



AGENDA
REGULAR MEETING OF THE BIRMINGHAM PLANNING BOARD
WEDNESDAY SEPTEMBER 27, 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 **September 13, 2023**
- C.** Chairpersons' Comments
- D.** Review of the Agenda
- E.** Unfinished Business
- F.** Rezoning Applications
- G.** Community Impact Studies
 - 1. **380 S. Bates – Community House – Request for Community Impact Study Review for New 3-Story Addition to Existing Building in Downtown Birmingham.**
- H.** Special Land Use Permits
- I.** Site Plan & Design Reviews
 - 1. **380 S. Bates – Community House – Request for Preliminary Site Plan Review for New 3-Story Addition to Existing Building in Downtown Birmingham.**
- J.** Study Session
- K.** Miscellaneous Business and Communications:
 - 1. Pre-Application Discussions
 - i. **34952 Woodward – Design Update**
 - 2. Communications
 - i. **Project Updates**
 - ii. **City Commission Joint Meeting – October 23, 2023**
 - 3. Administrative Approval Correspondence
 - i. **September 8, 2023 – September 22, 2023**
 - 4. Draft Agenda – **October 11, 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

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City Of Birmingham
Regular Meeting Of The Planning Board
September 13, 2023
City Commission Room
151 Martin Street, Birmingham, Michigan

Minutes of the regular meeting of the City of Birmingham Planning Board held on September 13, 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, Daniel Share, Janelle Whipple-Boyce; Alternate Board Member Nasseem Ramin (not voting); Student Representative Asher Kaftan, Matthew Wiegand (arrived 7:33 p.m.)

Absent: Alternate Board Member Jason Emerine

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

B. Approval Of The Minutes Of The Regular Planning Board Meeting of August 9, 2023

09-34-23

Motion by Mr. Boyle

Seconded by Mr. Share to approve the minutes of the Regular Planning Board meeting of August 9, 2023 as presented.

Motion carried, 7-0.

VOICE VOTE

Yeas: Clein, Williams, Boyle, Jeffares, Share, Koseck, Whipple-Boyce

Nays: None

C. Chair's Comments

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

D. Review Of The Agenda

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

J. Study Session

1. Health Club/Studio – Public Hearing

The Chair opened the public hearing at 7:33 p.m.

SP Cowan presented the item.

The Chair noted that the language was reviewed by the Birmingham Shopping District (BSD), and that the BSD was supportive.

Seeing no public comment, the Chair closed the public hearing at 7:35 p.m.

09-35-23

Motion by Mr. Williams

Seconded by Mr. Koseck to recommend to the City Commission approval of the proposed amendments to Article 2, Section 2.27 and Article 5, Section 5.12 to allow health club/studio uses in the B4 Business Residential District in the basement levels and floors two and above.

Mr. Boyle said he appreciated the feedback provided by both the business and real estate communities. He said the Board could consider a sunset clause for the amendments in case there was a consistent or increased in demand for the use on the ground floor.

Mr. Share replied that Staff should update the Board in the future if a consistent or increased demand for the use on the ground floor becomes apparent. He noted the Board could consider further proposals at that point in time. He said including a sunset clause would artificially affect the marketplace.

The Chair concurred with Mr. Share, affirming that the Board could make further amendments in the future. He added that the proposed amendments had not generated much conversation during the evening's review because there had been a lot of discussion about the amendments over the last few months.

Mr. Jeffares said there might be an opportunity for the use on the ground floor in the future. He advocated for approving the proposed amendments as presented and for observing the impact moving forward.

It was noted that these uses would permit an entrance, lobby, or retail on the first floor.

Motion carried, 7-0.

VOICE VOTE

Yeas: Clein, Williams, Boyle, Jeffares, Share, Koseck, Whipple-Boyce

Nays: None

The Chair thanked SP Cowan.

2. Dumpster Screening Materials – Study Session

PD Dupuis presented the item and answered informational questions from the Board.

Board discussion was as follows:

- Given that screenwalls for dumpster enclosures are frequently damaged by trash collection, it might be most appropriate to keep those screenwalls as masonry;
- It might be permissible to expand the types of materials used for the doors;
- Mechanical and dumpster screenwalls could have different requirements. Wood composite or metal could be appropriate additional materials for mechanical screenwalls;
- For Article 4, Section 4.54(B)(8)(a), the language should be changed to read something akin to 'Screenwalls shall measure at least 6 feet in height, or one foot taller than the height of the receptacle or equipment being screened';
- PVC siding could be further discussed as a possible material for mechanical screenwalls;
- The language should specify that the materials should be maintenance-free;
- While it might be too difficult to require by ordinance that screenwall doors come down to the ground in order to deter rodents, it might be possible for Staff to recommend that during design reviews;
- Concrete or steel bollards could potentially be used within dumpster screenwalls to minimize damage and to allow for other materials to be used;
- Given present issues with dumpster ordinance compliance in the City, the Board should consider recommending that all dumpsters be required to come into compliance with any updated ordinance over time;
 - That would be a policy issue for the Commission to opine on, and would also likely require the review of the City Attorney;
- Compactor use could be incentivized; and,
- Some language should be added for consideration that requires the gates to be closed at all times except when the dumpster is being accessed for use.

3. Mixed-Use Requirements – Study Session

PD Dupuis presented the item and answered informational questions from the Board.

Board discussion was as follows:

- It likely is no longer appropriate to offer a bonus story to developers for Bronze LEED certification;
- While it could be appropriate to require that all new buildings acquire LEED certification, that might be a Sustainability Committee or Commission decision;
- The commercial requirements should likely be higher than 25%. It would be helpful to review some recent projects to see their commercial percentages in order to get a sense of what different amounts look like;
- Heavy reliance on retail on the ground floor of mixed use buildings present problems, as noted in the article "The Ground-Floor Window Into What's Ailing Downtowns"¹;
- The emphasis on the ground floor should be on interaction and not on transaction;
- This is an opportunity to reconsider what commercial uses outside the redline area of the downtown might mean;
- There are commercial uses that are not retail that still generate traffic;

¹Badger, E. (2023, September 4). The Ground-Floor Window Into What's Ailing Downtowns. The New York Times. <https://www.nytimes.com/2023/09/04/upshot/cities-downtowns-vacant-storefronts.html>

- If commercial has to be a percentage of the first floor excluding parking, then parking could take up the majority of the first floor. It might be appropriate to have a minimum commercial requirement;
- It would be helpful to review whether there are commercial requirements on the ground floor if a developer were not trying to attain an additional story; and,
- It would be necessary to consider how to create an active, residential without duplicating the downtown. There are predominantly residential neighborhoods in other communities that still attract pedestrian activity.

K. Miscellaneous Business and Communications

- 1. Administrative Approval Correspondence**
- 2. Communications**
- 3. Draft Agenda**

Board members commented that Bates Street and directions on master plan implementation were two potential topics for the joint meeting with the Commission.

- 4. Action List – 2023**
- 5. 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 commended everyone present and adjourned the meeting at 8:50 p.m.



Nick Dupuis, Planning Director



Laura Eichenhorn, City Transcriptionist

380 S. Bates – Community House

Navigation

Please click the links below to jump directly to each section:

1. [Planning Division Report](#)
2. [Zoning Summary](#)
3. [Departmental Review Comments](#)
4. [Transportation Impact Study Review Letters](#)
5. [Site/Design Plans](#)
6. [Community Impact Study](#)



MEMORANDUM

Department Name

DATE: September 27, 2023

TO: Planning Board Members

FROM: Nicholas Dupuis, Planning Director

SUBJECT: 380 S. Bates – Community House – Community Impact Study & Preliminary Site Plan Review

Introduction

The applicant has submitted an application for Community Impact Study and Preliminary Site Plan Review for a new 3-story addition to the existing Community House building in Downtown Birmingham. The proposed addition will encompass what is currently a patio area, sculpture garden, childcare facilities and landscaping on the northern side of the property. The proposed new addition would house sporting/fitness facilities, assembly rooms, event space, and improved kitchen facilities. In total, the new addition will nearly double the existing building area, and will provide for building frontage on all four adjacent streets; Merrill, S. Bates, Townsend and S. Chester.

An important recurring element that will be mentioned throughout this report will be the existing zoning conditions as it relates to the proposal, as well as what will be needed to make this project work. As it stands, the property is zoned R7 (Multiple-Family Residential) with an overlay of C (Community) on approximately 2/3 of the site. To be able to develop the site as proposed, the applicant will need to pursue a successful rezoning to extend the C (Community Overlay) district across the entire site. This zoning issue has implications for building bulk, placement and height, but also for permitted uses. Detailed analyses of each zoning issue will be provided in the relevant sections below.

In addition to zoning, the property and building is also a locally designated historic resource, which subjects the property to the standards outlined in [Chapter 127](#) of the Birmingham Code of Ordinances and review by the Historic District Commission. On September 6, 2023 ([Agenda](#)), the Historic District Commission reviewed the proposal as it is being presented here and moved to

postpone indefinitely citing concerns about the massing of the addition, as well as concerns about other areas of the site, including the 1990's addition.

Finally, please be advised that the Planning Division has provided a pared-down version of the Community Impact Study in the agenda packet. This version includes narratives, maps, executive summaries, reports, and other pertinent information for this review. To view the full Community Impact Study and its appendices, data sheets, and other details, please follow the link provided below. In addition, a copy of the full Community Impact Study may be viewed at the Community Development Department upon request.

- [COMMUNITY HOUSE – FULL COMMUNITY IMPACT STUDY](#)

Community Impact Statement

Article 7, Section 7.27 (E) states that a community impact study (CIS) shall be required for an addition to an existing structure and/or building with a combined gross floor area of 20,000 square feet or more, provided that the addition has a gross floor area greater than 10% of the gross floor area of the existing structure and/or building, for review by the Planning Board at the preliminary Site Plan Review. The existing building area is 37,495 sq. ft. and the addition area is 33,830, which is an increase of 90%. Thus, 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 would be considered a Community Use in the C (Community) overlay district as defined in [Article 9, Section 9.02](#) of the Zoning Ordinance:

Community Use: Premises used principally for education, worship, cultural performances, and gatherings administered by nonprofit cultural, educational, and religious organizations; premises used principally for local, state, and federal government, administration, provision of public services, education, cultural performances, and gatherings.

The Community House is a registered [domestic nonprofit corporation](#) operating within the City of Birmingham. This Community Use is permitted by [Article 3, Section 3.04 \(C\)\(3\)](#), but only in the portions of the site that are within the overlay zoning district. Community Use is not listed in the R7 zoning district. Thus, **the applicant will need to pursue a successful rezoning to extend the C (Community Overlay) district across the entire site.**

In addition to the principal use, the Community House is also known to hold a liquor license (since 1974) and serve alcohol for on premise consumption as an accessory use. They also have other permits from the Michigan Liquor Control Commission related to said liquor license including a dance-entertainment permit,

outdoor service area, and additional bar. At this time, it is the City's position that the use of this liquor license is pre-existing legal nonconforming. Because this nonconforming use is proposed to be expanded/enlarged, the applicant must follow the requirements of Article 6, Section 6.02 of the Zoning Ordinance which states:

1. The use or building shall not be extended or enlarged except as herein provided. Nonconforming buildings may be extended or enlarged, provided that the extension or enlargement does not itself violate any provision of the Zoning Ordinance. Where the extension or enlargement will violate any provision of the Zoning Ordinance, *application for a variance shall be made to the Board of Zoning Appeals* pursuant to Section 8.01(F).
2. Existing and new establishments with alcoholic beverage sales (on-premise consumption) shall *obtain a Special Land Use Permit* upon change in ownership or name of establishment, or upon application for a Site Plan Review.

As the applicant would like **to continue the use of the liquor license for alcoholic beverage sales for on-premise consumption, the applicant must obtain a variance and Special Land Use Permit pursuant to Article 6, Section 6.02 of the Zoning Ordinance.**

1.2 **Downtown Overlay District:** Article 3, Section 3.04 of the Zoning Ordinance states that the purposes of the Downtown Birmingham Overlay District are to:

1. Encourage and direct development within the boundaries of the Downtown Birmingham Overlay District and implement the Downtown Birmingham 2016 Plan;
2. Encourage a form of development that will achieve the physical qualities necessary to maintain and enhance the economic vitality of Downtown Birmingham and to maintain the desired character of the City of Birmingham as stated in the Downtown Birmingham 2016 Plan;
3. Encourage the renovation of buildings; ensure that new buildings are compatible with their context and the desired character of the city; ensure that all uses relate to the pedestrian; and, ensure that retail be safeguarded along specific street frontages; and
4. Ensure that new buildings are compatible with and enhance the historic districts which reflect the city's cultural, social, economic, political, and architectural heritage.

On May 22, 2023, the Birmingham City Commission adopted the [Birmingham Plan 2040](#) ("2040 Plan"), which is a comprehensive master plan designed to incorporate and replace the Downtown Birmingham 2016 Plan. The 2040 Plan contains a Future Land Use Map that designates the entire "L" shaped Community House property as "Civic Destination: General." Civic destinations are described as spaces that offer neutral, aspirational places for citizens and community leaders to exchange ideas, form community associations, or simply socialize. It is

recommended that these civic destinations be “constructed as iconic structures and landscapes to the highest standards and at a civic scale. This should include authentic durable materials, oversized windows, high ceilings, and Tudor design and detailing.”

At this time, the proposed addition appears to meet these aspirational principles. Although not publicly owned, the Community House team has stated in public meetings that it is the mission of their non-profit to promote health and wellbeing, education, and service to the community. In the physical realm, the building will be constructed of brick and stone, will have large windows and high ceilings, and the pointed gables and other features draw from Tudor design principles.

1.3 **Land Development Issues**

The applicant has submitted a Phase 1 Environmental Site Assessment for the subject site which was prepared by PM Environmental. The assessment found no recognized environmental conditions, controlled recognized environmental conditions, and/or significant data gaps in connection with the subject property. Therefore, PM Environmental recommended no further investigation at this time. The consultants did mention, though, that there may be a Business Environmental Risk associated with the building due to visual observations of potential asbestos-containing material (ACM). To address this issue, PM Environmental recommends that the applicant perform a pre-renovation ACM survey to determine whether or not asbestos is present in the materials observed.

In regards to the soils, the applicant retained McDowell & associates to perform a soils investigation to better understand the capacity for development (dated April 20, 2023). In the report, the consultant details five test soil borings that consisted of a wide range of material. The consultant provides great detail on the depth that each material was encountered, and described where groundwater was found. The consultant also performed standard penetration tests that provided information on their densities of the soil. They found that the fill soils at the top seemed to have poor densities, while the underlying native soils were strong.

McDowell and associated goes on to describe the challenges with the slab-on-grade building addition in relation to their findings. Several key recommendations can be found in the report, which includes some of the unique materials discovered in the soil borings. In one example, the asphalt pavement that was discovered will need to be addressed before construction by either full removal, or having it fully broken up. Since the development is an addition, the consultant is careful to outline necessary steps in regards to settling and differential movement. It is noted that if more than normal differential movement cannot be tolerated, the applicant should remove and replace all fill soils and buried topsoil with engineered fill meeting the proper requirements.

Finally, the applicant has estimated the amount of excavated soils to be around 15,000 cubic yards. The haul route has been designed for trucks to come in off Oak, continue across to Willits, south down Chester, east on Brown and out to Woodward. Although the Chester frontage is directly adjacent to residential

dwelling, the right-of-way width is significantly wider and less active than the other access points along Merrill and Bates.

1.4 **Utilities, Noise & Air Issues**

The CIS indicates that the addition will be serviced by existing utilities within the public right-of-way, and that no easements are expected to be necessary for this project. The Engineering Department submitted comments requesting further information on stormwater calculations, sewer leads, and potential new water service lines. In general, there does not seem to be a concern about the existing infrastructure having the capacity to provide ample service to the development.

A Noise Impact Assessment dated April 20, 2023 was prepared by Kolano and Saha Engineers, Inc. (K & S) for the proposed addition, which concludes that the proposed will produce sound levels similar to what the existing facility produces and is expected to be within the Birmingham Noise Ordinance limits with due consideration for mechanical equipment noise control. In the study, K & S identified 4 potential sources of noise as a result of the addition that were explored further: building mechanical systems, delivery vehicle and waste collection, outdoor terraces, and emergency power generator. In general, K & S seemed to indicate each of these sources would require special design considerations to minimize the impact on both the residential use proposed on the site, but also the adjacent residential neighborhoods.

The subject site is located within the Southeast Michigan Air Quality District, with monitoring stations in Pontiac, Rochester, Oak Park and Allen Park. Current ambient air quality standards are below the minimum standards from the EPA. 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 acknowledges that with development comes additional pollution, but that the newer building will run cleaner and will be constructed with sustainable materials that should help to not establish any trends pertaining to air quality standards.

1.5 **Environmental Design & Historic Values**

The current site contains a 37,495 sq. ft. building, paved patio area, children's play facilities, and landscaping - including several trees. The applicant is proposing to install some new landscaping with the addition, but it is mostly decorative and evergreen plantings. In addition, the existing landscaping on the south side of the site will remain. Due to the minimal natural area existing on site, there are no major concerns over the loss of natural areas on the property.

Furthermore, with the development, much of the streetscape will be redeveloped, including the removal and replacement of several street trees. In general, the Department of Public Services (DPS) is comfortable with the replacement and has outlined several reasons (see attached comments) as to why new plantings would better serve the City of Birmingham streetscape. The DPS has also suggested that more trees could be planted in the Bates and Townsend streetscape as well.

The CIS continues to state that the applicant feels as though careful consideration as made to ensure that the proposed massing would not be out of character with neighboring buildings, and that it will not be out of scale or obtrusive. The applicant also states that any objectionable visual pollution such as loading docks and trash receptacles are placed along Chester St. and will be screened and minimized by the proposed design.

Finally, the existing building and property are a locally designated historic resource within the Shain Park Historic District. Other buildings in the district are the Baldwin Public Library, Birmingham City Hall, and the former Birmingham Post Office. The original building was constructed in 1928, and an addition was built on to the north side of the structure in the 1990's. As noted above, the applicant will be required to obtain a Certificate of Appropriateness from the Historic District Commission before the applicant can proceed with development. **The applicant must obtain a Certificate of Appropriateness before developing the property.**

1.6 **Refuse, Sewer & Water**

The CIS and site plans submitted a dedicated trash enclosure on the west side of the property along Chester. The CIS states, and the site plans confirm, that the applicant will be providing space to separate trash and recycling for pickup. The applicant feels as though the site will produce a "normal" level of waste and that it will be able to be handled by ordinary trash collection procedures. It is worth noting, however, that the existing trash receptacle on site appears to be a compactor located within a shed type structure with gates. The compactor is tall, and significantly taller than the gates for the enclosure in which it is located. The elevation drawings for the addition appear to show a standard 6 ft. high masonry screenwall with gates, which suggests that ordinary top-loading dumpster may be proposed as a part of this development. With the additional square footage, and the additional waste that could be reasonably assumed that it will produce, the change from a large compactor to two ordinary dumpsters (one for trash, one for recycling) may be problematic. If the solution is increased pickup scheduling, that could also prove to be problematic based on the location of the waste collection area. **The Planning Board should request that the applicant confirm and explain the strategy for solid waste at this site.**

The development appears to have access to sanitary sewers within the adjacent right of ways. 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, and that preliminary meetings and correspondence have already been had. The proposed development will also utilize low flow toilets and restricted flow faucets, which will reduce the output to the system. The applicant also stated that a greywater recycling system could be incorporated to reduce the amount of water entering the system, which is highly encouraged.

The applicant intends to also connect to the adjacent stormwater system, which is not expected to overburden the network. As noted in the CIS, the City of Birmingham is applying new stormwater detention standards developed by the County, which will require the applicant to provide stormwater detention on site.

This detention system will be underground, and is proposed on the west side of the property in the area of the loading dock. **The Planning Division suggests that the applicant review any and all opportunities on site to provide stormwater detention in the form of green infrastructure. Based on the site plans provided, there may be opportunities for strategies like permeable pavers or collection on rooftops/terraces.**

Finally, the CIS explains that the existing sites utilize the existing adjacent water mains, and that there are no capacity issues present or expected as a result of the development. 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 the applicant expects to have any public safety concerns as a part of the proposed development. The site has adequate access from four street frontages (2 separate "main" entrances), provides building access via a main entrance, and contains an elevator that can accommodate a medical cart. Furthermore, the building will likely have a security system that will be developed in conjunction with the Police Department. Although the fire suppression system has not yet been designed, the applicant has stated that the building will be fully suppressed, and will be designed to meet all applicable City and National fire codes.

1.8 Transportation Issues

The applicant has submitted a completed Transportation Impact Study (TIS) as required by the City's transportation consultants. A preliminary review of the submission was completed by the City's traffic consultants on March 14, 2023, and a review of the full TIS was completed on August 18, 2023. Both review letters from Fleis & Vandenbrink and MKSK are attached for review. In addition, a response letter from Stonefield Engineering is included for review, alongside the original complete TIS document. Up to this point, several meetings have been held between the consultants, and they are in agreement with the trip generation analysis and methodologies that have been proposed, but are awaiting a final updated TIS to review. **The Planning Division will provide any new updates at the time of the meeting, and will be available for questions.**

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. In addition, the applicant is proposing to provide 2 bike racks in the public right-of-way.

1.9 Parking Issues

Due to the subject site's location within the former Parking Assessment District, the applicant is not required to provide parking on-site. The adjacent right-of-way on each frontage does contain on-street parking, and the Chester Street parking garage is located nearby.

1.10 **Natural Features**

The site does not contain any natural features that will be lost as a result of this development. In addition, the little landscaped area that exists does not provide any significant storm water detention properties, nor does it contain enough variety of plantings to raise concerns over the loss of habitat for pollinators and other creatures.

1.11 **Departmental Reports**

1. **Engineering Division** – Please see attached Engineering Division comments dated September 6, 2023.
2. **Department of Public Services** – Please see attached Engineering Division comments dated September 20, 2023.
3. **Fire Department** – Please see attached Engineering Division comments dated August 30, 2023.
4. **Police Department** – The Police Department has no concerns at this time.
5. **Building Division** – Please see the attached Building Division comments dated August 31, 2023.
6. **Parking Manager** – The Parking Manager has no concerns at this time.

1.12 **Summary of CIS**

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

1. The applicant will need to pursue a successful rezoning to extend the C (Community Overlay) district across the entire site;
2. To continue the use of the liquor license for alcoholic beverage sales for on-premise consumption, the applicant must obtain a variance and Special Land Use Permit pursuant to Article 6, Section 6.02 of the Zoning Ordinance;
3. The Planning Board should discuss the haul route in relation to the adjacent neighborhood and the activity levels on the street;
4. The applicant must obtain a Certificate of Appropriateness from the Historic District Commission before developing the property;
5. The Planning Board should request that the applicant confirm and explain the strategy for solid waste at this site;
6. The applicant must submit a completed Transportation Impact Study for final review by the City; and
7. The applicant must comply with the requests of all City 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 380 S. Bates – Community House – with the following condition:

1. The applicant must obtain a successful rezoning to extend the C (Community Overlay) district across the entire site;
2. The applicant must obtain a variance and Special Land Use Permit To continue the use of the liquor license for alcoholic beverage sales for on-premise consumption, pursuant to Article 6, Section 6.02 of the Zoning Ordinance;
3. The applicant must obtain a Certificate of Appropriateness from the Historic District Commission before developing the property;
4. The applicant must provide the appropriate number and size of solid waste receptacles and screen them appropriately;
5. The applicant must submit a completed Transportation Impact Study for final review by the City; and
6. The applicant must comply with the requests of all City Departments.

1.14 **Sample Motion Language**

Motion to **ACCEPT** the Community Impact Study as provided by the applicant for the proposed development at 380 S. Bates – Community House – with the following conditions:

1. The applicant must obtain a successful rezoning to extend the C (Community Overlay) district across the entire site;
2. The applicant must obtain a variance and Special Land Use Permit To continue the use of the liquor license for alcoholic beverage sales for on-premise consumption, pursuant to Article 6, Section 6.02 of the Zoning Ordinance;
3. The applicant must obtain a Certificate of Appropriateness from the Historic District Commission before developing the property;
4. The applicant must provide the appropriate number and size of solid waste receptacles and screen them appropriately;
5. The applicant must submit a completed Transportation Impact Study for final review by the City; and
6. The applicant must comply with the requests of all City Departments.

OR

Motion to **POSTPONE** the Community Impact Study as provided by the applicant for the proposed development at 380 S. Bates – Community House – 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 380 S. Bates – Community House – 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 3-story addition to the existing Community House building in the R7 (Multiple-Family Residential) and C (Community Overlay zoning districts. The proposed addition will encompass what is currently a patio area, sculpture garden, childcare facilities and landscaping on the northern side of the property. The proposed new addition would house sporting/fitness facilities, assembly rooms, event space, and improved kitchen facilities. In total, the new addition will nearly double the existing building area, and will provide for building frontage on all four adjacent streets; Merrill, S. Bates, Townsend and S. Chester.

As detailed within the CIS, there are several large hurdles that the applicant must clear to develop the property as currently designed:

1. The "L" shaped site is currently split-zoned between an R7 (Multiple-Family) underlying zoning district and a C (Community) overlay district on 2/3 of the site. This has implications for the bulk, area and placement of the new addition as well as the permitted use on site. The applicant must seek a successful rezoning to extend the C (Community) overlay district across the entire site.
2. The property owner currently owns and operates a liquor license which provides for an accessory use of alcoholic beverage sales for on-premise consumption. This accessory use is not permitted in the R7 or C zoning districts and is considered a pre-existing legal nonconformity. To expand/enlarge the nonconforming use, the applicant must obtain a variance and a Special Land Use Permit.
3. The property is a locally designated historic resource. The addition must meet the Secretary of the Interior Standards for Rehabilitation, which are reviewed and analyzed by the Historic District Commission. In the end, the applicant must receive a Certificate of Appropriateness before the development may be permitted to be constructed.

Although these issues were explored in detail in the CIS above, the Planning Division suggests that the same conditions be applied to the preliminary site plan review as well. Please see the recommendation and suggested motion language below for the complete conditions.

1.0 Land Use & Zoning

- 1.1 **Existing Land Use** – The existing land use is Community within the Community Overlay District, and currently contains a 1-2 story building and associated site improvements.
- 1.2 **Zoning** – The subject site exists within the R7 (Multiple-Family Residential) and C (Community Use) 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	Public Library	Residential	Public Park	Residential
Existing Zoning District	PP (Public Property)	R8 (Attached Single Family)	PP (Public Property)	R8 (Attached Single Family)
Overlay Zoning District	C	N/A	C	N/A

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 C (Community) overlay district. However, as noted in the CIS document above, the applicant would not meet the bulk, area and placement requirements in the R7 portion of the site.

