/D-2
Use Type:	Clinic

Property 8

735 E Maple	Nails Etc.
Zoning:	B-2/D-2
Use Type:	Nail Salon

Property 9

725 E Maple	Sport Clips

Zoning:	B-2/D-2
Use Type:	Hair Salon

Property 10

715 E Maple	PT Heal with Oxygen
Zoning:	B-2/D-2
Use Type:	Clinic

Property 11

35028 Woodward Ave	Kroger/Kroger Pharmacy/Laidlaw Florists, Inc.
Zoning:	B-2/D-2
Use Type:	Grocery Store/Pharmacy/Florist

Property 12

35032 Woodward Ave	Dairy Mat
Zoning:	B-2/D-2
Use Type:	Ice Cream Shop

Property 13

34977 Woodward Ave	Ogletree Deakins/Greenleaf Trust/Finnea Group
Zoning:	B-4/D-4
Use Type:	Multi-Tenant Office Building

Property 14

34965-34967 Woodward Ave	
Zoning:	B-4/D-4
Use Type:	Vacant Land
Note:	Proposed building in litigation

Property 15

35901 Woodward Ave	Morgan Stanley/PNC Bank/Lady Jane's
Zoning:	B-4/D-4
Use Type:	Multi-Tenant Office Building/Retail

Property 16

34082 Woodward Ave	AAA Birmingham
Zoning:	B-2/MU-5
Use Type:	Travel Agency

Property 17

34750 Woodward Ave	Speedway
Zoning:	O-2/MU-5
Use Type:	Gas Station

Property 18

700 Forest Ave	Bloomfield Capital
Zoning:	O-2/MU-5
Use Type:	Loan Agency

Property 19

735 Forest Ave	735 Forest Residences/Templeton Building Co.
Zoning:	O-2/MU-5+MU-3
Use Type:	Mixed Use – Residential/Retail/Office

Property 20

200 S Elm St	Birmingham Urgent Care
Zoning:	O-2/MU-5

Use Type:	Clinic/Office Building

Property 21

266 S Elm St	The Pilates Method
Zoning:	O-2/MU-5
Use Type:	Fitness Studio

15. Complete the attached “Zoning Requirement Analysis” chart.

    Refer to Appendix 4.3 for Zoning Requirements Analysis.

LAND DEVELOPMENT ISSUES

16. A survey and site drainage plan.

    Refer to Civil Package in Appendix 4.10.

17. Identify any sensitive soils on the site that will require stabilization or alteration in order to support the proposed redevelopment.

    Refer to the Phase 1 and Geotechnical Investigation in Appendix 4.6 and 4.7, respectively.

18. Whether or not the proposed development will occur on a steep slope, and if so, the measures that will be taken to overcome potential erosion, slope stability and runoff.

    The proposed development does not occur on a steep slope. However, during construction of the development, care will be taken to prevent and sediment laden soils from leaving the site and to stabilize any steep slopes by employing soil erosion best management techniques.

19. The volume of excavated soils to be removed from the site and/or delivered to the site, and a map of the proposed haul routes.

    The site will be excavated to accommodate foundations immediately below grade only. The approximate volume of excavated soils is 33,000 Cupid Yards. Refer to Appendix 4.9 for the preliminary Construction Phasing Plan which depicts the map of the proposed haul routes.

20. Identify the potential hazards and nuisances that may be created by the proposed development and the suggested methods of mitigated such hazards.

    No hazards or nuisances will be created by the proposed development. Pedestrian and traffic control will be clearly marked and identified. The site will be secured with construction fencing and will be locked when not in use. Signage for street and sidewalk closures will be clearly identified. Scaffolding and pedestrian protection will be used as needed.

PRIVATE UTILITIES

21. Indicate the source of all required private utilities to be provided.

    Refer to Civil Package in Appendix 4.10.

- **Electrical service is proposed to be delivered at the southeast corner of the site via DTE Energy. The existing poles running along the boundary of the site will be relocated or removed.**
- **The gas service is proposed to come from E. Maple Road via Consumers Energy. Gas meters are located along east side of the northeast corner next to the parking garage.**
- **A 6" fire suppression water main will be provided from Woodward Ave via the alley.**
- **A domestic water service main will be provided from Woodward Ave via the alley.**

22. Provide verification that all required utility easements have been secured for necessary private utilities.

    Verification for all required utility easements will be coordinated with the respective utility owner and determined during the site plan and building review process. Additional required easements to support the development will be proposed and secured prior to construction of the respective utility.

NOISE LEVELS

23. Provide a reading of existing ambient noise and estimated future noise levels on the site.

    Refer to the Noise Impact Study completed by Kolano and Saha Engineers, Inc. in Appendix 4.4.

24. Indicate whether the project will be exposed to or cause noise levels which exceed those levels prescribed in Chapter 50, Division 4, Section 50-71 through 50-77 of the Birmingham City Code, as amended.

    Refer to the Noise Impact Study completed by Kolano and Saha Engineers, Inc. in Appendix 4.4.

25. Indicate whether the site is appropriate for the proposed activities and facilities given the existing ambient noise and the estimated future noise levels of the site.

    Refer to the Noise Impact Study completed by Kolano and Saha Engineers, Inc. in Appendix 4.4.

AIR QUALITY

26. Indicate whether the project is located in the vicinity of a monitoring station where air quality violations have been registered and, if so. Provide information as to whether the project will increase air quality problems in the area.

    This development is located within the Southeast Air Quality District and the closest monitoring stations are located in Oak Park and Pontiac. Current ambient air quality

standards are below the minimum standards from the EPA (Refer to Michigan EGLE Air Quality Report in Appendix 4.8).

27. Indicate if the nature of the project or its potential users would be particularly sensitive to existing air pollution levels and, if so, indicate how the project has been designed to mitigate possible adverse effects

    This project is consistent with the Triangle District Urban Plan and will not significantly impact air pollution levels. Newer buildings are built with cleaner, more sustainable materials and equipment, which should mitigate some of these effects. The building will be equipped with electric car charging stations to encourage the use of electric vehicles. The building will also be LEED certified.

28. Indicate whether the proposal will establish a trend which, if continued, may lead to violation of air quality standards in the future

    The use of the site as proposed will not result in any measurable air pollution impacts different than an ordinary mixed-use development. This development will not establish any trends that would lead to a violation of air quality standards, though there will be additional density of the built environment, which would be the case of any development.

PARKING

29. Indicate whether the proposed project will have parking facilities for more than 75 cars and indicate percentage of required parking that is proposed

    The proposed development will have parking facilities for more than 75 cars. The parking facilities include a three-level above/below grade parking deck integrated into the overall mixed-use project. There will be approximately 348 structured parking spaces, including 11 handicap spaces and 25 tandem/compact spaces. Additionally, there are 12 spaces along Woodward Avenue. The approximate total parking is 360 building & site spaces.

    The total required spaces = 239 residential + 84 retail = 323 total required

    The parking facilities described here comply with the existing zoning and parking requirements and are consistent with the traffic impact study. There is no variance for parking required.

ENVIRONMENTAL DESIGN AND HISTORIC VALUES

30. Indicate whether there will be demonstrable destruction or physical alteration of the natural or human-made environment on site or in the right-of-way (i.e. Clearance of trees, substantial regrading etc.)

    The existing structures will be demolished, along with the surface lot to make way for the proposed building. The few trees currently on these sites will be made

available to the City to transplant. The proposed development will greatly enhance the built environment including landscaping and walks.

31. Indicate whether there will be an intrusion of elements out of character or scale with the existing physical environment (i.e. Significant changes in size, scale of building, floor levels, entrance patterns, height materials, color or style from that of surrounding developments)

    The proposed building is taller than contiguous buildings but is similar in size, mass, height and scale to properties in the City along Woodward Avenue. The size, mass, height and scale of the building is consistent with the existing zoning, master plan and overlays. Design elements such as entrance patterns, materials, colors and styles will be subject to the City's development standards and will be consistent with the surrounding properties/area.

32. Indicate all elements of the project that are eligible for LEED points if the building were to be LEED certified (i.e. Extensive use of natural daylight, use of low VOC paint, use of renewable/recycled resources, energy efficient mechanical systems, use of wind and solar power, geothermal heating etc.)

    The project will be built to achieve LEED certification.

33. Indicate whether the proposed structure will block or degrade views, change the skyline or create a new focal point

    The proposed building will create a continuous streetscape oriented toward Woodward and Maple, the primary streets. The project will change the skyline as a 6-9 story building that will replace an existing parking lot and single-story office building. The project will change some of the views of existing properties; however, the proposed building is stepped back on the upper levels per ordinance and is consistent with the existing zoning and the Triangle District Building Design and Placement. The development will greatly enhance the existing streetscape and site area.

34. Indicate whether there will be objectionable visual pollution introduced indirectly due to loading docks, trash receptacles or parking, and indicate mitigation measures for same;

    The development does not propose to introduce any pollutants to the site. All on-site parking will be enclosed with façade treatments. Access to loading will be located off the south alley and will be contained within the building walls. The parking ramp entrance will be off of the alley. Trash receptacles will be inside the building and hidden from view. The only surface parking outside the building already exists today along Woodward Avenue. The remainder of the parking is within a parking structure (as recommended in the Overlay Plan), and parking aesthetics will be greatly improved by the proposed development.

35. Indicate whether there will be an interference with or impairment of ambient conditions necessary for the enjoyment of the physical environment (i.e. Vibration, dust, odor, heat, glare, etc.)

There will be no interference with or impairment of ambient conditions necessary for the enjoyment of the physical environment.

36. Indicate whether the project area and environs contain any properties listed on the National Register of Historic Places or the city's inventory of historic structures

    The project area is not listed on the National Register of Historic Places or the City's inventory of historic structures.

37. Provide any information on the project area that the State Historic Preservation Office (SHPO) may have.

    This office is not aware of the subject property appearing on the state registered historic properties.

38. Indicate whether there will be other properties within the boundaries or in the vicinity of the project that appear to be historic and thus require consultation with the SHPO as to eligibility for the National Register

    None of the properties adjacent to the site appear historic.

39. Indicate whether the Department of the Interior has been requested to make a determination of eligibility on properties the SHPO or HDC deems eligible and affected by the project

    There is no indication that the Department of the Interior has been requested to make a determination of the historic value of the surrounding properties.

40. Provide proof that the HDC has been given an opportunity to comment on properties that are listed on or have been found eligible for the National Register and which would be affected by the project.

    N/A

REFUSE

41. Indicate whether the existing or planned solid waste disposal system will adequately service the proposed development including space for separation of recyclable materials.

    There will be a refuse area off the loading dock that will have adequate space for separation of recyclable materials. There will be trash/recycling enclosed chutes for the residents' use.

42. Indicate whether the design capacity of the existing or planned solid waste disposal system will be exceeded as a result of the project

    Solid waste generated from this development will be below normal and can be handled via standard practices by local waste management.

SANITARY SEWER

43. Indicate whether existing or planned wastewater systems will be able to adequately service the proposed development

    A public combined gravity sanitary sewer exists within the Woodward Ave. right-of-way and E. Maple right-of-way along the frontage of the proposed development. The proposed development will plan to utilize the sewer within the Woodward right-of-way for wastewater discharge. It is anticipated that the existing sanitary sewer will have the capacity to adequately service the proposed development. The proposed development anticipates a 8 inch service lead for the building that will connect to the existing sewer main in the right-of-way. The planned sewer service flow basis of design and capacity of the existing sewer will be reviewed and confirmed by the City Engineer prior to site plan approvals.

44. Indicate whether the design capacity of the facilities will be exceeded as a result of the project

    It is not anticipated that the design capacity of the existing sanitary sewer will be exceeded by the development. The planned sewer service flow basis of design and capacity of the existing sewer will be reviewed and confirmed by the City Engineer prior to final site plan approvals.

45. Indicate the elements of the project that have been incorporated to reduce the amount of water entering the sewer system (such as low flush toilets, Energy Star appliances, restricted flow faucets, greywater recycling etc.)

    Reducing the amount of water entering the sewer system will be done in several ways. The plumbing fixtures used may include low-flow toilets and restricted flow faucets and/or shower heads. These elements reduce the amount of water used, and, in turn, discharged into the sewer system. The building design will also incorporate vegetation on amenities decks and/or terraces which will reduce the amount of rainwater that is collected and enters the sewer system.

STORM SEWER

46. Indicate whether existing or planned storm water disposal and treatment systems will adequately serve the proposed development

    A public combined gravity storm sewer exists within the Woodward Ave. right-of-way and E. Maple right-of-way along the frontage of the proposed development. The proposed development will plan to utilize the sewer within the Woodward Ave. right-of-way for the rooftop stormwater discharge. The proposed development anticipates a 12-inch lead from the building that will connect to the existing sewer. The planned storm sewer service flow basis of design and capacity of the existing storm sewer will be reviewed and confirmed by the City Engineer prior to the site plan approvals.

47. Indicate whether the design capacity of the facilities will be exceeded as a result of the project

    No additional runoff will be directed to drain to the municipal storm sewer system. It is not anticipated that the design capacity of the existing municipal storm sewer systems in the area will be exceeded or adversely affected by the runoff from the proposed development. The proposed pipe conveyance system will be designed to handle a 10-year design frequency storm in accordance with City standards.

48. Indicate the elements of the project that have been incorporated to reduce the amount of storm water entering the sewer system (such as the use of pervious concrete, rain gardens, greywater recycling, green pavers etc.)

    The amount of impervious area will remain nearly the same due to the building land coverage.

WATER SERVICE

49. Indicate whether either the municipal water utility or on-site water supply system is adequate to serve the proposed project

    A Public 12-inch water main exists within the Woodward Avenue right-of-way and a 6-inch water main exists along the Maple Road right-of-way along the frontage of the proposed development. It is anticipated that these existing water main(s) will have the capacity to adequately service the proposed development. The proposed development currently anticipates a proposed 4" domestic service line and a 6" fire suppression line for the building that will connect to the existing water main within the right-of-way. The planned water usage design and capacity of the existing water main will be reviewed and confirmed by the City Engineer prior to site plan approvals.

50. Indicate whether the water quality is safe from both a chemical and bacteriologist standpoint

    Birmingham's Annual Water Quality Report indicates the City's public water supply surpasses the EPA and MDEQ water quality standards, and is safe from a chemical and biological standpoint.

    The proposed water main will be field tested from both a chemical and bacteriological standpoint, in accordance with State and City standards, prior to making the connections to the existing water network and placing the proposed water main in service.

51. Indicate whether intended location of the service will be compatible with the location and elevation of the main

    The water service connection will be designed in accordance with City standards to be compatible with the location and elevation of the public water main.

PUBLIC SAFETY

52. Whether or not the project location provides adequate access to police, fire and emergency medical services

    The proposed development offers direct access for emergency personnel from multiple access points (Woodward Avenue, Maple Road and the Public Alley).

53. Whether or not the proposed project design provides easy access for emergency vehicles and individuals (ie. Are there obstacles to access, such as one-way roads, narrow bridges etc.)

    Woodward Avenue and Maple Road provide easy access for emergency vehicles and individuals.

54. Whether or not there are any plans for a security system which can be expanded, and whether approval for same has been granted by the police department.

    There are plans for a security system.

55. Detailed description of all fire access to the building, site, fire hydrants and water connections

    Fire access to both the proposed building and site will be provided via existing R.O.W.s surrounding the parcel. Access off of Maple Street, Woodward Avenue & ROW Parking, and the Public Alley provide fire access on the North, West, and South side of the site. Existing fire hydrants are noted in the ALTA Land Survey, reference Drawing 1 in the Civil Package (Appendix 4.10). For water connections, reference items #21 and #49 of this document.

56. Whether or not there are plans for adherence to all city and N.F.P.A. fire codes

    All code requirements will be met.

57. Proof that one elevator has been designed to accommodate a medical cart

    The proposed building will have multiple elevators and at least one that will accommodate a medical cart if required by code.

58. Detailed specifications on all fire lanes/parking lot surfaces/alleys/streets to demonstrate the ability to accommodate the weight of emergency/ fire vehicles

    No new surface drives, streets, or parking lots are being proposed on site. Any R.O.W. disturbances will be replaced per details on drawing P-5.0 in the Civil Package (Appendix 4.10).

59. Detailed description of all fire suppression systems

    The fire suppression system has not yet been designed; however, it will meet all applicable City and National (NFPA) codes. The entire building will be fully sprinklered per NFPA 13 and include a fire pump with alternate power source.

TRANSPORTATION ISSUES

60. Provide completed FORM A-Transportation Study Questionnaire (Abbreviated)

    Refer to the Traffic Impact Study by Rowe Professional Services in Appendix 4.5.

61. Provide completed FORM B- Transportation Study Questionnaire if required by the city's transportation consultant

    Refer to the Traffic Impact Study by Rowe Professional Services in Appendix 4.5.

62. Indicate whether transportation facilities and services will be adequate to meet the needs of all users (i.e. access to public transportation bicycle accommodations, pedestrian connections, disabled, elderly etc.)

    The transportation facilities available to the site (SMART bus service, shuttle bus service, pedestrian connections, bicycle facilities) will be adequate to serve the needs of the residents and staff. The SMART bus stop located on Maple Road which will be maintained and/or relocated as necessary. The project will include a bike storage room with racks as well as a code minimum handicap car stalls. The project will adhere to all ADA requirements.

63. Indicate how the project will improve the mobility of all groups by providing transportation choices

    The proposed development can be easily accessed on two street fronts by vehicle, bicycle, or pedestrian traffic.

64. Indicate how the users of the building will be encouraged to use the public transit and non-motorized forms of transportation

    There is a SMART bus stop on site. Applicant is working with the City and SMART on a potential relocation and upgrade to this bus stop to encourage public transportation and improve the existing features of the site related to public transport. The new sidewalks and streetscape elements are designed for pedestrian connectivity.

65. Indicate the elements that have been incorporated into the site and surrounding right of way to encourage mode shift away from private vehicle trips

    There is a SMART bus stop on site. The building will have a bike room with racks for residents. The site is walkable to downtown Birmingham.

66. Indicate the elements of the project that have been provided to improve the comfort and safety cyclists (such as secured or covered bicycle parking, lockers, bike lanes/paths, bicycle share program etc.)

    New bike racks will be added at the existing streetscape around the project development. In addition to illumination along walks and entries for safety and security. Bike racks are provided inside the building as well.

67. Indicate the elements of the project that have been provided to improve the comfort and safety of pedestrians (such as wheelchair ramps, crosswalk markings, pedestrian activated signal lights, bulb out, benches, landscaping, lighting etc.)

    There are markings on crosswalks. In addition, there are streetlights, benches, and landscape located along the sidewalks. Building entrances would be at grade.

68. Indicate the elements of the project that have been provided to encourage the use of sustainable transportation modes (such as receptacles for electric vehicle charging, parking for scooters/smart cars etc.)

    There will be electric vehicle chargers in the parking structure. There will be a bike room with racks in the development. In addition, the site is walkable from the surrounding areas.

NATURAL FEATURES

69. Indicate whether there any visual indicators of pond and/or stream water quality problems on or near the site

    No water quality issues are known to exist.

70. Indicate whether the project will invoke any increase in impervious surface area and, if So, indicate the runoff control measures that will be undertaken.

    The project proposes to keep similar impervious areas of the existing site. There are currently no stormwater detention improvements on the property. The new development will meet the current stormwater requirements for the City of Birmingham.

71. Indicate whether the project will affect surface water flows or water levels of ponds or other water bodies

    Effects to the surface water levels of water bodies in the area are not anticipated.

72. Indicate whether the project may affect or be affected by a wetland, flood plain, or floodway

    There are no wetland, floodplain, or floodway on subject parcels. The property lies within Zone X of the Flood Insurance Rate Map identified as Map No. 26125C0537F bearing an effective 9/29/2006.

73. Indicate whether the project location or construction will adversely impact unique natural features on or near the site

    It is not anticipated that the project location or construction will adversely impact unique natural features on or near the site. It is the intent to enhance the site through the proposed development.

74. Indicate whether the project will either destroy or isolate a unique natural feature from public access

It is not anticipated the development will destroy or isolate any unique natural feature from public access.

75. Indicate whether any unique natural feature will pose safety hazards for the proposed development

    It is not anticipated that any existing natural feature will pose safety hazards for the proposed development.

76. Indicate whether the project will damage or destroy existing wildlife habitats

    The existing site is urban land and it is not anticipated that the proposed project will destroy any existing wildlife or habitats.

OTHER INFORMATION

77. Any other information as may reasonably be required by the city to assure an adequate analysis of all existing and proposed site features and conditions

    Our team will provide any additional information that the city requests during the site plan review process.

PROFESSIONAL QUALIFICATIONS

The preparer(s) of the CIS must indicate their professional qualifications, which must include registration in the state of Michigan in their profession where licensing is a state requirement for the practice of the profession (i.e. engineer, surveyor, architect etc.). Where the state does not require licensing (i.e. planner, urban designer, economist etc.), the preparer must demonstrate acceptable credentials including, but not limited to, membership in professional societies, university degrees, documentation illustrating professional experience in preparing CIS related materials for similar projects.

Preparer: Brett Bunke, AIA. State of Michigan Architectural Registration no.1301071979

Section 4

Appendix

Ryan Companies US, Inc.

4.1 Proof of Ownership
4.2 Ryan A+E Site Plans & Drawings
4.3 Zoning Analysis
4.4 Noise Impact Study
4.5 Transportation Impact Study
4.6 Phase 1 Environmental Assessment
4.7 Geotechnical Report
4.8 Air Quality Report
4.9 Construction Phasing Plan
4.10 Civil Package

Section 4.1

Proof of Ownership

Ryan Companies US, Inc.

OAKLAND COUNTY TREASURER'S CERTIFICATE
THIS PARCEL HAS BEEN PAID ALL TAXES AND SPECIAL ASSESSMENTS PREVIOUS TO THE ... OF TITLES

ANDREW E. WEISHER, County Treasurer
Sec. 135, Act 206, 1893 as amended

74291
LIBER 44045 PAGE 143
$19.00 DEED - COMBINED
$4.00 REMONUMENTATION
04/11/2012 02:11:12 P.M. RECEIPT# 33628
PAID RECORDED - OAKLAND COUNTY
BILL BULLARD JR, CLERK/REGISTER OF DEEDS

2011 ... EXAMINER

COVENANT DEED

THIS COVENANT DEED IS MADE THIS 27th day of March, 2012, by

GRANTOR: TCF National Bank, a national banking association, whose address is 17440 College Parkway, Livonia, Michigan 48152, who

CONVEYS, GRANTS, TRANSFERS AND SELLS TO

GRANTEE: Maryko Hospitality, LLC, a Michigan limited liability company, whose address is 30500 Northwestern Highway, Suite 525, Farmington Hills, Michigan 48334

THE FOLLOWING DESCRIBED PROPERTY:

The premises situated in the City of Birmingham, County of Oakland, State of Michigan described more particularly in Exhibit "A" attached hereto (the "Property").

subject to zoning ordinances and other applicable governmental statutes, ordinances, rules and regulations pertaining to the Property, matters that would be disclosed by an accurate survey and the matters set forth in attached Exhibit "B" (collectively, the Permitted Encumbrances").

CONSIDERATION: As set forth in the Real Estate Transfer Tax Validation Affidavit filed simultaneously herewith.

Grantor does hereby bind itself and its successors to warrant and forever defend all and singular the Property unto Grantee, Grantee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same, or any part thereof, by through or under the acts of Grantor, but not otherwise. Grantor does hereby covenant that Grantor has not done, committed or willingly suffered to be done or committed, any act, matter or thing whatsoever whereby the Property is or shall be charged or encumbered except for the Permitted Encumbrances.

HP 2 Icek

(SIGNATURES CONTAINED ON FOLLOWING PAGE)

RECEIVED OAKLAND COUNTY REGISTER OF DEEDS 2012 APR -4 AM 10:49

56/461-BH

OK-MH

2012 APR 11 AM 10:27 RECEIVED OAKLAND COUNTY REGISTER OF DEEDS

METROPOLITAN

DOCS-#1206787-v1-covenant_deed_-_maryko.DOC 06241/0144

[THIS IS THE SIGNATURE PAGE TO THE DEED]

TCF NATIONAL BANK,
a national banking association

By: _____
Greg A. Stricker
Its: Vice President

STATE OF MICHIGAN)
) §
COUNTY OF OAKLAND)

On this 27th day of March, 2012, before me a Notary Public, personally appeared Greg A. Stricker, the Vice President of TCF National Bank, a national banking association, on behalf of said Bank.

MARCIA A. LAWLESS
NOTARY PUBLIC, STATE OF MI.
COUNTY OF MACOMB
MY COMMISSION EXPIRES Jul 15, 2012
ACTING IN COUNTY OF
Oakland

_____
Notary Public
_____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

Drafted by:

Kasturi Bagchi, Esq.
Maddin, Hauser, Wartell, Roth & Heller, P.C.
28400 Northwestern Highway, 3rd Floor
Southfield, MI 48034
(248) 354-4030

When recorded, return to:

GRANTEE

Send subsequent tax bills to: GRANTEE

County Transfer Tax: Real Estate Transfers Tax Valuation Affidavit being filed simultaneously.

State Transfer Tax: Real Estate Transfers Tax Valuation Affidavit being filed simultaneously.

Tax Item No.: 19-36-226-002

EXHIBIT A

COVENANT DEED

The land referred to herein, situated in the County of Oakland, City of Birmingham, State of Michigan, as described as follows:

Lots 6 and 7, and part of Lots 2, 4 and 5, ASSESSOR'S PLAT NO. 3, according to the recorded plat thereof, as recorded in Liber 46 of Plats, Page 29, Oakland County Records, and part of vacated High Street, all being more fully described as follows: Beginning at a point at the intersection of the East line of Hunter Boulevard and the South line of Maple Road as originally established; thence in a Southeasterly direction along the East line of Hunter Boulevard 310.08 feet to a point on the South line of Lot 4; thence Easterly along the South line of Lots 4 and 7, 149.28 feet to the Southeast corner of Lot 7; thence Northerly along the Easterly line of Lot 7, 297 feet to a point; thence Westerly in a straight line along the Northerly line of Lots 7, 6, 5 and 2, 237.63 feet to the point of beginning, excepting therefrom the North 17 feet of Lots 2, 5 and 6 and vacated High Street as set forth in Liber 2266, page 205, Oakland County Records.

EASEMENT PARCEL:

Easement as created, limited, and defined in Perpetual Mutual Parking easement recorded in Liber 8106, page 872, over the following described parcel:

Lot 8, excepting therefrom the South 98.8 feet, ASSESSOR'S PLAT NO. 3, according to the plat thereof recorded in Liber 46 of Plats, page 29, Oakland County Records.

ALSO KNOWN AS: Lot 7, part of Lots 2, 4, 5, 6 and part of vacated High Street, ASSESSOR'S PLAT NO. 3, according to the plat thereof recorded in Liber 46 of Plats, page 29, Oakland County Records, described as: Beginning at the Northeast corner of said Lot 7; thence South 00 degrees 35 minutes 00 seconds West, along the East line of said Lot 7 a distance of 297.00 feet; thence North 88 degrees 41 minutes 00 seconds West, 149.28 feet to the Easterly line of 204-foot-wide Woodward Avenue; thence North 15 degrees 58 minutes 18 seconds West along said Easterly line 292.30 feet to the South line of 83-foot-wide Maple Road; thence South 88 degrees 54 minutes 05 seconds East along said South line 166.56 feet to the West line of said Lot 7; thence North 00 degrees 35 minutes 00 seconds East along said West line 17.00 feet to the South line of 66-foot-wide Maple Road; thence South 88 degrees 54 minutes 05 seconds East, along said South line 66.00 feet to the point of beginning.

EASEMENT PARCEL:

Easement as created, limited, and defined in Perpetual Mutual Parking Easement recorded in Liber 8106, page 872, over the following described parcel:

Lot 8, excepting therefrom the South 98.8 feet, ASSESSOR'S PLAT NO. 3, according to the plat thereof recorded in Liber 46 of Plats, page 29, Oakland County Records.

Tax Item No. 19-36-226-002 - lots 2, 4, 5, 6, 7 only

Commonly known as: 34952 Woodward, Birmingham

EXHIBIT B

PERMITTED ENCUMBRANCES

1. Terms and Conditions contained in Agreement to connect storm water drainage as disclosed by instrument recorded in Liber 4428, page 44, Oakland County Records.

2. Terms and Conditions contained in Perpetual Mutual Parking Easement as disclosed by instrument recorded in Liber 8106, page 872, Oakland County Records.

3. Unrecorded Second Amended and Restated License Agreement between City of Birmingham and Empire Express Associates Limited Partnership dated July 12, 1999.

4. Taxes and assessments that are a lien but are not yet due or payable.

LIBER 46996 PAGE 87

0081961

OAKLAND COUNTY TREASURERS CERTIFICATE
I HEREBY CERTIFY that there are no TAX LIENS or TITLES held by the state or any individual against the within description and all TAXES on same are paid for five years previous to the date of this instrument as appears by the records in the office except as stated.

Apr 30, 2014

1.00 E-FILE

Sec. 135, Act 206, 1893 as amended
ANDREW E. MEISNER, County Treasurer

LIBER 46996 PAGE 87
$16.00 DEED - COMBINED
$4.00 REMONUMENTATION
$11,008.00 TRANSFER TX COMBINED
04/30/2014 01:02:32 PM RECEIPT# 39984
PAID RECORDED - Oakland County, MI
Lisa Brown, Clerk/Register of Deeds

STATE OF MICHIGAN REAL ESTATE TRANSFER TAX

OAKLAND
04/30/2014
39984

$1,408.00 CO
$9,600.00 ST
000924707

WARRANTY DEED

Corporate(Platted/Condominium)

Drafted By	**Return To**	**Send Tax Bills To**
Douglas A Troszak, General Manager Troszak Real Estate Ventures One, LLC 690 E Maple Road Birmingham, MI 48009	Maryko Hospitality, LLC 30500 Northwestern Highway, Suite 525 Farmington Hills, MI 48334	Maryko Hospitality, LLC 30500 Northwestern Highway, Suite 525 Farmington Hills, MI 48334

Recording Fee $	State Transfer Tax	$9,600 00	Tax Parcel No 19 36 226 003
File Number 636375 BH	County Transfer Tax	$1,408 00	

Know All Persons by These Presents That **Troszak Real Estate Ventures One, LLC, a Michigan limited liability company, a/k/a Troszak Real Estate Ventures I, LLC, a Michigan limited liability company** whose address is 690 E Maple Road, Birmingham, MI 48009

Convey(s) and Warrant(s) to **Maryko Hospitality, LLC, a Michigan limited liability company** whose address is 30500 Northwestern Highway, Suite 525, Farmington Hills, MI 48334

the following described premises situated in the City of **Birmingham**, County of **Oakland**, State of Michigan, to wit

(SEE ATTACHED EXHIBIT A)

More commonly known as **690 E Maple Road, Birmingham, MI**

For the full consideration of **one million two hundred eighty thousand** Dollars ($1,280,000 00)

Subject To

Existing building and use restrictions, easements of record, and zoning ordinances, if any

RECEIVED
OAKLAND COUNTY
REGISTER OF DEEDS
APR 28 AM 8 52

First American Title Insurance Company

OK - LB

First American Title

***(Attached to and becoming a part of Warranty Deed dated April 17, 2014** between Troszak Real Estate Ventures One, LLC, a Michigan limited liability company, a/k/a Troszak Real Estate Ventures I, LLC, a Michigan limited liability company, as Seller(s) and Maryko Hospitality, LLC, a Michigan limited liability company, as Purchaser(s))*

Dated this April 17, 2014

Seller(s)

Troszak Real Estate Ventures One LLC a Michigan limited liability company a/k/a Troszak Real Estate Ventures I LLC a Michigan limited liability company

By Douglas A Troszak General Manager

State of Michigan
County of Oakland

The foregoing instrument was acknowledged before me this April 17, 2014 by Douglas A Troszak, General Manager of Troszak Real Estate Ventures One, LLC, a Michigan limited liability company, a/k/a Troszak Real Estate Ventures I, LLC, a Michigan limited liability company.

Notary Public Patty A. Flinchum
Notary County/State / Wayne MI
County Acting In Oakland
Commission Expires 2/10/18

***(Attached to and becoming a part of Warranty Deed dated April 17, 2014** between Troszak Real Estate Ventures One, LLC, a Michigan limited liability company, a/k/a Troszak Real Estate Ventures I, LLC, a Michigan limited liability company, as Seller(s) and Maryko Hospitality, LLC, a Michigan limited liability company, as Purchaser(s))*

EXHIBIT A

Land situated in the City of Birmingham, County of Oakland, State of Michigan, described as follows

Parcel 1

Lot 8, EXCEPT the South 98 8 feet, ASSESSOR S PLAT NO 3, according to the plat thereof recorded in Liber 46 of Plats, page 29, Oakland County Records

Tax Item No 19 36 226 003

EASEMENT PARCEL

Easement(s) as created, limited and defined in that certain Perpetual Mutual Parking Easement recorded in Liber 8106, page 872

Tax Parcel Number 19 36-226 003

Section 4.2

Ryan A+E Site Plans & Drawings

Ryan Companies US, Inc.

WE
BUILD
STORIES

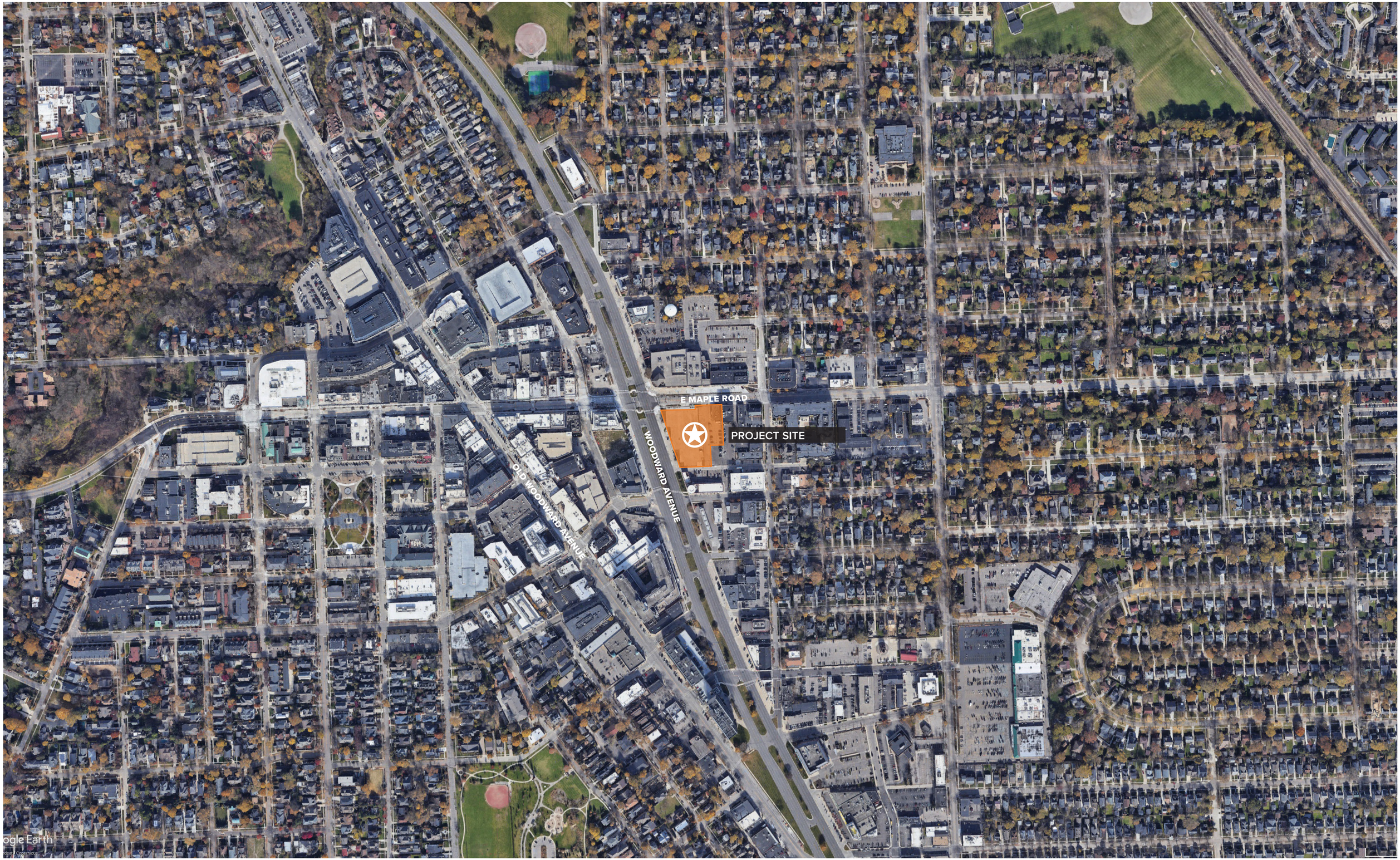
RYAN

PRELIMINARY SITE PLAN APPLICATION

BIRMINGHAM MIXED-USE DEVELOPMENT

WOODWARD AVENUE & MAPLE ROAD
BIRMINGHAM, MICHIGAN

FEBRUARY 3, 2023



RYAN

Property Location

Birmingham Mixed-Use Development · Preliminary Site Plan · Woodward Avenue & Maple Road

February 3, 2023

NORTH

RYAN

PROPERTY LOCATION - DETAILED

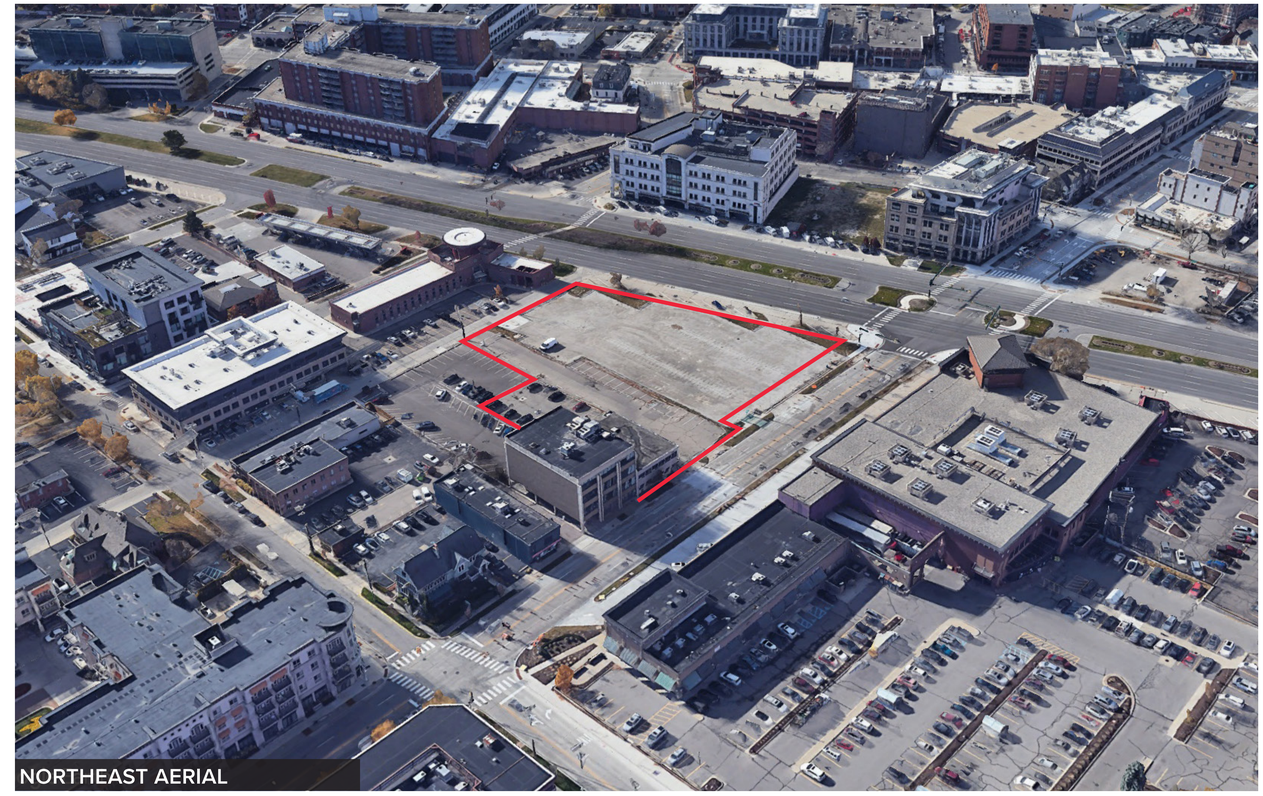
BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1"= 50' 50' 100'

NORTH

NORTHWEST AERIAL


NORTHEAST AERIAL

SOUTHWEST AERIAL

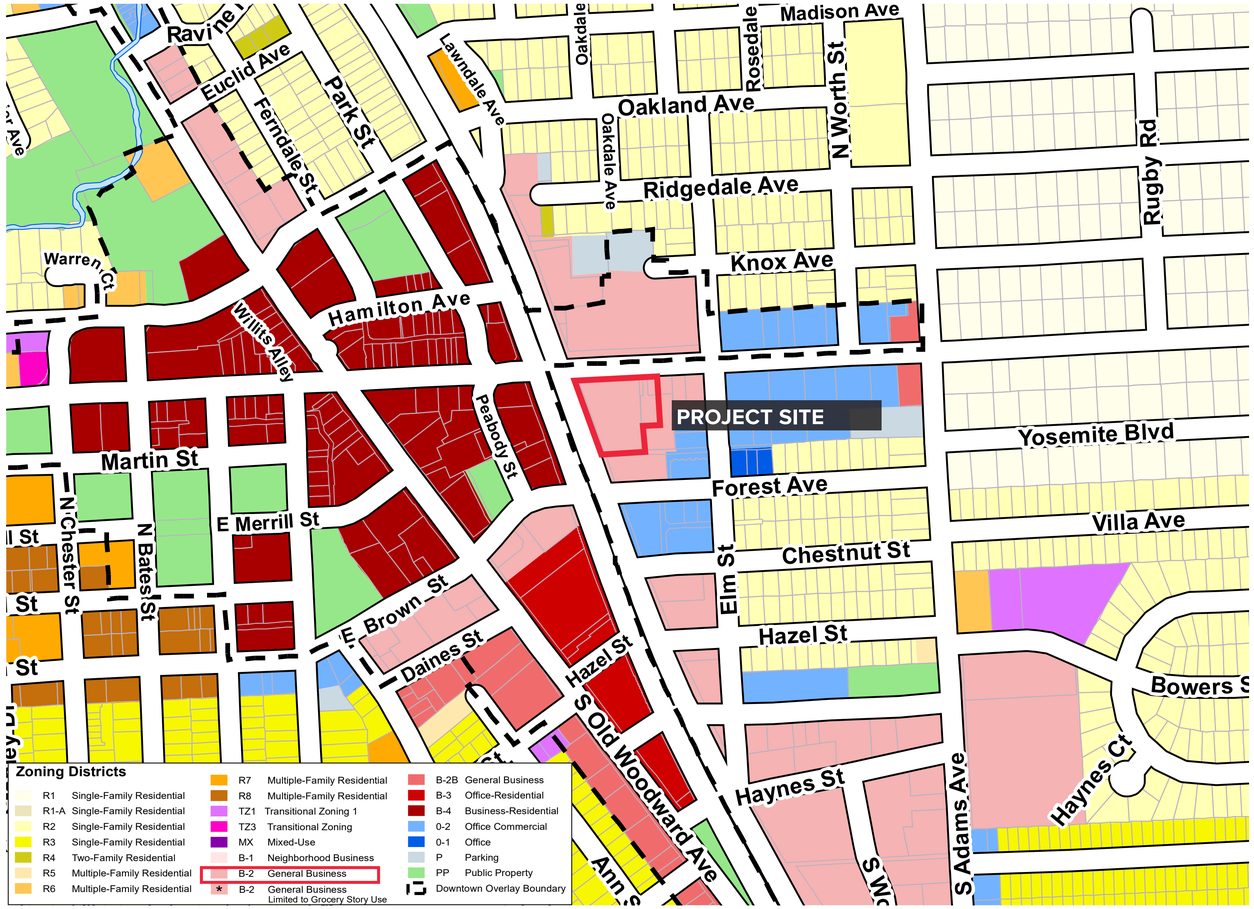
SOUTHEAST AERIAL

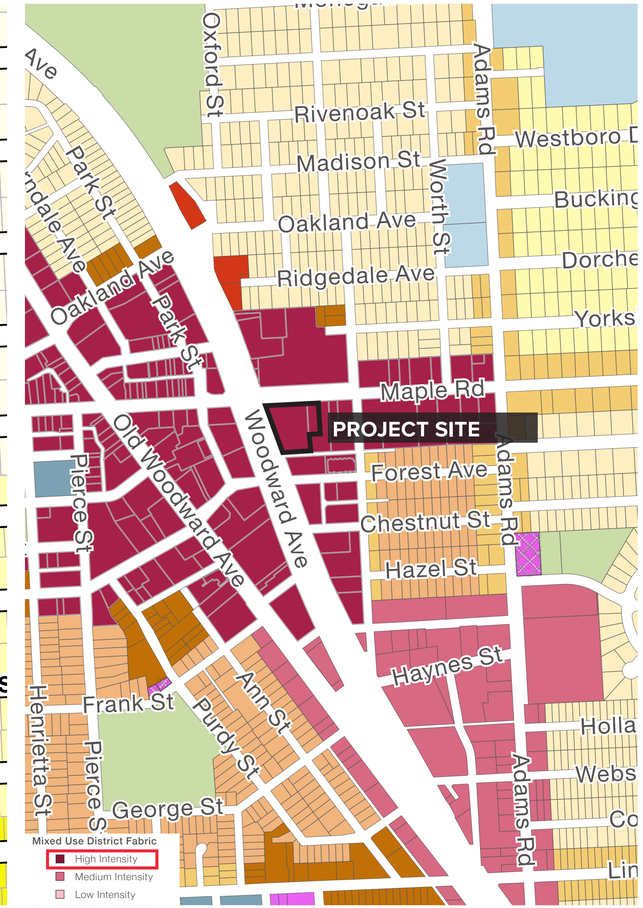
NORTHWEST CORNER

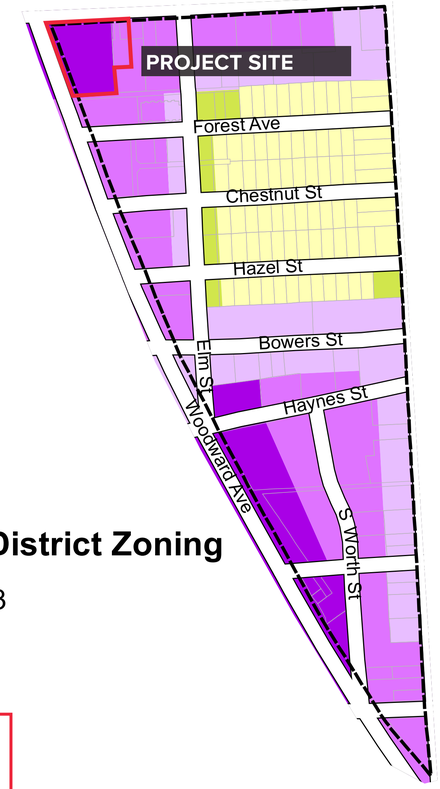
NORTHEAST CORNER

SOUTHWEST CORNER

SOUTHEAST CORNER







Triangle District Zoning

- ASF-3
- R2
- MU-3
- MU-5
- MU-7

ZONING INFORMATION

ZONED B-2, GENERAL BUSINESS

USES

DWELLING - MULTIPLE-FAMILY:	PERMITTED
GENERAL RETAIL:	PERMITTED
GARAGE - PUBLIC:	PERMITTED

DISTRICT DEVELOPMENT STANDARDS

MIN. LOT AREA	= 1,280 SF
MIN. OPEN SPACE	= N/A
MIN. LOT COVERAGE	= N/A
SETBACKS	
MIN. FRONT YARD	= ~~5'~~ **SEE TRIANGLE DISTRICT**
MIN. REAR YARD	= ~~10'~~ **SEE TRIANGLE DISTRICT**
MIN. SIDE YARD	= ~~0'~~ **SEE TRIANGLE DISTRICT**
MIN. FLOOR AREA PER UNIT	
EFFICIENCY, 1 BEDS	= 600 SF/UNIT
2 BEDS+	= 800 SF/UNIT
MAX TOTAL FLOOR AREA	= N/A FOR RESIDENTIAL/PARKING USES
MAX BUILDING HEIGHT	= ~~40', 3 STORIES~~ **SEE TRIANGLE DISTRICT**

PARKING REQUIREMENTS

2 OR LESS ROOM UNIT	= 1 STALL / UNIT
3 OR MORE ROOM UNIT	= 1.25 STALLS / UNIT
EATING ESTABLISHMENT *(INDOOR+OUTDOOR)*	= 1 STALL / 75 SF
RETAIL STORE	= 1 STALL / 300 SF

LOADING REQUIREMENTS (40' X 12' X 14'H)

COMMERCIAL *(5,0001 - 20,000SF)*	= 1 STALL

DESIGN REQUIREMENTS

STOREFRONT: NO LESS THAN 70% OF A STOREFRONT/GROUNDFLOOR FAÇADE BETWEEN 1 AND 8 FEET ABOVE GRADE SHALL BE CLEAR GLAZING. MIRRORED GLASS IS PROHIBITED. WINDOWS SHALL NOT BE BLOCKED WITH OPAQUE MATERIALS OR THE BACK OF SHELVING UNITS OR SIGNS.

BLANK WALLS: BLANK WALLS OF LONGER THAN 20 FEET ON THE GROUND FLOOR FAÇADE SHALL NOT FACE A PLAZA, PARK, PARKING AREA OR PUBLIC STREET.

UPPER STORY WINDOWS: OPENINGS ABOVE THE FIRST STORY SHALL BE A MAXIMUM OF 50% OF THE TOTAL FAÇADE AREA. UPPER STORY WINDOWS FACING A FRONTAGE LINE SHALL BE CLEAR GLAZING. WINDOWS SHALL BE VERTICAL IN PROPORTION. MIRRORED GLASS IS PROHIBITED.

BIRMINGHAM PLAN 2040

DRAFT 11/05/21

FUTURE LAND USE

MIXED-USE DISTRICT FABRIC - HIGH INTENSITY

CORRESPONDING ZONING DISTRICTS

- DOWNTOWN OVERLAY
- TRIANGLE OVERLAY
- MX: MIXEDUSE

MIXED-USE DISTRICT FABRIC

MAPLE AND WOODWARD IS A HIGH INTENSITY MIXED-USE DISTRICT WHICH INCLUDES ZONES AS DEFINED IN THE DOWNTOWN AND TRIANGLE DISTRICT OVERLAYS. ZONING MAY BE MODIFIED TO CREATE GREATER CONSISTENCY BETWEEN THESE OVERLAY DISTRICTS, BUT SHOULD GENERALLY RETAIN THE HEIGHTS AND USES AS DEFINED IN THOSE OVERLAYS. GROUND FLOOR COMMERCIAL USES ARE REQUIRED AS DEFINED BY THE RED LINE RETAIL STANDARDS.

TRIANGLE DISTRICT OVERLAY

ZONED MU-5 AND MU-7

3.06D: THE PROVISIONS OF THE TRIANGLE OVERLAY DISTRICT SHALL SPECIFICALLY SUPERSEDE THE FLOOR AREA RATIO, MAXIMUM HEIGHT, AND SETBACK REGULATIONS CONTAINED IN EACH TWO-PAGE LAYOUT IN ARTICLE 2 OF THE ZONING ORDINANCE

USES

DWELLING - MULTIPLE-FAMILY:	PERMITTED
RETAIL:	PERMITTED PER TABLE 3.07
PARKING - OFF-STREET:	ACCESSORY
FRONT YARD	= 0' MIN, 5' MAX
SIDE YARD	= 0' MIN, 10' MIN (WALLS W/ WINDOWS)
REAR YARD	= NA
FIRST FLOOR HEIGHT	= 14' MIN

MU-5

BUILDING HEIGHT	= 34' AND 3 STORIES MIN. = 66' AND 5 STORIES MAX.
ADDITIONAL HEIGHT	= 12' AND 1 STORY (MUST MEET 3.08E)

MU-7

BUILDING HEIGHT	= 34' AND 3 STORIES MIN. = 90' AND 7 STORIES MAX.
ADDITIONAL HEIGHT	= 24' AND 2 STORIES (MUST MEET 3.08E)

DESIGN REQUIREMENTS

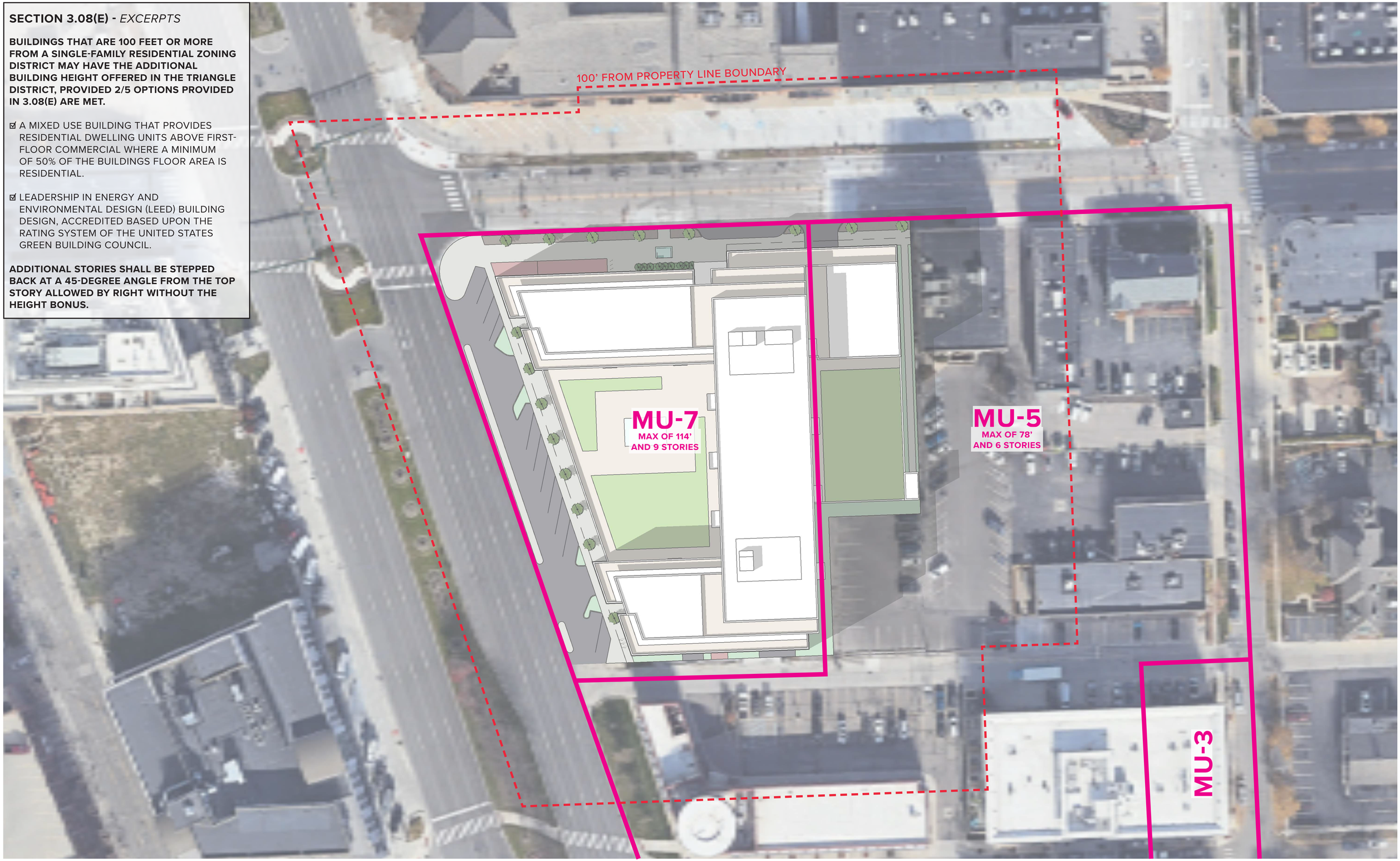
UPPER STORIES. OPENINGS ABOVE THE FIRST STORY SHALL BE A MAXIMUM OF 50% OF THE TOTAL FAÇADE AREA. WINDOWS SHALL BE VERTICAL IN PROPORTION. ALL WALLS EXPOSED TO PUBLIC VIEW FROM THE STREET, OR PARKING AREA SHALL BE CONSTRUCTED OF NOT LESS THAN 60% BRICK, STONE OR GLASS. PANEL BRICK AND TILT-UP BRICK TEXTURED PANELING SHALL NOT BE PERMITTED. THE REMAINING FAÇADE MAY INCLUDE WOOD SIDING OR FIBER CEMENT SIDING. EXTERIOR INSULATION FINISH SYSTEMS (EFIS) MAY BE USED FOR ARCHITECTURAL DETAILING ABOVE THE FIRST FLOOR.

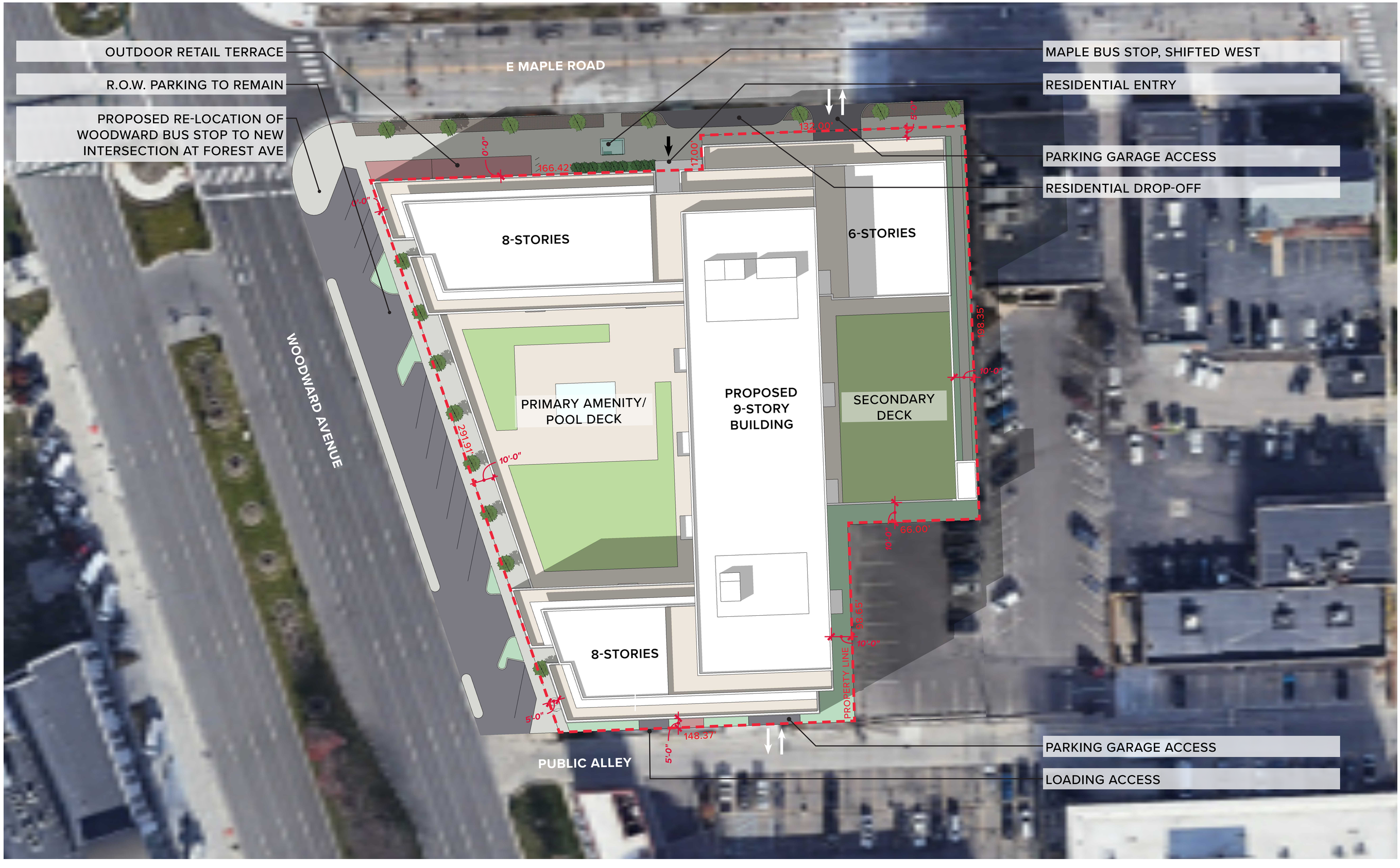
SECTION 3.08(E) - *EXCERPTS*

BUILDINGS THAT ARE 100 FEET OR MORE FROM A SINGLE-FAMILY RESIDENTIAL ZONING DISTRICT MAY HAVE THE ADDITIONAL BUILDING HEIGHT OFFERED IN THE TRIANGLE DISTRICT, PROVIDED 2/5 OPTIONS PROVIDED IN 3.08(E) ARE MET.

- ☑ A MIXED USE BUILDING THAT PROVIDES RESIDENTIAL DWELLING UNITS ABOVE FIRST-FLOOR COMMERCIAL WHERE A MINIMUM OF 50% OF THE BUILDINGS FLOOR AREA IS RESIDENTIAL.
- ☑ LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED) BUILDING DESIGN, ACCREDITED BASED UPON THE RATING SYSTEM OF THE UNITED STATES GREEN BUILDING COUNCIL.

ADDITIONAL STORIES SHALL BE STEPPED BACK AT A 45-DEGREE ANGLE FROM THE TOP STORY ALLOWED BY RIGHT WITHOUT THE HEIGHT BONUS.





RYAN

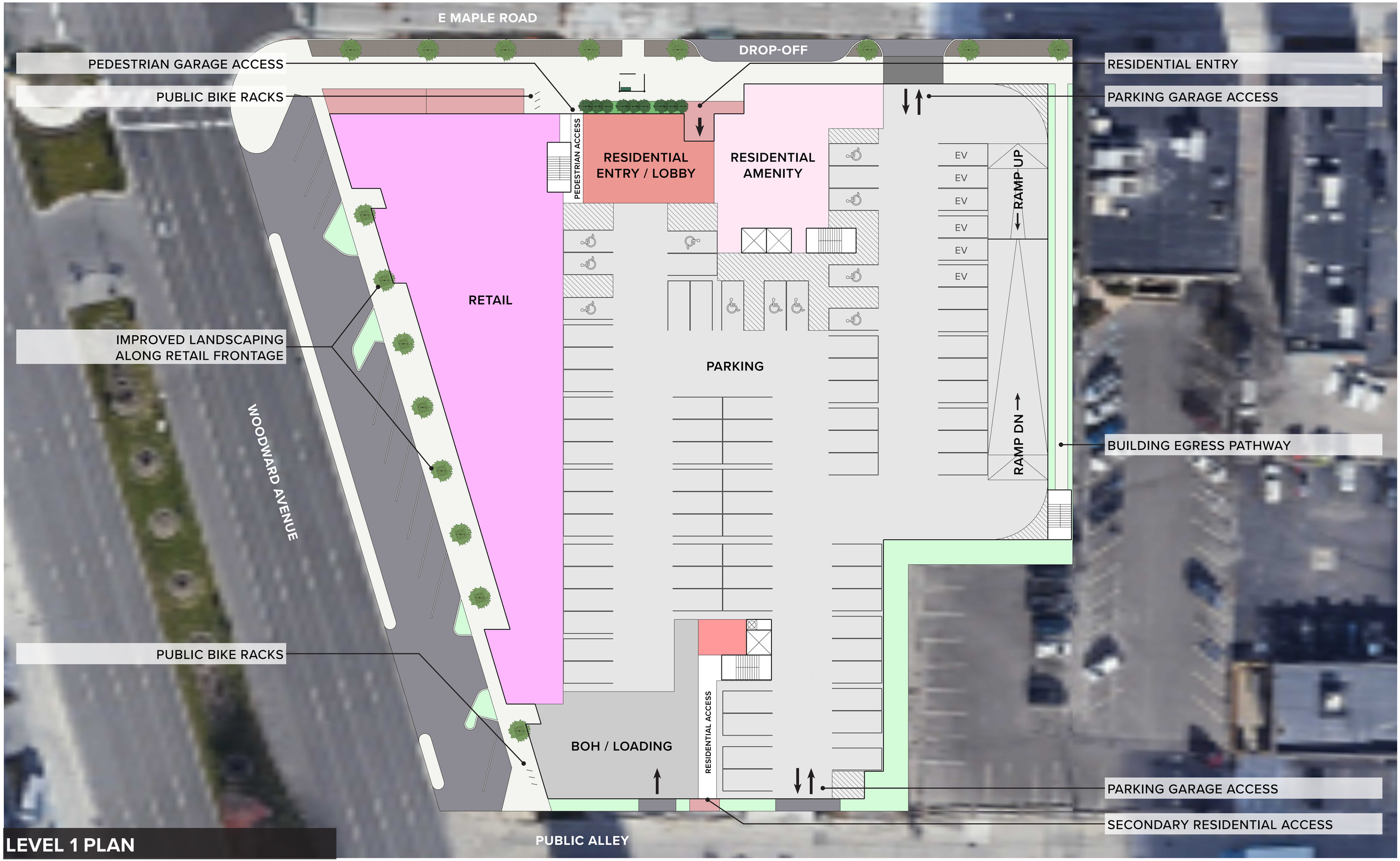
PRELIMINARY SITE PLAN

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1"= 20' 20' 40' 60'

NORTH



LEVEL 1 PLAN

RYAN

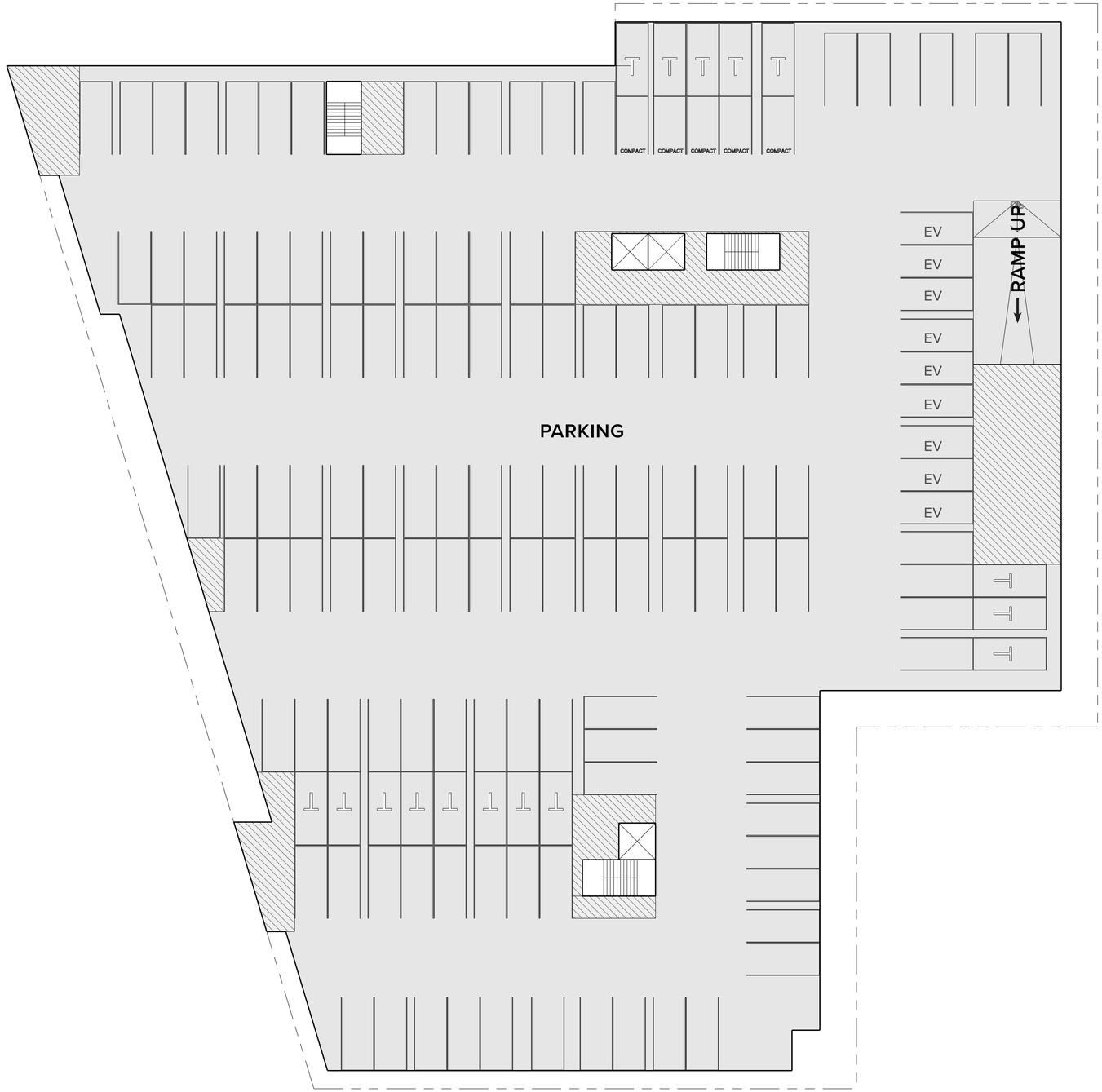
CONCEPT FLOOR PLANS

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

NORTH



LOWER LEVEL PLAN

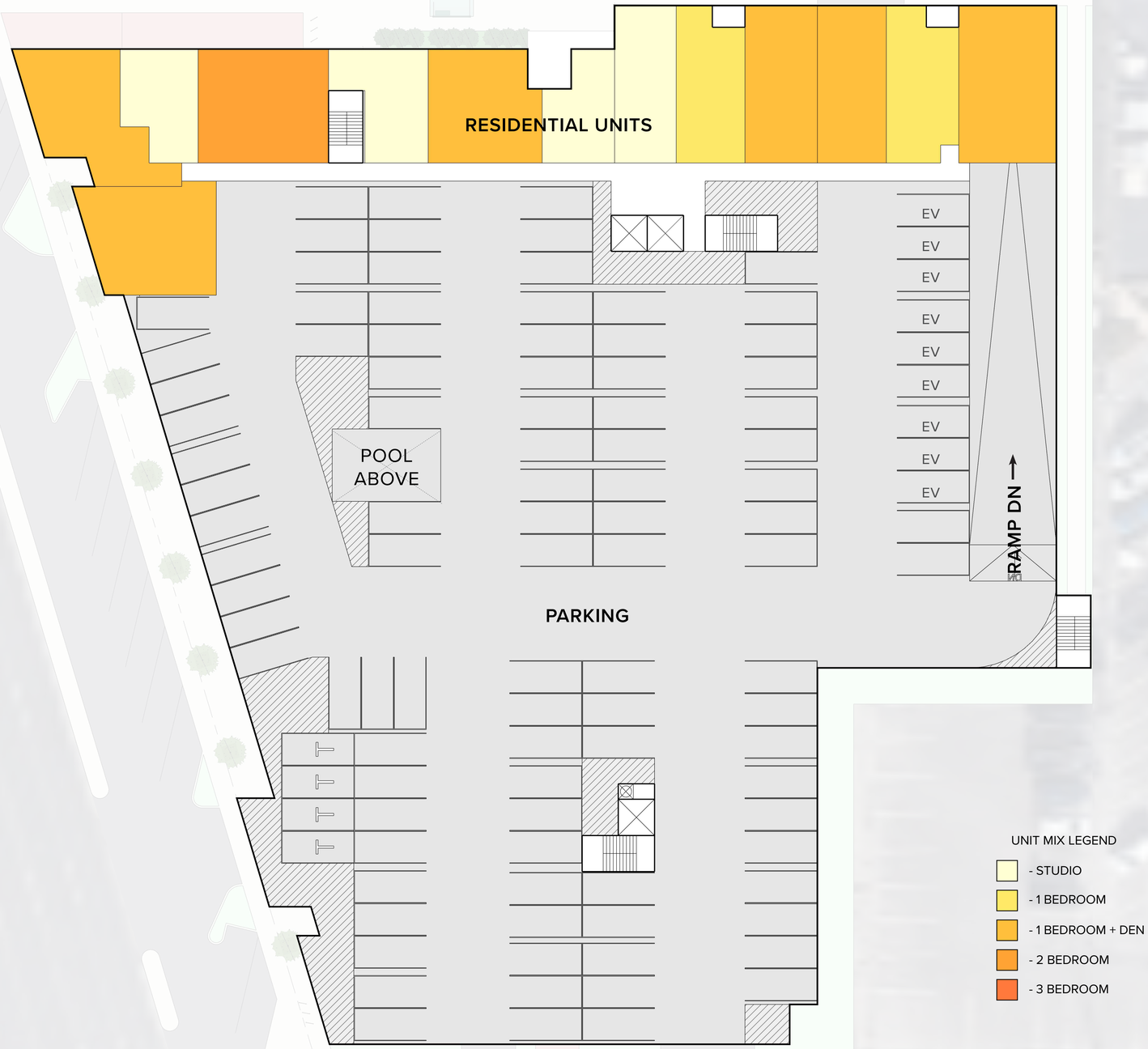
RYAN

CONCEPT FLOOR PLANS

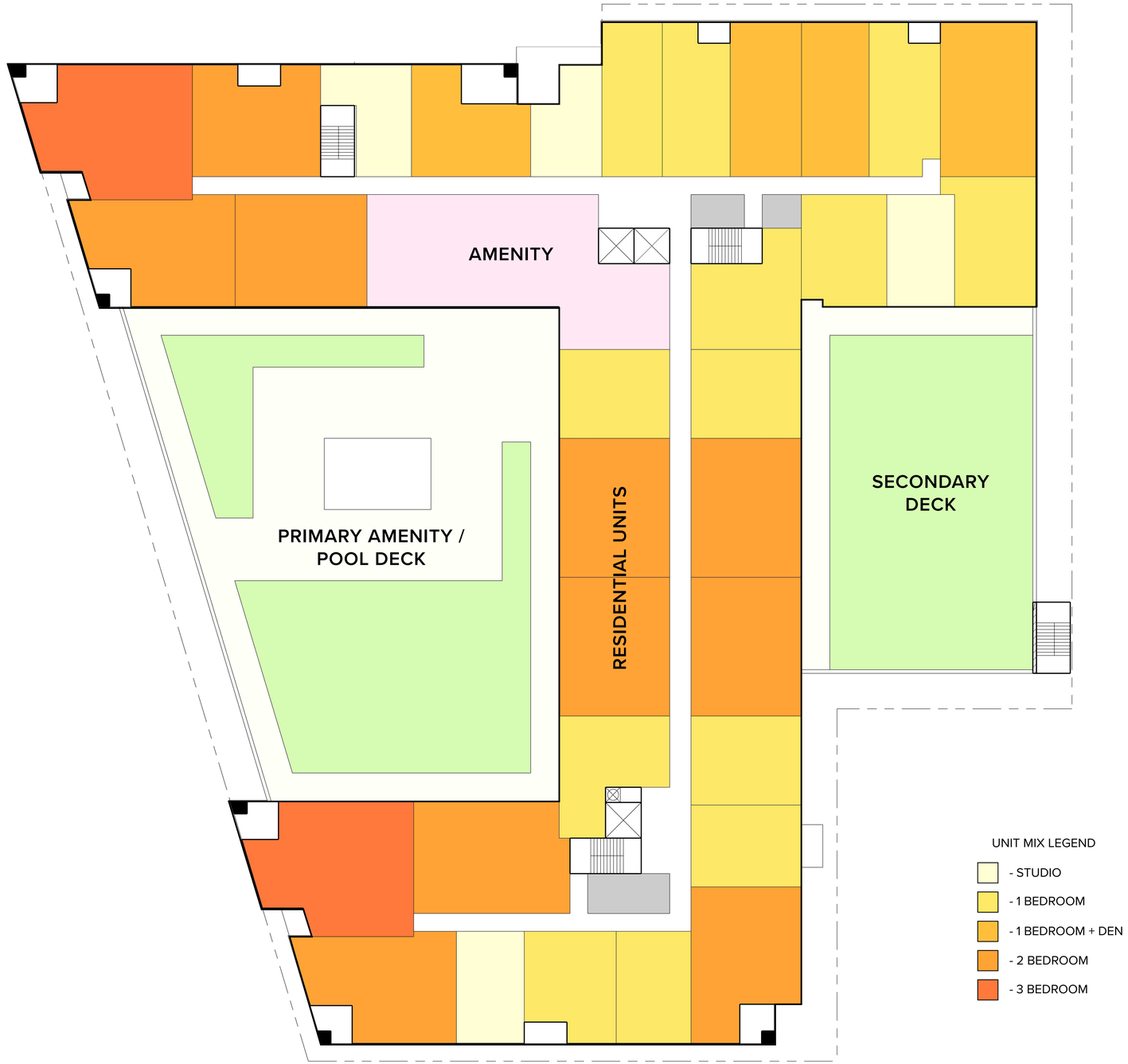
BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1/16"= 1'-0"
16' 32' 48'
NORTH