In regards to the C (Community) Overlay portion of the site, [Article 3, Section 3.03](#) states that the design of community buildings and improvements shall not be subject to the specific standards of Section 3.04, but shall be subject to design review by the Planning Board. The only bulk, area and placement standard that is explicitly noted in this section is related to building height, which requires buildings in the C zone to comply with the underlying height restrictions listed in each two-page layout in Article 2 of the Zoning Ordinance, but may be negotiated by the Planning Board. The proposed addition will measure 40 ft. in height, which is less than the 50 ft. maximum height in the R7 zoning district.

3.0 Screening & Landscaping

- 3.1 Dumpster Screening – The applicant is proposing one exterior solid waste collection area on the west side of the property along Chester. The proposed enclosure appears to be constructed of masonry with wood gates, meeting the requirements of the Zoning Ordinance.
- 3.2 Parking Lot Screening – The proposed development does not include an off-street parking facility. Thus, no screening is required.
- 3.3 Mechanical Equipment Screening – The applicant has submitted a rooftop plan and elevation drawings that clearly demonstrate a mechanical enclosure atop the new addition, as well as new mechanical units above the renovated kitchen are at the center of the property. The applicant has also submitted specification sheets for the units that are anticipated to be placed within the enclosures. The new units are centrally located on the top of the 3rd story. The proposed units include exhaust fans, energy recovery ventilator, heat pumps, and make up air units. The tallest piece of equipment measures nearly 8.5 ft. tall. At this time, the enclosure on the third story appears to meet the requirements of the Zoning Ordinance, while the new units above the renovated kitchen area do not appear to have screening on

the south side. **The applicant must provide screening for all mechanical units at Final Site Plan.**

- 3.4 Landscaping – The applicant is proposing several new plantings consisting of predominantly evergreen hedges (G. Velvet Boxwood and Dense Yew), flowering shrubs (Bob Hydrangea), evergreen groundcover (G. Carpet Pachysandra) flowering dogwood trees, and will retain the existing landscaping around the existing building. In addition, there are some ornamental Ivory Silk Lilac trees, All Gold Forest Grasses, and velvet boxwood on the terraces. The applicant is not required to provide landscaping, and none of the proposed plantings are present on the city's prohibited species list.
- 3.5 Streetscape Elements – The applicant has proposed a number of new street trees and 2 bike racks on the site plans submitted. In terms of street trees, Article 4, Section 4.20 (G) requires at least 1 street tree for each 40 linear feet of frontage along a street. A breakdown of the required and proposed street trees is provided below:

Street	Linear Frontage (ft.)	Required	Provided
Chester	103	2	2
Merrill	240	6	8
Bates	206	5	2
Townsend	120	3	2
Total	669	16	14

As described in the comments submitted by the Department of Public Services (DPS), the applicant will likely be approved to replace the selected streetscape trees, but the applicant must comply with the size and species requirements outlined by the DPS. The applicant must also provide the appropriate number of street trees per frontage.

Because the applicant is not proposing to install any new pedestrian street lights, benches, or waste receptacles, a conversation should be had about the streetscape and the appropriate elements for the site. Pedestrian scale street lights exist in front of the Baldwin Public Library across Merrill, and along Shain Park on Bates. In addition, it is common to see benches and waste receptacles for respite in this area. The Planning Division feels as though street lights on the Chester or Townsend side would be inappropriate due to the adjacency to residential, but benches and waste receptacles may be appropriate. **The Planning Board may wish to require the applicant to include pedestrian scale street lights, benches, bike racks, or trash receptacles along the Merrill and Bates frontages.**

4.0 Parking, Loading & Circulation

- 4.1 Parking – Due to the subject site's location within the former Parking Assessment District, the applicant is not required to provide parking on-site. The adjacent right-

of-way on each frontage does contain on-street parking, and the Chester Street parking garage is located nearby.

- 4.2 Loading – Due to the unique Community use on site, the office and commercial loading space standards in [Article 4, Section 4.24](#) do not apply to this site. However, the applicant is proposing a loading area on the west side of the property off of Chester, which is consistent with the existing conditions on site.
- 4.3 Vehicle Circulation & Access – The only vehicles that will be entering the site are delivery/service vehicles, which will be on the Chester side of the property.
- 4.4 Pedestrian Circulation & Access – Pedestrian access to the existing site will be maintained. The existing site contains a couple of entrances, but the main entrance is on Bates close to the corner of Bates and Townsend. The addition will provide for two new pedestrian access points, one more prominent than the other. The most prominent entrance will be centrally located and will provide access to circulation areas that access the new addition, but also connects to the existing building.

5.0 Lighting

The site/design plans submitted indicate several new light fixtures on the property. The lighting strategy consists of recessed, bollard, in-ground, and wall pack style fixtures located at new entries, sculpture garden, terraces, and receiving area. The recessed lighting and wall packs appear to be cutoff style as required by the Zoning Ordinance, but the spotlights, bollard lights, and in-ground lights do not meet the cutoff requirements. Exception to cutoff luminaires can be made at the discretion of the Planning Board or Historic District Commission under any of the following conditions:

- 1. The distribution of upward light is controlled by means of refractors or shielding to the effect that it be used solely for the purpose of decorative enhancement of the luminaire itself and does not expel undue ambient light into the nighttime environment.
- 2. The luminaire is neither obtrusive nor distracting, nor will it create a traffic hazard or otherwise adversely impact public safety, with appropriate methods used to eliminate undesirable glare and/or reflections.
- 3. The luminaire is consistent with the intent of the Master Plan, Urban Design Plan(s), Triangle district plan, Rail District plan and/or Downtown Birmingham 2016 Report, as applicable.
- 4. The scale, color, design or material of the luminaire will enhance the site on which it is located, as well as be compatible with the surrounding buildings or neighborhood.
- 5. Lighting designed for architectural enhancement of building features (i.e. architectural enhancement lighting). Appropriate methods shall be used to minimize reflection and glare.
- 6. The site lighting meets all requirements set forth in this ordinance including, but not limited to, light trespass and nuisance violations.

The Planning Board should review the lighting plans and specifications provided and consider granting a cutoff waiver for the bollard, spotlight, and in-ground fixtures.

In addition to specification sheets and lighting plan, the applicant also included photometric information demonstrating light intensity in each of the areas of new lighting. For this project, the intensity of light on a site shall not exceed six-tenths (0.6) maintained foot-candles at any property line that abuts a single-family residential zoned property or one and one half (1.5) maintained foot-candles at any property line for any other zoned property. The light intensity shall be measured at 6' above ground level on a vertical plane. As demonstrated by the photometric plan provided, the proposed light levels do not exceed the permitted intensity at any property line at this time.

6.0 Departmental Reports

- 6.1 **Engineering Department** – Please see the attached Engineering Division comments dated September 6, 2023.
- 6.2 **Department of Public Services** – Please see attached Engineering Division comments dated September 20, 2023.
- 6.3 **Fire Department** – Please see the attached Fire Department comments dated August 30, 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 August 31, 2023.
- 6.6 **Parking Manager** – The Parking Manager has no concerns at this time.

7.0 Design Review

The applicant has submitted elevation drawings without detailed material notes, but has indicated that the majority of façade material will consist of architectural brick, stone, glass/windows, and metal (railings, RTU screenwall). Detailed notes and 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. As noted above, the applicant will not be subject to any specific architectural standards such as required materials or glazing. **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.**

8.0 Required Attachments

(This space intentionally left blank)

	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 380 S. Bates – Community House – with the following conditions:

1. The applicant will need to pursue a successful rezoning to extend the C (Community Overlay) district across the entire site;
2. To continue the use of the liquor license for alcoholic beverage sales for on premise consumption, the applicant must obtain a variance and Special Land Use Permit pursuant to Article 6, Section 6.02 of the Zoning Ordinance;
3. The applicant must obtain a Certificate of Appropriateness from the Historic District Commission before developing the property;
4. The applicant must comply with the requests of the Planning Board and all City Departments.

11.0 Sample Motion Language

Motion to **APPROVE** the Preliminary Site Plan for 380 S. Bates – Community House – with the following conditions:

1. The applicant will need to pursue a successful rezoning to extend the C (Community Overlay) district across the entire site;
2. To continue the use of the liquor license for alcoholic beverage sales for on premise consumption, the applicant must obtain a variance and Special Land Use Permit pursuant to Article 6, Section 6.02 of the Zoning Ordinance;
3. The applicant must obtain a Certificate of Appropriateness from the Historic District Commission before developing the property;
4. The applicant must comply with the requests of the Planning Board and all City Departments.

OR

Motion to **POSTPONE** the Preliminary Site Plan for 380 S. Bates – Community House – pending receipt of the following:

1. _____
2. _____
3. _____

OR

Motion to **DENY** the Preliminary Site Plan for 380 S. Bates – Community House – for the following reasons:

1. _____
2. _____
3. _____

Zoning Compliance Summary Sheet
Community Impact Study & Preliminary Site Plan Review
380 S. Bates – Community House

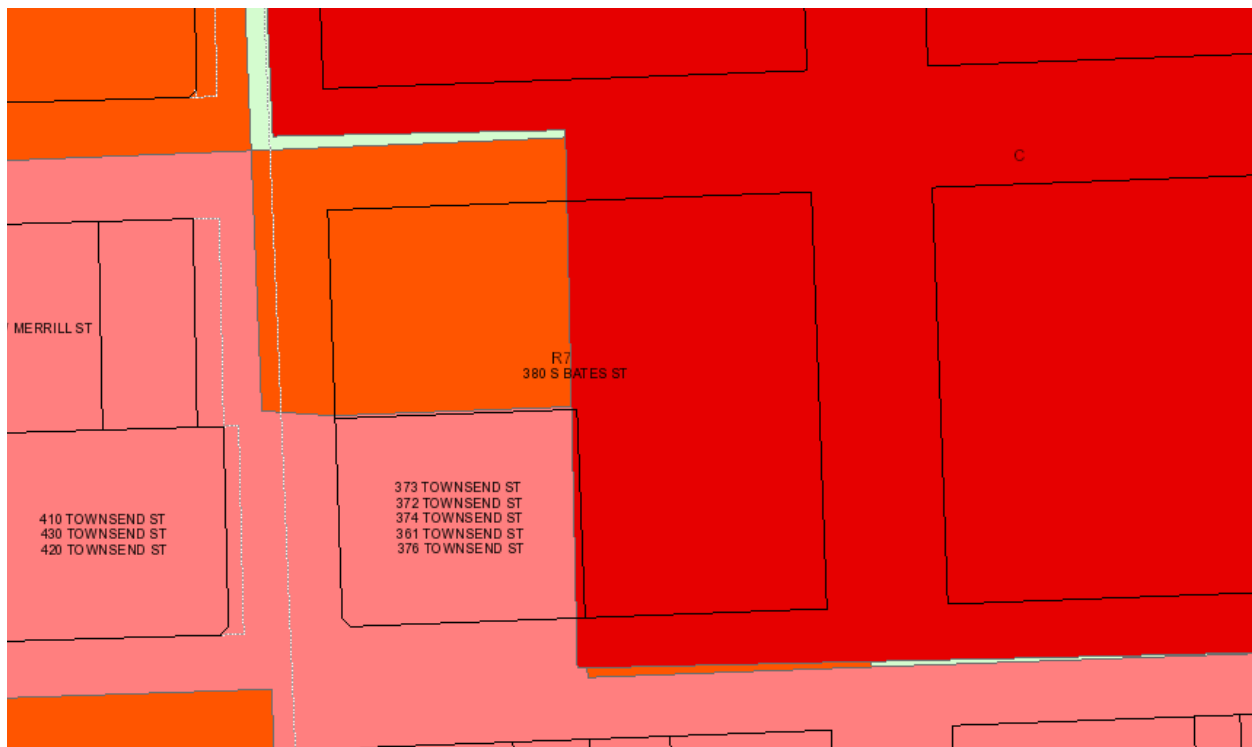
Existing Site: 2 story building and associated site improvements

Zoning: R7 (Multiple-Family Residential) & C (Community Overlay)

Land Use: Community

Existing Land Use and Zoning of Adjacent Properties:

	North	South	East	West
Existing Land Use	Public Library	Residential	Public Park	Residential
Existing Zoning District	PP (Public Property)	R8 (Attached Single Family)	PP (Public Property)	R8 (Attached Single Family)
Overlay Zoning District	C	N/A	C	N/A



Land Area:	Existing:	0.85 ac
	Proposed:	0.85 ac
Dwelling Units:	Existing:	0 units
	Proposed:	0 units
Minimum Lot Area/Unit:	Required:	N/A
	Proposed:	N/A
Min. Floor Area /Unit:	Required:	N/A
	Proposed:	N/A
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:	N/A (Community Overlay) Average setback of residential buildings within 200 feet, otherwise 25 feet (R7)
	Proposed:	N/A 5 ft.
Side Setbacks	Required:	N/A (Community Overlay) 1/2 the building height per side yard (R7)
	Proposed:	N/A 4 ft.
Rear Setback:	Required:	N/A (Community Overlay) 30 ft. (R7)
	Proposed:	N/A 12 ft. 9 in
Min. Front+Rear Setback	Required:	N/A
	Proposed:	N/A
Max. Bldg. Height:	Permitted:	50 ft., 4 stories
	Proposed:	40 ft., 3 stories

Min. Eave Height:	Required:	N/A
	Proposed:	N/A
Floor-Floor Height:	Required:	N/A
	Proposed:	N/A
Front Entry:	Required:	N/A
	Proposed:	N/A
Absence of Bldg. Façade:	Required:	N/A
	Proposed:	N/A
Opening Width:	Required:	N/A
	Proposed:	N/A
Parking:	Required:	None (Former Parking Assessment District)
	Proposed:	0 spaces
Min. Parking Space Size:	Required:	180 sq. ft.
	Proposed:	N/A
Parking in Frontage:	Required:	N/A
	Proposed:	N/A
Loading Area:	Required:	None
	Proposed:	2 off-street loading spaces 40 ft. x 12 ft. x 14 ft.
Screening:		
	<u>Parking:</u>	
	Required:	6 ft. masonry screen wall
	Proposed:	N/A
	<u>Loading:</u>	
	Required:	Screened from view
	Proposed:	Screened by building and masonry screen wall (south)
	<u>Rooftop Mechanical:</u>	
	Required:	Screened from view
	Proposed:	TBD
	<u>Elect. Transformer:</u>	
	Required:	Obscured from public view
	Proposed:	Separate masonry enclosure adjacent to trash enclosure
	<u>Dumpster:</u>	
	Required:	Masonry screen wall with wood gates
	Proposed:	Masonry screen wall with wood gates



MEMORANDUM

Department of Public Services

DATE: September 20, 2023

TO: Nick Dupuis, Planning Director

FROM: Brendan McGaughey, Parks and Forestry Foreman

SUBJECT: DPS Forestry Preliminary Site Plan Review – 380 S. Bates

The Department of Public Services has completed a review of the The Community House - 380 S. Bates preliminary site plans dated March 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 and general comments:

- Tree grates may be required.

Proposed forestry on Merrill:

- (8) 2.5-3" DBH Ginko 'Princeton Sentry' columnar trees proposed in Merrill ROW in existing tree well locations. DPS willing to accept proposed lower caliper (2.5-3" DBH, typical minimum is 3-3.5" DBH) because of restricted root zones and quality choice of tree for location, a smaller specimen has a better chance of survival.

Proposed forestry on S. Bates:

- (2) existing Norway Maples, due to location and current condition DPS recommends removal of these trees. (5) replacement trees could be planted in S. Bates ROW (columnar and/or medium growth approved species recommended) while following proper distances away from intersections (35'), stop signs (30'), etc.

Proposed forestry on Townsend:

- (2) existing Maples in fair condition to be preserved. Also potential for (1) additional tree (columnar and/or medium growth approved species recommended due to large existing private vegetation).

Proposed forestry on S. Chester:

- (1) existing 15" DBH Honeylocust, (1) proposed Honeylocust 'Skyline'. Due to proposed addition and anticipated construction damage, DPS recommends removal of the existing Honeylocust and replacement with an additional 3-3.5" DBH Honeylocust 'Skyline'.



MEMORANDUM

Engineering Department

DATE: September 6, 2023

TO: Nicholas J. Dupuis, Planning Director

FROM: Melissa A. Coatta, City Engineer

SUBJECT: Preliminary Site Plan Review – 380 Bates – The Community House

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

GENERAL:

- The Topographic Survey needs to show and label all existing utilities servicing the buildings, and the existing utilities located within the right of way.
- A grading plan will be required to show the limits of removal and replacement of the sidewalk in the City's right of way and changes in planned grade elevation in more detail.
- If construction staging will occur in the right-of-way, a construction agreement with the City and property owner will be required with possible road paving of the staging area.

SEWER:

- The preliminary plans do not indicate if a new sewer lead will be required for the building addition. If a new sewer lead is required, the proposed size and location need to be shown on the plans.

STORM WATER RUNOFF:

- Provide area calculations for the storm water detention design, invert elevations, and the designed allowable discharge rate.
- The City Ordinance (Chapter 114, Article III, Division 2, Sec 114-181) prohibits downspouts from being directly connected to the sewer system.

WATER SYSTEM:

- The preliminary plans do not indicate if a new water service will be required for the building addition. If a new water service is required, the proposed size and location need to be shown on the plans.

PERMIT FOR CONSTRUCTION:

- 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.
- Special Treatments Permit for proposed landscaping in the public right-of-way.

GENERAL CONSTRUCTION:

- Inspections will be required for planned Streetscape work, including sidewalk preparation and concrete placement.
- Additional pavement removal may be required if damaged during construction as requested by Building Department and Engineering Department.

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

CITY OF BIRMINGHAM
Community Development – Building Department
151 Martin Street, Birmingham, MI 48009

August 31, 2023

RE: Preliminary Site Plan Review Comments
380 S. Bates, the Community House

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 Residential Code.** Applies to 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.
- **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. An accessible route will be required to the Squash Courts in the lower level per Section 1110.4.1 of the building code.
2. No other code concerns noted at this stage.



Birmingham Fire Department

572 South Adams Road
Birmingham, MI 48009
Fire Marshal J. Scaife (248) 530-1903



Occupant Name:	Community House, The	Inspection Date:	8/30/2023
Address:	380 South Bates	InspectionType:	Site Plan Review
Suite:		Inspected By:	Scaife Jeff 248-530-1903 jscaife@bhamgov.org

No violations have been noted at this time. If you have any questions, please call our office. No violations.

Inspector Comments: Site plan was submitted for 33,830 square foot addition and renovation of the existing property. After careful review, here are the preliminary site plan comments;

1. Follow International Fire Code (IFC) 2015 ed., reference on submitted plans.
2. Knox Pad Locks will be required on construction fencing access gates.
3. Follow charter 33 of IFC 15' ed. "Fire safety during construction and demolition."
4. Knox Power Shutdown device requirements (review ordinance specs for requirements)
5. Current Knox Box may need to be upgraded to a larger size to accommodate potential increase in keys, cards, or fobs.
6. Sprinkler system (as required) - Submit plans to AHJ for review and approval.
7. Alarm plans (as required) - Submit plans to AHJ for review and approval.
8. Kitchen hood plans- Submit plans if additions or changes are made during renovation.
9. Fire Department Connection (FDC) ensure current FDC on Bates Street side does not get covered or encompassed by new plants/ shrubs.
10. Rooftop Garden requirements, IFC Chapter 317 and Sec. 905.3.8 for all requirements.
11. Bi-directional requirements comments (may be required-will be assessed toward the end of construction

phase by approved company).

12. All life safety requirements listed in IFC and NFPA documents and standards shall be followed and enforced.

A handwritten signature in black ink, appearing to be 'Jeff Scaife', written over a horizontal line.

Inspector:

Scaife Jeff
8/30/2023

MEMO

VIA EMAIL nkennedy@stonefieldeng.com

To: Nicholas Kennedy
Stonefield Engineering

CC: Nicholas Dupuis, City of Birmingham Planning Director, ndupuis@bhamgov.org
John Corak, Stonefield Engineering, jcorak@stonefieldeng.com

From: Julie M. Kroll, PE, PTOE
Salman Ahmad
Fleis & VandenBrink

Date: March 14, 2023

Re: Proposed Community House Expansion
Birmingham, Michigan
Preliminary TIS Review

Fleis & VandenBrink (F&V) have completed our preliminary review of the *Traffic Impact Study* provided by Stonefield Engineering submitted via email on Friday March 7, 2023. Based on our preliminary review of TIS provided, we have the following comments. **These comments will need to be addressed and the Transportation Impact Analysis resubmitted prior to any further review.**

EXISTING TRAFFIC VOLUMES

- A COVID factor was applied to the existing 2023 traffic volume data collected. This adjustment factor is no longer applicable. Please revise the analysis to reflect the current 2023 conditions *without* COVID adjustments.

SYNCHRO MODEL

- The Synchro model includes numerous unbalanced segments throughout the study network in all peak hour scenarios. The network models are to be balanced in accordance with the requirements outlined in the MDOT Electronic Traffic Control Guidelines.
- The link speeds need to be updated for the study roadway segments to reflect the correct speed limits.
- The signal timing permits for the signalized intersections in the study network were not provided and therefore the signal timing could not be verified for accuracy.
- The saturation flow rate needs to be updated to 2000 vphpl in all scenarios in accordance with the MDOT Electronic Traffic Control Guidelines.
- It is noted that wherever the PHF is below 0.7, it is being increased to 0.7 in Synchro model. The MDOT Electronic Traffic Control Guidelines PHF limits of are 0.6 and 0.95 should be used by approach.
- The HV% should be applied by approach, not movement. Synchro considered HV% as the total of both box trucks and articulated trucks. Additional information regarding how to apply HV% is provided in the MDOT Electronic Traffic Control Guidelines.

FUTURE GROWTH RATE

- It is recommended to use SEMCOG historical population and employment data to determine the annual background growth rate.

27725 Stansbury Boulevard, Suite 195
Farmington Hills, MI 48834
P: 248.536.0080
F: 248.536.0079
www.fveng.com

PERSON TRIP GENERATION

- The pedestrian trips generated from the vehicles using the offsite parking and walking to the Community Center should be shown on a Figure and reflected in the Synchro models.

If you have any questions, please do not hesitate to contact us at your convenience.

STONEFIELD

April 19, 2023

Nicholas Dupuis
Planning Director
City of Birmingham
151 Martin Street, Room #223
Birmingham, MI 48009

**RE: Proposed Community House Expansion
280 South Bates Street
City of Birmingham, Oakland County, Michigan**

Dear Mr. Dupuis:

Our office is submitting documents on behalf of the Applicant to address the comments contained within the Fleis and Vandenbrink review letter, dated March 14, 2023. Please find the following items enclosed:

ITEM DESCRIPTION	DATED	COPIES	PREPARED BY
Traffic Impact Study	04-19-2023	Electronic	Stonefield Engineering & Design
Synchro Files	--	Electronic	Stonefield Engineering & Design
SimTraffic Files	--	Electronic	Stonefield Engineering & Design

The following is an itemized response to the comments contained within the Fleis & VandenBrink Review Letter dated March 14, 2023. For the sake of brevity, any comments that are statements of fact or have been previously addressed are not included in the response below:

Existing Traffic Volumes:

- A COVID factor was applied to the existing 2023 traffic volume data collected. This adjustment factor is no longer applicable. Please revise the analysis to reflect the current 2023 conditions without COVID adjustments.*
Response: Acknowledged. The COVID adjustment factor was removed from the analysis.

Synchro Model:

- The Synchro model includes numerous unbalanced segments throughout the study network in all peak hour scenarios. The network models are to be balanced in accordance with the requirements outlined in the MDOT Electronic Traffic Control Guidelines.*
Response: The roadway network traffic volumes have been balanced in accordance with the MDOT Electronic Traffic Control Guidelines. It is noted that a dummy node was placed at the Chester Street garage driveway to account for the significant difference in traffic volume along Martin Street between Southfield Road and Chester Street.
- The link speeds need to be updated for the study roadway segments to reflect the correct speed limits.*
Response: The link speeds have been updated according to the speed limits along the roadways. It is noted that roadways without a posted speed limit were set to 25 mph.

STONEFIELDENG.COM

607 SHELBY STREET, SUITE 200, DETROIT, MI 48226 248.247.1115 T. 201.340.4472 F.

3. *The signal timing permits for the signalized intersections in the study network were not provided and therefore the signal timing could not be verified for accuracy.*

Response: The signal timing at the intersection of West Maple Road and Southfield Road and the intersection of West Maple Road and Chester Street has been provided within the appendix of the updated Traffic Impact Study.

4. *The saturation flow rate needs to be updated to 2000 vphpl in all scenarios in accordance with the MDOT Electronic Traffic Control Guidelines.*

Response: The saturation flow rates have been updated to 2,000 vphpl within the updated analysis.

5. *It is noted that wherever the PHF is below 0.7, it is being increased to 0.7 in Synchro model. The MDOT Electronic Traffic Control Guidelines PHF limits of are 0.6 and 0.95 should be used by approach.*

Response: The PHFs have been updated to reflect a minimum PHF of 0.6 and a maximum PHF of 0.95.

6. *The HV% should be applied by approach, not movement. Synchro considered HV% as the total of both box trucks and articulated trucks. Additional information regarding how to apply HV% is provided in the MDOT Electronic Traffic Control Guidelines.*

Response: The HV% has been updated at the intersections throughout the roadway network to be applied by approach rather than by movement.

Future Growth Rate:

1. *It is recommended to use SEMCOG historical population and employment data to determine the annual background growth rate.*

Response: SEMCOG historical population data has been utilized to determine the annual background growth. Census data between 2010 and 2020 forecasts a 0.85% annual population increase. The census data utilized is appended within the updated Traffic Impact Study.

Person Trip Generation:

1. *The pedestrian trips generated from the vehicles using the offsite parking and walking to the Community Center should be shown on a Figure and reflected in the Synchro models.*

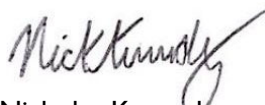
Response: Pedestrian trips utilizing offsite parking have been shown on the volume figures and within the analysis. Pedestrian volumes are shown within the intersection insets on the volume figures.

Should you have any questions regarding the submission items or responses above please do not hesitate to contact our office.

Regards,



John R. Corak, PE
Stonefield Engineering and Design, LLC



Nicholas Kennedy
Stonefield Engineering and Design, LLC

August 18, 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: Community House Development
380 Bates Street, Birmingham, MI
Transportation Impact Study Review**

Dear Mr. Dupuis:

Fleis & VandenBrink (F&V) and MKSK have completed our review of the Transportation Impact Study (TIS) prepared by Stonefield dated April 19, 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.

There are several key areas of the study where additional information is necessary to provide a comprehensive review of this project. We offer the following comments for the City's consideration:

MITIGATION MEASURES

- The TIS did not provide any recommendations to improve the transportation network to accommodate either vehicles or vulnerable road users. Additional information regarding the additional person trip generation associated with this development and mitigations to improve the safety should be provided.
- Additional information should be provided regarding the crash potential and mitigations associated with the study intersections, particularly as it relates to vulnerable road users.

TRIP GENERATION

- The analysis considered Community House similar to a YMCA, however the operations are more typical of a conference center at a hotel with weddings, celebrations, events, meetings, conferences, etc. These land uses generate more person trips than a community center/YMCA. We recommend that an alternative land use is considered OR local data is collected to determine the trip generation rate for the Community House.
- The person trip calculations for both the Assembly Hall and the Conservatory utilized a person trip generation similar to a conference center hotel in addition to a vehicle occupancy ratio of 3 persons per vehicle. There is no lodging associated with the proposed Community House expansion, therefore person trips generated will not have an inherent internal trip reduction or large ride share component. We recommend that an alternative land use is considered OR local data is collected to determine the trip generation rate for the Assembly Hall and Conservatory land uses. Additionally, a vehicle occupancy of 3 persons per vehicle should be verified based upon the vehicle occupancy information from ITE or other sources for similar land uses.
- Additional information is necessary to verify the correct person-trip generation calculations were considered in the study.

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www.fveng.com

- The development includes the extensive use of valet for the site (66% of drivers were assumed to use the valet). We would request additional information regarding how the self-park vs. valet use was determined for this site. Additional information is necessary to evaluate the impact of the valet operations on the roadway, pedestrian and bicycle facilities and operations.
- It is anticipated that ride hailing services and personal vehicle pick-up/drop-off will be utilized for the proposed site operations. These operations should be considered in the evaluation and designated areas provided within the site plan to accommodate these operations.
- The study cites that the Chester Parking garage has excess capacity, and we agree with utilizing this garage for valet, however it is anticipated that guests will also utilize on-street parking within the vicinity of the site and the Piece Street parking structure. This should be identified within the study and potential walking routes and are reviewed for potential operational and safety mitigations.

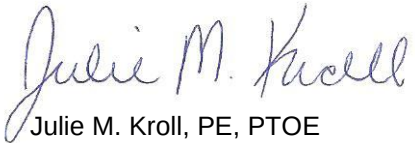
ROADWAY MODELING

- The Synchro/SimTraffic models need modifications to reflect the correct signal timings with Leading Pedestrian Intervals (LPIs) and other minor items that affect the results of the analysis.

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.

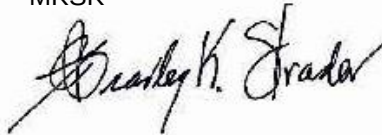
Sincerely,

FLEIS & VANDENBRINK ENGINEERING, INC.



Julie M. Kroll, PE, PTOE
Traffic Engineering, Group Manager

MKSK



Brad Strader, AICP, PTP
Transportation Planning Consultant

STUDY AREA: A description and map(s) of the study area including, but not limited to:	Complete	Comments
1. Surrounding land uses	Y	
2. Intersection geometries (Lane configuration, traffic control and signal timing, etc.)	Y	
3. Roadway geometries (Functional classifications, cross-sections, jurisdictions, posted speed limits, on-street parking, grades, percentage of heavy trucks, etc.)	Y	
4. Developments under construction, approved or anticipated in the area that may influence background conditions	Y	
5. Planned and committed roadway improvements in the vicinity	N	No confirmation from City CIP or discussion with the City Engineering Dept regarding roadway improvements
6. Existing traffic volume data (general ADT from recent counts, SEMCOG, etc.)	Y	
7. Acknowledge review of the City's Master Plan, Subarea Plan, and Multi-Modal Transportation Plan, and describe or illustrate any specific recommendations in the Study Area from those Plans.	N	Only the MMTP was noted.
8. Study area map(s) with site location, study intersections, and area evaluated for pedestrian, bicycle and transit)	Y	
Note: The Study Area, especially intersections selected for data collection and analysis, should be confirmed with the City's Traffic Engineer and Transportation Planner before data is collected.		
PROPOSED USE(S): A description of the current and proposed land use(s), including characteristics such as:		
1. Type of development, with associated ITE land use categories	Y	
2. Development size (Number of dwelling units, gross and usable floor area, etc.)	Y	
3. Development characteristics that influence travel (Number of employees, expected hours of operation, shift change factors, work from home or other programs that may influence person travel trips)	N	Need Employee information, hours of operations, and other site information used to develop the trip generation.
4. Proposed build-out year (Include any phasing or future expansion)		
EXISTING CONDITIONS: A description of existing transportation conditions, including:		
1. Existing traffic, pedestrian and bicycle counts including existing peak-hour turning movement counts at the study intersections and site access point(s).	Y	
2. Traffic count data shall not be over two years old, unless the City permits counts up to three years old to be increased by a factor supported by documentation.	Y	
3. Traffic and non-motorized counts shall be taken on a Tuesday, Wednesday, or Thursday of non-holiday weeks, while school is in session. Additional counts (i.e. on a Saturday for a proposed commercial development) may also be required in some cases. The individual or firm, shall obtain counts during average or higher than average volume conditions (i.e. regarding weather or seasonal variations and in consideration of any construction or special events) for the area under study.	Y	
4. Calculate the existing vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections at during the AM and PM peak hours of the streets, unless indicated otherwise. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the Highway Capacity Manual (HCM).	N	Vehicle queueing information was not discussed in the TIA
5. Traffic crash data and analysis covering the most recent three (3) years for the study area or proximity to site access points is required for a TIS and MAY be required by the City for a TIA, particularly for sites along roadways identified by SEMCOG or the City as Critical or Congested Corridors or High Crash locations. (see safety section below)	Y	
BACKGROUND TRAFFIC ASSUMPTIONS: A description of the background traffic growth (traffic changes expected based on		
1. For any project with an opening date beyond one year from the date the transportation study was prepared, the analysis should include a scenario analyzing forecasted traffic at the expected date of completion (i.e. existing + forecasted change + project traffic).	Y	
2. Existing traffic volumes should be forecasted for the future through use of historic count trends and/or use of the future traffic projected by SEMCOG + traffic associated with approved and/or proposed developments in the vicinity of the study area that have yet to be constructed, are currently under construction or are not yet fully occupied (data from traffic studies for those projects may be available from the City for this calculation).	N	Further information is necessary to confirm an accurate growth rate.
3. Include in the baseline background condition, any transportation improvement projects in the study area that will be completed or underway by the build-out year.	N	Confirm if multi-modal (road, bike, ped, transit) network improvements are programmed that would impact the study network.
4. Calculate the background (without the proposed development) vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections at during the AM and PM, unless indicated otherwise. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the HCM.	N	Vehicle queueing information was not discussed in the TIA
5. If one or more movements experiences a LOS "E" or worse in the downtown, or "D" or worse outside of the downtown, a description shall be provided and potential mitigation measures need to be evaluated.	Y	
PERSON TRIP GENERATION: A description of the person trip generation, including:		
1. Forecast of the number of peak hour (AM and PM, if applicable) and daily person trips that would be generated by the proposed development based on data published by the most recent edition of the Institute of Transportation Engineers (ITE) in Trip Generation and/or local development data as approved for use in the study by the City.	N	The calculations provided could not be verified with the information provided in the TIA. The modal split assumptions considered are not appropriate for the proposed land uses and operations.
2. Provide a comprehensive analysis of site-generated trips, based on the available transportation modes (i.e. private vehicle, semi-truck, pedestrian, bicycle, bike share, e-bike, e-scooter, SMART transit, private shuttles, ride hailing, and any other ways people or goods may be transported to the site.)	N	The analysis should include a modal split for the various types of options anticipated to be utilized by this site. Further consideration should be shown how they will be accommodated, i.e.. Ride hailing services, bike parking, etc.
3. A table that describes the land use, ITE code number, development size/number of units, daily trips, and peak hour trips in and out.	Y	
4. Any trip reduction for pass-by trips, internal capture rates, transit, ridesharing, other modes, etc. shall be based on ITE methodologies in the Trip Generation Handbook.	N/A	
5. For a rezoning, a comparison of the rates associated with the range of uses permitted in the current zoning district compared to the range of uses permitted in the requested district.	N/A	
6. For projects intended to be developed in phases, trip generation by phase shall be described and provided in a table format.	N/A	
Note: Person trip generation rates and reduction factors should be confirmed with the City's Traffic Engineer and Transportation Planner before analysis		

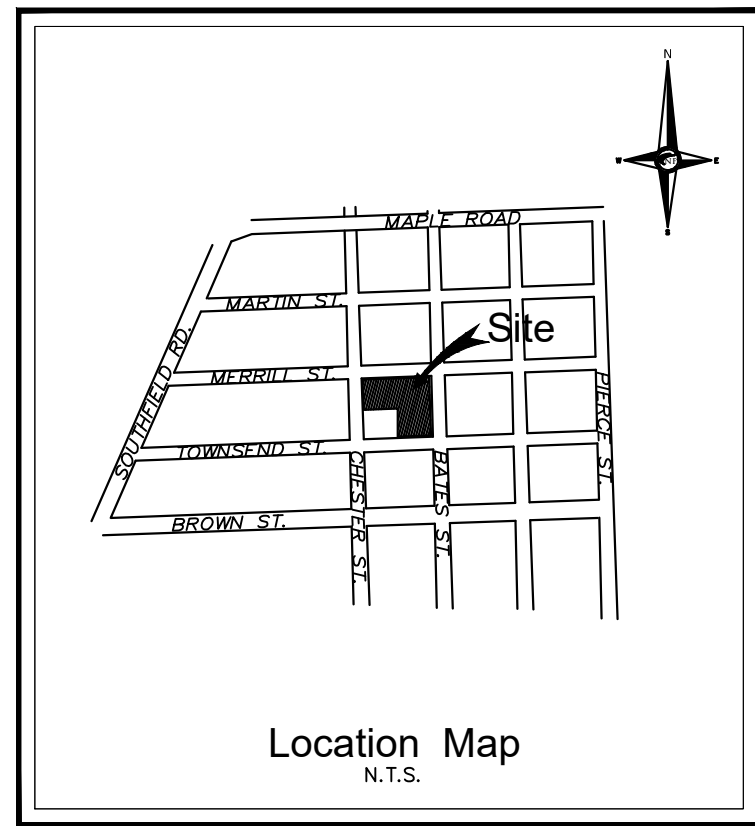
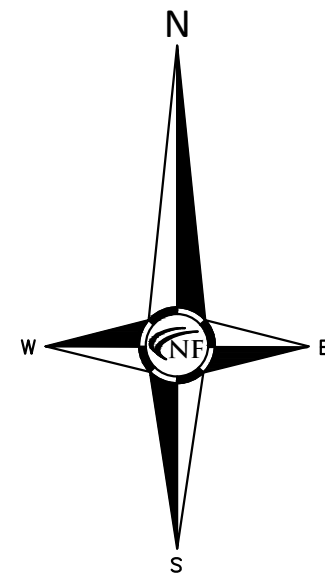
STUDY AREA: A description and map(s) of the study area including, but not limited to:	Complete	Comments
TRIP DISTRIBUTION: A description of the trip distribution (expected trip routing), including:		
1. Illustrations of where traffic generated is expected to be distributed onto the existing street network. The basis shall be explained (counts, observations, gravity model, market study)	Y	
2. Illustrations of project turning movements at site access point(s) and nearby intersections, where required.	Y	
3. For pedestrian, bicycle and transit trips, a map that illustrates expected volumes and the travel patterns related to nearby pedestrian crossings, bike share/parking, bus stops.	Y	
PROJECTED CONDITIONS - TRAFFIC: A description of the future transportation conditions, including:		
1. Calculate the future (existing + background + development) vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections during the AM and PM, unless indicated otherwise.	N	Vehicle queueing information is not provided.
2. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the HCM.	Y	
3. If one or more movements experiences a LOS "E" or worse in the downtown, or "D" or worse outside the downtown, potential mitigation measures shall be evaluated.(see mitigation section below)	Y	
NON-MOTORIZED AND TRANSIT: A description of multi-modal transportation, including:		
1. Describe the existing + projected volumes of pedestrian and bicyclists.	Y	
2. Provide a map that illustrates anticipated pedestrian and bicycle travel to and from the site including sidewalks, crosswalks or expected crossing locations, bike lanes, bicycle parking, and the closest SMART bus stops.	Y	
3. Illustrations on a site plan of the anticipated on-site routing of pedestrians and bicyclists, including those in any parking lot or structure.	Y	
4. An evaluation of the anticipated routes used by pedestrians and bicyclists to/from and within the site. This should include an evaluation of the pedestrian signal timing.	N	No discussion of ped signal timing was noted. LPIs are implemented at some, but not all signalized intersections. If additional LPI time should be considered, this should be part of the mitigation recommendations.
ACCESS MANAGEMENT. A description of the access design/access design and a demonstration that the number and location		
a. Illustration of the site plan with the location and design of the proposed access point(s).	N/A	
b. Data to demonstrate the number of driveways proposed is the fewest necessary to provide reasonable access.	N/A	
c. Notation of any sight distance limitations and, if applicable, changes to meet standards (sight distance to/from vehicles, and for pedestrians and bicyclists).	N/A	
d. Dimensions from adjacent driveways and intersections on either side of the street in the vicinity of the proposed driveway(s), with analysis to demonstrate that there will not be conflicts such as left-turn lock-ups with opposing access points.	N/A	
e. Dimensions from signalized intersections and analysis that the access points will not interfere with the functional operating area (i.e. the area within which vehicles commonly queue).	N/A	
f. Evaluation of the need for any changes to streets or access to improve safety and travel for vehicles, pedestrians, and bicyclists (driveway radii, widths, turn lanes, tapers, etc.	N/A	
SAFETY: A safety analysis is required to evaluate the existing safety and the impact of additional site generated on the safety of		
1. A safety analysis shall be performed at the study intersections and site driveway locations.	Y	
2. The safety analysis shall include an evaluation of all crashes that have occurred within the past five (5) years of available data. Those that involved a pedestrian or bicyclists should be highlighted.	N	Safety analysis should focus on the crash history and crash potential, especially as it relates to pedestrian and bike crashes.
3. Crashes shall be evaluated in accordance with the most recent version of the SEMCOG Crash Analysis Process as outlined in the SEMCOG Traffic Safety Manual (or analysis using the procedures in the Highway Safety Manual for FHWA STEM guidelines if endorsed by the City Traffic Engineer as appropriate for the location).	Y	
4. The intersection crash summary shall be compared for each intersection to determine the if the intersections are high-crash locations as compared to similar intersections by type and location and identify any significant crash patterns.		
5. Provide a summary of generally related causes and potential countermeasures for crash patterns, including specific countermeasures to address pedestrian and bicycle safety.	N	More information needed to summarize crashes and potential mitigation opportunities to improve safety
PARKING AND CIRCULATION: A description of parking and on-site circulation including:		
1. Review of the parking requirements in the Zoning Ordinance, where applicable.	Y	
2. Describe the anticipated parking demand of the proposed development.	N	The develop includes the extensive use of valet for the site. Provide additional information regarding the projected vehicle queueing and mitigation measures to ensure that the queue does not impact the adjacent roadway and pedestrian network.
3. Describe the locations of bicycle and micromobility parking proposed to be installed as part of this project, and explain how the locations were selected.	N	Add discussion about bike and micromobility storage on site.
4. Proposed program to accommodate parking demand. This may include a description of on- site parking, shared parking (agreements required) or use of city parking structures/lots (for those within the parking assessment area).	Y	
5. If public parking facilities are expected to be utilized for all or some of the parking demand, an acknowledgement by the Developer of the current availability should be provided.	Y	
6. Describe any parking features related to sustainability such as underground parking, parking lot canopy trees, Electric Vehicle Charging Stations, car-share, bicycle parking etc.	N/A	
7. Circulation for vehicles that will commonly operate on the site shall be illustrated with appropriate turning radii (delivery vehicles, semi-trucks, access to waste receptables, etc.)	N/A	
8. 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.	N/A	
9. For uses with a drive-through, an analysis shall be provided that the on-site queuing area is sufficient to accommodate peak conditions without causing back-up onto public streets. The City may require a special study of similar uses and site sizes from other locations in Michigan.	N/A	

STUDY AREA: A description and map(s) of the study area including, but not limited to:	Complete	Comments
MITIGATION: A description of measures/alternatives to mitigate the development's transportation impact for the categories		
Non-Motorized: Describe any design changes that could improve the Quality of Service (travel convenience and safety) for pedestrians and bicyclists (both in the study area and on-site). Examples include: additional or improve crosswalks, pedestrian signals/signs, bump-outs, streetscape enhancements. Describe the timing or phasing of vehicle and non-motorized improvements, and how those improvements will be accomplished	N	Mitigation measures should be considered to improve the safety and travel for vulnerable road users generated by the proposed development. Review of the transportation routes and potential improvements should be identified.
Transit: For site along a SMART route, or within ¼ mile of a bus stop, describe any proposed transit enhancements, such as the installation of a bench or a bus shelter. Documentation of communications with SMART regarding bus stop relocations or any amenities to make transit more convenient shall be provided.	N	Project is located within 0.1 Mile of transit stops.
Transportation Demand Management: Describe design features and programs that the developer or Owner has considered or will employ to reduce vehicular travel, such as: on-site amenities, employee health programs, convenient and covered bicycle parking, shared vehicle service with priority parking, micro-transit to remote parking areas, free or subsidized bike share programs, financial incentives (e.g. transit passes, separate charges for any on-site parking, etc.)	N/A	
Traffic: Outline of proposed mitigation measures necessary to accommodate the existing, background, and/or future conditions, for the study street network required (if needed) to accommodate the site-generated traffic volumes at a LOS E or better for all movements in the downtown and D or better outside of the downtown. If the street is under jurisdiction of MDOT or the Road Commission for Oakland County, the applicant shall document those agencies endorse the change.	Y	
A list of example mitigation measures is provided below. The designers are encourage to explore other options as well. The City may require a description of alternatives considered and an explanation of those selected.		
1. Street Improvements: Construct additional lanes, add turn lanes, improve sight distance		
2. Median Changes: Modify, relocate or close median crossovers, alter traffic signals		
3. Operational Improvements: Changes to signalization, improve pedestrian phases		
Note: For study intersections located along coordinated signal corridors, optimizing traffic signals will not be considered an acceptable recommendation to mitigate site-generated traffic Unless proposed signal timing changes reduce delays for the network not just traffic associated with the development		
Note: If a traffic signal is recommended at any of the study intersections or site access point(s), a signal warrant analysis shall be included in the study and follow the guidelines provided in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). The signal warrant analysis shall include an evaluation of Warrant 1: Eight-Hour Volumes, Warrant 2: Four-Hour Volumes, and Warrant 3: Peak-Hour Volumes.		
4. Access Management: Close or consolidate access points, relocate access to reduce conflicts, change driveway design to improve crossings for pedestrians and bicyclists, provide access onto a lower volume street (when appropriate)	N/A	
5. Site Plan/Land Use Techniques: Reduce project intensity, alter site design, on-site traffic calming, move drive-through or increase queuing area	N/A	

H

1	2	3	4	5	6	7	8	9	10
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COVER SHEET &
DRAWING INDEX



NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

PROJECT
The Community House

CLIENT
The Community House
380 S. Bates Street
Birmingham, MI 48009

Contact: Bill Seklar
P: 248.835-3551

PROJECT LOCATION
Part of the NW 1/4
of Section 36
T. 2N, R. 10E.
City of Birmingham,
Oakland County, Michigan

SHEET
Boundary / Topographic /
Tree Survey



DATE ISSUED/REVISED

DATE ISSUED/REVISED

DATE ISSUED/REVISED

DRAWN BY:
A. Wiseman

DESIGNED BY:
A. Wiseman

APPROVED BY:
P. Williams

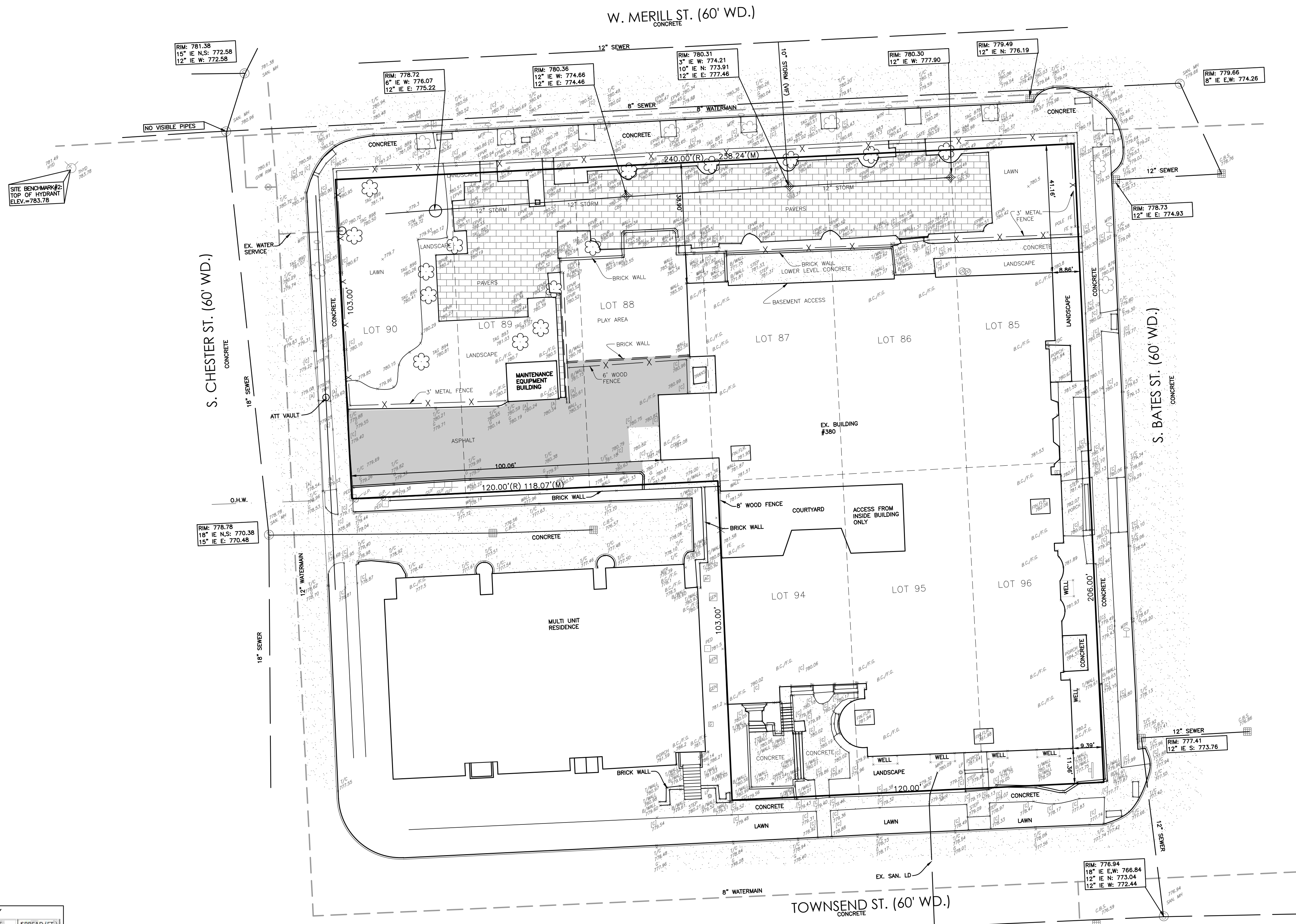
DATE:
March 03, 2023

SCALE: 1" = 20'

20 10 0 10 20 30

NFE JOB NO.
N382

SHEET NO.
C-1



BUILDING PLACEMENT PER CITY ZONING ORDINANCE:

BUILDINGS AND THEIR ELEMENTS SHALL BE PLACED ON LOTS AS FOLLOWS:

FRONT BUILDING FACADES AT THE FIRST STORY SHALL BE LOCATED AT THE FRONTAGE LINE, EXCEPT THE PLANNING BOARD MAY ADJUST THE REQUIRED FRONT YARD TO THE AVERAGE FRONT SETBACK OF ANY ADJUTING BUILDING.

IN THE ABSENCE OF A BUILDING FACADE, A SCREENWALL SHALL BE BUILT ALONG THE FRONTAGE LINE AND ALIGNED WITH THE ADJUTING BUILDING FACADE. SCREENWALLS SHALL BE BETWEEN 2.5 AND 3.5 FEET IN HEIGHT AND MADE OF BRICK, STONE OR OTHER MASONRY MATERIAL MATCHING THE BUILDING. UPON APPROVAL BY THE PLANNING BOARD, SCREENWALLS MAY BE A CONTINUOUS, MAINTAINED EVERGREEN HEDGE OR METAL FENCING. SCREENWALLS MAY HAVE OPENINGS A MAXIMUM OF 25 FEET TO ALLOW VEHICULAR AND PEDESTRIAN ACCESS.

SIDE SETBACKS SHALL NOT BE REQUIRED.

A MINIMUM OF 10 FOOT REAR YARD SETBACK SHALL BE PROVIDED FROM THE MIDPOINT OF THE ALLEY, EXCEPT THAT THE PLANNING BOARD MAY ALLOW THIS SETBACK TO BE REDUCED OR ELIMINATED. IN THE ABSENCE OF AN ALLEY, THE REAR SETBACK SHALL BE EQUAL TO THAT OF AN ADJUTING, PREEXISTING BUILDING.

FIRST-FLOOR AWNINGS MAY ENCRACH UPON THE FRONTAGE LINE AND PUBLIC SIDEWALK, BUT MUST AVOID THE STREET THRESH. PROVIDE AT LEAST 8 FEET OF CLEARANCE ABOVE THE SIDEWALK, AND BE SET BACK A MINIMUM OF 2 FEET FROM THE ROAD CURB.

UPPER-FLOOR AWNINGS SHALL BE PERMITTED ONLY ON VERTICALLY PROPORTIONED WINDOWS, PROVIDED THAT THE AWNING IS ONLY THE WIDTH OF THE WINDOW, ENCRACHES UPON THE FRONTAGE LINE NO MORE THAN 3 FEET, AND IS NOT USED AS A BACKLIT SIGN.

LOADING DOCKS AND SERVICE AREAS SHALL BE PERMITTED ONLY WITHIN REAR YARDS. DOORS FOR ACCESS TO INTERIOR LOADING DOCKS AND SERVICE AREAS SHALL NOT FACE A PUBLIC STREET. ALL BUILDINGS SHALL HAVE THEIR PRINCIPAL PEDESTRIAN ENTRANCE ON A FRONTAGE LINE.