RESIDENTIAL UNITS
EV
EV
EV
EV
EV
EV
EV
EV
EV
EV
RAMP DN
POOL
ABOVE
PARKING
UNIT MIX LEGEND
- STUDIO
- 1 BEDROOM
- 1 BEDROOM + DEN
- 2 BEDROOM
- 3 BEDROOM

LEVEL 2 PLAN



LEVEL 3 PLAN

RYAN

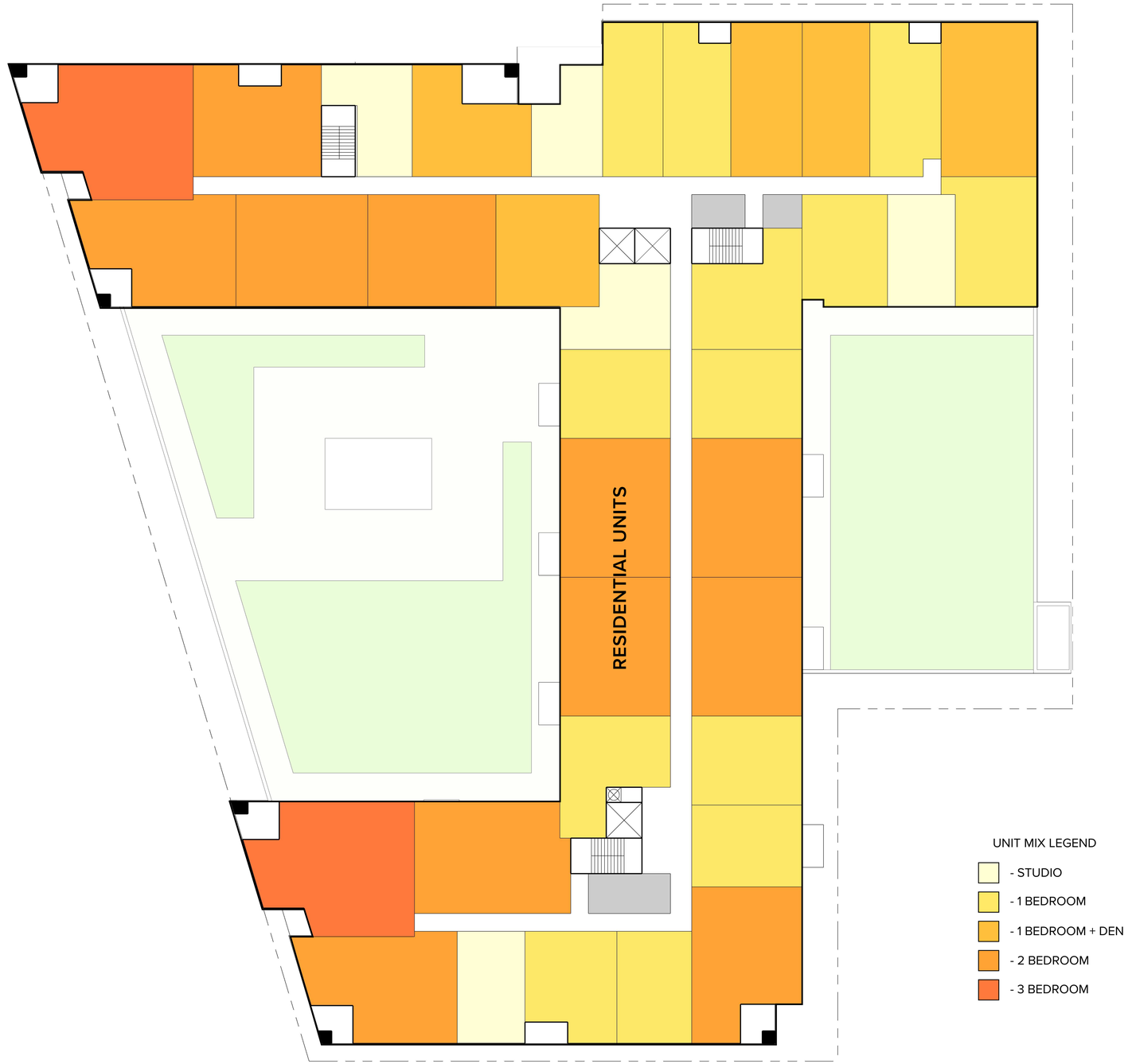
CONCEPT FLOOR PLANS

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

NORTH



LEVELS 4-5 PLAN

RYAN

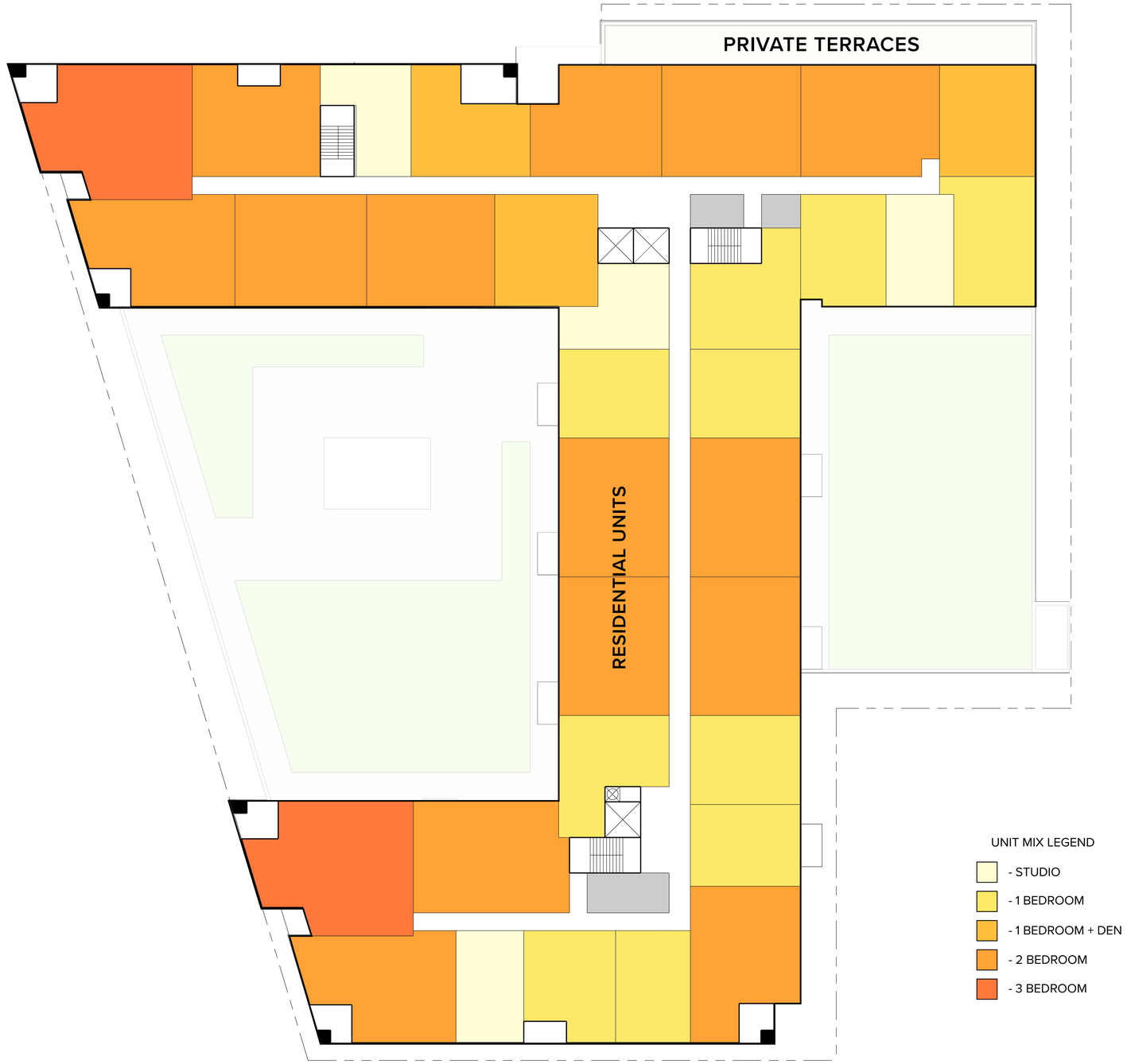
CONCEPT FLOOR PLANS

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

NORTH



LEVEL 6 PLAN

RYAN

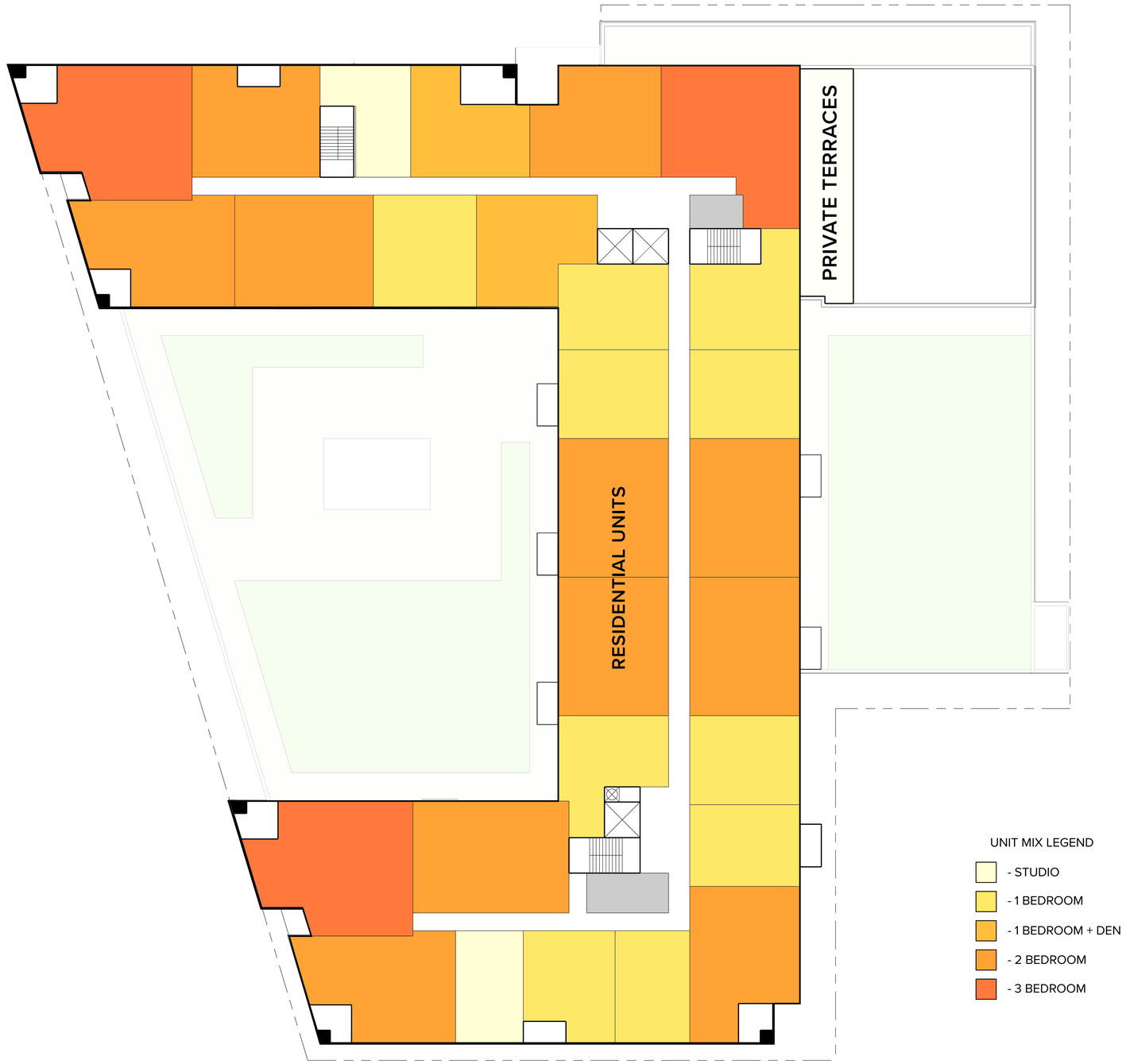
CONCEPT FLOOR PLANS

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

NORTH



LEVEL 7 PLAN

RYAN

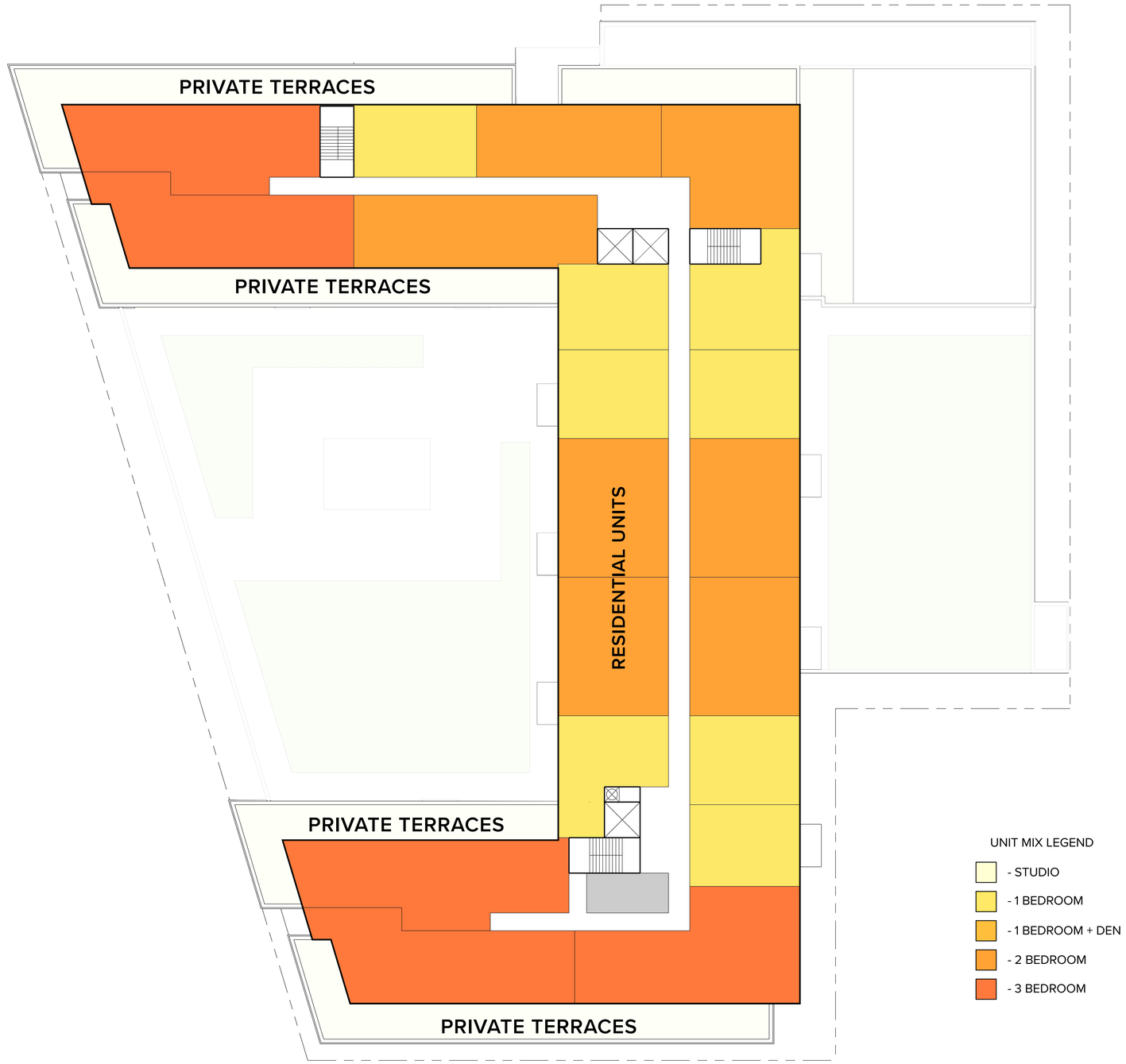
CONCEPT FLOOR PLANS

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

NORTH



LEVEL 8 PLAN

RYAN

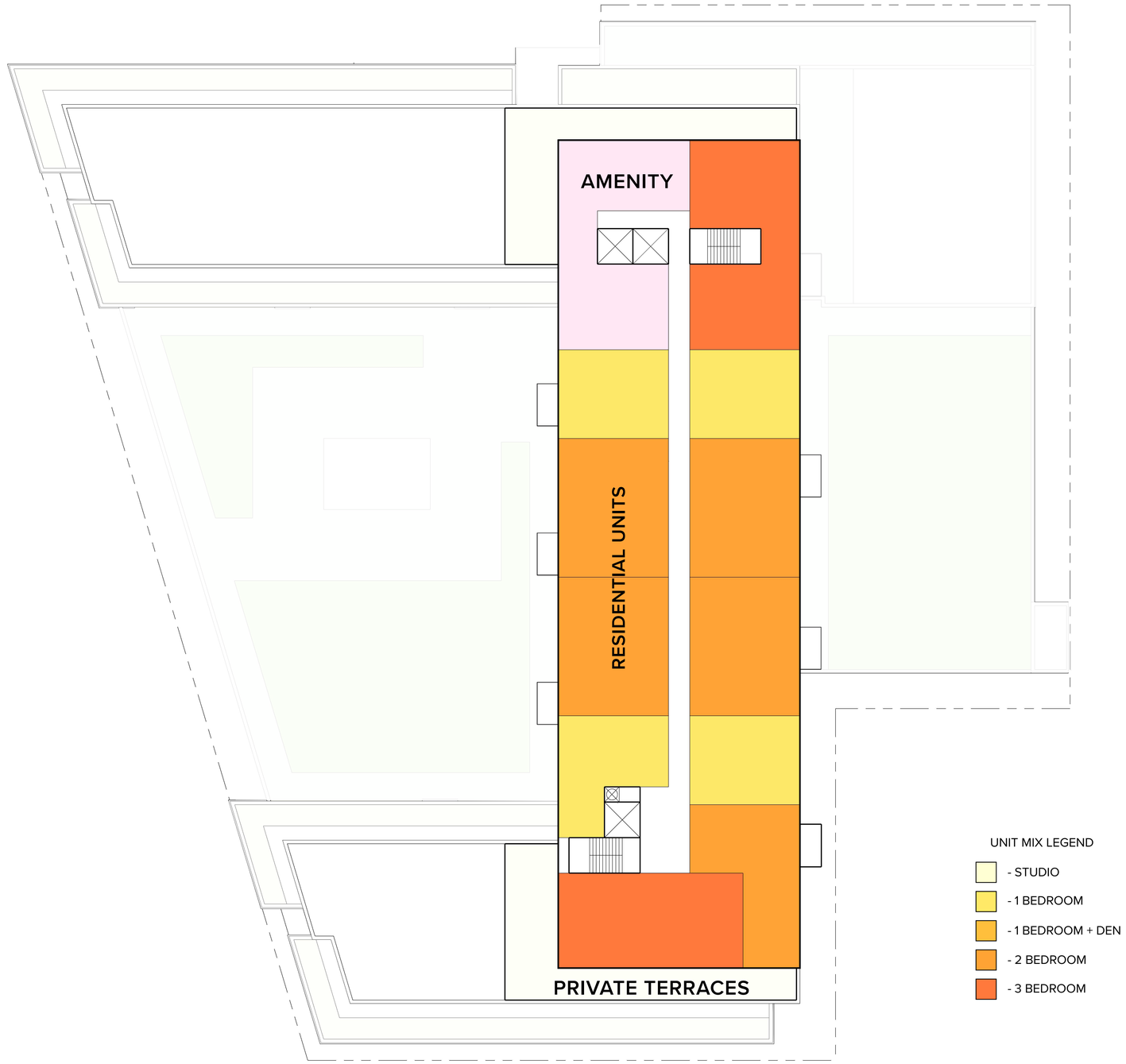
Concept Floor Plans

Birmingham Mixed-Use Development · Preliminary Site Plan · Woodward Avenue & Maple Road

February 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

NORTH



LEVEL 9 PLAN

RYAN

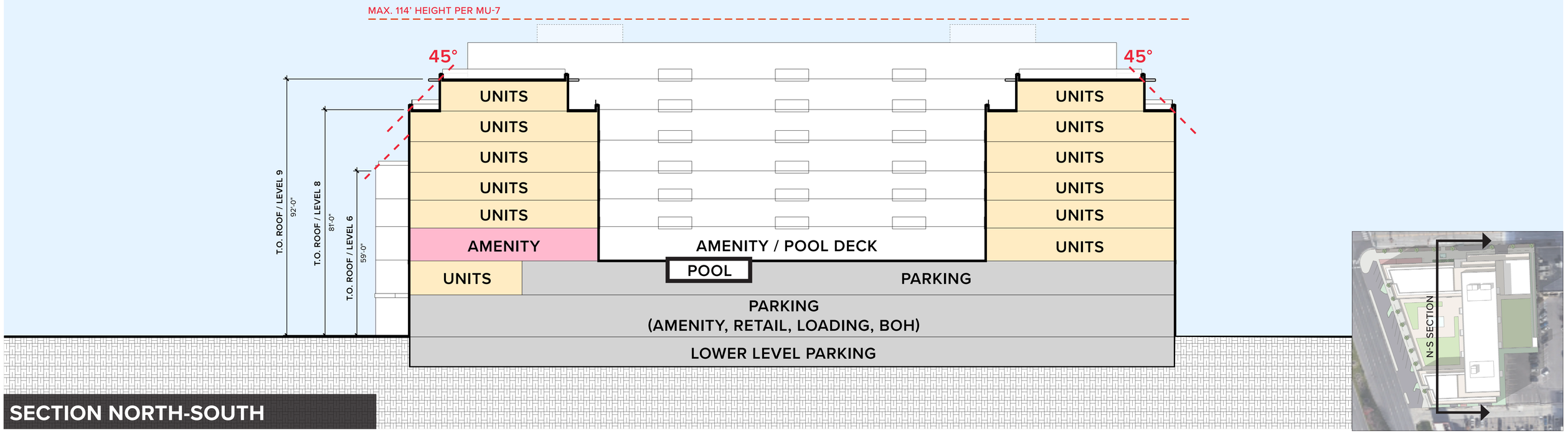
CONCEPT FLOOR PLANS

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

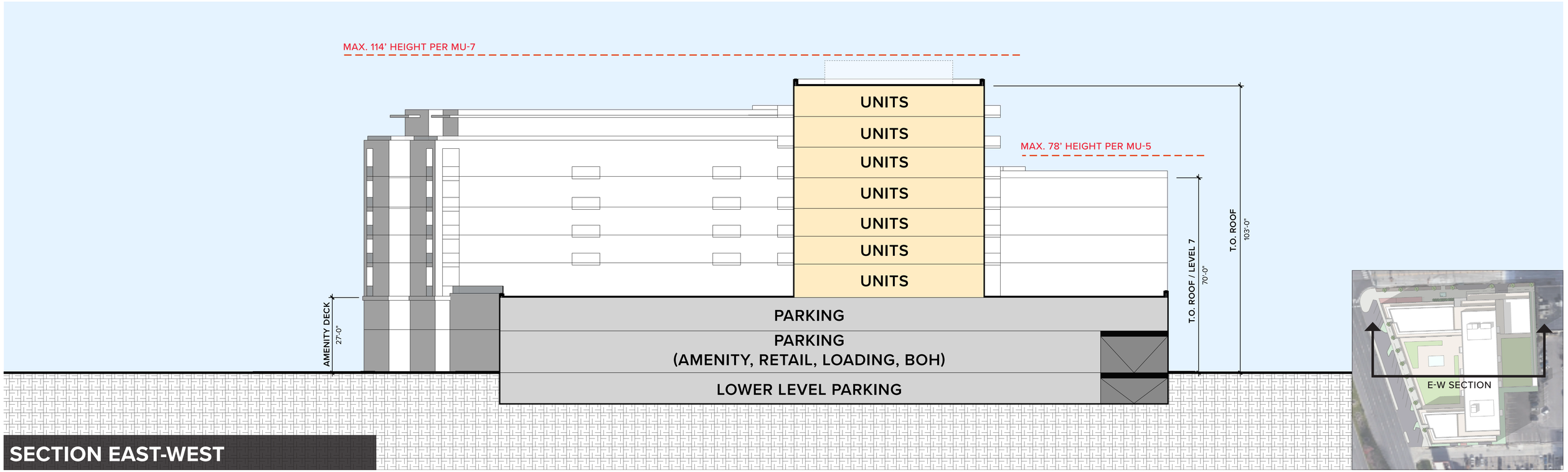
FEBRUARY 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

NORTH



SECTION NORTH-SOUTH



SECTION EAST-WEST

RYAN

Concept Sections

Birmingham Mixed-Use Development · Preliminary Site Plan · Woodward Avenue & Maple Road

February 3, 2023

SCALE: 1/16"= 1'-0" 16' 32' 48'

RYAN

Concept Aerial Perspective

Birmingham Mixed-Use Development · Preliminary Site Plan · Woodward Avenue & Maple Road

February 3, 2023

LOOKING SOUTH ON WOODWARD AVE

LOOKING EAST ON MAPLE RD

LOOKING NORTH ON WOODWARD AVE

LOOKING WEST ON MAPLE RD

RYAN

EXTERIOR CONCEPT

BIRMINGHAM MIXED-USE DEVELOPMENT · PRELIMINARY SITE PLAN · WOODWARD AVENUE & MAPLE ROAD

FEBRUARY 3, 2023

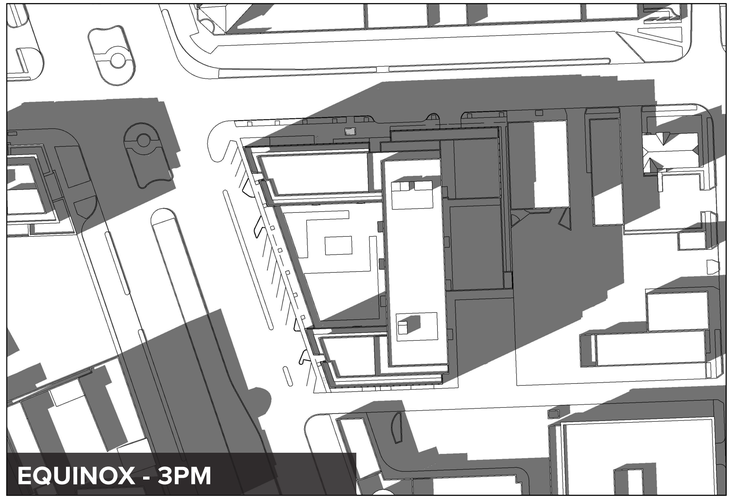
Precedent Imagery

Birmingham Mixed-Use Development · Preliminary Site Plan · Woodward Avenue & Maple Road

February 3, 2023

EQUINOX - 9AM

EQUINOX - 12PM


EQUINOX - 3PM

SUMMER SOLSTICE - 9AM

SUMMER SOLSTICE - 12PM

SUMMER SOLSTICE - 3PM

WINTER SOLSTICE - 9AM

WINTER SOLSTICE - 12PM

WINTER SOLSTICE - 3PM

Section 4.3

Zoning Analysis

Ryan Companies US, Inc.

City of Birmingham
A Walkable Community

ZONING REQUIREMENTS ANALYSIS

Development Standard	Required	Proposed	Variance Required
Zoning Classification	B-2 (General Business) MU-5, MU-7 (Triangle District Overlay)	Same	No
Front Setback	0' Minimum, 5' Maximum	Varies, 0'-5'	No
Rear Setback	Not Applicable	Varies, 0'-10'	No
Side Setback	0' Minimum for walls not containing windows; 10' Minimum	Varies, 0'-10'	No
FAR - Percentage	Not Applicable	Not Applicable	No
FAR – Square Footage	Not Applicable	Not Applicable	No
Open Space – Percentage	Not Applicable	Not Applicable	No
Open Space – Square Footage	Not Applicable	Not Applicable	No
Number of Residential Units	No Requirement	210	No
Minimum Floor Area	600sf/unit (efficiency, 1 Bed); 800sf/unit (2 Bed +)	Provided under item #9: Proposed Residential Structures	No
Maximum Height	MU-5: 6-Stories, 78' MU-7: 9-Stories, 114'	MU-5: 6-stories, 70' MU-7: 9-Stories, 103'	No
Parking	Residential: 238 Retail: 84	Residential: 266 Retail: 94	No
Loading	Size = 40'x12'x14' 5,001-20,000sf Commercial = 1 Stall	1 Stall @ Req'd Size	No
Screening	Req'd @ Utility Pads and Roof Mechanical	To be provided per requirements	No

Section 4.4

Noise Impact Study

Ryan Companies US, Inc.

Kolano and Saha Engineers, Inc.
Consultants in Acoustics, Noise and Vibration

2022-173
January 19, 2023

Mr. Toby Veit
Vice President - Development
Ryan Companies US, Inc.
224 N. Des Plaines St., Suite 100
Chicago, IL 60661

Subject: **Sound Level Measurements and Noise Impact Assessment**
re: Woodward MF
Birmingham, MI

Dear Mr. Veit:

At your request and authorization Kolano and Saha Engineers, Inc. (K&SE) conducted an updated investigation to review the environmental noise associated with the proposed Woodward MF development at the southeast corner of Woodward and Maple. The proposed development is to be a 9-story residential building with some first-floor retail and below and above-ground level parking decks. Sources of noise associated with this development are expected to be building mechanical equipment and services that will support the building, residents, and retail stores. This investigation includes a review of the measurements at the development site to understand the current ambient noise condition with an evaluation of the proposed development to help assess if noise associated with this development is expected to be compatible at this location.

On-Site Sound Level Measurements

We conducted measurements using a Brüel & Kjær 2270 environmental noise analyzer with a precision outdoor microphone assembly. This instrumentation was calibrated before and after measurements using an acoustic calibrator traceable to the National Institute for Standards and Technology. Sound levels were measured at two separate locations on the site. The first measurement location was toward the southwest corner of the site 55-feet from the Woodward Avenue road-edge. This measurement included the 24-hour period on January 10, 2023. The second measurement location was toward the northeast corner of the site, 30-feet from the Maple Road road-edge. This measurement included the 24-hour period on January 12, 2023. See **Exhibit 1** for a site plan showing these measurement locations.

The results of the measurements are presented in graphs of sound level versus time in **Exhibits 2 & 3**. These graphs contain three plot lines; the 5-minute L_{eq} (energy average level), the hourly-L_{eq}, and the daytime and nighttime L_{eq}. Spikes in the sound level were caused primarily by road traffic, including emergency vehicles.

From this data we calculated the DNL or day-night sound level average. The DNL is an average of both the daytime and nighttime sound levels where the nighttime sound levels have been raised by 10 dB to account for people's greater sensitivity to noise in the nighttime hours.

3559 Sashabaw Road · Waterford, MI 48329-2656 · (248) 674-4100 · Fax (248) 674-3755

Measurement results, in terms of the day-night sound level average (DNL), were determined and compared to U.S. Government guidelines promulgated by the U.S. Environmental Protection Agency (EPA) and the department of Housing and Urban Development (HUD). EPA guidelines define DNL 55dB (or less) as desirable goal for residential land use; HUD guidelines consider outdoor noise levels up to DNL 65dB as "normally acceptable" for residential land use. HUD guidelines consider outdoor noise levels between 65dB and 75dB as "normally unacceptable" for residential land use. The results of these measurements show that the site has a measured sound level of **DNL 69dB** at the first position, and **DNL 70dB** at the second. These sound levels are due to the high volumes of traffic on Woodward Ave. and Maple Rd. This indicates high sound levels and the likely need for noise protection to the residential living spaces. Improved building shell construction should be designed to isolate the traffic noise to reasonable interior sound levels appropriate for residential living.

City of Birmingham Noise Ordinance

The City of Birmingham addresses noise in their ordinance under Part II – City Code, Chapter 50 – Environment, Article II. Nuisances, Division 4 – Noise. This ordinance provides information of Definitions, general prohibitions, specific prohibitions, decibel level prohibitions, general exemptions and test procedures. The objective limits cited in this ordinance (as Table 1) are:

Use of Property Producing the Sound	Use of Property Receiving the Sound	Sunday to Saturday 7:00 a.m. to 7:00 p.m.	Sunday to Saturday 7:00 p.m. to 7:00 a.m.
Residential	Residential	75	60
Commercial	Residential	80	60
Residential	Commercial	80	60
Commercial	Commercial	90	75

Exemptions to these limits include power equipment operations between 7AM and 7PM that do not exceed 100 dB(A) at or beyond the property line, construction noise between 7AM and 7PM Monday-Saturday excluding holidays (with additional provisions), and snow removal which does not exceed 90 dB(A) at or beyond the property line.

Proposed Development Noise Impact

The proposed development is a 9-story, multi-family residential development with first floor retail along Woodward Ave. While this proposed development is similar to other buildings in Birmingham, it will be one of the largest residential buildings in Birmingham. The anticipated noise sources for the development are:

Individual Residential Unit Heating and Cooling Mechanical Systems

These climate systems are to be located in each living unit. With these systems each unit is expected to have a residential grade condensing unit. These condenser units are expected to be located near the building, likely on the roof. We don't anticipate these to be a significant source of noise beyond the property line.

Building Wide Heating and Cooling Mechanical Systems

Like other large buildings in Birmingham, centralized roof mounted heating and cooling equipment are expected control the climate of building common and amenity areas. If located sufficiently away from the property lines and shielded with screen walls, these elements are not expected to exceed the ordinance limits. Additionally, the height of this building and the absence of similarly tall buildings in this area will help provide shielding of the rooftop equipment noise from neighboring properties.

Exhaust Fans

Several exhaust fans are expected for this building. Between retail kitchens, common residential exhaust systems, and the various amenity areas, several exhaust fans are expected to vent air above the roof level. At the proposed building height, these fans are not expected to have significant noise levels beyond the property line.

Parking Structure

The proposed building is expected to have 3 levels of parking that includes one subterranean level. With the below grade parking and the other parking levels being mostly enclosed, ventilation fans will be needed to circulate fresh air to these spaces. Generally, fans and ventilation equipment for parking structures need to move large volumes of air and, as a result, can be quite noisy if not properly planned and developed. Generally, large centrifugal or mixed flow type fans can provide the needed airflow while being quieter that vane axial fans. Additionally, silencers may be needed on the intake and discharge of these fans to help minimize noise that can be a safety hazard to pedestrians in the parking deck (loud fans may reduce the audibility of oncoming vehicles) as well to reduce noise that could impact the surrounding community.

Emergency Power Generator

An emergency power generator may be located on the south side of the building near the loading dock. While this has the potential for excessive noise, with the proper enclosure, hospital grade silencing, and expected minimal use (weekly or bimonthly maintenance cycles during daylight hours are expected), the generator is expected to comply with the ordinance and create little impact.

Loading Dock/Delivery Vehicles

For food service, retail supplies, building supplies, and other delivery needs, multiple deliveries are expected each week. These deliveries are expected to come from small to medium sized commercial vehicles. These deliveries are expected to be comparable to those for restaurants or other moderately sized businesses, and similar to other buildings in the area.

Conclusion

The proposed Woodward MF development is being considered in an area that is predominantly commercial with some mixed use residential. Based on the information we have been provided, we anticipate that the proposed development will produce no excessive noise contribution to the adjacent community and will be within the Birmingham Noise Ordinance limits.

Additionally, this site is subject to significant noise from the Maple and Woodward roadways. Traffic noise is expected to create some impact on the proposed development. The building shell and fenestration should be constructed to help minimize this.

We appreciate your calling us for this work. Should you have questions or need additional assistance on this matter, do not hesitate to call.

Sincerely,

KOLANO AND SAHA ENGINEERS, INC.

Darren Brown, P.E.
INCE Board Certified
Senior Consultant

EXHIBIT 1

PLAN DETAILING THE SOUND MEASUREMENT LOCATIONS FOR THE PROPOSED WOODWARD MF DEVELOPMENT

Community Impact Study Conducted for: Ryan Companies US, Inc.

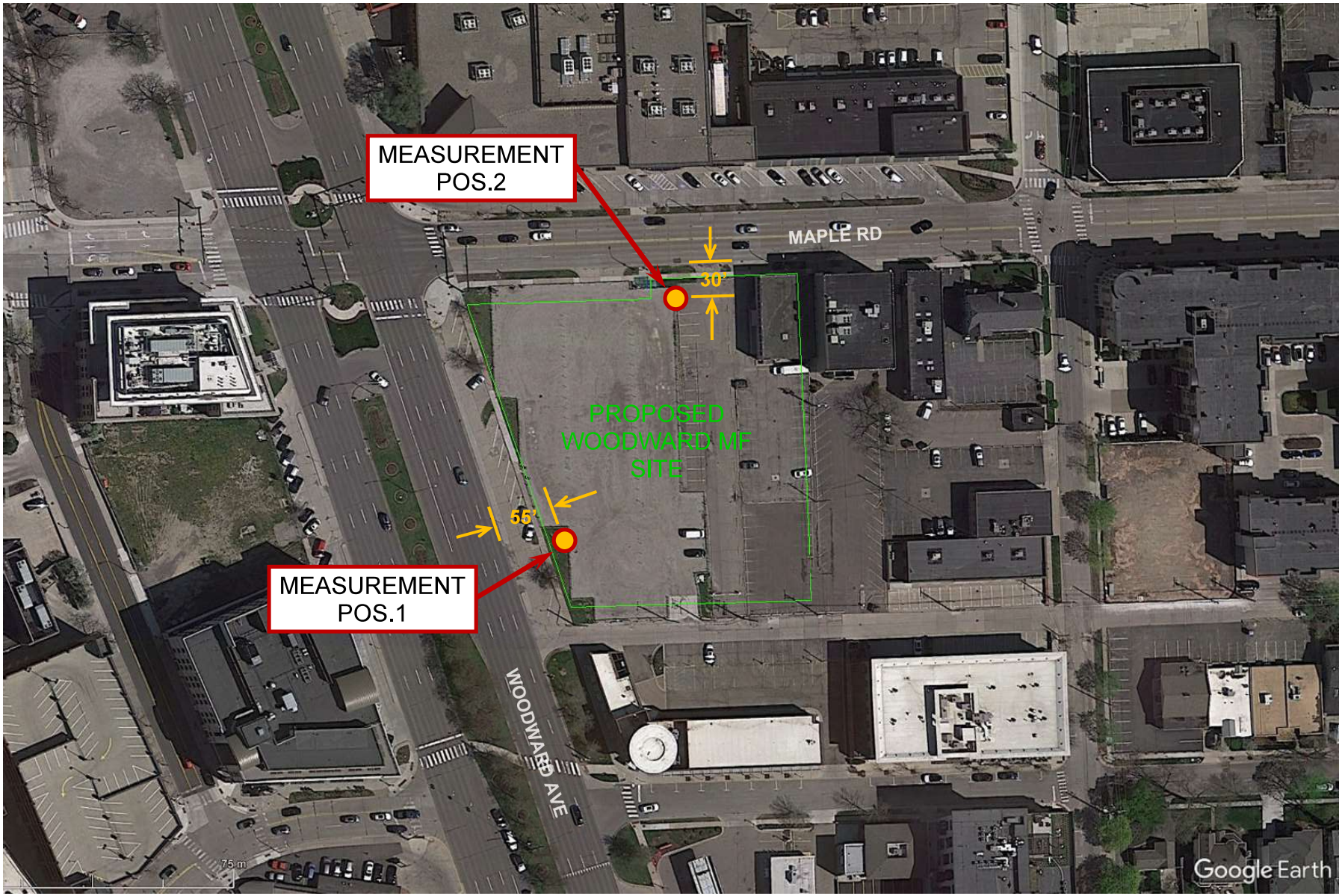
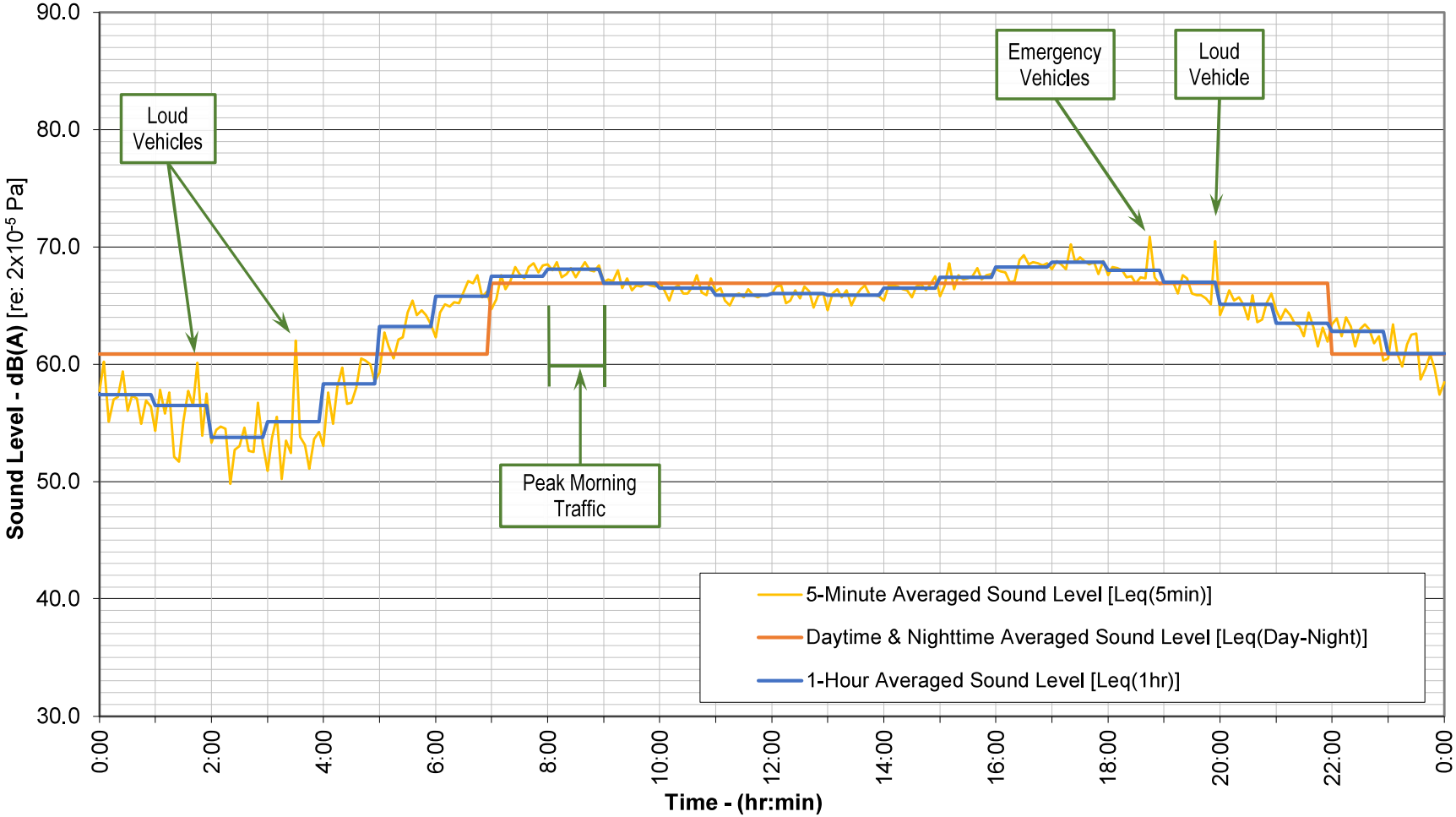


EXHIBIT 2

Ambient Sound Levels at the Proposed Woodward MF Development Site

Measured at a Position #1: 235-ft S of Maple Road, and 55-ft East of Woodward

Study Conducted For: Ryan Companies US, Inc.



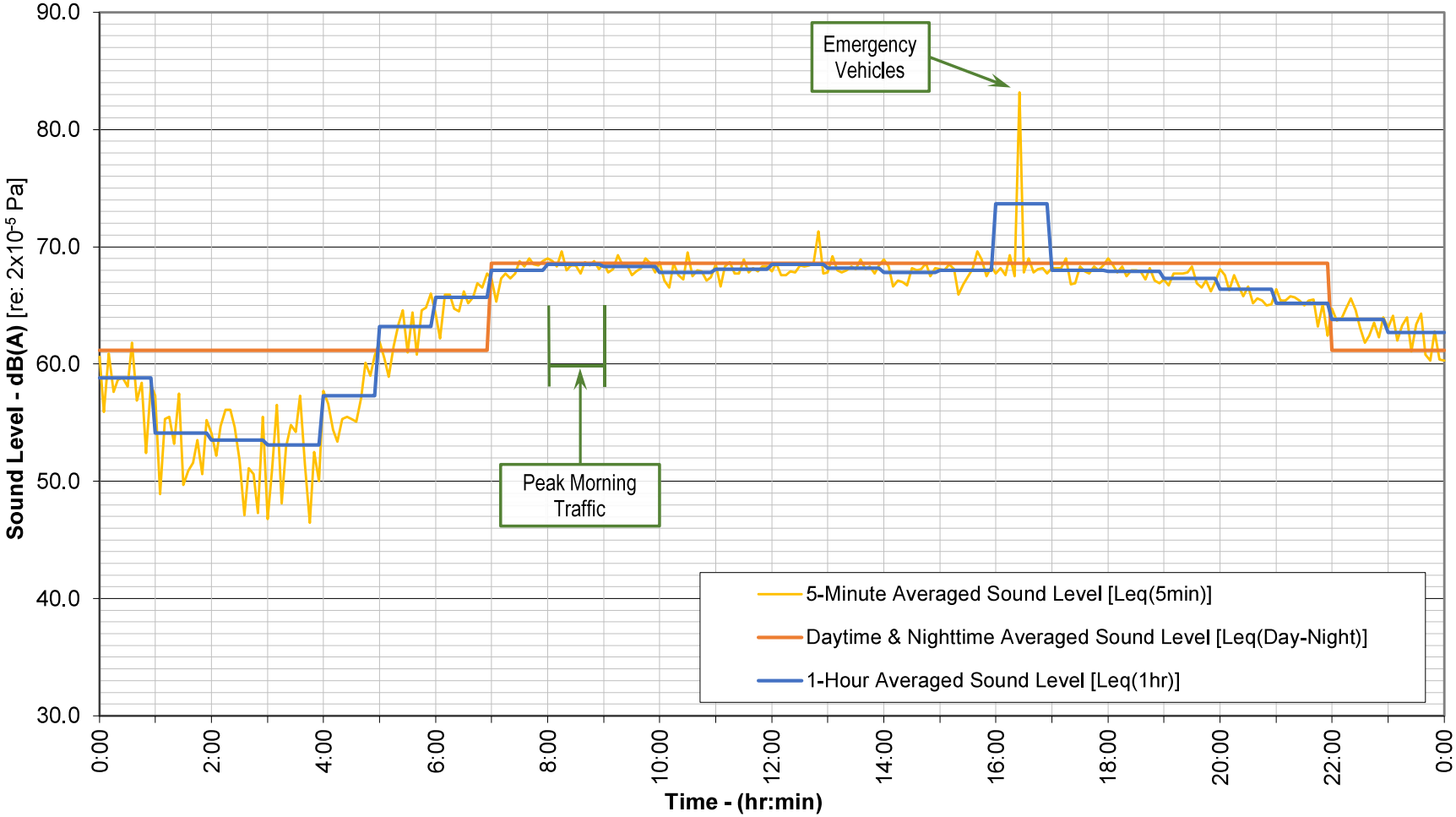
January 10, 2023

EXHIBIT 3

Ambient Sound Levels at the Proposed Woodward MF Development Site

Measured at a Position #2: 30-ft S of Maple Road, and 215-ft East of Woodward

Study Conducted For: Ryan Companies US, Inc.



January 12, 2023

Section 4.5

Transportation Impact Study

Ryan Companies US, Inc.

ROWE
27280 Haggerty Road, Suite C-2
Farmington Hills, MI 48331 | (248) 675-1096
www.rowepsc.com

Memorandum

To: Mr. Toby Veit, Vice-President, Development

From: Paul T. O'Meara, PE and Hailey Savola

Date: March 31, 2023

RE: Traffic Impact Statement for 34952 Woodward Avenue

ROWE Professional Services Company has completed a Traffic Impact Statement (TIS) related to the proposed mixed-use development to be located at the southeast corner of Woodward Avenue (M-1) and Maple Road in Birmingham, Michigan. The current site plan (included in the materials attached to this report) proposes 10,000 square feet (SF) of retail and 210 dwelling units (DU) with an anticipated opening date in 2027. A three-level private parking structure is also proposed with a capacity of 360 vehicles. This TIS was prepared to determine if any improvements would be necessary to mitigate traffic impacts to the adjacent road network. This report has been completed in accordance with the requirements specified by the City of Birmingham and their consultants.

TRAFFIC IMPACT STUDY

Study Area

The subject property is a vacant 1.55-acre parcel that has been most recently used as a gravel overflow parking lot operated by the city. The site was previously occupied by a motel. The property is currently zoned B-2 (General Business). All of the surrounding properties are also zoned B-2. The property also is in an overlay zoning district in accordance with the Triangle District Master Plan. The majority of the parcel is zoned MU-7, while the easterly section is zoned MU-5.

Existing Conditions

Table 1 summarizes the roadway characteristics for all roadways within the study area determined by the city's consultants.

Table 1 : Roadway Characteristics

Roadway	Jurisdiction	Speed Limit (MPH)	Roadway Classification	AADT (vpd)[1]
Woodward Ave.	MDOT	45	Trunkline	21,200
E. Maple Road	City of Birmingham	25	Principal Arterial	14,200
Alley		N.A.	Alley	-

[1]SEMCOG TCDS

The subject property has frontage on two streets and one public alley.

Woodward Avenue is a state trunkline operating as an eight-lane divided highway. Traffic flow adjacent to the proposed site is controlled by signals at Maple Road and Brown Street (southbound Woodward Avenue only). Woodward Avenue operates with a posted speed limit of 45 mph and is under the jurisdiction of the Michigan Department of Transportation (MDOT). MDOT has agreed to fund the installation of a traffic signal to the south of the site at Forest Avenue. The signal will serve to provide a new protected pedestrian crossing for northbound traffic where none currently exists. The signal will also improve the Level of Service for southbound Woodward Avenue traffic using the existing center turnaround lane to access eastbound Maple Road. The new signal is currently scheduled to be installed in the latter part of 2023. All future modeling completed in this report has been completed with the assumption that this signal has been installed and is operating in accordance with the timing provided by MDOT in the Synchro modeling and comments received from the city and their consultants.

East Maple Road is a four-lane principal arterial serving the region. Traffic flow on East Maple Road adjacent to the proposed site is controlled by signals at Park Street/Peabody Street, Woodward Avenue, Elm Street, and Adams Road. In the vicinity of the proposed project, Maple Road operates at 25 mph and is under the jurisdiction of the City of Birmingham. Grades are mild in the immediate area and do not introduce any traffic concerns.

The alley running along the south side of the proposed site is eighteen feet wide and is designed to operate with two-way traffic between Woodward Avenue and Elm Street. The alley is under the jurisdiction of the City of Birmingham.

Master Plan Review

As a part of this report, the applicable planning documents that pertain to this property were reviewed. The following information has been identified as pertinent:

Birmingham 2040 Plan (Draft) – Although not yet officially adopted, the Birmingham 2040 Plan has been worked on extensively to provide a current Master Plan for the entire city. The following is noted therein:

a. The 2040 Plan has divided the city into fifteen neighborhood districts and four mixed-use districts. The Downtown Mixed-Use District has been drawn to include the East Maple Road corridor from Woodward Avenue to Adams Road, thereby including the proposed development site. Historically, all properties east of Woodward Avenue were not considered a part of Birmingham's Central Business District. By extending the district east of Woodward Avenue, the city is making zoning and planning decisions to encourage the redevelopment of this area into a higher intensity commercial corridor.

b. The 2040 Plan calls for development that will encourage an interconnecting environment for pedestrians on the east side of Woodward Avenue. The proposed development will substantially move the city in this direction by providing a landmark destination for pedestrians to walk to and from downtown to the east side, introducing wider, improved sidewalks both on Woodward Avenue and East Maple Road.

Triangle District Master Plan (2007) – The subject property is contained within the area known as the Triangle District. The building has been designed to take advantage of the overlay zoning that calls for mixed uses. When the plan was written, newer development in the district was minimal. The writers of the plan saw the implementation of two public parking facilities as a means to incentivize future higher density development in the area. The City of Birmingham worked for a period of time with the previous property owner of this site, working to draft an agreement that would result in a public parking structure to be constructed on private property. However, the city was not able to arrive at mutually agreeable terms for such a project, and the public parking structure is no longer being pursued. More recently, the current trend of development in the Triangle District is demonstrating that multi-use residential buildings are being constructed with their own privately financed parking on site. The development of this project will further that trend significantly. While the construction of a public parking structure once appeared to be a worthwhile goal, the City of Birmingham is fortunate that market conditions are such that development that models the zoning goals of the Triangle District Plan is proceeding, even without a significant financial investment for parking on the part of the city.

The Triangle District Master Plan encourages the use of shared parking agreements, wherein landowners can lease a portion of their parking for adjacent tenants or visitors to use. As noted below, the development will be constructing more parking on Level 1 for visitors to the retail portion of the building than is required by the zoning ordinance. The retail tenant(s) have not yet been identified for the space that will be constructed. As a result, the developer is not prepared to commit to a shared parking arrangement with a neighbor at this time but will consider it in the future if the opportunity presents itself.

The Triangle District Master Plan also encourages a pedestrian oriented streetscape environment where activity on the street is encouraged. The proposed development has been designed with these goals in mind, with the use of wide sidewalks that will have the city's standard exposed aggregate design element, street trees, adjacent on-street parking, and public bicycle parking in the right-of-way.

Multi-Modal Transportation Plan (2013) A review of the city's Multi-Modal Transportation Plan was also conducted. For Woodward Avenue, the plan calls for significant changes to the corridor, including wider sidewalks and reconstructed parking areas within the right-of-way. On Maple Road, no specific changes are suggested until the street is reconstructed.

The new building has been stepped back from the right-of-way line across the majority of its frontage to provide an improved streetscape environment, including tree wells, seating areas, and bicycle parking. On Maple Road, a pedestrian drop-off area is proposed to encourage ride sharing and quick package delivery, which will reduce vehicle trips and/or on-site parking demand, and also help prevent package delivery trucks from blocking the right lane of Maple Rd. for quick stops.

The Multi-Modal Transportation Plan also calls for improved pedestrian crossings at each signalized intersection of the Woodward Avenue corridor, including Maple Road, Bowers Street, and Lincoln Avenue. Upgraded crosswalks using wider eight-foot ramps, as well as continental style pavement markings, were installed in 2019. The proposed protected pedestrian crossing at

Woodward Avenue and Forest Avenue is now planned for completion later this year, following the installation of a new traffic signal for northbound Woodward Avenue

No elements of the proposed development conflict with the goals of the Multi-Modal Transportation Plan or the Triangle District Master Plan. Additional Multi-Modal information related to the proposed development can be found in the *Trip Generation* section below.

Proposed Development

The proposed mixed-use building will contain 210 DU, 10,000 SF of commercial space, and 348 parking spaces located in an on-site parking structure. The building has also dedicated space to amenities such as a residential lobby, indoor gym, protected bike parking, and an outdoor - space offering a pool, dining space, etc. Final building completion is planned for 2025 and the development will be constructed in a single phase.

Traffic Counts

Turning movement counts (TMCs) were collected during the weekday AM (7 a.m. to 9 a.m.) and PM (4 p.m. to 6 p.m.) peak periods on January 26, 2023, along both impacted corridors:

Woodward Avenue Corridor:

- Northbound to Southbound turnaround north of Maple Road
- Maple Road (both directions)
- Bowers Street (southbound)
- Alley at south property line (northbound)
- Forest Avenue (northbound)
- Southbound to Northbound turnaround south of Maple Road

Maple Road Corridor:

- Park Street/Peabody Street
- Elm Street
- Adams Road

In addition, heavy vehicle percentages were reviewed at the studied intersections. Heavy vehicle percentages varied between zero percent and three percent at the studied intersections, which is typical for urban/suburban areas. A summary of all peak hour TMCs, including heavy vehicle percentages by approach, are attached to this memorandum.

All studied intersections are shown in Figure 1 attached to this memorandum. All traffic counts used in this study are attached to this memorandum. The existing adjusted peak hour traffic volumes are shown in Figure 2 attached to this memorandum.

Background Traffic Scenario

Historical traffic data was referenced to determine the applicable growth rate for the existing traffic volumes for the project build-out year in 2027. Historical traffic counts from SEMCOG were reviewed and revealed an average of 0.5 percent growth in traffic volumes in the subject area. In addition, community profiles were reviewed on the Southeast Michigan Council of Government's (SEMCOG) website. The population forecast for the City of Birmingham revealed that a small decrease in population is expected between 2020 and 2030 (21,813 to 21,732). Based on review

and conversations with the city and their consultants, a 0.5 percent growth rate would be utilized for this project.

No other developments were identified that are currently under construction or planned in the immediate area of this study. (Other developments currently under construction within the Triangle District were deemed to be outside of the area of influence.)

As noted above, MDOT plans to install a new traffic signal and pedestrian crossing for northbound Woodward Avenue at Forest Avenue, 150 feet south of the subject site. With 0.5 percent background growth of existing traffic volumes and no known background developments, 2027 background models were completed and are included in the report below.

Trip Generation

The site is currently vacant. Previously, the site was occupied by a 1950's era hotel known as the Barclay Inn, which closed in 2010. The building was demolished in 2012. More recently the City of Birmingham leased the property and constructed a temporary gravel parking lot (for downtown overflow) in 2018.

Using the information and methodologies specified in the latest version of Trip Generation (Trip Generation Manual, 11th Edition, 2021), ROWE forecast the weekday AM and PM peak hour trips and Saturday peak hour trips associated with the proposed development. LUC 221, LUC 822, and LUC 931 was determined to be the appropriate land uses for this development. The results of the trip generation forecasts are provided below in Table 2 .

Table 2: Trip Generation for Proposed Development

Land Use	Units	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Multifamily Housing (Mid-Rise)	228 DU	221	20	69	89	54	35	89	47	45	92	1,036	1,036
Strip Retail	5,000 SF	822	7	5	12	17	16	33	17	16	33	273	-
Fine Dining Restaurant	5,000 SF	931	2	2	4	26	13	39	31	22	53	420	451
Total	**-**	**-**	**29**	**76**	**105**	**97**	**64**	**161**	**95**	**83**	**178**	**1,729**	**1,487**
Internal Capture Reductions:		221	1	2	3	12	12	24	14	15	29	-	-
4% AM (7% In, 3% Out)		876	0	0	0	4	5	9	5	5	10	-	-
27% PM (23% In, 34% Out)		931	0	0	0	6	4	10	9	7	16	-	-
31% Sat. (29% In, 34% Out)		**Total Internal Capture**	**1**	**2**	**3**	**22**	**21**	**43**	**28**	**27**	**55**	**-**	**-**
Total External Trips			**28**	**74**	**102**	**75**	**43**	**118**	**67**	**56**	**123**	**1,729**	**1,487**

In multi-use developments, not all the trips generated are from sources outside the boundaries of the development but are rather trips that are "internally captured" within the site. The methodology presented in *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* was followed to determine an appropriate internal capture rate for the proposed development. For the Saturday peak hour, the PM spreadsheet was utilized. The results of this analysis indicate a four percent (seven percent in, three percent out) AM peak hour internal capture rate, a twenty-seven percent (twenty-three percent in, thirty-four percent out) PM peak hour internal capture rate, and a thirty-one percent (twenty-nine percent in, thirty-four percent out) for the combination of land uses. With the inclusion of the internal capture reductions, the proposed development will generate 102 external trips during the AM peak hour (twenty-eight inbound and seventy-four outbound), 118 external trips during the PM peak hour (seventy-five inbound and forty-three outbound), and 123 external trips during the Saturday peak hour (sixty-seven inbound and fifty-six outbound).

Not all the traffic generated by the proposed development will be new traffic added onto the adjacent roadway network. As with most new commercial development, a significant amount of the site-generated traffic is considered “pass-by” traffic. Pass-by trips are trips already present on the adjacent roadway network, which are interrupted to visit the site. Pass-by trips are accounted for by reducing the number of forecast new trips to be added to the roadway network; however, actual driveway volumes are not reduced. Pass-by trips are normally expressed as a percentage of trips generated by the new development. These pass-by rates are published in the Trip Generation Handbook.

Given the fact that the developer is not certain on the exact retail and restaurant land uses, pass-by trips were not accounted for in this study to allow for the numbers to be as conservative as possible. This gives the “worst-case” scenario in case specific tenants of those parcels of the development change over time.

The vehicle trips in Table 2 were converted to person-trips by using the baseline vehicle mode split and baseline vehicle occupancy rates published by ITE in Appendix B of the ITE *Trip Generation Handbook, 3rd Edition*. The vehicle mode splits and vehicle occupancy rates for the studies contained within the *Trip Generation Handbook* are provided in Table 3 and Table 4 below.

Table 3: Vehicle Occupancy and Mode Share – Peak Hours

Land Use	Land Use Code	AM Peak Hour						PM Peak Hour/Sat Peak Hour					
		Vehicle Occupancy	Mode Share					Vehicle Occupancy	Mode Share				
			Vehicle	Walking	Cycling	Transit	Work From Home		Vehicle	Walking	Cycling	Transit	Work From Home
Multifamily Housing (Mid-Rise)	221	1.13	0.873	0.017	0.002	0.002	0.106	1.15	0.873	0.017	0.002	0.002	0.106
Strip Retail	822	1.17	0.96	0.02	0.01	0.01	0.000	1.21	0.96	0.02	0.01	0.01	0.000
Fine Dining Restaurant	931	1.17	0.96	0.02	0.01	0.01	0.000	1.62	0.96	0.02	0.01	0.01	0.000

Table 4: Vehicle Occupancy and Mode Share – Daily

Land Use	Land Use Code	Weekday/Saturday				
		Vehicle Occupancy	Mode Share			
			Vehicle	Walking	Cycling	Transit
Multifamily Housing (Mid-Rise)	221	1.15	0.873	0.017	0.002	0.002
Strip Retail	822	1.21	0.96	0.02	0.01	0.01
Fine Dining Restaurant	931	1.62	0.96	0.02	0.01	0.01

Appendix B of the *Trip Generation Handbook, 3rd Edition* specifies weekday average vehicle occupancy rates of 1.13 (AM peak hour) and 1.15 (PM peak hour) for LUC 221 vehicle-based trips, weekday average vehicle occupancy rates of 1.17 (AM peak hour) and 1.21 (PM peak hour) for LUC 822 vehicle-based trips, and weekday average vehicle occupancy rates of 1.17 (AM peak hour) and 1.62 (PM peak hour) for LUC 931 vehicle-based trips. Data is not currently available for weekend average vehicle occupancy rates. ROWE also reviewed the work from home factor that could be used for this study. Based on the data, it is assumed that ten percent of the person trips are related to work from home for LUC 221. The other LUC's do not have a work from home factor. For the purpose of this study, the PM weekday rates were used for the Saturday peak analysis. Appendix B also specifies a *minimum* vehicle mode share of ninety-six percent for these person-trips. Therefore, it was assumed that the remaining four percent of person-trips were made via walking (two percent), cycling (one percent), and transit (one percent). Data previously provided by the City of Birmingham and their consultants based on the SEMCOG Community Profile for the city shows a vehicle mode share of 87.3 percent, walking mode share of 1.7 percent, and cycling/transit mode shares of 0.2 percent each associated with residential land uses (LUC 221). The vehicular trip generation associated with the new development was converted to a person-trip generation by applying the vehicle occupancy rate to the vehicular trip generation (prior to implementation of the Internal Capture reductions). These calculations are shown in, Table 5, 6 and 7 for LUC 221, LUC 822, and LUC 931, respectively. Next, the Internal Capture reductions were applied to the person-trip generation by applying the aforementioned factors. These calculations are shown in Table 8, Table 9, and Table 10 for the LUC 221, LUC 822, and LUC 931 development components, respectively. Finally, the vehicle mode share percentages were applied to the total number of person-trips to project the number of person-trips utilizing vehicle travel, walking, cycling, and transit travel to the site. These calculations are shown in Table 11, Table 12, and Table 13 for the LUC 221, LUC 822, and LUC 931 development components, respectively.

Table 5: Person-Trip Generation - LUC 221 (Prior to Internal Capture Reductions)

Land Use	Units		Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
				In	Out	Total	In	Out	Total	In	Out	Total		
Multifamily Housing (Mid-Rise)	228	DU	221	24	77	101	64	38	102	67	39	106	1181	1181

Table 6: Person-Trip Generation - LUC 822 (Prior to Internal Capture Reductions)

Land Use	Units		Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
				In	Out	Total	In	Out	Total	In	Out	Total		
Fine Dining Restaurant	5,000	SF	931	3	2	5	42	21	63	51	35	86	748	803

Table 7: Person-Trip Generation - LUC 931 (Prior to Internal Capture Reductions)

Land Use	Units		Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
				In	Out	Total	In	Out	Total	In	Out	Total		
Multifamily Housing (Mid-Rise)	228	DU	221	24	73	97	56	33	89	58	34	92	1181	1181

Table 8: Person-Trip Generation - LUC 221 (After Internal Capture Reductions)

Land Use	Units		Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
				In	Out	Total	In	Out	Total	In	Out	Total		
Strip Retail	5,000	SF	822	10	4	14	19	21	40	22	18	40	388	-

Table 9: Person-Trip Generation - LUC 822 (After Internal Capture Reductions)

Land Use	Units		Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
				In	Out	Total	In	Out	Total	In	Out	Total		
Strip Retail	5,000	SF	822	3	2	5	19	21	40	11	9	20	388	-

Table 10: Person-Trip Generation - LUC 931 (After Internal Capture Reductions)

Land Use	Units		Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
				In	Out	Total	In	Out	Total	In	Out	Total		
Fine Dining Restaurant	5,000	SF	931	3	2	5	40	20	60	45	31	76	748	803

Table 11: Person-Trip Generation by Travel Mode- LUC 221 (Multifamily midrise housing)

Travel Mode	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
		In	Out	Total	In	Out	Total	In	Out	Total		
Vehicle	221	20	65	85	40	25	65	39	24	63	1,031	1,031
Walking	221	2	0	2	2	0	2	6	3	9	20	20
Cycling	221	0	0	0	0	0	0	0	0	0	2	2
Transit	221	0	0	0	0	0	0	0	0	0	2	2
Work From Home	221	2	8	10	5	3	8	0	0	0	124	124
Total New Person-Trips		**24**	**73**	**97**	**47**	**28**	**75**	**45**	**27**	**72**	**1,179**	**1,179**

Table 12: Person-Trip Generation by Travel Mode- LUC 822 (Strip Retail)

Travel Mode	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
		In	Out	Total	In	Out	Total	In	Out	Total		
Vehicle	822	3	2	5	18	20	38	10	9	19	372	-
Walking	822	0	0	0	1	1	2	1	0	1	8	-
Cycling	822	0	0	0	0	0	0	0	0	0	4	-
Transit	822	0	0	0	0	0	0	0	0	0	4	-
Work from Home	822	0	0	0	0	0	0	0	0	0	0	0
Total New Person-Trips		**3**	**2**	**5**	**19**	**21**	**40**	**11**	**9**	**20**	**388**	**-**

Table 13: Person-Trip Generation by Travel Mode- LUC 931 (Fine dining restaurant)

Travel Mode	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
		In	Out	Total	In	Out	Total	In	Out	Total		
Vehicle	931	3	2	5	39	19	58	41	31	72	719	770
Walking	931	0	0	0	1	1	2	1	1	2	15	16
Cycling	931	0	0	0	0	0	0	1	0	1	7	8
Transit	931	0	0	0	0	0	0	1	0	1	7	8
Work from Home	931	0	0	0	0	0	0	0	0	0	0	0
Total New Person-Trips		**3**	**2**	**5**	**40**	**20**	**60**	**44**	**32**	**76**	**748**	**802**

Trip Distribution

Existing traffic volumes are used to develop a trip distribution model for the AM and PM peak hours for the new traffic that will be generated by the proposed development. Trip distribution was then completed based on the existing traffic patterns. Table 14 shows the result of this analysis.

Table 14: Trip Distribution

Street	Direction	Weekday AM		Weekday PM		Sat Peak	
		Volume	Percent	Volume	Percent	Volume	Percent
Maple	From East	592	9%	738	11%	739	14%
Maple	From West	424	7%	482	7%	445	9%
M-1	From North	1,989	32%	2246	34%	1425	28%
M-1	From South	2,276	36%	2065	32%	1672	33%
Adams	From North	602	10%	549	8%	402	8%
Adams	From South	383	6%	452	7%	441	9%
TOTAL		6,266	100%	6,532	100%	5,124	100%

The trip distribution for the site is shown in Figure 3, 4 and 5 attached to this memorandum. The existing and background volumes were then combined with the proposed site generated traffic volumes to obtain the total future traffic volumes, which are shown in Figures 6 through 14 attached to this memorandum.

Level of Service Analysis

Level of service (LOS) analyses for existing, background, and total future (build) conditions for the AM, PM and Saturday midday peak hours were performed for the study intersections.

According to the most recent (6th) edition of the Highway Capacity Manual (HCM), LOS is a qualitative measure describing operational conditions of a traffic stream or intersection. LOS ranges from A to F, with LOS A being the best and LOS D generally being considered acceptable. Table 15 presents the criteria for defining the various LOS for unsignalized intersections. LOS D is considered acceptable in urban/suburban areas. Reports for this analysis utilized the HCM 2000 reports due to intersection configurations and number of lanes.

Table 15: LOS Criteria – Unsignalized Intersection

LOS	Average Stopped Delay/Vehicle (seconds)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

The results of the LOS analyses for the intersection listed above are summarized in Table 16. Full LOS output reports are attached to this memorandum. An analysis of each scenario follows the summary table.

In addition, SimTraffic simulations were reviewed to identify any potential queueing issues at the study intersections. Review of the queue reports showed no queueing concerns in the study area.

Table 16: Peak Hour Analysis
Summary by Intersection

Intersection	Approach & Movement		Existing 2022		Background 2027		Future 2027	
			LOS	Delay, sec/veh	LOS	Delay, sec/veh	LOS	Delay, sec/veh
AM PEAK HOUR								
SB Woodward & Crossover N/O Hamilton	WB	LT	B	16.6	B	16.6	C	20.3
	SB	TH	B	12.7	B	12.9	A	3.2
Overall			B	12.9	B	13.1	A	4.2
SB Woodward & Maple	EB	TH/RT	B	15.7	B	15.8	B	15.8
	WB	TH	A	1.9	A	1.9	A	1.9
	SB	TH	B	11.0	B	11.0	A	2.8
		RT	A	7.8	A	7.8	A	0.2
Overall			B	10.0	B	10.1	A	4.6
NB Woodward & Maple	EB	TH	A	1.9	A	1.9	A	1.9
	WB	TH/RT	C	21.4	C	21.7	C	21.8
	NB	TH/RT	A	8.4	A	3.6	A	3.9
Overall			B	10.4	A	7.2	A	7.4
SB Woodward & Crossover S of Maple	EB	LT	A	9.8	A	9.9	B	10.1
	SB	TH	A	0.0	A	0.0	A	0.0
Overall			A	0.4	A	0.4	A	0.5
NB Woodward & Site Drive/Alley	WB	RT	A	9.1	A	9.5	B	10.0
	NB	TH/RT	A	0.0	A	0.0	A	0.0
Overall			A	0.1	A	0.1	A	0.3
SB Woodward & Brown	EB	RT	C	28.7	C	28.8	C	28.8
	SB	TH/RT	A	2.0	A	2.0	A	2.0
Overall			A	3.5	A	3.5	A	3.5
NB Woodward & Forest	WB	RT	A	9.3	C	30.5	C	30.5
	NB	TH/RT	A	0.0	A	5.7	A	5.8
Overall			A	0.2	A	6.2	A	6.3
NB Woodward & Crossover S of Brown	EB	LT	B	11.8	B	11.9	B	12.1
	NB	TH	A	0.0	A	0.0	A	0.0
Overall			B	1.3	A	1.3	A	1.3
Peabody/Park & Maple	EB	TH/RT	B	11.3	B	11.4	B	11.4
	WB	LT	A	6.6	A	7.0	A	6.7
		TH	A	6.5	A	6.7	A	6.4
		RT	C	22.1	C	20.3	B	18.3
	NB	RT	C	23.6	C	23.6	C	23.6
	SB	RT	D	42.3	D	42.3	D	42.3
Overall			B	10.0	B	10.1	A	9.9
Elm/Poppleton & Maple	EB	LT/TH/RT	A	3.6	A	3.6	A	3.8
	WB	LT/TH/RT	A	6.5	A	6.6	A	6.6
	NB	LT/TH/RT	C	29.3	C	29.3	C	29.3
	SB	TH/LT	C	29.3	C	29.3	C	29.3
		RT	C	28.6	A	28.6	C	28.6
Overall			A	8.1	A	8.1	A	8.1
Adams & Maple	EB	LT	C	22.3	C	22.9	C	23.8
		TH/RT	B	16.5	B	16.5	B	16.7
	WB	LT	C	23.1	C	23.5	C	23.9
		TH/RT	C	24.8	C	25.0	C	25.0
	NB	LT	C	29.6	C	30.0	C	30.3
		TH/RT	C	29.5	C	29.6	C	29.6
	SB	LT	C	27.3	C	27.7	C	27.7
		TH/RT	C	32.1	C	32.3	C	32.3
Overall			C	25.7	C	25.9	C	26.0
Proposed Driveway on Maple	EB	LT/RT	N/A				A	0.0
	WB	TH/LT					A	0.3
	NB	RT					A	9.1
Overall							A	0.2
PM PEAK HOUR								
SB Woodward & Crossover N/O Hamilton	WB	LT	B	18.3	B	18.3	C	23.7
	SB	TH	B	13.3	B	13.5	B	10.8
Overall			B	13.7	B	13.9	B	11.7
SB Woodward & Maple	EB	TH/RT	B	18.8	B	18.9	B	19.0
	WB	TH	A	0.9	A	0.9	A	0.9
	SB	TH	B	11.0	B	11.3	A	3.9
		RT	A	6.9	A	6.9	A	0.1
Overall			B	10.9	B	11.0	A	5.6
NB Woodward & Maple	EB	TH	A	1.0	A	1.0	A	1.0
	WB	TH/RT	B	17.3	B	17.5	B	17.6
	NB	TH/RT	A	7.3	A	2.5	A	2.6
Overall			A	8.8	A	5.3	A	5.4
SB Woodward & Crossover S of Maple	EB	LT	B	10.4	B	10.5	B	10.7
	SB	TH	A	0.0	A	0.0	A	0.0
Overall			A	0.4	A	0.5	A	0.5
NB Woodward & Site Drive/Alley	WB	RT	A	9.1	A	9.5	A	9.9
	NB	TH/RT	A	0.0	A	0.0	A	0.0
Overall			A	0.1	A	0.1	A	0.2
SB Woodward & Brown	EB	RT	D	37.2	D	37.7	D	37.8
	SB	TH/RT	A	2.8	A	2.9	A	2.5
Overall			A	7.5	A	7.6	A	7.2
NB Woodward & Forest	WB	RT	A	9.3	C	30.9	C	30.9
	NB	TH/RT	A	0.0	A	6.2	A	6.3
Overall			A	0.2	A	6.8	A	6.8
NB Woodward & Crossover S of Brown	EB	LT	B	13.8	B	14.1	B	14.9
	NB	TH	A	0.0	A	0.0	A	0.0
Overall			A	2.3	A	2.3	A	2.6
Peabody/Park & Maple	EB	TH/RT	B	12.8	B	12.9	B	13.0
	WB	LT	B	11.8	B	12.2	B	11.7
		TH	B	11.2	B	11.3	B	10.4
		RT	A	4.0	A	4.0	A	4.0
	NB	RT	C	22.6	C	22.6	C	22.6
	SB	RT	D	42.2	D	42.4	D	42.4
Overall			B	13.6	B	13.8	B	13.6
Elm/Poppleton & Maple	EB	LT/TH/RT	A	4.4	A	4.3	A	4.4
	WB	LT/TH/RT	A	2.0	A	2.0	A	2.2
	NB	LT/TH/RT	C	29.9	C	30.0	C	30.0
	SB	TH/LT	C	32.0	C	32.1	C	32.1
		RT	C	28.6	C	28.7	C	28.7
Overall			A	7.6	A	7.7	A	7.7
Adams & Maple	EB	LT	D	37.3	D	38.0	D	38.6
		TH/RT	C	22.7	C	22.8	C	22.9
	WB	LT	C	27.6	C	28.3	C	28.6
		TH/RT	C	28.1	C	28.4	C	28.5
	NB	LT	C	28.2	C	28.5	C	29.1
		TH/RT	C	30.4	C	30.6	C	30.6
	SB	LT	C	31.1	C	31.6	C	31.6
		TH/RT	C	31.9	C	32.2	C	32.3
Overall			C	28.5	C	28.8	C	28.9
Proposed Driveway on Maple	EB	LT/RT	N/A				A	0.0
	WB	TH/LT					A	0.3
	NB	RT					A	9.4
Overall							A	0.2
SAT PEAK HOUR								
SB Woodward & Crossover N/O Hamilton	WB	LT	B	16.8	B	16.9	C	24.4
	SB	TH	B	12.1	B	12.2	A	2.9
Overall			B	12.6	B	12.7	A	5.2
SB Woodward & Maple	EB	TH/RT	B	14.4	B	14.5	B	14.6
	WB	TH	A	1.4	A	1.4	A	1.3
	SB	TH	A	9.0	A	9.0	A	3.7
		RT	A	7.0	A	7.0	A	0.3
Overall			A	8.6	A	8.7	A	2.5
NB Woodward & Maple	EB	TH	A	2.6	A	2.5	A	2.5
	WB	TH/RT	C	20.2	C	20.5	C	20.6
	NB	TH/RT	A	6.9	A	1.7	A	1.9
Overall			A	9.5	A	6.1	A	6.2
SB Woodward & Crossover S of Maple	EB	LT	A	9.6	A	9.7	A	9.8
	SB	TH	A	0.0	A	0.0	A	0.0
Overall			A	0.6	A	0.6	A	0.7
NB Woodward & Site Drive/Alley	WB	RT	A	8.7	A	9.1	A	9.4
	NB	TH/RT	A	0.0	A	0.0	A	0.0
Overall			A	0.0	A	0.0	A	0.3
SB Woodward & Brown	EB	RT	C	29.9	C	30.1	C	30.1
	SB	TH/RT	A	2.8	A	2.8	A	2.7
Overall			A	5.6	A	5.6	A	5.5
NB Woodward & Forest	WB	RT	A	8.8	C	30.4	C	30.4
	NB	TH/RT	A	0.0	A	5.6	A	5.6
Overall			A	0.0	A	5.6	A	5.7
NB Woodward & Crossover S of Brown	EB	LT	B	12.1	B	12.3	B	12.7
	NB	TH	A	0.0	A	0.0	A	0.0
Overall			A	2.1	A	2.1	A	2.3
Peabody/Park & Maple	EB	TH/RT	B	13.9	B	14.1	B	14.2
	WB	LT	A	7.7	A	8.1	A	8.0
		TH	A	7.2	A	7.5	A	7.5
		RT	D	35.8	C	33.4	C	30.7
	NB	RT	C	21.0	C	20.9	C	20.9
	SB	RT	D	43.1	D	43.1	D	43.1
Overall			B	13.4	B	13.6	B	13.5
Elm/Poppleton & Maple	EB	LT/TH/RT	A	5.2	A	5.2	A	5.3
	WB	LT/TH/RT	A	6.8	A	6.8	A	6.9
	NB	LT/TH/RT	C	30.4	C	30.5	C	30.5
	SB	TH/LT	C	31.0	C	31.0	C	31.0
		RT	C	28.6	C	28.6	C	28.6
Overall			B	10.0	B	10.0	A	10.0
Adams & Maple	EB	LT	C	22.4	C	22.8	C	23.4
		TH/RT	B	19.1	B	19.2	B	19.2
	WB	LT	C	24.4	C	25.0	C	25.4
		TH/RT	C	23.5	C	23.6	C	23.7
	NB	LT	C	26.3	C	26.5	C	27.0
		TH/RT	C	29.8	C	29.9	C	29.9
	SB	LT	C	27.6	C	27.9	C	27.9
		TH/RT	C	30.6	C	30.7	C	30.8
Overall			C	24.9	C	25.0	C	25.1
Proposed Driveway on Maple	EB	LT/RT	N/A				A	0.0
	WB	TH/LT					A	0.3
	NB	RT					A	9.4
Overall							A	0.3

Existing Conditions
The results of the LOS analysis for existing conditions reveals that all approaches and movements of the studied intersections operate at LOS D or better during the AM and PM peak hours.