LEGEND

- SECTION CORNER
 - FOUND IRON, MON., NAIL
 - SET IRON
 - RECORDED
 - MEASURED
 - CALCULATED
- EXISTING DESCRIPTION
- U.P. = UTILITY POLE
 - E/MS = EDGE OF WOODS
 - B/BM = BOTTOM OF BERM
 - T/BM = TOP OF BERM
 - A/S = EDGE OF ASPHALT
 - C/ = EDGE OF CONCRETE
 - C/MS = CORRUGATED METAL PIPE INVERT
 - T. WALL = TOP OF WALL
 - B. WALL = BOTTOM OF WALL
 - E/W = EDGE OF WATER
 - B.C./T.G. = BUILDING CORNER/FINISHED GRADE
 - M/R = MARKER
 - W/SO = WATER SHUT OFF
 - CL = CENTERLINE
 - SAN. MH = SANITARY MANHOLE
 - C.B.S. = CATCH BASIN BEEHIVE
 - T/C = TOP OF CURB
 - STW. MH. = STORM MANHOLE
 - T/B = TOP OF BANK
 - B/B = BOTTOM OF BANK
 - C.B.S. = CATCH BASIN SQUARE
 - L.P. = LIGHT POLE
 - G.V. = GATE VALVE/WELL
 - P.M. = PARKING METER
 - 000.00 = EXISTING GRADE

PROPERTY DESCRIPTION
T2N, R10E, S23, 36, MERRILL'S PLAT LOTS 85 TO 90 INCL, ALSO LOTS 94, 95 & 96 7/24/90FR
00170004INCL0008

SITE BENCHMARK#1: TOP OF HYDRANT, ELEVATION: 779.72 (CITY DATUM)
SITE BENCHMARK#2: TOP OF HYDRANT, ELEVATION: 783.78 (CITY DATUM)
CITY BENCHMARK #29: BRASS DISC LOCATED AT THE SE CORNER OF CHESTER & MARTIN, ELEVATION: 783.350 (CITY DATUM)

TREE SURVEY			
TAG #	DIA. (IN.)	SPECIES	SPREAD (FT.)
877	9	MAPLE	25
878	8	PEAR	25
879	9	PEAR	20
880	9	PEAR	20
881	8	PEAR	25
882	9	PEAR	20
883	7	PEAR	15
884	5	PEAR	10
885	8	PEAR	15
886	9	PEAR	20
887	12	PEAR	30
888	11	PEAR	25
889	8	PEAR	20
890	15	LOCUST	35
891	6	PEAR	15
892	13	PINE	25
893	16	PINE	30
894	17	MAPLE	35
895	7	ORNAMENTAL	15
896	5	ORNAMENTAL	15
897	7	ORNAMENTAL	15
898	4	CRABAPPLE	25
899	6	CRABAPPLE	20

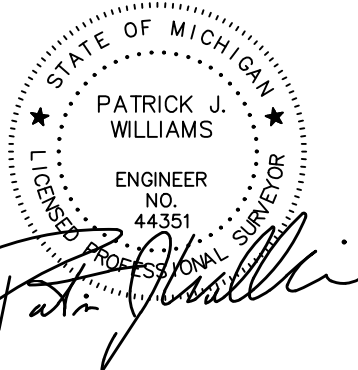


ADDRESS: 380 S BATES ST
PARCEL I.D. #19-36-132-007

REVISIONS

				Fenn & Associates, Inc.			
				Land Surveying and Civil Engineering			
				14933 Commercial Drive, Shelby Township, MI 48315 Phone: 586-254-9577 Fax: 586-254-9020 www.fennsurveying.com			
SCALE: 1" = 20'		FIELD: BH, VA		DRAWN BY: R.PERRI			
DATE: 05/25/2022		CHECKED: JSR,P.E./JUS,P.E./TWO		SHEET 1 OF 3			
TOPOGRAPHIC MAPPING PLAN UPON LOTS 85 TO 90 AND 94 TO 96 "MERRILL'S PLAT" PART OF THE NW 1/4 OF SECTION 36, T2N, R10E, CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN							
CLIENT: THE COMMUNITY HOUSE				DRAWING NUMBER: 22-00232			

SEAL



PROJECT
The Community House

CLIENT
The Community House
380 S. Bates Street
Birmingham, MI 48009

Contact: Bill Seklar
P: 248.835-3551

PROJECT LOCATION
Part of the NW 1/4
of Section 36
T. 2N, R. 10E.
City of Birmingham,
Oakland County, Michigan

SHEET
Preliminary Site Plan



Know what's below
Call before you dig.

DATE ISSUED/REVISED

DRAWN BY:
A. Wiseman

DESIGNED BY:
A. Wiseman

APPROVED BY:
P. Williams

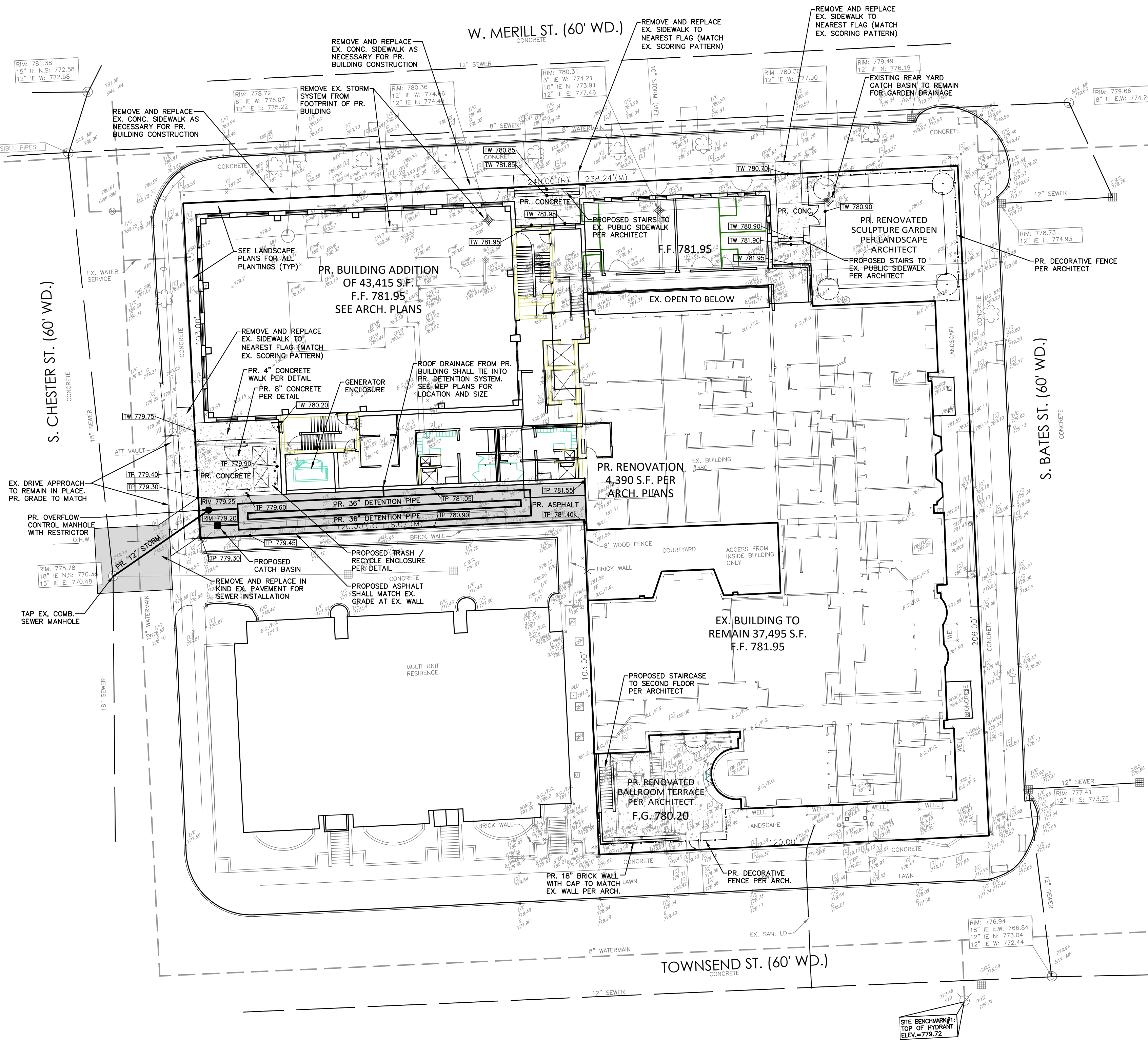
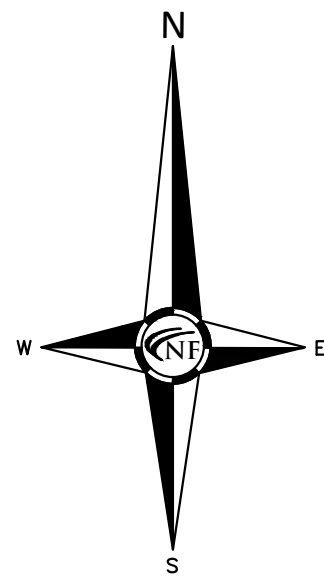
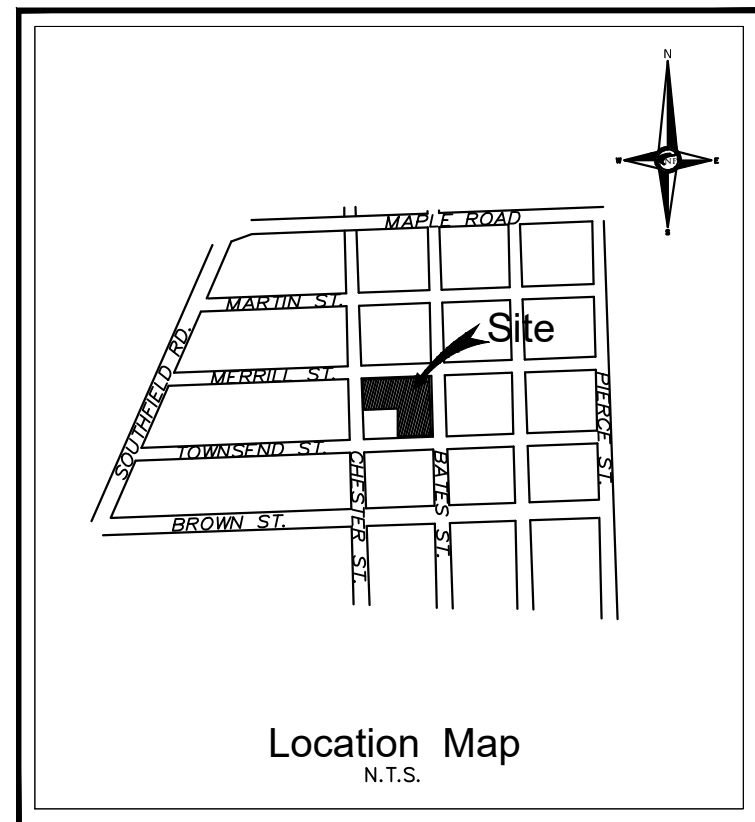
DATE:
March 03, 2023

SCALE: 1" = 20'

20 0 10 20 30

NFE JOB NO.
N382

SHEET NO.
C-2



GENERAL PAVING NOTES

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

CONCRETE: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

ASPHALT: BASE COURSE - MDOT BITUMINOUS MIXTURE NO. 1100L, 20AA; SURFACE COURSE - MDOT BITUMINOUS MIXTURE NO. 1100T, 20AA; ASPHALT CEMENT PENETRATION GRADE 85-100, BOND COAT - MDOT SS-1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-5164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKewise ARRANGE FOR ALL INSPECTION.

EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

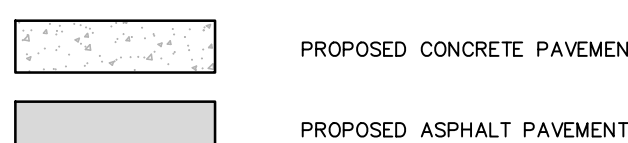
EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.

SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

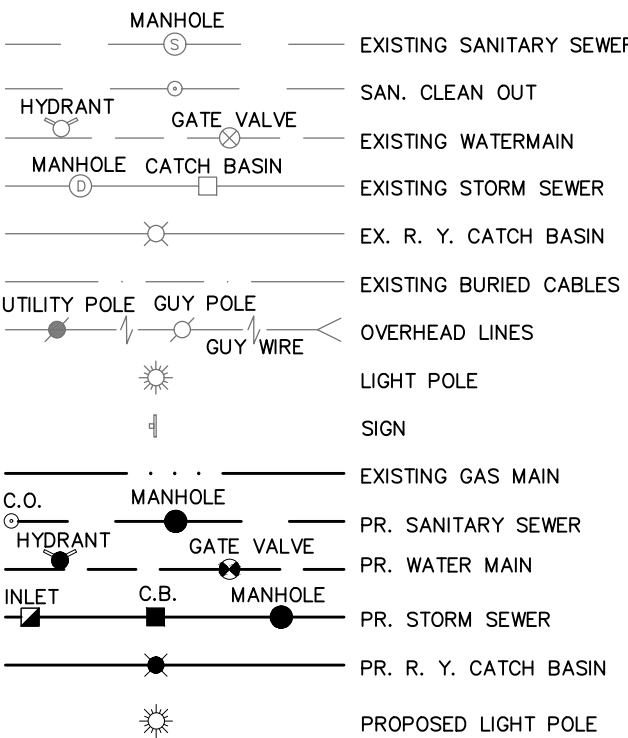
ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.

PAVING LEGEND



LEGEND



Detention Calculations (10) Year Storm Event

Contributing Area:	0.270 Acres
Allowable Outflow, Qa:	1.000 CFS / Acre
Runoff Coefficient, C:	0.950 Imperviousness
Maximum Allowable Outflow, Qo:	1.053 CFS / Acre * Imperv.
Ts Storage Time (10 Yr):	53.958 Minutes
Vs Storage Time (10 Yr):	4,903.532 CF / Acre * Imperv.
Vt Total Volume (10 Yr):	1,257.756 Cubic Feet

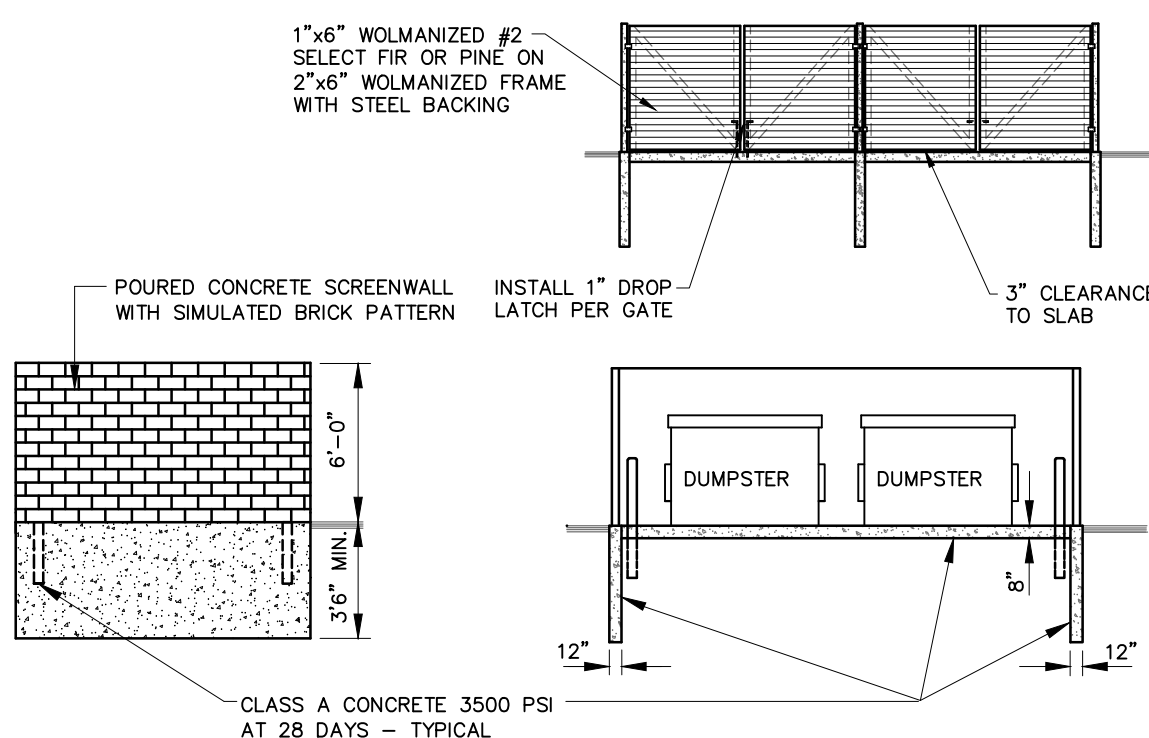
Volume Required : 1,258 Cubic Feet

Required Formulae:
 $Q_o = Q_a / (\text{Area} \times C)$ $V_s = (10,500 \times T / (T + 25)) - (40 \times Q_o \times T)$
 $T = -25 + (6,562.5 / Q_o)^{0.5}$ $V_t = V_s \times A \times C$

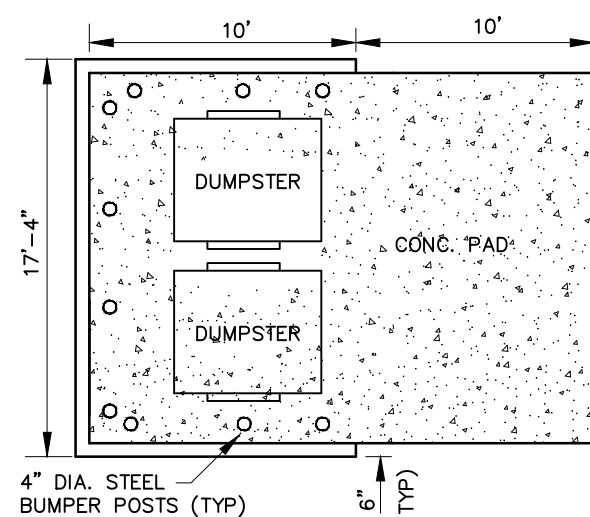
PIPE STORAGE CALCULATIONS

Pipe Dia (inches)	X-sec area (sq. ft.)	Length (LF)	Volume Provided (Cubic Feet)
36	7.07	180	1272.9

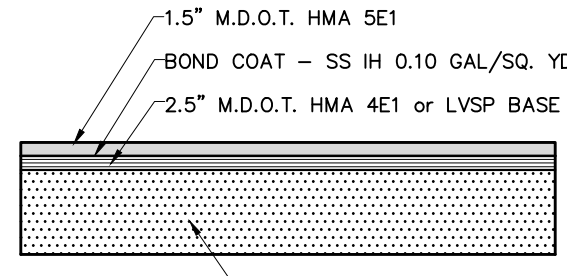
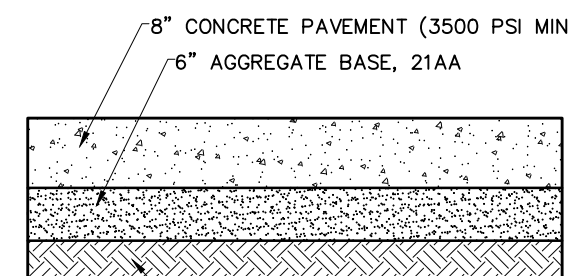
Volume Provided (Cu. Ft.) 1,273



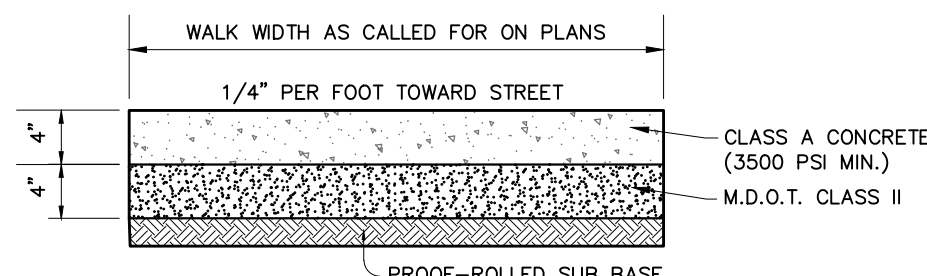
DUMPSTER ENCLOSURE DETAIL
N.T.S.



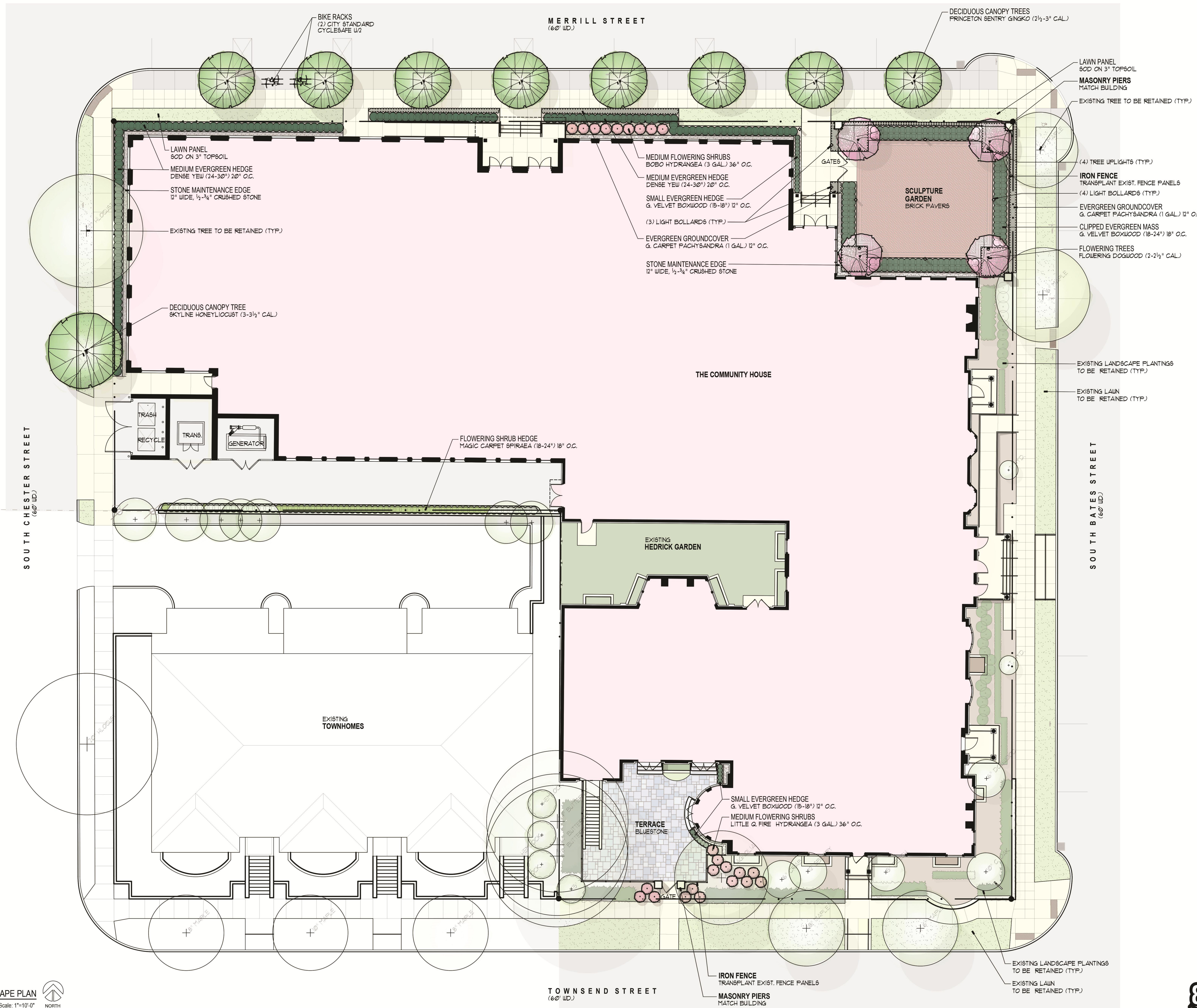
CONCRETE PAVEMENT SECTION
N.T.S.



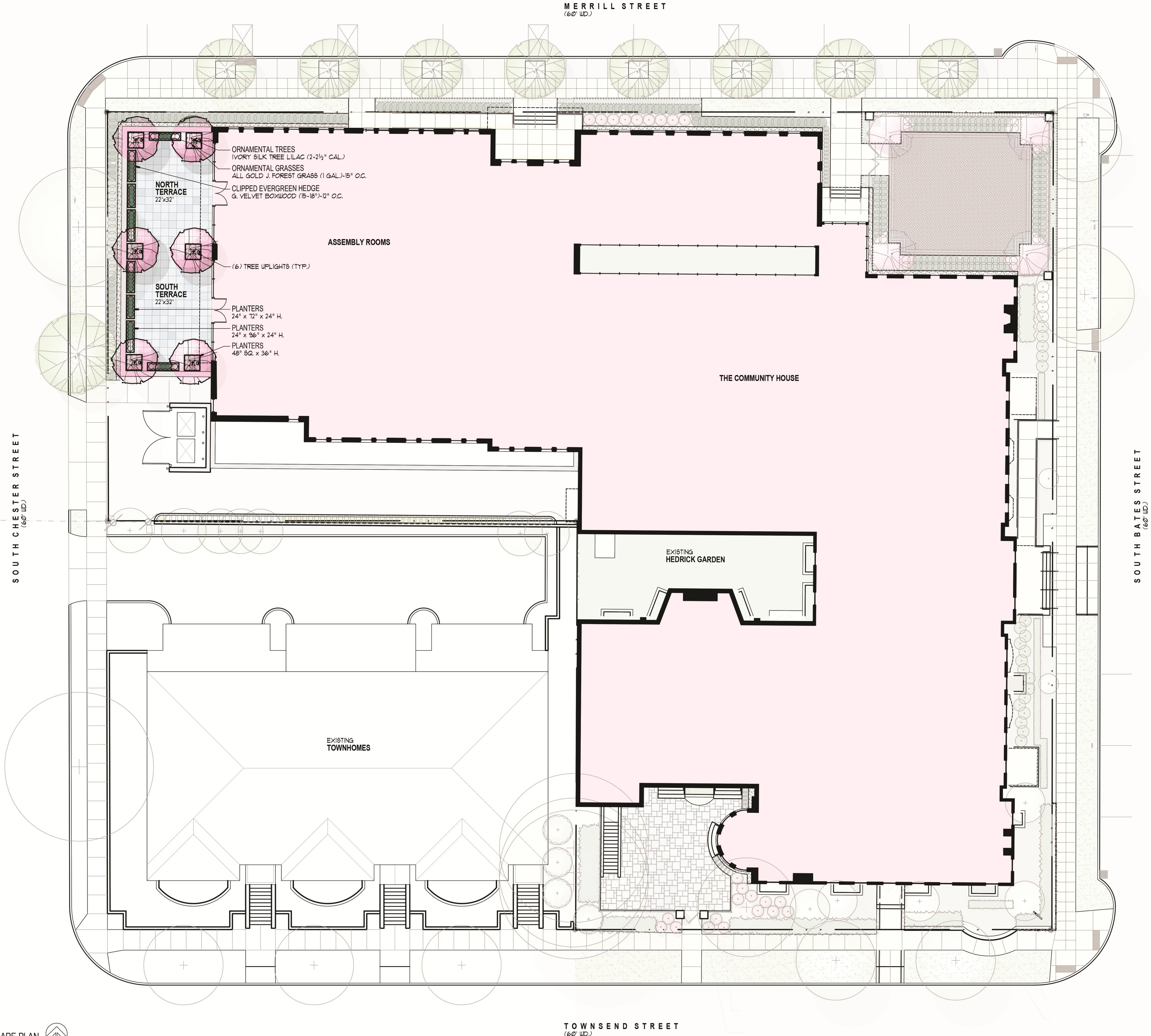
ASPHALT PAVEMENT SECTION
(DRIVE AND PARKING)



CONCRETE SIDEWALK SECTION
N.T.S.



A
B
C
D
E
F
G
H



A PRELIMINARY LANDSCAPE PLAN
L2 Plan-2nd Level
Scale: 1"=10'-0"
NORTH

1 2 3 4 5 6 7 8 9 10

LANDSCAPE
ARCHITECTURE

MICHAEL J. DUL
& ASSOCIATES, INC

212 DAINES STREET
BIRMINGHAM
MICHIGAN 48009

P 248 644 3410
F 248 644 0819



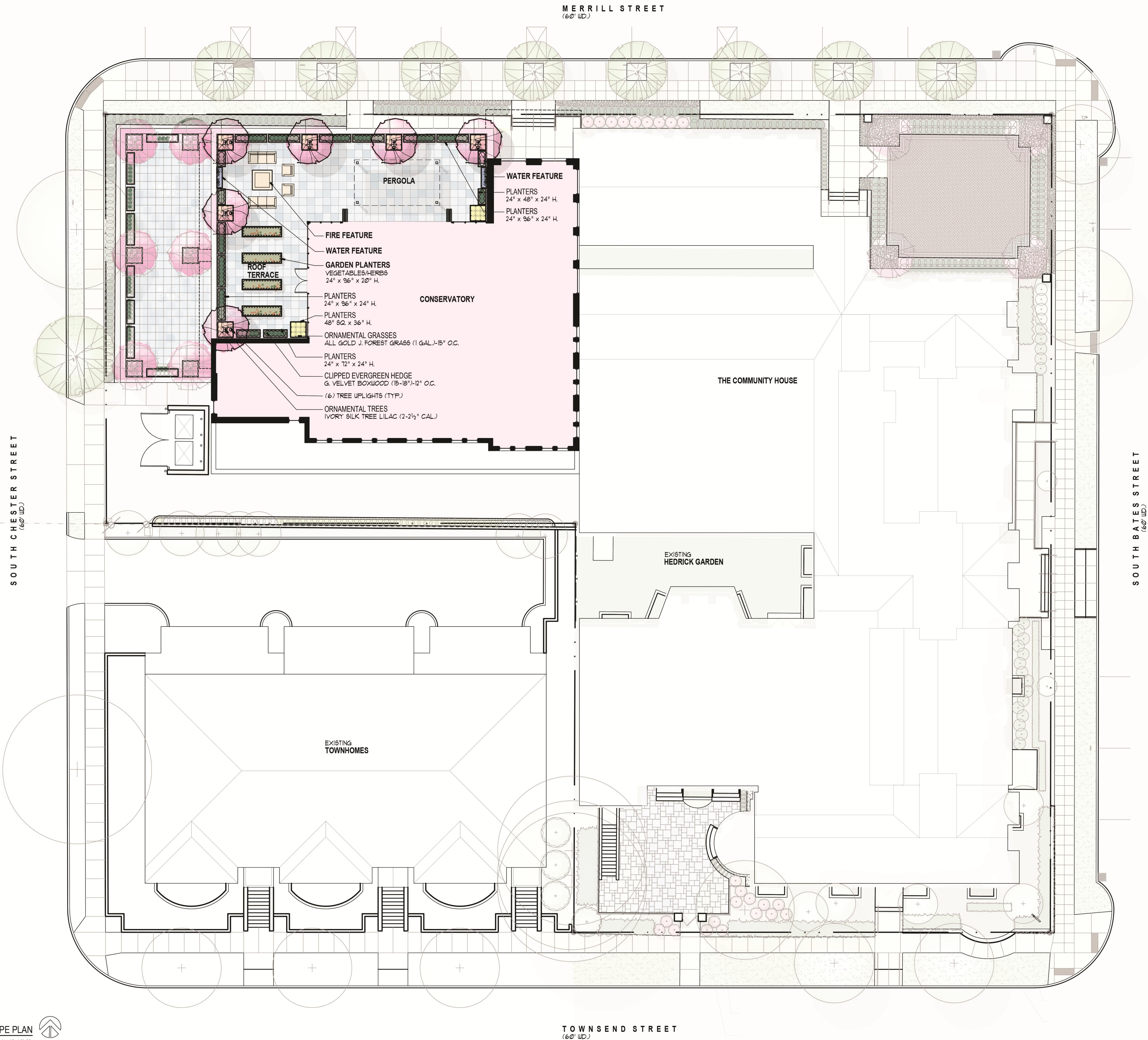
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BIRMINGHAM, MI
4 8 0 0 9
P. 248.258.5707
F. 248.258.5515
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The Community House
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Birmingham, MI 48009

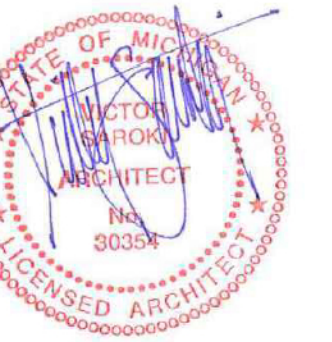
Date: Issued
For:
02-28-2023 Prelim. Site Plan Approval
04-04-2023 Revisions

Sheet No.:
L2
Preliminary
Landscape Plan
2ND LEVEL





1.	Baldwin Library	3 Stories	48' High
2.	City Offices	3 Stories	48' High
3.	Office Building	3 Stories	36' High
4.	Office Building	3 Stories	36' High
5.	Residential Building	3 Stories	36' High
6.	Chester Parking	4 Stories	46' High
7.	ATT Building	4 Stories	60' High
8.	Townsend Hotel	4 Stories	49' High
9.	Townsend Hotel	5 Stories	62' High
10.	Baldwin House	5 Stories	50' High
11.	Residential Building	5 Stories	60' High
12.	Residential Building	5 Stories	75' High
13.	Residential Building	5 Stories	80' High



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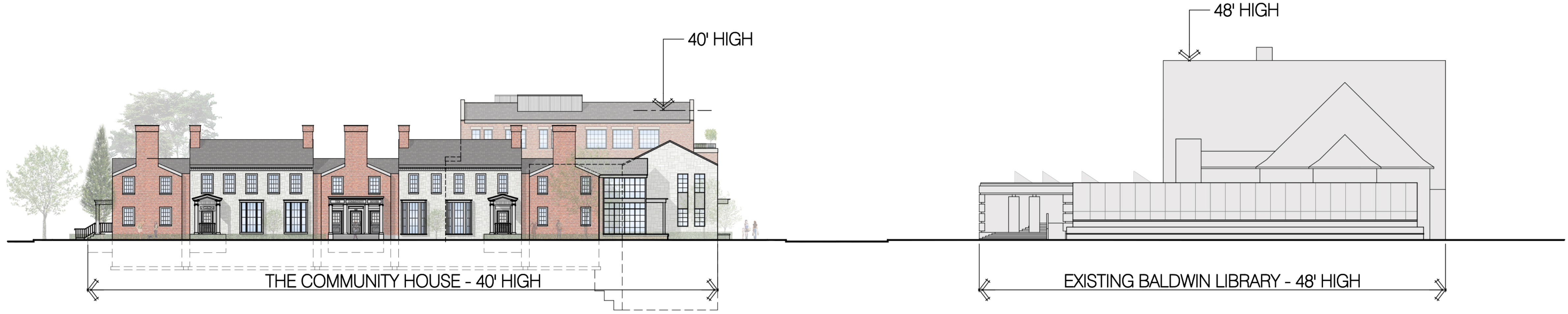
Date:	Issued For:
2023-03-13	PLANNING BOARD PRE APPLICATION
2023-08-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A060
CONTEXT SITE PLAN

A
B
C
D
E
F
G
H



D6 North Context Elevation
A065 SCALE: 1" = 20.0'



F6 East Context Elevation
A065 SCALE: 1" = 20.0'



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Sheet No.:
A065
CONTEXT ELEVATIONS



A
B
C
D
E
F
G
H

Zoned R7
Multiple-Family
Residential
Baldwin House

Zoned C
Community
Baldwin Library

Zoned C
Community
Shain Park

Zoned R8
Multiple-Family
Residential

S. CHESTER ST. (60' WD.)

Zoned R7
Multiple-Family
Residential
The Community House
Zoned R8
Multiple-Family
Residential
Townsend Townhomes
Zoned C
Community

S. BATES ST. (60' WD.)

Zoned R7
Multiple-Family
Residential

Zoned R8
Multiple-Family
Residential

Zoned R8
Multiple-Family
Residential

W. MERILL ST. (60' WD.)

TOWNSEND ST. (60' WD.)

1

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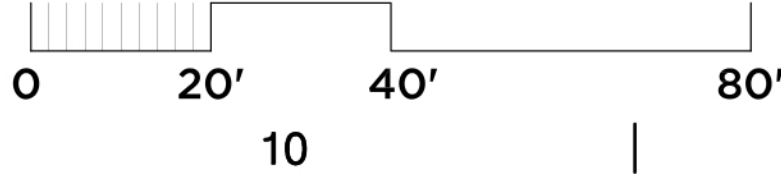
5

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H09
A070
Zoning Plan - Current
SCALE: 1" = 20.0'

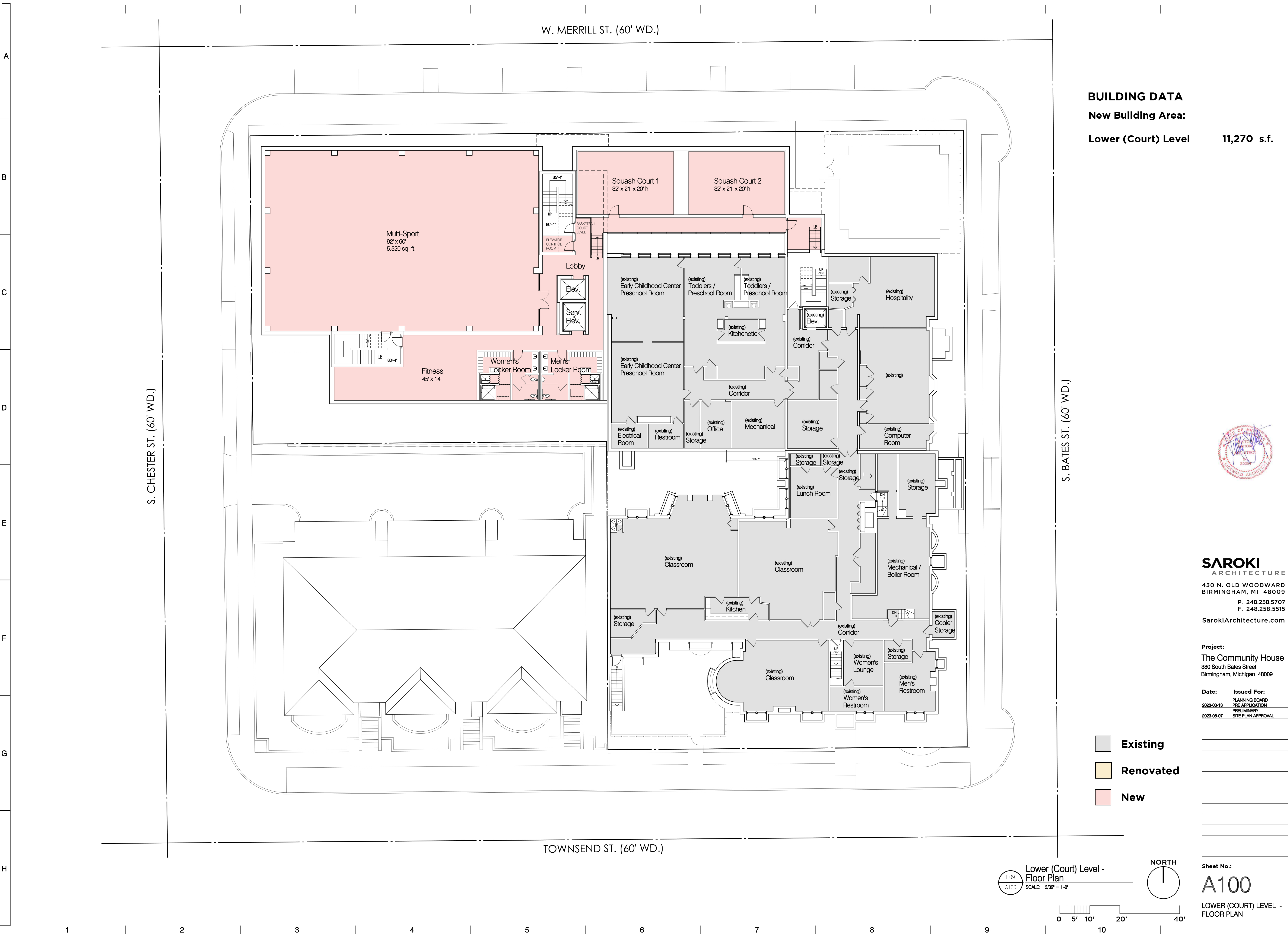


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2023-06-07
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SITE PLAN APPROVAL

Sheet No.:
A070
ZONING PLAN



BUILDING DATA
New Building Area:
Lower (Court) Level 11,270 s.f.

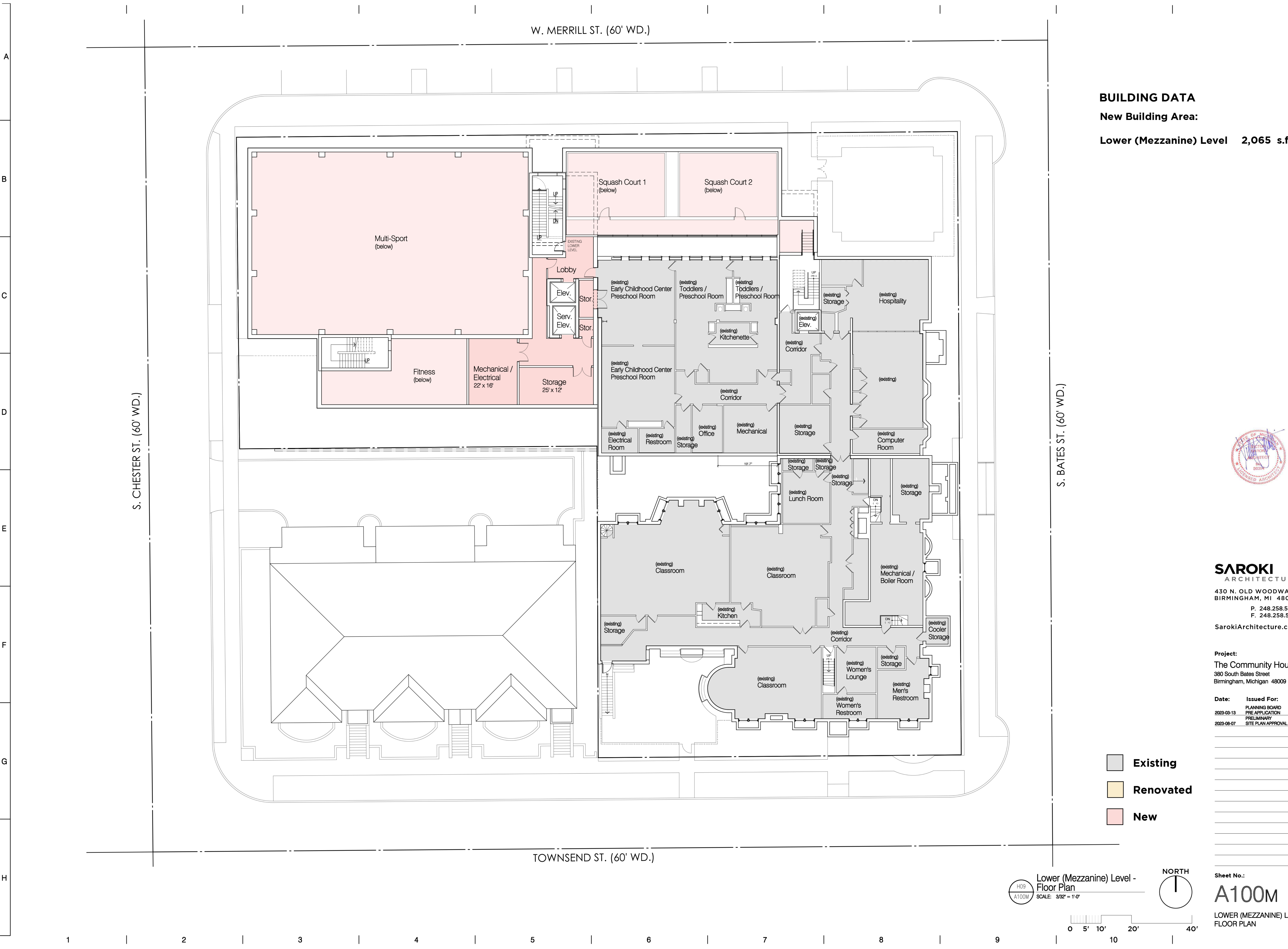


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	PRELIMINARY
	SITE PLAN APPROVAL

Sheet No.:
A100
LOWER (COURT) LEVEL -
FLOOR PLAN



BUILDING DATA

New Building Area:

Lower (Mezzanine) Level 2,065 s.f.



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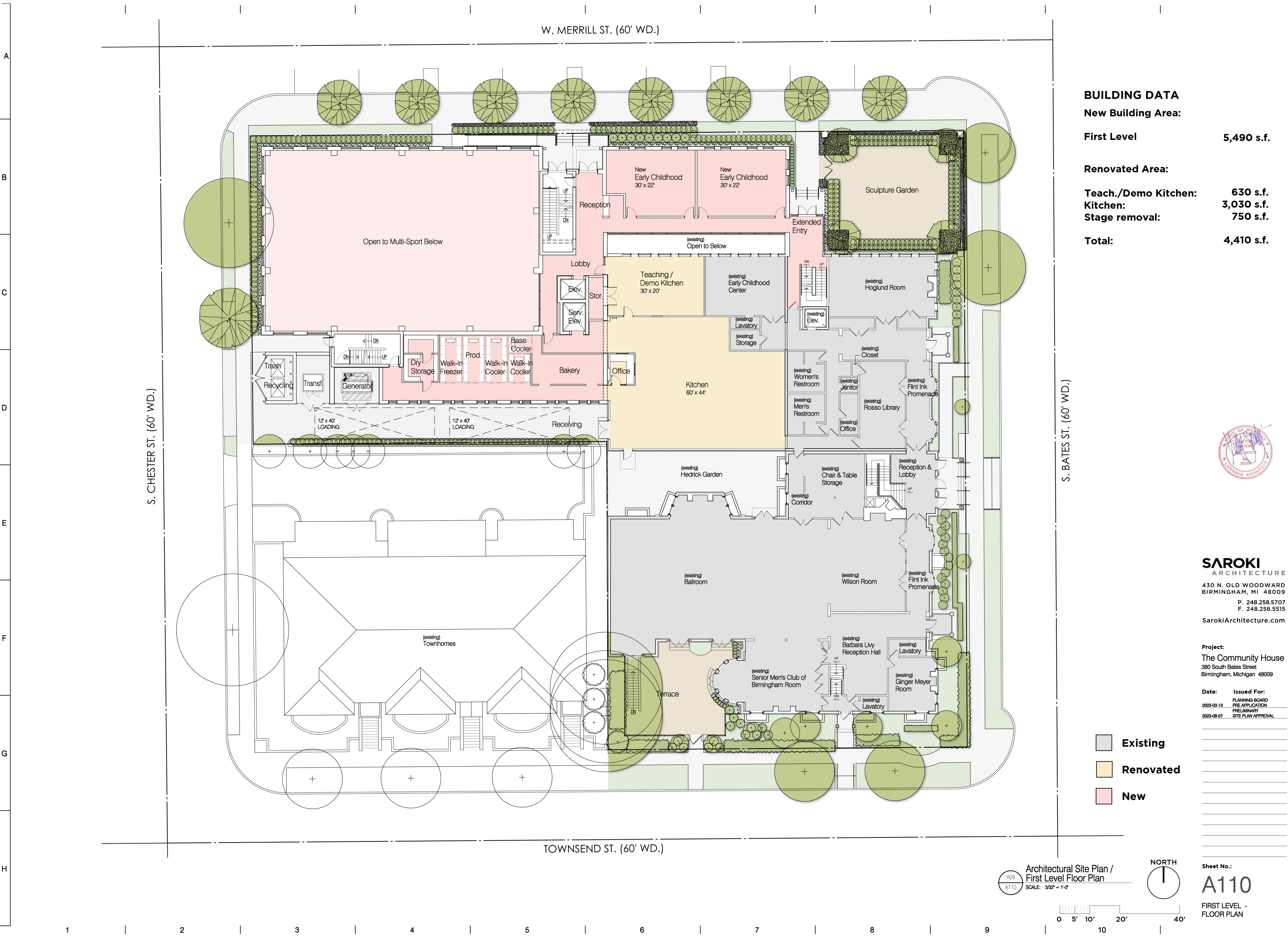
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2023-06-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A100M

LOWER (MEZZANINE) LEVEL -
FLOOR PLAN



BUILDING DATA

New Building Area:

First Level 5,490 s.f.

Renovated Area:

Teach./Demo Kitchen: 630 s.f.

Kitchen: 3,030 s.f.

Stage removal: 750 s.f.

Total: 4,410 s.f.



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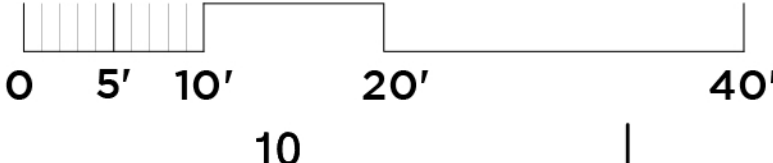
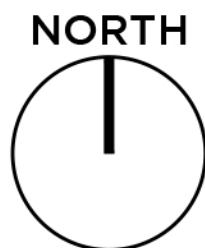
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2023-06-07	PRE APPLICATION
	PRELIMINARY
	SITE PLAN APPROVAL

- Existing
- Renovated
- New

Architectural Site Plan /
First Level Floor Plan
SCALE: 3/32" = 1'-0"



Sheet No.:
A110
FIRST LEVEL -
FLOOR PLAN

W. MERRILL ST. (60' WD.)

BUILDING DATA

New Building Area:

Second Level

10,345 s.f.

S. CHESTER ST. (60' WD.)

S. BATES ST. (60' WD.)

TOWNSEND ST. (60' WD.)

- Existing
- Renovated
- New

Second Level -
Floor Plan
SCALE: 3/32" = 1'-0"

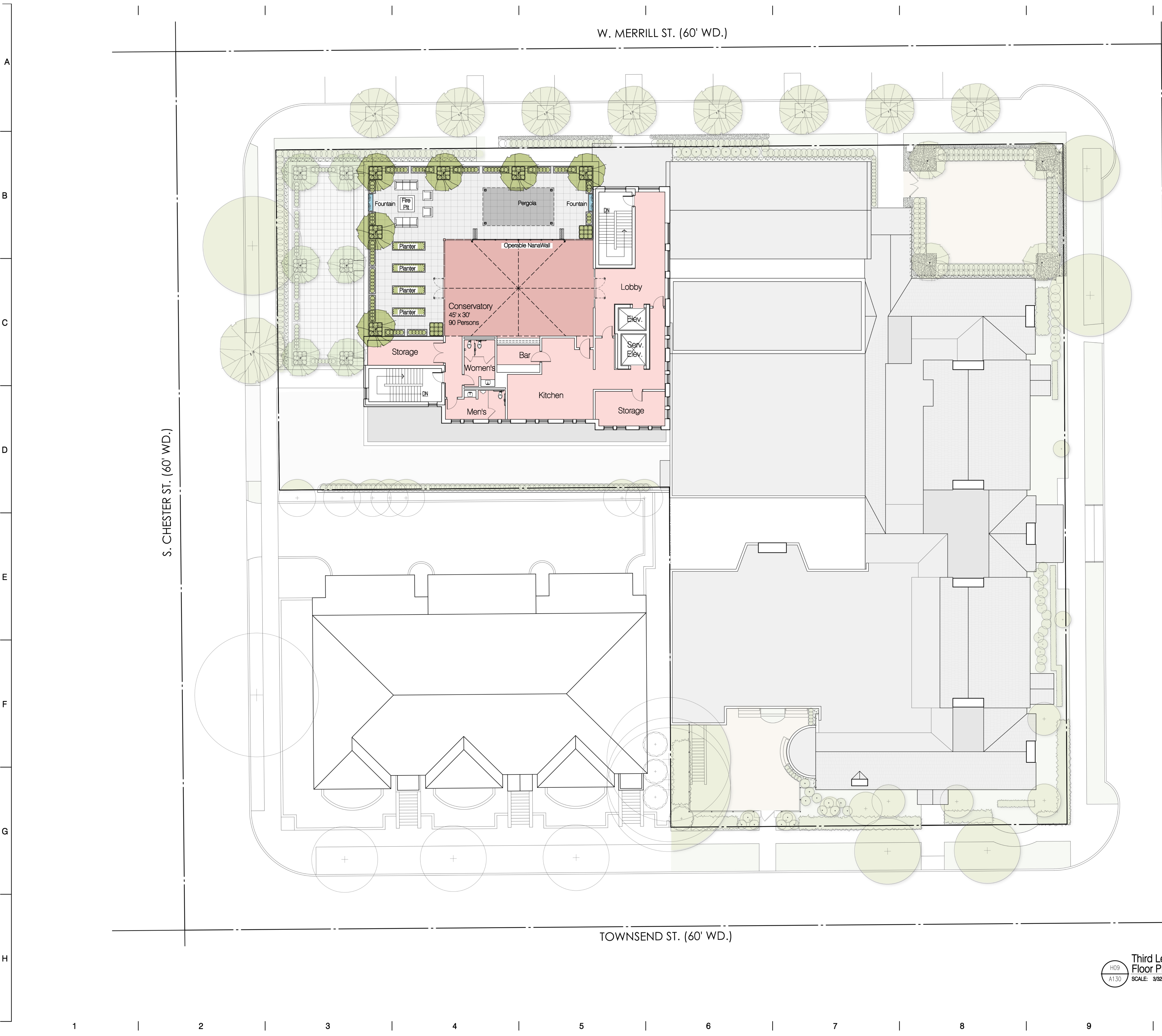


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Issued For: PLANNING BOARD
PRE APPLICATION
2023-06-07 PRELIMINARY
SITE PLAN APPROVAL

Sheet No.:
A120
SECOND LEVEL -
FLOOR PLAN



BUILDING DATA

New Building Area:

Third Level **4,825 s.f.**



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2023-06-07	PRE APPLICATION
	PRELIMINARY
	SITE PLAN APPROVAL

- Existing
- Renovated
- New

H09
A130

Third Level -
Floor Plan

SCALE: 3/32" = 1'-0"

NORTH

0 5' 10' 20' 40'

10

Sheet No.:

A130

THIRD LEVEL -
FLOOR PLAN

A
B
C
D
E
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G
H

S. CHESTER ST. (60' WD.)

S. BATES ST. (60' WD.)

W. MERRILL ST. (60' WD.)

TOWNSEND ST. (60' WD.)