Background Conditions
The results of the LOS analysis for background conditions reveals that all approaches and movements of the studied intersections operate at LOS D or better during the AM and PM peak hours. This analysis included the new signal at the intersection of NB Woodward and Forest Street.

Future Conditions
The results of the LOS analysis for future conditions reveals that all approaches and movements of the studied intersections would continue to operate at LOS D or better during the AM and PM peak hours.

Site Access
Two driveways are proposed for the site, one on Maple Road, and the other on the alley at the south side of the site. The first level of the parking structure will not be restricted with traffic control gates but will be available as free parking for customers and employees of the on-site retail areas. Signage will be erected with time limits posted to encourage turnover. Parking on the upper and lower levels will be accessible to residents only. Interior garage doors will be installed to restrict access at both vehicular access points. For building services, an enclosed loading dock will be constructed on the south side of the building, accessible from the public alley. No changes to the adjacent roadways are needed to improve access for all roadway users (vehicles, pedestrians, and bicyclists).

For the purposes of the model, it is assumed that northbound and southbound traffic arriving and leaving the site via Woodward Avenue will use the southerly driveway on the alley. Eastbound and westbound traffic arriving and leaving the site will use the northerly driveway on Maple Road, with the exception that westbound vehicles departing from the site will find left turns on to Maple Road difficult during the peak hour, and that they will elect to use the alley driveway as well. It is recommended that the Owner monitor the outbound movements on to Maple Road during the peak hour. Should motorists attempting to make a left turn out of the Maple Road driveway begin causing queue problems in the parking structure, a NO LEFT TURN restriction could be posted within the parking structure during the afternoon peak hours, particularly on weekdays.

Site Circulation and Parking
This development includes a three-level parking structure with 348 proposed spaces. A majority of these spaces will be for resident use. On Level 1, a total of 82 parking spaces will be available primarily for retail customers, but also for employees. An additional existing 12 parking spaces within the Woodward Avenue right-of-way will also be maintained. A specific tenant has not yet been identified for the retail space. Using the ordinance standard of 1 parking space for every 300 SF of retail space; the retail space would generate demand for 34 parking spaces.

For the residential portion of the building, a total of 266 parking spaces is proposed, which exceeds the minimum number required in the zoning ordinance. Should any adjustments be made in the final unit mix, the developer is committed to meeting the minimum requirements of the zoning ordinance.

The developer intends to provide at least the minimum number of electric vehicle charging stations on site to achieve LEED certification. The developer is currently working with DTE Energy to confirm the number of electric vehicle charging stations that could be offered within the facility.

As is often the case with urban developments and urban parking structures, the access driveways to both Maple Road and the adjacent alley to the south will have limited sight distance when vehicles exit the garage in either direction, particularly with respect to pedestrians on Maple Road. To improve this condition, the proposed building is being constructed back off the property line (five feet at Maple Road, and four feet at the alley) at both parking structure driveways. It is recommended that the project also implement audible and visual warning systems to alert pedestrians using the Maple Road sidewalk that caution should be exercised when crossing these driveways.

For loading and trash handling functions, a loading garage will be provided with access to the alley, as is required by ordinance. The property operations team will arrange loading times that are in accordance with the ordinance and coordinate vehicles to minimize obstructions of the alley. A separate trash storage area will also be constructed adjacent to the loading garage, so that all trash storage from the building can be accommodated indoors, and out of sight of the public.

Multi-Modal Considerations

Cyclists

Bicycle parking will be provided for residents in the parking structure in a separate storage room (minimum 500 square feet). The facility is expected to accommodate approximately 50 bicycles. Residents using the bike parking facility will have the opportunity to walk their bike in/out of the parking structure via a doorway to the Maple Road sidewalk. In addition, public bike racks that will be provided at two different locations within both the Woodward Avenue and Maple Road rights-of-way, accommodating a minimum of 30 bicycles. No further enhancements are required to support the subject development.

Pedestrians

The existing sidewalk network in the area was studied with respect to expected pedestrian desire lines. As shown on Figure 14, significant points of interest for future residents of this building include:

1. *Downtown Birmingham to the west*
   Pedestrians wishing to access downtown Birmingham will find a complete sidewalk network, using the existing enhanced crosswalk located directly outside of the building at Woodward Avenue and Maple Road Should pedestrians be headed to the south end of downtown Birmingham, a new signal protected crosswalk will become available at the Forest Avenue and Brown Street intersection with Woodward Avenue upon completion of the new Forest Avenue traffic signal scheduled to be installed in late 2023. In 2019, MDOT removed and replaced all of the handicap ramps on the Woodward Avenue corridor in this area, widening them to eight feet wide with oversized continental style pavement markings, as requested by the City of Birmingham. No further improvements are recommended.

It is noted that the pedestrian interval provided for crossing Woodward Ave. will require the use of two signal cycles for most pedestrians (with a waiting period in the center median). While this is less than ideal, the signal timing is part of a coordinated signal progression for M-1, and the developer will not be in a position to modify the signal timing to the extent that would be required to address this.

2. *Neighborhood shopping center to the north (685 to 795 E. Maple Road)*
   The full-service Kroger grocery store, other convenient destinations such as a hair and nail salon, and a neighborhood bank are located in close proximity to the development on the north side of Maple Road. The Maple Road crosswalk was also improved by MDOT in 2019 to the same standards. Should residents prefer to cross Maple Road to the east end of the shopping center, a signalized, ADA crossing exists at Elm Street as well.

Should residents of the building wish to access the several other varied businesses in the area, a fully compliant and accessible sidewalk network exists to the south and east as well. No further enhancements to pedestrian access are required to support the development.

Transit Users
Route 450/460 – Woodward Local has a scheduled stop location at Woodward Avenue northbound at Maple Road. The developer plans to enhance the sidewalk streetscape area at this intersection to facilitate the installation of a new bus stop shelter by others.

Route 460/780 – Maple Road also has a scheduled bus stop just east of Woodward Avenue, in front of the subject property. The developer plans to coordinate the relocation of the existing bus stop shelter at this location, fully integrating it into the enhanced streetscape planned on Maple Road and locating it within close proximity of the residential main entrance to the building.

These routes, administered by SMART, run for approximately 18 hours on weekdays and Saturdays, and approximately 16 hours on Sundays. Headways are approximately 60 minutes for each of the two independently numbered routes. Existing sidewalk is available to access the bus stops from the proposed development. Bus stops for northbound and southbound Woodward Avenue are located less than ¼ mile from the site.

For transit riders headed in the opposite direction, there are also bus stops directly across both Woodward Avenue and Maple Road. The bus stop for southbound Woodward Avenue already has a shelter as well.

No additional bus stops, routes, or sidewalks are required to support the subject development.

Non-motorized Routing
Given the high average daily traffic on both Woodward Avenue and Maple Road, bicycle riders may seek alternative routes for non-motorized travel. Fortunately, the new parking structure's southerly exit connects to an alley that has direct access to Elm Street. Once on Elm Street, a large network of local streets exists for travel in all directions. Elm Street will also connect bicycle riders to Bowers Street, a designated shared use route that will connect riders either to Adams Road to the east, or to Old Woodward Avenue to the west. Residents wishing to access downtown further north, or other areas to the west will also be able to use the new signalized Woodward Avenue crossing at Forest Avenue and Brown Street, which then connects to a multitude of local commercial and residential streets.

The Multi-Modal Transportation Plan has recommended shared use pavement markings to encourage an improved environment for both Bowers Street and Adams Road in this area. Installation of these shared use markings are outside of the scope of this project and are best implemented as part of larger transportation projects implemented at the city level. Other shared lane marking recommendations in the area would be best implemented as part of larger projects implemented at the city level.

Anticipated routes for all non-motorized traffic associated with the development were determined. These routes are shown in Figures 14, 15, and 16 attached to this memorandum. These routes will utilize the existing pedestrian facilities and crosswalks.

Crash/Safety Analysis

A crash analysis was conducted for all intersections included in this study. Traffic crash data was reviewed for the most recently completed five years (January 1, 2018 – December 31, 2022) of available data. With the large study area, the analysis was broken out into individual locations for ease of review.

Maple Road at Park Street / Peabody Street

A review of the crash data at the Maple Road and Park Street/Peabody Street intersection revealed a total of 27 crashes. Summaries of Crashes by Year and the associated injuries are tabulated below.

Table 17: Summary of Crashes by Year – Maple Road at Park Street / Peabody Street

Year	2018	2019	2020	2021	2022
No. of Crashes	3	0	2	13	9

The following table shows crash injury details. Of the twenty-seven (27) crashes, no fatalities are reported, but there is a reported A-injury. This is a hit and run vehicle-motorcycle collision that occurred in May 2022 in the evening. The hazardous action was disregarding traffic control.

Table 18: Summary of Crashes by Injury - Maple Road at Park Street / Peabody Street

	Fatal	A	B	C	No Injury	Total
Persons	0	1	3	0	0	4

None of the reported crashes involved alcohol or drugs.

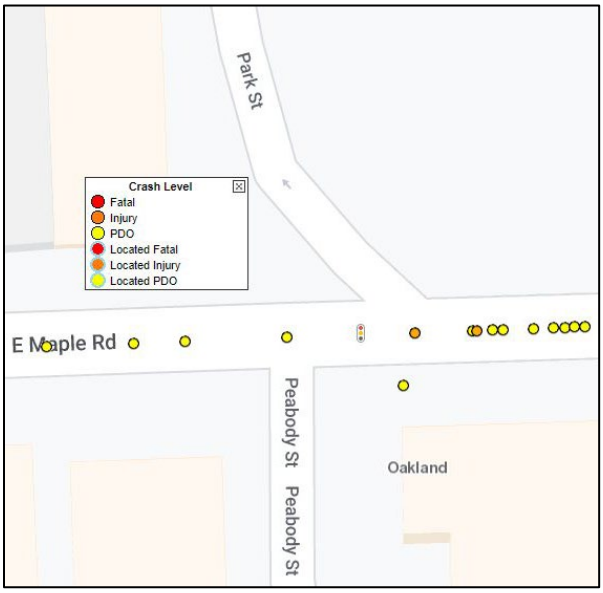


Figure 17 - Crash Location

<u>Crash Type Analysis</u>

The most frequent crash types were same-side sideswipe collisions at fourteen (14) and angle crashes at six (6). The side-swipes crashes have all occurred in the westbound direction. The intersection geometry was changed in 2020 to realign Park Street and Peabody Street leaving a very short 120 feet segment of Maple Road to negotiate between Park Street and Woodward Avenue. Twelve (12) of these crashes occurred in 2021 and two (2) in 2022 which seems to indicate people are becoming familiar with the new traffic pattern. The crash locations are shown in Figure 17, and Table 3 summarizes the crash type.

Table 19: Summary of Crashes by Type

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Ped-vehicle	2	**7%**
Angle	6	**22%**
Rear-end	1	**4%**
Parking/Backing	4	**15%**
Side-swipe - same	14	**52%**
TOTAL	**27**	**100%**

One pedestrian crash occurred when the pedestrian was in the marked crosswalk (2018). The hazardous action was the vehicle failed to yield. The other reported pedestrian-vehicle crash the pedestrian was not crossing in the crosswalk (2020). Both of these crashes resulted in B-injuries to the pedestrian and occurred in the evening. There are no reported bicycle crashes at this intersection.

Southbound Woodward Avenue at the crossover North of Maple Road

A review of the crash data on southbound Woodward at the crossover located north of Maple Road shows a total of 13 crashes. Summary of Crashes by Year is tabulated below.

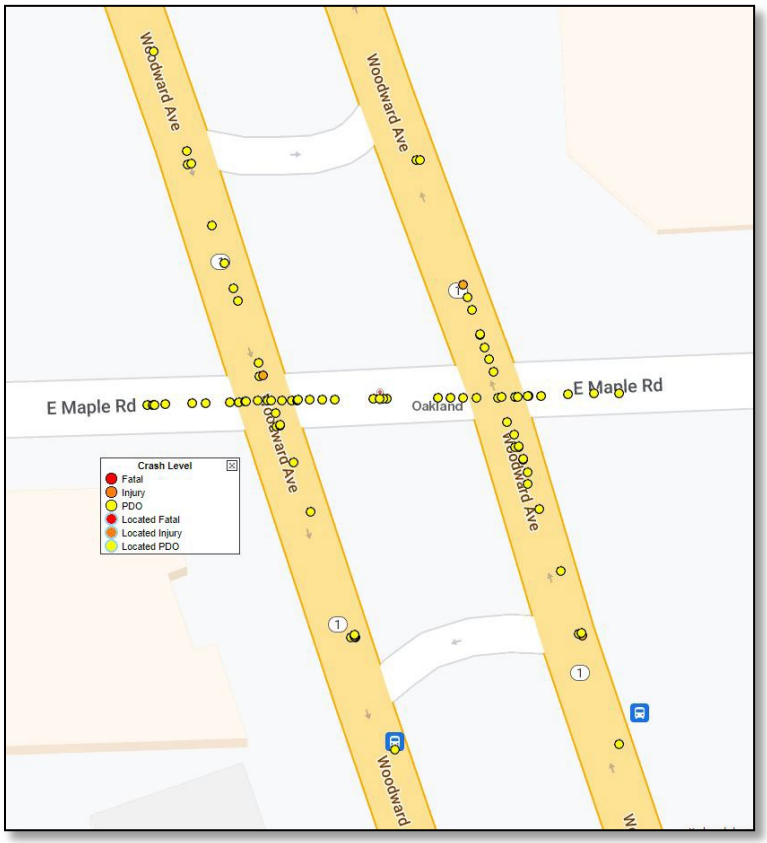


Figure 18 – Crash Locations
At crossovers North and South of Maple Road & NB and SB Woodward at Maple Road

Table 20: Summary of Crashes by Year
Southbound Woodward Avenue at the crossover North of Maple Road

Year	2018	2019	2020	2021	2022
No. of Crashes	1	4	2	4	2

Of the eleven (11) crashes, no fatalities or injuries are reported. Also, none of the reported crashes involved alcohol or drugs.

Table 21: Summary of Crashes by Type

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Single	1	**8%**
Angle	3	**23%**
Rear-end	3	**23%**
Other	1	**8%**
Side-swipe - same	5	**38%**
TOTAL	**13**	**100%**

There are no pedestrian or bicycle crashes reported at this intersection. The reported hazardous action for a majority of the collisions is improper lane use and failed to yield.

Southbound Woodward Avenue at Maple Road

A review of the crash data on southbound Woodward at the intersection of Maple Road shows a total of 61 crashes. Summary of Crashes by Year is tabulated below.

Table 22: Summary of Crashes by Year
SB Woodward Avenue at the intersection of Maple Road

Year	2018	2019	2020	2021	2022
No. of Crashes	12	11	5	14	19

Table 23: Summary of Crashes by Injury –
SB Woodward Avenue at the intersection of Maple Road

	Fatal	A	B	C	No Injury	Total
Crash Severity	0	2	4	2	53	61

Of the 61 crashes, no fatalities are reported. Two (2) A-injury, and 1 B-injury were all the result of vehicle-pedestrian crashes. Two (2) of these crashes were right turning vehicles that failed to yield to the pedestrian in the crosswalk. One A-injury crash may have been contributed to the pedestrian disregarding the traffic signal. The other A-injury crash the pedestrian had been drinking. Two angle crashes resulted in a reported B-injury and a C-injury. The B-injury crash reported the traffic signal had malfunctioned.

Table 24: Summary of Crashes by Type

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Single	1	**1%**
Angle	7	**12%**
Rear-end	13	**21%**
Parking/Backing	1	**1%**
Side swipe - same	36	**59%**
Vehicle-Pedestrian	3	**6%**
TOTAL	**61**	**100%**

The predominate crash type is side swipe in the same direction with the rear-end type being second. There are no bicycle crashes reported at this intersection. The reported hazardous action for a majority of the collisions is improper lane use and failed to yield.

Northbound Woodward Avenue at Maple Road

A review of the crash data on northbound Woodward at the intersection of Maple Road shows a total of 71 crashes. Summary of Crashes by Year is tabulated below.

Table 25: Summary of Crashes by Year
Northbound Woodward Avenue at the intersection of Maple Road

Year	2018	2019	2020	2021	2022
No. of Crashes	29	16	6	8	12

Table 26: Summary of Crashes by Injury –
Northbound Woodward Avenue at the intersection of Maple Road

	Fatal	A	B	C	No Injury	Total
Crash Severity	0	0	1	3	67	71

Of the 71 crashes, no fatalities are reported. Two (2) C-injury, and 1 B-injury were all the result of vehicle-pedestrian crashes. All three (3) of these crashes were right turning vehicles that failed to yield to the pedestrian in the crosswalk. One angle crash resulted in a reported C-injury.

Table 27: Summary of Crashes by Type

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Single	2	**3%**
Angle	9	**13%**
Rear-end	30	**42%**
Parking/Backing	2	**3%**
Side swipe - same	25	**35%**
Vehicle-Pedestrian	3	**4%**

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
TOTAL	**71**	**100%**

The predominate crash type is rear-end and side swipe in the same direction is the second. There are no bicycle crashes reported at this intersection for our study period. The reported hazardous action for a majority of the collisions is unable to stop and improper lane use.

Northbound Woodward Avenue at the crossover South of Maple Road

A review of the crash data on northbound Woodward at the crossover located south of Maple Road shows a total of 11 crashes. Summary of Crashes by Year is tabulated below.

Table 28: Summary of Crashes by Year
Northbound Woodward Avenue at the crossover South of Maple Road

Year	2018	2019	2020	2021	2022
No. of Crashes	1	3	2	3	2

Of the eleven (11) crashes, no fatalities are reported. There was one (1) reported B-injury associated with a rear-end collision and one (1) C-injury from a side swipe crash. Also, none of the reported crashes involved alcohol or drugs.

Table 29: Summary of Crashes by Type

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Rear-end	5	**45%**
Side-swipe - same	6	**55%**
TOTAL	**11**	**100%**

There are no pedestrian or bicycle crashes reported at this intersection. The reported hazardous action for a majority of the collisions is unable to stop and improper lane use.

Maple Road at S. Elm Street / Poppleton Street

A review of the crash data at the signalized Maple Road and Elm Street / Poppleton Street shows a total of 27 crashes. Summary of Crashes by Year is tabulated below, and the locations are shown in Figure 19.

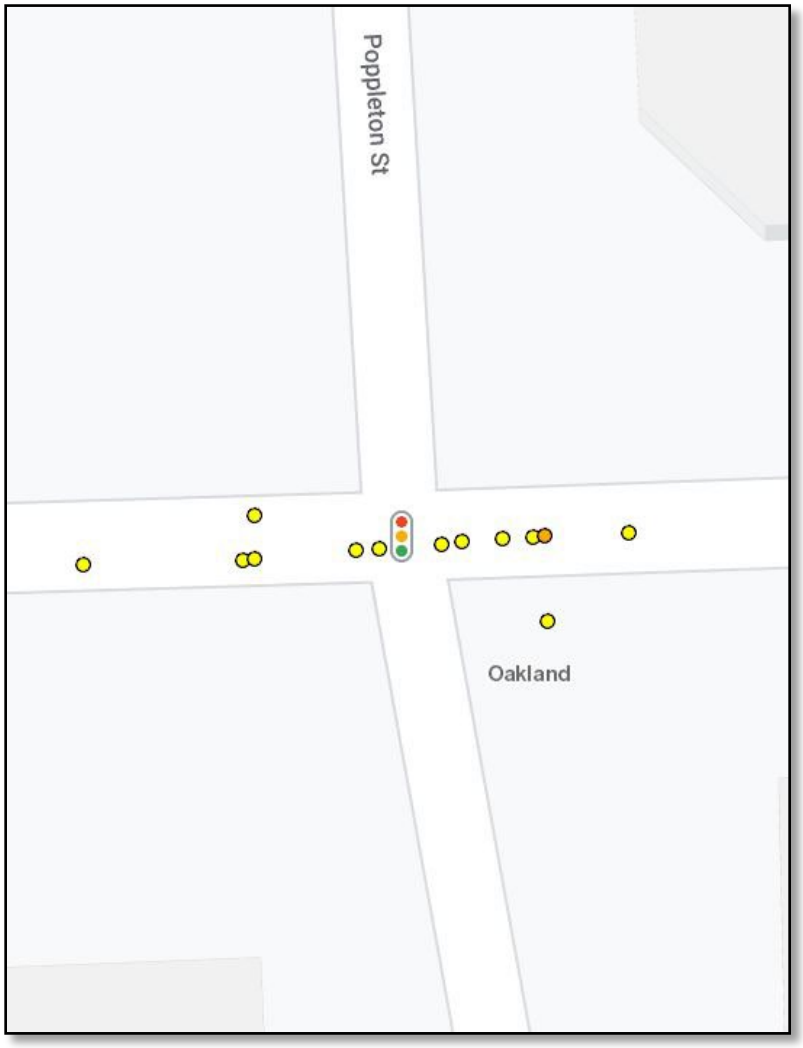


Figure 19 – Maple Road at Elm Street/ Poppleton Street

Table 30: Summary of Crashes by Year
Maple Road at S. Elm Street / Poppleton Street

Year	2018	2019	2020	2021	2022
No. of Crashes	8	7	1	5	6

Of the 27 crashes, no fatalities are reported. There was one (1) reported C-injury associated with a rear-end collision and one (1) C-injury from a head-on left crash. Also, none of the reported crashes involved alcohol or drugs.

Table 31: Summary of Crashes by Type

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Head-on Left	4	**15%**
Angle	9	**33%**
Rear-end	7	**26%**
Side swipe - same	6	**22%**
Side swipe - opposite	1	**4%**
TOTAL	**27**	**100%**

The predominate crash type is angle collisions. Rear-end and side swipes are the second type. There are no pedestrian or bicycle crashes reported at this intersection for our study period. The reported hazardous action for the collisions is failed to yield, unable to stop and improper lane use.

Maple Road at Adams Road

A review of the crash data at the signalized Maple Road and Adams Road shows a total of 29 crashes. Summary of Crashes by Year is tabulated below, and the locations are shown in Figure 20.

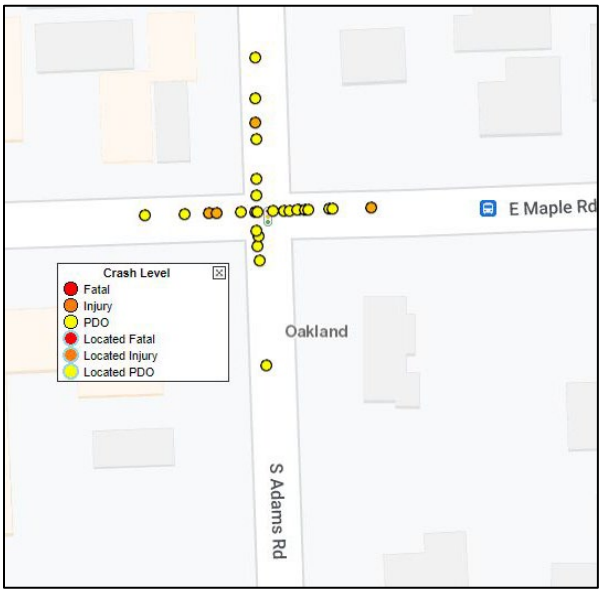


Figure 20: Maple Road at Adams Road

Table 32: Summary of Crashes by Year
Maple Road at Adams Road

Year	2018	2019	2020	2021	2022
No. of Crashes	7	8	5	4	5

Of the 29 crashes, no fatalities or A-injuries are reported. There was one (1) reported C-injury associated with a rear-end collision and snowing conditions and three (3) C-injuries from angle crashes. None of the reported crashes involved alcohol or drugs.

Table 33: Summary of Crashes by Type – Maple Road at Adams Road

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Single	1	**3%**
Angle	7	**24%**
Rear-end	12	**41%**
Side swipe - same	9	**32%**
TOTAL	**29**	**100%**

The predominate crash type is rear-end collisions at 41 percent. Side swipes are the second type. There are no pedestrian or bicycle crashes reported at this intersection for our study period. The reported hazardous action for a majority of the collisions is unable to stop and improper lane use.

Southbound Woodward Avenue at Brown Street

A review of the crash data at the signalized tee intersection of SB Woodward and Brown Street shows a total of 33 crashes. Summary of Crashes by Year is tabulated below, and the locations are shown in Figure 21.

Table 34: Summary of Crashes by Year
SB Woodward Avenue at Brown Street

Year	2018	2019	2020	2021	2022
No. of Crashes	8	2	9	7	7

Of the 33 crashes, one (1) fatal crash is reported. Per the Traffic Crash Report, the pedestrian did not obey the traffic signal and was struck in the crosswalk. It was dark at the time of the collision. There was one (1) reported C-injury associated with a rear-end crash and two (2) C-injuries from angle crashes. None of the reported crashes involved alcohol or drugs.

Figure 21 – SB Woodward Avenue at Brown Street

Table 35: Summary of Crashes by Type

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Vehicle-Pedestrian	1	**3%**
Angle	9	**27%**
Rear-end	12	**37%**
Side swipe - same	10	**30%**
Parking/Backing	1	**3%**
TOTAL	**33**	**100%**

The predominate crash type is rear-end collisions with side swipes as the second type at this tee intersection. There are no bicycle crashes reported for our study period. The reported hazardous action for the collisions is unable to stop and improper lane use.

Northbound Woodward Avenue at Forest Avenue

A review of the crash data at the tee intersection of Northbound Woodward and Forest Street shows a total of 8 crashes. Summary of Crashes by Year is tabulated below, and the locations are shown in Figure 22.

Table 36: Summary of Crashes by Year
Northbound Woodward Avenue at Forest Street

Year	2018	2019	2020	2021	2022
No. of Crashes	1	2	2	2	1

Of the 8 crashes, one (1) fatal crash is reported. Per the Traffic Crash Report, the pedestrian did not cross at the crosswalk. It was dark at the time of the collision. None of the reported crashes involved alcohol or drugs.

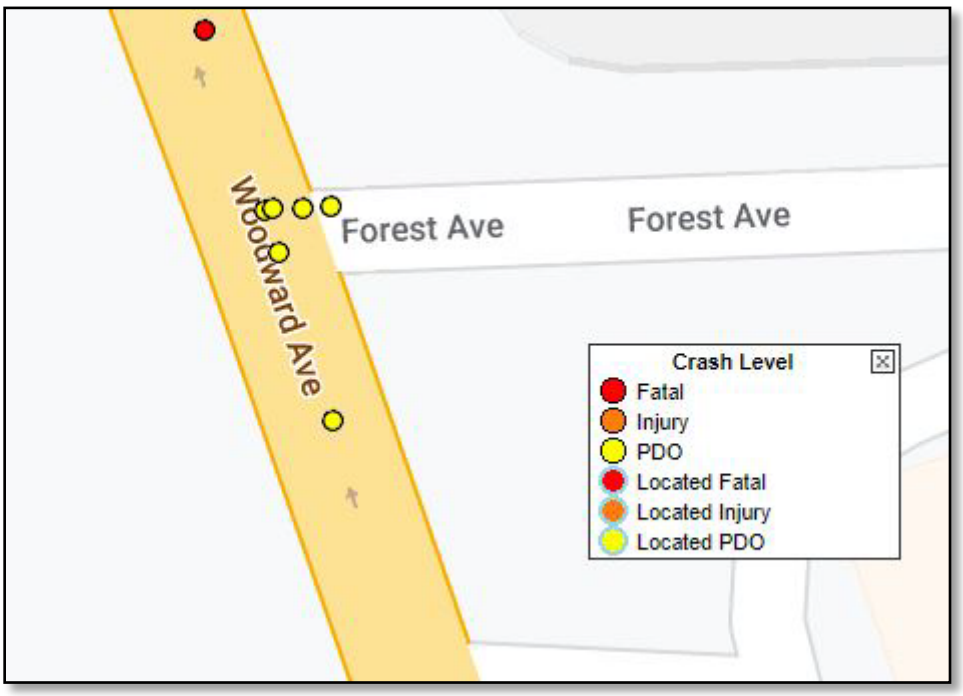


Figure 22 – Northbound Woodward Avenue at Forest Avenue

Table 37: Summary of Crashes by Type – Northbound Woodward at Forest Avenue

Type of Crash	Number of Crashes	Overall Crash % Based on Type of Crash
Vehicle-Pedestrian	1	**3%**
Angle	1	**27%**
Rear-end	6	**37%**
TOTAL	**8**	**100%**

The predominate crash type is rear-end collisions at this tee intersection. There are no bicycle crashes reported for our study period. The reported hazardous action for the collisions is unable to stop. Plans are scheduled to signalize this intersection in the upcoming year.

Northbound Woodward Avenue at Alley adjacent to the site

A review of the crash data at the tee intersection of Northbound Woodward and the alley shows a total of 2 crashes in the 5-year study period. Both crashes were side swipe same with the hazardous action being improper lane use/failing to yield. No injuries were recorded with these collisions. Nor are alcohol or drugs. Figure 23 below shows the crash locations.

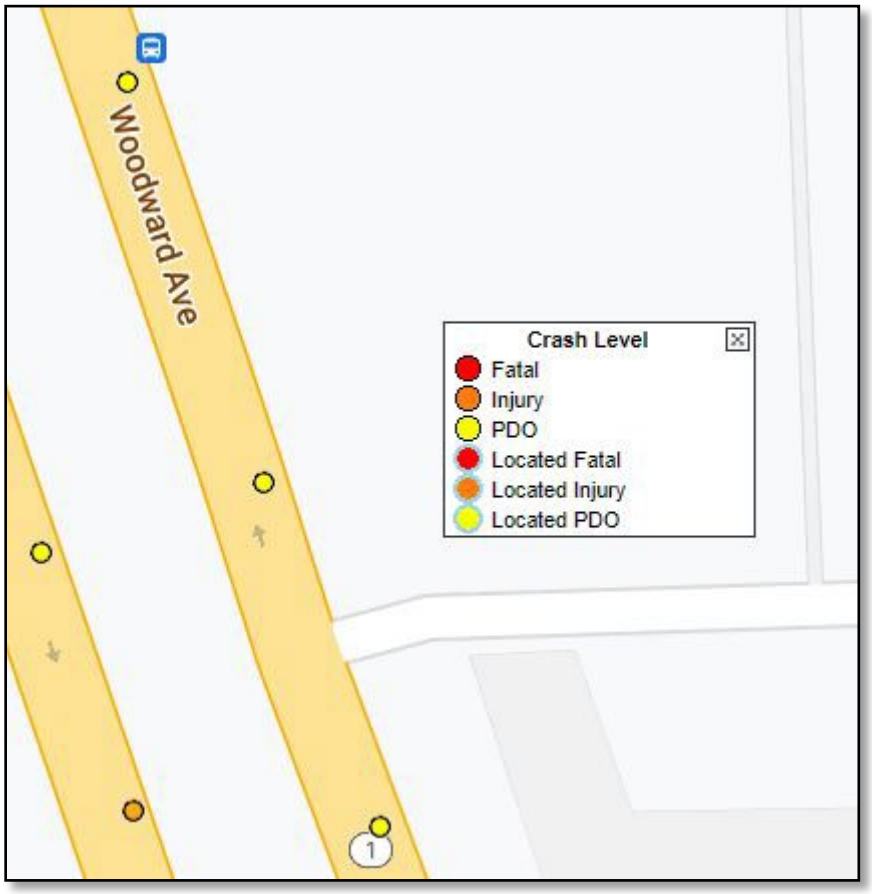


Figure 23 – Northbound Woodward Avenue at site alley

To summarize, both Woodward Avenue and Maple Road are highly developed corridors that operate with high traffic demands, both vehicular and pedestrian. The one significant deficit in the immediate area is the lack of a protected pedestrian crossing for northbound Woodward Avenue at Forest Avenue, which is now scheduled for correction by MDOT later this year. The development is not creating any new turning movements on Woodward Avenue. Further, the new driveway on Maple Road matches the location of the driveway that existed for many years when the site was occupied by a motel. We do not see any road system changes that can be implemented at this time that would further improve safety of the adjacent road system.

Conclusions and Recommendations for the Traffic Impact Study

Motor Vehicle Analysis

The proposed project consists of a mixed-use development located at the southeast corner of Woodward Avenue and Maple Road in Birmingham, MI. The current site plan proposes 10,000 SF of commercial space and 210 DU with an anticipated opening date of 2027. The proposed development will have an on-site parking structure with two driveways accessing both Maple Road and the public alley to the south.

The proposed development is forecast to generate 102 new trips during the AM peak hour (28 inbound and 74 outbound from the site) and 118 new trips during the PM peak hour (75 inbound and 43 outbound from the site) and 123 new trips in the Saturday peak hour (67 inbound and 56 outbound).

An operational analysis was performed for existing, background and total future (build) conditions for the intersections in the study area.

The operational analysis indicated that most approaches of the study intersections would operate at acceptable levels during all peak hours reviewed.

Multi-Modal Analysis

The Multi-Modal Transportation Plan recommends crosswalk improvements along the Woodward Avenue corridor that were primarily completed in 2019. The last remaining piece, that being a new traffic signal at Forest Avenue to greatly improve the safety of crossing northbound Woodward Avenue at this location, is planned for later this year, prior to the proposed building being occupied. It also recommends shared use pavement markings on Bowers Street and Adams Road. For both the Bowers Street and Adams Road corridors, the implementation of shared use markings should be considered in a larger context that involves many other streets, so as to be a part of a holistic network.

Overall, the proposed project has a minimal impact at the studied intersections or on the surrounding road network. No transportation improvements will be required to support the development on opening day.

Attachments

Section 4.6

Phase 1 Environmental Assessment

Ryan Companies US, Inc.

PRIVILEGED AND CONFIDENTIAL

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

690 E. MAPLE ROAD and
34952 WOODWARD AVENUE
BIRMINGHAM, MI

PREPARED FOR:

RYAN COMPANIES US, INC.
MINNEAPOLIS, MN

PREPARED BY:

Barr Engineering Co.
3005 Boardwalk Street
Suite 100
Ann Arbor, MI 48108
734-922-4400

FEBRUARY 2023

Consultant Project Number: 22631238.00

DRAFT

ENVIRONMENTAL PROFESSIONAL STATEMENT

I, Thomas Boom, do declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a Property of the nature, history, and setting of the subject Property. Barr Engineering Co. has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

_____

Thomas Boom

Vice President

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EXECUTIVE SUMMARY

Barr Engineering Co. (Barr) was retained by Ryan Companies US, Inc. (**Ryan**) to conduct a Phase I Environmental Site Assessment (**ESA**) and prepare this Phase I ESA Report for two parcels totaling approximately 1.5 acres of vacant land/vacant office building addressed as 690 E Maple Rd and 34952 Woodward Ave., City of Birmingham (**City**), County of Oakland, State of Michigan (the **Property**). The Property is located in the Northeast Quarter of Section 36, Township 2 North, Range 10 East. A list of Abbreviations, some of which are used throughout this Phase I ESA Report, is included in **Section 11.0** of this Phase I ESA Report. **Figure 1** in **Appendix A** shows the location of the Property. The Property Layout is included as **Figure 2** in **Appendix A**. One of the purposes of the Phase I ESA is to allow Ryan to qualify for one or more of the following Landowner Liability Protections (**LLPs**) as defined in 42 U.S.C. § 9601 (35) (B): Innocent Landowner, Bona Fide Prospective Purchaser, or Contiguous Property Owner.

Ryan intends to purchase the Property and develop it for use as a multifamily facility.

Property and Surrounding Properties Description

General Area	Commercial, residential, and developing area
Property Description	Vacant office building and paved parking lot
Adjacent to North	East Maple Road, beyond which is commercial property
Adjacent to East	Commercial
Adjacent to South	An alleyway, beyond which is residential and commercial
Adjacent to West	Woodward Avenue, beyond which is commercial

Based on the information reviewed, the Property was residential prior to 1937. By 1949, residential buildings on the western portion of the Property had been demolished and South Hunter Boulevard (currently Woodward Avenue) was expanded to adjoin the Property to the west. By 1960, all residential buildings had been cleared and replaced by the Birmingham House Motel and a filling station. The filling station operated until the mid-1960s. No information was available for the closure and/or removal of the filling station on the Property. An office building was constructed at 690 E Maple Rd around 1965 and is still present on the Property today. The Birmingham House Motel eventually became Holiday Inn Express before being demolished around 2010.

Adjoining land use was primarily residential prior to the 1960s. Evidence of a coal yard adjoining the property in the 1920s and 1930s was noted in historical sources. Former filling stations adjoining the Property to the west were also noted in the 1950s and 1960s. After 1960, adjoining properties and surrounding areas became primarily commercial.

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Minimal debris was observed on the Property at the time of Barr's Walk-Over Survey on December 7, 2022. Small amounts of residential-grade cleaning products were observed in the utility rooms in the vacant office building along with evidence of mold and suspected lead-based paint. Floor drains were observed in restrooms and a sump was identified in the mechanical room of the vacant office building. Air conditioning window units were observed as well as a boiler in the basement of the building. No indications of hazardous substances or petroleum were observed. See Figure 2 in Appendix A for the approximate location of the Walk-Over observations.

According to a Commitment to Insure from First American Title Insurance Company, File No. 968431, Effective Date: November 4, 2022 (**the Title Commitment**), furnished to Barr by Ryan, the Property is owned by Maryko Hospitality, LLC. The Title Commitment did not identify environmental liens or easements for the parcels.

Work performed for the Phase I ESA included: a review of federal, state, county, and municipal information, a Walk-Over Survey, review of documents furnished to Barr by Ryan; an interview with representatives of Ryan and site representative DeAndre Glenn, and a review of historical data. The Phase I ESA was conducted in general accordance with the scope and limitations of the ASTM Standard Practice E1527-13 as expanded in accordance with Ryan's Environmental Site Assessment Guidelines (Version July 1, 2018). Any exceptions to or deletions from this practice are noted in **Section 2.0** of this Phase I ESA Report.

Barr has not identified any significant data gaps, as defined by the ASTM Standard Practice E1527-13.

Based on Barr's assessment and a review of information obtained, no recognized environmental conditions (**RECs**), as defined in ASTM Standard Practice E1527-13, or historical RECs were identified for the Property.

Although not constituting RECs, the following items of environmental note were observed for the Property:

- Historical Filling Station – The Property was historically occupied by a filling/service station that used petroleum products and underground storage tanks (USTs) with the potential for releases and orphan UTSs on the Property. Impacts from the filling station were not detected in soil and groundwater samples collected during a previous Phase II investigation (2011 Phase II ESA). A ground penetrating radar (GPR) survey was also completed at the same time to investigate the potential for orphan USTs. No anomalies consistent with orphan USTs were identified during the survey. Based on the results of the previous investigation, this finding is

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not considered a REC.

- Historical Residences – Until the early 1960s, residential buildings were located on the Property. It is anticipated that historical foundations were removed from the Property when the current building was constructed. This finding is not a REC.
- Holiday Inn Express Laundry Room Fire – According to information provided by the Birmingham Fire Department, a small fire occurred in the basement of the former hotel located on the Property. The fire was reportedly contained within the building and was extinguished with a portable fire extinguisher and water. Based on the small size of the fire and that only a fire extinguisher and water were used to extinguish the fire, this finding is not a REC.
- Chemical Storage and Possible Lead-Based Paint – The vacant building on the Property was observed for environmental impacts during Barr's Walk-Over Survey. Small amounts of residential grade cleaning products were observed in the utility rooms and lead-based paint was suspected to be present in the building. Based on the small quantities of chemicals observed, this finding not a REC.
- Historical Use of Nearby Properties – Historically, a coal yard adjoined the Property to the west and several gasoline service stations adjoined the Property to the west and northwest. In addition, nearby properties have reported leaking underground storage tank (LUST) sites, some of which are still open. Also, a former dry cleaner operated from 1959-1998 adjoining the Property to the north. Based on the closed status of many of these sites, their distance from the Property, and soil and groundwater data gathered during a previous Phase II investigation on the Property, there is no indication of contamination from nearby sites on the Property and this finding is not a REC.
- Adjoining Transformers – Three pole-mounted transformers were observed adjoining the Property: one to the south and two to the east. The transformers appeared to be in good condition and no signs of leaks or staining were observed.

Based on the information collected for the Phase I ESA, Barr does not believe further environmental assessment of the Property is necessary at this time.

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1.0 INTRODUCTION

Barr Engineering Co. (**Barr**) was retained by Ryan Companies US, Inc. (**Ryan**) to conduct a Phase I Environmental Site Assessment (**ESA**) and prepare this Phase I ESA Report for two parcels totaling approximately 1.5 acres of vacant land/vacant office building addressed as 690 E Maple Rd and 34952 Woodward Ave, City of Birmingham (**City**), County of Oakland, State of Michigan (the **Property**). The Property is located in the Northeast Quarter of Section 36, Township 2 North, Range 10 East. A list of Abbreviations, some of which are used throughout this Phase I ESA Report, is included in **Section 11.0** of this Phase I ESA Report. **Figure 1** in **Appendix A** shows the location of the Property. The Property Layout is included as **Figure 2** in **Appendix A**. One of the purposes of the Phase I ESA is to allow Ryan to qualify for one or more of the following Landowner Liability Protections (**LLPs**) as defined in 42 U.S.C. § 9601 (35) (B): Innocent Landowner, Bona Fide Prospective Purchaser, or Contiguous Property Owner.

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2.0 SCOPE OF WORK

The following work items were completed for the Phase I ESA:

- Contacts with county and municipal regulatory agencies to determine if any known environmental concerns have been reported on or adjacent to the Property;
- A review of a database file search from EDR dated November 23, 2022 (the **EDR Response**);
- A review of information provided by the DNRES and SHPO;
- A walk-over survey of the Property to identify any readily apparent environmental concerns on or adjacent to the Property;
- A historical review of the Property, utilizing available aerial photographs, USGS topographic maps, Sanborns, and City Street Directories;
- Interviews with representatives of Ryan, and the Property representative;
- A review of the Wellogic database for the presence of wells on the Property;
- A review of three previous Phase I ESAs and a Phase II investigation (**January 2011 Phase I ESA Report, 2011 Phase II ESA Report, October 2011 Phase I ESA Report, and 2013 Phase I ESA Report**) prepared by PM Environmental (PME);
- Preparation and submittal of this Phase I ESA Report summarizing the findings.

The following sections discuss the results of the investigation and summarize the information obtained for the Phase I ESA. The Phase I ESA did not include a complete compliance analysis with local, state or federal environmental laws, rules or regulations. However, Barr attempted to note obvious instances of non-compliance. The Phase I ESA was conducted in accordance with the scope and limitations of the ASTM Standard Practice E1527-13 as expanded in accordance with Ryan's Environmental Site Assessment Guidelines (Version July 1, 2018).

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2.1 Exceptions or Deletions from the ASTM Standard Practice

Barr did not check the zoning/land-used records as listed in the Standard Historical Sources in ASTM Standard Practice E1527-13 because in Barr's past experiences, information from this source is not likely to be sufficiently useful in providing historical site information beyond those sources which were already checked by Barr.

A review of Recorded Land Title Records, as defined in the ASTM Standard Practice E1527-13, other than Barr's review of the Title Commitment, was deemed unnecessary as other, more relevant historical sources were available.

3.0 PHYSICAL SETTING

A site's ability to impact surrounding properties is largely dependent on the direction of groundwater flow from the site. To assess groundwater flow to the Property, Barr reviewed the EDR Radius Map Report (the **EDR Response).** The USGS 7.5-minute Birmingham topographic quadrangle (revised 2019) map (the **Topographic Map**) was also used to identify topographic features such as hills, streams, and lakes, which may influence site specific shallow ground water flow direction.

3.1 Topography

The Property is characterized by relatively flat topography based on the topographic maps, with an overall slope down to the southeast based on the topographic maps. The elevation of the Property is approximately 773 feet NGVD.

3.2 Geology/Hydrogeology

The soil survey summarizes available information on the geology and hydrogeology of the area of interest. According to the soil survey, surficial deposits in the vicinity of the Property consist of Udorthents and Udipsamments, nearly level to hilly. During the 2011 Phase II investigation, soil borings indicated sand between 8.0 and 9.0 feet below ground surface (bgs) underlain by a dense brown to gray clay to a depth of 25.0 feet bgs.

The nearest surface water feature is the Rouge River, a tributary of the Detroit River, located approximately 0.3 miles northwest of the Property. Topographic information indicates the Property is separated from the Rouge River by higher elevations immediately northwest of the Property.

The EDR Response indicates the groundwater flow direction to be in a southeast direction. However, local groundwater flow direction is often influenced by topography and local drainage features such as lakes, streams and wetland areas and may vary from the regional groundwater flow direction.

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During the 2011 Phase II Investigation, perched and discontinuous groundwater was encountered between 5.0 and 10.0 feet bgs.

3.3 Wetland Classification

Barr reviewed the National Wetland Inventory (**NWI**) map published by the U. S. Department of the Interior, Fish and Wildlife Service and the EGLE Wetland Map Viewer published by the State of Michigan. These maps do not show wetland and/or potential wetland (hydric soil) areas on or adjacent to the Property.

Barr also reviewed the EDR Overview Map for National and State Wetlands within a one-mile radius of the Property (the **EDR Overview Map**). The EDR Overview Map indicates that the closest wetland is located nearly 0.5 miles northwest of the Property contiguous to the Rouge River.

3.4 Potential for Presence of Naturally Occurring Asbestos

Based on the reviewed geologic information, the potential for naturally occurring asbestos in the bedrock or unconsolidated material at the Property is considered low.

3.5 Vapor Intrusion Assessment

A previous Phase II investigation was conducted by PME in 2011 to investigate potential impacts from historical sites adjoining and upgradient of the Property. Groundwater and soil samples were collected on the Property for analysis of volatile organic compounds (VOCs), polynuclear aromatics (PNAs), polychlorinated biphenyls (PCBs) and metals. No concentrations of target compounds were detected in soil or water samples above laboratory method detection limits. Based on the results of this investigation, PME and their client opted to not perform a Vapor Intrusion Assessment.

3.6 Potential for Presence of Methane Gas and Radon

Based on the reviewed geologic and soil information, the potential for naturally occurring methane gas at the Property is considered low.

Radon is a naturally occurring colorless, odorless gas that is a by-product of the decay of radioactive materials potentially present in bedrock and soil. The EPA guidance action level for annual residential exposure to radon is 4.0 Pico Curies per liter of air (**pCi/L**). The guidance action level is not a regulatory requirement for private owners of commercial real estate but is commonly used for comparison purposes to suggest whether further action at a building may be prudent.

The EPA and the USGS have evaluated the radon potential in the U.S. and have developed the EPA

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Map of Radon Zones (**the EPA Radon Zone Map**) to assist national, state, and local organizations to target their resources and to assist building code officials in deciding whether radon-resistant features are applicable in new construction.

The EPA Radon Zone Map assigns each of the counties in the U.S. to one of three zones based on radon potential. Each zone designation reflects the average short-term radon measurement that can be expected to be measured in a building without the implementation of radon control methods. The EPA Radon Zone Map is not intended to be used to determine if a structure in a given zone should be tested for radon. Structures with elevated levels of radon have been found in all three designated zones on the EPA Radon Zone Map. The radon zone designation of the highest priority is Zone 1, which indicates a structure has the highest potential to exceed EPA's current action level of 4.0 pCi/L of measured radon.

According to the EPA Radon Zone Map, Oakland County, in which the Property is located, is in Zone 2 with anticipated radon levels of 2-4 pCi/L. The determination of Property specific radon levels was beyond the Scope of Services for the Phase I ESA and would require measurements following EPA accepted methods.

3.7 Critical Habitat/Endangered Species

According to the U.S. Fish and Wildlife Service Information for Planning and Consultation (**IPaC**) website, the following federally listed species are known to occur in the vicinity of the Property:

- Indiana bat (endangered)
- Tri-colored bat (proposed endangered)
- Eastern massasauga rattlesnake (threatened)
- Monarch butterfly (candidate)

In addition, Barr performed a database search of the Michigan Natural Features Inventory (**MNFI**) for the section, township, and range of the Property. A copy of the database search is provided in **Appendix B**. State threatened and endangered species are protected under the Endangered Species Act of the State of Michigan (Part 365 of PA 451, 1994 Michigan Natural Resources and Environmental Protection Act). Special concern species are not afforded protection under this statute. The MNFI search results are summarized as follows:

- Clinton's bulrush (special concern)
- Creek heelsplitter (special concern)
- False hop-sedge (threatened)
- Ginseng (threatened)
- Hairy angelica (special concern)

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- River fingernail clam (special concern)
- Rusty-patched bumble bee (special concern)
- Showy orchis (threatened)

The MNFI list does not provide specific geographical locations of the listed species and the observation dates for the three threatened species are over 100 years old. Please note that the data provided MNFI are not based on a comprehensive inventory of the state. The lack of data for any geographic area shall not be construed to mean that no significant features are present. In addition, although MNFI maintains high standards of quality control, MNFI makes no warranty as to the fitness of the data for any purpose, nor that the data are necessarily accurate or complete.

Due to the urbanized and historical development on and surrounding the Property, it highly unlikely that the Property provides the appropriate habitat for any of the federal or state-listed species.

3.8 Historical Preservation Classification

On November 30, 2022, Barr submitted a Freedom of Information Act Request (FOIA) to the State Historic Preservation Office (SHPO) of the Michigan Economic Development Corporation to determine if known archaeological or cultural items of interest are associated with the Property. On January 12, 2023, Barr received a map in response from SHPO indicating that there were no architectural sites associated with the Property. The map from SHPO is included in **Appendix C.**

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4.0 REGULATORY AGENCY RESPONSES

4.1 EDR Response

EDR was requested to conduct a file evaluation of the Property to determine if there were any identifiable environmental concerns on, or within the ASTM search distances for the specific environmental regulatory databases of the Property. The search meets the specific requirements of the ASTM Standard Practice E1527-13 for Environmental Site Assessments. The EDR Response is included in **Appendix D.** A description of each database searched is included in the EDR Response.

The EDR Response identified the following sites within the ASTM-defined search radius for the Property:

EDR MAP ID	NAME	ADDRESS	DATABASE	GW FLOW	DIST (FT & MI) DIRECTION
2, 3	HOLIDAY INN	34952 WOODWARD AVE	RCRA-VSQG, FINDS	On Property	0

Holiday Inn – The Property was identified as a RCRA-VSQG of hazardous waste with no violations reported. Barr reviewed the FRS Facility Detail Report which indicated the site produced hazardous waste, code D001, ignitable waste. Based on former hotel operations and lack of violations reported, this is not considered a REC.

The EDR Response identified the following sites within the ASTM-defined search radius for adjoining and nearby sites:

EDR MAP ID	NAME	ADDRESS	DATABASE	GW FLOW	DIST (FT & MI) DIRECTION
5	BURNS JERRY DRY CLEANER	615 E MAPLE	DRYCLEANERS, FINDS, EDR Hist Cleaner	Upgradient	37, 0.007, North
7	KROGER CO OF MICHIGAN	685 E MAPLE	RCRA-VSQG	Upgradient	67, 0.013, North
12	SHELL-HUNTER	34977 WOODWARD AVE	LUST, UST, BROWNFIELDS	Upgradient	207, 0.04, West
13	CATALYST DEVELOPMENT CO 8 LLC	34977 WOODWARD AVE	RCRA-VSQG, FINDS	Upgradient	207, 0.04, West
14	34965 WOODWARD AVE	34965 WOODWARD AVE	BROWNFIELDS	Upgradient	207, 0.04, West
15	34901 AND 34953 WOOWARD AVE	34901 AND 34953 WOOWARD AVE	BROWNFIELDS	Cross-gradient	209, 0.04, West
18	WEISS SAMONA	34901 WOODWARD AVE	US BROWNFIELDS, FINDS	Cross-gradient	211, 0.04, West

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EDR MAP ID	NAME	ADDRESS	DATABASE	GW FLOW	DIST (FT & MI) DIRECTION
20, 22	SPEEDWAY #8721	34750 WOODWARD AVE	LUST, UST, RCRA-VSQG	Downgradient	289, 0.055, South
23	SUNOCO #0008-4178	35001 WOODWARD AVE	LUST, UST	Upgradient	303, 0.057, Northwest
25	JAX KAR WASH #048	34745 WOODWARD AVE	LUST, UST	Cross-gradient	330, 0.062, Southwest
30	ALL SEASONS OF BIRMINGHAM	820 E MAPLE RD	AST	Downgradient	367 ft, 0.07, East
38	CARMAN TILLARD	910 N HUNTER BLVD	LUST, UST	Downgradient	462, 0.087, South
51	PARKING LOT (DIETZ CORP)	985 E MAPLE RD	LUST, UST	Cross-gradient	678, 0.128, East
57	BUDGET RENT-A-CAR	1000 E MAPLE RD	LUST	Downgradient	784, 0.148, East
59	GREEN'S ART SUPPLY	400 S OLD WOODWARD AVE	US BROWNFIELDS	Cross-gradient	797, 0.151, Southwest
61	ESTATE MOTORS	464 S WOODWARD AVE	LUST, UST	Cross-gradient	826, 0.156, Southwest
68	BIRMINGHAM STANDARD	1088 E MAPLE RD	LUST, UST	Cross-gradient	1008, 0.191, East
77	GOODYEAR TIRE CENTER 1685	835 HAYNES ST	LUST, UST	Downgradient	1384, 0.262, South
83	TIFFANY FLORIST	772 S OLD WOODWARD AVE	LUST, UST	Downgradient	1570, 0.297, South
86	THE PLANT STATION	720 S ADAMS RD	LUST, UST	Downgradient	1710, 0.324, Southeast
87	AMERICAR	860 S OLD WOODWARD RD	LUST, UST	Downgradient	1869, 0.354, South
89	PROPOSED BALDWIN HOUSE SITE	200 CHESTER ST	LUST, UST	Downgradient	2098, 0.397, West
92	912 S OLD WOODWARD AVE	912 S OLD WOODWARD AVE	US BROWNFIELDS	Downgradient	2222, 0.421, South
97	WOODLINC/MICH LTD PARTNERSHIP	1050 S OLD WOODWARD AVE	LUST	Downgradient	2316, 0.439, South
98	BIRMINGHAM PUBLIC SCHOOLS	550 W MERRILL ST	LUST	Cross-gradient	2413, 0.457, West
99	QUARTON WOODWARD SERVICE	1599 S WOODWARD AVE	LUST, UST	Downgradient	2435, 0.461, South
100	DERBY MIDDLE SCHOOL	1100 DERBY RD	LUST	Cross-gradient	2540, 0.481, Northeast

Jerry Burns Dry Cleaner – This site, identified as 615 E Maple Rd, adjoins the Property to the north. The EDR Response identified the site as a closed historical dry cleaner with no releases reported. PME completed a Phase II investigation in February 2011 to investigate potential contamination on the Property from the former dry cleaner operations. Eight soil samples and two groundwater samples were collected and analyzed for VOCs, PNAs, PCBs and metals. No detections were identified in the soil or groundwater samples.

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Kroger Co. of Michigan – This site, identified as 685 E Maple Rd, adjoins the Property to the north. The EDR Response identified the site as a RCRA-VSQG of hazardous waste code D001, ignitable waste. No releases were reported.

Catalyst Development Co & LLC, and Shell-Hunter – This site, identified as 34977 Woodward Ave, adjoins the Property to the west, across Woodward Avenue. The EDR Response identified the site as a RCRA-VSQG of hazardous waste code D001, ignitable waste, a closed underground storage tank (UST) site, a LUST site with four reported releases, and a Brownfield site. Releases were reported in 1989, 1998, and 2008. The releases reported in 1989 and 1998 were closed in 2000 and 1999, respectively, while the release of waste oil in 2008 remains open.

Sunoco #0008-4178 – This site, identified as 35001 Woodward Ave, adjoins the Property to the west across Woodward Avenue. The EDR Response identified the site as closed UST and LUST site with one reported release. A spill of unknown substance was reported in November 1996 and the site was closed in June 2010.

Weiss Samona – This site, identified as 34901 Woodward Ave., adjoins the Property to the southwest across Woodward Avenue. The EDR Response identified the site as a US Brownfield site. According to the EDR Response, the site was developed as a feed mill and was used as a coal and lumber yard until at least 1931. By 1944 the northern portion of the site was developed with a bowling alley. By 1960 a used car lot occupied the southern portion of the site. A commercial strip mall replaced the car lot by 1974 until all buildings on the site were demolished in 2005 and replaced by a parking lot. Phase I and Phase II ESAs were conducted in 2010 on the site, which discovered impacts to soil and groundwater, including lead and VOC contamination. This Property has since been redeveloped as commercial space.

<u>UNMAPPABLE SITES</u>
EDR did not uncover any orphan sites nearby the Property.

4.2 OAKLAND COUNTY RESPONSE

On December 13, 2022, Barr contacted Oakland County Health Division regarding the Property via their FOIA procedure. On December 20, 2022, Barr received a response from the Health Division (Christine Newcomb) indicating the County is not aware of USTs, ASTs, petroleum product or hazardous substance storage, dumping, or landfilling at the Property. Ms. Newcomb indicated the County does not have any record of landfilling, dumping, demolition permits, or sealing or abandonment of water wells or septic systems for the Property.

4.3 CITY RESPONSE

On December 13, 2022, Barr contacted the City of Birmingham via the City's FOIA procedure and by

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telephone regarding known environmental concerns and status of septic systems and wells on the Property. On December 20, 2022, Kris Cameron, City of Birmingham City Engineer, provided Barr with the water and sewer cards for the two addresses located on the Property. These are included in **Appendix K.** Ms. Cameron informed Barr that water and sewer lines were removed at 34952 Woodward Ave. in 2011. She said there were no records regarding utility removal at 690 E Maple Rd and that the water and sewer lines were likely still in place. Ms. Cameron was not aware of any wells or environmental concerns located on the Property.

On November 30, 2022, Barr contacted the City of Birmingham Fire Department via the City's FOIA procedure regarding known environmental concerns on or adjacent to the Property. On December 2, 2022, Jack Pesha, Birmingham Fire Marshal, responded with documents related to incidents at the Property.

- On December 29, 2004, Birmingham Fire Department responded to a report of a dryer fire at 34952 Woodward Ave., a former Holiday Inn Express. The incident report states that laundered rags, subject to flammable solvents were placed in the dryer and caused a fire to start in the drum of the dryer. The incident report states that a portable fire extinguisher was discharged twice. Upon fire department arrival, water was used to fully extinguish the fire and the damage was contained only to the dryer. Smoke damage was limited to the laundry room and occupant rooms directly above the laundry room.

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5.0 WALKOVER SURVEY/INTERVIEWS

5.1 WALK-OVER SURVEY

On December 7, 2022, Barr representative Luke Mackewich conducted a walk-over survey of the Property. Mr. Mackewich was accompanied by DeAndre Glenn, the field maintenance supervisor for the Property building. The purpose of the walk-over survey was to identify any readily apparent indications of potential environmental concern on or immediately adjacent to the Property. **Appendix E.** contains a copy of the completed Walk-Over Survey Form. **Appendix F** contains selected photographs taken during the walk-over survey.

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General Area	Commercial, residential, and developing area
Property Description	Vacant office building and paved parking lot
Adjacent to North	E Maple Road, beyond which is commercial property
Adjacent to East	Commercial
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Adjacent to West	Woodward Avenue, beyond which is commercial

The following items of environmental note were observed during the walk-over survey.

Stained Soils and Stressed Vegetation

No areas of stained soils or stressed vegetation were observed.

Old Foundations/Filled Areas/Excavations/Debris Piles

No old foundations or excavations were observed on the Property. The western half of the Property is currently vacant and used as a construction staging area. Based on historical information, there may be old foundations from prior homes, or the demolished hotel, located below the gravel lot.

USTs / ASTs

No physical evidence of USTs or ASTs was observed.

Oil Filled Equipment and PCB Containing Items

PCBs are found in older electric equipment such as transformers, certain hydraulic and high temperature service oils in machinery, caulks, and fluorescent lamp ballasts. Manufactured items containing PCBs were banned in 1978; however, certain items in good condition, containing PCBs or their residues still remain in service. Fluorescent light ballasts manufactured prior to 1978 may contain PCBs. Recently US EPA issued an advisory that caulks in buildings constructed or renovated between 1950-1978 may contain PCBs.

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Two pole-mounted transformers of unknown ownership are located on the eastern perimeter of the property and one pole mounted transformer of unknown ownership is located along the southern perimeter. The transformers appeared to be in good condition and no indications of leaks or spill of transformer fluid were noted on the Property. See Figure 2 in Appendix A for approximate location of the pole-mounted transformers

No other potential PCB-containing electrical equipment was observed.

Pits, Sumps, Dry Wells & Catch Basins/Septic Systems
A sump was observed in the basement mechanical room.

Municipal Utilities
Evidence of City sewer and water services was observed on and adjacent to the Property. Existence of these services was confirmed by visual observation of water meters.

Floor Drains
Floor drains were observed in each of the restrooms on the main floor and second floor.

ODCs
No ODCs were observed.

Fluorescent and HID Lamps
Fluorescent or HID lamps were observed throughout the building.

Suspect ACM
A survey for suspected ACM was completed by BDN during the walkover. An asbestos survey is anticipated separately from this Phase I ESA.

Mold
Visual evidence of mold was observed along the walls.

Hazardous Waste
No hazardous wastes are currently generated or stored on the Property. No indications of spills or leaks of hazardous substances or petroleum products were observed.

Mercury Switches
No mercury switches were observed.

LBP & Lead Pipes

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LBP is suspected based on the age of the building. No lead pipes were observed.

Chemicals

No significant quantities of chemicals were observed being used or stored. Minor amounts of residential grade cleaning products were observed in the utility rooms. Minor quantities (containers < 5 gallons) of cleaners (Ferroquest LP7200) and descaling compounds (NC-27-M) were also observed in the basement mechanical room.

Wells

No evidence of wells was observed.

Wetlands/Surface Water

No wetlands or surface waters were observed on the Property.

High Voltage Transmission Lines

No high voltage overhead transmission lines were observed. Overhead powerlines were observed along the eastern and southern perimeter.

Pipelines

No gas pipeline or pipeline markers were observed.

Heating/Cooling Systems

A boiler and forced air heating system was observed. Cooling was provided by window mounted air condition units that were observed throughout the building.

5.2 Interviews

Mr. Mackewich interviewed DeAndre Glenn with Group 10 Management for information regarding the Property. Mr. Glenn indicated he has been associated with the Property for six years in his capacity as field maintenance for Group 10 Management. According to Mr. Glenn, various commercial companies have utilized the Property in the past, but it has been vacant for six years. He was not aware of any former buildings on the Property and his general knowledge was that the surrounding properties were used for commercial purposes.

Barr also interviewed Steven Banovetz, Environmental Specialist with Ryan, regarding the Property. Mr. Banovetz has been involved with the Property since November 2022 and was not aware of any environmental issues.

ASTM Standard Practice E1527-13 describes information gathering tasks to be performed by the "user", which for the purpose of this Phase I ESA Report is Ryan. The information gathered is to help

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identify the possibility of RECs for the Property. The questions asked of Mr. Banovetz and his responses follow:

Question
Are you aware of any environmental clean up liens against the Property that are filed or recorded under federal, tribal, state or local law?
Response
No.

Question
Are you aware of any activity and land use limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the Property and/or have been filed or recorded in a registry under federal, tribal, state or local law?
Response
No.

Question
As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?
Response
No.

Question
Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?
Response
Yes.

Question
Are you aware of commonly known or reasonably ascertainable information about the Property that would help the environmental professional identify conditions indicative of releases or threatened releases? For example, as user,

a) Do you know the past uses of the property? **Response:** No.
b) Do you know of specific chemicals that are present at the property? **Response:** No.
c) Do you know of spills or other chemical releases that have taken place at the property? **Response**: No.

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d) Do you know of any environmental cleanups that have taken place at the property? **Response:** No.

Question

As the user of this ESA, based on your knowledge and experience related to the Property are there any obvious indicators that point to the presence or likely presence of contamination at the Property?

Response

No.

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6.0 HISTORICAL RESEARCH

6.1 Sanborn Fire Insurance Map Review

Sanborns were prepared for various communities from the late 1800s through the 1980s. These maps show addresses, structures, and other improvements, such as utilities and storage tanks, for the areas covered. A copy of the EDR Sanborns response is included in **Appendix G.**

The following table summarizes the Sanborns for the Property:

Year	Description
1910	The Property is not mapped on the 1910 fire insurance map
1915	The Property is not mapped on the 1915 fire insurance map
1921	Residential with five buildings and three garages
1926	No change from previous map
1931	Ice station present on northwest corner of Property
1949	Building in northwest corner and the adjoining property in northwest corner have been demolished and S Hunter Blvd has widened, adjoining Property to the west. Four buildings and three garages remain on Property.
1960	All buildings and garages besides eastern residential building and garage have been demolished and replaced by a filling station, Birmingham House Motel, and a swimming pool. An office and one other unknown building are also present on the Property.

The following table summarizes the Sanborns for the adjacent properties.

Year	Direction	Observations
1910	North	Not mapped
	South	Not mapped
	East	Not mapped
	West	Not mapped
1915	North	Maple Ave, residential – four buildings and two garages
	South	Tuxworth & Story Artificial Stonework's, Campbell Subdivision – three buildings
	East	Not mapped
	West	McClellan & Son Feed mill & Warehouse – one building
1921	North	Maple Avenue, residential, four new buildings on north adjoining parcel
	South	Residential – three buildings with garages, commercial building
	East	Residential – one home with garage
	West	McClellan & Son Feed mill & Warehouse, residential - three homes with garages
1926	North	No change from previous map
	South	No change from previous map
	East	No change from previous map
	West	New building and coal yard present
	North	No change from previous map

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Year	Direction	Observations
1931	South	Landscape Gardeners Warehouse occupies commercial building, two residential units, one garage
	East	New building present
	West	One building demolished at Parks Coal Co.
1949	North	Buildings demolished northwest of Property. Two buildings and two garages adjoining the Property
	South	Landscape Gardeners Warehouse has been demolished and only two residential buildings and one garage adjoin the Property
	East	No change from previous map
	West	S Hunter Blvd has widened and now adjoins the Property
1960	North	E Maple Ave, large commercial structure with five buildings and a restaurant has replaced former two buildings and two garages
	South	Office building has replaced former residential home. Building appears to be the same, just different use
	East	Two buildings and one garage have been demolished, an office building and parking lot are present
	West	No change from previous map

6.2 City Directory Review

Barr reviewed the City Directory Review provided by EDR which included a search of the Property and cross-reference directory collections for the Property for E Maple Road and Woodward Avenue. The address 34952 Woodward Ave. was formerly known as 612 E Maple Rd. Additionally, the address 690 E Maple Rd was formerly known as 652 E Maple Rd and 684 E Maple Rd. Information from these addresses is included in the table under the current addresses, 34952 Woodward Ave. and 690 E Maple Rd. The City Directories are included in **Appendix H** and are summarized below.

The following table summarizes the review for the Property.

Year	Address	Listing
1937	690 E Maple Rd	Residential
1937	34952 Woodward Ave.	Residential
1940	690 E Maple Rd	Residential
1940	34952 Woodward Ave.	Residential
1944	690 E Maple Rd	Residential
1944	34952 Woodward Ave.	Residential
1949	690 E Maple Rd	Residential
1949	34952 Woodward Ave.	Vacant
1954	690 E Maple Rd	Residential
1954	34952 Woodward Ave.	Birmingham Flowers Inc
1960	690 E Maple Rd	City directories not available
1960	34952 Woodward Ave.	City directories not available

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Year	Address	Listing
1965	690 E Maple Rd	Johnson Rubber Co. Sales Office
1965	34952 Woodward Ave.	City directories not available
1970	690 E Maple Rd	Office building
1970	34952 Woodward Ave.	City directories not available
1975	690 E Maple Rd	Office building
1975	34952 Woodward Ave.	City directories not available
1980	690 E Maple Rd	Office building
1980	34952 Woodward Ave.	City directories not available
1985	690 E Maple Rd	Office building
1985	34952 Woodward Ave.	City directories not available
1989	690 E Maple Rd	Office building
1989	34952 Woodward Ave.	City directories not available
1992	690 E Maple Rd	Office building
1992	34952 Woodward Ave.	City directories not available
1995	690 E Maple Rd	Office building
1995	34952 Woodward Ave.	City directories not available
2000	690 E Maple Rd	Office building
2000	34952 Woodward Ave.	Holiday Inn Express
2005	690 E Maple Rd	Office building
2005	34952 Woodward Ave.	Holiday Inn Express
2010	690 E Maple Rd	Office building
2010	34952 Woodward Ave.	Not identified
2014	690 E Maple Rd	Office building
2014	34952 Woodward Ave.	Not identified
2017	690 E Maple Rd	Office building
2017	34952 Woodward Ave.	Barclay Inn

The following table summarizes the review for adjacent properties. City directories were only available for Woodward Avenue from 1995-2017 and for E Maple Rd.

Year	Direction	Observations
1937	North	Residential
	South	City directories not available
	East	Residential
	West	Not available
1940	North	Residential
	South	City directories not available
	East	Residential
	West	City directories not available

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Year	Direction	Observations
1944	North	Residential
	South	City directories not available
	East	Residential
	West	City directories not available
1949	North	Residential
	South	City directories not available
	East	Residential
	West	City directories not available
1954	North	Residential
	South	City directories not available
	East	Residential
	West	City directories not available
1960	North	City directories not available
	South	City directories not available
	East	City directories not available
	West	City directories not available
1965	North	Kroger Co
	South	City directories not available
	East	Franke Thos Construction
	West	City directories not available
1970	North	Kroger Co
	South	City directories not available
	East	Commercial office building
	West	City directories not available
1975	North	Under construction
	South	City directories not available
	East	Commercial office building
	West	City directories not available
1980	North	Chatham Foods Supermarket
	South	City directories not available
	East	Commercial office building
	West	City directories not available
1985	North	Chatham Foods Supermarket
	South	City directories not available
	East	Commercial office building
	West	City directories not available
1989	North	Great Scott Supermarket
	South	City directories not available
	East	Commercial office building
	West	City directories not available
1992	North	Kroger Co, Western Union
	South	City directories not available
	East	Commercial office building
	West	City directories not available
	North	Kroger Co

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Year	Direction	Observations
1995	South	City directories not available
	East	Commercial office building
	West	City directories not available
2000	North	Kroger Co
	South	AAA Birmingham
	East	Commercial office building
	West	Shell Service, Sunoco Service, Peabody's Restaurant, 1st Discount Mortgage Co
2005	North	Kroger Co
	South	Club Travel Agency
	East	Commercial office building
	West	Peabody's Restaurant, Loan Star Mortgage
2010	North	Great Clips
	South	AAA Birmingham
	East	Commercial office building
	West	Peabody's Restaurant
2014	North	Great Clips
	South	AAA Birmingham
	East	Commercial office building
	West	Office Building, Peabody's Restaurant, Catalyst Development
2017	North	City directories not available
	South	AAA Birmingham
	East	Commercial office building
	West	Office Building, Peabody's Restaurant, Catalyst Development

6.3 Aerial Photograph Review

Aerial photographs were reviewed to identify past land uses and any readily apparent environmental concerns on or near the Property. Photographs from the years 1937, 1940, 1949, 1952, 1956, 1967, 1972, 1976, 1983, 1987, 1997, 1999, 2005, 2009, 2012, and 2016 were available from EDR. Aerial photographs prior to 1937 were not reasonably ascertainable. Copies of the aerial photographs are included in **Appendix I.**

The following table summarizes the aerial photograph review for the Property.

Year	Description
1937	Majority of land on and around Property is residential or commercial. Roads are present on and adjoining the Property.
1940	Majority of the land on and around Property is residential or commercial. A large road has been constructed running northwest to southeast adjoining the Property to the west.
1949	Little change from previous aerial.
1952	Little change from previous aerial.

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Year	Description
1956	Northwest corner of Property has been cleared and a new structure is present. Otherwise, the Property remains residential.
1967	Majority of land on and around the Property is now commercial. Four buildings are present on the Property. The remaining portion of the Property appears fully paved and used as parking lots for the buildings.
1972	Little change from previous aerial.
1976	Little change from previous aerial.
1983	Little change from previous aerial.
1987	Little change from previous aerial.
1997	Little change from previous aerial.
1999	Little change from previous aerial.
2005	Little change from previous aerial.
2009	Little change from previous aerial.
2012	Land on the western portion of the Property is now vacant. It appears three of the buildings have been demolished, land is now dirt/gravel. A building and parking lot remains on the eastern portion of the Property.
2016	Little change from previous aerial.