1 2 3 4 5 6 7 8 9

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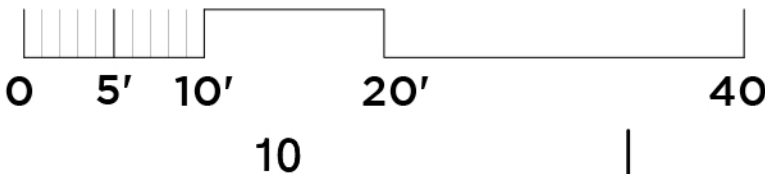
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2023-06-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A200
NORTH ELEVATION

H9
A200
North Elevation
SCALE: 3/32" = 1'-0"



A

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C

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H



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ARCHITECTURE

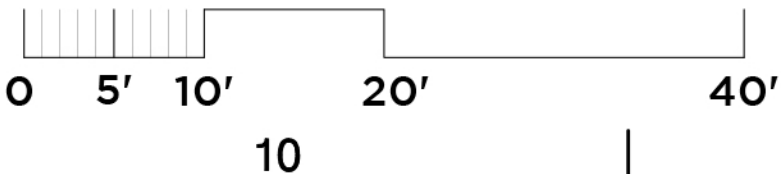
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	PRE APPLICATION
2023-06-07	PRELIMINARY
	SITE PLAN APPROVAL

Sheet No.:
A210
WEST ELEVATION

H9
A210
West Elevation
SCALE: 3/32" = 1'-0"



1 2 3 4 5 6 7 8 9

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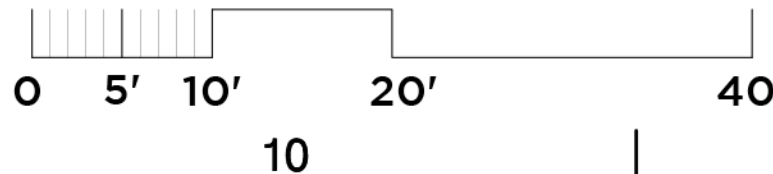
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2023-06-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A220
SOUTH ELEVATION

h9
A220
South Elevation
SCALE: 3/32" = 1'-0"



A

B

C

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1 2 3 4 5 6 7 8 9



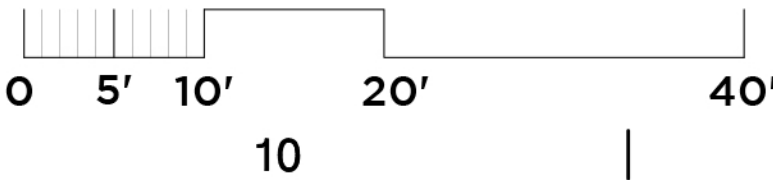
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2023-06-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A220wo
SOUTH ELEVATION

h9
A220
South Elevation
SCALE: 3/32" = 1'-0"



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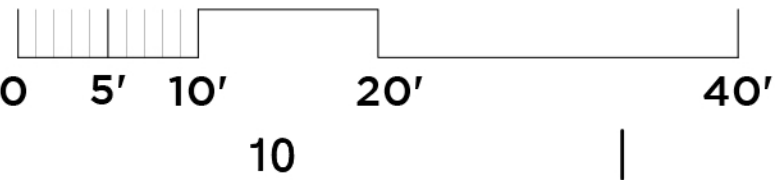
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2023-06-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A230
EAST ELEVATION

H9
A230
East Elevation
SCALE: 3/32" = 1'-0"



A

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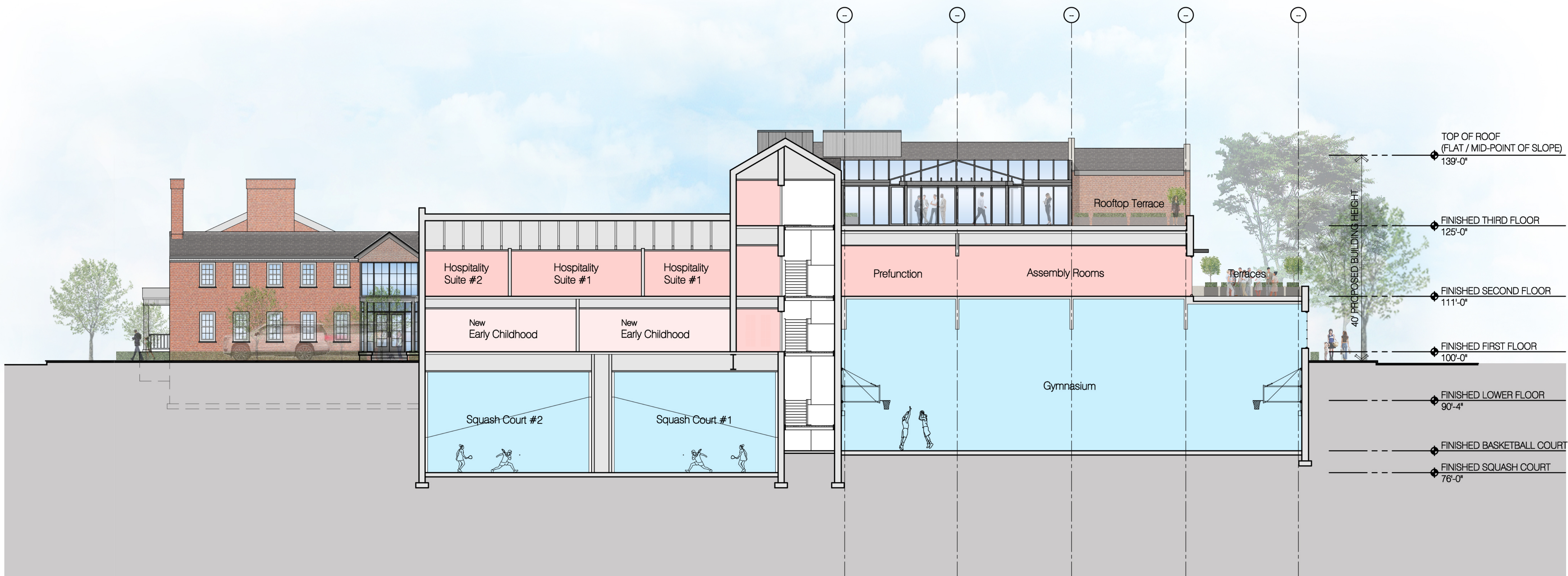
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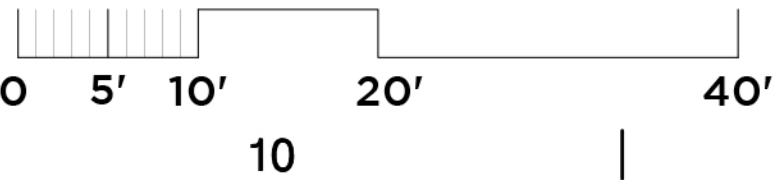
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Date:	Issued For:
2023-03-13	PLANNING BOARD PRE APPLICATION
2023-06-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A300
BUILDING SECTION -
CONCEPT

H9
A300
Building Section - Concept
SCALE: 3/32" = 1'-0"



A

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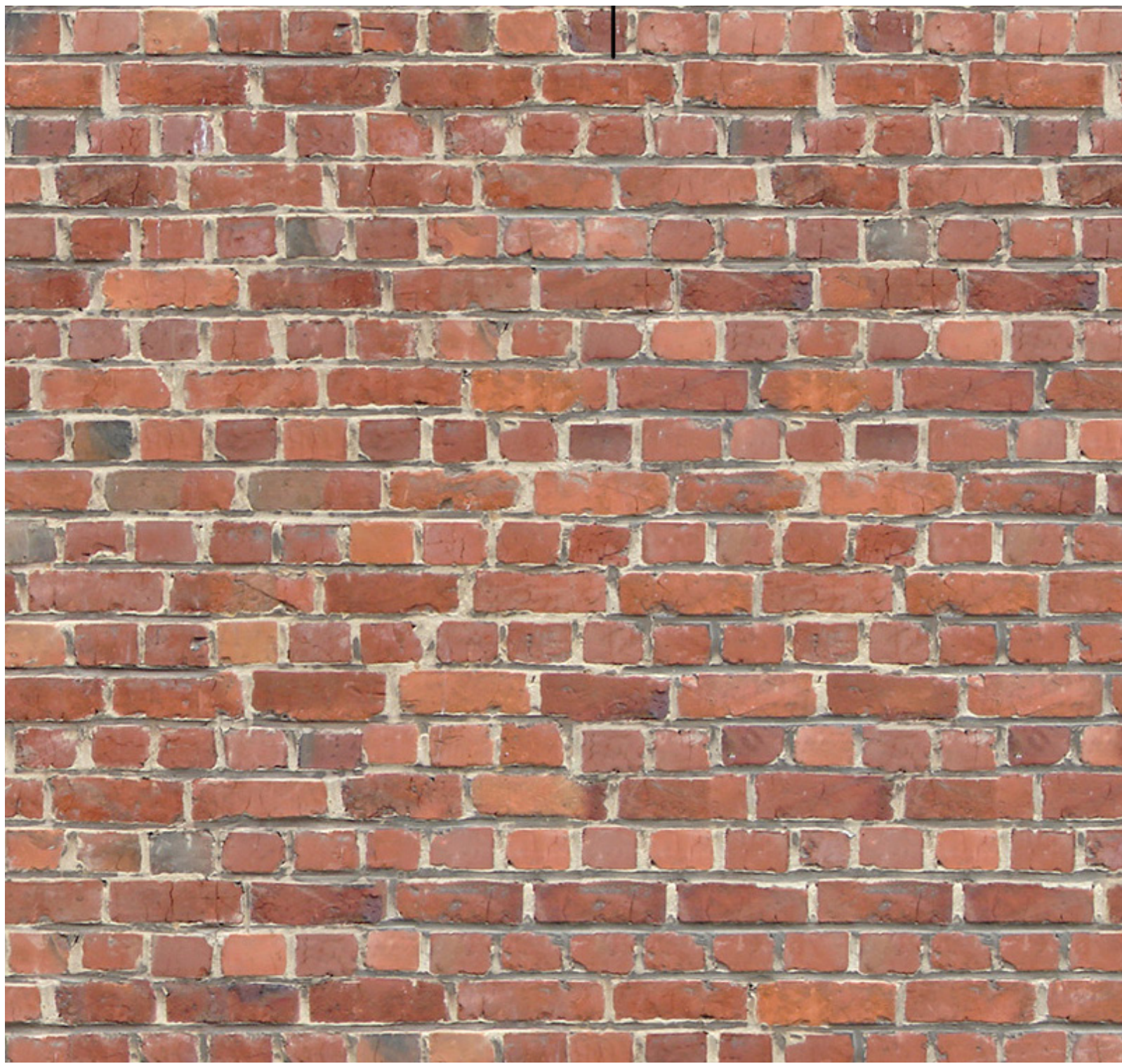
6

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10



Architectural Brick
(similar to existing building)



Stone
(similar to existing building)



Window Frames
Black



Metal Railings
Black



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2023-06-07	PRELIMINARY SITE PLAN APPROVAL

Sheet No.:
A900
EXTERIOR MATERIALS















View #1 - Existing Photograph

The Community House
374 Townsend St. Terrace Views



View #1 - Expansion with Existing Landscaping



View #1 - Expansion with Proposed Landscaping



View #2 - Existing Photograph

The Community House
374 Townsend St. Terrace Views



View #2 - Expansion with Existing Landscaping



View #2 - Expansion with Proposed Landscaping

Exterior Light Fixture Cutsheets Proposed



870ILED GENEVA SERIES

LED BOLLARDS

DIMENSIONS
11" x 11" x 46-1/2" TALL

7 YEAR
WARRANTY

LUMEN
RANGE
320-580

LIFE SPAN
L70
MINIMUM
100,000
HOURS

UL
LISTED

CLICK
FOR TAGS

JOB NAME

FIXTURE TYPE

MEMO

BUILD A PART NUMBER

ORDERING EXAMPLE: 870ILED-IL40TS-MDL07-CL2/BKT

Model	LED	CCT	Type	Driver	Option Chain Loop	Option Fuse	Option Protocol	Option Response	Finish

Model

- 870ILED

LED

- L

CCT - Color Temperature (K)

- 2700K • 3000K • 3500K • 4000K • 5000K

Type

- TS (Symmetric)

Driver

- MDL07 (120V-277V, 700mA)
- MDH07 (347V-480V, 700mA)

Options (Click here to view accessories sheet)

- CL1 Single Chain Loop
- CL2 Double Chain Loops at 180°
- FHD Double Fuse and Holder
- FCD Electronic Button Photocontrol, mounted on an access door (480V)
- GFPLUC 15 Amp duplex GFCI receptacles with a low profile in-use cover
- GFPIUC 15 Amp duplex GFCI receptacles with a standard in-use cover
- USB IUC 15 Amp duplex USB/Receptacle combo with a low profile in-use cover (NON-GFI)
- GFPIB 15 Amp duplex GFCI receptacles in pole base, includes mouse hole on door for wire access
- USB IB 15 Amp duplex USB/Receptacle combo in pole base, includes mouse hole on door for wire access (NON-GFI)

Specifications

General

The luminaire shall be provided with an individual collimating type acrylic optic applied to the COB (Chip On Board) LED assembly. The luminaire shall provide a symmetric distribution with near perfect surface brightness and uniformity.

Construction

The bollard is made of heavy wall 356 alloy cast aluminum with a 1" thick floor cast as an integral part of the bollard. The removable bollard cap is cast aluminum.

LED's

The luminaire shall use high output, high brightness LED's, consisting of a two piece assembly complete with Chip on Board (COB) LED component and COB holder frame. The LED's and printed circuit boards shall be 100% recyclable; they shall also be protected from moisture and corrosion by a conformal coating of 1 to 3 mils. They shall not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. The LED life rating data shall be determined in accordance with IESNA LM-80. The High Performance white LED's will have a life expectancy of approximately 100,000 hours with not less than 70% of original brightness (lumen maintenance), rated at 25°C. The High Brightness, High Output LED's shall be 4000K (2700K, 3000K, 3500K or 5000K option) color temperature with a minimum of 70 CRI. Consult factory for custom color CCT. The luminaire shall have a minimum _____ (see table) delivered initial lumen rating when operated at steady state with an average ambient temperature of 25°C (77°F).

Options

Standard Finishes* (Click here to view paint finish sheet)

- BKT Black Textured
- WHT White Textured
- PCT Park Green Textured
- ABZT Architectural Medium Bronze Textured
- DDT Dark Bronze Textured

*Smooth finishes are available upon request.

Stemberg Select Finishes

- VC Verde Green
- ST Swedish Iron
- OWCT Old World Gray Textured

Custom Finishes*

- CM Custom Match
- CI Cold Iron
- WR Weathered Brown
- CD Cedar
- WVK Weathered Black
- TT Two Tone

*Custom colors require upcharge.

SternbergLighting

ESTABLISHED 1923 / EMPLOYEE OWNED

800-621-3376
555 Lawrence Ave., Roseville, IL 60172
info@sternberglighting.com
www.sternberglighting.com

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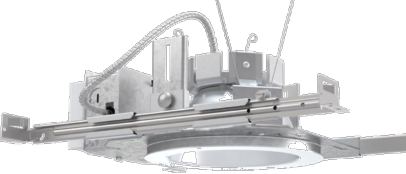


FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.
CONSTRUCTION — Galvanized steel mounting plate/frame galvanized overprotective low with hidden integral access covers and spring latches. Reflectors are retained by torsion springs.
Vertically adjustable mounting brackets with concealed bar hangers provide 3-2 1/4" total adjustment. Two combinations 15 3/4" and fixed 12" brackets for straight through installation. Capacity 8-14, 4-6, 16, 12 AWG conductors, rated for 90°C.
Accommodates 1/2" x 3/4" post spacing.
Passive cooling thermal management for 25°C standard, high ambient (40°C) option available. Light engine and drivers are accessible from above or below opening.
Max ceiling thickness 1-1/2".
OPTICS — LEDs are bonded to a 3-step MacAdam Ellipse; 84 CRI minimum, 90 CRI optional.
LED light source concealed with diffusing optical lens.
General illumination lighting with 1.8 S/MH and 55° cutoff to source and source image.
Self-Retained and/or reflectors in specular, semi-specular, or matte diffuse finishes. Also available in white and black painted reflectors.
WGR — LED's are for fixtures aimed at grade with cut-off equal to or less than 60 degrees per CIE 117-1996 Discomfort Glare in Interior Lighting.
ELECTRICAL — Rated with 120-277V, 50/60Hz 0-10V dimming drivers mounted to junction box, 32% or 7% minimum dimming level available.
0-10V dimming fixture requires two (2) additional low voltage wires to be pulled.
LUMEN MAINTENANCE — 70% lumen maintenance at 60,000 hours, L70/L90/L80 hours.
LISTINGS — Certified to UL and Canadian safety standards. Wet location standard (covered option). IP55 rated. DMX512 "DMX" certified product. Drivers are ball compliant.
BUY AMERICAN ACT — Product with the BAA option is assembled in the USA and meets the Buy American Act government procurement requirements under FAR, DFARS and DOD regulations. Please refer to www.buyusa.gov for additional information.
WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.lithonia.com/support/warranty-terms-and-conditions
Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25°C.
Specifications subject to change without notice.

LDN6 STATIC WHITE

6" Open and Wallwash LED
New Construction Downlight

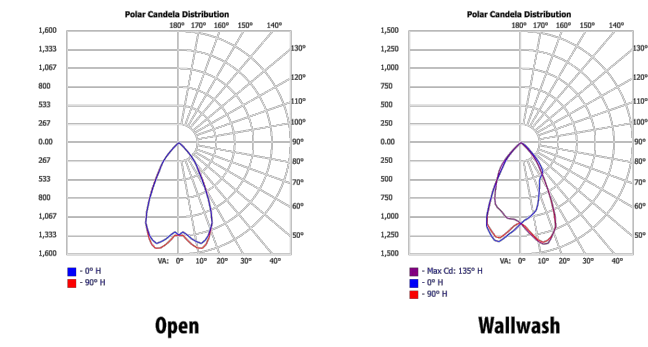


PERFORMANCE DATA

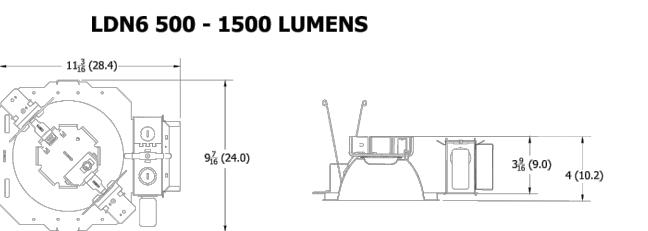
Nominal Lumens	Lumens	Wattage	Lm/W
500	3279	5.8	96.3
750	788.1	8.9	86.3
1000	950.1	10.4	91.0
1500	1514	13.5	86.4
2000	2066	22.5	88.1
2500	2584	28.3	88.6
3000	3021	34.8	86.9
4000	4088	44.3	96.8
5000	4915	57.7	86.1

Notes

- Tested in accordance with IESNA LM-79-08.
- Tested in accordance with IESNA LM-80 standards under stabilized laboratory conditions.
- CRI > 90 typical.



Dimensions



See page 4 for other fixture dimensions

1 EXTERIOR LIGHT FIXTURE SPECIFICATION - BOLLARD LIGHT - "FXB"

2 EXTERIOR LIGHT FIXTURE SPECIFICATION - DOWNLIGHT - "FXD-750" / "FXD-1000"

3 EXTERIOR LIGHT FIXTURE SPECIFICATION - PERGOLA LIGHT - "FXP"



SPECIFICATION SHEET

MODEL 1185 Architectural Series • Inground & Well Lights

FIXTURE SPECIFICATIONS:

DOOR:
Die-cast, low copper content, A360 aluminum. Post anodized Type III (hard anodized) and powder coated for maximum corrosion protection. Captive stainless steel fasteners affixed to a ventilated door. Inner vents allow hot air to escape from around optic housing while outer vents allow cool air to enter fixture housing.

FIXTURE HOUSING:
Compression-molded, glass-reinforced polymer for strength and high UV stability. Molded with integral junction box. Unibody construction allows for superior door and optic housing support. J-box covers standard with two 3/4" NPT bottom B34 tapped holes. 3/4" NPT front F34, 1/2" NPT side S34 and 3/4" NPT at A34 conductive inlet holes optional (Kinsale Factory).

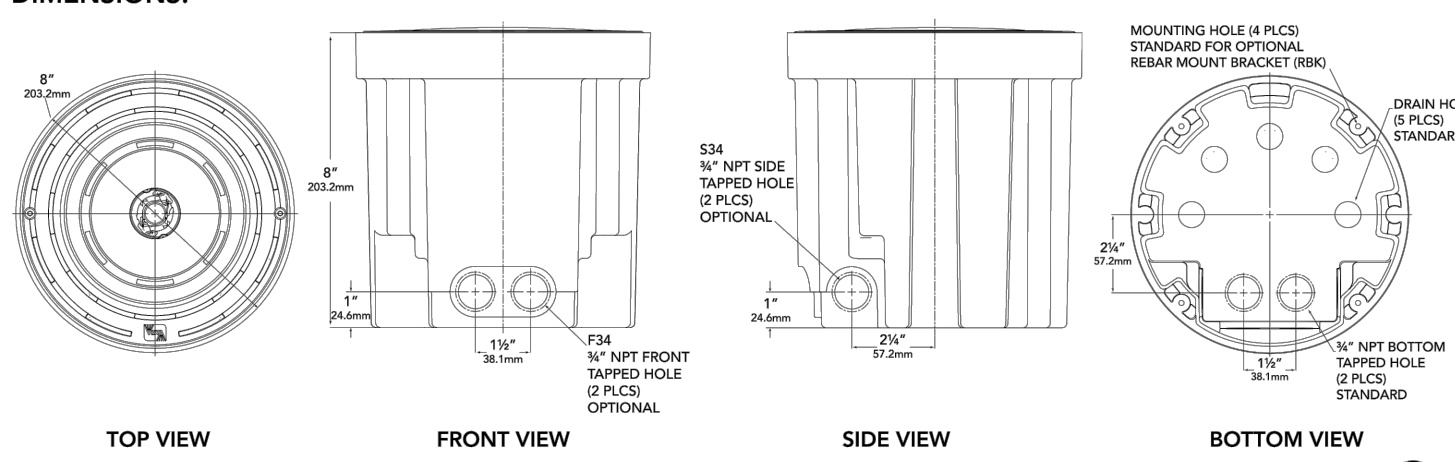
OPTIC HOUSING:
Die-cast A360 aluminum. Finned for maximum heat dissipation. Type III hard anodized and powder coated for maximum corrosion protection. Optic and driver compartment separately sealed while being electrically connected.

DRIVER COMPARTMENT:
Injection molded PPS for maximum corrosion protection. Driver compartment houses electronic LED driver and thermostat which cuts power to fixture in abnormal ambient temperature conditions. Driver compartment is completely epoxy potted to protect electronics from moisture.

DOOR FINISH:
Durable powder coat finish available in Black, Architectural Bronze, Dark Bronze, Granite, White, Architectural Brick, Light Bronze, Special Bronze, Glossy Gray, Rust, Hunter Green, Weathered Bronze, Weathered Iron, Graphite Metallic, Verde, Pewter, Mocha and Olde Finish. Custom Powder coat finishes available on request.

LED:
Cree® CXA 1830 COB driven at 350mA, 500mA, or 620mA.
CRI:
The CRI range is 83 - 85.

Dimensions:



Color Temperature:
LED's are offered in 2700°K, 3000°K, 3500°K, 4000°K, or 5000°K CCT
ANSI white 4 step Cree® East White™ bins

Light Distribution:
Very Narrow Spot **NS** (NEMA 2x2), Narrow Spot **NS** (NEMA 2x2), Medium Flood **MF** (NEMA 4x4), and Wide Flood **WF** (NEMA 6x6).

Reflector:
Specular or semi-specular optics designed for maximum performance and uniformity. Very Narrow Spot **NS** optic incorporates an internal source shield to eliminate unwanted glare outside the beam pattern.

Lens/Seal:
1/4" thick tempered pressed clear glass sealed with a solid molded silicone gasket.

Wiring:
3' 18/3 outdoor-rated hard usage cable standard for non-dimming **ND** and Phase Cut TRIAC (120V only) dimming **PCT** fixtures. 3' 18/3 outdoor-rated hard usage cable standard for 0-10V dimming **DIO** fixtures. Cable exits fixture housing through a liquid tight cable fitting.

Driver:
Integral CUL listed LED driver, either non-dimmable **ND** or dimmable. Dimming: 0-10VDC **DIO** and Phase Cut TRIAC (120V only) **PCT** options available. Multi-Volt **MV** 120V-277V driver input standard.

Accessories:
TOS - Tilt Optic 5°, **T010** - Tilt Optic 10°, **T015** - Tilt Optic 15°, **T025** - Tilt Optic 25°, **DF** - Diffuse Filter, **LSF** - Linear Spread Filter, **RBC** - Rubber Bracket Kit, **STR** Stainless Trim Ring, and **HS** - Half Glass Shield.
Dichroic Lenses: **YL** - Yellow, **RL** - Red, **BL** - Blue, **GL** - Green.

Mounting:
Fixture suitable for direct burial in earth or poured concrete applications.

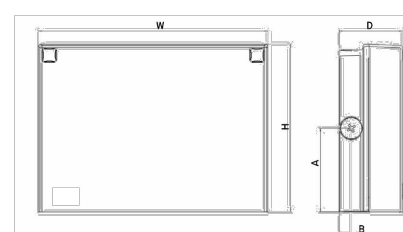
Certification:
C-ETL US wet location listed. IP68

All Vista Architectural luminaires are MADE IN THE U.S.A.



WPX LED Wall Packs

Specifications



Ordering Information

EXAMPLE: WPX2 LED 40K MVOLT DDBXD

Series	Color Temperature	Voltage	Options	Finish
WPX1 LED P1	1,500 Lumens, 17W	300K 300K	MVOLT 120V-277V	(BakK) None
WPX1 LED P2	2,000 Lumens, 24W	40K 4000K	347 347V1	EWHR Emergency battery backup, CCC compliant (WV, PCT, etc)
WPX2 LED	6,000 Lumens, 47W	300K 3000K	EWHR Emergency battery backup, CCC compliant (WV, PCT, etc)	EWHR Emergency battery backup, CCC compliant (WV, PCT, etc)
WPX3 LED	9,000 Lumens, 69W	300K 3000K	EWHR Emergency battery backup, CCC compliant (WV, PCT, etc)	EWHR Emergency battery backup, CCC compliant (WV, PCT, etc)

Notes

1. All WPX wall packs come with 60V surge protection standard, except WPX1 LED P1 package with 60V surge protection. Sample nomenclature: WPX1 LED P1 40K MVOLT SP0WV DDBXD

2. Battery pack options only available on WPX1 and WPX2.

3. Battery pack options not available with 347V and PE options.

Features & Specifications

INTENDED USE — The WPX LED wall packs are designed to provide a cost-effective, energy-efficient solution for the WPX LED wall packs. The WPX LED wall packs are designed to provide a cost-effective, energy-efficient solution for the WPX LED wall packs. The WPX LED wall packs are designed to provide a cost-effective, energy-efficient solution for the WPX LED wall packs.

CONSTRUCTION — WPX feature a die-cast aluminum main body with optional thermal management that both enhances LED efficiency and extends component life. The luminaires are 100% steel, and sealed against moisture or environmental contaminants.

ELECTRICAL — LED light engine configurations consist of high-efficiency LEDs and LED lumen maintenance of L70/L90/L80 hours. Color temperature (CCT) options of 3000K, 4000K and 5000K with minimum CRI of 70. Electronic drivers ensure system power factor >90% and THD <20%. All luminaires have 60V surge protection. Sample WPX1 LED P1 package comes with a standard surge protection rating of 60V. (See our website for an optional 60V surge protection).

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.

Notes

1. All WPX wall packs come with 60V surge protection standard, except WPX1 LED P1 package with 60V surge protection. Sample nomenclature: WPX1 LED P1 40K MVOLT SP0WV DDBXD

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3. Battery pack options not available with 347V and PE options.

Notes

1. All WPX wall packs come with 60V surge protection standard, except WPX1 LED P1 package with 60V surge protection. Sample nomenclature: WPX1 LED P1 40K MVOLT SP0WV DDBXD

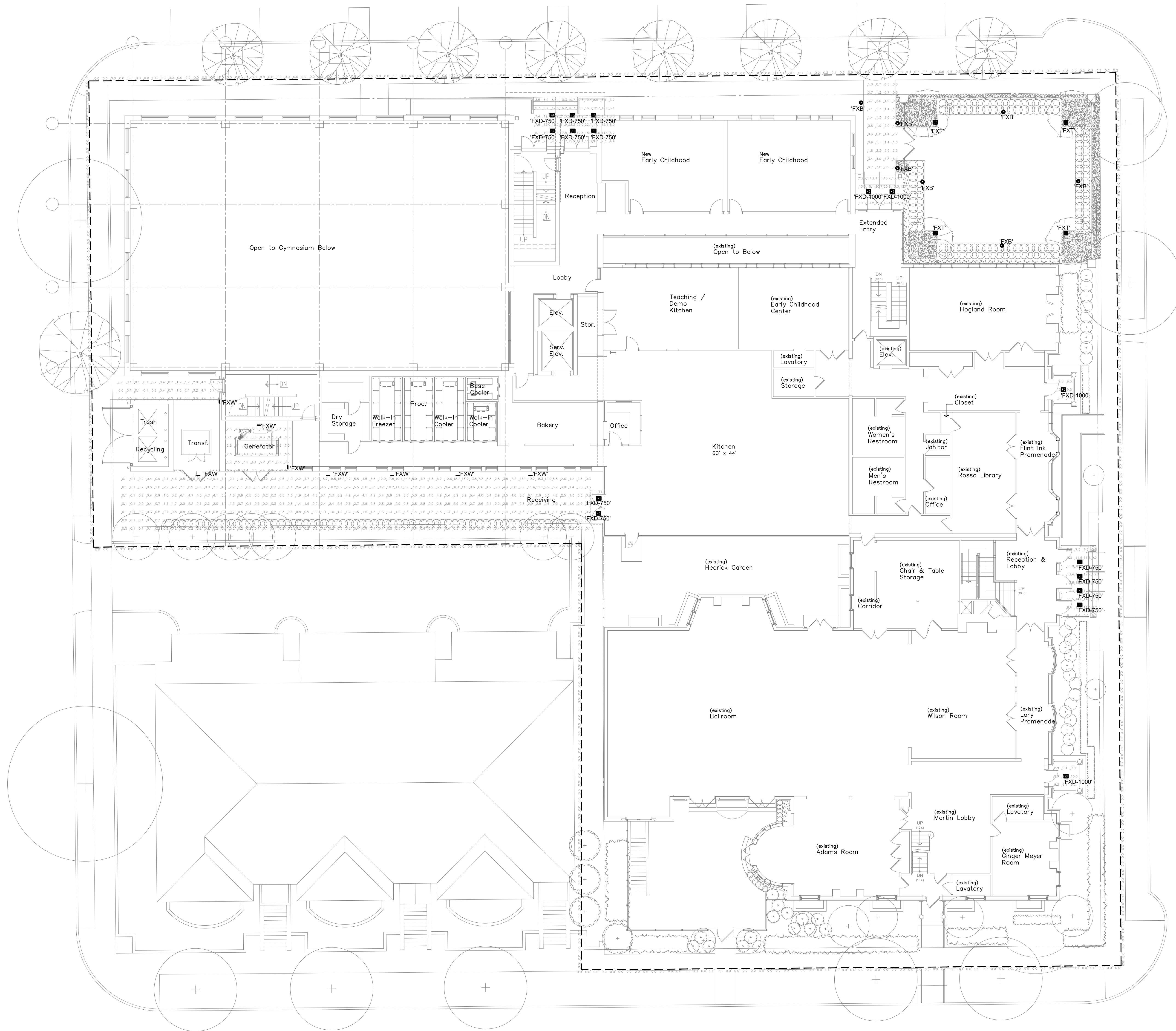
2. Battery pack options only available on WPX1 and WPX2.

3. Battery pack options not available with 347V and PE options.

4 EXTERIOR LIGHT FIXTURE SPECIFICATION - TREE UPLIGHT - "FXT"

5 EXTERIOR LIGHT FIXTURE SPECIFICATION - WALL PACK LIGHT - "FXW"

S. CHESTER ST. (60' WD.)

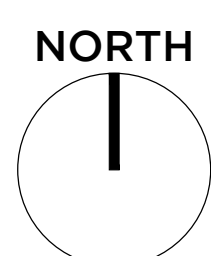


S. BATES ST. (60' WD.)

GENERAL NOTES:

1. THE INTENSITY OF LIGHT ON THE SITE DOES NOT EXCEED ONE AND ONE HALF (1.5) MAINTAINED FOOT-CANDLES AT ANY PROPERTY LINE FOR ANY OTHER ZONED PROPERTY OTHER THAN SINGLE-FAMILY RESIDENTIAL ZONED. THE LIGHT INTENSITY IS MEASURED AT 6FT ABOVE THE GROUND LEVEL ON A VERTICAL PLANE, NOTED ALONG THE BOLD DASHED LINE.
2. THE INTENSITY OF LIGHT ON A SITE WHICH PROVIDES A FRONT SETBACK OF LESS THAN 5FT SHALL BE MEASURED FROM 5FT BEYOND THE FRONT PROPERTY LINE, NOTED ALONG THE BOLD DASHED LINE.
3. REFER TO SHEET E-0 FOR LIGHT FIXTURE SPECIFICATIONS

**First Level Exterior Lighting Photometric Plan
Proposed**



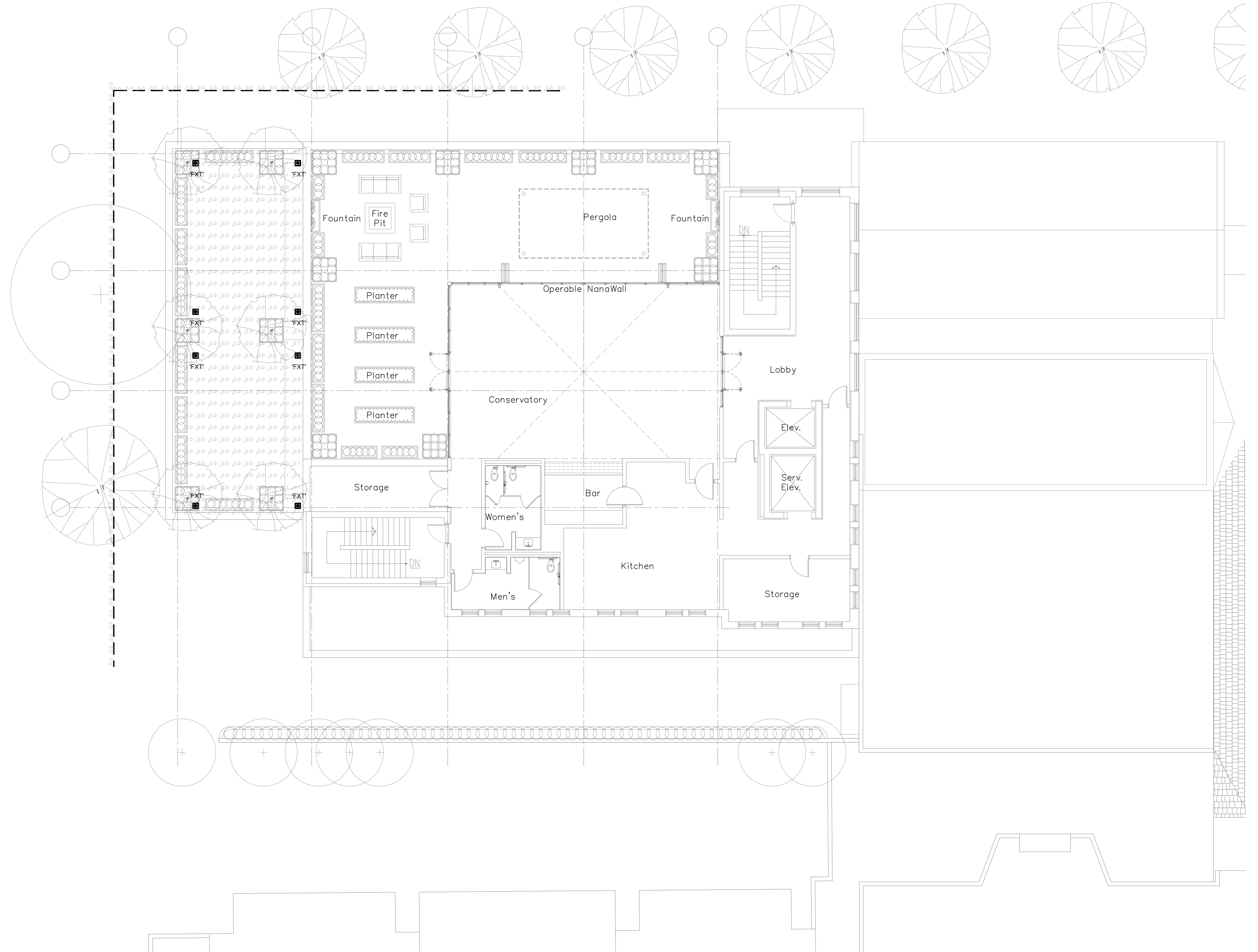
The Community House

380 Bates Street
Birmingham, Michigan
Proposed Layout
3/32" = 1'-0"

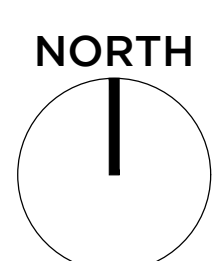
April 25, 2023

GENERAL NOTES:

1. THE INTENSITY OF LIGHT ON THE SITE DOES NOT EXCEED ONE AND ONE HALF (1.5) MAINTAINED FOOT-CANDLES AT ANY PROPERTY LINE FOR ANY OTHER ZONED PROPERTY OTHER THAN SINGLE-FAMILY RESIDENTIAL ZONED. THE LIGHT INTENSITY IS MEASURED AT 8FT ABOVE THE GROUND LEVEL ON A VERTICAL PLANE, NOTED ALONG THE BOLD DASHED LINE.
2. THE INTENSITY OF LIGHT ON A SITE WHICH PROVIDES A FRONT SETBACK OF LESS THAN 5FT SHALL BE MEASURED FROM 5FT BEYOND THE FRONT PROPERTY LINE, NOTED ALONG THE BOLD DASHED LINE.
3. REFER TO SHEET E-0 FOR LIGHT FIXTURE SPECIFICATIONS



**Second Level Exterior Lighting Photometric Plan
Proposed**

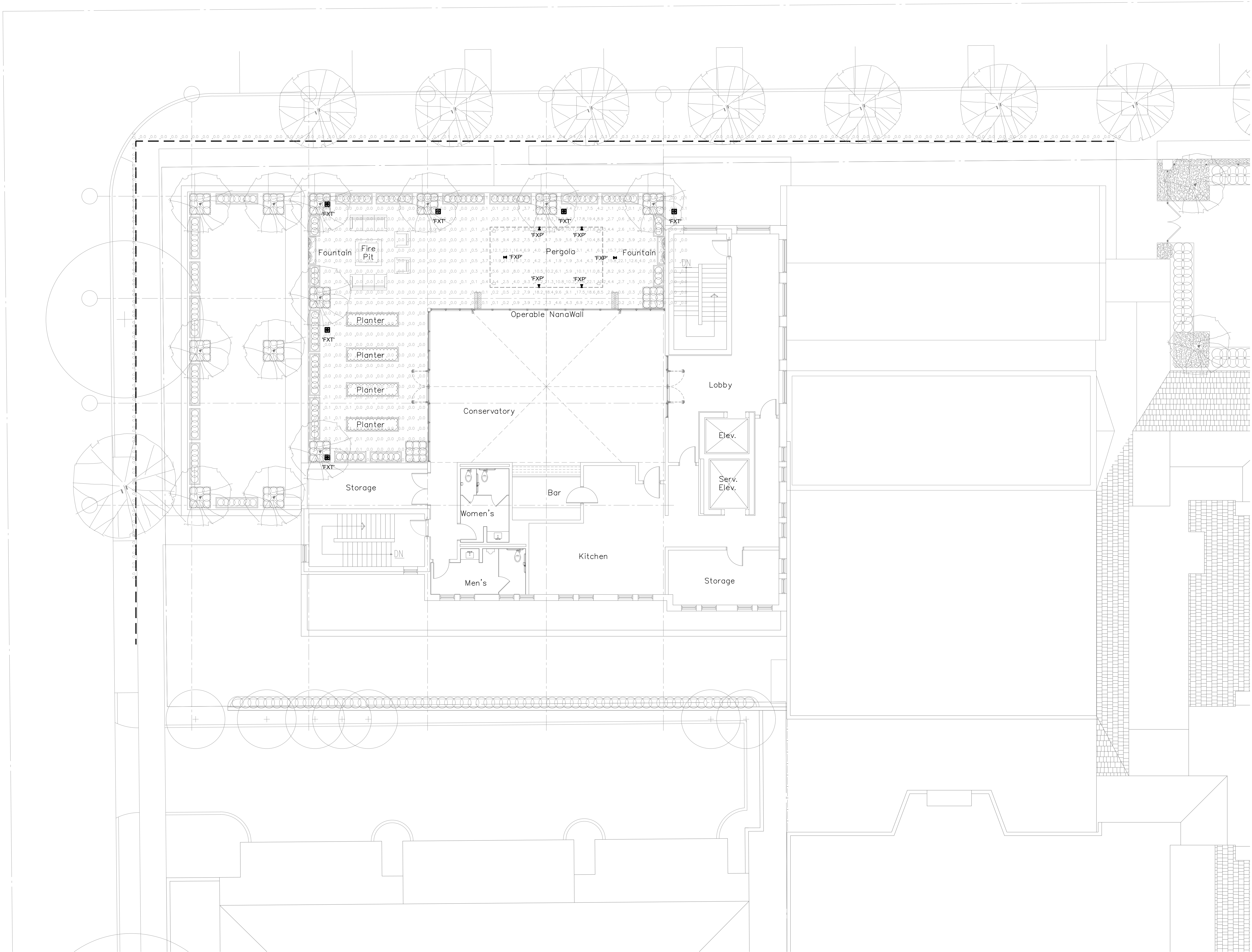


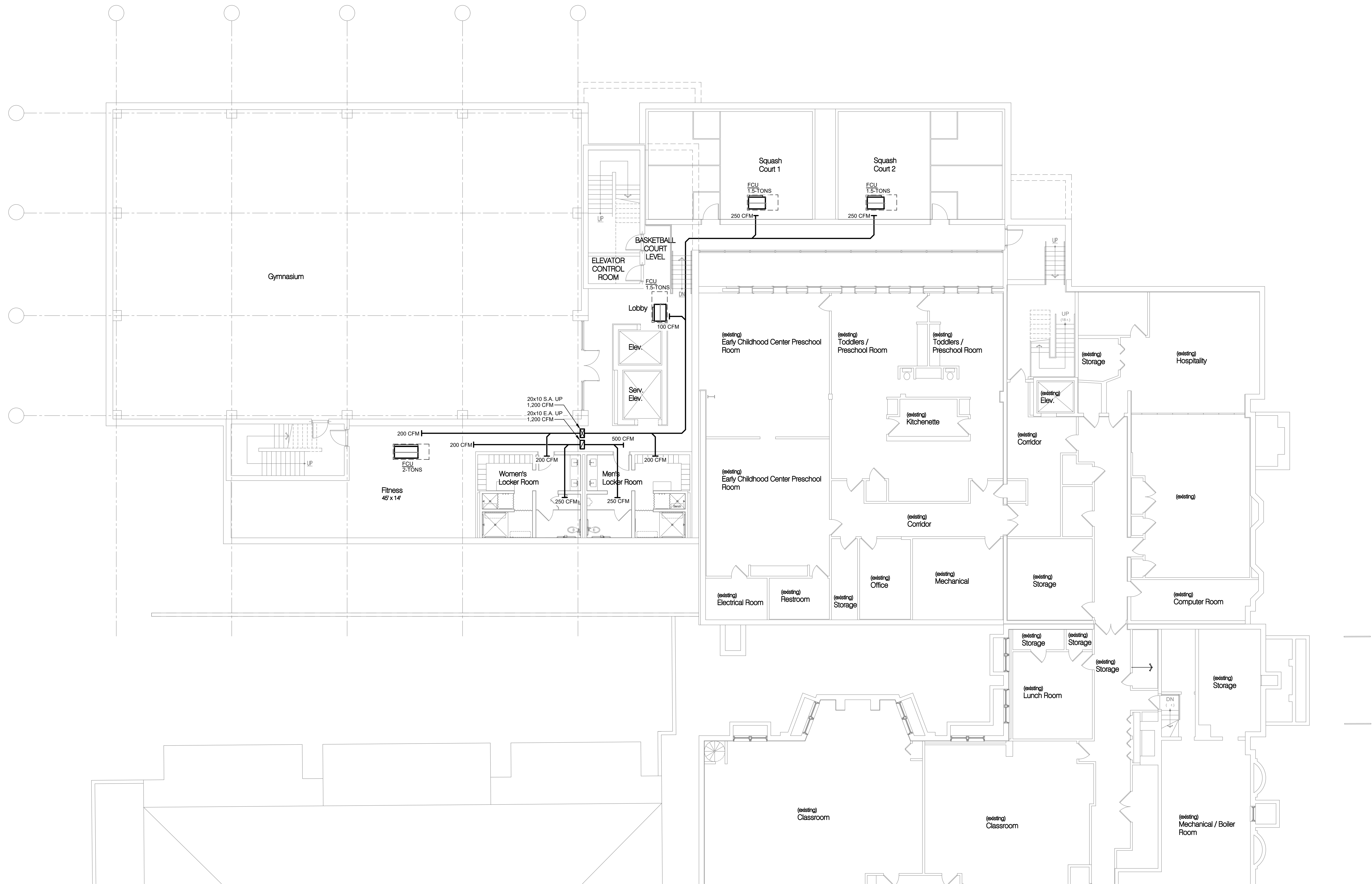
W. MERRILL ST. (60' WD.)

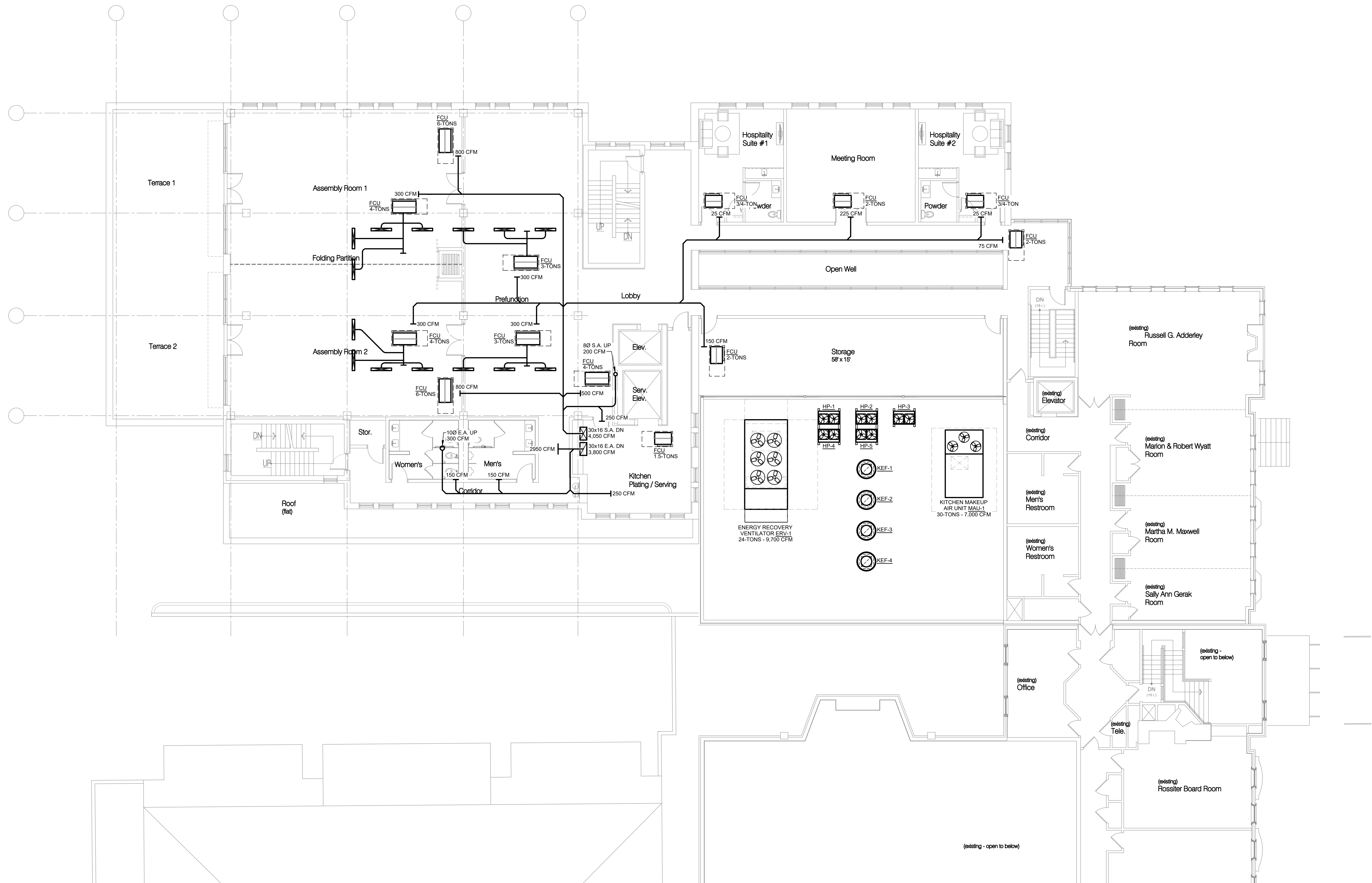
GENERAL NOTES:

1. THE INTENSITY OF LIGHT ON THE SITE DOES NOT EXCEED ONE AND ONE HALF (1.5) MAINTAINED FOOT-CANDLES AT ANY PROPERTY LINE FOR ANY OTHER ZONED PROPERTY OTHER THAN SINGLE-FAMILY RESIDENTIAL ZONED. THE LIGHT INTENSITY IS MEASURED AT 6FT ABOVE THE GROUND LEVEL ON A VERTICAL PLANE, NOTED ALONG THE BOLD DASHED LINE.
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3. REFER TO SHEET E-0 FOR LIGHT FIXTURE SPECIFICATIONS

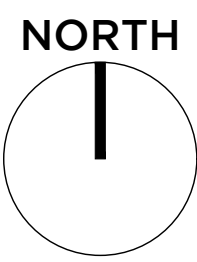
S. CHESTER ST. (60' WD.)