The following table summarizes the aerial photograph review for adjacent properties.

Year	Direction	Observations
1937	North	Residential
	South	Residential
	East	Residential/and or commercial
	West	Commercial
1940	North	Little change from previous aerial
	South	Little change from previous aerial
	East	Little change from previous aerial
	West	Woodward Avenue (S Hunter Boulevard) constructed adjoining Property
1949	North	New water tower constructed
	South	Little change from previous aerial
	East	Land clearing activities of a commercial area
	West	Little change from previous aerial
1952	North	Little change from previous aerial
	South	
	East	
	West	
1956	North	New building constructed north of Property
	South	Few buildings constructed along Woodward Avenue
	East	Little change from previous aerial

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Year	Direction	Observations
	West	Residential homes cleared for parking lot
1967	North	New building added on commercial property north of Property
	South	New buildings constructed along Woodward Avenue, large parking lot and building constructed southwest of Property
	East	New building and parking lot constructed east of Property
	West	Additional buildings constructed west and northwest of Property
1972	North	Little change from previous aerial
	South	
	East	
	West	
1976	North	New building is Present northwest of Property
	South	Little change from previous aerial
	East	Little change from previous aerial
	West	Little change from previous aerial
1983	North	Little change from previous aerial
	South	
	East	
	West	
1987	North	A new building is present northwest of Property
	South	Little change from previous aerial
	East	Little change from previous aerial
	West	Little change from previous aerial
1997	North	Little change from previous aerial
	South	
	East	
	West	
1999	North	Additional building constructed on property adjoining to the north
	South	Little change from previous aerial
	East	Little change from previous aerial
	West	Little change from previous aerial
2005	North	Little change from previous aerial
	South	
	East	
	West	
2009	North	Little change from previous aerial
	South	Building demolished southwest of Property
	East	Little change from previous aerial
	West	Little change from previous aerial
2012	North	Little change from previous aerial
	South	
	East	

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Year	Direction	Observations
	West	
2016	North	Little change from previous aerial
	South	
	East	
	West	

6.4 Historical Map Review

6.4.1 Historical USGS Topographic Map Review

Historical topographic maps provided by EDR were reviewed to identify past land uses and any readily apparent environmental concerns on or near the Property. USGS topographic maps reviewed for the area of the Property included a 15-minute map from 1908 and 7.5-minute maps from 1936, 1945, 1952, 1968, 1973, 1981, 2014, 2017, and 2019. The 1908 map identifies a railroad adjacent to the Property to the west. Maps from 1908-1945 identify three unknown structures on the Property. These maps do not identify utility pipelines or any other features of readily apparent environmental concern on or near the Property. Copies of the topographic maps are included in **Appendix J.**

6.5 Well Records Review

No well records associated with the Property were provided in the EDR Response. Barr reviewed Michigan's statewide groundwater database (Wellogic) for well records on the Property, and no wells were identified for the Property. Well log records for surrounding properties were included in the EDR Response (**Physical Setting Source Map**). No household wells were identified within a half mile of the Property.

6.6 Significant Assumptions/ Limitations/Data Failure

The following significant assumptions were made to complete the ESA:

- The detailed history of ownership and land-use to satisfy the requirements and purpose of the ESA was determined from the activities listed in the Scope of Work.
- Groundwater flow direction was determined based on topography and nearby surface water features.

Data failures in the historical information which resulted in data gaps were evaluated to determine if they are significant enough to affect the environmental professional's ability to identify RECs for the Property, as summarized in the paragraphs below.

The reasonably ascertainable standard historical sources likely to be useful were searched, however the following data failures were encountered:

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- The Property's first developed use could not be identified. However, based on the first identified use of the Property as residential this is also likely the first use of the Property, and therefore this data failure is not considered a significant data gap.

7.0 DOCUMENT REVIEW

Barr, reviewed, as part of its preparation of this Phase I ESA Report, documents provided by Ryan:

7.1 January 2011 Phase I ESA Report

The Phase I ESA, prepared for TCF Bank, by PME, dated January 5, 2011 (**January 2011 Phase I ESA Report)** was prepared for 34952 Woodward Ave., the western parcel of the Property. The January 2011 Phase I ESA identified four RECs for the Property:

- Historical interior waste streams associated with the former filling station operations located on the Property from between 1952 and 1956 until between 1963 and 1967 would have consisted of general hazardous substances and/or petroleum products. The historical waste management practices associated with the filling station are unknown and may be a source of subsurface contamination.
- The former service station likely contained in ground hydraulic hoists. In ground hoists have underground reservoirs for hydraulic fluids which may contain PCBs. The potential exists that a release may have occurred from the hydraulic hoists located at the former filling station.
- Review of previous site investigations indicates that soil and/or groundwater samples were not collected from beneath the former pump islands or the former building footprint. The potential exists for contamination in these areas of the Property.
- The Property was historically utilized as a gasoline service station. PME was unable to determine the installation date, size, or location of the USTs. Additionally, PME was unable to determine removal date of any USTs. The potential exists for orphan USTs to be present on the Property and releases may have occurred.

Additionally, the January 2011 Phase I ESA identified two RECs for adjoining and/or nearby properties:

- The west adjoining property, currently Woodward Ave, was occupied by a coal yard from between 1921 and 1926 until between 1931 and 1939. The coal yard may have utilized general hazardous substances and/or petroleum products. This time period also precedes major environmental regulations and proper waste management procedures. Based on the proximity to the Property, the potential exists that a release occurred on the adjoining property and

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migrated onto the Property.

- The north adjoining property was historically occupied by a dry cleaner from approximately 1959 until approximately 1998. Dry cleaning typically involves the use of chlorinated solvents and other general hazardous substances, which can be a source of contamination if not properly managed and/or disposed of. Based on the close proximity to the Property and the long-time frame of dry-cleaning operation, the potential exists that a release has occurred on this adjoining property and migrated onto the Property.

The January 2011 Phase I ESA recommends additional investigations to address the RECs identified in the Phase I.

7.2 2011 Phase II ESA Report

The Phase II ESA, prepared for TCF Bank, by PME, dated February 15, 2011 (**2011 Phase II ESA)** was prepared for 34952 Woodward Ave., the western parcel of the Property. The 2011 Phase II ESA was completed in response to RECs identified in the January 2011 Phase I ESA. On January 4, 2011, PME completed a GPR survey, the advancement of 8 soil borings to a maximum depth of 25 feet, the installation of two temporary monitoring wells, and the collection of soil and groundwater samples. Soil and groundwater were evaluated for VOCs, PNAs, PCBs and metals. No concentrations of VOCs, PNAs and PCBs were detected in soil samples. No concentrations of metals were detected in soil samples above laboratory MDLs or Michigan Statewide Default background levels, except for total chromium in two soil borings (SB-3 and SB-4). However, since the property is not known to have been historically involved in metal plating operations, the MDEQ criterion for chromium III valence was deemed a better comparison. The concentrations were below the MDEQ RBSLs for chromium III. Additionally, commercial, and industrial releases typically result in significant releases of multiple metals or other contaminants. Since no other contaminants including VOCs, PNAs and PCBs were detected, this was likely not a release. No concentrations of VOCs, PNAs, PCBs, or metals were detected in groundwater samples analyzed from the Property above laboratory MDLs. A GPR survey was completed on January 4, 2011. No anomalies consistent with orphan USTs were identified during the survey.

No further investigations were recommended for the site.

7.3 October 2011 Phase I ESA Report

The Phase I ESA, prepared for TCF Bank, by PME, dated October 25, 2011 (**October 2011 Phase I ESA Report)** was prepared for 34952 Woodward Ave., the western parcel of the Property. The October 2011 Phase I ESA identified three findings of note:

- Former gasoline service station operations including the potential historical uses of in ground hydraulic hoists have been properly assessed and do not represent a REC.

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- PME previously identified the potential for orphan USTs on the subject property as a REC. A GPR survey was completed in February 2011 to assess for orphan USTs. No anomalies consistent with an orphan UST were identified therefore the finding is not a REC.
- The north adjoining property was historically occupied by Jerry Burns Dry Cleaner from approximately 1959-1998. The western adjoining property was occupied by a coal yard between 1921 and 1926 until between 1931 and 1939. A Phase II investigation by PME took 8 confirmatory soil samples and 2 groundwater samples which revealed no evidence of contamination of VOCs, PNAs, PCBs or metals. Based on analytical data from samples collected on the Property, this finding is not a REC.

The October 2011 Phase I ESA did not identify any RECs on the subject property. The October 2011 Phase I ESA Report also did not provide any recommendations for the subject property.

7.4 2013 Phase I ESA Report

The Phase I ESA, prepared for Maryko Hospitality, by PME, dated December 19, 2013 (the **2013 Phase I ESA Report**) was prepared for 690 E Maple Rd, the eastern parcel of the Property. The 2013 Phase I ESA did not identify any RECs on the Property. The 2013 Phase I ESA also did not provide any recommendations for the Property.

7.5 Title Commitment

According to a Commitment to Insure from First American Title Insurance Company, File No. 968431, Effective Date: November 4, 2022 (**the Title Commitment**), furnished to Barr by Ryan, the Property is owned by Maryko Hospitality, LLC. The Title Commitment did not identify environmental liens or easements for the parcels.

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8.0 CONCLUSIONS

Work performed for the Phase I ESA included: a review of federal, state, county, and municipal information, a Walk-Over Survey, review of documents furnished to Barr by Ryan; an interview with representatives of Ryan and site representative DeAndre Glenn, and a review of historical data. The Phase I ESA was conducted in general accordance with the scope and limitations of the ASTM Standard Practice E1527-13 as expanded in accordance with Ryan's Environmental Site Assessment Guidelines (Version July 1, 2018). Any exceptions to or deletions from this practice are noted in **Section 2.0** of this Phase I ESA Report.

Barr has not identified any significant data gaps, as defined by the ASTM Standard Practice E1527-13.

Based on Barr's assessment and a review of information obtained no RECs, as defined in ASTM Standard Practice 1527, or historical RECs were identified for the Property.

Although not constituting RECs, the following items of environmental note were observed for the Property:

- Historical Filling Station – The Property was historically occupied by a filling/service station that used petroleum products and underground storage tanks (USTs) with the potential for releases and orphan UTSs on the Property. Impacts from the filling station were not detected in soil and groundwater samples collected during a previous Phase II investigation (2011 Phase II ESA). A ground penetrating radar (GPR) survey was also completed at the same time to investigate the potential for orphan USTs. No anomalies consistent with orphan USTs were identified during the survey. Based on the results of the previous investigation, this finding is not considered a REC.
- Historical Residences – Until the early 1960s, residential buildings were located on the Property. It is anticipated that historical foundations were removed from the Property when the current building was constructed. This finding is not a REC.
- Holiday Inn Express Laundry Room Fire – According to information provided by the Birmingham Fire Department, a small fire occurred in the basement of the former hotel located on the Property. The fire was reportedly contained within the building and was extinguished with a portable fire extinguisher and water. Based on the small size of the fire and that only a fire extinguisher and water were used to extinguish the fire, this finding is not a REC.
- Chemical Storage and Possible Lead-Based Paint – The vacant building on the Property was observed for environmental impacts during Barr's Walk-Over Survey. Small amounts of residential grade cleaning products were observed in the utility rooms and lead-based paint was suspected to be present in the building. Based on the small quantities of chemicals observed, this finding not a REC.
- Historical Use of Nearby Properties – Historically, a coal yard adjoined the Property to the west

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and several gasoline service stations adjoined the Property to the west and northwest. In addition, nearby properties have reported leaking underground storage tank (LUST) sites, some of which are still open. Also, a former dry cleaner operated from 1959-1998 adjoining the Property to the north. Based on the closed status of many of these sites, their distance from the Property, and soil and groundwater data gathered during a previous Phase II investigation on the Property, there is no indication of contamination from nearby sites on the Property and this finding is not a REC.

- Adjoining Transformers – Three pole-mounted transformers were observed adjoining the Property: one to the south and two to the east. The transformers appeared to be in good condition and no signs of leaks or staining were observed.

9.0 RECOMMENDATIONS

Based on the information collected for the Phase I ESA, Barr does not believe further environmental assessment of the Property is necessary at this time.

10.0 QUALIFICATIONS

The qualifications of the authors of this Phase I ESA Report are included in **Appendix L.**

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11.0 EDR RESPONSE – LIST OF DATABASES

A) Databases searched to 1-mile:

EDR - Former manufactured gas (**coal gas**) sites
EPA - National Priorities List (**NPL**)
EPA - Delisted NPL Sites (**Delisted NPL**)
EPA - National Priorities List Liens (**NPL Liens**)
EPA - Corrective Action Report (**CORRACTS**)
EPA - Proposed NPL List (**Proposed NPL**)
EPA - Superfund (**CERCLA**) Consent Decrees (**CONSENT**)
NTIS - Record of Decision (**ROD**)
USGS - Department of Defense Sites (**DOD**)
USGS - Indian Reservations (**INDIAN RESERV**)
USACE - Formerly Used Defense Sites (**FUDS**)
DOD - Unexploded Ordinance Sites (**UXO**)
DOE - Formerly Utilized Sites Remedial Action Program (**FUSRAP**)
MI - Part 201 Sites (**PART 201**)
MI - Delisted Part 201 Sites (**DEL PART 201**)
MI - State Hazardous Waste Sites (**SHWS**)

B) Databases searched to 1/2-mile:

DOE - Uranium Mill Tailings Sites (**UMTRA**)
DHHS - Open Dumps on Indian Land (**IHS OPEN DUMPS**)
EPA - Resource Conservation and Recovery Act (**RCRA**) Treatment, Storage, Disposal (**TSDF**)
EPA - Comprehensive Environmental Response, Compensation and Liability Information System (**CERCLIS**)- Federal Facility Site Information Listing (**FEDERAL FACILITY**)
EPA - Superfund Enterprise Management System (**SEMS**)(**SEMS-ARCHIVE**)
EPA - Listing of Brownfield Sites (**US Brownfields**)
EPA - Engineering Controls (**US ENG CONTROL**)
EPA - Institutional Controls (**US INST CONTROL**)
EPA - Voluntary Cleanup Priority Listing on Indian Land (**INDIAN VCP**)
EPA - Report on Status of Open Dumps on Indian Land (**INDIAN ODI**)
EPA - Leaking Underground Storage Tanks on Indian Land (**INDIAN LUST**)
EPA - Torres Martinez Reservation Illegal Dump Site Locations (**DEBRIS REGION 9**)
EPA - Open Dump Inventory (**ODI**)
EPA - State Coalition for Remediation of Drycleaners Listing (**SCRD DRYCLEANERS**)
EPA - Coal Combustion Residue Surface Impoundments List (**COAL ASH EPA**)
Navy - Land Use Control Information System (**LUCIS**)
MI - Solid Waste Facilities Database (**MI SWF/LF**)
MI - Leaking Underground Storage Tank Sites (**MI LUST**)

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MI - Engineering and Institutional Controls (**MI AUL**)
MI - Brownfields and UST Site Database (**MI BROWNFIELDS**)
MI - Recycling Facilities (**MI SWRCY**)
MI - Inactive Solid Waste Facilities (**MI HIST LF**)
MI - Inventory of Facilities (**MI INVENTORY**)
MI - PFAS Contaminated Sites Listing (**MI PFAS**)
MI - Baseline Environmental Assessment Database (**MI BEA**)
MI - Coal Ash Disposal Sites (**MI COAL ASH**)

C) Databases search to 1/4-mile:
EPA - RCRA very small-quantity generators (**RCRA-VSQG**)
EPA - RCRA small-quantity generators (**RCRA-SQG**)
EPA - RCRA large-quantity generators (**RCRA-LQG**)
EPA - RCRA – Non generators/no longer regulated (**RCRA NonGen / NLR**)
EPA - Fuels Program Registered Listing (**FUELS PROGRAM**)
EPA - 2020 Corrective Action Program List (**2020 COR ACTION**)
EPA - Underground Storage Tanks on Indian Land (**INDIAN UST**)
FEMA - Underground Storage Tank Listing (**FEMA UST**)
Interior - Abandoned Mines (**ABANDONED MINES)**
MSHA - Mines Master Index File (**US MINES**)
MI - Underground Storage Tank Facility List (**MI UST**)
MI - Aboveground Storage Tanks (**MI AST**)
MI - Drycleaning Establishments (**MI DRYCLEANERS**)
US - Underground Storage Tank Listing **(FEMA UST)**

D) Databases searched to 1/8-mile:
EDR - EDR Exclusive Historical Auto Stations (**EDR Hist Auto**)
EDR - EDR Exclusive Historical Cleaners (**EDR Hist Cleaner**)

E) Databases searched for the Property:
EPA - Facility Index System (**FINDS**)
EPA - Section 7 Tracking Systems (**SSTS**)
EPA - FIFRA/TSCA Tracking System Administrative Case Listing (**FTTS**)
EPA - FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing (**HIST FTTS**)
EPA - PCB Activity Database System (**PADS**)
EPA - RCRA Administrative Action Tracking System (**RAATS**)
EPA - Toxic Chemical Release Inventory System (**TRIS**)
EPA - Toxic Substances Control Act (**TSCA**)
EPA - CERCLA Lien Information (**LIENS 2**)
EPA - Financial Assurance Information (**US FIN ASSUR**)

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EPA - EPA Watch List (**EPA WATCH LIST**)
EPA - Risk Management Plans (**RMP**)
EPA - Potential Responsible Parties (**PRP**)
EPA - Integrated Compliance Information System (**ICIS**)
EPA - PCB Transformer Registration Database (**PCB TRANSFORMER**)
EPA - Radiation Information Database (**RADINFO**)
EPA - Lead Smelter Sites (**LEAD SMELTERS**)
EPA - Enforcement & Compliance History Information (**ECHO**)
EPA - Air Facility System Data (**US AIRS**)
EPA - Hazardous Waste Compliance Docket Listing (**DOCKET HWC**)
DEA - Clandestine Drug Labs (**US CDL**)
DEA - Historical Clandestine Drug Labs (**US HIST CDL**)
DOE - Steam-Electric Plant Operation (**COAL ASH DOE**)
DOT - Incident and Accident Data (**DOT OPS**)
DOT - Hazardous Materials Information Reporting System (**HMIRS**)
National Response Center - Emergent Response Notification System (**ERNS**)
Nuclear Regulatory Commission - Material Licensing Tracking System (**MLTS**)
USGS -Mineral Resources Data System (**MINES MRDS**)
MI - Clandestine Drug Lab Listing (**MI CDL**)
MI - Lien List (**MI LIENS**)
MI - Permit and Emissions Inventory Data (**MI AIRS**)
MI - Asbestos Notification Listing (**MI ASBESTOS**)
MI - Financial Assurance Information Listing (**MI Financial Assurance**)
MI - Lead Safe Housing Registry (**MI LEAD**)
MI - List of Active NPDES Permits (**MI NPDES**)
MI - Underground Injection Wells Database (**MI UIC**)
MI - Waste Data System (**MI WDS**)
MI - Recovered Government Archive -Hazardous Waste Facilities (**MI RGA PART 201**)
MI - Recovered Government Archive -Solid Waste Facilities (**MI RGA LF**)
MI - Recovered Government Archive -Leaking Underground Storage Tanks (**MI RGA LUST**)
MI - Pollution Emergency Alerting System-PEAS (**MI SPILLS**)

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12.0 ABBREVIATIONS

LIST OF ABBREVIATIONS

ACM – Asbestos Containing Materials
AST - Aboveground Storage Tank
ASTM - American Society for Testing and Materials
ATSDR – Agency for Toxic Substances and Disease Registry
bgs - below ground surface
EDR - Environmental Data Resources, Inc.
ESA - Environmental Site Assessment
FINDS - Facility Index System
FOIA – Freedom of Information Act
IPaC – Information for Planning and Consultation
LAST – Leaking Above Ground Storage Tanks
LBP – Lead Based Paint
LUST - Leaking Underground Storage Tank
MNFI – Michigan Natural Features Inventory
NWI - National Wetlands Inventory
ODCs – Ozone Depleting Chemicals
PCB - Polychlorinated Biphenyl
PME – PM Environmental Inc.
PNAs – Polynuclear Aromatic Compounds
RCRA - Resource Conservation and Recovery Act
Sanborns - Sanborn Fire Insurance Company Maps
SHPO - State Historic Preservation Office
U.S. – United States
USGS - United States Geologic Survey
UST - Underground Storage Tank
VIC - Voluntary Investigation and Cleanup Program
VOCs – Volatile Organic Compounds

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13.0 REFERENCES

EDR Radius Map with Geocheck, dated November 23, 2022.

Well logs, GeoWebFace Database, Department of Environment, Great Lakes, and Energy (EGLE), Accessed December 16, 2022

Envrironmental Mapper, Department of Environment, Great Lakes, and Energy (EGLE), Accessed December 16, 2022

MNFI database search, Michigan State University, Accessed December 19, 2022

IPaC Resource List, US Fish and Wildlife Services, Accessed December 19, 2022

Naturally Occurring Asbestos Locations in the Contiguous US and Alaska, ASTDR, Accessed December 20, 2022

Commitment to Insure from First American Title Insurance Company, File No. 968431, Effective Date: November 4, 2022.

Documents listed on the Environmental Document List dated November 29, 2022, prepared by Ryan and included on the following page.

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ENVIRONMENTAL DOCUMENT LIST – November 29, 2022

1. Phase I ESA for 34952 Woodward Ave, which includes the western parcel of the Property, prepared for TCF Bank, and performed by PME, dated January 5, 2011.

2. Phase II ESA for 34952 Woodward Ave, which includes the western parcel of the Property, prepared for TCF Bank, and performed by PME, dated February 15, 2011.

3. Phase I ESA for 34952 Woodward Ave, which includes the western parcel of the Property, prepared for TCF Bank, and performed by PME, dated October 25, 2011.

4. Phase I ESA for 690 E Maple Rd, which includes the eastern parcel of the Property, prepared for Maryko Hospitality, and performed by PME, dated December 19, 2013.

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Appendix A

Figures

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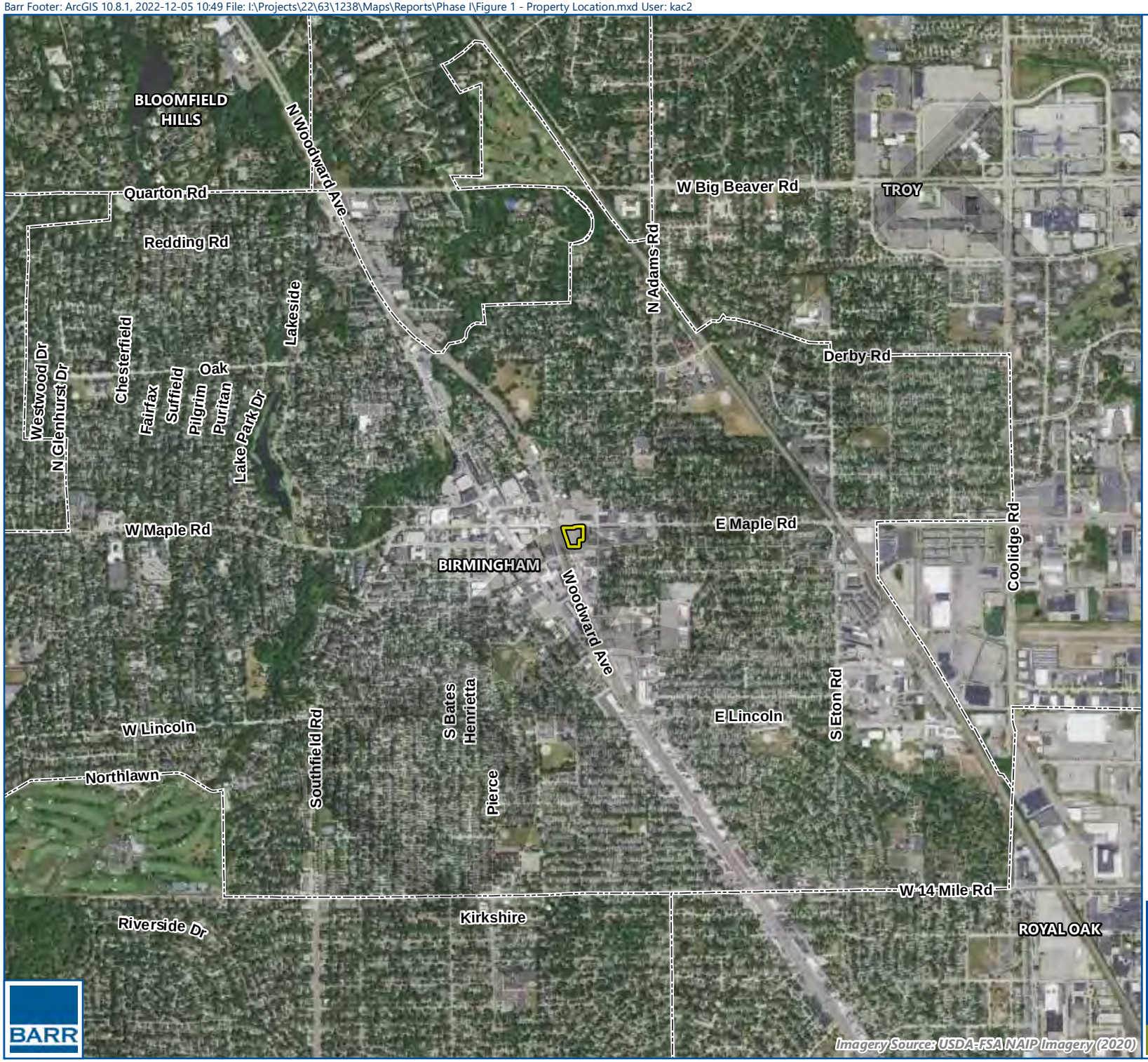
Barr Footer: ArcGIS 10.8.1, 2022-12-05 10:49 File: I:\Projects\22\63\1238\Maps\Reports\Phase I\Figure 1 - Property Location.mxd User: kac2



Property Boundary

City Boundary

N

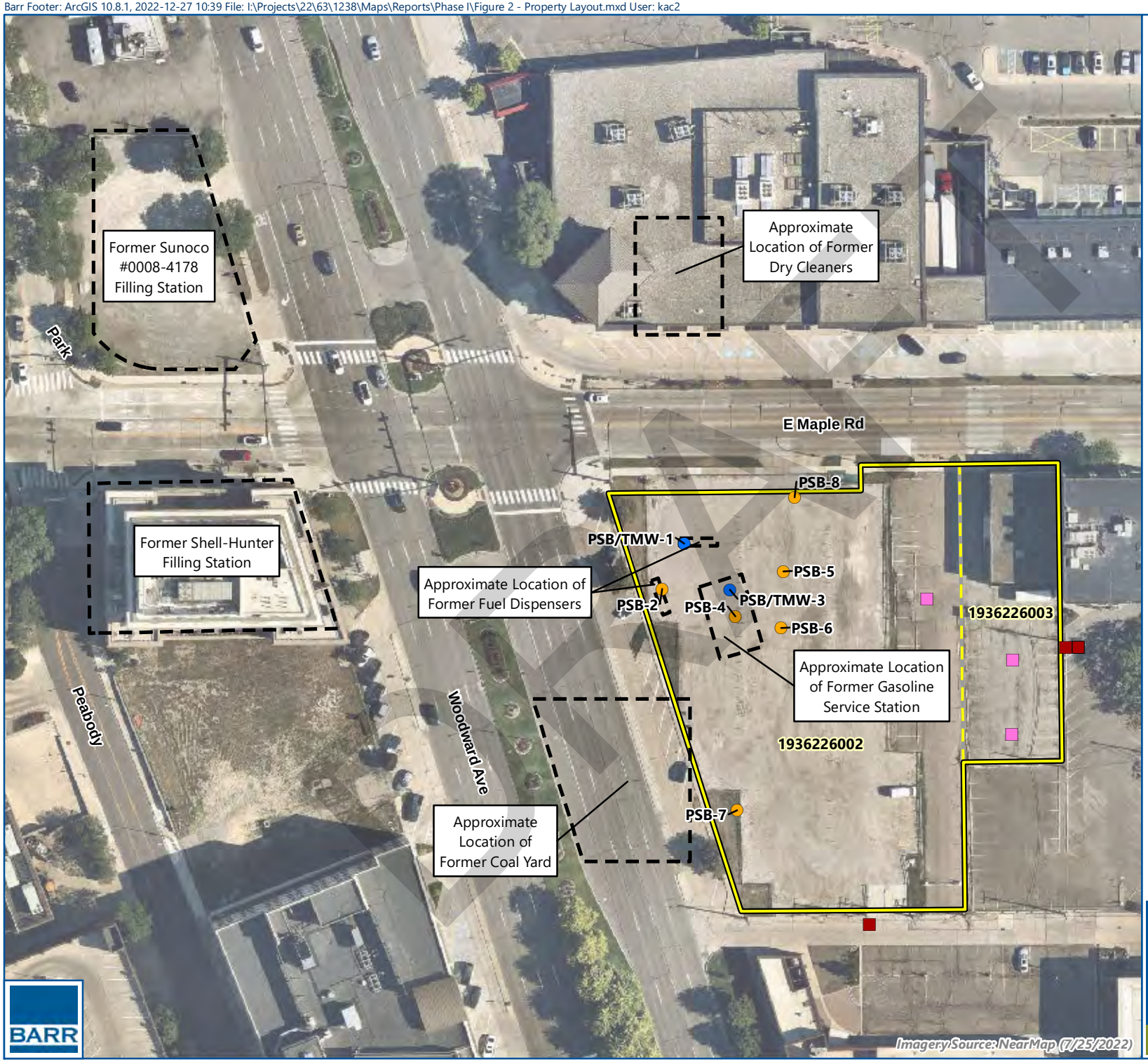
0 1,000 2,000

Feet

PROPERTY LOCATION
690 E Maple Rd. and
34952 Woodward Ave.
Birmingham, MI

FIGURE 1

BARR



Property Boundary

Parcel Boundary

Catch Basins

Pole Mounted Transformer

Soil Boring

Soil Boring and Temporary Well

Note: Soil boring and temporary well locations were completed by PM Environmental (2011)

N

0 45 90

Feet

PROPERTY LAYOUT
690 E Maple Rd. and
34952 Woodward Ave.
Birmingham, MI

FIGURE 2

BARR

Appendix B

MNFI Database Search

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MNFI Home Contact Us Plant List Animal List Abstracts Help

Michigan Natural Features Inventory

Web Database Search

MICHIGAN STATE UNIVERSITY EXTENSION

Search Results for Town 02N, Range 10E, Section 36

Query Results Generated on Dec 19, 2022

Displaying Record 1 to 9 of 9 Records Found

Database Updated on Dec 01, 2022

New Search | Refine Search | Previous 25 Records | Next 25 Records

Abstract	Common Name	Scientific Name	State Status	Federal Status	Last Observed Date	Element Category	Mapping Precision	Site of Observation	Best Documentation of EO	Town	Range	Section	County
	Clinton's bulrush	Trichophorum clintonii	SC		1916-06-04	Plant	GX	BLOOMFIELD HILLS	Billington, C. 1916. MICH,WUD	02N	10E	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Oakland
	Creek heelsplitter	Lasmigona compressa	SC		2016-07-07			River Rouge near Birmingham	2017-07-22. Unionidae download from IDIGBIO for new Special Concern mussels. Spreadsheet.	02N	10E	23, 25, 26, 31, 35, 36	Oakland
	False hop sedge	Carex lupuliformis	T		1918-07-13	Plant	GX	ROYAL OAK	Billington, C. and O.N. Farwell. 1918. July 13 - Type Collection #5064.	02N	10E	24, 25, 36	Oakland
	Ginseng	Panax quinquefolius	T		1917-07-29	Plant		Southfield Township	Chandler, B.F. (s.n.) 1917. US 938488. [http://n2t.net/ark:/65665/35a393ccf-8ca4-4ae3-b21f-b7189c8b1477].	02N	10E	31, 32, 33, 34, 35, 36	Oakland
	Hairy angelica	Angelica venenosa	SC		1915-08-19	Plant	GX	Bloomfield Hills	Chandler, B.F. 1915. MSC	02N	10E	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,	Oakland

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												16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	
	River fingernail clam	Sphaerium fabale	SC			Animal		Rouge River	Walker. Unknown date. UMMZ Lot #67029. 4 collected.	02N	10E	25, 35, 36	Oakland
	Rusty-patched bumble bee	Bombus affinis	SC	LE	1965-08-29	Animal		Birmingham	Rowe, Logan, T. Wood, and D. Cuthrell. 2019. January 17 - Excel file with museum specimen data for the bumble bees of Michigan project.	02N	10E	25, 26, 35, 36	Oakland
	Showy orchis	Galearis spectabilis	T		1916-05-26	Plant	GX	SOUTHFIELD	Chandley, B.F. 1916. May 26 - WUD 3189 (no collection #).	02N	10E	19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Oakland
	Showy orchis	Galearis spectabilis	T		1902-05-18	Plant	GX	ROYAL OAK	Cook, W. 1902. May 18 - WUD 3190 (no collection #).	02N	10E	36	Oakland

New Search | Refine Search | Previous 25 Records | Next 25 Records

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Appendix C

SHPO Map

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My Map

SHPO_MAP_SHPOStaff

Architectural/History Surveys

Buildings, Objects, Structures

- Contributing
- Noncontributing
- Eligible for Listing in the National Register of Historic Places
- Not Eligible for Listing in the National Register of Historic Places
- Listed in the National Register of Historic Places
- More Information Needed/Unevaluated

Districts, Sites, Complexes

- Contributing
- Noncontributing
- Eligible for Listing in the National Register of Historic Places
- Not Eligible for Listing in the National Register of Historic Places
- Listed in the National

200ft

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Esri Community Maps Contributors, Province of Ontario, Oakland County, Michigan, SEMCOG, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Section 4.7

Geotechnical Report

Ryan Companies US, Inc.

CONSULTING GROUP

Report of Preliminary Geotechnical Investigation

Birmingham Development
Woodward Avenue and Maple Road
Birmingham, Michigan

Prepared for:

Ryan Companies US, Inc.
224 North Des Plaines Street
Suite #100
Chicago, Illinois 60661

G2 Project No. 220924
March 29, 2023

g2consultinggroup.com

Headquarters	1866 Woodslee St	Troy, MI 48083	P 248.680.0400	F 248.680.9745
Ann Arbor	1350 Eisenhower Pl	Ann Arbor, MI 48108	P 734.390.9330	F 734.390.9331
Chicagoland	1186 Heather Dr	Lake Zurich, IL 60047	P 847.353.8740	F 847.353.8742

CONSULTING GROUP

March 29, 2023

Ms. Sheila Sheridan
Senior Preconstruction Manager
Ryan Companies US, Inc.
224 North Des Plaines Street
Suite #100
Chicago, Illinois 60661

Re: Report of Preliminary Geotechnical Investigation
Birmingham Development
Woodward Avenue and Maple Road
Birmingham, Michigan
G2 Project No. 220924

Dear Ms. Sheridan:

We have completed the preliminary geotechnical investigation for the proposed Birmingham Development in Birmingham, Michigan. This report presents the results of our observations and analyses and our recommendations for earthwork operations, foundation design, and construction considerations as they relate to the geotechnical conditions on site.

We appreciate the opportunity to be of service to Ryan Companies US, Inc. and look forward to discussing the recommendations presented. In the meantime, if you have any questions regarding the report or any other matter pertaining to the project, please call us.

Sincerely,

G2 Consulting Group, LLC

Jennifer M. Casey, P.E.
Project Manager

Noel J. Hargrave-Thomas, P.E.
Principal

JMC/NJHT/ljv

Enclosures

EXECUTIVE SUMMARY

Schematic drawings indicate the development will include a building occupying the majority of the site. The building will consist of one level of below grade parking, ground level parking with a lobby and retail space, and between five and eight stories of multi-family units.

Gravel fill is present at the surface of the soil borings and extends to an approximate depth of 1 foot. Medium compact sand fill is present beneath the gravel fill within soil boring B-2 and extends to an approximate depth of 3 feet. Stiff to hard silty clay fill and sandy clay fill with debris and organic matter are present beneath the sand fill in soil boring B-2 and the gravel fill in soil boring B-7 and extend to approximate depths ranging from 4-1/2 to 6 feet. Native very stiff to hard silty clay underlies the fill soils and extends to an approximate depth of 11 to 13 feet. Medium to stiff silty clay and clayey silt are present beneath the very stiff to hard silty clay and extends to an approximate depth of 52 feet. Alternating layers of medium compact to compact granular soils and medium to hard consistency cohesive soils underlie the upper silty clay and extend to approximate depths of 121-1/2 and 123 feet. Very compact sandy silt and sand are present below approximate depths of 121-1/2 and 123 feet and extend to the explored depth of 135 feet. Groundwater was encountered at depths of 39 and 53 feet within soil borings B-2 and B-7, respectively, during drilling operations. An accurate groundwater level could not be obtained at completion of drilling operations due to the use of drilling mud to advance the borings. Although long-term groundwater levels were not recorded, based on the soil profile, the potential for an artesian groundwater condition exists. We recommend the static, long-term groundwater level be verified with piezometers prior to construction.

We understand maximum column loads will range between 1,400 and 2,000 kips. The existing medium to stiff silty clay anticipated at the foundation bearing elevation will not provide adequate support for conventional spread footings. As such, deep foundations or ground improvement techniques will be required to support the proposed structure. We anticipate drilled shaft foundations will be the most economical deep foundation choice. We anticipate maximum drilled shaft foundation diameters ranging from 5 to 6 feet extending to a depth on the order of 123 feet below existing grade on the very compact granular soils. Smaller shaft diameters and/or shorter shaft lengths can be used where column loads are lower. Alternatively, a ground improvement technique, such as rigid inclusions, can be used to improve the existing soils to provide increased support of spread footings. Rigid inclusions are a proprietary design element, with design services being provided by the rigid inclusion contractor. We understand preliminary discussions with rigid inclusion contractors indicate an improved bearing capacity on the order of 8,000 psf may be achieved based on the encountered soil conditions. A mat foundation may also be a feasible option for support of the building.

We anticipate the below-grade parking will extend on the order of 12 feet below existing grade. Therefore, the subgrade soils beneath the below-grade pavement are expected to generally consist of medium to stiff native silty clay. Silty clay is considered poor quality for direct support of pavements, has poor drainage characteristics, and has a high susceptibility to frost penetration. We recommend pavements be designed based on a California Bearing Ratio (CBR) value of 4 percent. Based on this CBR value, we have calculated an effective resilient modulus (M_R) of 6,000 pounds per square inch (psi) for pavement design. This value has been selected to reflect seasonal effects of moisture and temperature changes on the subgrade soils. Based on the results of our analysis, we recommend a minimum pavement design cross-section of 6 inches of MDOT P1 Portland cement concrete over 8 inches of MDOT 21AA dense-graded aggregate.

This summary is not to be considered separate from the entire text of this report, with all the conclusions and qualifications mentioned herein. Details of our analysis and recommendations are discussed in the following sections and in the Appendix of this report.

PROJECT DESCRIPTION

Schematic drawings indicate the development will include a building occupying the majority of the site. The building will consist of one level of below grade parking, ground level parking with a lobby and retail space, and between five and eight stories of multi-family units.

Existing and proposed grades were not available at the time of this report. We anticipate the proposed buildings will be constructed at or slightly above the prevailing existing grade. We understand maximum single column loads will be between 1,400 and 2,000 kips. When final site grades become available or if loading conditions vary from the provided values, G2 Consulting Group, LLC (G2) must be notified so we can review the recommendations provided within this report.

SCOPE OF SERVICES

The field operations, laboratory testing, and engineering report preparation were performed under the direction and supervision of a licensed professional engineer. Our services were performed according to generally accepted standards and procedures in the practice of geotechnical engineering in this area. Our scope of services for this project is as follows:

1. We drilled a total of two (2) soil borings throughout the development. Soil borings B-2 and B-7 were drilled as part of the preliminary investigation. Each boring extends to a depth of 135 feet below existing grade.

2. We performed laboratory testing on representative samples obtained from the soil borings. Laboratory testing included visual engineering classification, natural moisture content, dry density, and unconfined compressive strength determinations.

3. We prepared this preliminary engineering report. The report includes recommendations regarding foundation types, allowable bearing capacity, estimated settlement, and construction considerations related to site construction and associated development.

FIELD OPERATIONS

Ryan Companies US, Inc. in conjunction with G2, selected the number, depth, and location of the soil borings. The soil boring locations were determined in the field by measuring from existing site features using conventional taping methods in conjunction with GPS technology. The approximate soil boring locations are shown on the Soil Boring Location Plan, Plate No. 1. Ground surface elevations at the soil boring locations are not available at the time of this report. We recommend the ground surface elevation at the soil borings locations be surveyed prior to any construction operations so depth can be tied to elevation.

Soil borings were drilled using a truck-mounted rotary drilling rig. 4-inch diameter solid stem augers were used to advance the borings to a depth of 10 feet, at which time a 4-inch diameter casing was set and wash rotary drilling methods were employed using a 2-7/8 inch tri-cone rotary bit to the explored depths. Soil samples were obtained at intervals of 2-1/2 feet within the upper 10 feet and at intervals of 5 feet thereafter. These samples were obtained by the Standard Penetration Test Method (ASTM D 1586), which involves driving a 2-inch diameter split-spoon sampler into the soil with a 140-pound weight falling 30 inches. The sampler is generally driven three successive 6-inch increments with the number of blows for each increment recorded. The number of blows required to advance the sampler the last 12 inches is termed the Standard Penetration Resistance (N). Blow counts for each six-inch increment and the resulting N-values are presented on the individual soil boring logs.

The soil samples obtained during field operations were placed in sealed containers in the field and brought to our laboratory for testing and classification. During drilling operations, the drilling crew maintained logs of the encountered subsurface conditions, including changes in stratigraphy and observed groundwater levels of the soil borings to be used in conjunction with our analysis of the

subsurface conditions. The final boring logs are based on the field logs and laboratory soil classification and test results. After completion of the drilling operations the boreholes were backfilled with cement-bentonite grout.

LABORATORY TESTING

Representative soil samples were subjected to laboratory testing to determine soil parameters pertinent to foundation design and site preparation. An experienced geotechnical engineer classified the samples in general conformance with the Unified Soil Classification System.

Laboratory testing included natural moisture content, dry density, and unconfined compressive strength determinations. The unconfined compressive strengths were determined by ASTM Test Method D 2166 and using a spring loaded hand penetrometer. Per ASTM Test Method D 2166, the unconfined compressive strength of cohesive soils is determined by axially loading a small cylindrical soil sample under a slow rate of strain. The unconfined compressive strength is defined as the maximum stress applied to the soil sample before shear failure. If shear failure does not occur prior to a total strain of 15 percent, the unconfined compressive strength is defined as the stress at a total strain of 15 percent. The hand penetrometer estimates the unconfined compressive strength to a maximum of 4-1/2 tons per square foot (tsf) by measuring the resistance of the soil sample to the penetration of a calibrated spring loaded cylinder.

The results of the laboratory tests are indicated on the soil boring logs at the depths the samples were obtained. The unconfined compressive strength test results using test method D 2166 are presented graphically on the Unconfined Compressive Strength Tests, Figure Nos. 3 through 7. We will hold the soil samples for 60 days from the date of this report, after which time they will be discarded. If you would to retain the samples beyond this date, please let us know.

SITE CONDITIONS

The project site is located within the southeast quadrant of the intersection of Woodward Avenue and Maple Road in Birmingham, Michigan. Based on visual observations and historic aerial photographs, the western half site has been vacant and generally used for parking since approximately 2014. Prior to 2014, three buildings and associate pavements were located on this portion of the property. An existing building is present within the northeast corner of the overall property with associated bituminous concrete pavement. Based on visual observations, the site is relatively flat and open. The ground surface is primarily covered in bituminous concrete or aggregate with small grassy areas present along Woodward Avenue.

Surrounding properties generally consist of commercial or retail properties. Single-family and multi-family residential properties are located beyond the commercial and retail properties to the northeast and southeast.

SOIL CONDITIONS

Gravel fill is present at the surface of the soil borings and extends to an approximate depth of 1 foot. Sand fill is present beneath the gravel fill within soil boring B-2 and extends to an approximate depth of 3 feet. Silty clay fill and sandy clay fill with debris and organic matter are present beneath the sand fill in soil boring B-2 and the gravel fill in soil boring B-7 and extend to approximate depths ranging from 4-1/2 to 6 feet. Native silty clay underlies the fill soils and generally extends to an approximate depth of 52 feet. Occasional clayey silt layers are present within the silty clay stratum within soil boring B-2. The native cohesive soils are underlain by sand, silty sand, or sandy silt extending to depths of 62 to 72 feet. Silty clay, sandy clay, and gravelly clay are present beneath the native granular soils and extend to an approximate depth of 92 feet. Clayey gravel is present between the approximate depths of 92 and 102 feet within soil boring B-2. Silt underlies the clayey gravel in boring B-2 and the gravelly clay within soil

boring B-7 and extends to approximate depths of 98 and 113 feet. Clayey silt and silty clay are present beneath the silt and to approximate depths of 121-1/2 and 123 feet. Sandy silt and sand underlie the silty clay and extend to the explored depth of 135 feet.

The sand fill within soil boring B-2 is medium compact with a Standard Penetration Test N-value of 12 blows per foot. The sandy clay fill within boring B-7 is hard in consistency with a moisture content of 12 percent and an unconfined compressive strength of 9,000 pounds per square foot (psf). The silty clay fill soil is stiff in consistency with moisture contents of 14 and 16 percent and unconfined compressive strengths of 2,500 and 3,000 psf. The native silty clay is very stiff to hard in consistency to approximate depths of 11 to 13 feet with natural moisture contents ranging from 12 to 15 percent and unconfined compressive strengths ranging from 7,000 to 9,000 psf. The underlying silty clay and clayey silt are medium to stiff in consistency with natural moisture contents ranging from 13 to 22 percent, dry densities ranging from 112 to 127 pounds per cubic foot (pcf), and unconfined compressive strengths ranging from 1,000 to 3,960 psf. The sand, silty sand, and sandy silt are medium compact to compact with N-values ranging from 25 to 48 blows per foot. The underlying silty clay is medium in consistency within soil boring B-7 with natural moisture contents ranging from 20 to 33 percent, dry densities ranging from 93 to 96 pcf, and unconfined compressive strengths ranging from 1,190 to 2,000 psf. The silty clay at similar depths within soil boring B-2 is stiff to very stiff in consistency with natural moisture contents ranging from 15 to 16 percent, dry densities ranging from 119 to 126 pcf, and unconfined compressive strengths ranging from 3,850 to 4,300 psf. The underlying sandy clay and gravelly clay within soil boring B-7 are hard in consistency with natural moisture contents of 9 and 13 percent and an unconfined compressive strength of 9,000 psf. The silt is medium compact with N-values ranging from 12 to 23 blows per foot. The underlying silty clay and clayey silt are stiff to very stiff in consistency with natural moisture contents ranging from 19 to 25 percent, dry densities ranging from 99 to 113 pcf, and unconfined compressive strengths ranging from 2,000 to 4,270 psf. The underlying sandy silt and sand are very compact with N-values ranging from 86 blows per foot to 50 blows for 3 inches of penetration.

The stratification depths shown on the soil boring logs represent the soil conditions at the boring locations. Variations may occur between borings. Additionally, the stratigraphic lines represent the approximate boundaries between soil types. The transitions may be more gradual than what are shown. We have prepared the boring logs on the basis of laboratory classification and testing as well as field logs of the soils encountered.

The approximate soil boring locations are shown on the Soil Boring Location Plan, Plate No. 1, in the Appendix. The Soil Boring Logs, Figure Nos. 1 and 2, and the Unconfined Compressive Strength Tests, Figure Nos. 3 through 7, are presented in the Appendix. The soil profiles described above are generalized descriptions of the conditions encountered at the boring locations. General Notes defining the nomenclature used on the boring logs and elsewhere in this report are presented on Figure No. 8.

GROUNDWATER CONDITIONS

Groundwater was encountered at depths of 39 and 53 feet within soil borings B-2 and B-7, respectively, during drilling operations. An accurate groundwater level could not be obtained at completion of drilling operations due to the use of drilling mud to advance the borings.

An estimate of the historical groundwater levels may be made based on the soil color change from browns (aerobic condition where free oxygen is available) to grays (anaerobic condition where free oxygen is not available). This color change occurs between the depths of 11 and 13 feet.

Although long-term groundwater levels were not recorded, based on the soil profile, the potential for an artesian groundwater condition exists. We recommend the static, long-term groundwater level be verified with piezometers prior to construction.

Fluctuations in groundwater levels should be anticipated due to seasonal variations and following periods of prolonged precipitation. It should be noted that groundwater observations made during

drilling operations in predominantly cohesive soils are not necessarily indicative of the static groundwater level. This is due to the low permeability of such soils and the tendency of drilling operations to seal off the natural paths of groundwater flow.

SITE PREPARATION

We anticipate a moderate amount of earthwork will be required to achieve finished grades. We anticipate earthwork operations will consist of demolishing the existing building and pavements, removing any vegetation and topsoil within the footprint of the proposed building, relocating existing utilities within the footprint of the proposed building, as required, excavating for utilities, below grade parking, and foundations, backfilling excavations with engineered fill, and preparing the site for pavement support. We recommend all earthwork operations be performed in accordance with comprehensive specifications and be properly monitored in the field by qualified field technicians under direction of a licensed engineer.

At the start of earthwork operations, any existing vegetation or topsoil should be removed in their entirety from the proposed building footprint. Any foundations, floor slabs, or pavement remaining from the previous development should be completely removed from within the footprint of the proposed building. Any existing utilities within the proposed building footprint should be relocated and/or completely filled with grout and abandoned in place, as required.

Engineered fill should be free of organic matter, frozen soil, clods, or other harmful material. Engineered fill should be placed in uniform horizontal layers, not more than 9 inches in loose thickness. The engineered fill should be compacted to achieve a density of at least 95 percent of the maximum dry density as determined by the Modified Proctor compaction test (ASTM D 1557). All engineered fill material should be placed and compacted at approximately the optimum moisture content. Frozen material should not be used as fill, nor should fill be placed on a frozen subgrade. The existing fill soils are generally not considered suitable for reuse as engineered fill due to the presence of organic matter and miscellaneous debris. We recommend the use of granular engineered fill as backfill for utilities, foundations, and manhole structures where smaller compaction equipment will be required due to the confined space conditions.

FOUNDATION RECOMMENDATIONS

We understand maximum column loads will range between 1,400 and 2,000 kips. The existing medium to stiff silty clay anticipated at the foundation bearing elevation will not provide adequate support for conventional spread footings. As such, deep foundations or ground improvement techniques will be required to support the proposed structure. We anticipate drilled shaft foundations will be the most economical deep foundation choice. Alternatively, a ground improvement technique, such as rigid inclusions, can be used to improve the existing soils to provide increased support of spread footings. A mat foundation can also be considered for support of the proposed building.

Preliminary Drilled Shaft Recommendations

Based on the anticipated maximum column loads of 1,400 to 2,000 kips, we anticipate maximum drilled shaft foundation diameters ranging from 5 to 6 feet extending to a depth on the order of 123 feet below existing grade on the very compact granular soils. Smaller shaft diameters and/or shorter shaft lengths can be used where column loads are lower.

Rigid Inclusions

Rigid inclusions are a ground improvement technique that typically consist of unreinforced, grout columns installed below spread and/or strip footings to improve bearing capacity in soft or marginal soils. Rigid inclusions are a proprietary design element, with design services being provided by the rigid

inclusion contractor. We understand preliminary discussions with rigid inclusion contractors indicate an improved bearing capacity on the order of 8,000 psf may be achieved based on the encountered soil conditions.

Mat Foundation

We anticipate a mat foundation bearing on the medium to very stiff silty clay will be feasible for support of the proposed building. We anticipate a net allowable soil bearing capacity of 3,500 psf may be available for design of the mat foundation. A minimum subgrade modulus of 30 pounds per cubic inch (pci) can be expected for design of a mat foundation. We recommend a drainage layer be incorporated below the mat foundation to minimize the development of hydrostatic pressure below the mat.

General

Exterior foundations must bear at a minimum depth of 3-1/2 feet below finished grade for protection against frost heave. Interior foundations can be constructed at shallower depths provided suitable bearing soils are present and they are protected from frost penetration during construction. Isolated spread footings should be at least 30 inches in their least dimension. If foundations are required to be constructed at different levels, adjacent foundations should be designed and constructed so the least lateral distance between the foundations is equivalent to or more than the difference in their bearing levels. We recommend all foundations be suitably reinforced to minimize the effects of differential settlements associated with local variations in soil conditions. We also recommend a G2 engineer be on site during construction to observe the excavations, measure the bearing depth, and verify the adequacy of the bearing soils.

We recommend foundations be designed such that total and differential settlement are within 1 inch and 1/2 inch, respectively. We expect settlements of these magnitudes are within tolerable limits for the type of building proposed.

EXCAVATION RECOMMENDATIONS

Given the proximity to the property line and the proposed depth of excavation, we anticipate a temporary earth retention system (TERS) will be required to support the proposed excavation. Where space is available, excavations may be sloped back within the existing fill soils at maximum slope angles of 1-1/2 horizontal to 1 vertical (1.5H:1V). Excavations within the stiff to hard silty clay can be sloped at a maximum of 1H:1V. Where seepage from excavation slopes is observed, the slopes must be flattened sufficiently to maintain stability, but in no case left steeper than 3H:1V at and below the seepage level.

If temporary construction slopes are to be maintained for long periods when rain may be expected, berms are suggested along the tops of the embankments to prevent runoff water from entering the excavation and eroding the slope faces. The soils exposed in the slope faces should be inspected by qualified personnel so modifications of the slopes can be made if variations in the soil or water conditions occur.

For design of a cantilevered or single row internally braced shoring system, we recommend a triangular distribution of lateral earth pressure above the excavation line. It may be assumed that the retained soils with a level surface behind the shoring will exert a lateral pressure equal to that developed by a fluid with a density of 35 pounds per square foot per foot of depth for soils above water level. Soils below the water table should be modeled as a fluid with a density of 85 pcf. If construction traffic or material storage is allowed within 10 feet of the excavation, a uniform lateral pressure of 100 pounds per square foot should be added to the design lateral load. For design of multi-level braced, we recommend the use of a rectangular distribution of lateral earth pressure. It may be assumed that the retained soils with a level surface behind the braced shoring will exert a lateral pressure equal to 26H in

pounds per square foot, where H is the height of the shoring in feet. Where shoring extends below the water table, an additional triangular distribution of hydrostatic pressure should be added to the design lateral load.

All excavations should be safely sheeted, shored, sloped, or braced in accordance with MI-OSHA requirements. If material is stored or equipment is operated near the excavation, stronger shoring must be used to resist the extra pressure due to the superimposed loads. Care should always be exercised when excavating near existing buildings, roadways, or utilities to avoid undermining. In no case should unsupported excavations extend below the level of adjacent structures or utilities unless underpinning is planned.

PERMANENT BELOW GRADE WALL RECOMMENDATIONS

We recommend below grade walls be designed to resist lateral soil loads due to backfilled soils modeled as an equivalent fluid pressure. Free draining granular backfill (less than 10 percent minus 200 sieve) should be used as backfill behind below grade walls. Below grade walls considered to be fixed at the top should be designed on the basis of at-rest lateral earth pressures corresponding to an equivalent fluid pressure of 50 pounds per square foot per foot of depth for drained soil conditions and 85 pounds per square foot per foot of depth for undrained soil conditions. Appropriate surcharge loads should be added for floor slabs and footings constructed adjacent to below grade walls.

Lateral earth pressures are significantly influenced by the type and intensity of backfill compaction. We recommend only relatively small compaction equipment be used to compact backfill placed against below grade basement walls. To prevent the development of groundwater and hydrostatic pressures on below grade floors and walls and to maintain drained conditions, we recommend a perimeter foundation drain system be placed at the foundation level. The perforated or slotted subdrains should be protected with coarse aggregates and the pipe and gravel together should be wrapped with a suitable filter fabric to prevent the migration of surrounding soil fines into the subdrains. The subdrain system should outlet water to a sump/pump system designed to remove the collected water.

In order to make below grade walls more resistant to passage of water vapor from the outside and to increase their resistance to capillary penetration of water, the exterior basement walls should be treated with an impervious membrane, such as MIRA-Dry, TUFF-N-DRI, or equivalent. The continuity and resulting effectiveness in resisting moisture penetration depends on the smoothness and regularity of the concrete surface and workmanship in applying the membrane materials to the dry concrete surface.

PAVEMENT RECOMMENDATIONS

We anticipate the below-grade parking will extend on the order of 12 feet below existing grade. Therefore, the subgrade soils beneath the below-grade pavement are expected to generally consist of medium to stiff native silty clay. Silty clay is considered poor quality for direct support of pavements, has poor drainage characteristics, and has a high susceptibility to frost penetration. We recommend pavements be designed based on a California Bearing Ratio (CBR) value of 4 percent. Based on this CBR value, we have calculated an effective resilient modulus (M_R) of 6,000 pounds per square inch (psi) for pavement design. This value has been selected to reflect seasonal effects of moisture and temperature changes on the subgrade soils.

We anticipate the proposed pavement areas will consist of standard duty rigid Portland cement concrete. We have assumed a load of 50,000 equivalent single-axle loads (ESALS) over a 20-year design life for the standard duty pavements. Once actual traffic loading information becomes available, G2 should be notified so that we may review our design assumptions. For purposes of design, we recommend a serviceability loss of 2.0, a standard deviation of 0.45 for flexible pavements and 0.35 for rigid pavements, and a reliability factor of 0.85.

Based on the results of our analysis, we recommend the minimum following pavement design cross-section:

Standard Duty Rigid Pavement Section	
Material	**Thickness**
MDOT P1 Portland Cement Concrete	6 inches
MDOT 21AA (dense-graded aggregate)	6 inches

All pavement materials are specified within the 2012 Standard Specifications for Construction from the Michigan Department of Transportation. The concrete pavement materials are described in Section 601.

The pavement and subgrade should be properly sloped to promote effective surface and subsurface drainage and prevent water ponding. Regular timely maintenance should be performed on the bituminous pavement to reduce the potential deterioration associated with moisture infiltration through surface cracks. The owner should be prepared to seal the cracks with a hot-applied elastic crack filler as soon as possible after cracking develops and as often as necessary to block the passage of water to the subgrade soils.

CONSTRUCTION CONSIDERATIONS

Drilled Shaft Foundations

Caving and/or sloughing of the granular soil layers should be anticipated for drilled shaft excavations. In addition, groundwater should be anticipated within the native granular soils. Therefore, the contractor should be prepared to use temporary steel casing, drilling mud, and water, as necessary, to maintain a stable excavation. We recommend a minimum drilling mud head of 6 feet above the static groundwater elevation be maintained during drilling operations.

Once the drilled shaft excavation has been completed to the design bearing depth, reinforcing steel should be set and concrete placed until a positive concrete head has been established within the temporary casing. This positive concrete head must be maintained while pulling the casing to prevent the infiltration of loose soil and groundwater outside the casing into the fresh concrete. After concrete has been placed to an appropriate grade, the casing may be removed and concrete placement operations completed. Telescoped casing must be removed in the opposite order in which it is installed (i.e. – from the inside out). If groundwater cannot be controlled with temporary casing or drilling mud is used to maintain a stable excavation, concrete must be placed by tremie method.

To reduce lateral movement of the drilled shaft foundation, the contractor must place the concrete for the shaft in intimate contact with undisturbed soil. Fill any voids or enlargements in the drilled shaft excavation with concrete at the time of drilled shaft concrete placement. Free fall concrete may be used for dry shafts provided fall is vertical without hitting sides of excavation, form-work, reinforcing bars, form ties, cage bracing, or other obstructions. Tremie concrete placement must be used for drilled piers excavated in the wet. Concrete slump shall be between 5 to 7 inches for free fall placement and 7 to 9 inches for tremie placement to reduce the potential for concrete arching and provide a workable material.

Rigid Inclusions

Rigid inclusions are typically installed within a cased borehole with tremie-placed grout. Rigid inclusions drill rigs have two sets of excavation flights. The bottom flights excavate soil while the second upper flights push the excavated soils outward, densifying the soils and limiting soils from coming out of the ground. Once the drilling operation extends to the design depth, grout ins placed through the hollow stem as the auger is removed. As previous mentioned, we recommend the static, long-term

groundwater level be determined prior to construction so the hydrostatic pressure can be factored into the rigid inclusion design and construction.

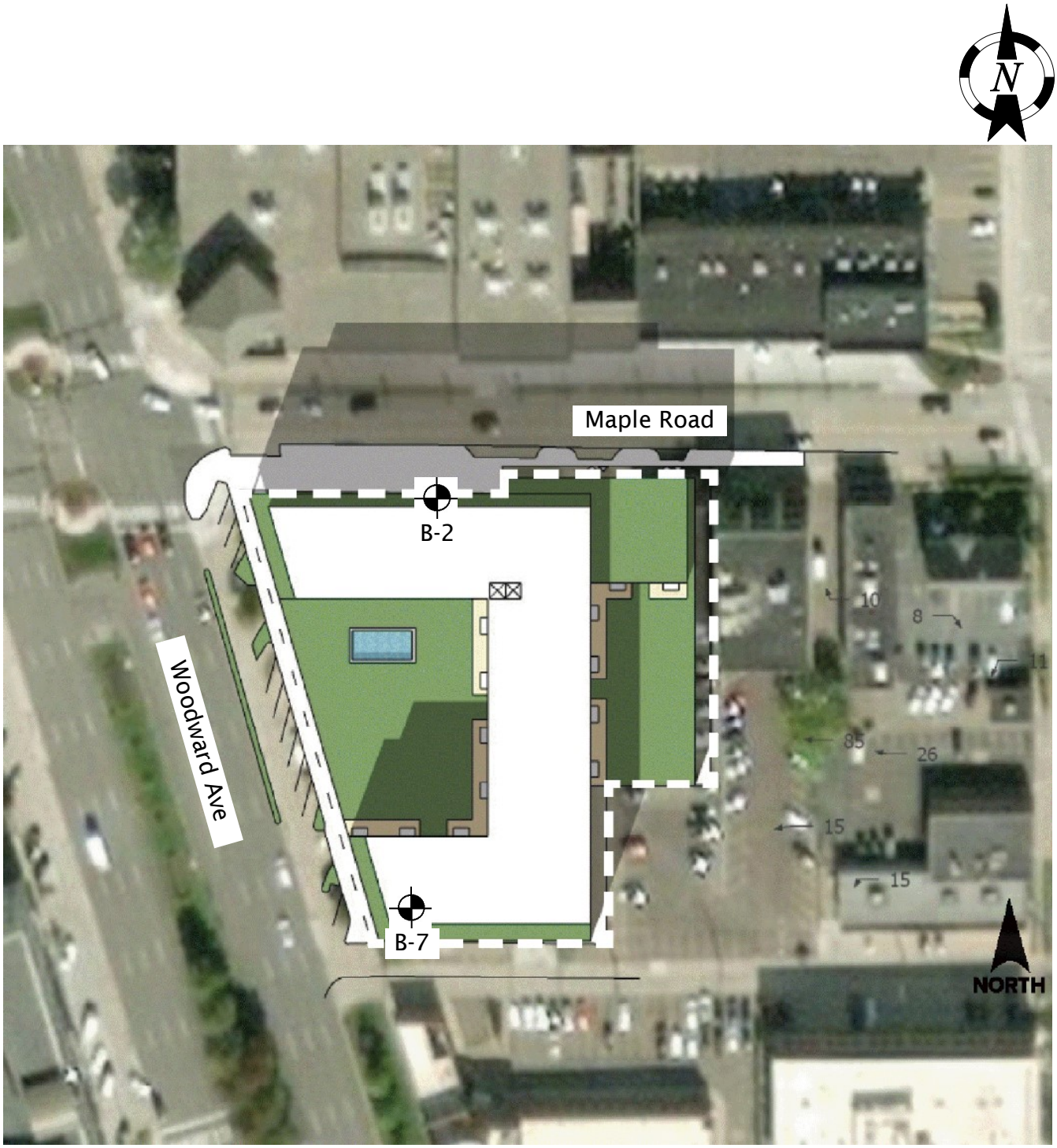
GENERAL COMMENTS

We have formulated the evaluations and recommendations presented in this report relative to site preparation and foundations on the basis of data provided to us relating to the project location, type of structure, and surface grade for the proposed site. Any significant change in this data should be brought to our attention for review and evaluation with respect to prevailing subsurface conditions. Furthermore, if changes occur in the design, location, or concept of the project, conclusions and recommendations contained in this report are not valid unless G2 Consulting Group, LLC reviews the changes. G2 Consulting Group, LLC will then confirm the recommendations presented herein or make changes in writing.

The scope of the present investigation was limited to evaluation of subsurface conditions for the support of proposed buildings and other related aspects of the development. No chemical, environmental, or hydrological testing or analyses were included in the scope of this investigation. If changes occur in the design, location, or concept of the project, the conclusions and recommendations contained in this report are not valid unless G2 Consulting Group, LLC reviews the changes. G2 Consulting Group, LLC will then confirm the recommendations presented herein or make changes in writing.

We base the analyses and recommendations submitted in this report upon the data from the soil borings performed at the approximate locations shown on the Soil Boring Location Plan, Plate No. 1. This report does not reflect variations that may occur between the actual boring locations and the actual structure locations. The nature and extent of any such variations may not become clear until the time of construction. If significant variations then become evident, it may be necessary for us to re-evaluate our report recommendations.

We recommend G2 Consulting Group, LLC observe all geotechnical related work, including foundation construction, subgrade preparation, and engineered fill placement. G2 Consulting Group, LLC will perform the appropriate testing to confirm the geotechnical conditions given in the report are found during construction.



Legend

Soil borings drilled by BRAX Drilling on January 18 and 26, 2023

Note: Soil borings B-1, B-3 through B-6, and B-8 through B-10 were not performed.

Soil Boring Location Plan		
Birmingham Development Woodward Avenue and Maple Road Birmingham, Michigan		
2G CONSULTING GROUP	Project No. 220924	
	Drawn by: JMC	
	Date: 3-28-23	Plate No. 1
	Scale: NTS	

Section 4.8

Air Quality Report

Ryan Companies US, Inc.

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

AIR QUALITY ANNUAL REPORT

2020

Michigan Department of Environment, Great Lakes, and Energy
Michigan.gov/EGLE | 800-662-9278

Air Quality Annual Report

2020

EXECUTIVE SUMMARY

This report gives an overview of the air quality for 2020. Current data for Michigan can be found on Mlair (deqmiair.org) and Air Quality alerts can be delivered directly to email by signing up for the Michigan EnviroFlash program (http://miair.enviroflash.info/). Data in this report are collected by the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and the environment.

The six pollutants monitored by EGLE, Air Quality Division (AQD) are:

1. Carbon monoxide (CO)
2. Lead (Pb)
3. Nitrogen dioxide (NO_2)
4. Ozone (O_3)
5. Particulate matter smaller than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively)
6. Sulfur dioxide (SO_2)

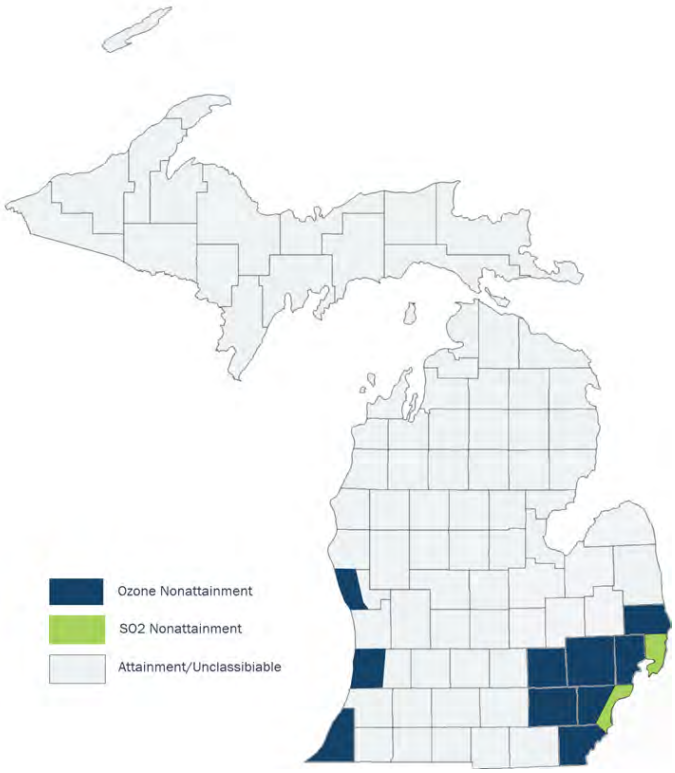
EGLE has established a network of more than 40 monitoring sites throughout the state that monitor for one or more of the criteria pollutants (Figure 1.1 and Table 1.2).

Congress passed the CAA in 1970; however, Michigan has had a long-standing history of environmental awareness well before the Act was established. In 1887, Detroit was the first city in Michigan to adopt an air quality ordinance, which declared that the dense smoke from burning coal was a public nuisance.

The USEPA reviews the criteria pollutant standards every five years. Over time, based upon health data, the standards have been tightened to better protect public health (see Appendix C). Areas that meet the NAAQS are considered in "attainment." Locations where air pollution levels persistently exceed the NAAQS may be designated as "nonattainment." The tightening standards are why some areas in the state may be designated to nonattainment from attainment even though monitoring shows that air quality continues to improve.

Since EGLE began monitoring in the early 1970s, criteria pollutant levels have continually decreased (see Chap. 2-7). The air is much cleaner today than when the CAA began. The entire state of Michigan is in attainment for CO, Pb, NO_2, and particulate matter. Although portions of the state are in nonattainment for SO_2 and O_3, as illustrated in the figure, levels of these pollutants are still decreasing. The NAAQS levels have also decreased recently, which prompted these nonattainment areas. EGLE is currently working on State Implementation Plans (SIPs) to reduce pollutants further and bring the entire state into attainment for SO_2 and ozone.

Attainment Status for the National Ambient Air Quality Standards



Several changes to the monitoring network occurred during 2020.

- The TSPs were shut down at Allen Park and Grand Rapids since they were no longer required for NCore sites (Chap. 7).
- Several changes were made to the $PM_{2.5}$ network, exchanging Federal Reference Method (FRM) manual filter-based monitors and/or non-regulatory continuous monitors for continuous, federal equivalent method (FEM) monitors due to funding changes. Sites that were affected were Eliza Howell-Near Road (Eliza Howell-NR), Bay City, Holland, Kalamazoo, Lansing, Port Huron, and New Haven. Several of these changes occurred at the end of 2020 and data will not be available until the 2021 report (Chap. 7).
- $PM_{2.5}$, PM_{10} and PM coarse measurements at Allen Park, Grand Rapids, and Jenison were switched to T640X instruments that accomplish the same measurements with one instrument.
- The Livonia-Near Road (Livonia-NR) monitor is in the process of moving since site access was lost in July 2019.
- The NOx monitor at Detroit-E 7 Mile was switched to an NOy and a NOx monitor was added to Jenison.
- Sampling continues for the Gordie Howe International Bridge (GHIB) project special study.
- The Detroit-W. Fort St. site name is being changed to Detroit-Southwest (Detroit-SW).

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INTRODUCTION

Air quality regulations in Michigan are based on National Ambient Air Quality Standards (NAAQS) established by United States Environmental Protection Agency (USEPA) based on the federal Clean Air Act (CAA). The NAAQS designates six criteria pollutants considered harmful to public health and the environment. The USEPA must describe the characteristics and potential health and welfare effects for these criteria pollutants. These standards define the maximum permissible concentration of criteria pollutants in the air (see Table 1.1).

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) monitors the six criteria pollutants, which are:

- Carbon monoxide (CO);
- Lead (Pb);
- Nitrogen dioxide (NO_2);
- Ozone (O_3);
- Particulate matter smaller than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively); and
- Sulfur dioxide (SO_2).

Chapters 2 through **7** provide information on each of the six criteria pollutants and include:

- Michigan's monitoring requirements for 2020;
- Attainment / nonattainment status;
- Monitoring site locations (tables and maps show all the monitors active in 2020); and
- Air quality trends from 2015-2020 broken down by location.[1]

The 2020 data for each criteria pollutant is available in **Appendix A.** COVID-19 did not impact air quality data collection in Michigan.

The AQD also monitors air toxics. Air toxics are other hazardous air pollutants that can affect human health and the environment.[2] This data can be found in **Appendix B.**

The purpose of this report is to provide a snapshot of Michigan's 2020 air quality data, air quality trends, overview of the monitoring network (available in much greater detail in the 2020 Network Review),[3] air toxics monitoring program, and other AQD programs, such as MIair and the Emissions Inventory.[4]

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[1] Air quality trends are based on actual statewide monitored readings, which are also listed in the USEPA's Air Quality Subsystem Quick Look Report Data at www3.epa.gov/airtrends/ .

[2] An Overview of Michigan Air Toxic Rules is available on the AQD website at www.michigan.gov/air (select "Permits," then "Toxics Laws and Rules.")

[3] Available online at Michigan's 2020 Ambient Air Monitoring Network Review

[4] Online information about criteria pollutants and air toxics, along with this and previous Annual Air Quality Reports, are available via the AQD's website at www.michigan.gov/air (select "Monitoring.")

CHAPTER 1: BACKGROUND INFORMATION

This section summarizes the development of the NAAQS (see **Appendix C** for further details) and how compliance with these standards is determined. Also included is an overview of Michigan's air sampling network, attainment status of the state, and information on Mlair and the Air Quality Index (AQI).

National Ambient Air Quality Standards (NAAQS)

Under the CAA, the USEPA established a primary and secondary NAAQS for each criteria pollutant. The primary standard is designed to protect public health with an adequate margin of safety, including the health of the most susceptible individuals in a population, such as children, the elderly, and those with chronic respiratory ailments. Secondary standards are chosen to protect public welfare (personal comfort and well-being) and the environment.

In addition, the NAAQS have various averaging times to address health impacts. Short averaging times reflect the potential for acute (immediate) effects, whereas long-term averaging times are designed to protect against chronic (long-term) effects.

NAAQS have been established for CO, Pb, NO_2, PM, O_3, and SO_2. **Table 1.1** lists the primary and secondary NAAQS, averaging time, and concentration level for each criteria pollutant in effect in 2020. The concentrations are listed as parts per million (ppm), micrograms per cubic meter (µg/m^3), and/or milligrams per cubic meter (mg/m^3).

Table 1.1: NAAQS in Effect during 2020 for Criteria Pollutants

Pollutant	Primary (health) Level	Primary Averaging Time	Secondary (welfare) Level	Secondary Averaging Time
CO 8-hour average	9 ppm (10 mg/m^3)	8-hour average, not to be exceeded more than once per year *(1971)*	None*	None*
CO 1-hour average	35 ppm (40 mg/m^3)	1-hour average, not to be exceeded more than once per year *(1971)*	None*	None*
Lead	0.15 µg/m^3	Maximum rolling 3-month average *(2008)*	Same as Primary	Same as Primary
NO_2 Annual mean	0.053 ppm (100 µg/m^3)	Annual mean *(1971)*	Same as Primary	Same as Primary
NO_2 1-hour average	0.100 ppm	98th percentile of 1-hour average, averaged over 3 years *(2010)*	Same as Annual	Same as Annual
PM_{10}	150 µg/m^3	24-hour average, not to be exceeded more than once per year over 3 years *(1987)*	Same as Primary	Same as Primary
$PM_{2.5}$ Annual average	12.0 µg/m^3	Annual mean averaged over 3 years *(2012)*	15.0 µg/m^3	Annual mean
$PM_{2.5}$ 24-hour average	35 µg/m^3	98th percentile of 24-hour concentration, averaged over 3 years *(2006)*	Same as Primary	Same as Primary
Ozone	0.070 ppm	Annual 4th highest 8-hour daily max averaged over 3 years *(2015)*	Same as Primary	Same as Primary
SO_2	0.075 ppm	99th percentile of 1-hour daily max averaged over 3 years *(2010)*	0.5 ppm	3 hours

*In 1985, the USEPA revoked the secondary standard for CO (for public welfare) due to a lack of evidence of adverse effects on public welfare at or near ambient concentrations.

Michigan Air Sampling Network

EGLE's AQD operates the Michigan Air Sampling Network (MASN), along with other governmental agencies. For instance, the O_3 and $PM_{2.5}$ monitor in Manistee County is a tribal monitor operated by the Little River Band of Ottawa Indians. **Figure 1.1** is a picture of the Lansing site. **Figure 1.2** is a picture of the Military Park (GHIB) site. **Figure 1.3** shows a map of the 2020 MASN monitoring sites.

The MASN consists of federal reference method (FRM) monitors that enable continuous monitoring for the gaseous pollutants CO, NO_2, O_3, and SO_2 providing real-time hourly data. PM and Pb monitors measure concentrations over a 24-hour period. In addition, continuous $PM_{2.5}$ and PM_{10} monitors provide real-time hourly data for PM. $PM_{2.5}$ chemical speciation monitors determine the chemical composition of $PM_{2.5}$. The MASN data is also used to provide timely reporting to EGLE's air quality reporting web page (Mlair, see later in this chapter). The types of monitoring conducted in 2020 and the MASN locations are shown in **Table 1.2.**

Figure 1.1: Lansing site

Figure 1.2: Military Park site

The **NCore network** began January 1, 2011, as part of the USEPA's 2006 amended air monitoring requirements. NCore is a multi-pollutant network that integrates several advance measurement systems for particles, pollutant gases, and meteorology. Michigan has two NCore sites, Allen Park and Grand Rapids. Further information on this network is provided in **Chapters 2** through **7**.

The **Near-road Monitoring Network** focuses on vehicle emissions and how they disperse near roadways. Data from these sites are presented in **Chapters 2, 5,** and **7.**

Figure 1.3: 2020 MASN Monitoring Sites

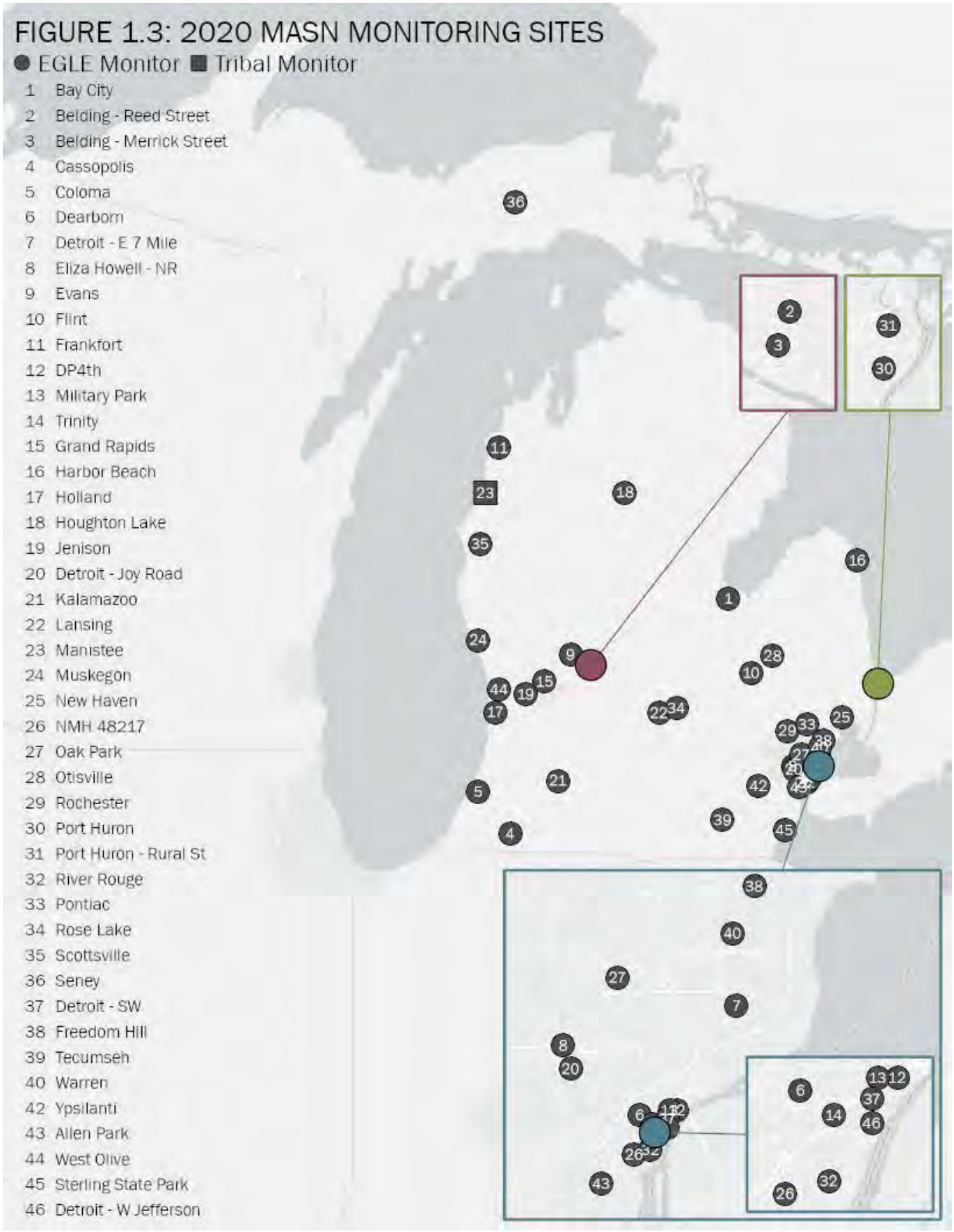


Table 1.2a: Types of Monitoring Conducted in 2020 and MASN Locations in Detroit-Ann Arbor Area.

Airs ID	Site Name	CO	NO_2	Trace NO_y	O_3	PM_{10}	$PM_{2.5}$ FRM	$PM_{2.5}$ Continuous	$PM_{2.5}$ Speciation	SO_2	VOC	Carbonyls	Trace Metals (As, Cd, Mn, Ni, Pb)	Wind Speed & Direction, Temp.	Relative Humidity	Solar Radiation	Barometric Pressure
260910007	Tecumseh				√			√F						√			√
260990009	New Haven				√		√							√	√	√	
260991003	Warren				√												
261250001	Oak Park				√		√							√			
261470005	Port Huron				√		√	√T		√				√			
261470031	Port Huron-Rural St.												√				
261610008	Ypsilanti				√			√F						√			√
261630001	Allen Park	√*		√	√	√	√	√T	√+A	√*				√	√		√
261630005	River Rouge											√	√	√			
261630015	Detroit-SW[5]		√			√	√	√F	√+A	√	√	√	√	√	√		√
261630019	Detroit-E 7 Mile			√	√		√							√	√		√
261630027	Detroit-W. Jefferson												√				
261630033	Dearborn					√^	√	√T	√+A		√	√	√#	√	√		√
261630093	Eliza Howell-NR	√	√					√F						√			
261630097	New Mount Herman (NMH) 48217							√T		√			√				
261630098	Detroit Police 4th Precinct (DP4th)	√	√					√F	A	√			√				
261630099	Trinity	√	√					√F	A	√			√	√			
261630100	Military Park		√					√F	A	√			√				

√ = Data Collected

= 9 additional metals sampled: Ba, Be, Cr, Co, Cu, Fe, Mo, V, Zn

F = FEM continuous $PM_{2.5}$ monitor

T = TEOM (non-FEM) continuous $PM_{2.5}$ monitor

* = Trace monitor

^ = Continuous PM_{10} monitor

A = Aethalometer monitor

[5] Detroit-SW is renamed from Detroit-W. Fort St., SWHS, Southwestern High School, N. Delray to reflect the site more accurately and maintain some continuity from its previous names.

Table 1.2b: Types of Monitoring Conducted in 2020 and MASN Locations in other Michigan CSAs.

Area (CSA)	Airs ID	Site Name	CO	NO_2	Trace NO_y	O_3	PM_{10}	$PM_{2.5}$ FRM	$PM_{2.5}$ Continuous	$PM_{2.5}$ Speciation	SO_2	VOC	Carbonyls	Trace Metals (As, Cd, Mn, Ni, Pb)	Wind Speed & Direction, Temp.	Relative Humidity	Solar Radiation	Barometric Pressure
Flint	260490021	Flint				√		√	√F						√			√
Flint	260492001	Otisville				√									√			
Grand Rapids	261390005	Jenison		√		√	√	√							√			
Grand Rapids	261390011	West Olive									√				√			
Grand Rapids	260810020	Grand Rapids	√*		√	√	√	√	√T	√	√*				√			√
Grand Rapids	260810022	Evans				√									√			
Lansing/E. Lansing	260650018	Lansing		√		√		√	√F		√				√			√
Lansing/E. Lansing	260370002	Rose Lake				√												

√ = Data Collected

F = FEM continuous $PM_{2.5}$ monitor

T = TEOM (non-FEM) continuous $PM_{2.5}$ monitor

* = Trace monitor

Table 1.2c: Types of Monitoring Conducted in 2020 and MASN Locations in Michigan Counties.

County	Airs ID	Site Name	CO	NO_2	Trace NO_y	O_3	PM_{10}	$PM_{2.5}$ FRM	$PM_{2.5}$ Continuous	$PM_{2.5}$ Speciation	SO_2	VOC	Carbonyls	Trace Metals (As, Cd, Mn, Ni, Pb)	Wind Speed & Direction, Temp.	Relative Humidity	Solar Radiation	Barometric Pressure
Monroe	261150006	Sterling State Park									√				√			
Huron	260630007	Harbor Beach				√									√			
Bay	260170014	Bay City							√F						√			
Missaukee	261130001	Houghton Lake		√		√			√F						√			√
Allegan	260050003	Holland				√			√F						√	√	√	√
Benzie	260190003	Frankfort[6]				√												
Berrien	260210014	Coloma				√									√			
Cass	260270003	Cassopolis				√									√			
Kalamazoo	260770008	Kalamazoo				√		√	√T						√			
Manistee	261010922	Manistee (tribal)				√		√							√		√	√
Mason	261050007	Scottville				√									√			
Muskegon	261210039	Muskegon				√									√			
Schoolcraft	261530001	Seney				√			√F						√	√	√	√
Ionia	260670002	Belding-Reed St.													√			
Ionia	260670003	Belding-Merrick St.												√				

√ = Data Collected

F = FEM continuous $PM_{2.5}$ monitor

T = TEOM (non-FEM) continuous $PM_{2.5}$ monitor

[6] Also called Benzonia.

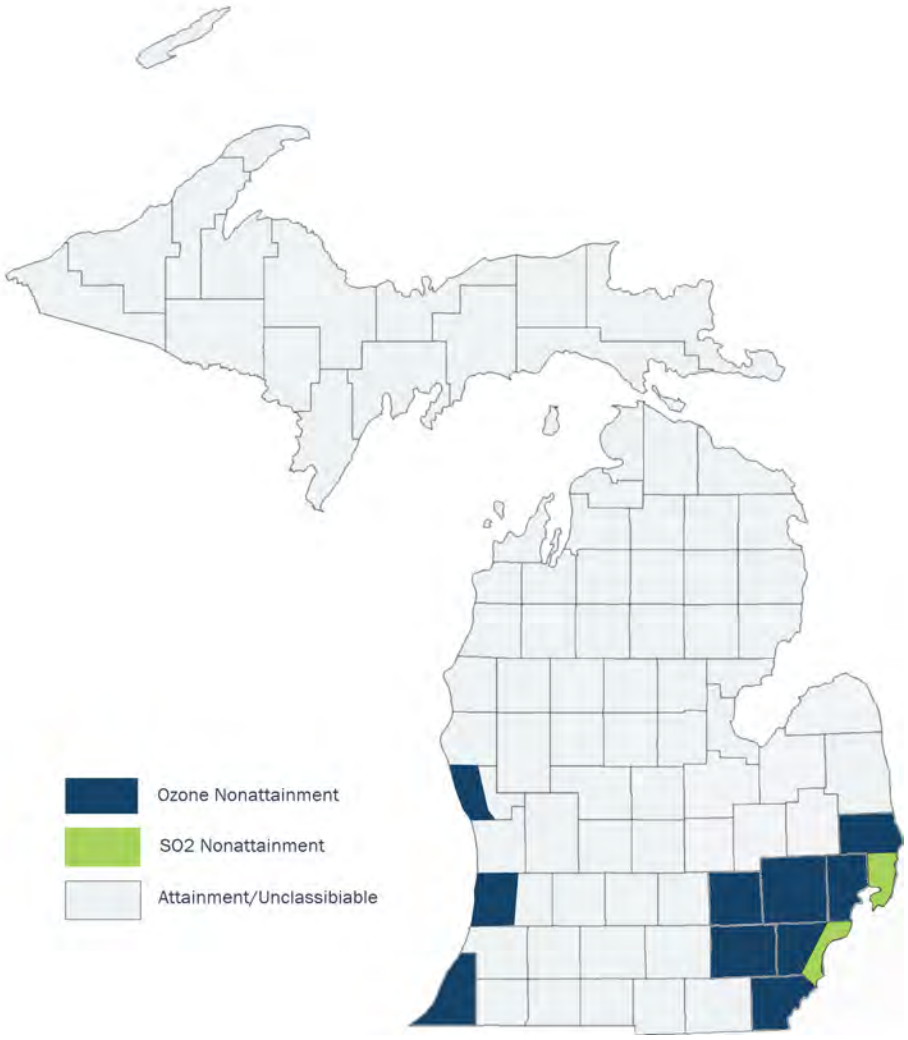
Current Attainment Status

Areas of the state that are below the NAAQS concentration level are called attainment areas. The entire state of Michigan is in attainment for the following pollutants:

- CO
- Pb
- NO_2
- Particulate Matter

Nonattainment areas are those that have been classified by the USEPA as having concentrations over the NAAQS level. Portions of the state are in nonattainment for SO_2 and O_3 (see **Figure 1.4**). The SO_2 nonattainment area includes a portion of Wayne County and a portion of St. Clair County. Ozone nonattainment areas include a portion of Allegan County, all of Berrien County, a portion of Muskegon County and the 7-county area of Southeast Michigan, which includes Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties. Nonattainment status for O_3 was effective on August 3, 2019.

Figure 1.4: Attainment Status for the National Ambient Air Quality Standards

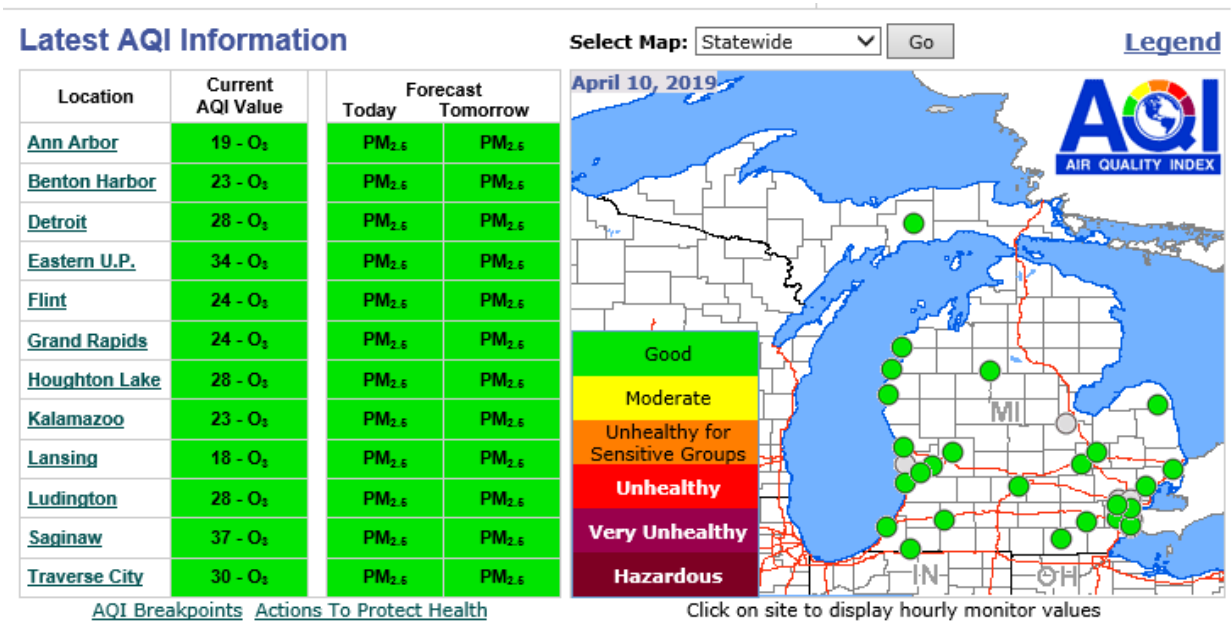


MIair – Air Quality Information in Real-Time

MIair is the internet tool that provides real-time air quality information via EGLE's web page. The deqmiair.org hotlink opens to the current Air Quality Index (AQI) map and displays air quality forecasts for "today" and "tomorrow." **MIair** also hosts EnviroFlash, the automated air quality notification system.

Air Quality Index

The Air Quality Index (AQI) is a simple tool developed to communicate current air quality information to the public. The current day's color-coded AQI values, ranging from Good to Hazardous (see **Table 1.3**), are displayed in a forecast table and as dots on a Michigan map (see example below).



As can be seen from the AQI bar graphs for the Detroit-Warren-Dearborn area (Figure 1.5) and the Grand Rapids-Wyoming area (Figure 1.6), air quality in Michigan is generally in the Good or Moderate range. An area will occasionally fall into the Unhealthy for Sensitive Groups range, but rarely reaches Unhealthy levels.

In the Detroit area, only two days were in the Unhealthy range, both for $PM_{2.5}$ on July 4 and 5, due to fireworks. In the Unhealthy for Sensitive Groups (USG), 15 days were due to ozone, five were due to $PM_{2.5}$ and four were due to SO_2. In Detroit area, $PM_{2.5}$ leads the AQI 220 days, meaning that pollutant has the highest AQI value of all the pollutants measured per day.

In the Grand Rapids area, only one day was in the Unhealthy range, for $PM_{2.5}$ on July 4, due to fireworks. In the Unhealthy for Sensitive Groups (USG), six days were due to ozone, one was due to $PM_{2.5}$ (on July 5th). In Grand Rapids area, ozone leads the AQI 247 days, meaning that pollutant has the highest AQI value of all the pollutants measured per day.

Figure 1.5: 2020 AQI Days per Pollutant for Detroit-Warren-Dearborn MSA, numbers next to categories are for the Overall AQI Value (First Bar on Graph)

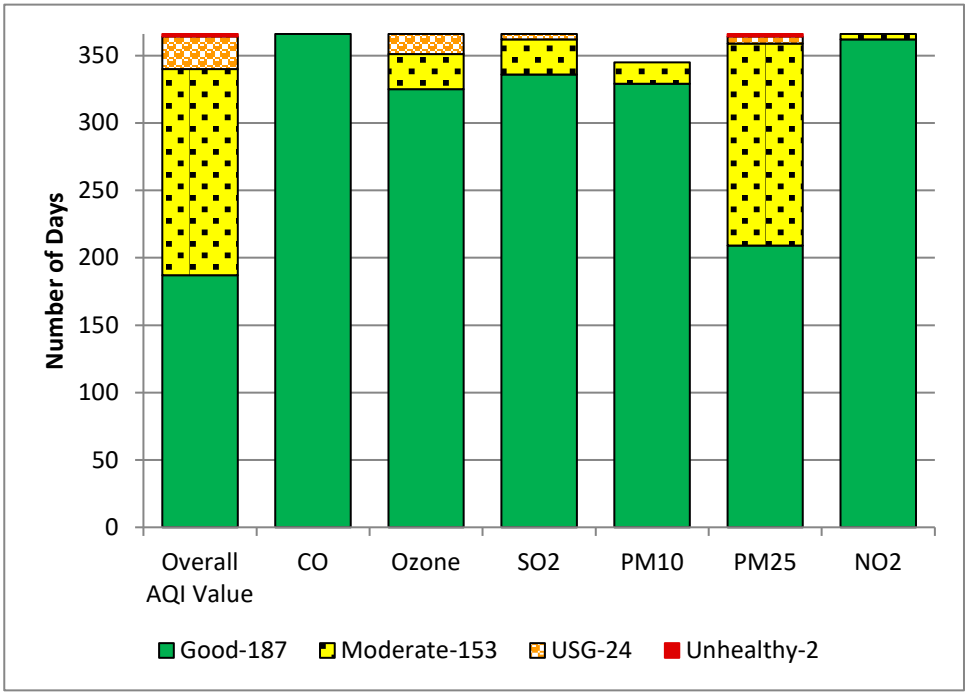
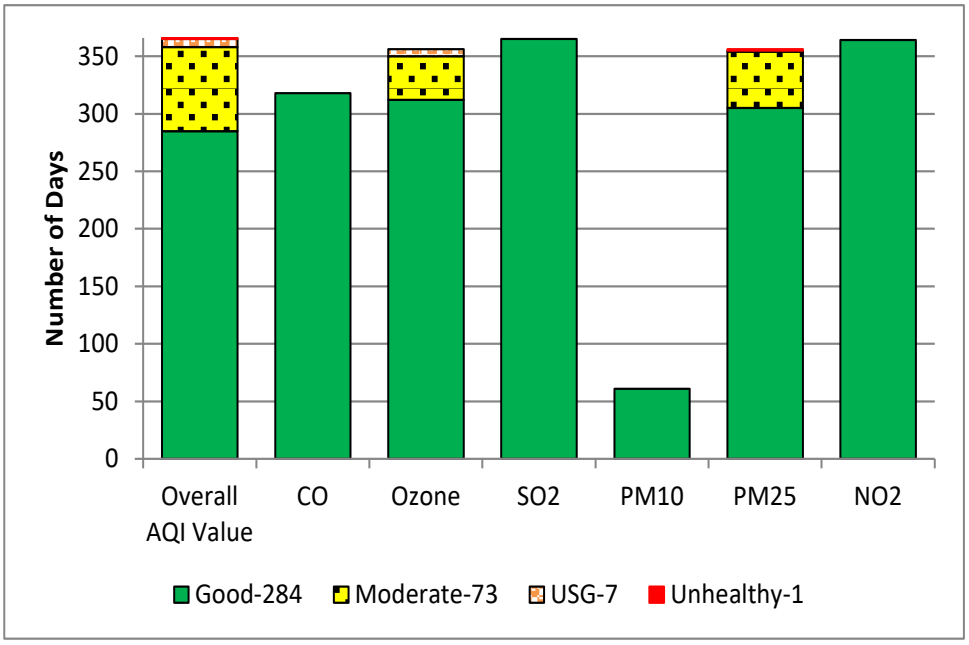


Figure 1.6: 2020 AQI Days Per Pollutant for Grand Rapids-Wyoming MSA, numbers next to categories are for the Overall AQI Value (First Bar on Graph)



MIair includes an "Air Quality Index Fact Sheet" link: michigan.gov/documents/deq/deq-aqd-aqifacts_273090_7.pdf, which contains activity recommendations based on the AQI levels (also **Table 1.3**).

Table 1.3: AQI Colors and Health Statements

AQI Color, Category and Value	Particulate Matter (µg/m³) 24-hour	Ozone (ppm) 8-hour / 1-hour	Carbon Monoxide (ppm) 8-hour	Sulfur Dioxide (ppm) 24-hour	Nitrogen Dioxide (ppm) 1-hour
GREEN: Good 1- 50	None	None	None	None	None
YELLOW: Moderate 51- 100	Unusually sensitive people should consider reducing prolonged or heavy exertion.	Unusually sensitive people should consider reducing prolonged or heavy exertion.	None	None	Unusually sensitive people should consider limiting prolonged outdoor exertion
ORANGE: Unhealthy for Sensitive Groups 101- 150	People with heart or lung disease, children, teens, & older adults should reduce prolonged or heavy exertion.	People with heart or lung disease, children, teens, & older adults, and people who are active outdoors should reduce prolonged or heavy exertion.	People with heart disease, such as angina, should reduce heavy exertion & avoid sources of CO, such as heavy traffic.	People with asthma should consider reducing outdoor exertion.	People with lung disease, children, & older adults should limit prolonged outdoor exertion
RED: Unhealthy 151- 200	People with heart or lung disease, children, teen, & older adults should avoid prolonged or heavy exertion. Everyone should reduce prolonged or heavy exertion.	People with heart or lung disease, children, teens & older adults, and people who are active outdoors should avoid prolonged or heavy exertion. Everyone should reduce prolonged or heavy exertion.	People with heart disease, such as angina, should reduce moderate exertion & avoid sources of CO, such as heavy traffic.	Children, asthmatics, & people with heart or lung disease should reduce outdoor exertion.	People with lung disease, children, & older adults should avoid prolonged outdoor exertion. Everyone should limit prolonged outdoor exertion.
PURPLE: Very Unhealthy 201- 300	People with heart or lung disease, children, teens, & older adults should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy outdoor exertion.	People with heart or lung disease, children & older adults, and people who are active outdoors should avoid all physical activity outdoors. Everyone else should limit outdoor exertion.	People with heart disease, such as angina, should avoid exertion & sources of CO, such as heavy traffic.	Children, asthmatics, & people with heart or lung disease should avoid outdoor exertion. Everyone should reduce outdoor exertion.	People with lung disease, children, & older adults should avoid all outdoor exertion. Everyone else should limit prolonged outdoor exertion.
MAROON: Hazardous 301- 500	People with heart or lung disease, children, teens, & older adults should remain indoors. Everyone should avoid all physical activity outdoors.	People with heart or lung disease, children, and older adults should remain indoors. Everyone should avoid all physical activity outdoors.	People with heart disease, such as angina, should avoid exertion & CO sources, such as heavy traffic. Everyone should limit heavy exertion.	Children, asthmatics, & people with heart or lung disease should remain indoors. Everyone should avoid outdoor exertion.	Children and People with respiratory disease, such as asthma, should avoid outdoor exertion.

Air Quality Forecasts

AQD meteorologists provide air pollution forecasts to alert the public when air pollution levels may become elevated. *Action!* Days are declared when levels are expected to reach or exceed the Unhealthy for Sensitive Groups AQI health indicator. On Action! Days, businesses, industry, government, and the public are encouraged to reduce air pollution levels by limiting vehicle use, refueling only after 6 PM, carpooling, walking, biking, or taking public transit, deferring the use of gasoline-powered lawn and recreation equipment, limiting the use of volatile chemicals, and curtailing all burning. More information on voluntary air pollution control measures can be found under the Action! Days tab on **MIair**.

The weather plays a significant role in air quality (see **Chapter 9** for an annual weather summary) and can either help increase or decrease the amount of pollution in the air. High temperatures, sun, and longer days (i.e., more daylight hours) are conducive to ozone formation, whereas rain tends to wash pollutants out of the air. *Action!* Days are declared when meteorological conditions are conducive for the formation of elevated ground-level O_3 or $PM_{2.5}$ concentrations.

Table 1.4 shows that there were some *Action!* Days declared during the summer of 2020.

Table 1.4: *Action!* Days Declared During Summer 2020

Location	Year	Number	Dates
Ann Arbor	2020	9	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18
Benton Harbor	2020	10	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18, 8/26
Detroit	2020	9	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18
Flint	2020	2	6/19, 6/20
Grand Rapids	2020	10	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18, 8/26
Kalamazoo	2020	2	6/19, 6/20
Ludington	2020	3	6/18, 6/19, 6/20
Traverse City	2020	2	6/19, 6/20

Air Quality Notification

EnviroFlash is a free service that provides automated air quality (AQI) and ultraviolet (UV) forecasts to subscribers. Those enrolled receive email or mobile phone text messages when the health level they select is predicted to occur. AIRNow iPhone and Android applications deliver ozone and fine particle air quality forecasts plus detailed real-time information that can be used to better protect health when planning daily activities. To learn more about this program, select the **MIair** button from Michigan's Air Quality page Michigan.gov/air. To receive notices, choose the "Air Quality Notification" tab and click the "Enroll in AQI EnviroFlash" link. Michigan's EnviroFlash network has the potential to reach up to 98 percent of the state's population.

AIRNow

EGLE supplies Michigan air monitoring data to AIRNow, the USEPA's nationwide air quality mapping system. Information about AIRNow is available at AirNow.gov or you can select the AIRNow hot link at the bottom of each **MIair** web page.

CHAPTER 2: CARBON MONOXIDE (CO)

Carbon monoxide is a gas formed during incomplete burning of fuel. CO is colorless, odorless, and tasteless, and is lethal at elevated concentrations. Levels peak during colder months primarily due to cold temperatures that affect combustion efficiency of engines. The CO NAAQS is 9 ppm for the second highest 8-hour average and 35 ppm for the second highest 1-hour average. Its sources and effects are provided below.

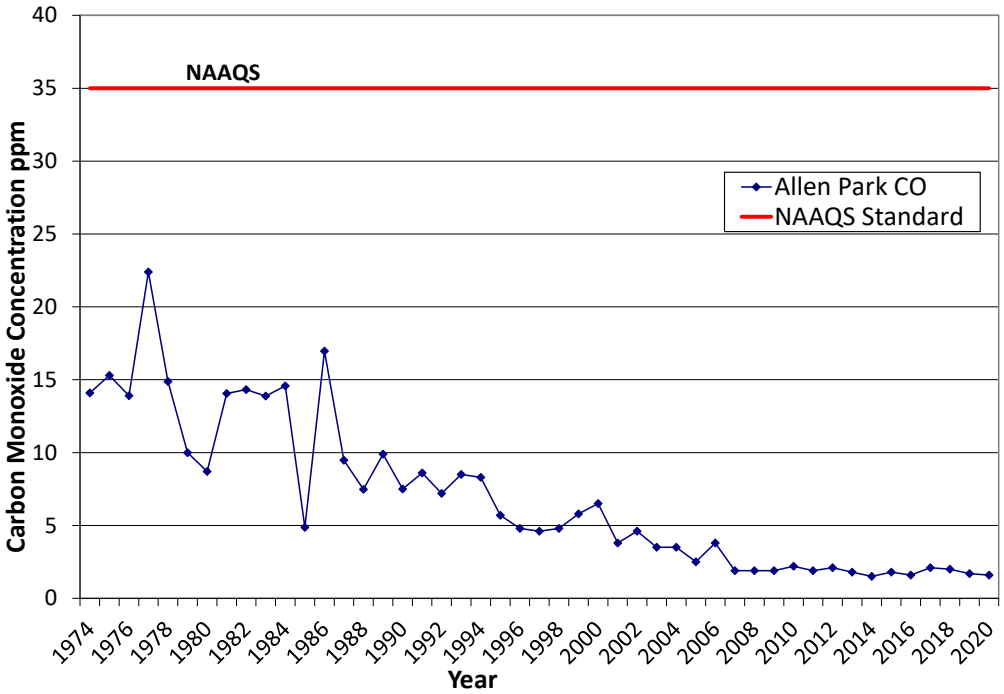
Sources: CO is given off whenever fuel or other carbon-based materials are burned. Outdoor exposure sources include automobile exhaust, industrial processes (metal processing and chemical production), and non-vehicle fuel combustion. Natural sources include volcanos, forest fires, and photochemical reactions in the atmosphere. Indoor exposure sources include wood stoves and fireplaces, gas ranges with continuous pilot flame ignition, unvented gas or kerosene heaters, and cigarette smoke.

Effects: CO enters the bloodstream through the lungs, where it displaces oxygen delivered to the organs and tissues. Elevated levels can cause visual impairment, interfere with mental acuity by reducing learning ability and manual dexterity, and can decrease work performance in the completion of complex tasks. In extreme cases, unconsciousness and death can occur. CO also alters atmospheric photochemistry contributing to the formation of ground-level O_3, which can trigger serious respiratory problems.

Population most at risk: Those who suffer from cardiovascular (heart and respiratory) disease, fetuses, infants, and the elderly are most at risk for exposure to elevated levels of CO. People with angina and peripheral vascular disease are especially at risk, as their circulatory systems are already compromised and less efficient at carrying oxygen; however, elevated CO levels can also affect healthy people.

Historical Trends: Southeast Michigan has been monitoring CO for 45 years. **Figure 2.1** shows the CO trend at Allen Park to be well below the 1-hour standard of 35 ppm. This standard has not changed since 1971.

Figure 2.1: Historical 1-hour CO Averages at Allen Park



Figures 2.2 and **2.3** show CO emission sources and CO emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 2.2: CO Emissions by Source Sector for Michigan 2017 in Tons (NEI 2017)

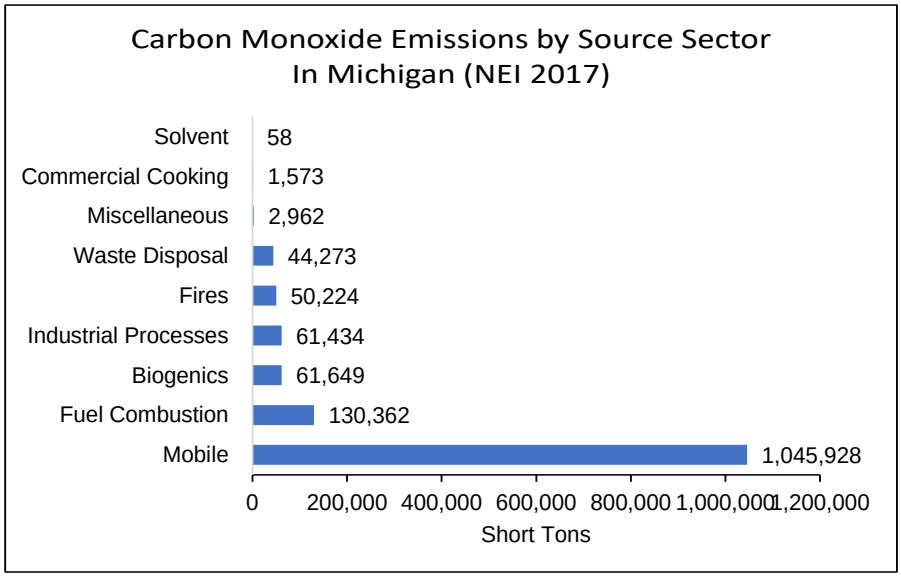


Figure 2.3: CO Emissions in 2017 (NEI)

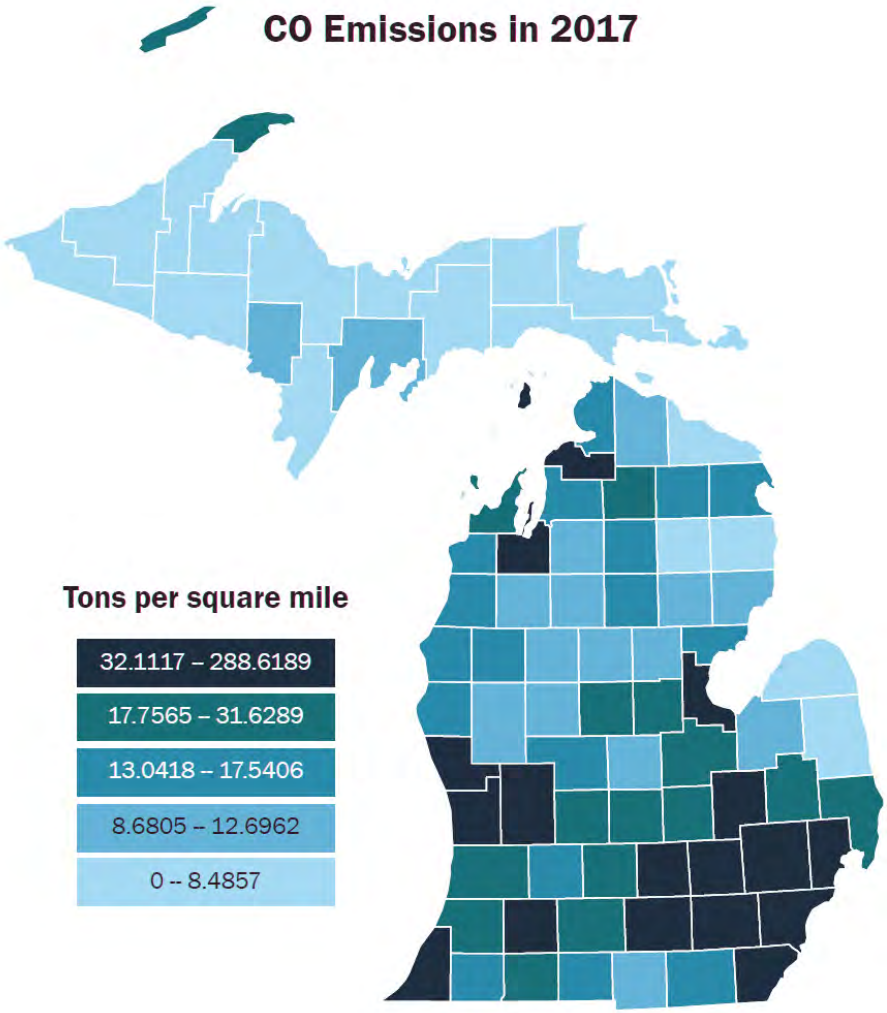


Figure 2.4 shows the location of each CO monitor that operated in 2020.

- Near-roadway network sites: Eliza Howell-NR.
- NCore Network: Grand Rapids and Allen Park measure trace CO (lower detection levels 1-50 ppm).
- GHIB project: DP4th and Trinity, started summer and fall 2018, respectively.

Figure 2.4: CO Monitors in 2020

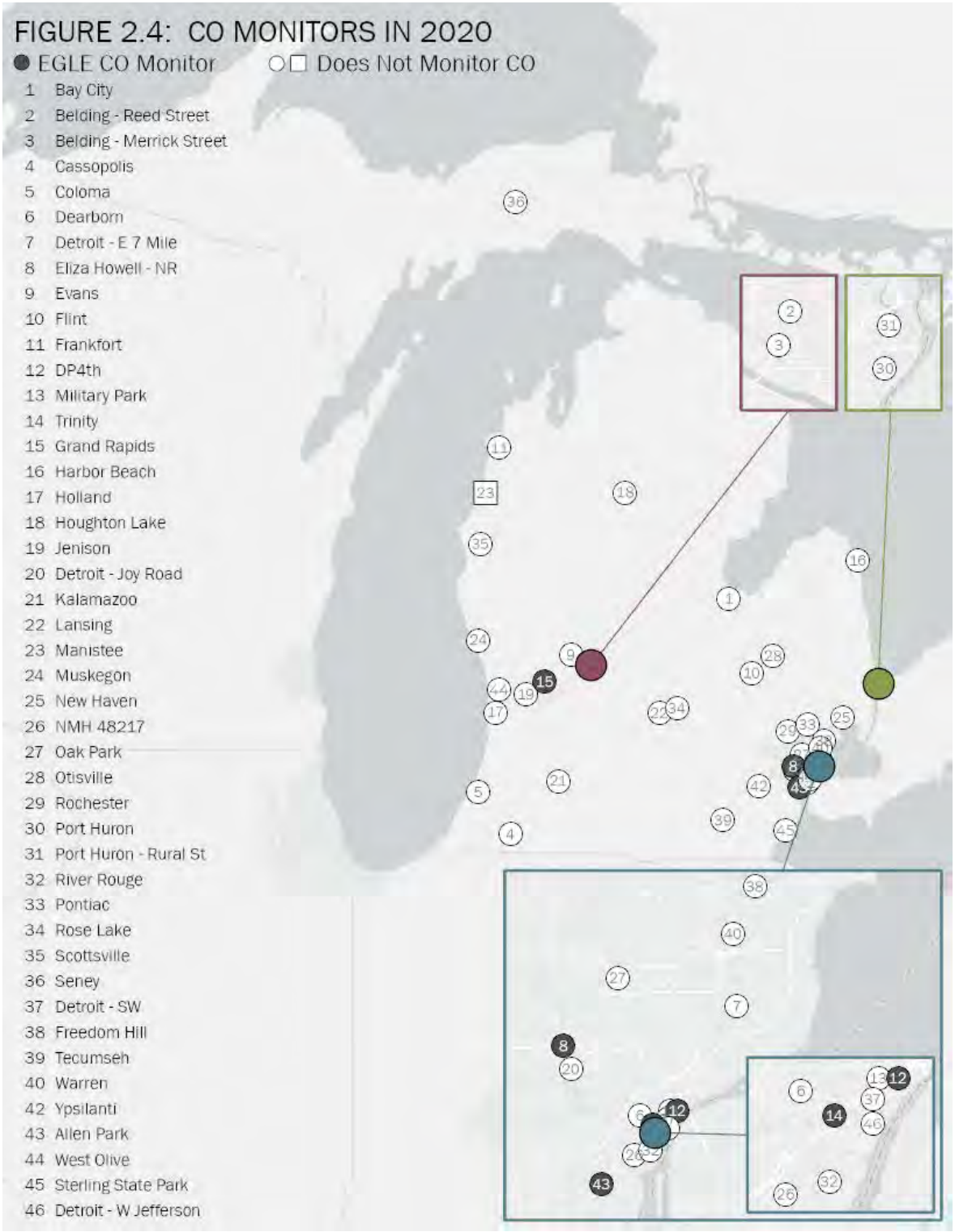


Figure 2.5 shows the second highest 1-hour CO concentrations for Michigan from 2015-2020, which demonstrates there have not been any exceedances of the 1-hour CO NAAQS.

Figure 2.5: CO Levels in Michigan from 2015-2020 (2nd Highest 1-Hour Maximum Values)

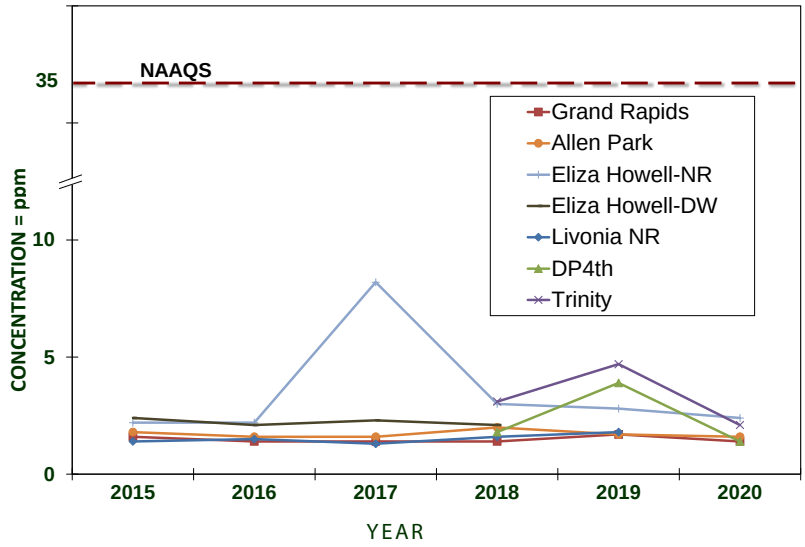
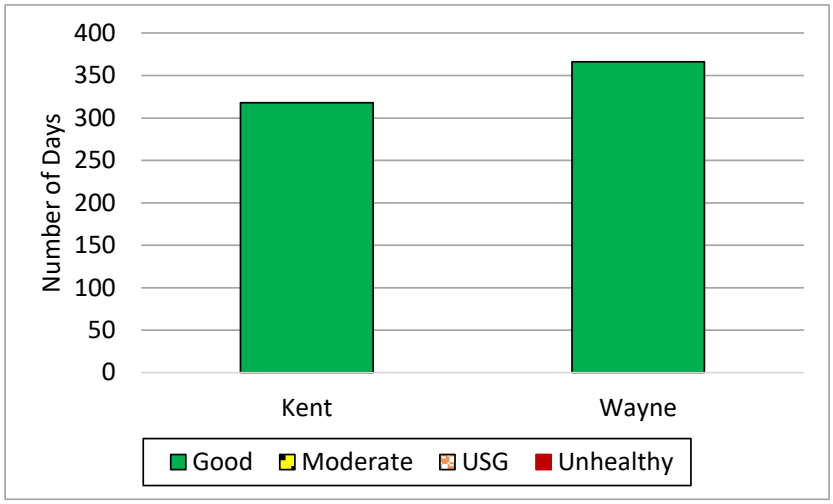


Figure 2.6 shows the AQI values per day in counties where CO is monitored. All days were in the good AQI range.

Figure 2.6: 2020 AQI Days for CO in Michigan Counties



CHAPTER 3: LEAD (PB)

Lead is a highly toxic metal found in coal, oil, and other fuels. It is also found in older paints, municipal solid waste, and sewage sludge, and may be released to the atmosphere during combustion. In 2008, the USEPA lowered the Pb NAAQS from a maximum quarterly average of 1.5 $\mu g/m^3$ to a 3-month rolling average of 0.15 $\mu g/m^3$. Its sources and effects are presented below.

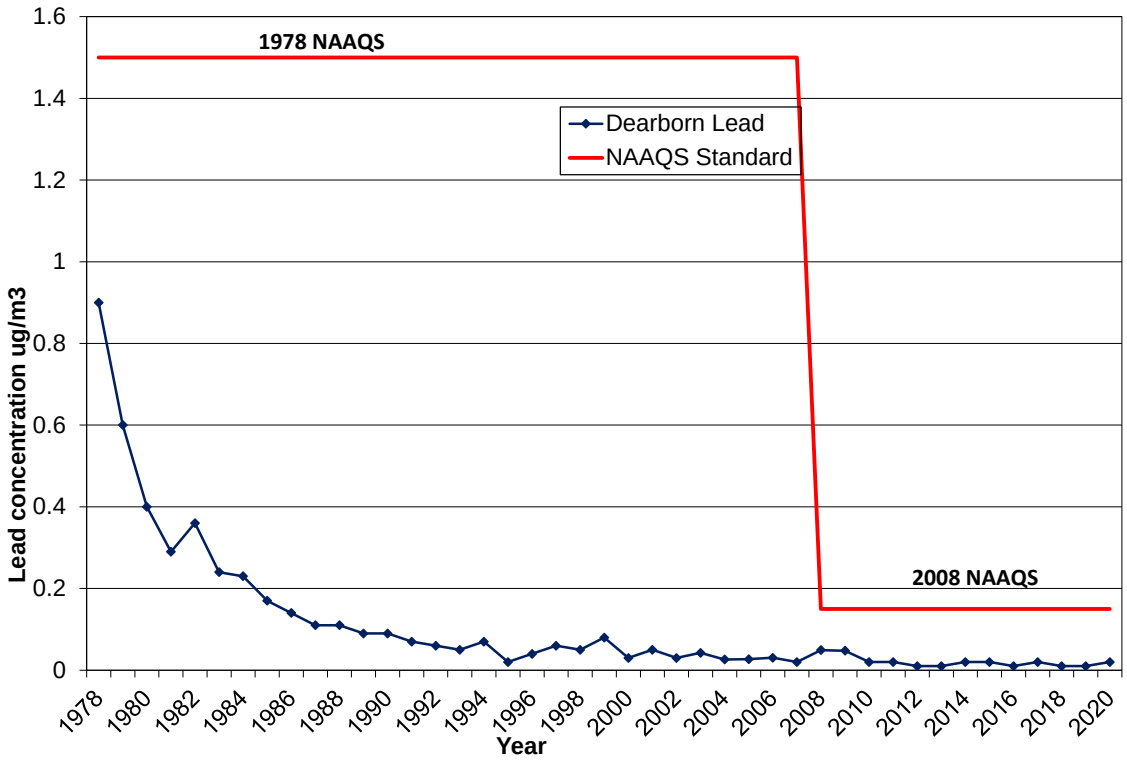
Sources: With the phase-out of leaded gas in the 1970s, the major sources of Pb emissions have been due to ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other industrial sources include Pb acid battery manufacturers, waste incinerators, and utilities. The highest air concentrations of Pb are usually found near lead smelters.

Effects: Exposure occurs through the inhalation or ingestion of Pb in food, water, soil, or dust particles. Pb primarily accumulates in the body's blood, bones, and soft tissues, and adversely affects the nervous system as well as the cardiovascular system, reproductive system, blood, kidneys, and other organs.

Population most at risk: Fetuses and children are most at risk since low levels of Pb may cause central nervous system damage. Excessive Pb exposure during the early years of life is associated with lower IQ scores and neurological impairment (seizures, mental development, and behavioral disorders). Even at low doses, lead exposure is associated with changes in fundamental enzymatic, metabolic, and homeostatic mechanisms in the body, and Pb may be a factor in high blood pressure and subsequent heart disease.

Historical Trends: Southeast Michigan has been monitoring for lead for 40 years. **Figure 3.1** shows the trend for lead at Dearborn. The largest decrease in Pb in the air is due to the removal of Pb in gasoline. By 1975, most newly manufactured vehicles no longer required leaded gasoline, and as a result, there was a dramatic decrease in ambient Pb levels. In 1996, the USEPA banned the sale of leaded fuel for use in on-road vehicles. The graph also shows the decrease in the Pb standard that occurred in 2008.

Figure 3.1: Historical Quarterly / 3-month Averages for Lead at Dearborn



Figures 3.2 and **3.3** show Pb emission sources and Pb emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 3.2: Pb Emissions by Source Sector

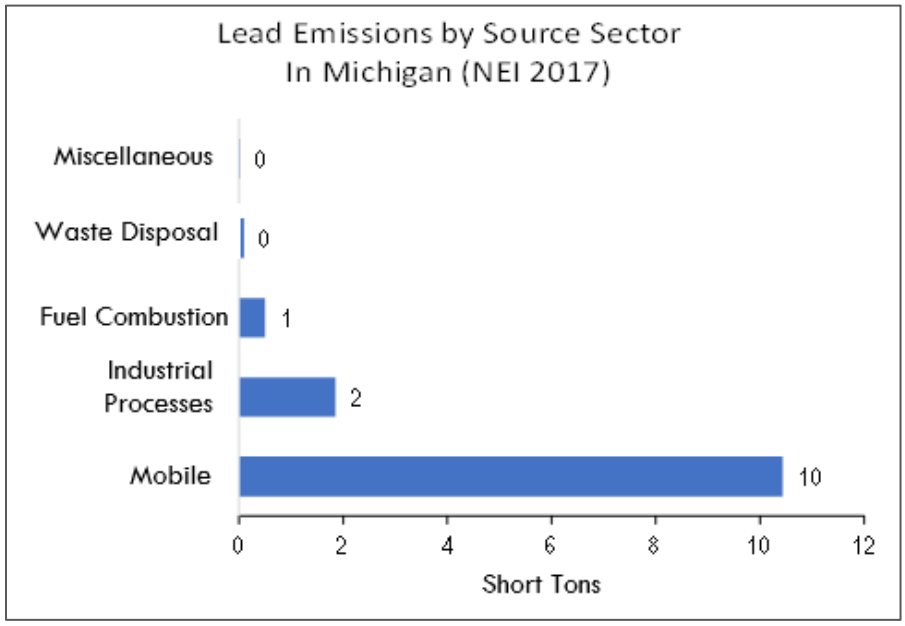


Figure 3.3: Pb Emissions in 2017 (NEI)

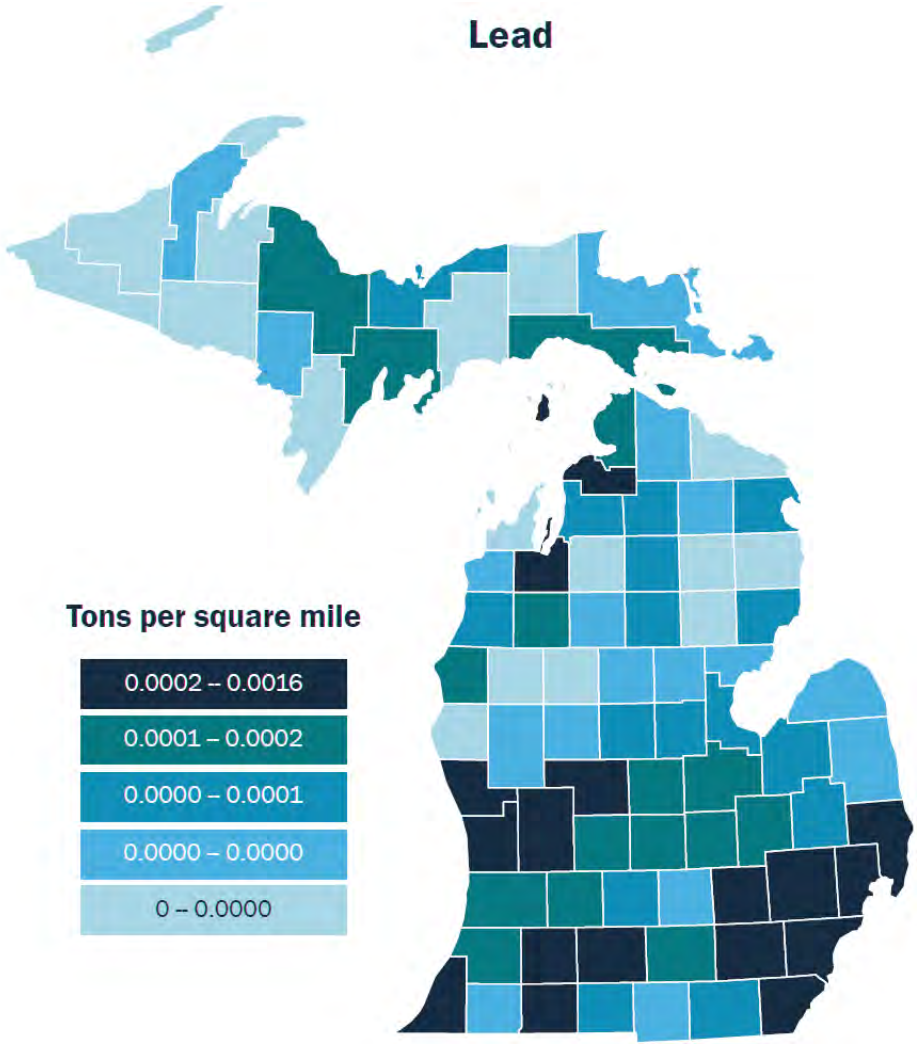


Figure 3.4 shows the location of the Pb monitors in the MASN in 2020. When the Pb NAAQS was lowered in 2008, the monitoring network was modified to consist of source-oriented monitors and population-oriented monitors. As part of the 2008 Pb NAAQS, EGLE must monitor near stationary sources emitting more than 1/2 ton of Pb per year.

- Source-oriented sites: Port Huron-Rural St. and Belding-Merrick St. The second site, Belding-Reed St. was shut down on January 1, 2019, since lead levels are below the standard and both sites are no longer necessary. The two sites in Belding previously were above the standard, but values for both the sites have been below the NAAQS for the past five years. Belding was designated to attainment on July 31, 2018.
- National Air Toxics Trend Sites (NATTS): Dearborn lead and trace metals, both as total suspended particulate (TSP) and PM_{10}. Lead measurements as $PM_{2.5}$ are also made throughout the $PM_{2.5}$ speciation network.
- NCore sites: Allen Park and Grand Rapids.
- Network consistency: River Rouge, Detroit-W. Jefferson, NMH 48217, and Detroit-SW. On January 1, 2018, lead sampling was started at all the TSP metals sites to maintain consistency and to be more protective of public health. Many older homes, which often contain lead-based paint, are being demolished in the Detroit area near these monitors.

- Secondary monitor: Port Huron-Rural St. to comply with the USEPA's collocation regulations.
- Gordie Howe International Bridge (GHIB) project: DP4th, Trinity, and Military Park.

Figure 3.4: Lead (Pb) Monitors in 2020

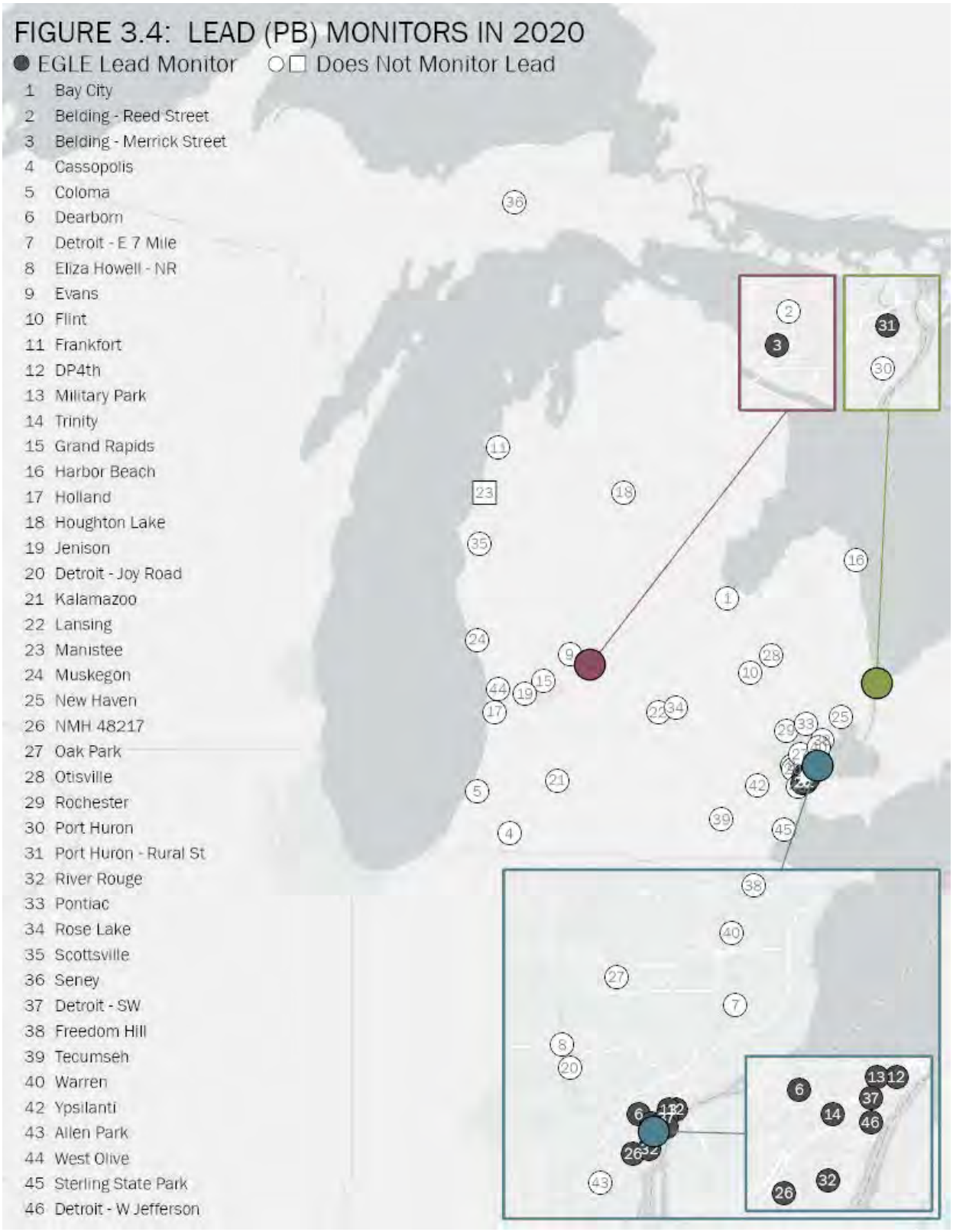
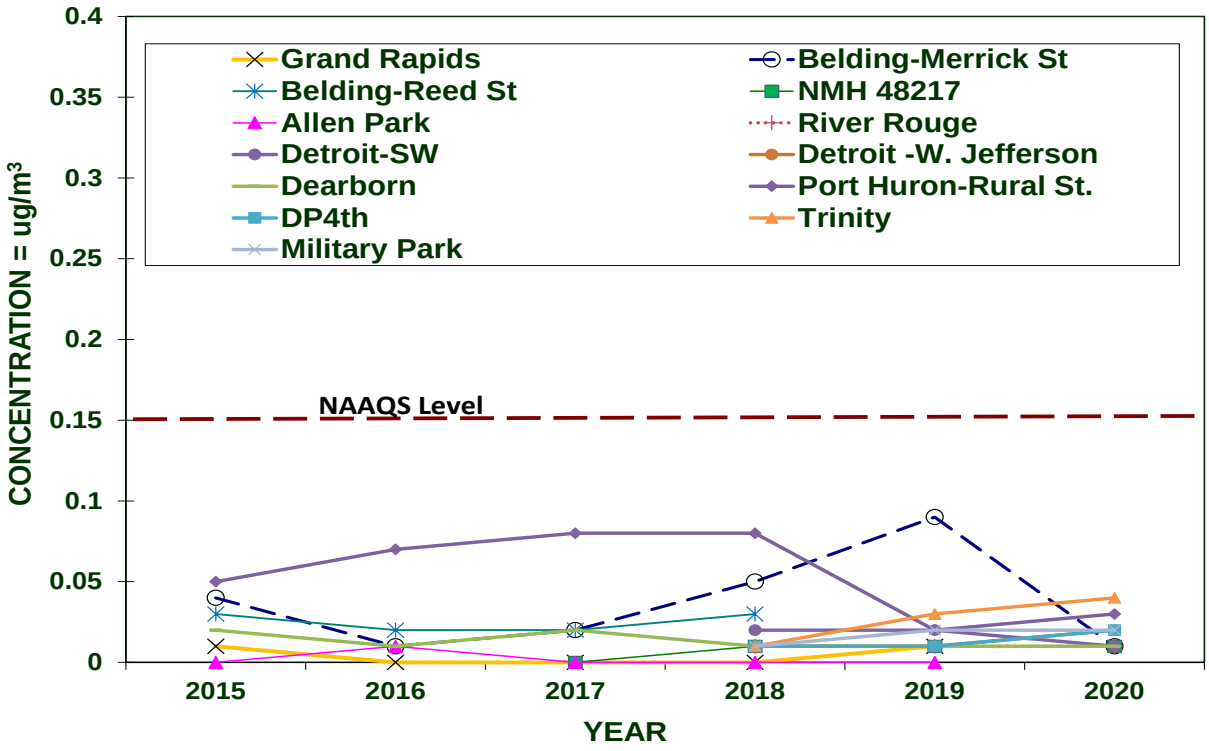


Figure 3.5 shows the maximum 3-month rolling average values for Pb from 2015 to 2020. All Pb monitor sites in Michigan are below the standard.

Figure 3.5: Lead Levels in Michigan from 2015-2020 (Maximum 3-month Average Values)



CHAPTER 4: NITROGEN DIOXIDE (NO_2)

Nitrogen dioxide is a reddish-brown, highly reactive gas formed through oxidation of nitric oxide (NO). Upon dilution, it becomes yellow or invisible. High concentrations produce a pungent odor and lower levels have an odor like bleach. NO_X is the term used to describe the sum of NO, NO_2, and other nitrogen oxides. NO_X can lead to the formation of O_3 and NO_2 and can react with other substances in the atmosphere to form particulate matter or acidic products that are deposited in rain (acid rain), fog, or snow. Since 1971, the primary and secondary standard for NO_2 was an annual mean of 0.053 ppm. In January 2010, the USEPA added a 1-hour NO_2 standard of 100 ppb, taking the form of the 98th percentile averaged over three years. The sources and effects of NO_2 are as follows:

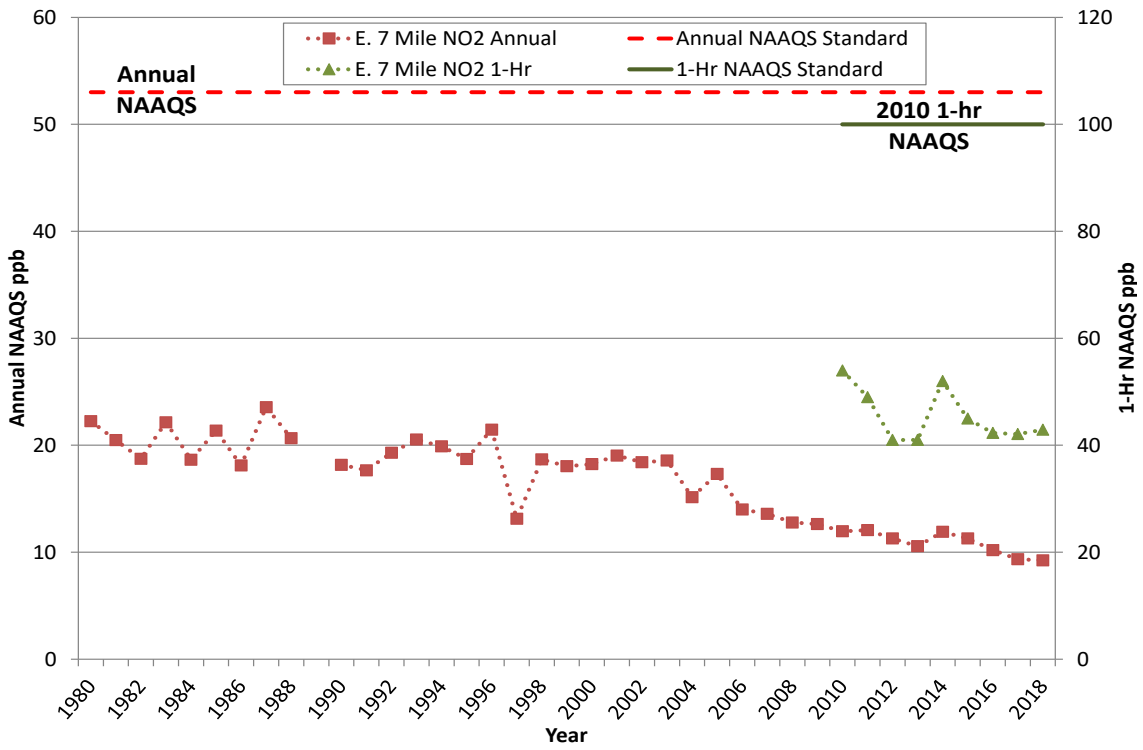
Sources: NO_X compounds and their transformed products occur both naturally and because of human activities. Natural sources of NO_X are lightning, forest fires, bacterial processes in soil, and stratospheric intrusion. Stratospheric intrusion is when the air upper atmosphere (stratosphere) descends towards the surface of the earth and mixes with the air at breathing level. Ammonia and other nitrogen compounds produced naturally are important in the cycling of nitrogen through the ecosystem. The major sources of man-made (anthropogenic) NO_x emissions come from high-temperature combustion processes such as those occurring in automobiles and power plants. Home heaters and gas stoves produce substantial amounts of NO_2 in indoor settings.

Effects: Exposure to NO_2 occurs through the respiratory system, irritating the lungs. Short-term NO_2 exposures (i.e., less than three hours) can produce coughing and changes in airway responsiveness and lung function. Evidence suggests that long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause structural changes in the lungs. Exercise increases the ventilation rate and hence exposure to NO_2. Nitrate particles and NO_2 can block the transmission of light, resulting in visibility impairment (i.e., smog or haze). Nitrogen deposition can lead to fertilization, excessive nutrient enrichment, or acidification of terrestrial, wetland, and aquatic systems that can upset the delicate balance in those ecosystems.

Population most at risk: Individuals with pre-existing respiratory illnesses and asthmatics are more sensitive to the effects of NO_2 than the general population. Short-term NO_2 exposure can increase respiratory illnesses in children.

Historical Trends: Southeast Michigan has been monitoring for NO_2 for 40 years. **Figure 4.1** shows the trend for NO_2 at Detroit-E 7 Mile Road, which has been well below the annual standard of 53 ppb and shows a downward trend. In 2010, the USEPA added a 1-hour standard for NO_2, which has also remained well below the standard in Michigan. Southeast Michigan is highly industrialized; therefore, it is a good indicator of the air quality improvement for the rest of the state.

Figure 4.1: Historical Annual and 1-hour NO_2 at Detroit-E 7 Mile Road



Figures 4.2 and **4.3** show NO_2 emission sources and NO_2 emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 4.2: Nitrogen Oxide Emissions by Source Sector

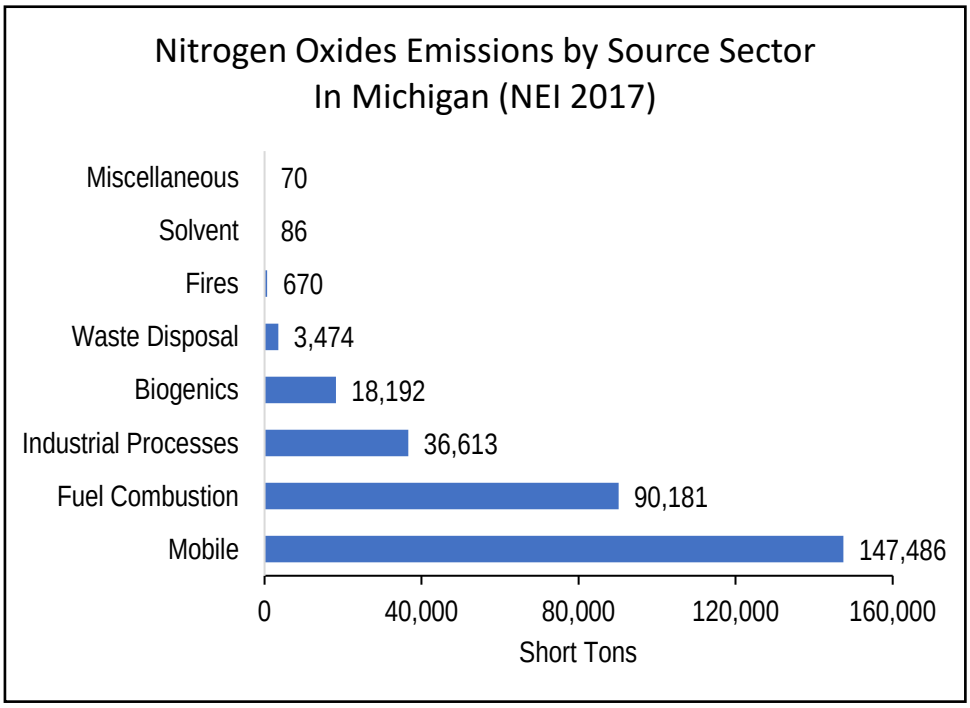


Figure 4.3: Nitrogen Oxide Emissions in 2017 (NEI)

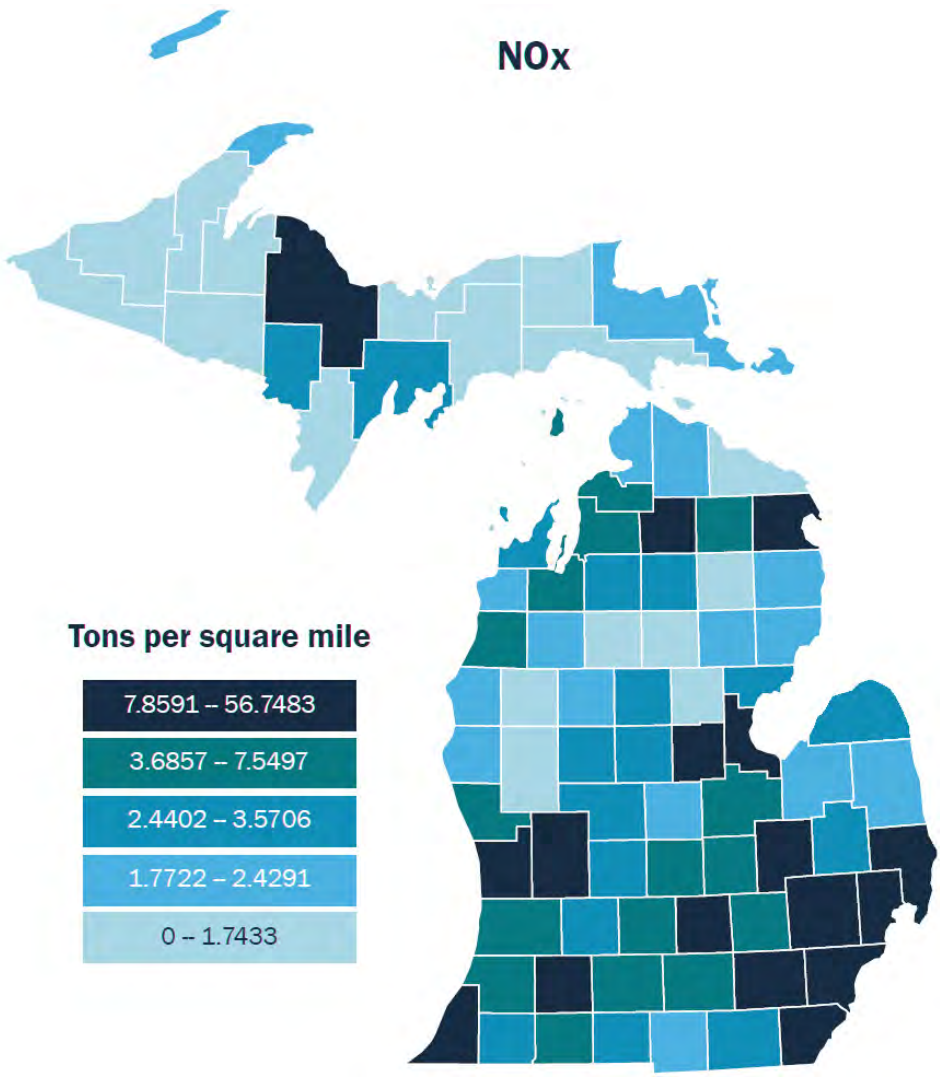
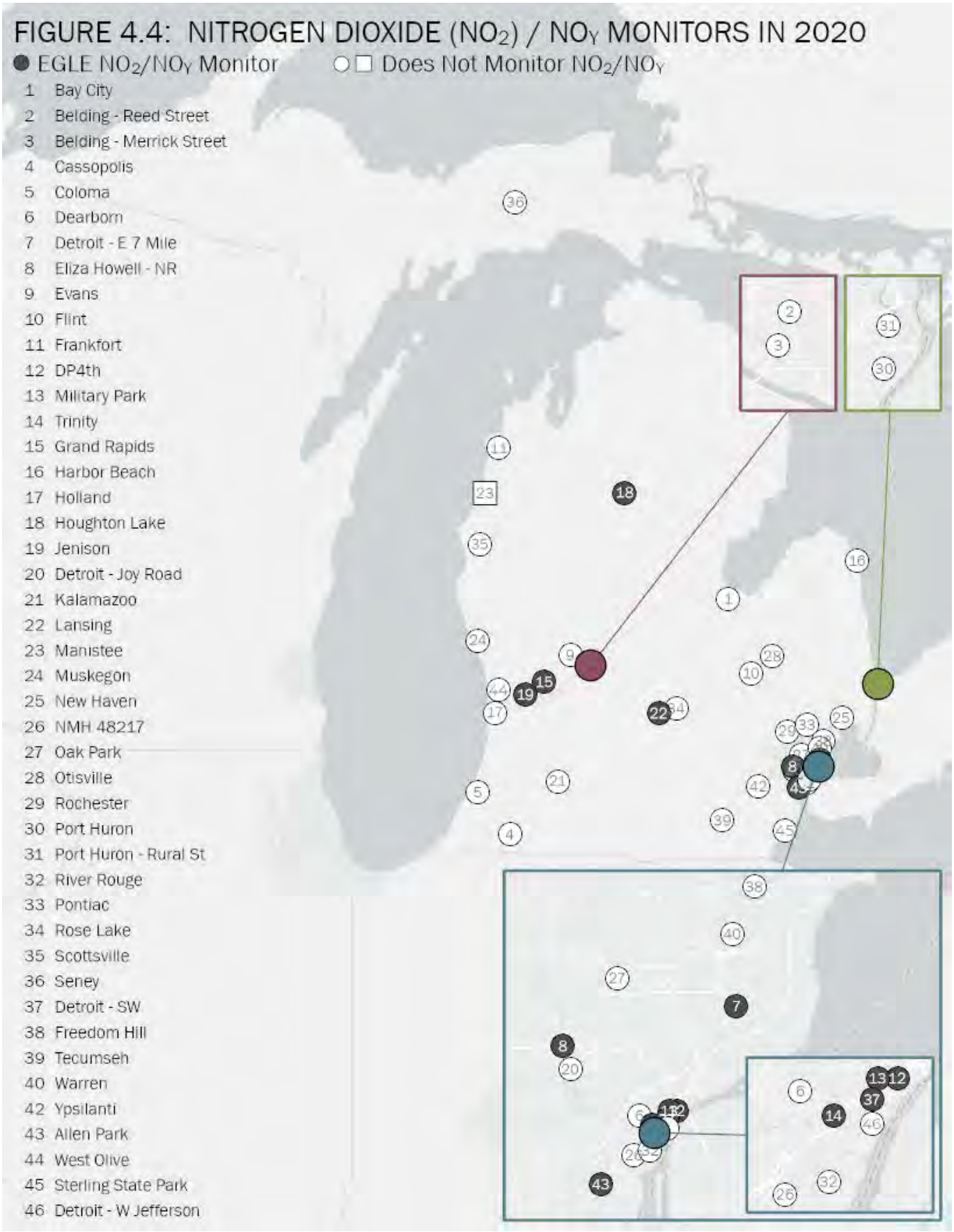


Figure 4.4 shows the location of all NO_2 monitors that operated in 2020.

- Downwind urban scale site: Detroit-E 7 Mile in Detroit and Jenison for the Grand Rapids area.
- Near-roadway Network sites: Detroit Eliza Howell-NR site, the downwind site was shut down since it is not necessary for the near-road network. The Livonia roadway site needed to be moved since EGLE lost site access. A suitable replacement has not been found.
- NCore sites: Grand Rapids and Allen Park, monitor NO_Y, which includes NO_X, nitric acid, and organic and inorganic nitrates (not used for attainment/nonattainment purposes).
- Photochemical Assessment Monitoring Station (PAMS) Network: The NOX monitor at Detroit-E 7 Mile was switched to a NOY for PAMS. Direct NO_2 will also be monitored at Detroit-E 7 Mile when the PAMS network is completely installed at this site.
- Background monitors for modeling: Lansing and Houghton Lake.
- GBIH project: Detroit-SW, DP4th, Trinity, and Military Park.

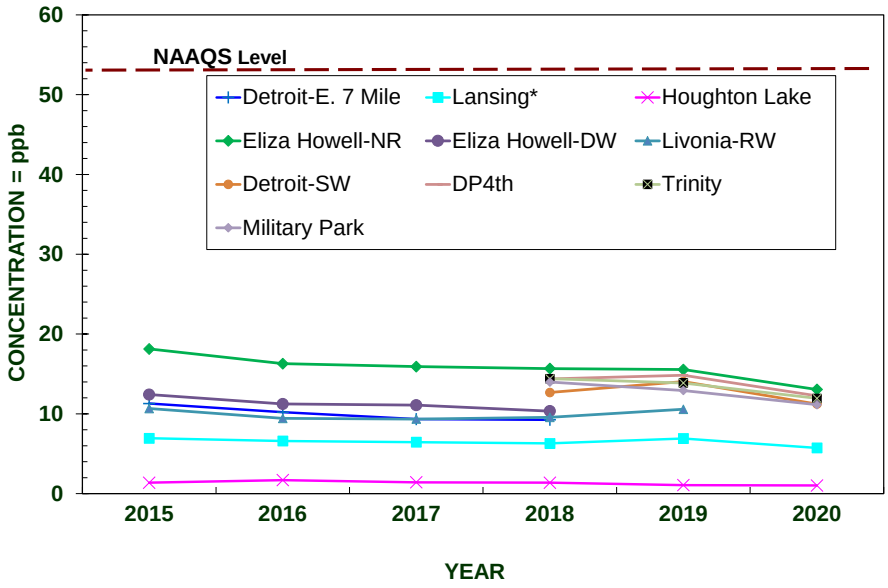
Figure 4.4: Nitrogen Dioxide (NO_2)/NO_y Monitors in 2020



Michigan's ambient NO_2 levels have always been well below the NAAQS. Since March 3, 1978, all areas in Michigan have been in attainment for the annual NO_2 NAAQS. As shown in **Figure 4.5**, all monitoring sites have had an annual NO_2 concentration at less than half of the 0.053 ppm NAAQS.

Even though there are no nonattainment areas for NO_2 in Michigan and monitoring for attainment purposes is not required, monitors continue to operate to support photochemical model validation work.

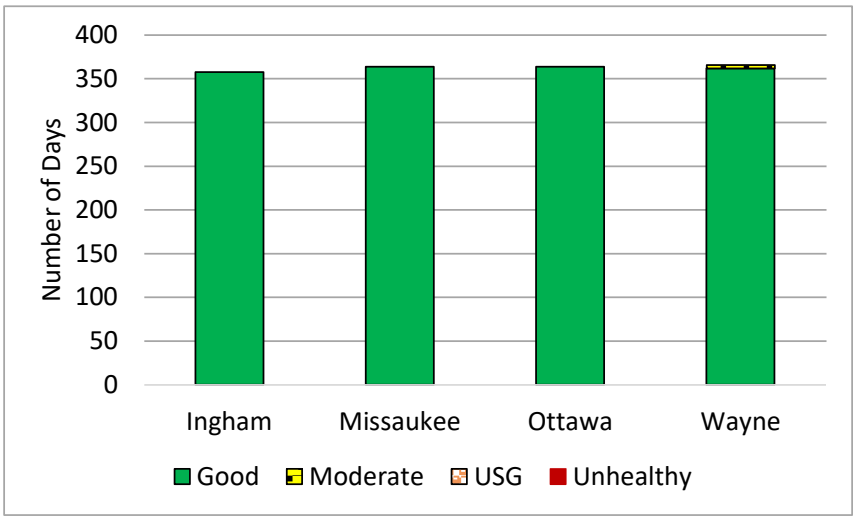
Figure 4.5: NO_2 Levels in MI from 2015-2020 (Annual Arithmetic Mean)**



*Indicates site was moved in 2018 and concentrations were averaged together for both locations.
**Since Allen Park and Grand Rapids are monitoring NO_Y, those sites are not included in graph.

Figure 4.6 shows the AQI values per day in counties where NO_2 is monitored. All days were in the good AQI range except for four days in Wayne County that were in the moderate AQI range.

Figure 4.6: 2020 AQI Days for NO_2 in Michigan Counties



CHAPTER 5: SULFUR DIOXIDE (SO_2)

Sulfur dioxide is a gas formed by the burning of sulfur-containing material. Odorless at typical ambient concentrations, SO_2 can react with other atmospheric chemicals to form sulfuric acid. At higher concentrations it has a pungent, irritating odor like a struck match. When sulfur-bearing fuel is burned, the sulfur is oxidized to form SO_2, which then reacts with other pollutants to form aerosols. These aerosols can form particles in the air causing increases in $PM_{2.5}$ levels. In liquid form, it is found in clouds, fog, rain, aerosol particles, and in surface films on these particles. In June 2010, the USEPA changed the primary SO_2 standard to a 99th percentile of 1-hour concentrations not to exceed 0.075 ppm, averaged over a 3-year period. The secondary standard has not changed and is a 3-hour average that cannot exceed 0.5 ppm once per year. Its sources and effects are presented below.

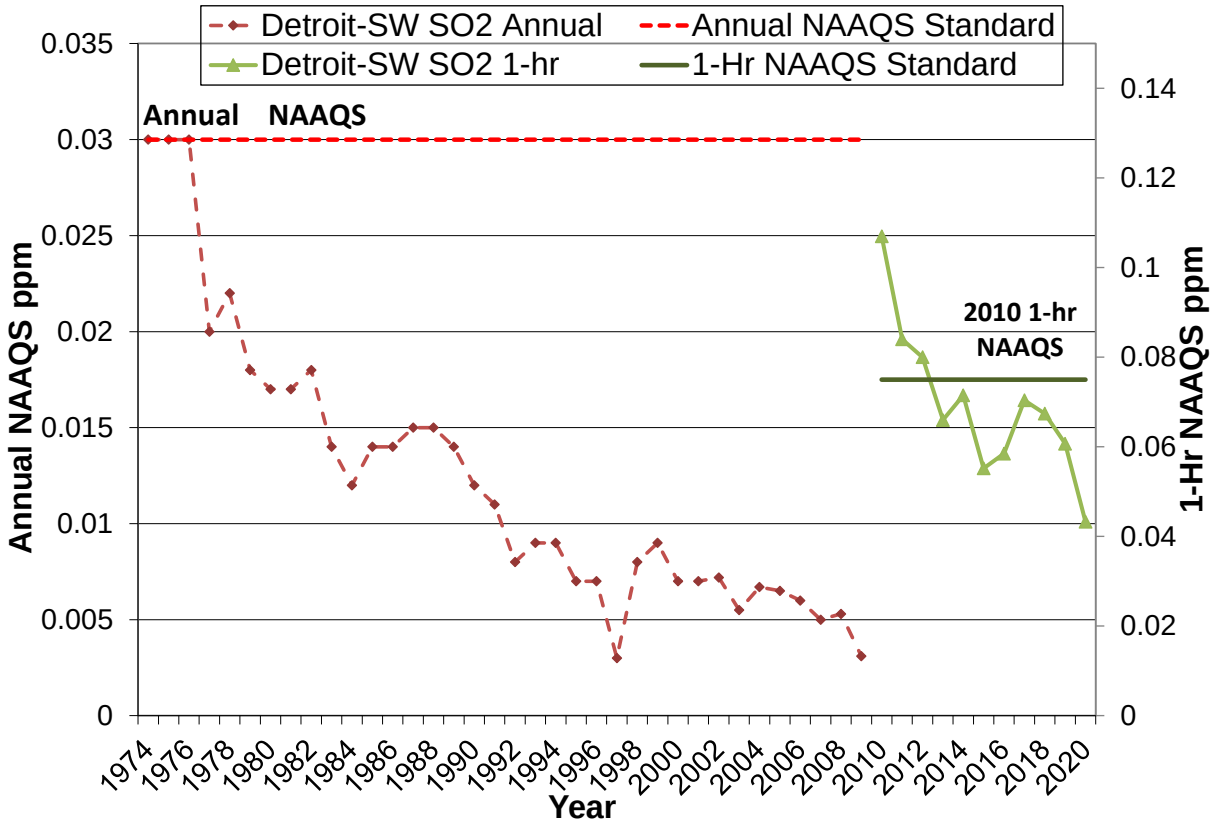
Sources: Coal-burning power plants are the largest source of SO_2 emissions. Other sources include industrial processes such as extracting metal from ore, and non-road transportation sources, and natural sources such as volcanoes. SO_2 and particulate matter are often emitted together.

Effects: Exposure to elevated levels can aggravate symptoms in asthmatics and cause respiratory problems in healthy groups. SO_2 and NOx together are the major precursors to acid rain and are associated with the acidification of soils, lakes, and streams, as well as accelerated corrosion of buildings and monuments.

Population most at risk: Asthmatics, children, and the elderly are especially sensitive to SO_2 exposure. Asthmatics receiving short-term exposures during moderate exertion may experience reduced lung function and symptoms, such as wheezing, chest tightness, or shortness of breath. Depending on the concentration, SO_2 may also cause symptoms in people who do not have asthma.

Historical Trends: Southeast Michigan has been monitoring for SO_2 for over 45 years. **Figure 5.1** shows the SO_2 trend for the old annual standard and the new 1-hour standard for Detroit-SW. Michigan had been in attainment for SO_2 since 1982 with levels consistently well below the annual SO_2 NAAQS. In 2010, when the USEPA changed the standard from an annual average to a 1-hour standard, a portion of Wayne County was designated nonattainment. In September 2016, a portion of St. Clair County was also designated as nonattainment by the USEPA based on emissions and modeling. Even though the areas are in nonattainment for the 1-hour SO_2 standard, SO_2 concentrations have decreased at these sites and are currently under the NAAQS, although modeling results are not below the NAAQS.

Figure 5.1: Historical Annual and 1-hour SO_2 Averages at Detroit-SW



Figures 5.2 and **5.3** show SO_2 emission sources and SO_2 emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 5.2: SO_2 Emissions by Source Sector

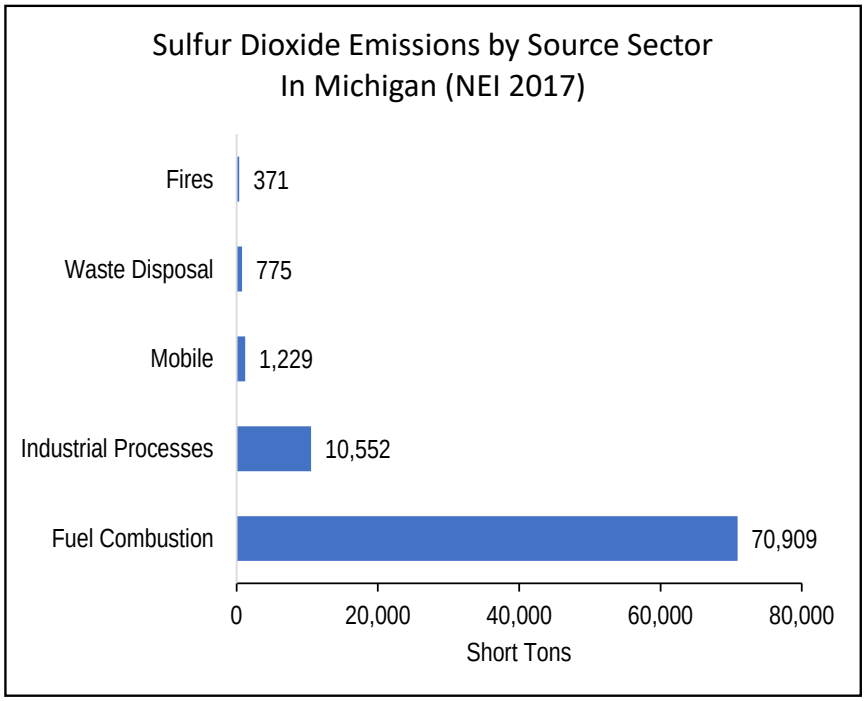


Figure 5.3: SO_2 Emissions in 2017 (NEI)

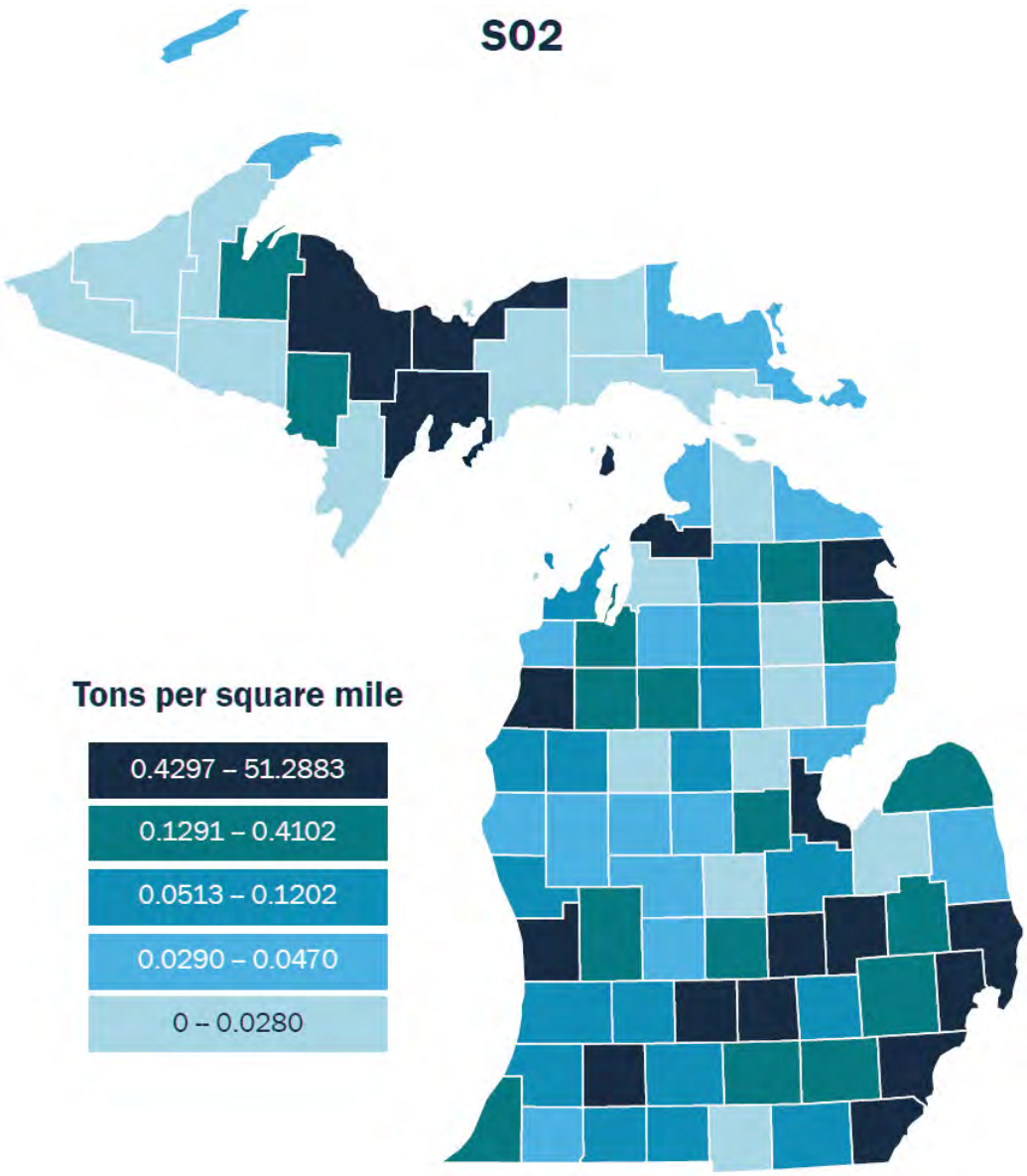


Figure 5.4 shows the location of each SO_2 monitor that operated in 2020.

- NCore sites: Allen Park and Grand Rapids have trace SO_2 monitors that have lower detection limits than traditional SO_2 monitors.
- Source-oriented sites: Lansing, Port Huron, Detroit-SW, Sterling State Park, West Olive.
- Community monitoring project: NMH 48217.
- GHIB project: DP4th, Trinity, and Military Park.

Figure 5.4: Sulfur Dioxide (SO_2) Monitors in 2020

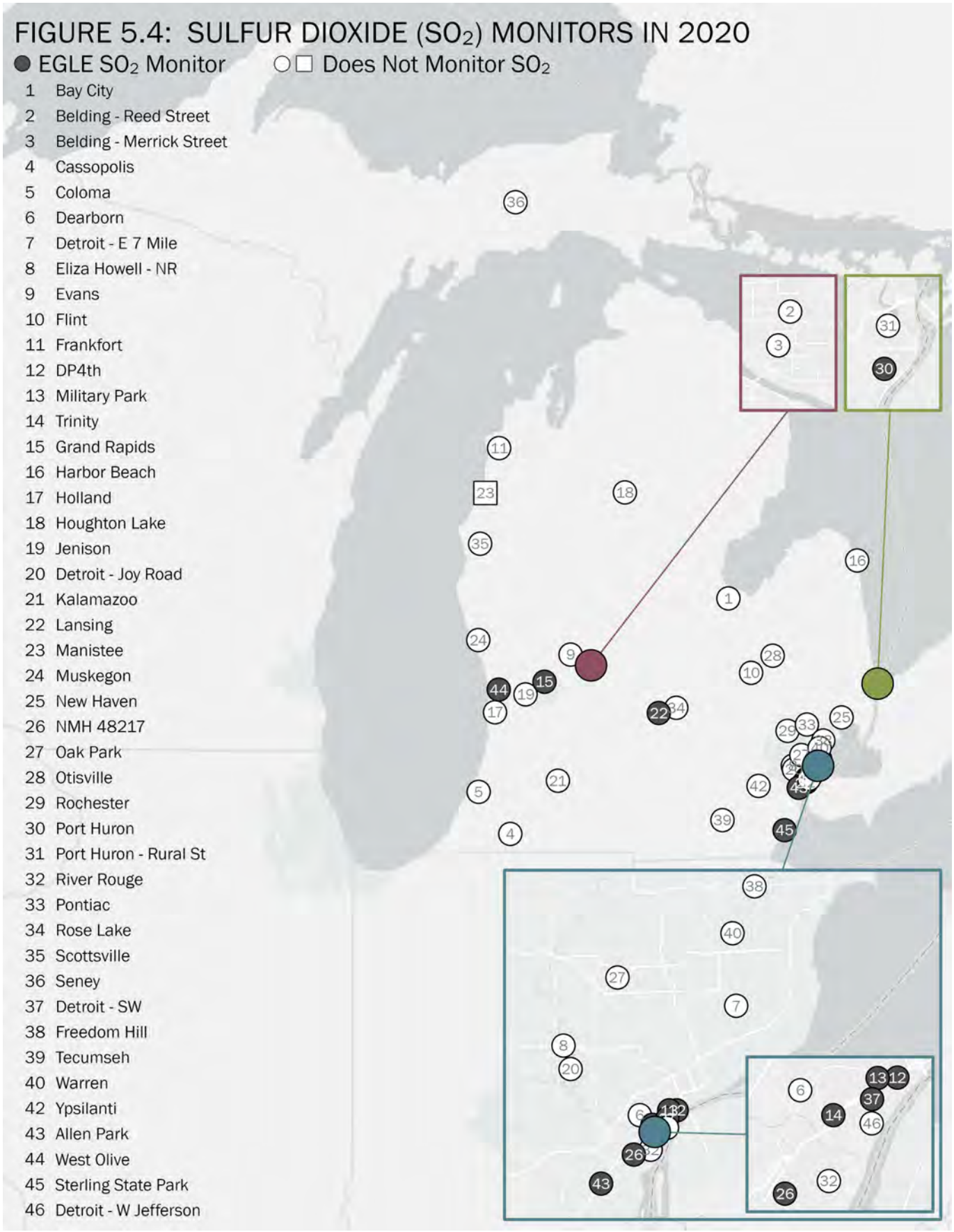


Figure 5.5 shows that all the SO_2 sites in Michigan are below the standard even though there is a nonattainment area for SO_2. The standard is a three-year average, therefore having one point above the NAAQS level line does not mean the monitor is over the standard. SO_2 pollution is extremely variable and would require a large monitoring network to designate areas as attainment. Therefore, SO_2 attainment depends on both emission modeling and monitoring data.

The NCore sites, Grand Rapids and Allen Park, monitor for trace SO_2. For trend purposes, all SO_2 data are graphed together in **Figure 5.5**.

Figure 5.5: SO_2 Level in Michigan from 2015-2020 (1-Hour 99th Percentile)

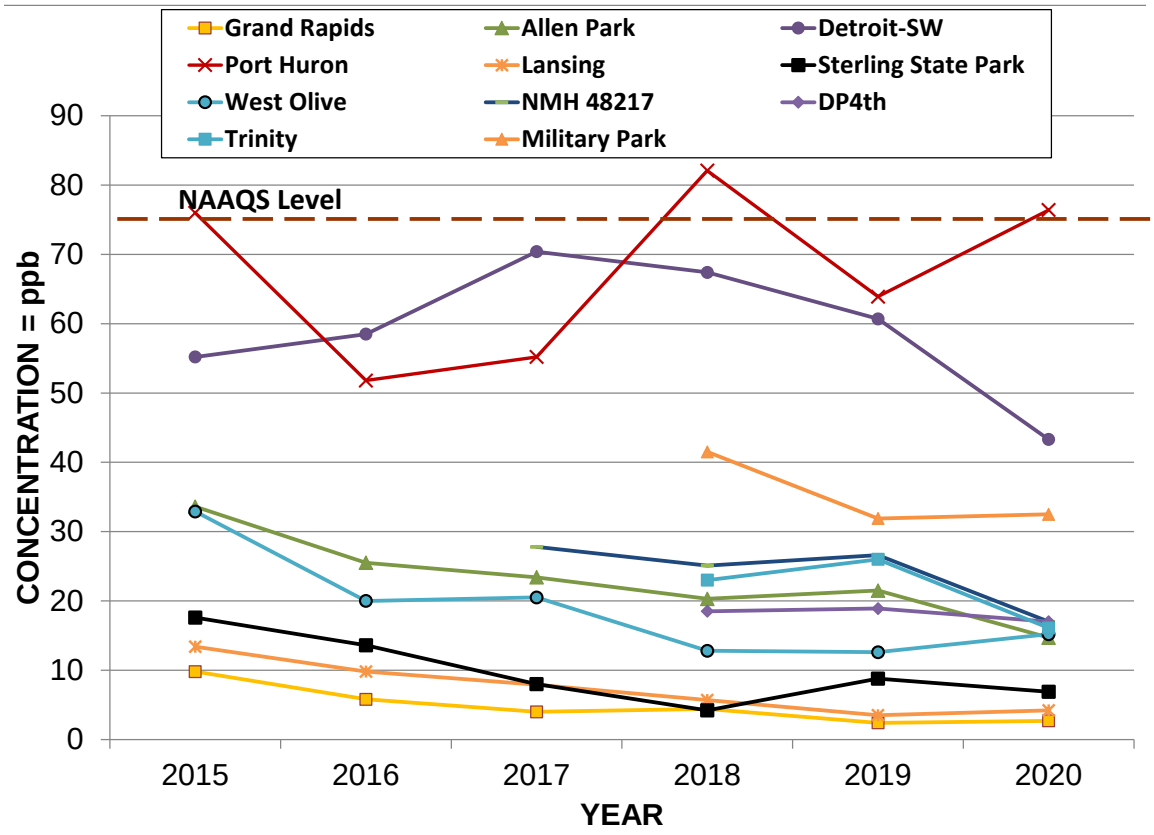
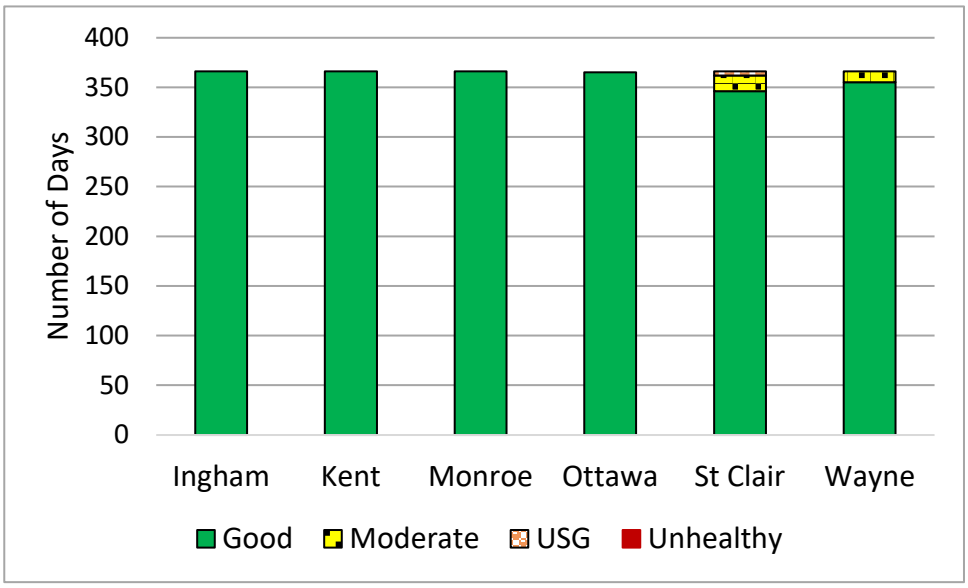
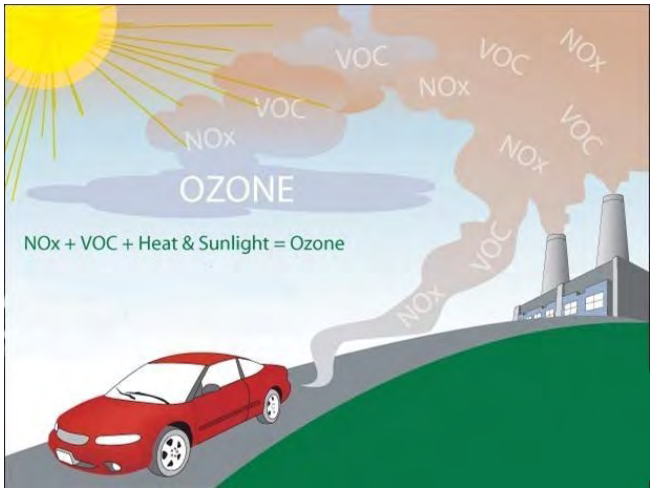


Figure 5.6 shows the AQI values per day in counties where SO_2 is monitored. All days were in the good AQI range except for 27 days in the moderate AQI range in St. Clair and Wayne Counties and four days in the Unsafe for Sensitive Groups (USG) in St. Clair County.

Figure 5.6: 2020 AQI Days for SO_2 in Michigan Counties



CHAPTER 6: OZONE (O_3)



Ground-level O_3 is created by reactions involving nitrogen oxides (NO_X) and volatile organic compounds (VOCs), or hydrocarbons, in the presence of sunlight as the illustration to the right depicts (image courtesy of the USEPA). These reactions usually occur during the hot summer months as ultraviolet radiation from the sun initiates a sequence of photochemical reactions. In Earth's upper atmosphere (the stratosphere), O_3 helps by absorbing much of the sun's ultraviolet radiation, but in the lower atmosphere (the troposphere), ozone is an air pollutant. O_3 is also a key ingredient of urban smog and can be transported hundreds of miles under certain meteorological conditions. Ozone levels are often higher in rural areas than in cities due to transport to regions downwind from the actual emissions of NO_X and VOCs. Shoreline monitors along Lake Michigan often measure high ozone concentrations due to transport from upwind states. The ozone NAAQS was revised by the USEPA and became effective in November 2015. It is a 3-year average of the 4th highest daily maximum 8-hour average concentration that must not exceed 0.070 ppm. The sources and effects of ozone follow.

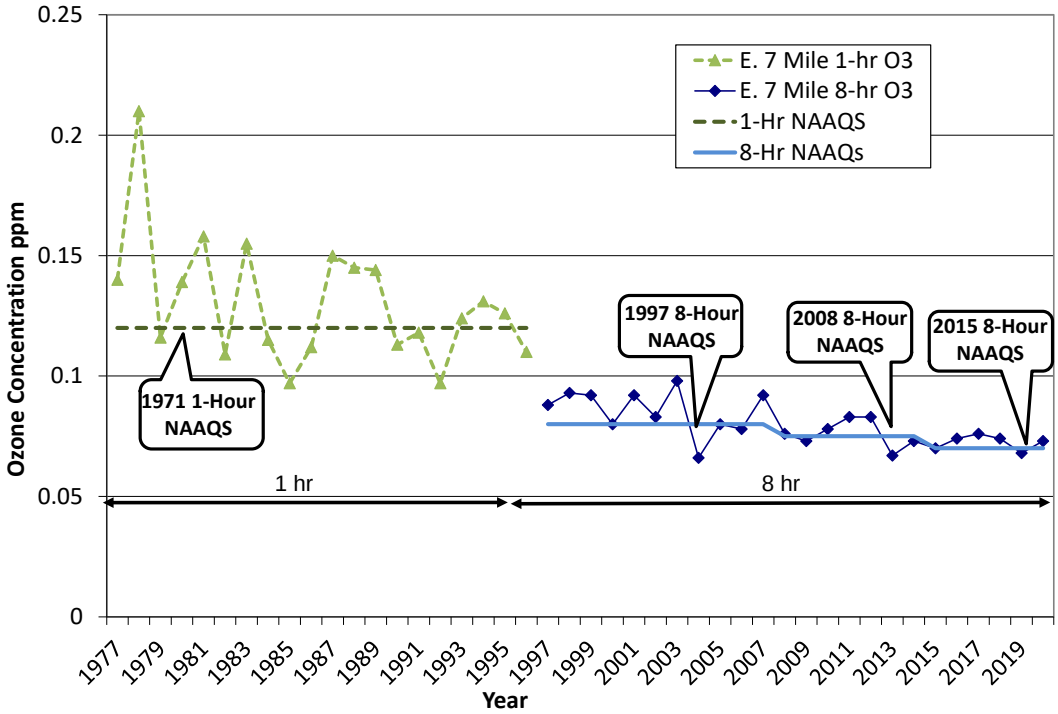
Sources: Major sources of NO_X and VOCs are engine exhaust, emissions from industrial facilities, combustion from power plants, gasoline vapors, chemical solvents, and biogenic emissions from natural sources. Ground-level O_3 can also be transported hundreds of miles under certain wind regimes. As a result, the long-range transport of air pollutants impacts the air quality of regions downwind from the actual area of formation.

Effects: Elevated O_3 exposure can irritate airways, reduce lung function, aggravate asthma and chronic lung diseases like emphysema and bronchitis, and inflame and damage the cells lining the lungs. Other effects include increased respiratory related hospital admissions with symptoms such as chest pain, shortness of breath, throat irritation, and cough. O_3 may also reduce the immune system's ability to fight off bacterial infections in the respiratory system, and long-term, repeated exposure may cause permanent lung damage. O_3 also impacts vegetation and forest ecosystems, including agricultural crop and forest yield reductions, diminished resistance to pests and pathogens, and reduced survivability of tree seedlings.

Population most at risk: Individuals most susceptible to the effects of O_3 exposure include those with a pre-existing or chronic respiratory disease, children who are active outdoors and adults who actively exercise or work outdoors.

Historical Trends: Southeast Michigan has been monitoring for ozone for over 40 years. **Figure 6.1** shows the ozone levels at the Detroit-E 7 Mile Road site. This graph shows how the standard changed from a 1-hour average of 0.120 ppm to an 8-hour average of 0.08 ppm in 1997. The standard was further lowered to 0.075 ppm in 2008 and to 0.070 ppm at the end of 2015. Ozone depends on weather conditions, so ozone concentrations are more variable than other pollutants. Ozone is also monitored primarily in warmer months. In the 2015 NAAQS, the ozone season was extended to by two months to March 1 to October 31.

Figure 6.1: Historical 1-hour and 8-hour Ozone at Detroit-E 7 Mile



Figures 6.2 and **6.3** show VOC emission sources and VOC emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 6.2: VOC Emissions by Source Sector

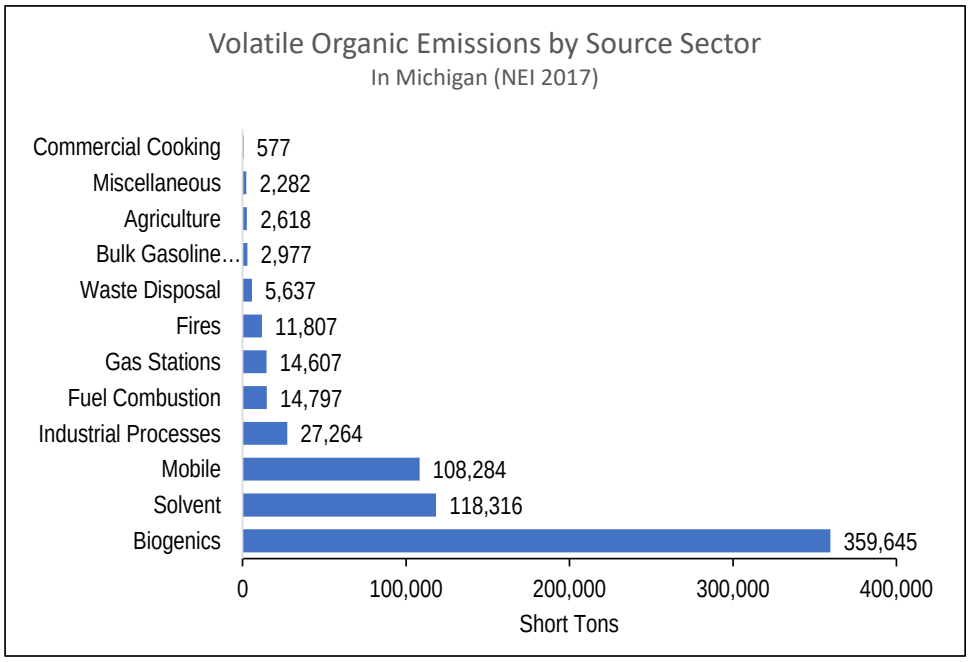


Figure 6.3: VOC Emissions in 2017

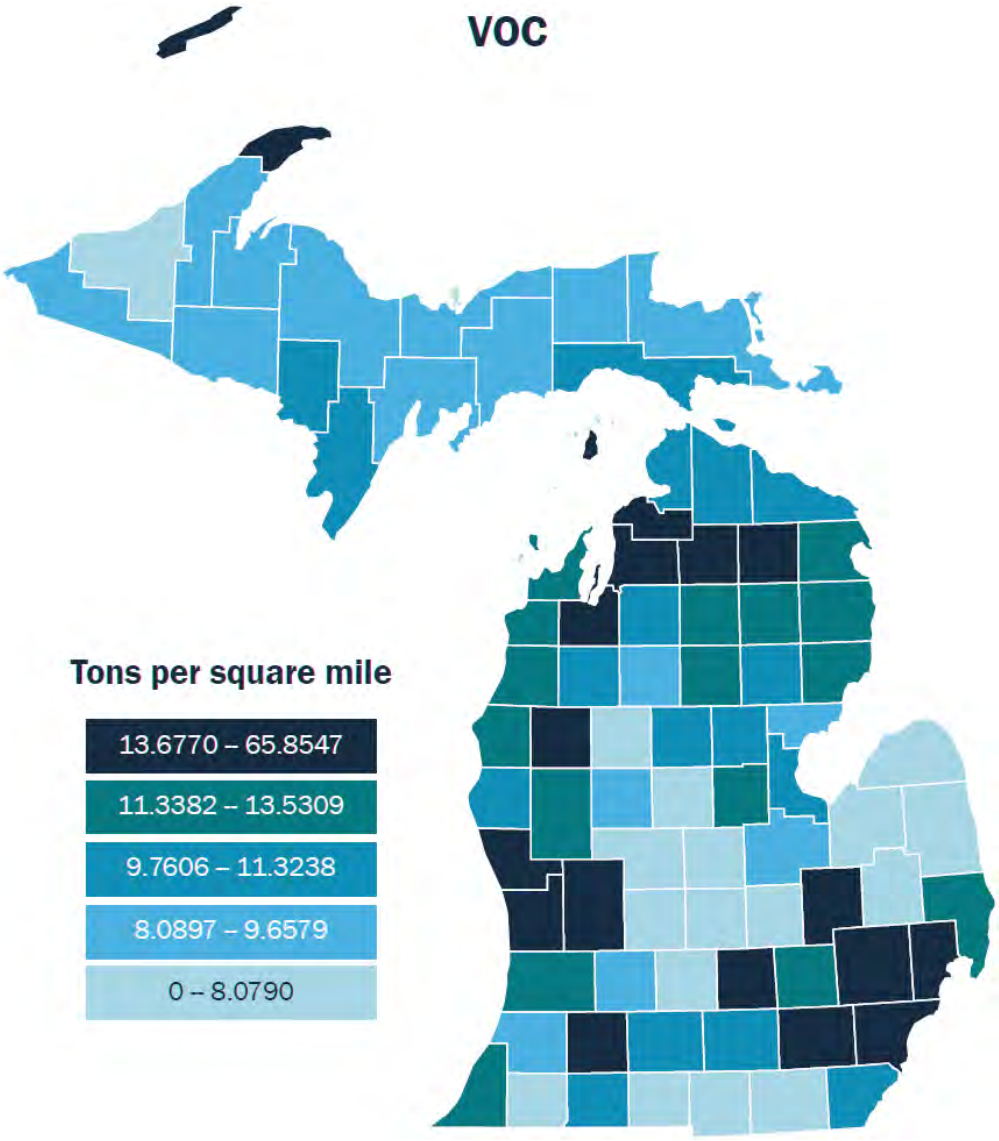


Figure 6.4 shows all O_3 air quality monitors active in Michigan at the beginning of the 2020 ozone season.

- Background site monitors: Houghton Lake, Scottville, Seney.
- Transport site monitors: Frankfort, Coloma, Harbor Beach, Holland, Muskegon, Tecumseh.
- Tribal site: Manistee
- Population-oriented monitors: All other sites.

Figure 6.4: Ozone Monitors in 2020

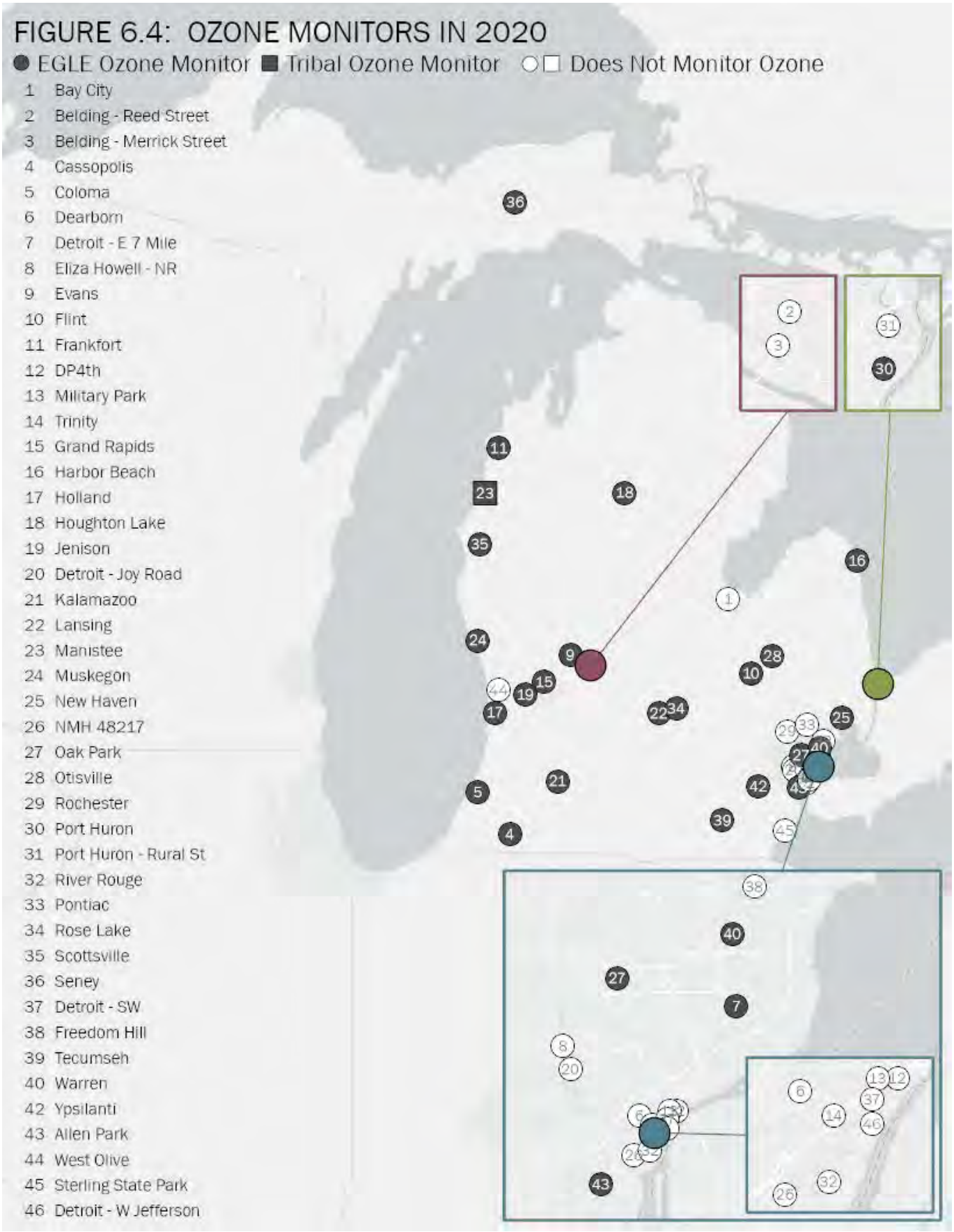


Table 6.1 shows the three-year averages of ozone. The USEPA uses these values (called design values) to determine attainment/nonattainment areas. The USEPA made their final designations for the 2015 standard on April 30, 2018 (effective August 3, 2018) based on 2014-2016 data. Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties were designated nonattainment in Southeast Michigan; and all of Berrien County, and portions of Allegan and Muskegon Counties were designated nonattainment in Western Michigan. In 2019 Berrien County was below the standard and a redesignation request was submitted to the USEPA in January 2020. Berrien County experienced elevated ozone in 2020. The USEPA has not yet acted on the submitted redesignation request.

The O_3 monitoring season in Michigan is from March 1 through October 31. During this time O_3 monitoring data is available for the public via the AQD's website (discussed in **Chapter 1**). However, year-round O_3 monitoring is conducted at the following four sites: Allen Park, Grand Rapids, Houghton Lake, and Lansing. This data helps in attainment designations, urban air quality and population exposure assessments.

Table 6.1: 3-Year Average of the 4th Highest 8-hour Ozone Values from 2016-2018, 2017-2019, and 2018-2020 (concentrations in ppm)

Areas	County	Monitor Sites	2016-2018	2017-2019	2018-2020
Detroit-Ann Arbor	Lenawee	Tecumseh	0.068	0.065	0.065
Detroit-Ann Arbor	Macomb	New Haven	**0.072**	0.068	**0.071**
Detroit-Ann Arbor	Macomb	Warren	0.069	0.066	0.068
Detroit-Ann Arbor	Oakland	Oak Park	**0.073**	0.070	**0.072**
Detroit-Ann Arbor	St. Clair	Port Huron	**0.072**	**0.071**	**0.071**
Detroit-Ann Arbor	Washtenaw	Ypsilanti	0.069	0.066	0.067
Detroit-Ann Arbor	Wayne	Allen Park	0.068	0.066	0.067
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	**0.074**	**0.072**	**0.071**
Flint	Genesee	Flint	0.068	0.064	0.065
Flint	Genesee	Otisville	0.068	0.063	0.065
Grand Rapids	Ottawa	Jenison	0.070	0.067	**0.071**
Grand Rapids	Kent	Grand Rapids	0.070	0.066	**0.071**
Grand Rapids	Kent	Evans	0.068	0.064	0.065
Muskegon Co	Muskegon	Muskegon	**0.076**	**0.074**	**0.076**
Allegan Co	Allegan	Holland	**0.073**	**0.072**	**0.073**
Huron	Huron	Harbor Beach	0.068	0.064	0.068
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	**0.071**	0.066	0.068
Lansing-East Lansing	Ingham	Lansing	0.068*	0.063	0.062
Lansing-East Lansing	Clinton	Rose Lake	0.069*	0.062	0.063
Benton Harbor	Berrien	Coloma	**0.073**	0.069	**0.072**
Benzie Co	Benzie	Frankfort	0.068	0.063	0.064
Cass Co	Cass	Cassopolis	**0.074**	0.070	**0.071**
Mason Co	Mason	Scottville	0.068	0.063	0.064
Missaukee Co	Missaukee	Houghton Lake	0.067	0.062	0.064
Manistee Co	Manistee	Manistee	0.066	0.064	0.059
Schoolcraft Co	Schoolcraft	Seney	0.064	0.059	0.063

Numbers in bold indicate 3-year averages over the 2015 ozone standard of 0.070 ppm.
*The three-year average is using data averaged from sites that were moved.

Tables 6.2 and 6.3 highlight the number of days when two or more O_3 monitors exceeded 0.070 ppm. It also specifies in which month they occurred and the temperature range.

Table 6.2: 2020 West Michigan Ozone Season

Daily High Temperature Range	Mar Days	Mar O_3 Days	Apr Days	Apr O_3 Days	May Days	May O_3 Days	Jun Days	Jun O_3 Days	Jul Days	Jul O_3 Days	Aug Days	Aug O_3 Days	Sep Days	Sep O_3 Days	Oct Days	Oct O_3 Days
≥ 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90 ≤94	0	0	0	0	1	0	3	2	10	1	3	1	0	0	0	0
85 ≤ 89	0	0	0	0	2	0	10	4	5	1	11	0	1	0	0	0
80 ≤ 84	0	0	0	0	1	0	7	0	16	0	8	0	3	0	0	0
75 ≤ 79	0	0	1	0	2	0	5	0	0	0	8	0	9	0	1	0
70 ≤ 74	0	0	1	0	6	0	4	0	0	0	1	0	5	0	2	0
65 ≤ 69	0	0	2	0	5	0	1	0	0	0	0	0	4	0	8	0
60 ≤ 64	3	0	6	0	6	0	0	0	0	0	0	0	8	0	1	0
55 ≤ 59	3	0	5	0	4	0	0	0	0	0	0	0	0	0	5	0
50 ≤ 54	5	0	5	0	2	0	0	0	0	0	0	0	0	0	8	0
49 ≤	20	0	10	0	2	0	0	0	0	0	0	0	0	0	6	0
Totals	**31**	**0**	**30**	**0**	**31**	**0**	**30**	**6**	**31**	**2**	**31**	**1**	**30**	**0**	**31**	**0**

Days: Number of days during month when the daily high temperature falls within the specified temperature range.
O_3 Days: Number of days, during specified temperature range, when two or more area monitors exceeded 70 ppb.

West Michigan had six O_3 exceedance days in June; two in July and one in August when ozone exceeded 0.070 ppm at two or more ozone monitors. The temperatures on those days ranged between 85°F and 94°F.

Table 6.3: 2020 Southeast Michigan Ozone Season

Daily High Temperature Range	Mar Days	Mar O_3 Days	Apr Days	Apr O_3 Days	May Days	May O_3 Days	Jun Days	Jun O_3 Days	Jul Days	Jul O_3 Days	Aug Days	Aug O_3 Days	Sep Days	Sep O_3 Days	Oct Days	Oct O_3 Days
≥ 95	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
0 ≤94	0	0	0	0	0	0	3	2	9	2	4	0	0	0	0	0
85 ≤ 89	0	0	0	0	3	0	9	2	13	0	10	0	1	0	0	0
80 ≤ 84	0	0	0	0	2	0	10	1	7	0	8	0	6	0	0	0
75 ≤ 79	0	0	0	0	1	0	4	0	1	0	9	0	7	0	3	0
70 ≤ 74	0	0	2	0	5	0	3	0	0	0	0	0	5	0	4	0
65 ≤ 69	1	0	3	0	8	0	1	0	0	0	0	0	7	0	4	0
60 ≤ 64	4	0	6	0	6	0	0	0	0	0	0	0	4	0	4	0
55 ≤ 59	1	0	8	0	2	0	0	0	0	0	0	0	0	0	7	0
50 ≤ 54	7	0	3	0	2	0	0	0	0	0	0	0	0	0	4	0
49 ≤	18	0	8	0	2	0	0	0	0	0	0	0	0	0	5	0
Totals	**31**	**0**	**30**	**0**	**31**	**0**	**30**	**5**	**31**	**3**	**31**	**0**	**30**	**0**	**31**	**0**

Days: Number of days during month when the daily high temperature falls within the specified temperature range.
O_3 Days: Number of days, during specified temperature range, when two or more area monitors exceeded 70 ppb.

Southeast Michigan had five O_3 exceedance days in June, and three in July when ozone exceeded 0.070 ppm at two or more ozone monitors. The temperature for those days ranged between 80°F and 95°F.

Table 6.4 gives a breakdown of the O_3 days and the specific monitors that went over the standard in western, central/upper, and eastern Michigan in 2020.

Table 6.4: 8-Hour Exceedance Days (>0.070 ppm) and Locations Monitors with Exceedances of the Ozone Standard

Date	Western Michigan	Central/Upper Mich.	Eastern Michigan	Total
5/26/2020			Harbor Beach	1
6/2/2020	Coloma, Evans, Grand Rapids, Holland, Jenison, Kalamazoo, Muskegon			7
6/4/2020			New Haven	1
6/5/2020	Cassopolis, Coloma		New Haven	3
6/9/2020		Houghton Lake	Flint, New Haven, Oak Park, Tecumseh, Ypsilanti	6
6/17/2020	Coloma, Cassopolis, Grand Rapids, Jenison, Kalamazoo	Seney	New Haven, Ypsilanti	8
6/18/2020	Frankfort, Cassopolis, Coloma, Grand Rapids, Holland, Jenison, Kalamazoo, Muskegon, Scottville	Seney	Harbor Beach, New Haven	12
6/19/2020	Frankfort, Cassopolis, Coloma, Evans, Grand Rapids, Holland, Jenison, Kalamazoo, Muskegon, Scottville	Seney	Harbor Beach, Oak Park	13
6/20/2020	Coloma, Grand Rapids, Holland, Jenison, Muskegon		Detroit-E 7 Mile, Harbor Beach, New Haven, Oak Park, Port Huron, Warren, Ypsilanti	12
7/2/2020			Detroit-E 7 Mile	1
7/6/2020			Detroit-E 7 Mile, Harbor Beach, New Haven, Oak Park, Warren	5
7/7/2020	Cassopolis, Kalamazoo		Allen Park, Detroit-E 7 Mile, New Haven, Oak Park, Tecumseh, Ypsilanti	8
7/9/2020			Allen Park, Harbor Beach, New Haven, Oak Park, Ypsilanti	5
7/15/2020			Harbor Beach	1
7/17/2020			New Haven	1
7/25/2020	Coloma, Holland			2
8/21/2020			New Haven	1
8/22/2020			New Haven	1
8/24/2020	Muskegon			1
8/26/2020	Grand Rapids, Holland, Jenison, Muskegon			4
			TOTAL	**93**

On July 19, 2020, there were 13 monitors and on June 18 and June 20, 2020, there were 12 monitor readings that exceeded the level of the standard. The site with the most exceedances in the western region of Michigan was Coloma with seven. The central/upper Michigan sites had Seney with 3 exceedances. New Haven had 12 exceedances each in eastern Michigan.

Figure 6.5 shows the 4th highest 8-hour O_3 values for Southeast Michigan monitoring sites from 2015-2020. Detroit-E 7 Mile, New Haven, Oak Park, and Port Huron site violated the 3-year standard.

Figure 6.6 shows the 4th highest 8-hour O_3 values for Grand Rapids-Muskegon-Holland CSA. Muskegon. Holland, Grand Rapids, and Jenison violated the 3-year standard.

Figure 6.7 shows 4th highest 8-hour O_3 values for mid-Michigan. Cassopolis and Coloma violated the 3-year standard.

Figure 6.8 shows 4th highest 8-hour O_3 values for Northern Lower and Upper Peninsulas. No sites violated the 3-year standard.

Figure 6.5: O_3 Levels in Detroit-Warren-Flint CSA from 2015-2020 - (4th Highest 8-Hour O_3 Values).

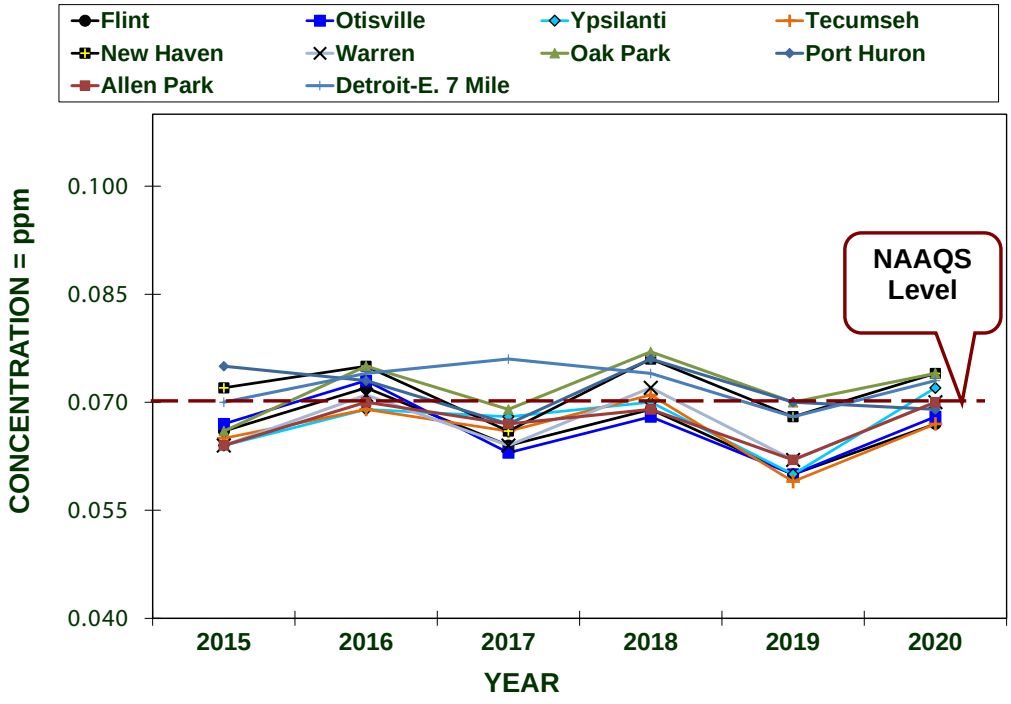


Figure 6.6: O_3 Levels in the Grand Rapids-Muskegon-Holland CSA from 2015-2020 (4th Highest 8-Hour O_3 Values)

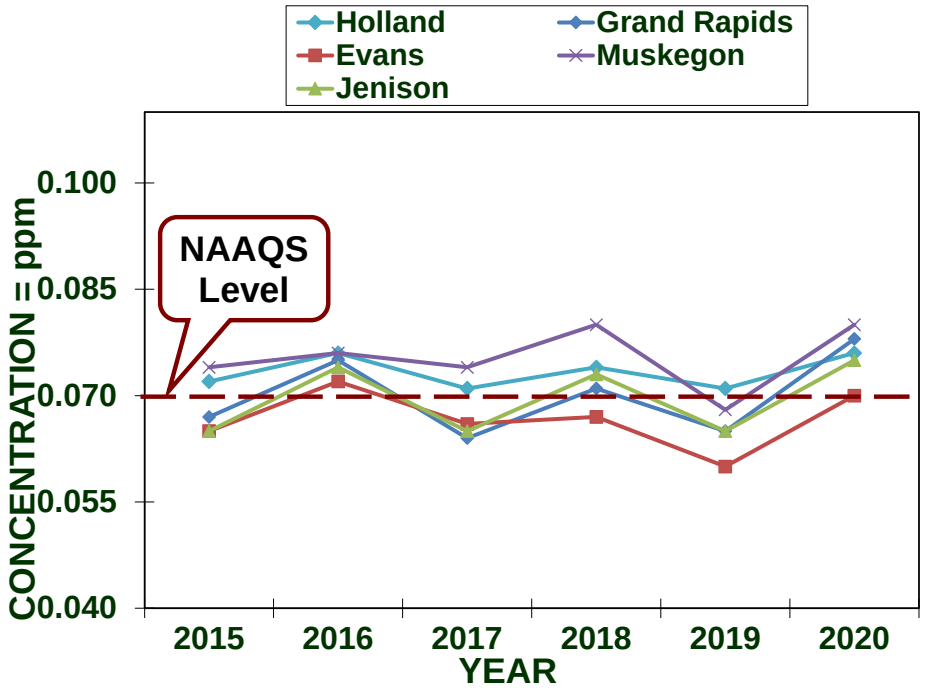


Figure 6.7: O_3 Levels in the Kalamazoo-Portage MSA, Lansing-E. Lansing-Owosso CSA, Niles-Benton Harbor MSA, & South Bend-Mishawaka (IN-MI) MSAs from 2015-2020 (4th Highest 8-Hour O_3 Values)

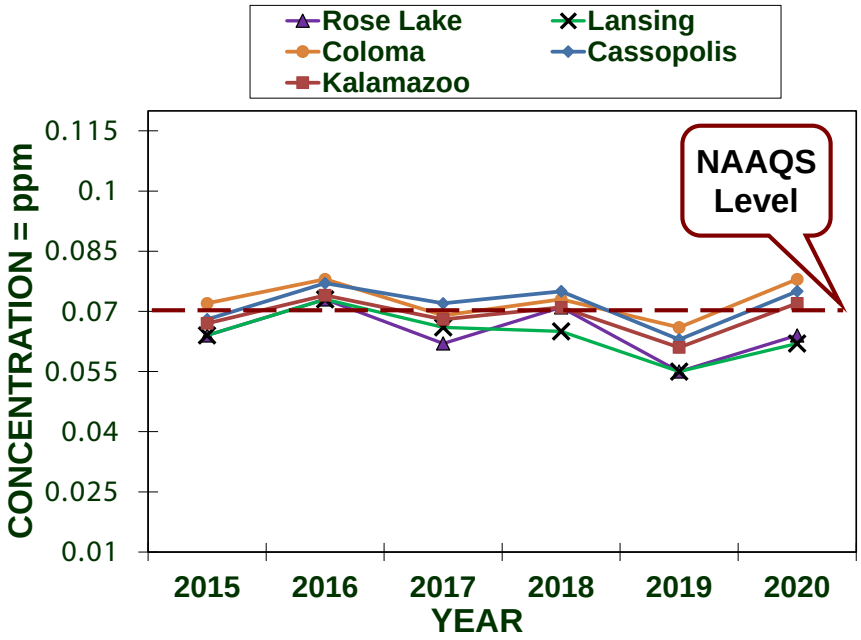


Figure 6.8: O_3 Levels in MI's Northern Lower and Upper Peninsula Areas from 2015-2020 (4th Highest 8-Hour O_3 Values)

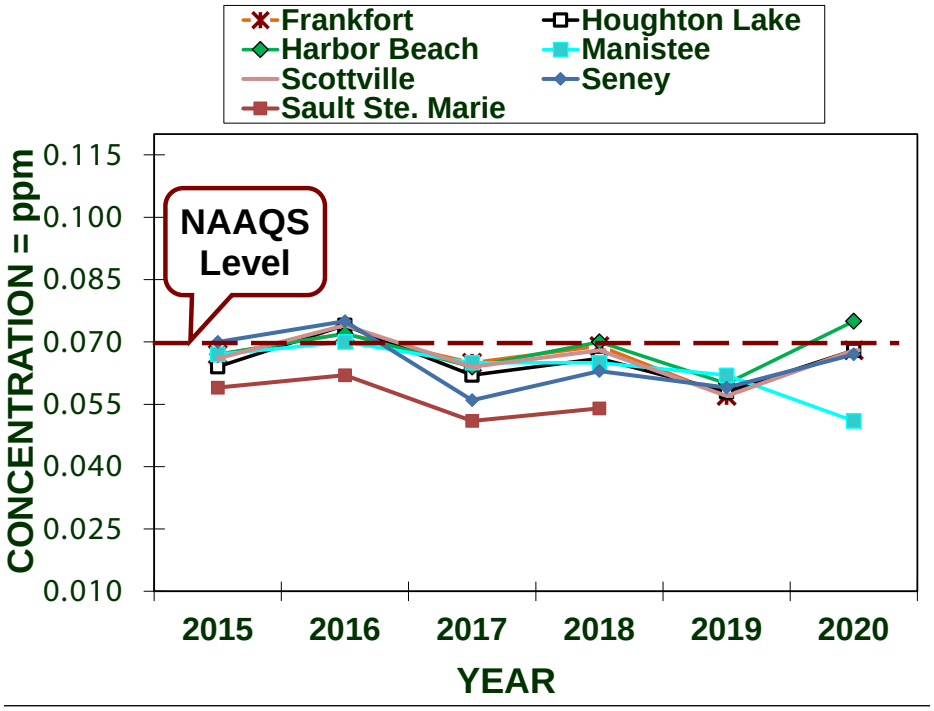
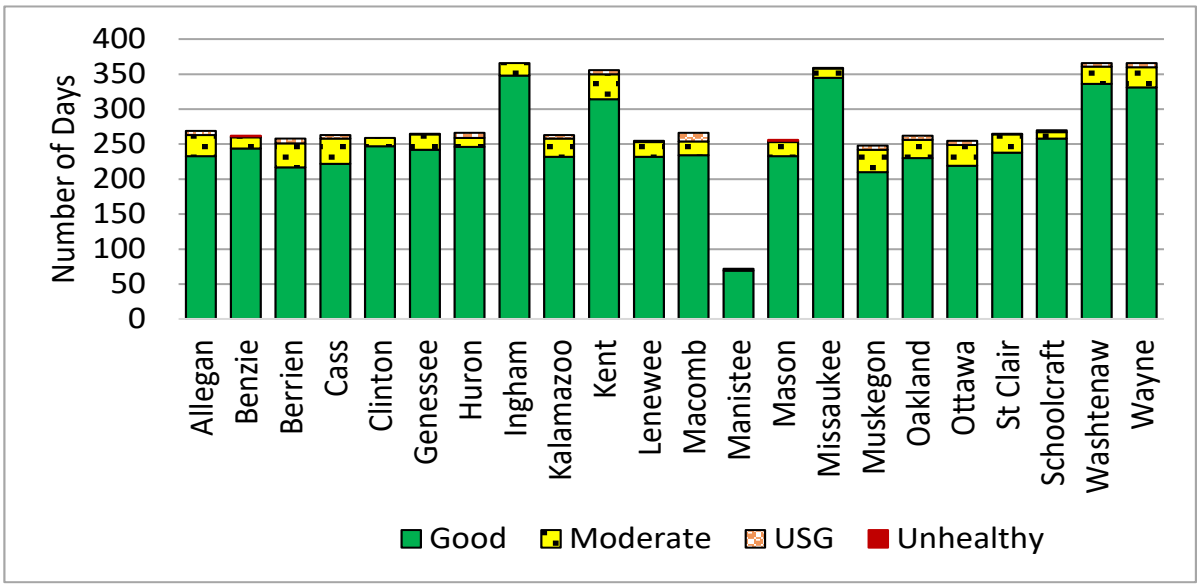


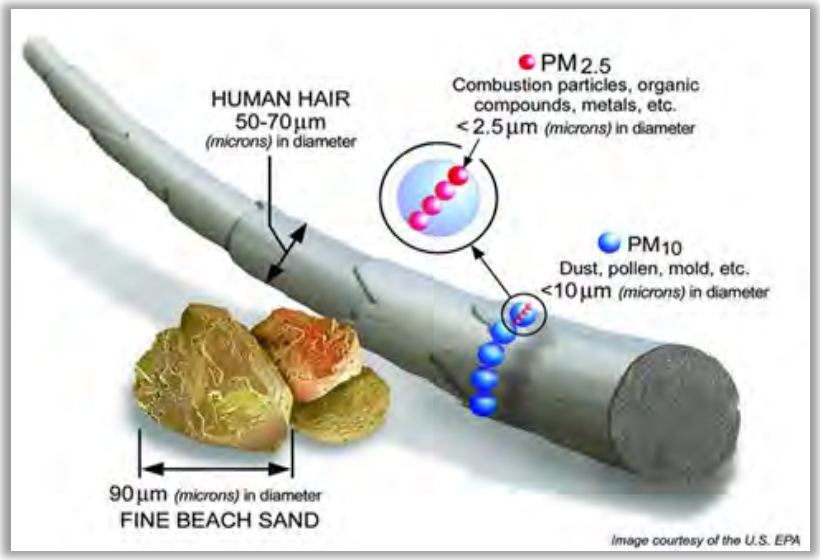
Figure 6.9 shows the AQI values per day in counties where ozone is monitored. Most days were in the good to moderate AQI range. Most counties had a few days in the USG range, Macomb County having the most USG days with 12 days. Two counties had one day each in the unhealthy AQI range: Benzie and Mason Counties.

Figure 6.9: 2020 AQI Days for Ozone in Michigan Counties



CHAPTER 7: PARTICULATE MATTER (PM_{10}, $PM_{10-2.5}$, $PM_{2.5}$, $PM_{2.5}$ CHEMICAL SPECIATION AND TSP)

Particulate matter (PM) is a general term used for a mixture of solid particles and liquid droplets (aerosols) found in the air. These are further categorized according to size; larger particles with diameters of less than 50 micrometers (µm) are classified as total suspended particulates (TSP). PM_{10} consists of "coarse particles" less than 10 µm in diameter (about one-seventh the diameter of a human hair) and $PM_{2.5}$ are much smaller "fine particles" equal to or less than 2.5 µm in diameter. PM_{10} has a 24-hour average standard of 150 µg/m^3 not to be exceeded more than once per year over 3 years. $PM_{2.5}$ has an annual average standard of 12 µg/m^3, and a 98th percentile 24-hour concentration of 35 µg/m^3 averaged over 3 years. The sources and effects of PM are as follows:



Sources: PM can be emitted directly (primary) or may form in the atmosphere (secondary). Most man-made particulate emissions are classified as TSP. PM_{10} consists of primary particles that can originate from power plants, various manufacturing processes, wood stoves and fireplaces, agriculture and forestry practices, fugitive dust sources (road dust and windblown soil), and forest fires. $PM_{2.5}$ can come directly from primary particle emissions or through secondary reactions that include VOCs, SO_2, and NO_X emissions originating from power plants, motor vehicles (especially diesel trucks and buses), industrial facilities, and other types of combustion sources.

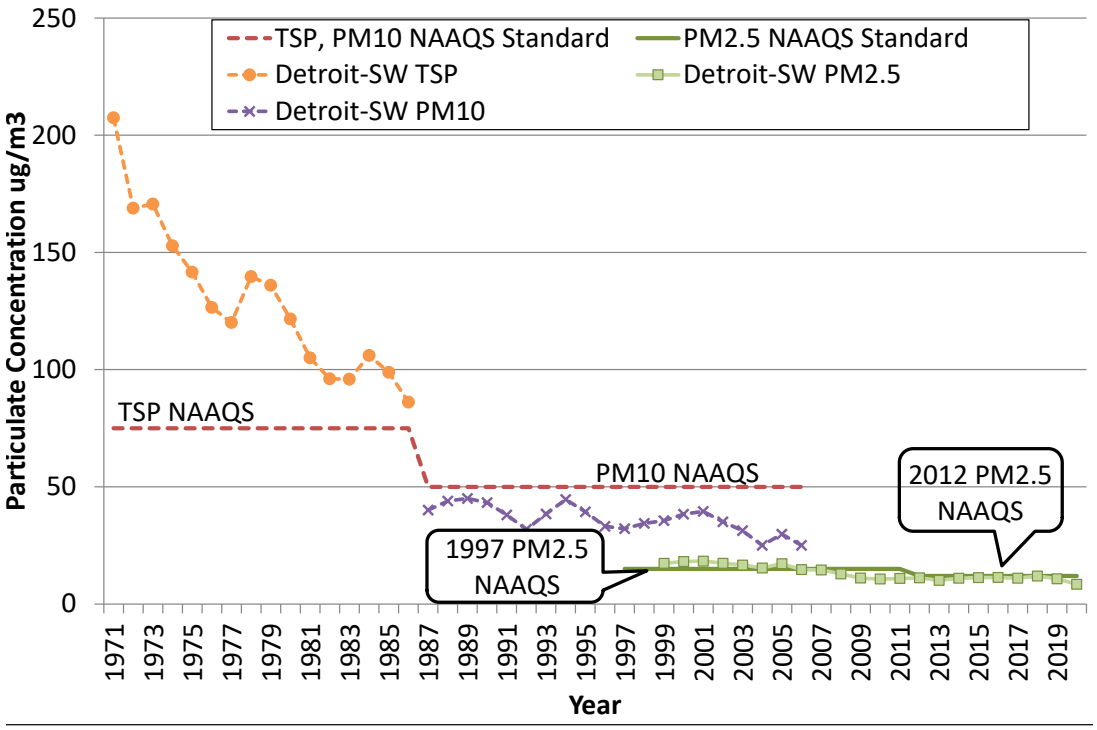
Effects: Exposure to PM can aggravate existing cardiovascular ailments and even cause death in susceptible populations. PM may affect breathing and the cellular defenses of the lungs and has been linked with heart and lung disease. Smaller particles (PM_{10} or smaller) pose the greatest problems, because they can penetrate deep in the lungs and possibly into the bloodstream. PM is the major cause of reduced visibility in many parts of the United States. $PM_{2.5}$ is considered a primary visibility-reducing component of urban and regional haze. Airborne particles impact vegetation ecosystems and damage paints, building materials and surfaces. Deposition of acid aerosols and salts increases corrosion of metals and impacts plant tissue.

Population most at risk: People with heart or lung disease, the elderly, and children are at highest risk from exposure to PM.

Historical Trends: Southeast Michigan has been monitoring for particulate for over 40 years. **Figure 7.1** shows the trends for particulate matter. In 1971, the USEPA promulgated an annual and 24-hour particulate standard based on total suspended particulates (TSP). In 1987, the USEPA changed the standard to PM_{10}. Health studies indicated that particles smaller than 10 microns affect respiration. In 1997, the USEPA added additional NAAQS for a smaller particle fraction size, $PM_{2.5}$, which can get deeper into the lungs and possibly into the blood stream. In 2006, the USEPA revoked the PM_{10} annual standard but kept the PM_{10} 24-hour standard. The $PM_{2.5}$ 24-hour standard was also reduced from 65 µg/m^3 to 35 µg/m^3. In 2012, the USEPA reduced the annual standard from 15 µg/m^3 to 12 µg/m^3.

Particulate trends show that particulate concentrations have decreased, and the state is in compliance for all particulate NAAQS; however, Michigan has had past nonattainment issues in Southeast Michigan for TSP, PM_{10} and $PM_{2.5}$.

Figure 7.1: Historical Annual Particulate Matter at Detroit-SW



PM_{10}

Figures 7.2 and **7.3** show PM_{10} emission sources and PM_{10} emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 7.2: PM_{10} Emissions by Source Sector

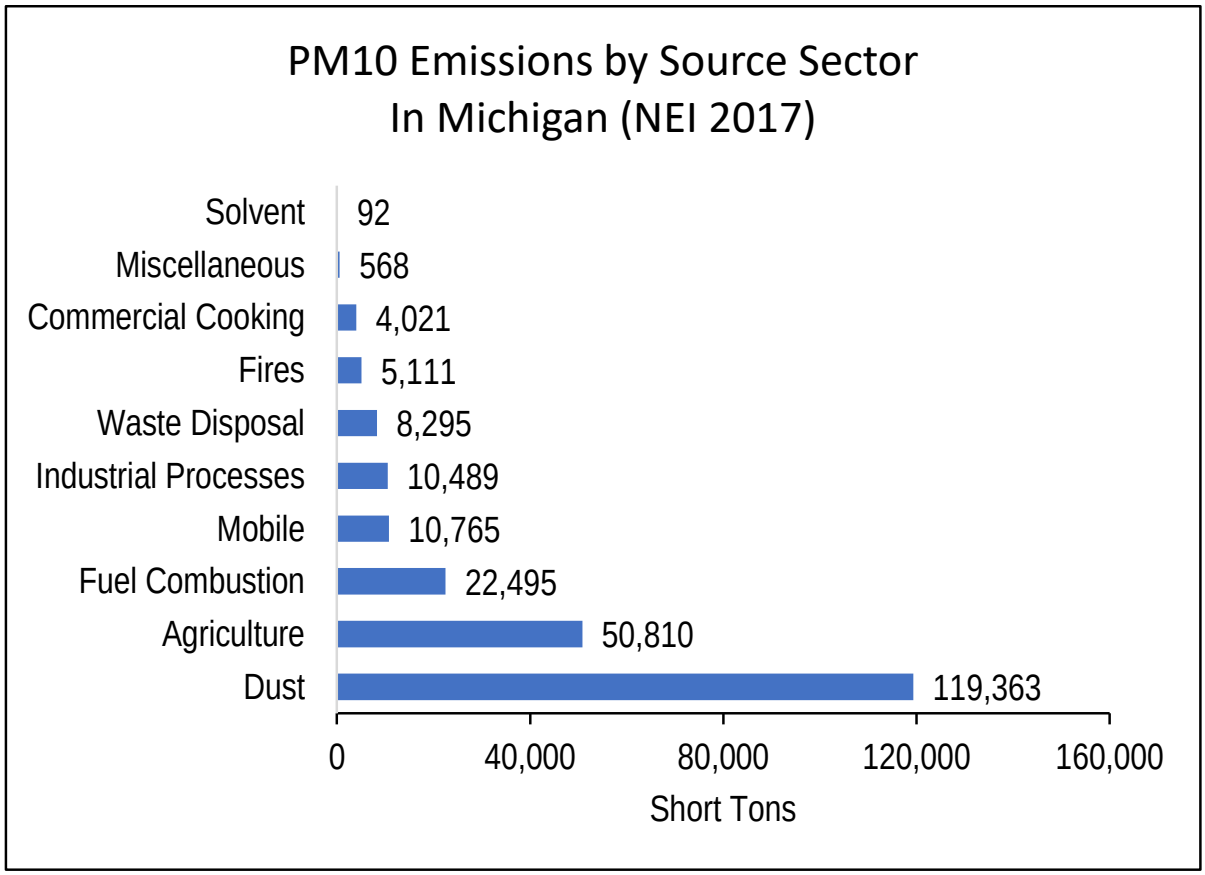
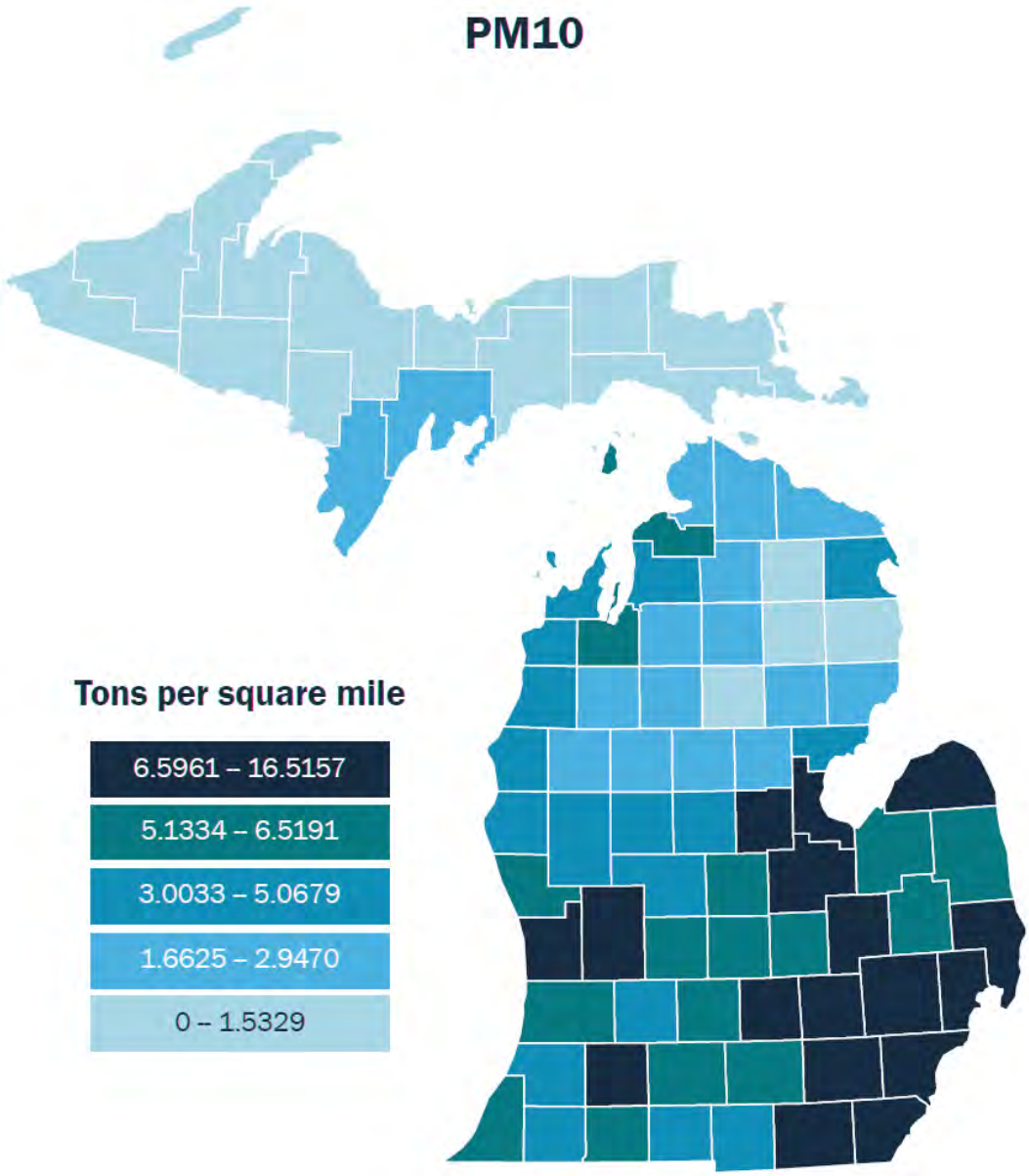


Figure 7.3: PM_{10} Emissions in 2017



Since October 1996, all areas in Michigan have been in attainment with the PM_{10} NAAQS. Due to the recent focus upon $PM_{2.5}$ and because of the relatively low concentrations of PM_{10} measured in recent years, Michigan's PM_{10} network has been reduced to a minimum level. Table 1.2 identifies the locations of PM_{10} monitoring stations that were operating in Michigan during 2020. These monitors are located mostly in the state's largest populated urban areas: three in the Detroit area and two in Grand Rapids. In late fall of 2020, Grand Rapids, Jenison, and Allen Park PM_{10} continuous monitors (T640X), which also collect $PM_{2.5}$ data, were installed. However, filter-based instruments were shut down on January 1, 2021, so the continuous instruments will not be reported in the 2020 report.

Figure 7.4 shows the location of each PM_{10} monitor. All PM_{10} monitors are population-oriented monitors. A second PM_{10} monitor was added to the Grand Rapids area in Jenison (**Figure 7.5**) based on the USEPA's population requirements.

Figure 7.4: PM_{10} Monitors in 2020

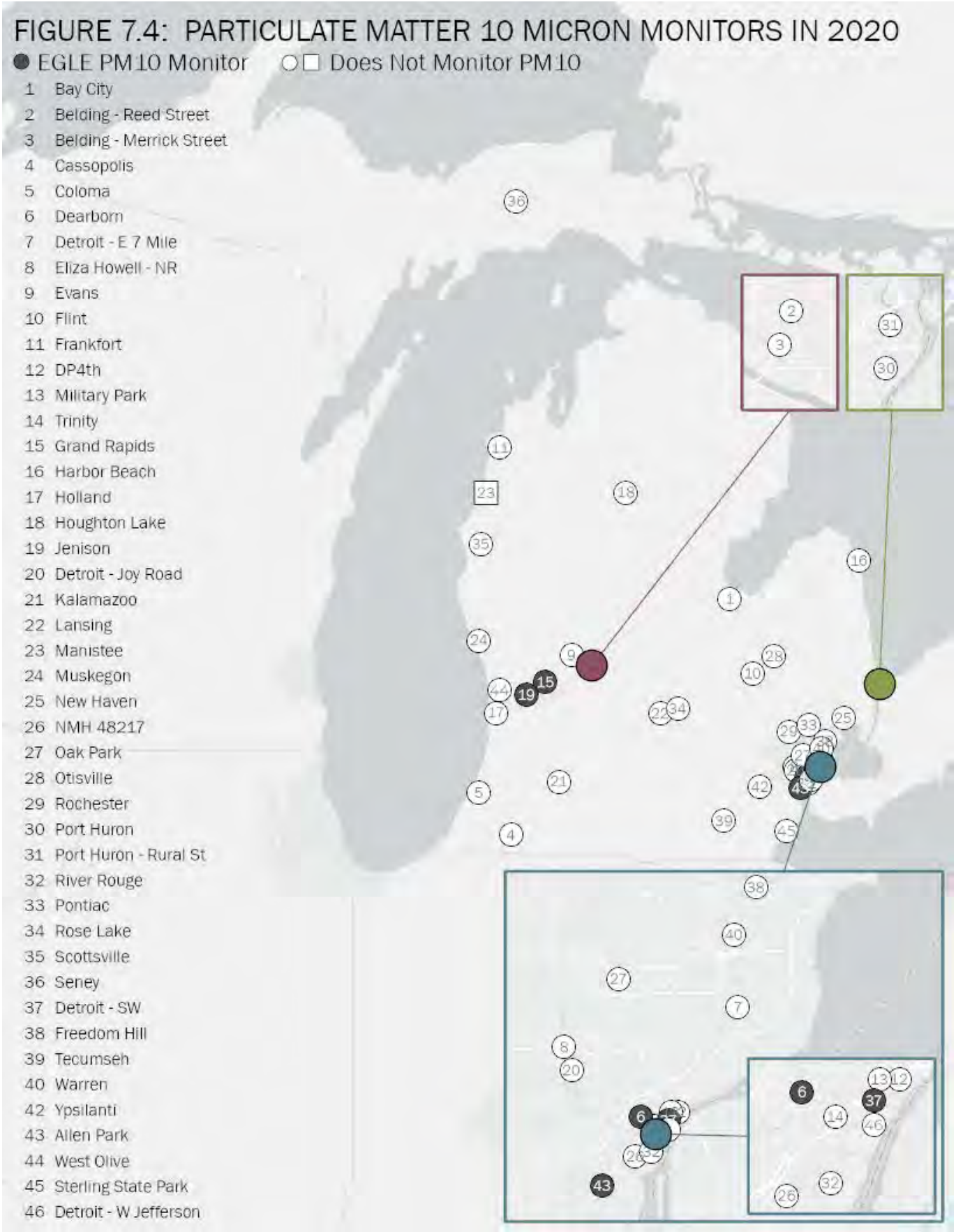


Figure 7.5 shows the PM_{10} levels in Michigan compared to the 24-hour average NAAQS of 150 µg/m³. This standard must not be exceeded on average more than once per year over a 3-year period. The design value is the 4th highest value over a 3-year period. The PM_{10} levels at all sites in Michigan are well below the national standard.

Figure 7.5: 24-Hour PM_{10} Design Value

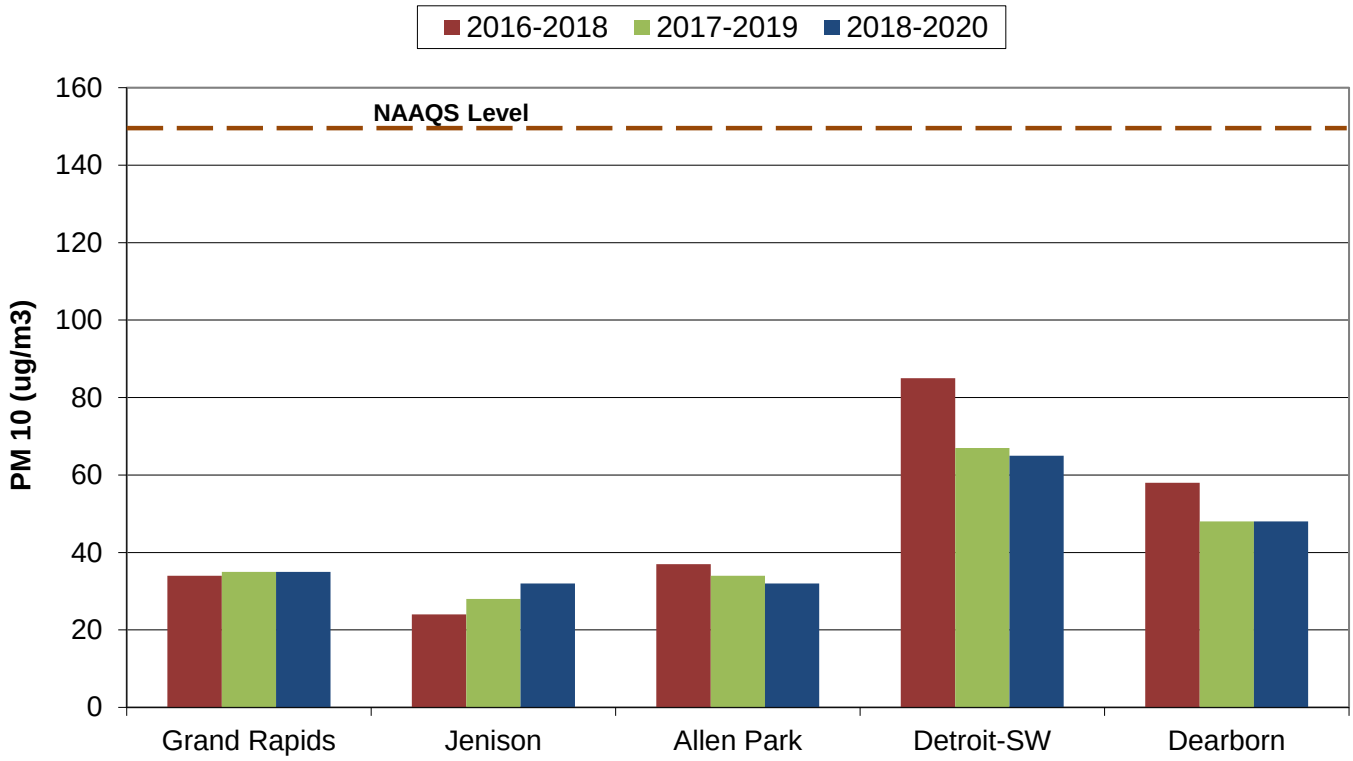
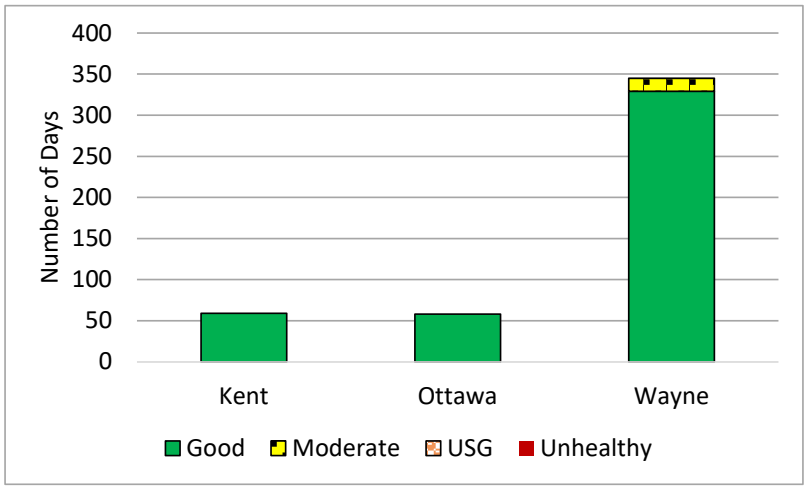


Figure 7.6 shows the AQI values per day in counties where PM_{10} is monitored. All days were in the good AQI range except for 16 days in the moderate AQI range in Wayne County.

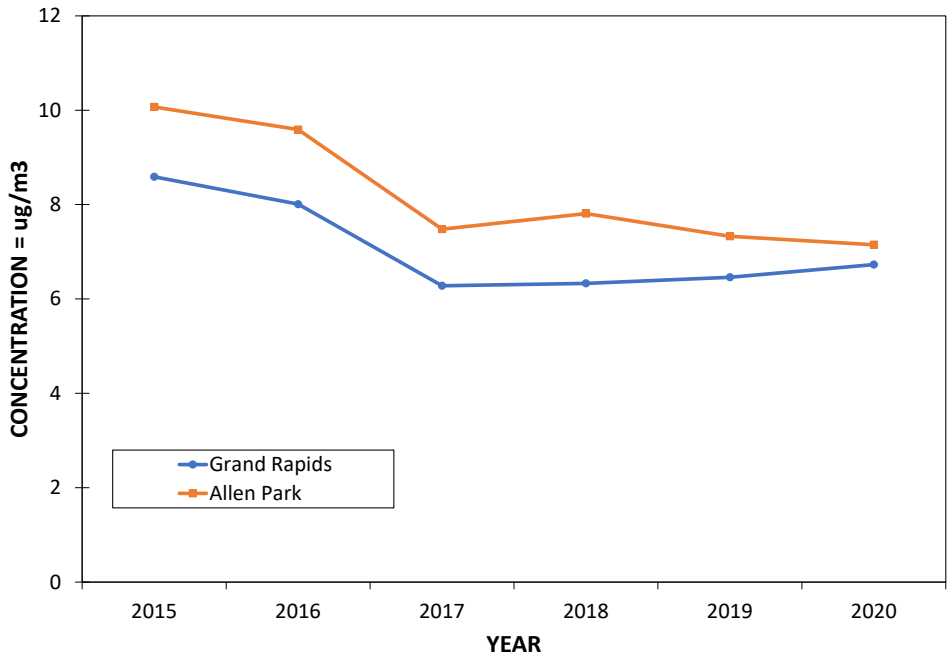
Figure 7.6: 2020 AQI Days for PM_{10} in Michigan Counties



$PM_{10-2.5}$

The 2006 amended air monitoring regulations specified that measurements of PM course ($PM_{10-2.5}$) needed to be added to the NCore sites.[7] EGLE began PM course monitoring at Allen Park and Grand Rapids in 2010. **Figure 7.7** shows the $PM_{10-2.5}$ levels in Michigan.

Figure 7.7: PM Coarse Levels in Michigan from 2015-2020 (Annual Arithmetic Mean)



$PM_{2.5}$

In December 2012, the USEPA revised the annual primary standard to 12 µg/m³ while the annual secondary standard remained at 15 µg/m³. The primary and secondary 24-hour standard remained at 35 µg/m³. In December 2014, the USEPA determined that no area in Michigan violated the 2012 standard and the state was classified as unclassifiable/attainment.

Figures 7.8 and **7.9** show $PM_{2.5}$ emission sources and $PM_{2.5}$ emissions by county (from the USEPA's State and County Emission Summaries).

[7] Current information can be found at www3.epa.gov/ttn/amtic/ncoreguidance.html.

Figure 7.8: $PM_{2.5}$ Emissions by Source Sector

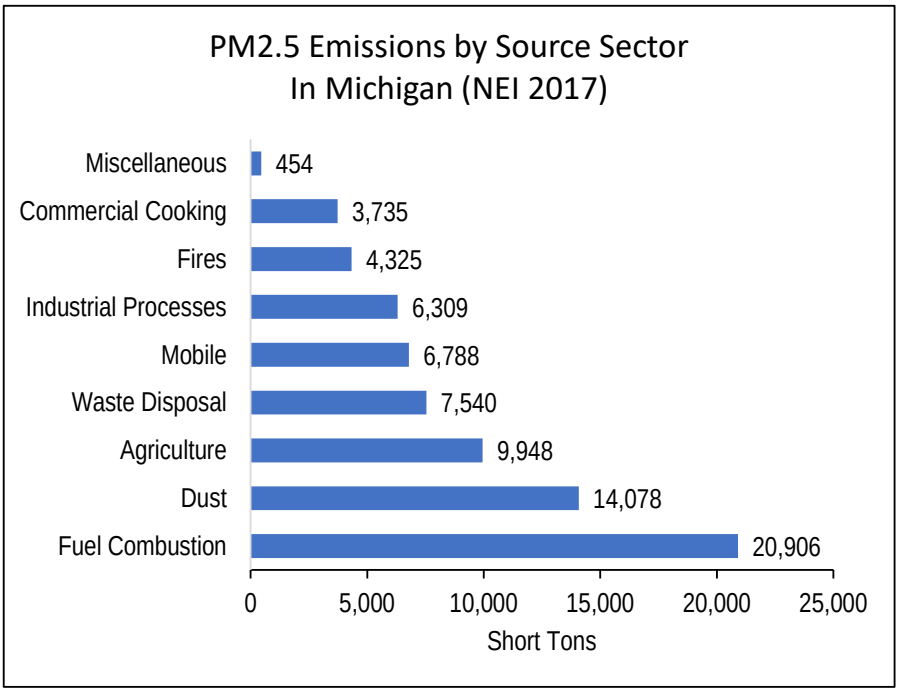
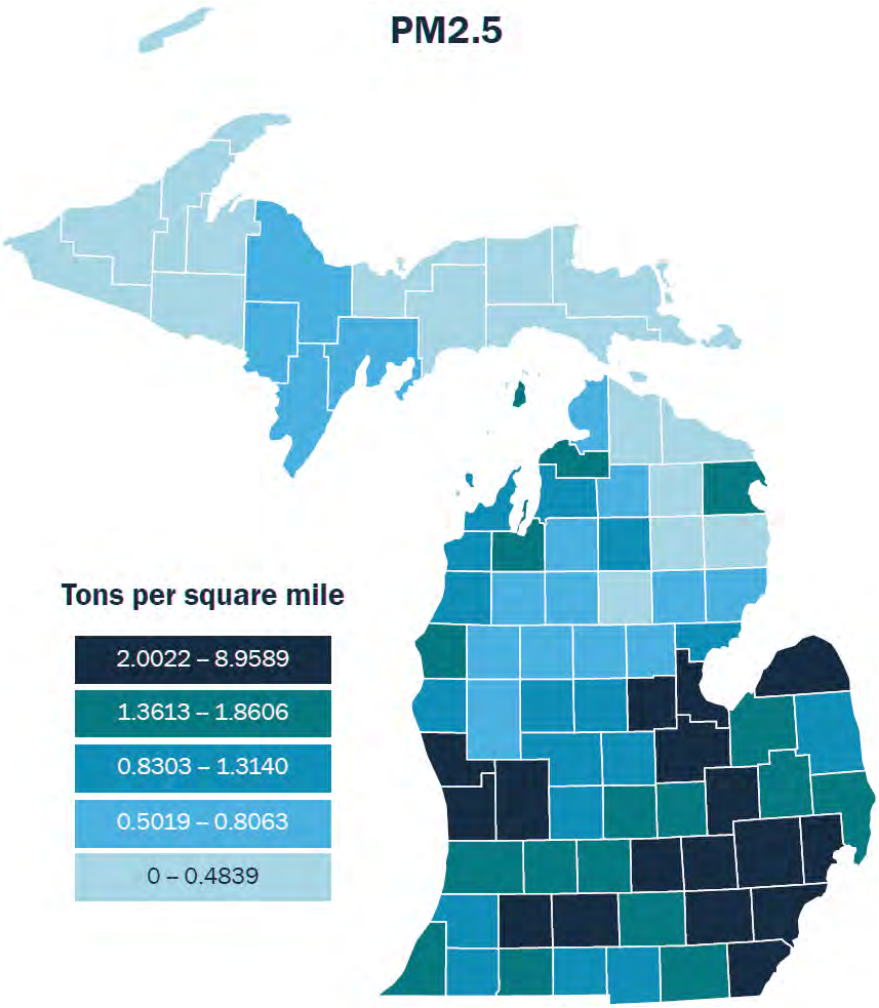


Figure 7.9: $PM_{2.5}$ Emissions in 2017



Fine particulate matter ($PM_{2.5}$) is measured using three techniques: a filter-based FRM, Continuous Methods, and Chemical Speciation Methods. These methods are described in more detail in Appendix A.

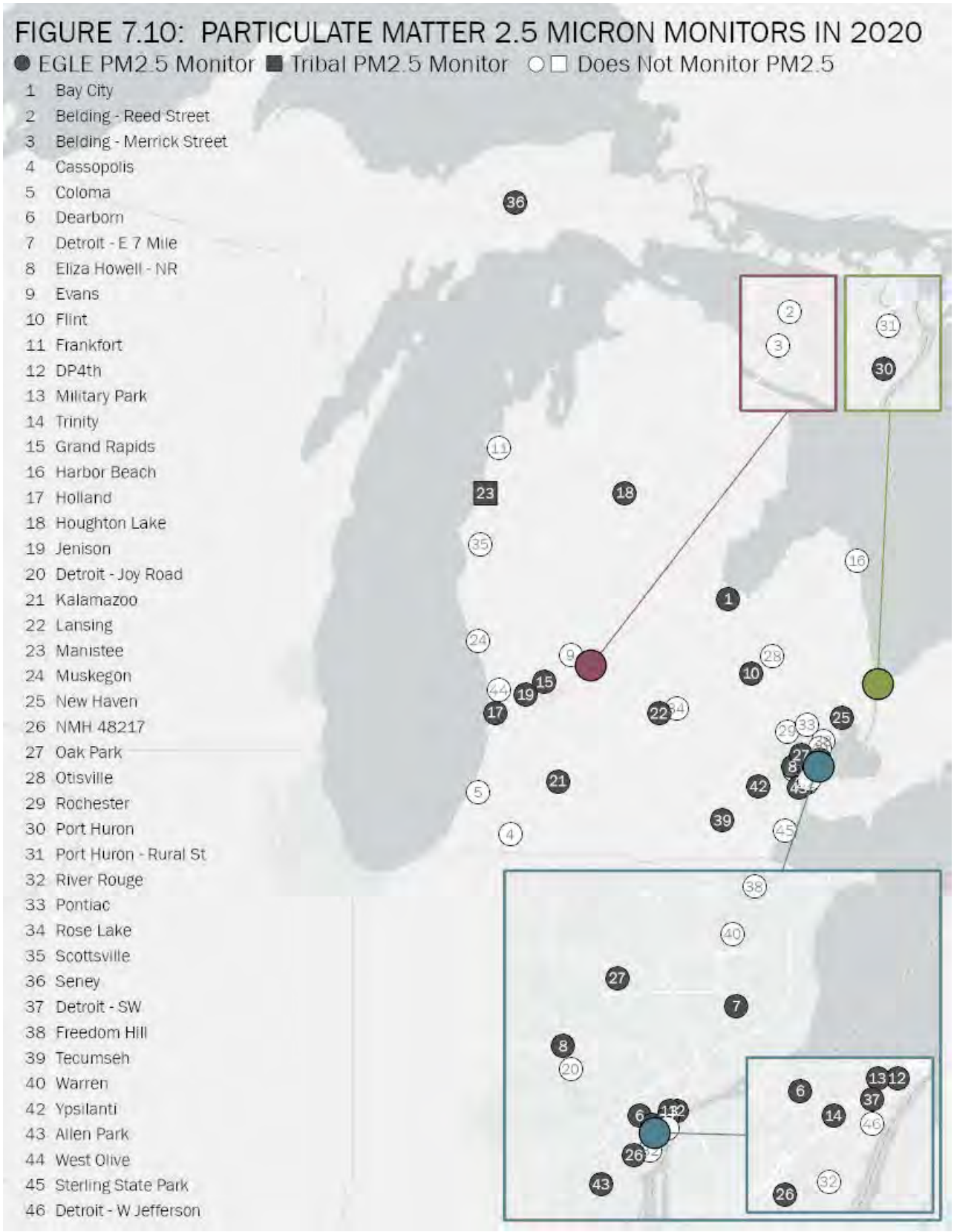
Figure 7.10 shows the location of each $PM_{2.5}$ monitor.

$PM_{2.5}$ FRM Monitoring Network: $PM_{2.5}$ FRM filter-based monitors are deployed to characterize background or regional $PM_{2.5}$ transport collectively from upwind sources as well as population-oriented sites. Several changes occurred in the FRM network in 2020.

- Loss of site access shut down: Livonia Near-road will be relocated, but a suitable replacement site has not been found yet.
- Collocation sites: Five $PM_{2.5}$ FRM monitoring sites are collocated with PM_{10} monitors to allow for $PM_{2.5}$ and PM_{10} comparisons.[8] Collocated PM_{10} and $PM_{2.5}$ sites include Dearborn and Detroit-SW. Allen Park, Grand Rapids, and Jenison also have collocated PM_{10} and $PM_{2.5}$ but monitors were switched from FRMs and TEOMs to continuous FEM T640X beginning January 1, 2021, which measure PM_{10}, $PM_{2.5}$ and PM coarse. The T640X particulate instruments determine the concentration of particulates in the air using a light scattering technique. The T640x is FEM for both $PM_{2.5}$ and PM_{10} and then it subtracts the two to get PM coarse.
- Switched FRM to BAMs: Holland, Bay City, and Ypsilanti (collocated with secondary FRM).
- Switched FRMs to T640s: Kalamazoo, New Haven, and Port Huron were switched to T640s in the fall, but FRMs were collocated at these sites until January 1, 2021. No T640 data is reported in 2020 for these sites. The T640 particulate instruments determine the concentration of particulates in the air using a light scattering technique, but the T640 primarily is used to measure $PM_{2.5}$.

[8] Requirements for $PM_{2.5}$ FRM sites are obtained from the Revised Requirements for Designation of Reference and Equivalent Methods for $PM_{2.5}$ and Ambient Air Quality Surveillance for PM [62 FR 38763]; Guidance for Using Continuous Monitors in $PM_{2.5}$ Monitoring Networks [EPA-454/R-98-012, May 1998]; and Appendix N to Part 50 - Interpretation of the National Ambient Air Quality Standards for PM [40 CFR Part 50, July 1, 1998].

Figure 7.10: $PM_{2.5}$ Monitors in 2020



Continuous $PM_{2.5}$ Network: Short-term measurements of $PM_{2.5}$ or PM_{10} are updated on an hourly basis using TEOM, BAM or T640 instruments. At least one continuous monitor is required at the NCore $PM_{2.5}$ monitoring site in a metropolitan area with a population greater than one million. Both Detroit (Allen Park) and Grand Rapids meet this requirement.[9] Under the revised 2006 air monitoring regulations, 50 percent of the FRM monitoring sites are now required to have a continuous $PM_{2.5}$ monitor. For Michigan, there are 13 FRM monitoring sites, 7 of which also had TEOMs or BAMs.

- T640 replaced TEOMS: Lansing switched to a T640 monitor in September 2020 and is running a collocated filter-based FRM. The T640 data will not be reported until 2021.
- GHIB project: DP4th, Trinity, Military Park and Detroit-SW were switched from BAMs to T640s in fall 2020. These T640 data are reported in the 2020 report.

Speciation Monitors: Speciation monitors consist of filter-based, 24-hour monitors and continuous speciation monitors, aethalometers. Continuous monitors are used to determine diurnal changes in $PM_{2.5}$ composition.

- 24-hour speciation monitors: Allen Park and Grand Rapids (NCore sites), Dearborn (NATTS site), and Detroit-SW. The Tecumseh speciation monitor was shut down in 2019. These monitors are placed in population-oriented stations in both urban and rural locations. $PM_{2.5}$ chemical speciation samples are collected over a 24-hour period and analyzed to determine various components of $PM_{2.5}$. The primary objectives of the chemical speciation monitoring sites are to provide data that will be used to determine sources of poor air quality and to support the development of attainment strategies. Historical speciation data for Michigan indicates that $PM_{2.5}$ is made up of 30 percent nitrate compounds, 30 percent sulfate compounds, 30 percent organic carbon,[10] and 10 percent unidentified or trace elements.
- Aethalometers: Allen Park, Dearborn, and the GHIB project (DP4th, Trinity, Military Park, and Detroit-SW started in 2018). These continuous monitors measure black carbon, a combustion by-product typical of transportation sources.

Table 1.2 in Chapter 1 shows all of Michigan's $PM_{2.5}$ FRM monitoring stations operating in 2020 and denotes which sites have TEOM, FEM, Speciation, or Aethalometer monitors in operation.

[9] Under the Guidance for Using Continuous Monitors in $PM_{2.5}$ Monitoring Networks [EPA-454/R-98-012, May 1998].
[10] To better understand the chemical composition of the organic carbon fraction, several studies have been conducted in Southeast Michigan to further investigate organic carbon. Information can be found in the Michigan 2012 Ambient Air Monitoring Network Review, available at http://www.michigan.gov/documents/deq/deq-aqd-aqe-2012-Air-Mon-Network-Review_357137_7.pdf

Table 7.1 provides the design value, the 3-year average of the annual mean $PM_{2.5}$ concentrations for 2018-2020. Michigan's levels are below the 12 µg/m^3 primary standard.[11]

Table 7.1: 3-Year Average of the Annual Mean $PM_{2.5}$ Concentrations for 2018-2020

Areas	County	Monitoring Sites	2018	2019	2020	2018-2020 Mean
Detroit-Ann Arbor	Lenawee	Tecumseh	8.4	8.5	8.2	8.3
Detroit-Ann Arbor	Macomb	New Haven	7.8	7.3	6.0	7.0
Detroit-Ann Arbor	Oakland	Oak Park	8.3	7.7	7.4	7.8
Detroit-Ann Arbor	St. Clair	Port Huron	8.1	7.6	6.7	7.5
Detroit-Ann Arbor	Washtenaw	Ypsilanti	8.3	8.4	8.2	8.3
Detroit-Ann Arbor	Wayne	Allen Park	9.1	8.7	7.5	8.4
Detroit-Ann Arbor	Wayne	Detroit-Linwood	8.86	--	--	8.9
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	8.4	7.6	7.5	7.8
Detroit-Ann Arbor	Wayne	Detroit-SW	11.5	12.1	9.1	10.9
Detroit-Ann Arbor	Wayne	Detroit-W. Lafayette	8.9*	--	--	8.9
Detroit-Ann Arbor	Wayne	Wyandotte	8.0	--	--	8.0
Detroit-Ann Arbor	Wayne	Dearborn	10.6	9.9	9.4	10.0
Detroit-Ann Arbor	Wayne	Livonia	7.4*	--	--	7.4
Detroit-Ann Arbor	Wayne	Livonia-Roadway	9.0	8.4*	--	8.7
Detroit-Ann Arbor	Wayne	Eliza Howell-NR	--	--	10.6	10.6
Flint	Genesee	Flint	7.4	7.2	6.0	6.9
Grand Rapids	Ottawa	Jenison	8.3*	8.3	7.4	8.0
Grand Rapids	Kent	Grand Rapids	8.2	8.00	7.7	8.0
Allegan Co	Allegan	Holland	7.6	7.2	6.0	6.9
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	8.4	7.2	7.6	7.8
Lansing-East Lansing	Ingham	Lansing	7.7**	7.3	7.1	7.4
Bay Co	Bay	Bay City	7.1	6.8	4.7	6.2
Missaukee Co	Missaukee	Houghton Lake	5.4	5.8	8.0	6.4
Manistee Co	Manistee	Manistee	6.1	4.9*	5.1*	5.4
Schoolcraft Co	Schoolcraft	Seney	4.1*	4.2	4.6*	4.3

*Indicates site does not have a complete year of data.

**Indicates site was moved during the year and concentrations were averaged together for both locations.

[11] For comparison to the standard, the average annual means is rounded to the nearest 0.1 µg/m^3.

Table 7.2 provides the 24-hour 98th percentile $PM_{2.5}$ concentrations for 2018-2020 showing Michigan's levels are below the 35 µg/m^3 standard (3-year average).[12]

Table 7.2: 24-Hour 98th Percentile $PM_{2.5}$ Concentrations for 2018-2020

Areas	County	Monitoring Sites	2018	2019	2020	2018-2020 Mean
Detroit-Ann Arbor	Lenawee	Tecumseh	24.2	22.1	18.7	22
Detroit-Ann Arbor	Macomb	New Haven	18.9	18.7	15.5	18
Detroit-Ann Arbor	Oakland	Oak Park	20.1	18.2	23.3	21
Detroit-Ann Arbor	St. Clair	Port Huron	19.6	20.3	16.6	19
Detroit-Ann Arbor	Washtenaw	Ypsilanti	21.3	22.0	19.8	21
Detroit-Ann Arbor	Wayne	Allen Park	22.8	22.0	26.3	24
Detroit-Ann Arbor	Wayne	Detroit-Linwood	18.6	--	--	19
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	21.5	19.6	17.7	20
Detroit-Ann Arbor	Wayne	Detroit-SW	28.1	30.6	24.1	28
Detroit-Ann Arbor	Wayne	Detroit-W. Lafayette	8.9*	--	--	8.9
Detroit-Ann Arbor	Wayne	Wyandotte	20.4	--	--	20
Detroit-Ann Arbor	Wayne	Dearborn	26.1	24.0	21.0	24
Detroit-Ann Arbor	Wayne	Livonia	18.1*	--	--	18
Detroit-Ann Arbor	Wayne	Livonia-Roadway	22.8*	29.0	--	26
Detroit-Ann Arbor	Wayne	Eliza Howell-NR	--	--	23.2	23
Flint	Genesee	Flint	22.2	18.9	14.5	19
Grand Rapids	Ottawa	Jenison	22.3*	24.4	17.9	22
Grand Rapids	Kent	Grand Rapids	18.9	23.2	17.6	20
Allegan Co	Allegan	Holland	21.2	18.2	13.1	18
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	19.0	16.9	18.0	18
Lansing-East Lansing	Ingham	Lansing	23.5**	22.3*	21.6	22
Bay Co	Bay	Bay City	17.8	17.5	14.0	16
Missaukee Co	Missaukee	Houghton Lake	16.2	15.1	15.2	16
Manistee Co	Manistee	Manistee	16.9	14.9*	13.3*	15
Schoolcraft Co	Schoolcraft	Seney	19.0*	14.1	10.6*	15

*Indicates site does not have a complete year of data.

**Indicates site was moved during the year and concentrations were averaged together for both locations.

[12] The 98th percentile value was obtained from the USEPA AQS. For comparing calculated values to the standard, the 3-year, 24-hour average is rounded to the nearest 1 µg/m^3.

Figures 7.11 through **7.14** illustrate the current annual mean $PM_{2.5}$ trend for each monitoring site in Michigan. For clarity, the monitoring sites within the Detroit-Warren-Flint CSA have been broken down into two graphs.

Figure 7.11 shows the 2020 levels in Wayne County remained below the $PM_{2.5}$ NAAQS standard. Historically, Dearborn has had the highest concentrations in the state, but Detroit-SW now has the highest concentrations. All sites are below the annual $PM_{2.5}$ NAAQS standard. The Gordie Howe International Bridge sites are included in these graphs.

Figure 7.12 contains the remainder of those sites in the Detroit-Warren-Flint CSA that are outside of Wayne County. These sites also show readings in 2020 are below the $PM_{2.5}$ NAAQS.

Figure 7.13 combines the $PM_{2.5}$ monitoring sites located in West Michigan-Grand Rapids-Muskegon-Holland CSA, Kalamazoo, and Benton Harbor MSAs. All sites are below the annual $PM_{2.5}$ NAAQS.

Figure 7.14 displays the remaining monitoring sites in the Northern Lower and Upper Peninsulas. All sites are below the annual $PM_{2.5}$ NAAQS standard.

Figure 7.11: Detroit-Warren-Flint CSA (Wayne County Only)
Annual Arithmetic Means for $PM_{2.5}$ from 2015-2020

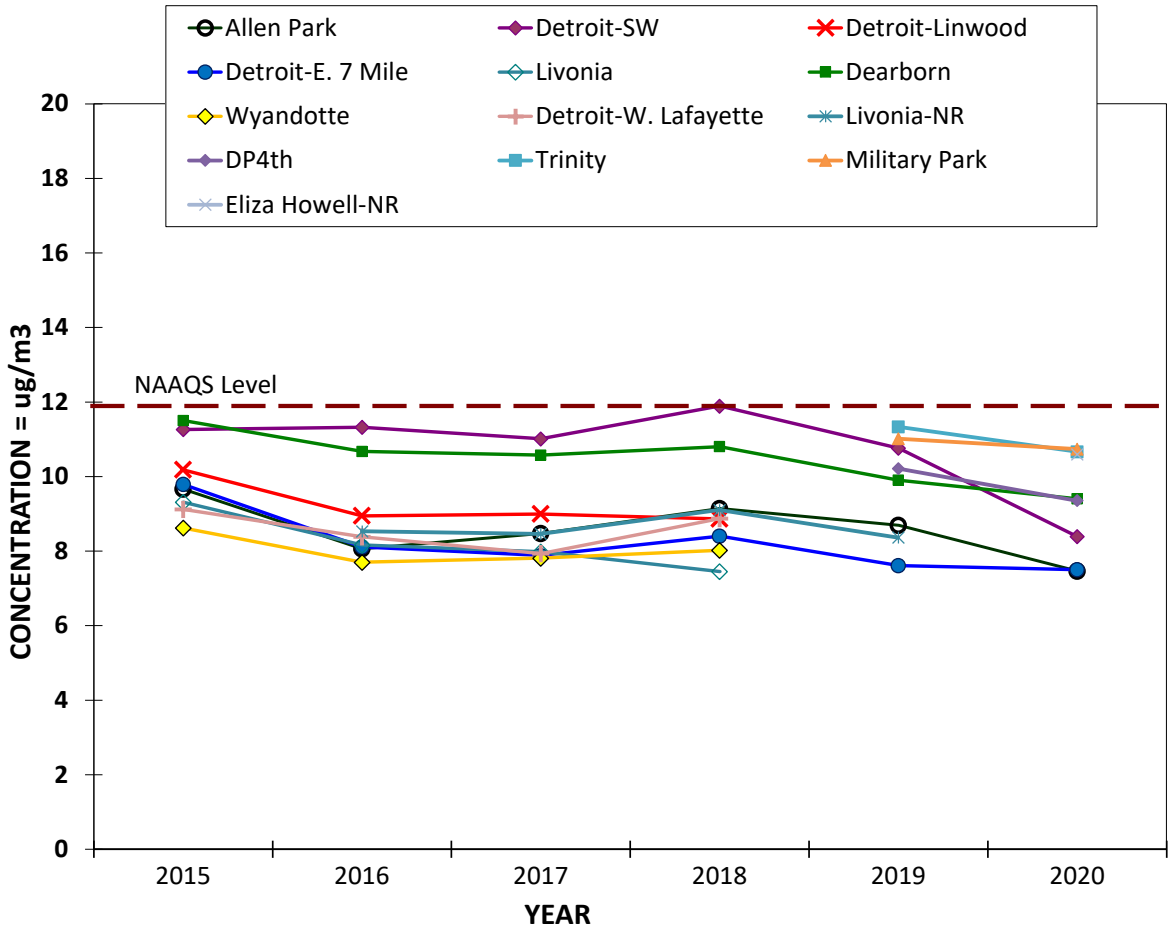


Figure 7.12: Detroit-Warren-Flint CSA (without Wayne County) Annual Arithmetic Means for $PM_{2.5}$ from 2015-2020

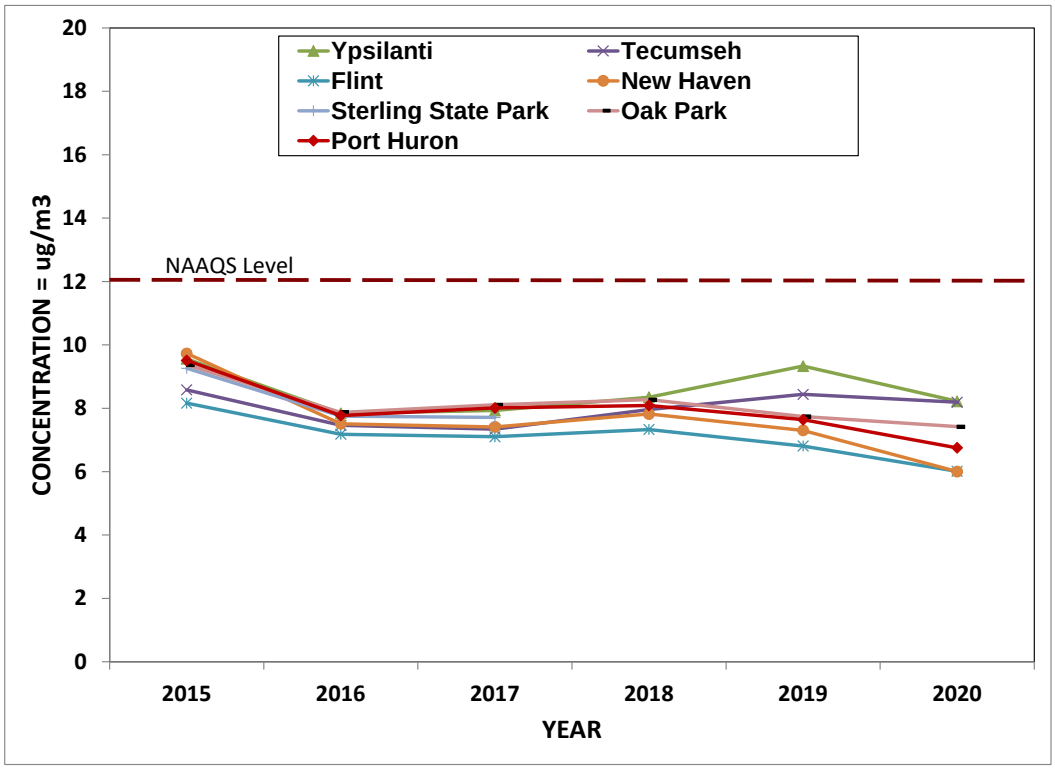


Figure 7.13: West MI - Grand Rapids-Muskegon-Holland CSA, Kalamazoo, and Benton Harbor MSAs Annual Arithmetic Means for $PM_{2.5}$ from 2015-2020

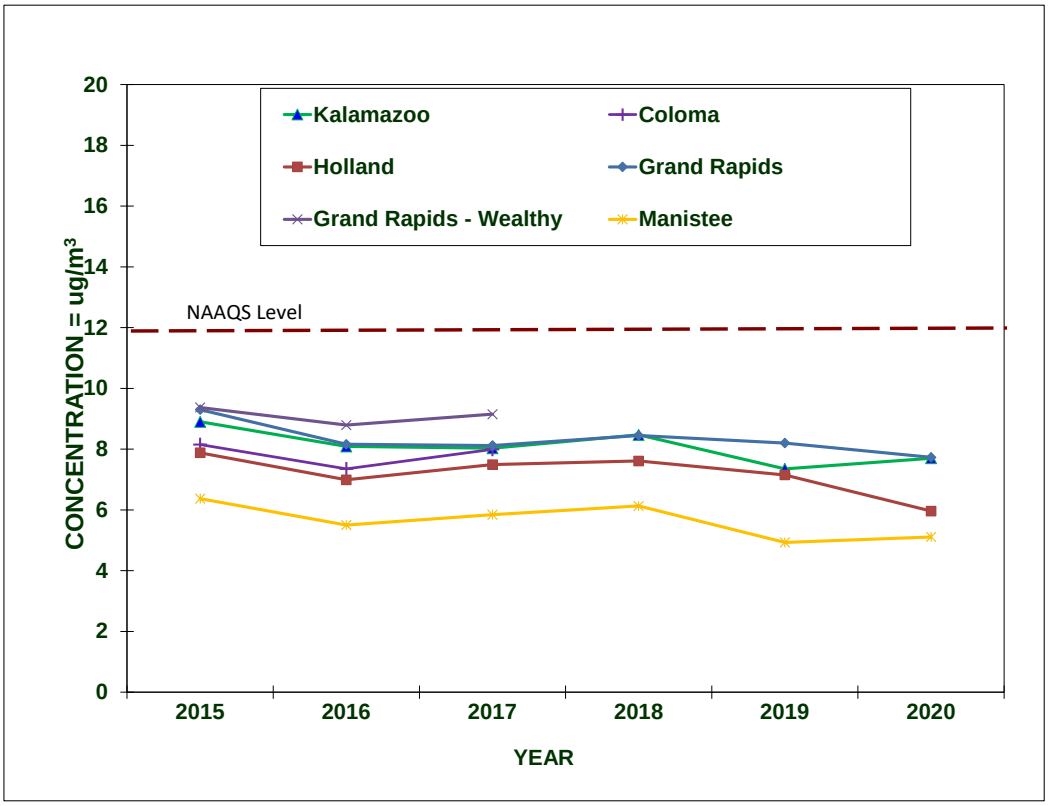


Figure 7.14: Lansing-E. Lansing CSA, Saginaw-Bay City CSA, Cadillac MSA and Upper Peninsula Annual Arithmetic Means for $PM_{2.5}$ from 2015-2020

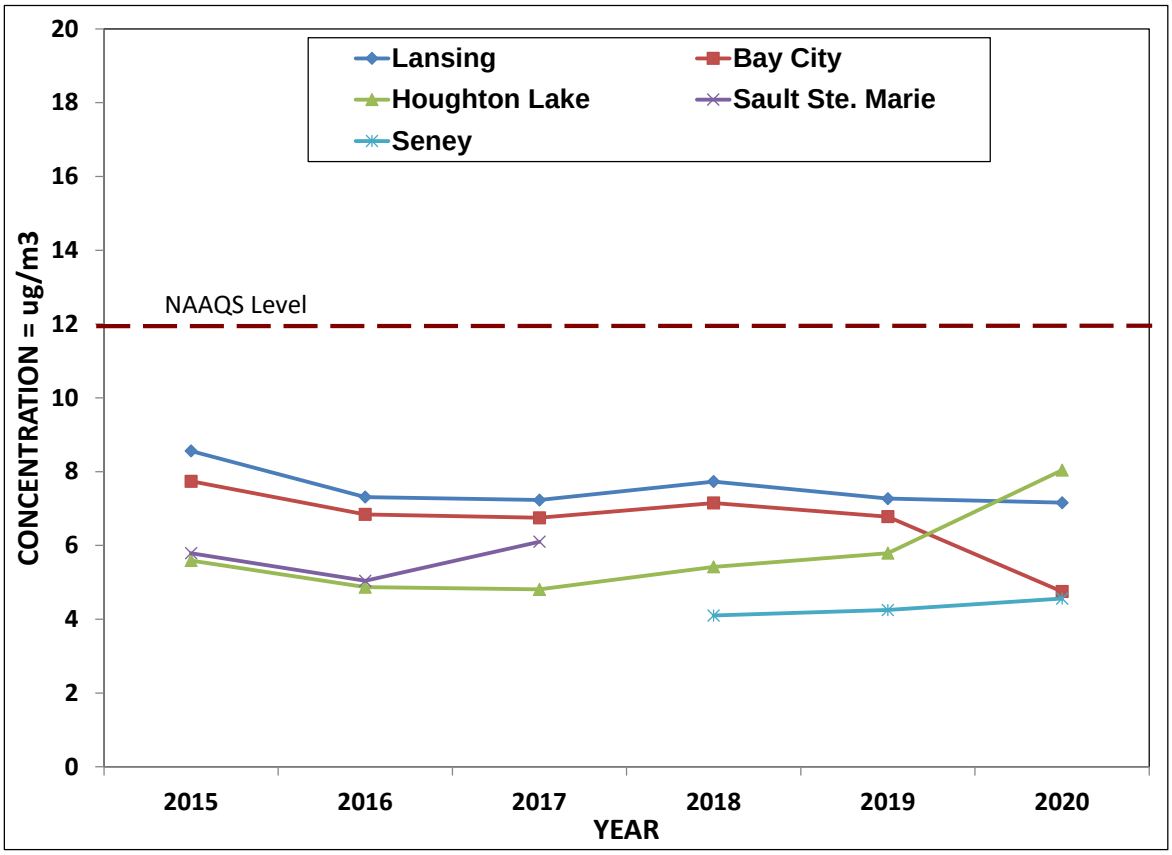
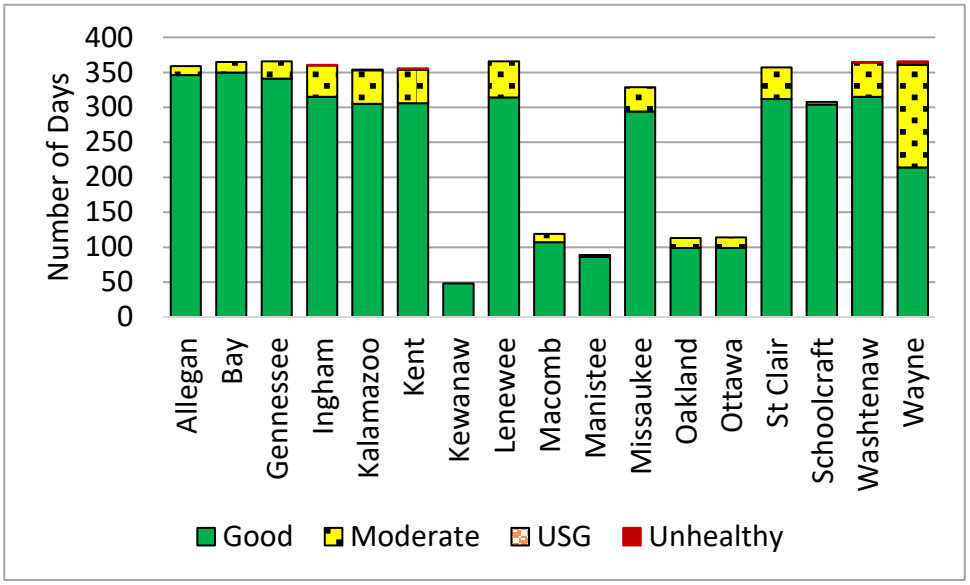


Figure 7.15 shows the AQI values per day in counties where $PM_{2.5}$ is monitored. Most days were in the good to moderate AQI range. Three counties had five days in the USG AQI range, Kalamazoo, and Kent County each had one day, and Wayne County had three days in the USG AQI range. Four counties had AQI values in the Unhealthy range; Ingham, Kent, and Washtenaw Counties had one day, and Wayne County had two days. All these days occurred on July 4th or 5th most likely due to fireworks.

Figure 7.15: 2020 AQI Days for $PM_{2.5}$ in Michigan



CHAPTER 8: TOXIC AIR POLLUTANTS

In addition to the six criteria pollutants discussed in previous chapters, the AQD monitors for a wide variety of substances classified as toxic air pollutants, and/or Hazardous Air Pollutants (HAPs). Under the Clean Air Act, the USEPA specifically addresses a group of 187 HAPs. Under Michigan's air regulations, Toxic Air Contaminants (TACs) are defined as all non-criteria pollutants that may be "*…harmful to public health or the environment when present in the outdoor atmosphere in sufficient quantities and duration.*" The definition of TACs lists 42 substances that are not TACs, indicating that all others are TACs. The sources and effects of toxics are as follows:

Sources: Air toxics come from a variety of mobile, stationary, and indoor man-made sources as well as outdoor natural sources. Mobile sources include motor vehicles, stationary sources include industrial factories and power plants, indoor sources include household cleaners, and natural sources include forest fires and eruptions from volcanoes.

Effects: Once air toxics enter the body, there is a wide range of potential health effects. They include: the aggravation of asthma; irritation to the eyes, nose, and throat; carcinogenicity; developmental toxicity (birth defects); nervous system effects; and various other effects on internal organs. Some effects appear after a shorter period of exposure, while others may appear after long-term exposure or after a long period of time has passed since the exposure ended. Most toxic effects are not unique to one substance, and some effects may be of concern only after the substance has deposited to the ground or to a water body (e.g., mercury, dioxin), followed by exposure through an oral pathway such as the eating of fish or produce. This further complicates the assessment of air toxics concerns due to the broad range of susceptibility that various people may have.

Population most at risk: People with asthma, children, and the elderly are generally at the highest risk for health effects from exposure to air toxics.

Air Toxics can be categorized as:

- **Metals:** Examples include aluminum, arsenic, beryllium, barium, cadmium, chromium, cobalt, copper, iron, mercury, manganese, molybdenum, nickel, lead, vanadium, and zinc.
- **Organic Substances:** Further divided into sub-categories that include –
    - VOCs, include benzene (found in gasoline), perchloroethylene (emitted from some dry-cleaning facilities), and methylene chloride (a solvent and paint stripper used by industry);
    - carbonyl compounds (formaldehyde, acetone, and acetaldehyde);
    - semi-volatile compounds (SVOCs);
    - polycyclic aromatic hydrocarbons (PAHs)/polynuclear aromatic hydrocarbons (PNAs);
    - pesticides and;
    - polychlorinated biphenyls (PCBs).
- **Other substances:** Asbestos, dioxin, and radionuclides such as radon.

Because air toxics are such a large and diverse group of substances, regulatory agencies sometimes further refine these classifications to address specific concerns.

For example:

- Some initiatives have targeted those substances that are persistent, bioaccumulative and toxic (PBT), such as mercury, which accumulates in body tissues.
- The USEPA has developed an Integrated Urban Air Toxics Strategy with a focus on 30 substances (the Urban HAPs List).[13]

The evaluation of air toxics levels is difficult due to several factors.

- There are no health-protective NAAQS. Instead, air quality assessments utilize various short- and long-term screening levels and health-based levels estimated to be safe considering the critical effects of concern for specific substances.
- There is incomplete toxicity information for many substances. For some air toxics, the analytical detection limits are too high to consistently measure the amount present, and in some cases, the risk assessment-based levels are below the detection limits.
- Data gaps are present regarding the potential for interactive toxic effects for co-exposure to multiple substances present in emissions and in ambient air. Air toxics also pose a challenge due to monitoring and analytical methods that are either unavailable for some compounds or cost-prohibitive for others (e.g., dioxins).

These factors make it difficult to accurately assess the potential health concerns of all air toxics. Nevertheless, it is feasible and important to characterize the potential health hazards and risks associated with many air toxics.

Table 8.1 shows the monitoring stations and what air toxic was monitored at each station in 2020. This table can also be found in **Appendix B** with the Air Toxics Monitoring Summary.

[13] USEPA's Air Toxics website: Urban Strategy is located at www.epa.gov/urban-air-toxics.

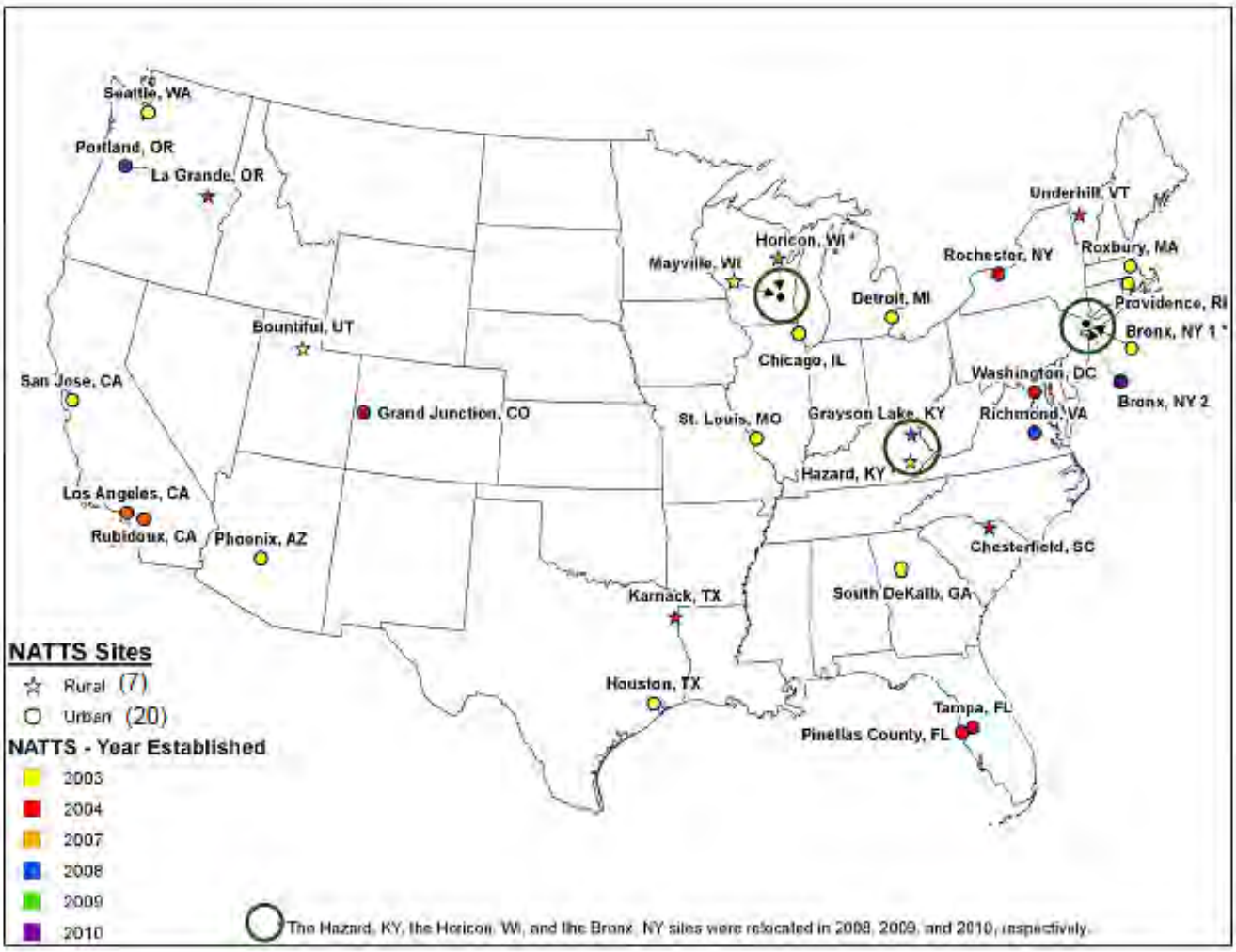
Table 8.1: 2019 Toxics Sampling Sites

Site Name	VOC	Carbonyl	PAHs	Metals TSP	Metals PM_{10}	Speciated $PM_{2.5}$
Allen Park				x		x
Dearborn	x	x	x	x	x	x
Detroit-SW	x	x		x		x
Detroit-W. Jefferson				x		
Grand Rapids				x		x
Belding-Merrick St.				x		
NMH 48217				x		
Port Huron-Rural St.				x		
River Rouge		x		x		
DP4th				x		
Military Park				x		
Trinity				x		

National Monitoring Efforts and Data Analysis

The USEPA administers national programs that identify air toxics levels, detect trends, and prioritize air toxics research. EGLE participates in these programs. In addition, the AQD operates a site in Dearborn that is part of the USEPA's NATTS. The purpose of the NATTS network is to detect trends in high-risk air toxics such as benzene, formaldehyde, chromium, and 1,3-butadiene and to measure the progress of air toxics regulatory programs at the national level. Currently, the NATTS network contains 27 stations; 20 urban and 7 rural (see **Figure 8.1**). The USEPA requires that the NATTS sites measure VOCs, carbonyls, PAHs, and trace metals on a once-every-six-day sampling schedule. The Dearborn NATTS site measures trace metals as TSP, PM_{10}, and $PM_{2.5}$.

Figure 8.1: National Air Toxics Trends Sites



CHAPTER 9: METEOROLOGICAL INFORMATION

Figures 9.1 through **9.3** show average daily temperatures, and **Figures 9.4** through **9.6** show total monthly precipitation amounts compared to their climatic norms for sites in the Northern Lower, Southern Lower, and Upper Peninsulas. These figures were constructed by averaging data from several National Weather Service stations and therefore are not meant to be representative of any one single location in Michigan. Instead, they are intended to depict the regional trends that occurred during the year 2020.

Figure 9.1: Southern Lower Peninsula Observed Average Monthly Temperatures vs. Normal Average Monthly Temperatures

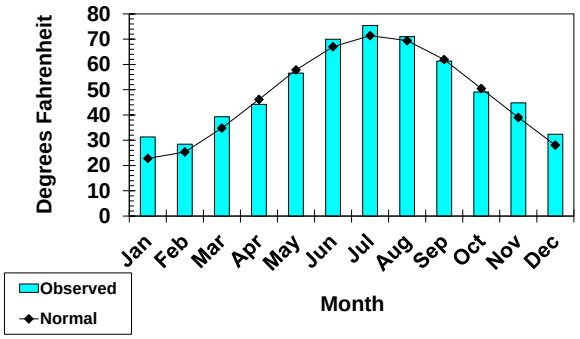


Figure 9.2: Northern Lower Peninsula Observed Average Monthly Temperatures vs. Normal Average Monthly Temperatures

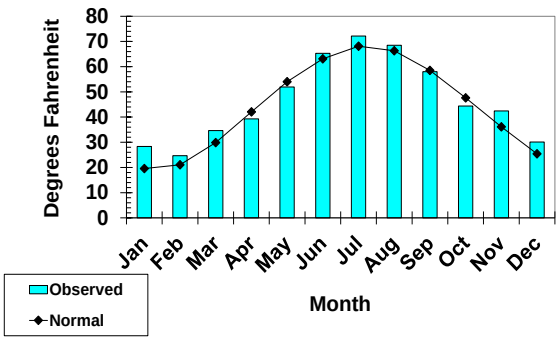


Figure 9.3: Upper Peninsula Observed Average Monthly Temperatures vs. Normal Average Monthly Temperatures

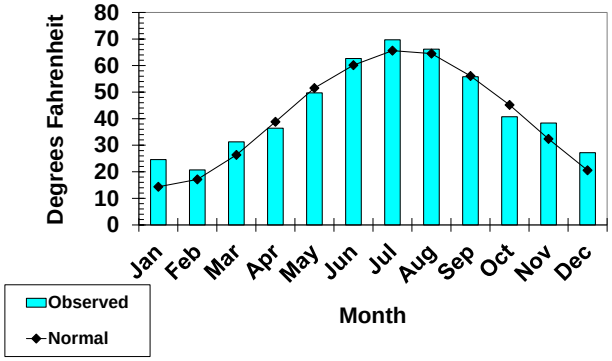


Figure 9.4: Southern Lower Peninsula Observed Monthly Precipitation vs. Normal Monthly Precipitation

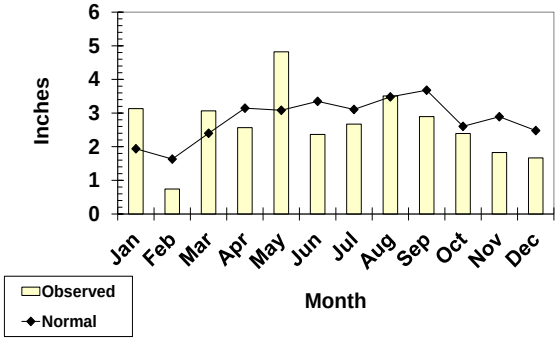


Figure 9.5: Northern Lower Peninsula Observed Monthly Precipitation vs. Normal Monthly Precipitation

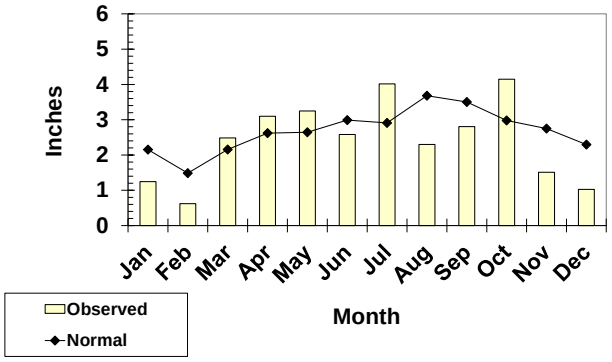
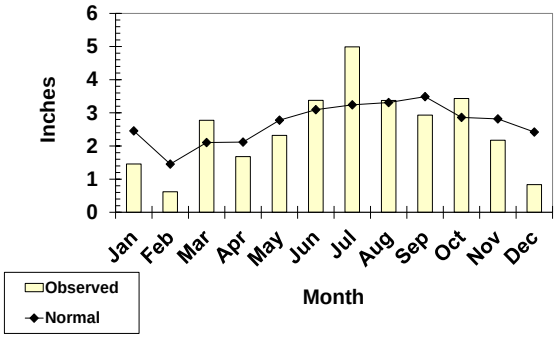


Figure 9.6: Upper Peninsula Observed Monthly Precipitation vs. Normal Monthly Precipitation



CHAPTER 10: SPECIAL PROJECTS

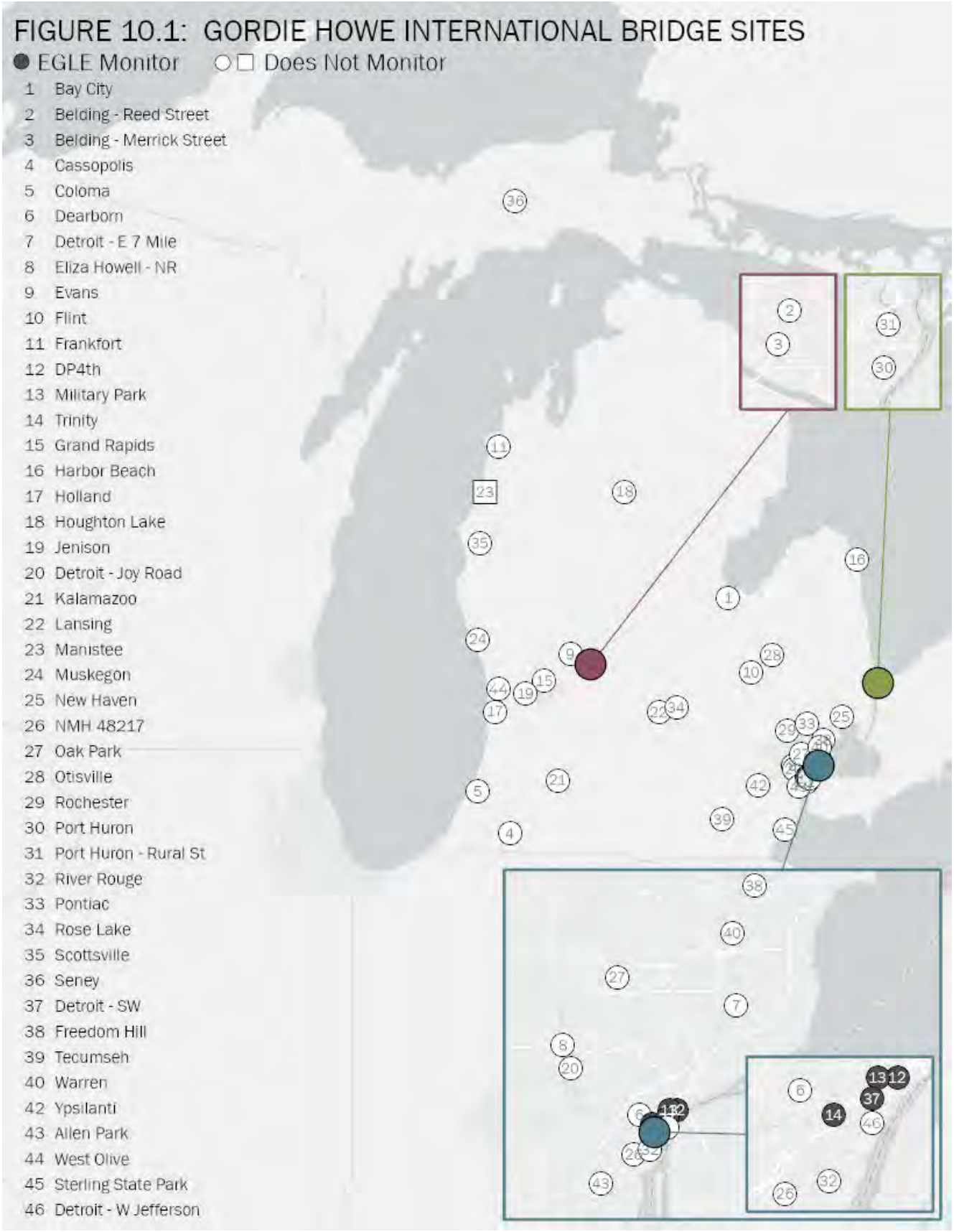
EGLE continues the sampling for the Gordie Howe International Bridge (GHIB). This project is a joint Canadian-American venture. The GHIB will be built linking Windsor, Ontario and Detroit, Michigan. Construction is slated to occur between 2018-2024. For additional information, go to: GordieHoweInternationalBridge.com.

EGLE is conducting ambient air quality monitoring in the Delray community to ascertain air pollution levels in the community. The three new sites will monitor air pollutants before, during, and after construction of the bridge. In addition, NOx, continuous $PM_{2.5}$, and black carbon were added to the Detroit-SW (261630015) monitoring site for this project.

- **Trinity (261630098)**: Meteorological parameters, NOx, SO_2, CO, continuous $PM_{2.5}$, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **DP4TH (261630099)**: NOx, SO_2, CO, continuous $PM_{2.5}$, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **Military Park (261630100)**: NOx, SO_2, continuous $PM_{2.5}$, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **Detroit-SW (261630015):** Meteorological parameters, NOx, SO_2, continuous $PM_{2.5}$, $PM_{2.5}$ Speciated, PM_{10}, black carbon, VOCs, carbonyls, and five trace metals (Pb, Mn, As, Cd, and Ni).

The data from these sites is reported along with the other sites in the previous chapters and in the following appendices.

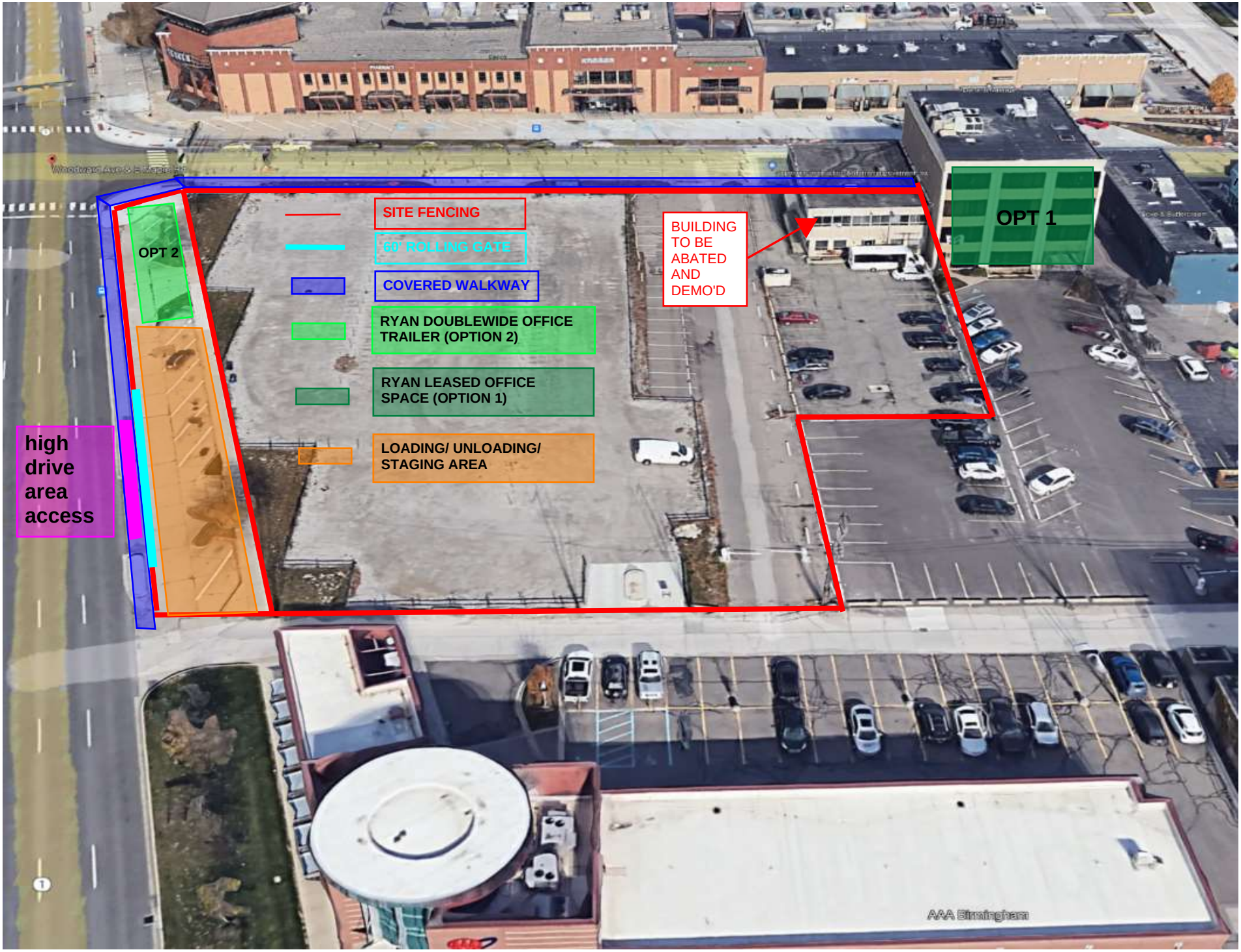
Figure 10.1: Gordie Howe International Bridge Sites



Section 4.9

Construction Phasing Plan

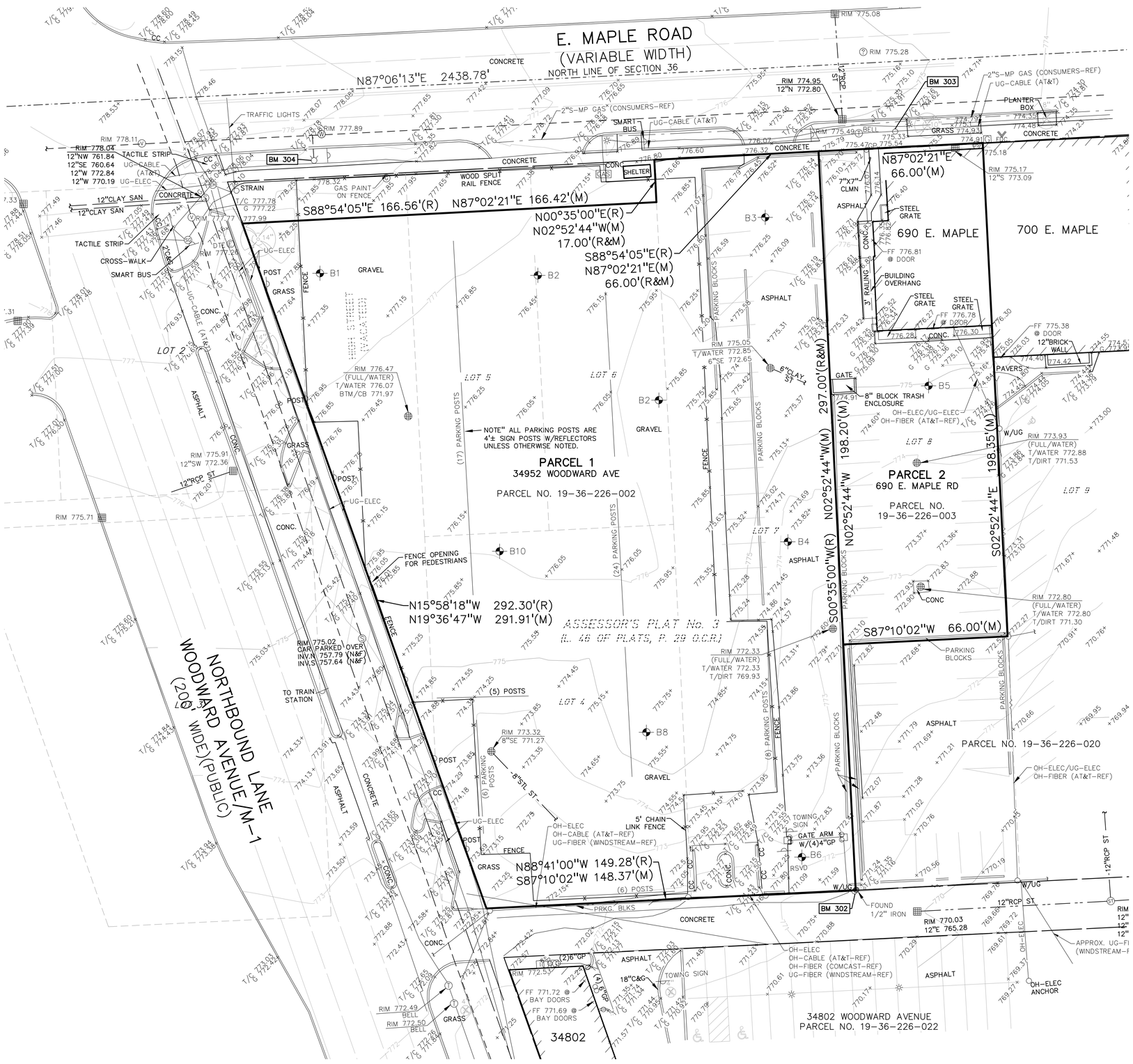
Ryan Companies US, Inc.


SITE FENCING
60' ROLLING GATE
COVERED WALKWAY
RYAN DOUBLEWIDE OFFICE TRAILER (OPTION 2)
RYAN LEASED OFFICE SPACE (OPTION 1)
LOADING/ UNLOADING/ STAGING AREA
OPT 1
OPT 2
BUILDING TO BE ABATED AND DEMO'D
high drive area access
AAA Birmingham

Section 4.10

Civil Package

Ryan Companies US, Inc.



LEGEND:

- EX. OH, ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC.MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND, & BEEHIVE CATCH BASIN
- EX. YARD DRAIN & ROOF DRAIN
- EX. UNIDENTIFIED STRUCTURE
- EX. MAILBOX, SIGN & LIGHTPOLE
- EX. FENCE
- EX. GUARD RAIL
- EX. SPOT ELEVATION
- EX. CONTOUR
- EX. WETLAND
- IRON FOUND / SET
- NAIL FOUND / NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND / SET
- SECTION CORNER FOUND
- RECORDED / MEASURED / CALCULATED

R M C

REFERENCE DRAWINGS:

TOPOGRAPHIC SURVEY, PEA JOB NO. 2018-349, DATED 11/18/2018	
CABLE	AT&T MAP A1, DATED 01/13/2023
FIBER OPTIC	COMCAST CABLE MAP, EMAIL DATED 01/10/2023 WINDSTREAM MAP, EMAIL DATED 01/05/2023
GAS	CONSUMERS MAP 060361, DATED 10/26/22

CITY OF BIRMINGHAM BENCHMARKS:

CITY BM #6
NORTHEAST CORNER OF ADAMS & MAPLE.
ELEV. - 765.61

REFERENCE BENCHMARKS
(Per PEA Job No. 2018-349)

REF. BM #300:
TOP NUT ON HYDRANT, SOUTH SIDE OF MAPLE ROAD, APPROX. 45 FEET NORTHEAST OF THE NORTHEAST CORNER OF BUILDING #920-970.
ELEV. - 770.33

REF. BM #301:
PK NAIL IN NORTHWEST FACE OF THE 2ND UTILITY POLE EAST OF ELM STREET, APPROX. 115 FEET EAST OF THE MOST SOUTHEAST CORNER OF BUILDING #219.
ELEV. - 768.49

BM #302
FOUND NAIL IN THE SOUTH FACE OF A UTILITY POLE LOCATED ON THE NORTH SIDE OF THE ALLEY AT THE SOUTHEAST PROPERTY CORNER.
ELEV.- 777.63
(REVISED LOCATION)

BM #303
TOP/SOUTHWEST ANCHOR BOLT ON A LIGHT POLE LOCATED ON THE SOUTH SIDE OF E. MAPLE ROAD, APPROX. 15'± NORTHEAST OF THE NORTHWEST BUILDING CORNER OF 690 E. MAPLE.
ELEV.- 777.67

BM #304
ARROW ON TOP/HYDRANT LOCATED ON THE SOUTH SIDE OF E. MAPLE ROAD, APPROX. 30'± EAST OF WOODWARD AVENUE.
ELEV.- 779.88

LEGAL DESCRIPTION:
(Per First American Title Insurance Company, Commitment No. 968431)

Land in the City of Birmingham, Oakland County, MI, described as follows:

PARCEL 1:
Part of Lot 6 and all of Lot 7 and part of Lots 2, 4 and 5 of ASSESSOR'S PLAT NO. 3 according to the plat thereof recorded in Liber 46 of Plats, Page 29 of Oakland County Records and part of vacated High Street, all being more fully described as follows: Beginning at a point at the intersection of the East line of Hunter Boulevard and the South line of Maple Road, as originally established; thence in a Southeasterly direction along the East line of Hunter Boulevard, 310.08 feet to a point on the South line of Lot 4; thence Easterly along the South line of Lots 4 and 7, 149.28 feet to the Southeast corner of Lot 7; thence Northerly along the Easterly line of Lot 7, 297.00 feet to a point; thence Westerly in a straight line along the Northerly line of Lots 7, 6, 5 and 2, 237.63 feet to the Point of Beginning. EXCEPT the North 17.00 feet of Lots 2, 5 and 6 and vacated High Street as set forth in Liber 2266, page 205, Oakland County Records.

PARCEL 1 ALSO DESCRIBED AS:
Lot 7, part of Lots 2, 4, 5, 6 and part of vacated High Street of ASSESSOR'S PLAT NO. 3 according to the plat thereof recorded in Liber 46 of Plats, Page 29 of Oakland County Records, described as: Beginning at the Northeast corner of said Lot 7; thence South 00 degrees 35 minutes 00 seconds West, along the East line of said Lot 7 a distance of 297.00 feet; thence North 88 degrees 41 minutes 00 seconds West, 149.28 feet to the Easterly line of 204.00 foot wide Woodward Avenue; thence North 15 degrees 58 minutes 18 seconds West along said Easterly line 292.30 feet to the South line of 83.00 foot wide Maple Road; thence South 88 degrees 54 minutes 05 seconds East along said South line 166.56 feet to the West line of said Lot 7; thence North 00 degrees 35 minutes 00 seconds East along said West line 17.00 feet to the South line of 66.00 foot wide Maple Road; thence South 88 degrees 54 minutes 05 seconds East, along said South line 66.00 feet to the Point of Beginning.

PARCEL 2:
Lot 8, EXCEPT the South 98.8 feet of

FLOODPLAIN NOTE:
BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AN AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FLOOD INSURANCE RATE MAP NUMBER 26125C0537F, DATED SEPTEMBER 29, 2006.

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH

0 10 20 40
SCALE: 1" = 20'

811 Know what's below. Call before you dig.

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO WARRANTIES EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
RYAN COMPANIES
700 OAKMONT LANE, SUITE 100
WESTMONT, ILLINOIS 60559

PROJECT TITLE
BIRMINGHAM MIXED USE DEVELOPMENT
SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
FEBRUARY 03, 2023

DRAWING TITLE
TOPOGRAPHIC SURVEY

PEA JOB NO.	2022-1461
P.M.	JBT
DN.	KFP
DES.	DSK

DRAWING NUMBER:
P-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022-2022-1461 RYAN - BIRMINGHAM MP\DWG\SITE_PLAN\(P-1.0)TOPO-22-1461.dwg PLOT DATE: 2/2/2023
BY: Kyle Franson

LEGAL DESCRIPTION
(per First American Title Insurance Company, Commitment No.: 968431, Commitment Date: November 04, 2022)

Land in the City of Birmingham, Oakland County, MI, described as follows:

PARCEL 1:
Part of Lot 6 and all of Lot 7 and part of Lots 2, 4 and 5 of ASSESSOR'S PLAT NO. 3 according to the plat thereof recorded in Liber 46 of Plats, Page 29 of Oakland County Records and part of vacated High Street, all being more fully described as follows: Beginning at a point at the intersection of the East line of Hunter Boulevard and the South line of Maple Road, as originally established; thence in a Southeasterly direction along the East line of Hunter Boulevard, 310.08 feet to a point on the South line of Lot 4; thence Easterly along the South line of Lots 4 and 7, 149.28 feet to the Southeast corner of Lot 7; thence Northerly along the Easterly line of Lot 7, 297.00 feet to a point; thence Westerly in a straight line along the Northerly line of Lots 7, 6, 5 and 2, 237.63 feet to the Point of Beginning. EXCEPT the North 17.00 feet of Lots 2, 5 and 6 and vacated High Street as set forth in Liber 2266, page 205, Oakland County Records.

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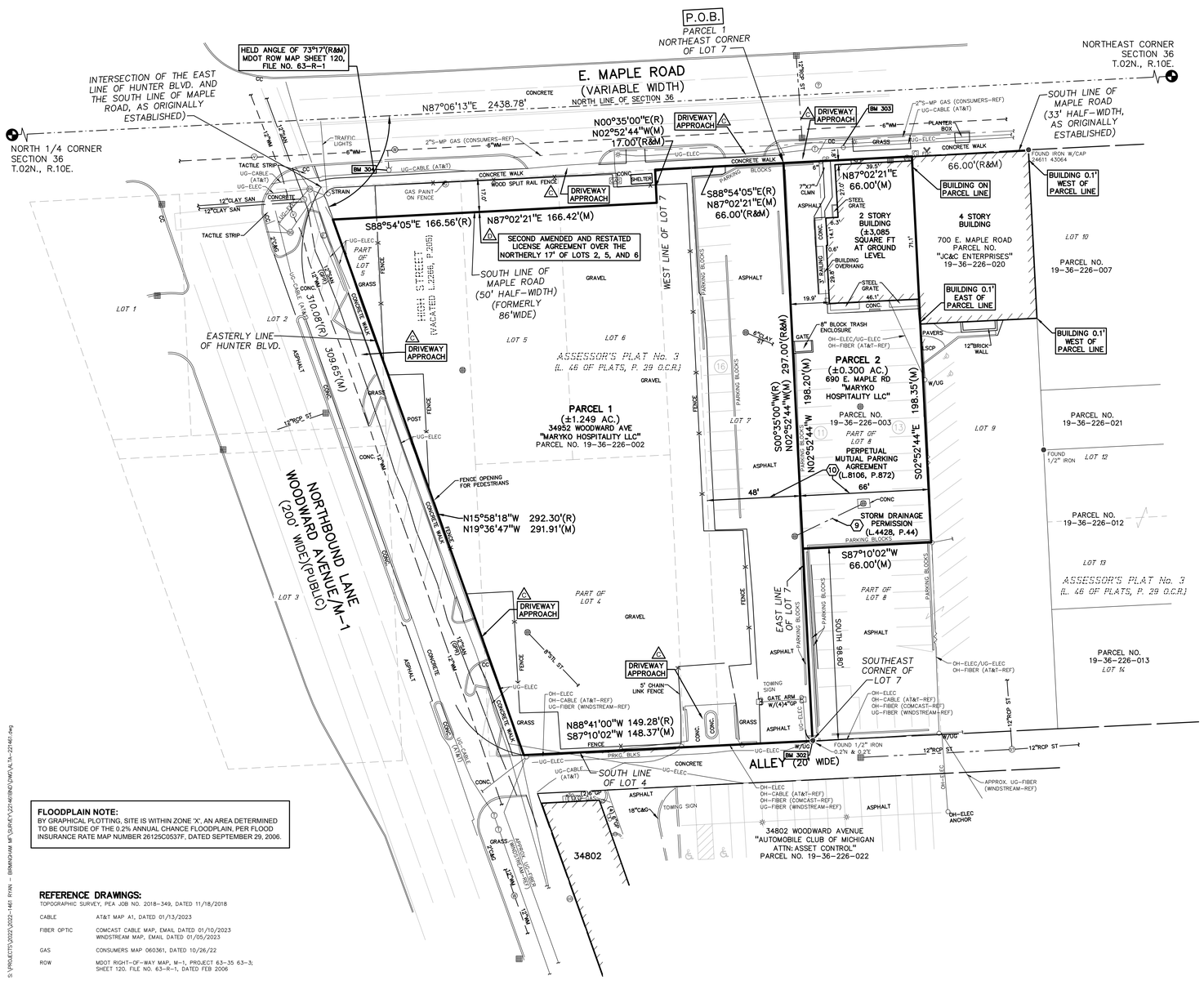
PARCEL 2:
Lot 8, EXCEPT the South 98.8 feet of ASSESSOR'S PLAT NO. 3 according to the plat thereof recorded in Liber 46 of Plats, Page 29 of Oakland County Records.

LEGEND

- IRON FOUND
- IRON SET
- NAIL FOUND
- NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND
- MONUMENT SET
- SEC. CORNER FOUND
- R RECORDED
- M MEASURED
- C CALCULATED

EXISTING

- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
- UNDERGROUND CABLE TV, CATV PEDESTAL
- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
- GAS MAIN, VALVE & GAS LINE MARKER
- WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE
- SANITARY SEWER, CLEANOUT & MANHOLE
- STORM SEWER, CLEANOUT & MANHOLE
- COMBINED SEWER & MANHOLE
- SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN
- POST INDICATOR VALVE
- WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
- MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE
- UNIDENTIFIED STRUCTURE
- FENCE
- GUARD RAIL
- STREET LIGHT
- SIGN
- CONCRETE
- ASPHALT
- GRAVEL
- SCHEDULE B EXCEPTION
- SURVEY NOTE
- PARKING COUNT



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BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AN AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FLOOD INSURANCE RATE MAP NUMBER 26125C0537F, DATED SEPTEMBER 29, 2006.

REFERENCE DRAWINGS:
TOPOGRAPHIC SURVEY, PEA JOB NO. 2018-349, DATED 11/18/2018

CABLE	AT&T MAP A1, DATED 01/13/2023
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GAS	CONSUMERS MAP 060361, DATED 10/26/22
ROW	MDOT RIGHT-OF-WAY MAP, M-1, PROJECT 63-35 63-3; SHEET 120, FILE NO. 63-R-1, DATED FEB 2006

S:\PROJECTS\2022\2022-1461 RYAN - BIRMINGHAM MF\SURVEY\22-1461BKD\DWG\ALTA-22-461.dwg

SCHEDULE B, PART II EXCEPTIONS
(per First American Title Insurance Company, Commitment No.: 968431, Commitment Date: November 04, 2022)

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I–Requirements are met. [Not a survey matter.]
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or by making inquiry of persons in possession of the Land. [Not plottable.]
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records. [Not plottable.]
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title including discrepancies, conflicts in boundary lines, shortage in area, or any other facts that would be disclosed by an accurate and complete land survey of the Land, and that are not shown in the Public Records. [Not plottable.]
5. Any lien or right to lien for services, labor or material imposed by law and not shown by the Public Records. [Not a survey matter.]
6. Taxes and assessments not due and payable at Commitment Date. [Not a survey matter.]
7. Mortgage in the original amount of $2,800,000.00 executed by Maryko Hospitality, LLC, a Michigan limited liability company to Mercantile Bank of Michigan, dated August 24, 2018, recorded August 24, 2018, in Liber 52126, page 386. [Not plottable.]
8. Assignment of Rents executed by Maryko Hospitality, LLC, a Michigan limited liability company to Mercantile Bank of Michigan, dated August 24, 2018, recorded August 24, 2018, in Liber 52126, page 398. [Not a survey matter.]
9. Terms and Conditions contained in Agreement as disclosed by instrument recorded in Liber 4428, page 44. [As plotted. Permission to connect storm drainage from catchbasin on Lot 8 to Catchbasin on Lot 7. Affects Parcel 1 & 2.]
10. Terms and Conditions contained in Perpetual Mutual Parking Easement as disclosed by instrument recorded in Liber 8106, page 872. [As plotted. Agreement area over the east 48 feet of Lot 7 and Lot 8 (except the south 98.8 feet thereof) Affects Parcel 1 & 2.]
11. Omit.
12. Omit.
13. Rights, title, and interests of the other owners of portions of the building partly located on the insured land and partly located on other land in the party walls, roof, chimneys, fixtures, and other appurtenances to the building susceptible to common use, whether or not they are located in whole or in part on the insured land or other land, as to Parcel 2. [The easterly line of the building on Parcel 2 (#690 Maple Road) and the westerly line of the building on #700 Maple Road do not appear to share a party wall, field verification by the client is required.]
14. Rights of tenants, if any, under any unrecorded leases. [Not a survey matter.]
15. Lien for outstanding water or sewer charges, if any. [Not a survey matter.]
16. Survey by Kem-Tec, dated July 18, 2022, Job No. 22-01733, discloses the following: [As shown on the survey.]
    a. Overhead utility lines, utility poles and guy wires crossing property and property lines without the benefit of a recorded easement.
    b. Water line, storm and sanitary sewer on property without the benefit of a recorded easement.
    c. Fence and gravel parking lot encroach into E. Maple Road right-of-way.
    d. Fence inside southerly property line, inside and crossing westerly property line, outside and crossing northerly property line.
    e. Parking blocks inside and crossing southerly property line, and inside and outside easterly property line.
    f. Concrete crossing northerly, southerly and westerly property lines.
    g. Asphalt crossing northerly, southerly, and easterly property lines.

SURVEY NOTES:

A. Gross land area PARCEL 1: ±54,393 square feet (±1.249 acres); PARCEL 2: ±13086 square feet (±0.300 acres).

B. Parcel 1 & 2 contain 40 combined parking spaces.

C. Parcel 1 has access to Maple Road (variable width - public) on the north, the 20 foot wide public alley on the south, and Woodward Avenue (variable width - public) along the west. Parcel 2 has access to Maple Road (variable width - public) and to the 20' wide public alley on the south.

D. Reference survey by Kem-Tec & Associates, Job #: 14-00275, dated February 3, 2014 shows an unrecorded document, dated July 12, 1999, Titled "Second Amended and Restated License Agreement, as depicted.

E. Parcel 1 is currently under demolition and is subject to daily change.

F. Zoning information required for certification to optional Table A item 6 has not been provided at the time of survey.

CERTIFICATE OF SURVEY

To: First American Title Insurance Company
Maryko Hospitality, LLC, a Michigan limited liability company

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 2, 3, 4, 6(a), 7(a), 8, 9, 11(a), 13, 16 and 17 of Table A thereof. The field work was completed on January 27th, 2023.

Date of Plat or Map: February 01, 2023.

David A. Nord

David Anthony Nord, PS
P.S. No. 4001056501
Agent for PEA Group

STATE OF MICHIGAN
DAVID ANTHONY NORD
PROFESSIONAL SURVEYOR NO. 4001056501
LICENSED PROFESSIONAL SURVEYOR

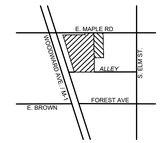
PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH

0 15 30 60
SCALE: 1" = 30'

811 Know what's below. Call before you dig.

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NEITHER GUARANTEE OR OTHER EXPRESSED OR IMPLIED WARRANTY OF THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
RYAN COMPANIES
700 OAKMONT LANE, SUITE 100
WESTMONT, ILLINOIS 60559

PROJECT TITLE
RYAN - BIRMINGHAM MF
SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

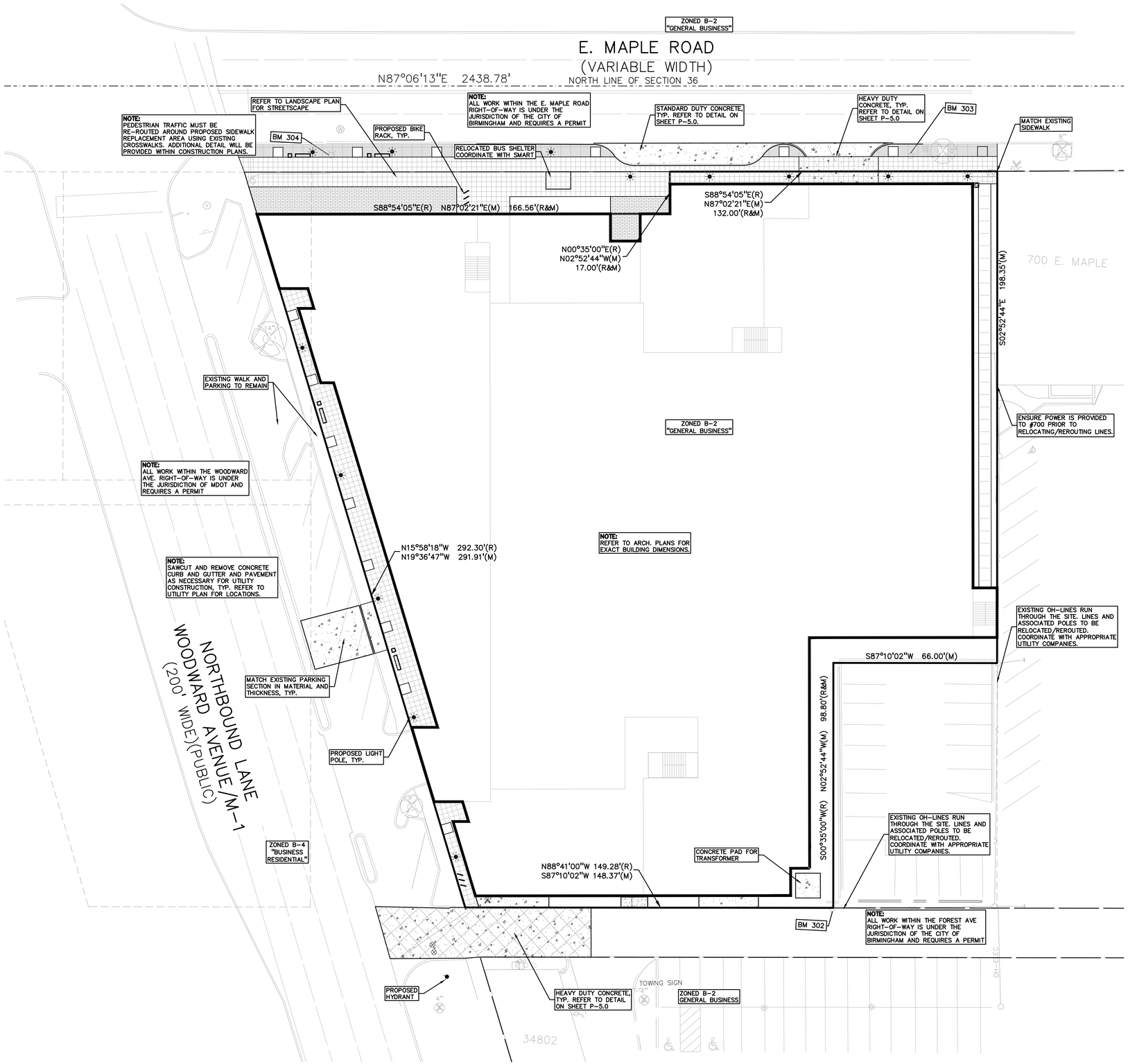
REVISIONS
- -

ORIGINAL ISSUE DATE:
FEBRUARY 01, 2023

DRAWING TITLE
ALTA NSPS LAND TITLE SURVEY

PEA JOB NO.	2022-1461
P.M.	DCM
DN.	LKP-DN
DES.	

DRAWING NUMBER:
1



LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY / R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY / HEAVY DUTY / DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WIT CITY OF BIRMINGHAM CURRENT STANDARDS AND REGULATIONS.
3. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
4. ANY WORK WITHIN THE STREET OR HIGHWAY RIGHT-OF-WAYS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL ALL NECESSARY PERMITS HAVE BEEN ISSUED FOR THE WORK.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (MANHOLES, CATCH BASINS, INLETS, GATE WELLS ETC.) WITHIN GRADED AND/OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS. ALL SUCH ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.

DEMOLITION NOTES:

REMOVE THE FOLLOWING ON-SITE ITEMS:

PARKING LOT, STORM SEWER, LANDSCAPING, LIGHT POLES, SIDEWALK, AND BUILDING.

SITE DATA TABLE:

SITE AREA: 1.55 ACRES (67,479.51 SF.) NET AND GROSS

ZONING: B-2, GENERAL BUSINESS

PROPOSED USE: RETAIL AND MULTI-FAMILY RESIDENTIAL

BUILDING INFORMATION:
MAXIMUM ALLOWABLE BUILDING HEIGHT = 114 FT. (9 STORIES)
PROPOSED BUILDING HEIGHT = 9 STORY

BUILDING FOOTPRINT AREA = 60,618 SF.

BUILDING LOT COVERAGE = 89.8%

SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
FRONT (NORTH)	0'	VARIES
SIDE (EAST)	0'	VARIES
SIDE (WEST)	0'	VARIES
REAR (SOUTH)	N/A'	VARIES

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NORTH

0 10 20 40
SCALE: 1" = 20'

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CLIENT
RYAN COMPANIES
700 OAKMONT LANE, SUITE 100
WESTMONT, ILLINOIS 60559

PROJECT TITLE
BIRMINGHAM MIXED USE DEVELOPMENT
SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
FEBRUARY 03, 2023

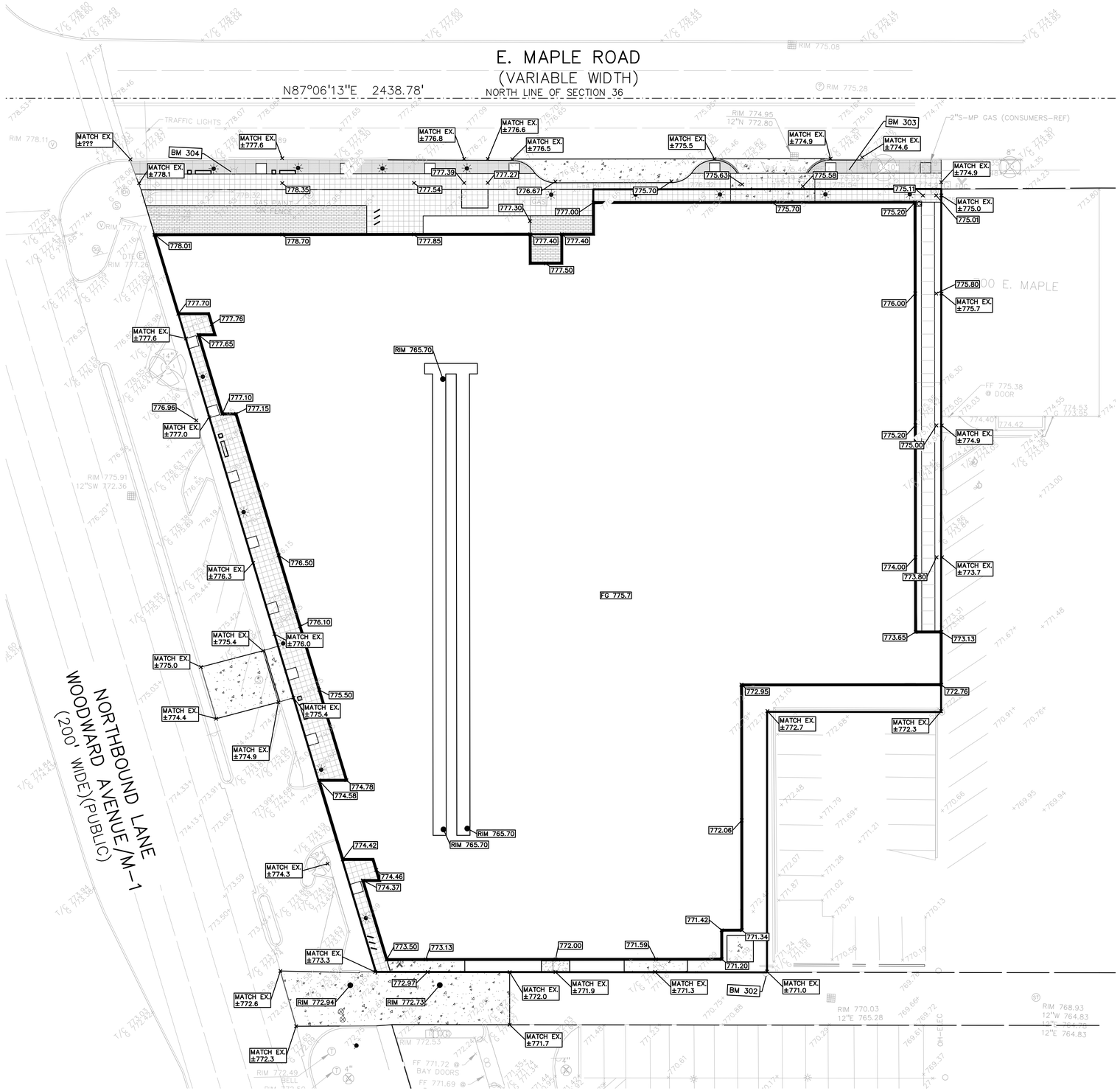
DRAWING TITLE
PRELIMINARY SITE PLAN

PEA JOB NO.	2022-1461
P.M.	JBT
DN.	KFP
DES.	DSK

DRAWING NUMBER:
P-2.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022\2022-1461 RYAN - BIRMINGHAM MF\DWG\SITE_PLAN\P-2.0(24x-22461).dwg PLOT DATE: 2/2/2023
BY: Kayla Thorson



GRADING LEGEND:

+698.31	EXISTING SPOT ELEVATION
622.50	PROPOSED SPOT ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES.
670	EXISTING CONTOUR
922	PROPOSED CONTOUR
	PROPOSED REVERSE GUTTER PAN
	PROPOSED RIDGE LINE
	PROPOSED SWALE/DITCH

ABBREVIATIONS

T/C = TOP OF CURB	G = GUTTER GRADE
T/P = TOP OF PAVEMENT	F.G. = FINISH GRADE
T/S = TOP OF SIDEWALK	RIM = RIM ELEVATION
T/W = TOP OF WALL	B/W = BOTTOM OF WALL

CITY OF BIRMINGHAM BENCHMARKS:

CITY BM #6
NORTHEAST CORNER OF ADAMS & MAPLE.
ELEV. - 765.61

SYMBOLS: GRADING

PROPOSED SPOT ELEVATION:
TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES — 622.50

ABBREVIATIONS:
TC = TOP OF CURB
G = GUTTER GRADE
T/P = TOP OF PAVEMENT
T/S = TOP OF SIDEWALK
F.G. = FINISH GRADE
RIM = RIM ELEVATION

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NORTH

0 10 20 40
SCALE: 1" = 20'

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CLIENT
RYAN COMPANIES
700 OAKMONT LANE, SUITE 100
WESTMONT, ILLINOIS 60559

PROJECT TITLE
BIRMINGHAM MIXED USE DEVELOPMENT
SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
FEBRUARY 03, 2023

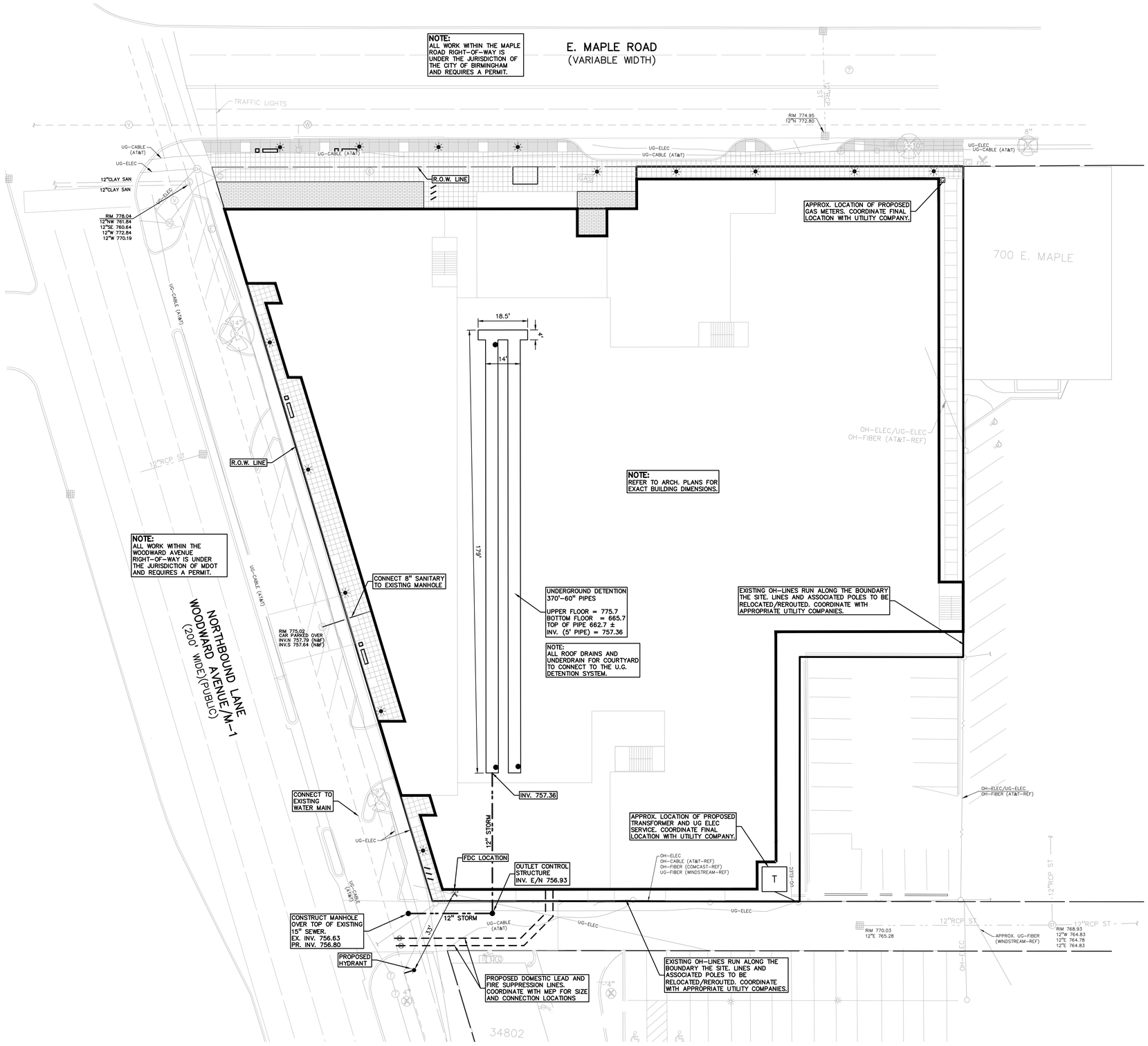
DRAWING TITLE
PRELIMINARY GRADING PLAN

PEA JOB NO.	2022-1461
P.M.	JBT
DN.	KFP
DES.	DSK

DRAWING NUMBER:
P-3.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022\2022-1461 RYAN - BIRMINGHAM MP\DWG\SITE_PLAN\(P-3.0)GRADE-22-1461.dwg PLOT DATE:2/12/2023
BY: Kaya Parson



UTILITY LEGEND:

- EX. OH. ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC,MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND, & BEEHIVE CATCH BASIN
- EX. YARD DRAIN & ROOF DRAIN
- EX. UNIDENTIFIED STRUCTURE
- PROPOSED WATER MAIN
- PROPOSED HYDRANT AND GATE VALVE
- PROPOSED TAPPING SLEEVE, VALVE & WELL
- PROPOSED POST INDICATOR VALVE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY CLEANOUT & MANHOLE
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER CLEANOUT & MANHOLE
- PROPOSED CATCH BASIN, INLET & YARD DRAIN

TEN YEAR STORM DETENTION DESIGN (OAKLAND COUNTY DESIGN METHOD)

Contributing Area (A):	1.55	AC.
Allowable Discharge (Qa)	1.55	C.F.S. (= 1.0 CFS/AC.)
Coefficient of Runoff (Cr):	0.95	

Calculation of Required Discharge/Acre

Qo = ((Qa)/(A)(Cr): 1.05 cfs/Ac imp.

T = -25 + ((6562.5/Qo))0.5: 53.96 min

Storage Volume Required:

Vs = (10500(T)/(T+25)) - 40Qo(T): 4903.53 cf/Ac imp.

Vt = (Vs)(A)(Cr): **7220 CF**

PIPE STORAGE:	
L=	370 ft.
SIZE=	60 in.
C.F./FT.=	19.625 c.f./ft.
VOLUME=	7,261 c.f.

OC Restrictor Sizing:		
Storage Elevation =	762.16	
Outlet Elevation =	756.93	
Hmax=	5.23 ft.	
10 Year Outlet Restriction:		
Qallow =	1.55 cfs	
A = (Qallow)/((0.62*(32.2*2*Hmax)^0.5) =	0.1362 sf	
10 Year Hole Dia. Provided =	**5** in.	
10 Year Hole Area Provided =	0.1363 sf	
Qactual (total) =	**1.55 cfs**	**<= 1.55**

PROPOSED SANITARY SEWER BASIS OF DESIGN:
(Unit Factors Based on Oakland County Unit Assignment Factors)

Multi-Family		
Number of units	210	
Unit Factor	0.6	per unit
REU	126	REU
Population (P) (3.5 PEOPLE/EDU)	441	People
Retail		
Size of Retail	5,000	sf
Unit Factor	0.04	per 1000 sf
REU	0.2	REU
Population (P) (3.5 PEOPLE/EDU)	1	People
Restaurant		
Number of seats	150	seats
Unit Factor	0.13	per seat
REU	19.5	REU
Population (P) (3.5 PEOPLE/EDU)	68	People

TOTAL		
REU	**145.7**	
	510	**People**
Average Flow (100 GPCPD)	**51,000**	**G.P.D.**
	0.079	**C.F.S.**
P (1000s)	**0.510**	
Peaking Factor (PF)	**3.97**	

WATER MAIN BASIS OF DESIGN:
(Unit Factors Based on Oakland County Unit Assignment Factors)

Multi-Family		
Number of units	210	
Unit Factor	0.6	per unit
REU	126	
Population (P) (3.5 PEOPLE/EDU)	441	People
Retail		
Size of Retail	5,000	sf
Unit Factor	0.04	per 1000 sf
REU	0.2	REU
Population (P) (3.5 PEOPLE/EDU)	1	People
Restaurant		
Number of seats	150	seats
Unit Factor	0.13	per seat
REU	19.5	REU
Population (P) (3.5 PEOPLE/EDU)	68	People

TOTAL		
REU	**145.7**	
	510	**People**
Average Flow (150 GPCPD)	**76,500**	**G.P.D.**
	0.118	**C.F.S.**

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NORTH

0 10 20 40
SCALE: 1" = 20'

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CLIENT
RYAN COMPANIES
700 OAKMONT LANE, SUITE 100
WESTMONT, ILLINOIS 60559

PROJECT TITLE
BIRMINGHAM MIXED USE DEVELOPMENT
SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
FEBRUARY 03, 2023

DRAWING TITLE
PRELIMINARY UTILITY PLAN

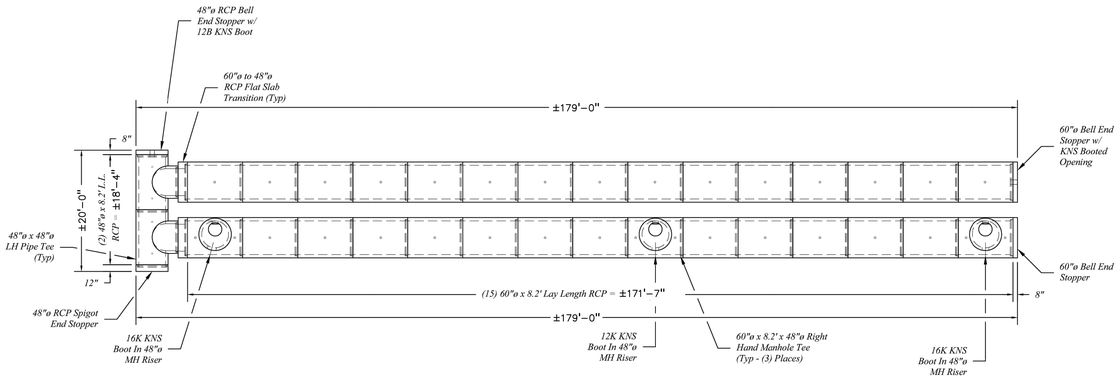
PEA JOB NO.	2022-1461
P.M.	JBT
DN.	KFP
DES.	DSK

DRAWING NUMBER:
P-4.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022-1461 RYAN - BIRMINGHAM MF\DWG\SITE_PLAN\(P-4.0)TEL-221461.dwg PLOT DATE:2/2/2023
BY: Kyle Franson

60"ø C-76 RCP Detention System



Notes:

1. *All RCP Shall Be Manufactured To Meet or Exceed ASTM C-76 Specifications; Joints Per ASTM C-443.*
2. *f'_c = 4,000 psi (min) @ 28 Days. (Subject To Change Depending On Class of RCP)*
3. *Reinforcing Per ASTM A-615/1064, Grade 60 (min)*

Approved By: _____
Company Name: _____
Date Approved: _____

NORTHERN CONCRETE PIPE
www.ncp-inc.com/

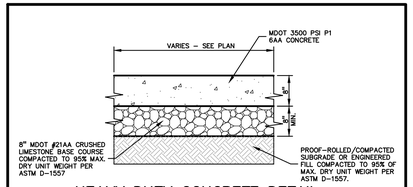
401 Kelton Street, Bay City, MI 48706	
3281 Lansing Road Charlotte, MI 48813	2701 Chicago Dr. SW Wyoming, MI 49519
4950 White Lake Rd. Clarkston, MI 48346	3756 Centennial Rd. Sylvania, OH 43560

Proposed - 60"ø C-76 RCP Detention System

PEA Group
Auburn Hills, MI

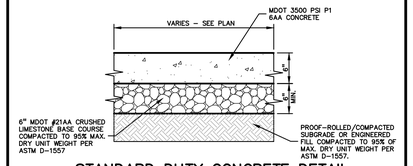
Birmingham, Oakland Co., MI

Drawn By: ECK | Scale: 1/32" = 1'



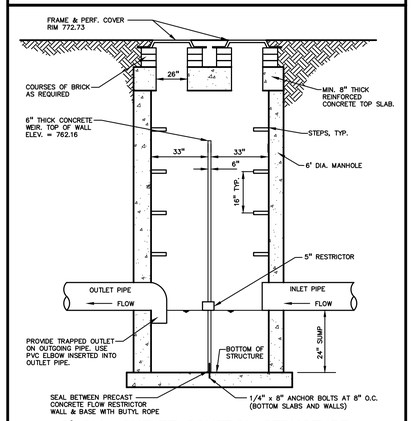
HEAVY DUTY CONCRETE DETAIL

NOT TO SCALE



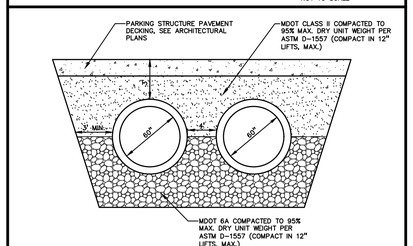
STANDARD DUTY CONCRETE DETAIL

NOT TO SCALE



6' DIA. OUTLET CONTROL STRUCTURE

NOT TO SCALE



SECTION THRU DETENTION SYSTEM

N.T.S.

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NORTH

0 10 20 40
SCALE: 1" = 20'

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WESTMONT, ILLINOIS 60559

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BIRMINGHAM MIXED USE DEVELOPMENT
SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
FEBRUARY 03, 2023

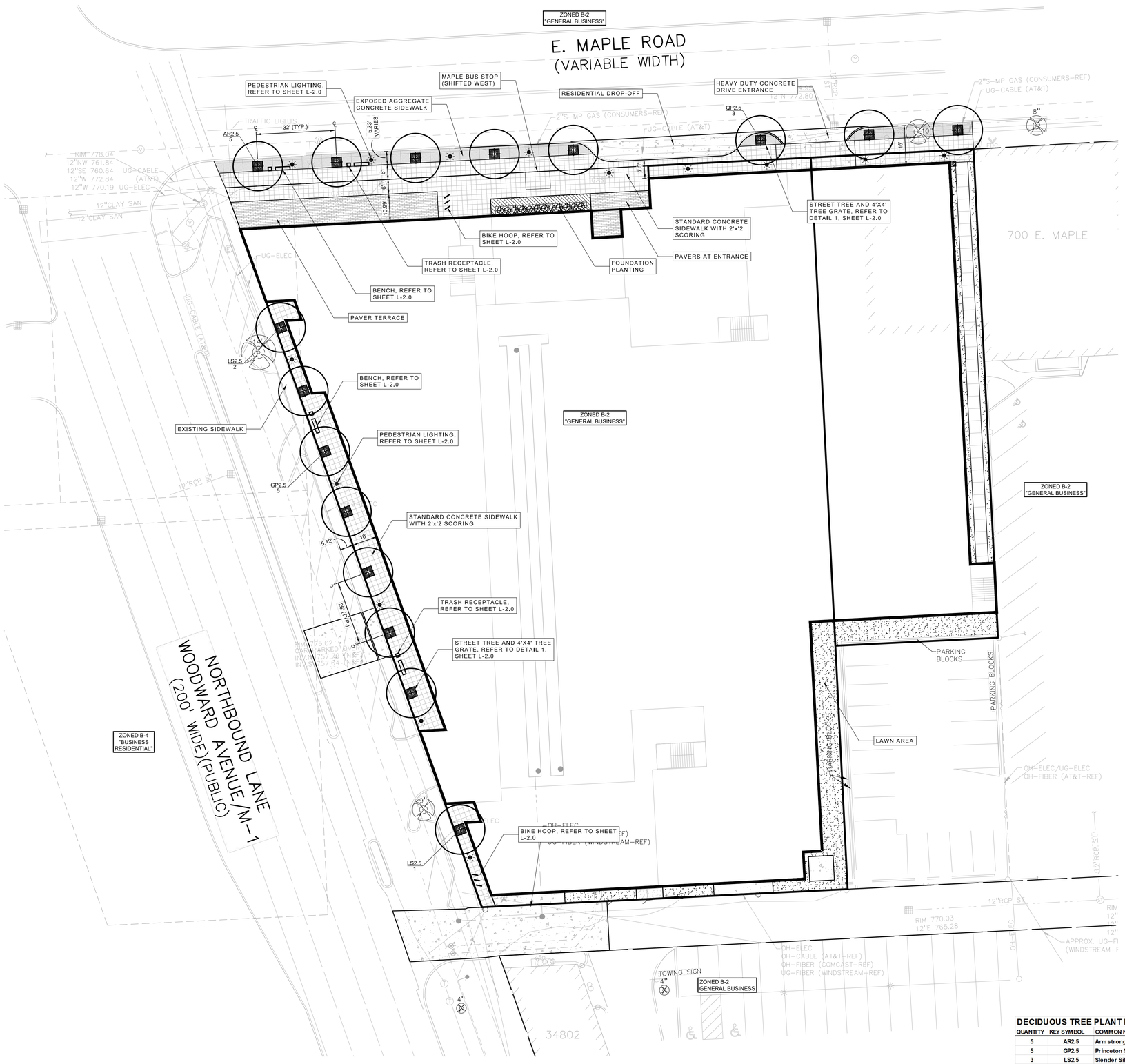
DRAWING TITLE
NOTES AND DETAIL SHEET

PEA JOB NO.	2022-1461
P.M.	JBT
DN.	KFP
DES.	DSK

DRAWING NUMBER:
P-5.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022\2022-1461 RYAN - BIRMINGHAM MF\DWG\SITE_PLAN\P-5.0(DET-22461.dwg PLOT DATE:2/2/2023
BY:Kayla Popson



LANDSCAPE CALCULATIONS:

PER CITY OF BIRMINGHAM ZONING ORDINANCE

TRIANGLE OVERLAY DISTRICT
3.12 STREETSCAPE DESIGN REQUIREMENTS

B. SIDEWALKS
REQUIRED: 12' MIN.

PROVIDED:
EAST MAPLE ROAD: 16'
WOODWARD AVENUE: 5' (EXISTING)

C. STREET TREES
REQUIRED: 1 CANOPY TREE PER 40 LF.
ADAMS ROAD: 299 LF / 40 LF = 8 TREES
HAYNES STREET: 292 LF / 40 LF = 8 TREES

PROVIDED:
ADAMS ROAD: 8 TREES
HAYNES STREET: 8 TREES

D. STREET LIGHTS

REQUIRED: PEDESTRIAN LEVEL STREET LIGHTING OF A DECORATIVE NATURE

PROVIDED: PEDESTRIAN LEVEL STREET LIGHT THAT MATCH DISTRICT STANDARDS

F. STREET FURNITURE

REQUIRED: BENCHES AND TRASH RECEPTACLES WERE PEDESTRIAN ACTIVITY WILL BENEFIT

PROVIDED: BENCHES AND TRASH RECEPTACLES ALONG THE SIDEWALK THAT MATCH DISTRICT STANDARDS

G. BICYCLE FACILITIES

REQUIRED: 1 BIKE FOR EVERY 3,000 SF OF COMMERCIAL FLOOR AREA
12,000 SF / 3,000 SF = 4 BIKE

PROVIDED: (6) BIKE HOOPS THAT MATCH THE DISTRICT STANDARDS

GENERAL PLANTING NOTES:

1. LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING SITE CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, PLAN SHALL GOVERN QUANTITIES. CONTACT LANDSCAPE ARCHITECT WITH ANY CONCERNS.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ELECTRIC, GAS, TELEPHONE, CABLE TELEVISION MAY BE LOCATED BY CALLING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES ON THE JOB AND SHALL REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER'S REPRESENTATIVE PRIOR TO COMMENCING.
3. ALL PLANT MATERIAL TO BE PREMIUM GRADE NURSERY STOCK AND SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARD FOR NURSERY STOCK. ALL LANDSCAPE MATERIAL SHALL BE NORTHERN GROWN, NO. 1. GRADE.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON LANDSCAPE PLAN PRIOR TO PRICING THE WORK.
5. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL NOT MEETING SPECIFICATIONS.
6. ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
7. ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
8. ALL MULTI STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS. ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
9. ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
10. ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
11. NO MACHINERY IS TO BE USED WITHIN THE DRIP LINE OF EXISTING TREES; HAND GRADE ALL LAWN AREAS WITHIN THE DRIP LINE OF EXISTING TREES.
12. ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF THE PLANT MATERIAL.
13. IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS.
14. ALL PLANTING BEDS SHALL RECEIVE 3" SHREDDED HARDWOOD BARK MULCH WITH PRE EMERGENT, SEE SPECIFICATIONS. SHREDDED PALETTE AND DYED MULCH WILL NOT BE ACCEPTED.
15. ALL LANDSCAPED AREAS SHALL RECEIVE 3" COMPACTED TOPSOIL.
16. SEE SPECIFICATIONS FOR ADDITIONAL COMMENTS, REQUIREMENTS, PLANTING PROCEDURES AND WARRANTY STANDARDS.

DECIDUOUS TREE PLANT LIST:

QUANTITY	KEY SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	SPEC
5	AR2.5	Armstrong Maple	*Acer rubrum 'Armstrong'*	2.5" Cal.	B&B, Matched Specimens
5	GP2.5	Princeton Sentry Ginkgo	*Ginkgo biloba 'Princeton Sentry'*	2.5" Cal.	B&B, Matched Specimens
3	LS2.5	Slender Silhouette Sweetgum	*Liquidambar styraciflua 'Slender Silhouette'*	2.5" Cal.	B&B, Matched Specimens
3	QP2.5	Regal Prince Oak	*Quercus robur x bicolor 'Long' (columnar)*	2.5" Cal.	B&B, Matched Specimens
16	TOTAL DEC.				

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH

0 10 20 40
SCALE: 1" = 20'

811 Know what's below. Call before you dig.

CAUTION!!
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CLIENT
RYAN COMPANIES
700 OAKMONT LANE, SUITE 100
WESTMONT, ILLINOIS 60559

PROJECT TITLE
BIRMINGHAM MIXED USE DEVELOPMENT
SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

REVISIONS
-
-

ORIGINAL ISSUE DATE:
FEBRUARY 03, 2023

DRAWING TITLE
PRELIMINARY LANDSCAPE PLAN

PEA JOB NO.	2022-1461
P.M.	JBT
DN.	KFP
DES.	DSK

DRAWING NUMBER:
L-1.0

S:\PROJECTS\2022\2022-1461 RYAN - BIRMINGHAM MP\DWG\SITE_PLAN\L-1.0_LANDSCAPE_221461.dwg PLOT
DATE: 2/2/2023 Brihoun Brenan

PEA GROUP
t: 844.813.2949
www.peagroup.com

35 PITCH LITTER RECEPTACLE
35 COLLECTION
SIDE OPENING, SURFACE MOUNT
POWDER COAT: SILVER
BLACK POLYETHYLENE
LANDSCAPE FORMS
PHONE: 800.521.2546
QUANTITY: 5

6 TRASH RECEPTACLE
NOT TO SCALE

HADCO LUMINAIRE C8191B
120-277 VAC.
LED FIXTURE
4000K COLOR TEMP.
3000 LUMENS
QUANTITY: 18

NOTE:
THE DEVELOPER SHALL CONTACT DTE TO COORDINATE AND CONTRACT THE INSTALLATION OF THE LIGHTING FIXTURES TO THE CITY'S SYSTEM. THIS WILL BE FUNDED BY THE DEVELOPER.

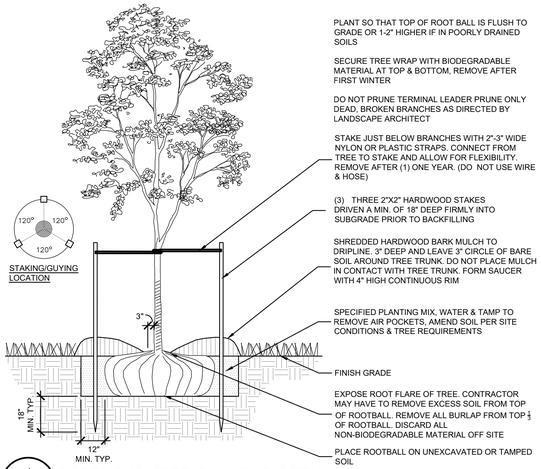
8 PEDESTRIAN LIGHTING
NOT TO SCALE

LOOP BIKE RACK
SURFACE MOUNT
POWDER COAT: SILVER
LANDSCAPE FORMS
PHONE: 800.521.2546
QUANTITY: 9

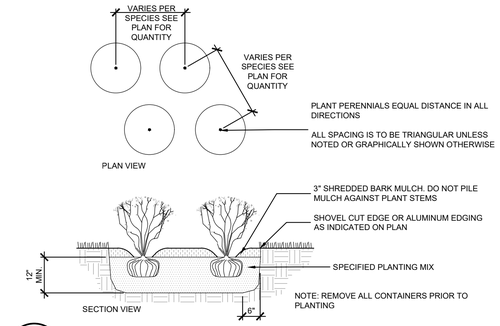
5 BIKE HOOP
NOT TO SCALE

35 SIT BACKED BENCH, 72"
35 COLLECTION
SURFACE MOUNT
POWDER COAT: SILVER
LANDSCAPE FORMS
PHONE: 800.521.2546
QUANTITY: 5

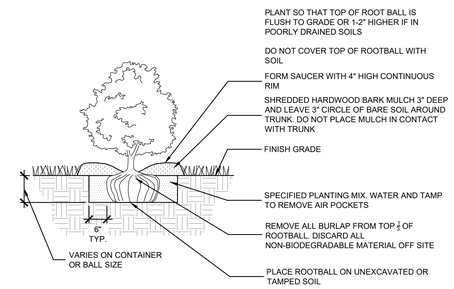
7 BENCH
NOT TO SCALE



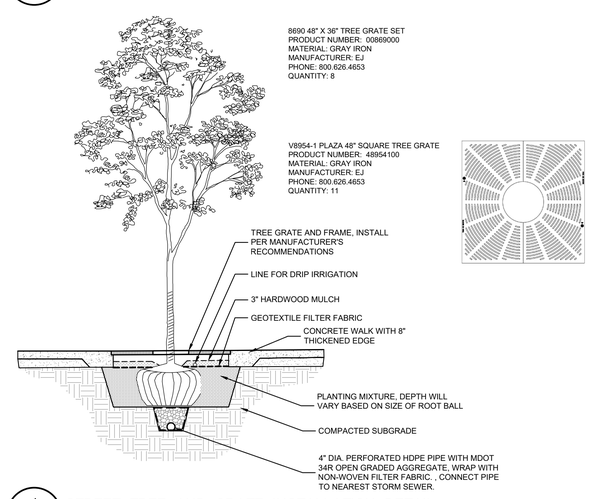
4 DECIDUOUS TREE PLANTING DETAIL
SCALE: 1" = 3'-0"



3 PERENNIAL PLANTING DETAIL
SCALE: 1" = 2'-0"



2 SHRUB PLANTING DETAIL
SCALE: 1" = 2'-0"



1 STREET TREE AND GRATE INSTALLATION DETAIL
SCALE: 1" = 3'-0"

NORTH

0 10 20 40
SCALE: 1" = 20'

811 Know what's below. Call before you dig.

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SOUTHEAST CORNER OF MAPLE ROAD AND WOODWARD AVENUE
CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
FEBRUARY 03, 2023

DRAWING TITLE
LANDSCAPE DETAILS

PEA JOB NO.	2022-1461
P.M.	JBT
DN.	KFP
DES.	DSK

DRAWING NUMBER:
L-2.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2022\2022-1461 RYAN - - BIRMINGHAM MF\DWG\SITE_PLAN\L-2.0\L DETAILS-221461.dwg PLOT DATE:2/24/2023 BY:Nick Simon

MEMORANDUM

Planning Division

DATE: April 17, 2023

TO: Planning Board Members

FROM: Nicholas Dupuis, Planning Director

SUBJECT: Project Updates & Information

The following report contains updates on projects that have completed by the Planning Board and are on to the next steps of approval. In addition, other significant development-related projects that have been reviewed or embarked upon by boards/commissions such as the Historic District Commission, Design Review Board, Multi-Modal Transportation Board, or similar bodies have been included for reference as well. New information/updates provided in **bold blue text**.

Site Plan & Design Reviews

- 2159 E. Lincoln – Lincoln Yard – Permitting/Preparing for Construction
- 34965 Woodward – Peabody Redevelopment – Permitting, numerous extensions requested.
- 35001 Woodward – Land lease executed by City Commission.
- 770 S. Adams – Permitting/Construction
- 2225 E. 14 Mile – Our Shepherd – Permitting/Construction
- 36877 Woodward – Gasow Veterinary Hospital – Permitting
- 588 S. Old Woodward – Phoenicia – Under Construction
- 243 Merrill – La Strada – Permitting
- 320 Martin – Birmingham Post Office – Design Development
- 185 N. Old Woodward – Bell Bistro – Permitting
- 460 N. Old Woodward – Wilders – Permitting/Construction
- 295 Elm St. – Forest Townhomes – Design Development
- **34350 Woodward – Fred Lavery Porsche – Public Hearing at the City Commission was tabled by the City Commission to afford the applicant and City Staff time to work out any issues.**
- **479 S. Old Woodward – Birmingham Tower – Design Development**

Ordinance Amendments/Master Planning

- Outdoor Dining Ordinance – A public hearing date has been reset for April 24, 2023 to review the proposed amendments and the changes requested by the City Commission.

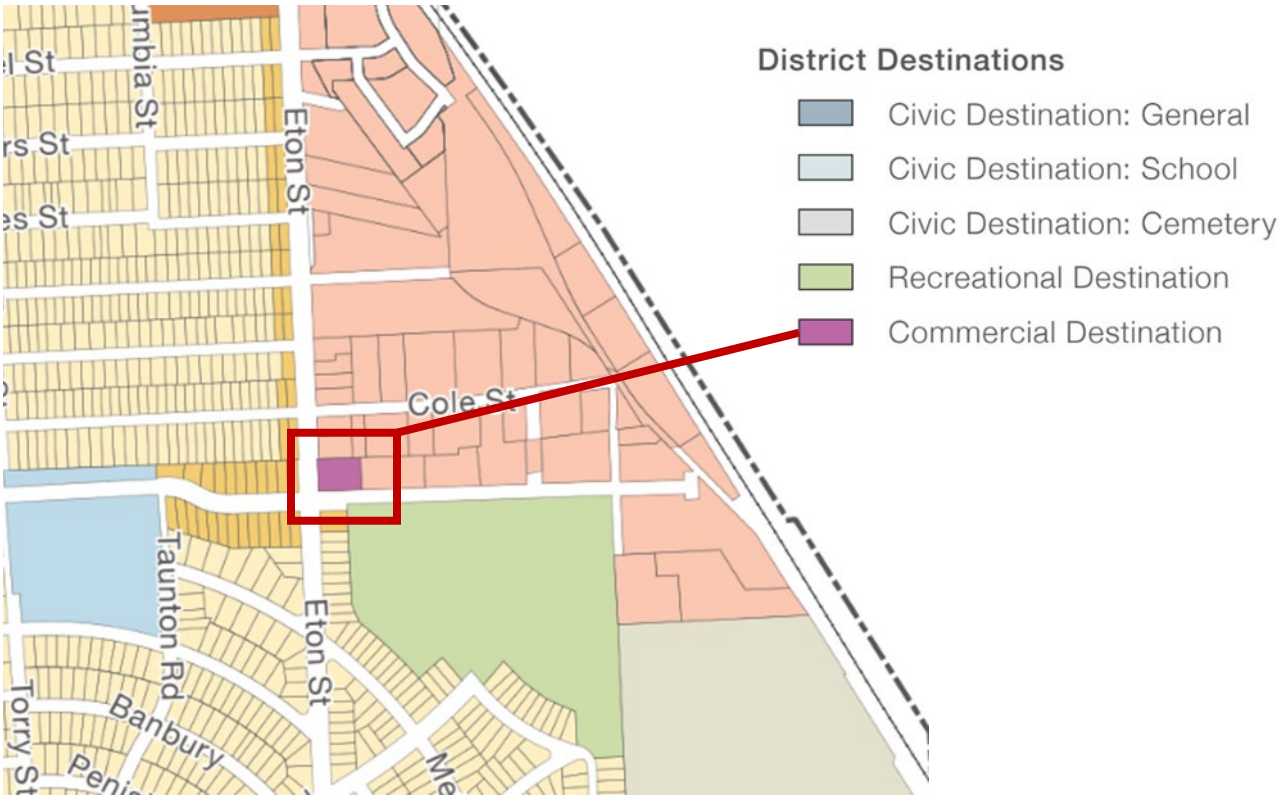
Non-Planning Board Projects

- 148 Pierce – Telephone Exchange Building – New mural on rear of building.
- 135-139 S. Old Woodward – Stifel – Façade renovations on historic Briggs Building, permitting/construction.
- 220 Park St. – Façade renovations, permitting/construction.
- 34040 Woodward – Community Unity Bank – Façade renovations, in progress.
- 185 Oakland – Belfor – Façade renovations, design development.
- 33680 Woodward – Petrucci Studio – Façade renovations, permitting.
- Historic District Design Guidelines – On March 15, 2023, the Historic District Commission reviewed a 90% completed document and provided KDG with final feedback.
- Citywide Wayfinding and Signage Design Program Update – Kickoff meeting at the Wayfinding and Gateway Signage Committee is planned for April 17, 2023. In addition, a public input session will be held at City hall the same evening from 5:30 PM to 7:00 PM.
- **Ad Hoc Environmental Sustainability Committee – Roster has been set, first meeting will be planned in the spring.**
- Eton St. Bike Lane Study – After the bike lane pilot on Eton, MMTB is studying a new design as a part of a resurfacing project that is planned for 2023.

The Birmingham Plan 2040

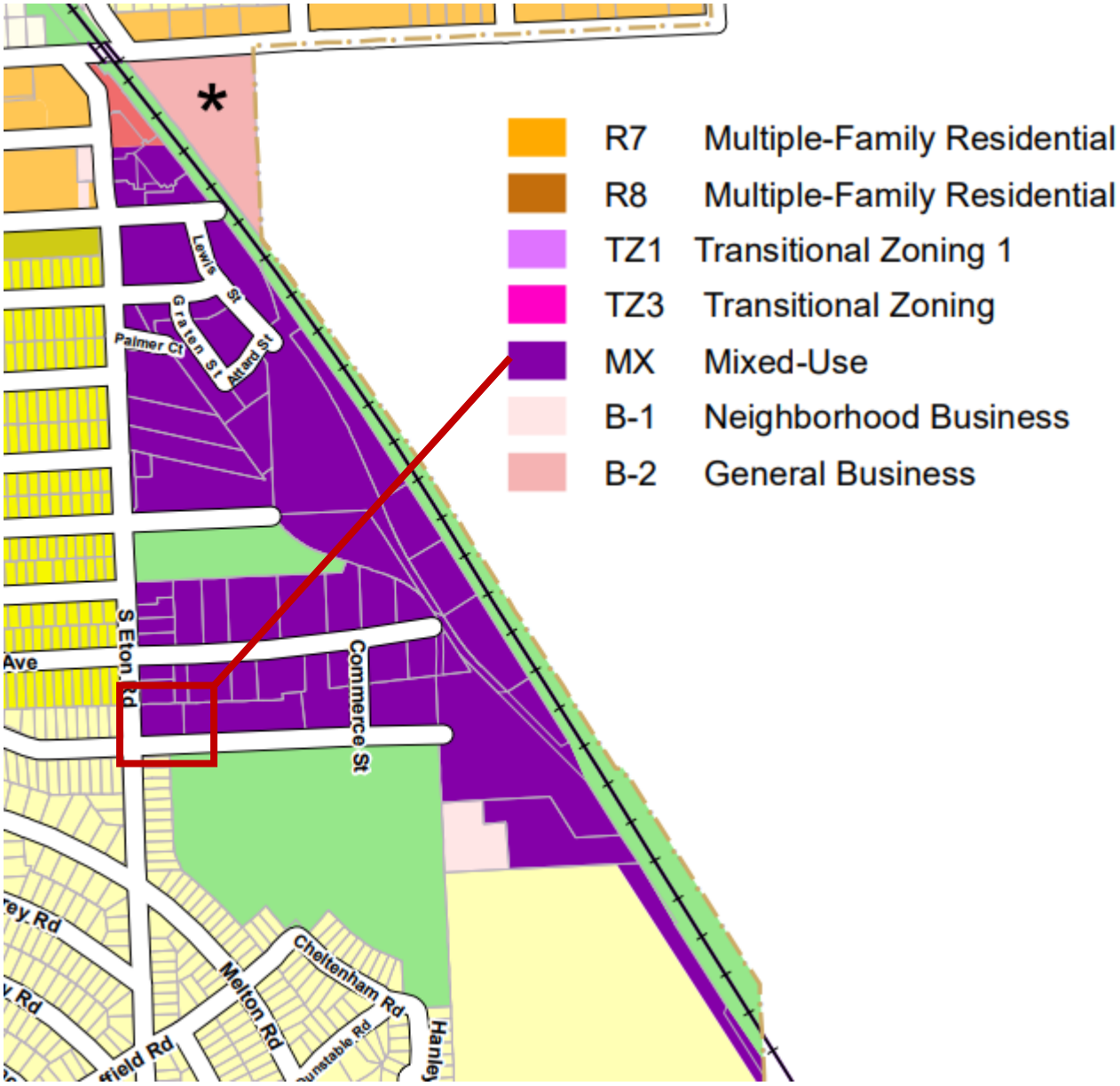
- **A public hearing has been set at the City Commission for May 22, 2023.**
- **The City has been reviewing the parcel at Lincoln/Eton that was the subject of much discussion in regards to its commercial destination designation. The following was presented to the City Commission on March 27, 2023.**

Over the course of the last two Planning Board meetings, the City has received substantial public comment regarding the proposed commercial destination at the northeast corner of Lincoln and Eton in the Birmingham Plan 2040.

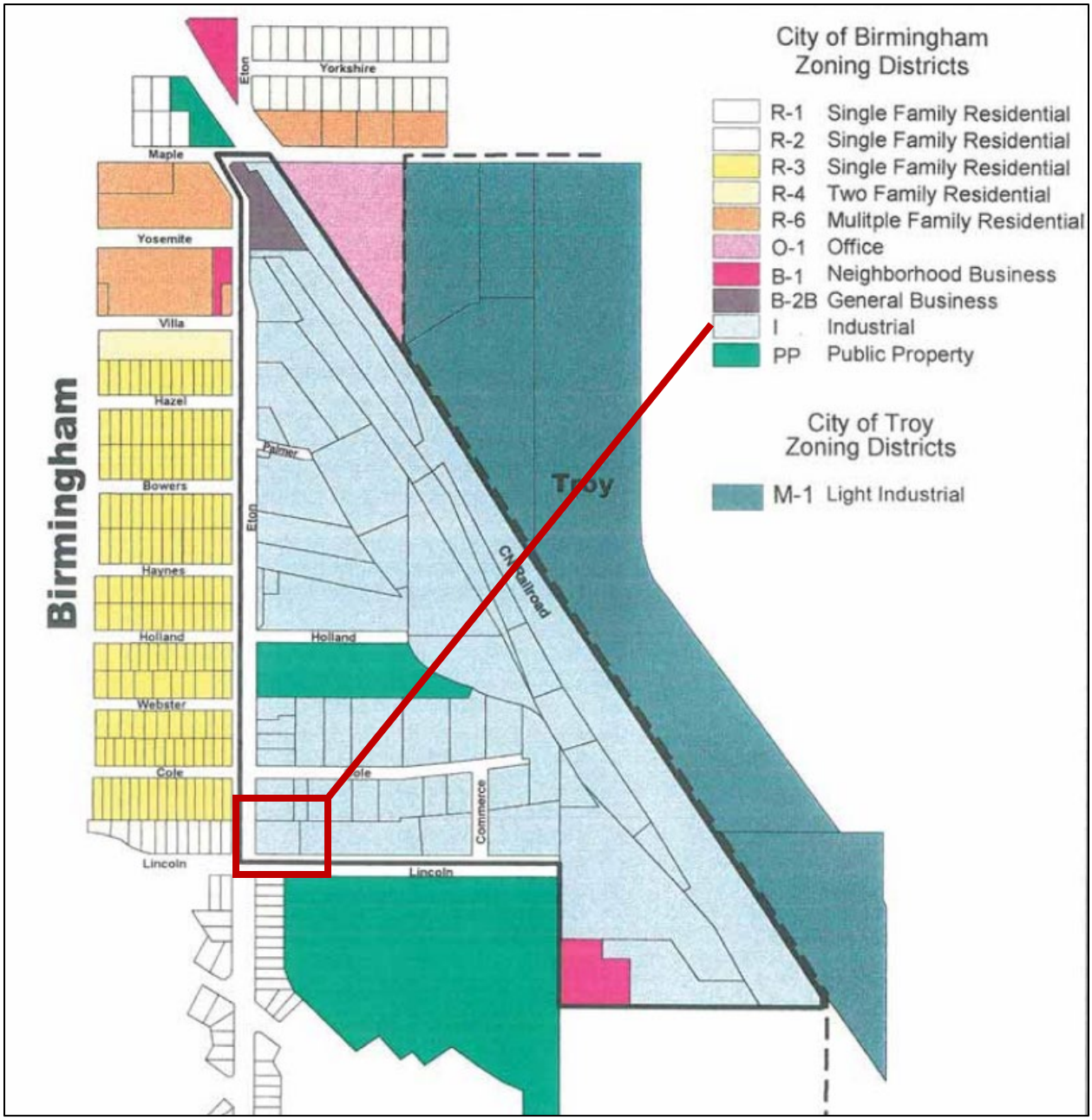


By way of background, the commercial destination proposal is a part of the larger planning districts concept in which several of the recommendations of the 2040 Plan are based upon. In the 2040 Plan, commercial destinations are described as a special category of non-residential uses that serve a local rather than regional customer base due to their size, hours of operation, and the specific category of business, and would be intended for new zoning categories, which limit development and operational parameters necessary to promote compatibility with surroundings.

Although this parcel is without question publicly owned property, the history of zoning on the site has been consistently aligned with the greater district, which has resulted in the zoning conditions that are applicable today. When the official zoning map received comprehensive updates in 2001, the parcel in question was zoned MX (Mixed-Use), and remains zoned MX to this day:



It is worth noting that this is not the first time that this parcel was zoned consistently with the greater area. Prior to the zoning map updates in 2001, the Rail District area was zoned as industrial, including the subject parcel despite it being publicly owned.



Based on the history of the zoning on this parcel, a conclusion can be drawn that the proposed commercial destination concept in the 2040 Plan does NOT contemplate a future zoning for this site that is substantially different than exists today. It also remains that a master plan does not rezone property, but rather informs future zoning.

Finally, as it relates to the current status of the subject property, City Staff is currently undergoing extensive research in an attempt to discover if it was ever formally designated as a park, or part of a park, by the City Commission. As has come up in recent conversations about the property adjacent to the Fire Station and Market Square, a formally designated park and the functions thereof are very different from non-park public open space. Any future findings relating to the status of this property will be reported to the City Commission at a future date.

BIRMINGHAM
A WALKABLE CITY

AGENDA
REGULAR MEETING OF THE BIRMINGHAM PLANNING BOARD
WEDNESDAY APRIL 26, 2023 – 7:30 PM
151 MARTIN ST., CITY COMMISSION ROOM 205, BIRMINGHAM MI*

The City recommends members of the public wear a mask if they have been exposed to COVID-19 or have a respiratory illness. City staff, City Commission and all board and committee members must wear a mask if they have been exposed to COVID-19 or actively have a respiratory illness. The City continues to provide KN-95 respirators and triple layered masks for attendees.

A. Roll Call
B. Review and Approval of the Minutes
C. Chairpersons' Comments
D. Review of the Agenda
E. Unfinished Business
F. Rezoning Applications
G. Community Impact Studies
H. Special Land Use Permits
I. Site Plan & Design Reviews
1. **221 Hamilton Row – Greek Islands – Request for Final Site Plan & Design Review for a new outdoor dining platform and minor building façade changes.**

J. Study Session
K. Miscellaneous Business and Communications:
1. Pre-Application Discussions
   i. **34244 Woodward – Bistro Joes Outdoor Dining**
2. Communications
   i. **Project Updates**
3. Administrative Approval Correspondence
   i. **April 14, 2023 – April 21, 2023**
4. Draft Agenda – **May 10, 2023**
5. Action List – **2023**
6. Other Business

L. Planning Division Action Items
1. Staff Report on Previous Requests
2. Additional Items from Tonight's Meeting

M. Adjournment

*Please note that board meetings will be conducted in person once again. Members of the public can attend in person at Birmingham City Hall OR may attend virtually at:

Link to Access Virtual Meeting: https://zoom.us/j/111656967
Telephone Meeting Access: 877-853-5247 US Toll-Free
Meeting ID Code: 111656967

NOTICE: Due to Building Security, public entrance during non-business hours is through the Police Department—Pierce St. Entrance only. Individuals with disabilities requiring assistance to enter the building should request aid via the intercom system at the parking lot entrance gate on Henrietta St.

Persons with disabilities that may require assistance for effective participation in this public meeting should contact the City Clerk's Office at the number (248) 530-1880, or (248) 644-5115 (for the hearing impaired) at least one day before the meeting to request help in mobility, visual, hearing, or other assistance.

Las personas con incapacidad que requieren algún tipo de ayuda para la participación en esta sesión pública deben ponerse en contacto con la oficina del escribano de la ciudad en el número (248) 530-1800 o al (248) 644-5115 (para las personas con incapacidad auditiva) por lo menos un dia antes de la reunión para solicitar ayuda a la movilidad, visual, auditiva, o de otras asistencias. (Title VI of the Civil Rights Act of 1964).

DRAFT

BIRMINGHAM
A WALKABLE CITY

AGENDA
REGULAR MEETING OF THE BIRMINGHAM PLANNING BOARD
WEDNESDAY MAY 10, 2023 – 7:30 PM
151 MARTIN ST., CITY COMMISSION ROOM 205, BIRMINGHAM MI*

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A. Roll Call
B. Review and Approval of the Minutes of the Regular Meeting of **April 17, 2023 & April 26, 2023**
C. Chairpersons' Comments
D. Review of the Agenda
E. Unfinished Business
F. Rezoning Applications
G. Community Impact Studies
H. Special Land Use Permits
I. Site Plan & Design Reviews
J. Study Session
1. **B1 Zoning District – Commercial Permitted Uses**

K. Miscellaneous Business and Communications:
1. Pre-Application Discussions
2. Communications
   i. **Project Updates**
3. Administrative Approval Correspondence
   i. **April 21, 2023 – May 5, 2023**
4. Draft Agenda – **May 24, 2023**
5. Action List – **2023**
6. Other Business

L. Planning Division Action Items
1. Staff Report on Previous Requests
2. Additional Items from Tonight's Meeting

M. Adjournment

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DRAFT

Updated 4/3/2023

Planning Board Action List – 2023

Topic	General Goals	City Commission Directive?	Quarter	Status	
				In Progress	Complete
2040 Master Plan	Adopt a new comprehensive master plan.	☒	Ongoing	☐	☒
B1 Neighborhood Business Uses	Consider adding additional commercial permitted uses in the B1 zone.	☐	1st (January-March)	☒	☐
Mixed Use Requirements	Consider changing the requirements for mixed use in the Triangle District.	☐	1st (January-March)	☐	☐
Impervious Surface Definition	Clarify definition to promote the infiltration of storm water.	☐	2nd (April-June)	☐	☐
Lighting Standards	Review lighting standards and study residential districts to reduce light pollution and nuisance.	☐	2nd (April-June)	☐	☐
Health Club/Studio Use	Consider allowing health/fitness type activities in more areas of the City.	☐	3rd (July-September)	☐	☐
Dumpster Enclosures	Expand the materials permitted/not permitted in dumpster enclosures.	☐	3rd (July-September)	☐	☐
Definitions	Revisit key definitions to address any challenges presented and clean up verbiage to aid Planning Staff.	☐	4th (October-December)	☐	☐

Next Up…

Topic	General Goals	City Commission Directive?	Quarter	Status	
				In Progress	Complete
Public Project Review	Place on joint meeting agenda to express concerns over the review process of public projects.	☐	-	☐	☐

APPROVED