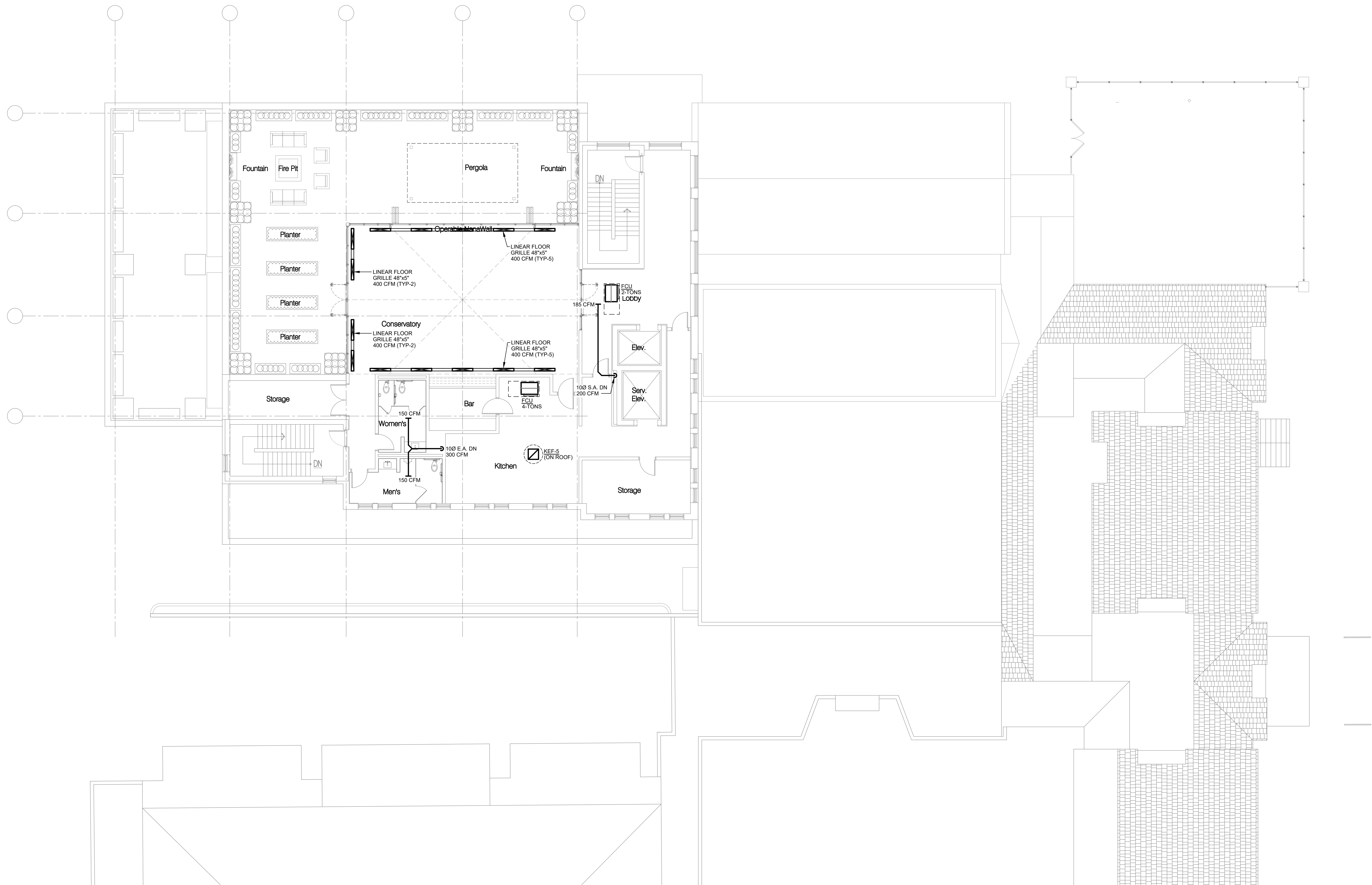




Second Level HVAC Plan
Proposed



The Community House
380 Bates Street
Birmingham, Michigan
Proposed Layout
1/8" = 1'-0"
April 25, 2023



Community Impact Study

THE COMMUNITY HOUSE

380 S BATES STREET

Birmingham, MI

Prepared By

Saroki Architecture

430 N. Old Woodward Ave.

Birmingham, MI 48009

Property Owner

The Community House

380 S Bates Street

Birmingham, MI 48009

THE COMMUNITY HOUSE

380 S BATES STREET

Birmingham, MI

Development Team

Applicant

The Community House
380 S Bates Street
Birmingham, MI 48009
(248) 644-5832

Architect

Saroki Architecture
430 N. Old Woodward Ave
Birmingham MI, 48009
(248) 258-5707

Surveyor

Fenn & Associates
14933 Commercial Dr
Shelby Twp, MI 48315
(586) 254-9577

Civil Engineer

Nowak & Fraus Engineers
46777 Woodward Ave.
Pontiac, MI 48342
(248) 332-7931

Landscape Architect

Michael J Dul & Associates, Inc.
212 Danes Street
Birmingham, MI 48009
(248) 644-3410

Environmental Engineer

PM Environmental, INC.
4080 West Eleven Mile Road
Berkley, MI 48072
(248) 414-1425

MEP Engineer

Mechanical Electrical Engineering Consultants
14496 N. Sheldon Rd. Ste. 260
Plymouth, MI 48170
(248) 935-4671

Geotechnical Engineer

McDowell & Associates
21355 Hatcher Avenue
Ferndale, MI 48220
(248) 399-2066

Acoustical Engineer

Kolano and Saha Engineers, Inc.
3559 Sashabaw Road
Waterford, MI 48329
(248) 674-4100

Traffic Engineer

Stonefiled
607 Shelby St. Suite 200
Detroit, MI 48226
(248) 247-1115

Table of Contents

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Section 2	CIS Checklist Supplemental Information
Section 3	Appendix
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	Warranty Deed
3.2	Maps
	Zoning Map
	Location Map
3.3	Noise Impact Study
3.4	Traffic Impact Study
3.5	Phase I Environmental Site Assessment
3.6	Geotechnical Investigation
3.7	Air Quality Information
3.8	Site Photographs
3.9	Site Logistics
	Proposed Haul Routes Map
4.0	Mechanical Equipment Specifications

Section 1

CIS Checklist & Zoning Requirements Analysis

Section 2

CIS Checklist Supplemental Information

Section 2

CIS Checklist Supplemental Information

THE COMMUNITY HOUSE

Birmingham, MI 48009

Combined CIS & Site Plan Review Application

Planning Division

GENERAL INFORMATION:

1. Name and address of applicant and proof of ownership

**The Community House
380 S Bates Street
Birmingham, MI 48009
(248) 644-5832**

The Community House owns the land parcel in the proposed development. Refer to Appendix 3.1 for the Proof of Ownership.

2. Name of Development

The Community House Expansion

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

**380 S Bates Street
Birmingham, MI 48009**

(Refer to Survey for Legal Description)

4. Name and address of the surveyor

**Fenn & Associates
14933 Commercial Drive
Shelby Twp, MI 48315
(586) 254-9577**

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

See Site Plan

6. A separate location map

See the location map in Appendix 3.2.

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 the zoning map provided in Appendix 3.2.

8. Details of all proposed site plan changes

Refer to Preliminary Site Plan Review drawings.

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

Civic Destination: General

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

The Downtown Birmingham 2016 Plan (1996): Recommended land use for this parcel is "C" Community Use (appendix F-2, page 94). The Birmingham Plan Draft #2 (11/05/2021) identifies this site in the Future Land Use Map as Civic Destination: General. The site is located within the Civic Center and identified in Figure 23 as a Civic Destination on Page 39. The Birmingham Plan states, "Civic buildings and landscapes should be grand and iconic, and be distinct from residential construction to avoid confusing public and private uses." The proposed addition uses timeless materials to complement the existing Community House. The proposed development meets the goals and objectives of the current and proposed master plan.

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 within the Downtown Overlay Zoning.

12. The current zoning classification of the subject property

The current zoning classification for the subject property is "C" Community Use in the Downtown Overlay Zoning and R7 for a portion of the property along Chester Street.

13. The zoning classification required for the proposed development

The zoning classification required for the proposed development is “C” Community Use in the Downtown Overlay Zoning.

14. The existing land uses adjacent to the proposed project

North: 5-story hotel building & 3-story Mixed-Use Building, zoned D-4 overlay zoning

South: 3-story office building, zoned D-3 overlay zoning

East: 1-story retail & office buildings, zoned D-4 overlay zoning

West: 4-story office building, zoned D-4 overlay zoning

15. Complete the attached “Zoning Requirements Analysis” chart

Refer to Section 1 for Zoning Requirements Analysis.

LAND DEVELOPMENT ISSUES

16. A survey and site drainage plan

(See Civil Engineering drawings) Refer to the enclosed survey of the site.

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

Refer to the Environmental Soil Profiles and Geotechnical Investigation in Appendix 3.6.

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. There is very little grade change on the parcel. However, during the 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.

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 volume of excavated soils is estimated to be 15,000 cubic yards. Refer to Appendix 3.9 for the proposed haul route.

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

Pedestrian and traffic control which will be clearly marked and identified with either jersey barriers, fencing, signage, street and sidewalk closures clearly identified, etc. Signage at the gates clearly noting areas as “do not enter”, etc. Misc. noise nuisances that may occur are demo of the existing structures, starting of large equipment, safety back-up alarms, and heavy machinery. Dust mitigation and track out clean-up will be accomplished with water spray guns and sweepers.

PRIVATE UTILITIES

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

Refer to Civil Engineering Drawings.

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

It is unlikely that easements for private utility services will be required as all existing services and leads will be within the public right-of-way.

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 3.3.

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 3.3.

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 3.3.

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 air quality information in Appendix 3.7).

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 development is consistent with similar downtown Birmingham building types and uses. Newer buildings are built with cleaner, more sustainable materials and equipment, which should mitigate some of these effects.

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

This development will not establish any trends pertaining to air quality standards, though there will be some additional pollution from the additional density of the built environment, which would be the case of any development.

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 not have any onsite parking. There is no percentage of required parking for the commercial uses because the proposed project is within the parking assessment district.

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.)

There will not be any demonstrable destruction or physical alteration on the sight as the existing structure will remain and the proposed building addition will occur to the West on a vacant portion of the parcel. There are very few trees currently on this site. The proposed development will greatly enhance the built environment with new trees, 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 buildings are similar in size, scale, and materiality to the neighboring buildings. The overall development brings density and activity to an underutilized portion of the site.

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.)

Not Applicable

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

The proposed building will not block or degrade views, as there has been thoughtful consideration of the adjacent properties to enhance the general area. The proposed development would lead to an increase in activity and would create a new area of focus on an underutilized site.

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;

There will not be objectionable visual pollution, as we are improving views to and from the site. Access to loading and trash receptacles will be maintained off Chester Street. Trash receptacles will screened and hidden from view.

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. The project is in the City's Shain Park Historic District.

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

No nearby properties are listed on the National Register of Historic Places. The project is in the City's Shain Park Historic District.

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 historical 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 an enclosed refuse area off Chester Street with adequate space to separate recyclable materials. The refuse will be removed as required for scheduled pick-up.

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 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

Public gravity sanitary sewer exists within the right-of-way along the frontage of the proposed development. It is anticipated that the existing sanitary sewer will have the capacity to adequately service the proposed development. Per preliminary meetings and correspondence with the City, the existing sewer along the frontage of the property has the capacity to handle the flows from the proposed 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.

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. Per preliminary meetings and correspondence with the City, the existing sewer along the property has the capacity to handle the flows from the proposed 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.)

Low-flush toilets, restricted flow faucets, and greywater recycling may be incorporated to reduce the amount of water entering the sewer system.

STORM SEWER

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

In existing conditions, .85 acres of the site (which is mostly developed) drains via a storm sewer conveyance pipe network. The proposed addition includes a Stormwater Detention System as required by Oakland County and the City of Birmingham. The planned storm water management design will be reviewed and confirmed by the City Engineer prior to final site plan approvals.

47. 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 municipal storm sewer systems in the area will be exceeded or adversely affected by the runoff from the proposed development. The proposed addition includes a Stormwater Detention System as required by Oakland County and the City of Birmingham. Therefore, drainage from the site will not adversely affect the municipal system. 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 proposed addition includes a Stormwater Detention System as required by Oakland County and the City of Birmingham. Therefore, drainage from the site will not adversely affect the municipal system.

WATER SERVICE

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

Public water mains exist within the right-of-way along the frontages of the proposed development. Per preliminary meetings and correspondence with the City, the existing water mains should be able to service the proposed building types. The planned water usage design and capacity of the existing water main will be reviewed and confirmed by the City Engineer before final site plan approvals.

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

It is not anticipated that the water quality of the existing water main supply system is unsafe. The proposed water main will need to 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 proposed water supply design is compatible with the existing system and will not require rerouting, significant alterations, or modifications.

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 (Bates, Merrill, Chester, and Townsend Streets).

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.)

The proposed project provides easy and direct access for emergency vehicles along all four sides of the building (Bates, Merrill, Chester, and Townsend Streets).

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.

The Community House will likely have a security system to be determined. It is the responsibility of The Community House to submit plans to the police department for approval.

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

Refer to Civil Engineering Drawings.

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 one elevator that will 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

Refer to Civil Engineering Drawings.

59. Detailed description of all fire suppression systems

Full fire suppression system and/or standpipe, Siamese FDC, and knox box will be provided where required. Fire suppression drawings will be based on a performance specification. Drawings will be issued for the building with requirements for a design-build fire suppression contractor to submit full working plans and specifications for review which will then be submitted for approval prior to construction.

TRANSPORTATION ISSUES

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

Refer to the Traffic Impact Study by Stonefield in Appendix 3.4.

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

Refer to the Traffic Impact Study by Stonefield in Appendix 3.4.

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.)

There are three SMART bus stops (#10692, 12071, & 1277) located on W Maple Road between Chester and Old Woodward within close proximity to the proposed building. Pedestrian connectivity will be improved with new streetscape elements and accessible ramping at the proposed entrance along Merrill Street.

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

The proposed development can be easily accessed on four 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 are three SMART bus stops within proximity of the site. 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 are three SMART bus stops within proximity of the site.

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.)

Illumination will be added to the existing streetscape around the project development along walks and entries for safety and security.

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 throughout the development. Building entrances would be at grade or have accessible access.

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.)

The project 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 proposed addition includes a Stormwater Detention System as required by Oakland County and the City of Birmingham, thus runoff peak discharge rate and discharge volumes are expected to be reduced in the proposed conditions.

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

The property does not lie within a special flood hazard area as defined by the Federal Emergency Management Agency; 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: Victor Saroki, FAIA. State of Michigan Architectural Registration no. 1301030354.

Section 3

Appendix

Section 3	Appendix
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	Warranty Deed
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	Location Map
3.3	Noise Impact Study
3.4	Traffic Impact Study
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3.9	Site Logistics
	Preliminary Haul Routes Map
4.0	Mechanical Equipment Specifications

Section 3.1

Proof of Ownership

KNOW ALL MEN BY THESE PRESENTS: That FLORENCE BRADWAY

Conveys and Warrants to BIRMINGHAM COMMUNITY HOUSE ASSOCIATION, a Michigan Corporation,
380 S. Bates St.
whose Street Number and Post Office address is Birmingham, Michigan,

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

An undivided one-half interest in the North sixty-one (61) feet of Lot Numbered Eighty-Five (85), and the North sixty-one (61) feet of Lot Numbered Eighty-Six (86), and the North sixty-one (61) feet of the East thirty (30) feet of Lot Numbered Eighty-Seven (87) all situated in Merrill's plat of the Village of Birmingham, Oakland County, Michigan, according to said plat recorded August 25, 1836, in Liber 12 of Deeds, Page 388, in the office of the Oakland County Register of Deeds.



for the sum of One (\$1.00) Dollar and other good and valuable considerations.
subject to Zoning Ordinances and existing restrictions of record, if any.

Dated this twenty-second day of December
Signed, Sealed and Delivered in Presence of:

A. D. 19 54.
Signed and Sealed:

E. A. Thoms
E. A. Thoms
M. A. Robertson
M. A. Robertson

Florence Bradway
Florence Bradway (L. S.)
1955 JAN 27 PM 3 39
RECORDED
REGISTER OF DEEDS RECORDS
MICHIGAN
(L. S.)
(L. S.)
(L. S.)

In the STATE OF MICHIGAN, COUNTY OF Wayne
On this 22nd day of December
appeared FLORENCE BRADWAY
A. D. 19 54 before me personally

to me known to be the person described in and who executed the foregoing instrument and acknowledged that she
executed the same as her free act and deed.

My commission expires April 8th A. D. 19 56.

Ella A. Thoms
Ella A. Thoms
Notary Public Wayne County, Michigan
Register of Deeds Office

County Treasurer's Certificate

OAKLAND COUNTY TREASURER'S CERTIFICATE
No. 2383
I HEREBY CERTIFY that there are no TAX
LIENS or LITIGATIONS held by the State or any in-
dividual against the within described land, and
all TAXES on same are paid for years
previous to the date of this instrument, as
appears by the records in this office except
as stated.
CHARLES A. SPARKS, County Treasurer
Sec. 135, Act 206, Iord & Am.

Recording Fee 1.50
U. S. Revenue Stamps 2

When recorded return to
Mrs. Wm. L. ...
159 ...
Birmingham, Mich.

TITLE INSURANCE -- ABSTRACTS -- ESCROWS

TITLE INSURANCE -- ABSTRACTS -- ESCROWS

WARRANTY DEED

STATUTORY FORM

**Abstract and Title Guaranty
Company**
735 GRISWOLD ST.
(OPPOSITE CITY HALL)
DETROIT 26, MICHIGAN

WARRANTY DEED

STATUTORY FORM

NOTE 1

Print, typewrite or stamp names of all persons whose signatures appear on this instrument immediately below such signature.

NOTE 2

U. S. Revenue stamps required to be affixed by Grantor and Grantee's responsibility not to accept deed unless proper stamps are affixed. Stamp tax applies on amounts of consideration above \$100.00 at the rate of 55 cents for each \$500.00 or fraction thereof less all encumbrances on property before the sale which are not removed by the sale.

NOTE 3

Male Grantors must indicate marital status.

NOTE 4

Fill in address of Grantee.

JAN-27-55 PAID 2612 • 2389 — K Dds

0.35

heirs, executors, and administrators shall warrant and defend the same against all lawful claims whatsoever, except such as may have accrued or attached by or through the acts or omissions of persons other than the party of the first part herein from and after the 1st day of August 1917, that being the date of the land contract, in fulfillment of which this deed is given.

In witness whereof the said part y of the first part has hereunto set her hand and seal the day and year first above written.

Signed, sealed and delivered in presence of

John J. Chais
Foster Toothacker

Ethel J. Bassett [L. S.]

_____ [L. S.]

_____ [L. S.]

_____ [L. S.]

State of Michigan,

County of Wayne

ss.

On this Seventeenth day of May

in the year one thousand nine hundred and twenty-nine before me.

a Notary Public, in and for said county, personally appeared

ETHEL J. BASSETT

to me known to be the same person described in and who executed the within instrument, who then acknowledged the same to be her free act and deed.

My commission expires Sept. 11, 1933

Notary Public

Wayne
Oakland County, Michigan.
Macomb

2-10

Warranty Deed

ETHEL J. BASSETT

TO

BIRMINGHAM COMMUNITY HOUSE
ASSOCIATION, a Michigan
corporation.

REGISTER'S OFFICE

Wayne County

ss.

This instrument was presented and received for Record, this

day of 18 Feb 1930 A. D. 19
at 8 o'clock A. M., and Recorded
in Liber 762 of Deeds, on Page 375-16

A certificate having been furnished in compliance with §4134 Compiled Laws, 1915.

Register of Deeds.

TAXES PAYABLE—City Taxes payable from July 15 to 1st of Dec. 1929, without percentage, at the City Treasurer's Office; State and County Taxes payable from December 1 to December 31, without percentage, at County Treasurer's Office.

John C. Mary
919 Linc. Blvd. Bldg
Detroit, Mich

This Indenture Made this Seventeenth day of
May in the year of our Lord one thousand nine hundred and twenty-nine
 Between ETHEL J. BASSETT

part Y of the first part, of Birmingham, Michigan
 and BIRMINGHAM COMMUNITY HOUSE ASSOCIATION, a Michigan
corporation

part Y of the second part,
 Witnesseth, that the said part Y of the first part, for and in consideration of the sum of
One (\$1.00) Dollar----- and other valuable considerations

to her in hand paid by the said part Y of the second part, the receipt whereof is hereby con-
 fessed and acknowledged, do ES by these presents grant, bargain, sell, remise, release, alien and
 confirm unto said part Y of the second part, and its heirs and assigns, Forever, all
those certain pieces or parcels of land situate and being in the Village of
Birmingham county of Oakland and State of Michigan,
 and described as follows, to-wit: Lots 94, 95, 96 of Merrill's Plat of part
of North 1/2 of North West 1/4 of Section 36, Town 2 North, Range
10 East, according to the Plat thereof in Liber 3 of Plats on
page 3, in the Office of Register of Deeds for Oakland County,
Michigan.

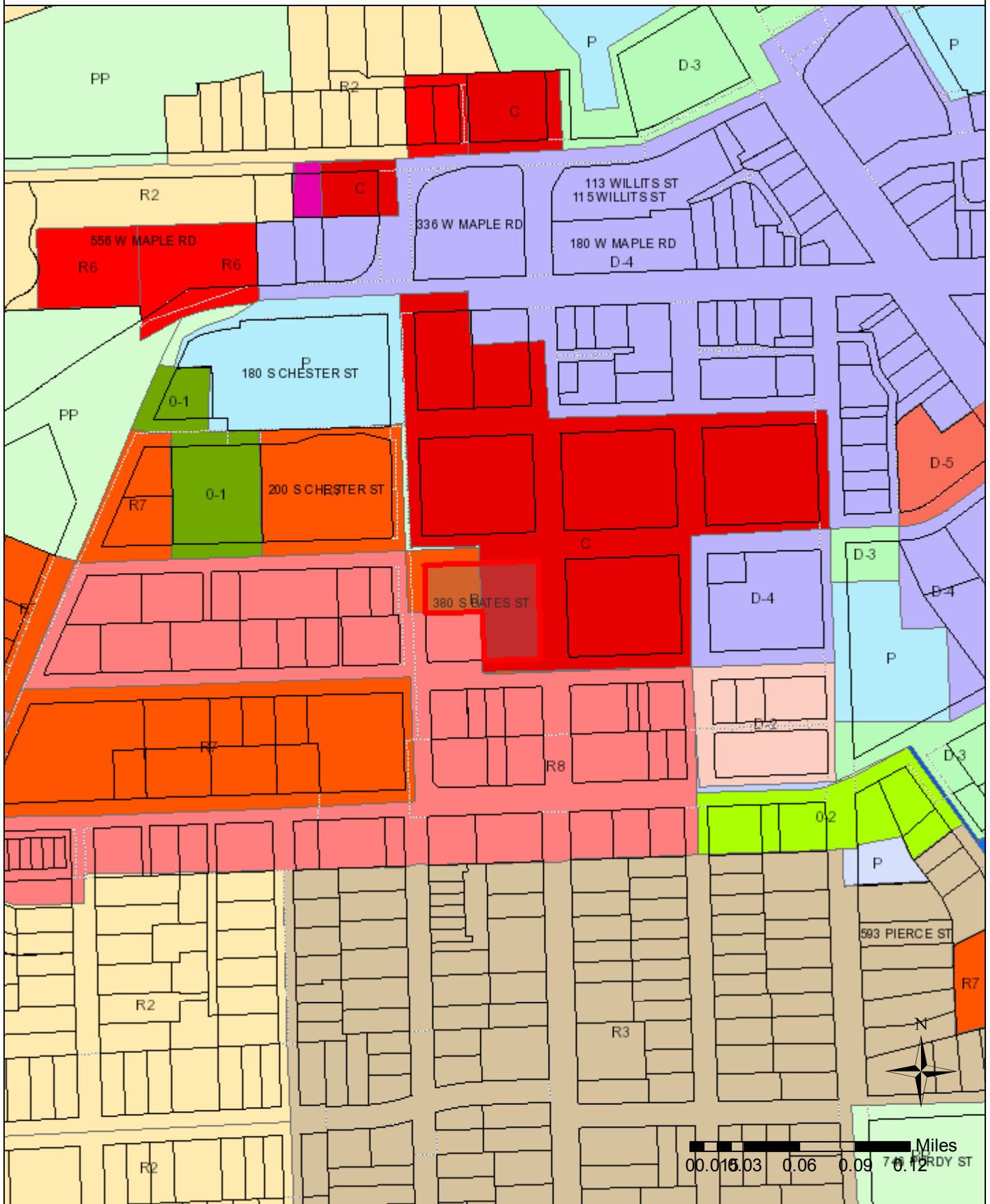
Together with all and singular the hereditaments and appurtenances thereto belonging or in anywise
 appertaining: To have and to hold the said premises, as herein described, with the appurtenances
 unto the said part Y of the second part, and to its heirs and assigns, Forever;
 and the said Ethel J. Bassett
 party of the first part and her heirs, executors and administrators, do cov-
 enant, grant, bargain and agree to and with the said part Y of the second part its heirs and
 assigns, that at the time of the ensealing and delivery of these presents she is well
 seized of the above-granted premises in fee simple; that they are free from all incumbrances whatever
 except such, if any, as are excepted from the covenant following, and that she will, and her

Safety in titles depends upon Title Insurance. For dependable title service see the Union Title and Surety Company, Union Trust Building.

Section 3.2

Maps

Zoning Map



Location Map



Section 3.3

Noise Impact Study



2022-174
April 20, 2023

Mr. William D. Seklar
Officer, President & CEO
The Community House
380 S Bates
Birmingham, MI 48009

Subject: **Birmingham CIS - Sound Level Measurements and Noise Impact Assessment**
re: Building Addition – The Community House
Birmingham, MI

Mr. Seklar:

At your request and authorization, Kolano and Saha Engineers, Inc. (K&SE) conducted an investigation to evaluate the environmental noise associated with the proposed building addition to The Community House. This investigation included conducting outdoor noise measurements at The Community House site to understand the current ambient noise conditions and an evaluation of the proposed development. Both were used to help assess if noise associated with this expansion will be compatible at this location and whether any specific noise sources attributable to the project are likely to need some attention.

On-Site Sound Level Measurements

We conducted outdoor noise 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.

Measurements were conducted on The Community House site for a 24-hour period to capture the existing ambient sound levels. Measurements were conducted on the northwest quadrant of The Community House property, 28-feet east of Chester Street and 28-feet south of W. Merrill Street. Details of this measurement position are provided in **Exhibit 1**.

The measurement equipment captured sound levels for a continuous 24-hour period on January 18, 2023. The measurement results are provided in **Exhibit 2**. The results of the measurements are presented in a graph of sound level versus time. These graphs contain three plot lines; the 5-minute L_{eq} (energy average level), the hourly L_{eq} and the daytime and nighttime averaged sound levels.

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. 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. For The Community House property, we measured a site sound level of **57dB(A) DNL**. This level is well within the HUD guidelines for normally acceptable sound levels for residential land use. While The Community House is not specifically a residential building, the sound level provides reassurance that activities indoors and outdoors will have minimal impact from ambient sound levels.

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.

The properties adjacent to The Community House are the public library to the north, Shane Park to the east, and several residential buildings surrounding on all other sides. The noise associated with The Community House and the proposed addition are expected to be primarily related to building mechanical equipment, on-site activities, deliveries, and waste removal.

Proposed Development Noise Impact

The proposed building addition is generally similar to what currently exists for The Community House, though it will introduce new elements that may increase the amount of sound heard in the community. Most of these spaces and amenities are located internally and will not directly add sound

to the community. Indirectly, the additional amenities will require additional deliveries and waste removal. A few other spaces have the potential to create additional sound outdoors to the adjacent community. These spaces include second-floor and third-floor terrace spaces where groups of people are expected to gather for various functions.

An additional change to the site will relocate the Sculpture Garden/Preschool Play Area from the northwest quadrant of the property to the northeast quadrant. This change will move this use further from residential properties to the west to a position closer to Shane Park to the east.

The sources of noise expected from the building addition include:

Building Mechanical Systems

The Community House addition is expected to include additional heating and cooling equipment to control the climate of the new building spaces. To help ensure mechanical equipment noise is not a noise disturbance to the community, proper equipment selection, adequate spacing away from the adjacent property lines, and enclosing screen walls should be considered. With thoughtful planning, these elements are not expected to exceed the ordinance limits.

Delivery Vehicles & Waste Collection

The Community House currently receives deliveries and has waste removal services. With additional building space, these sources of noises are expected to increase somewhat with additional deliveries and/or potentially more frequent waste collection. The access for the deliveries and waste removal will be from the same drive currently used. The effective noise levels from these activities are expected to be similar to what currently is experienced and not expected to be a noise issue.

Outdoor Terraces

The building addition is expected to include terraces on the second and third floors on the northwest quadrant of the property. These terraces are planned to be adjacent to assembly rooms on the second floor and Conservatory on the third floor. It is anticipated that gatherings of people in these locations will produce some sound from talking that may be audible from some adjacent properties. This is not expected to cause undue impact to the surrounding community. Music performance or reproduction is not expected for the second-floor terraces. Alternately, the conservatory is expected to serve dinner on a regular basis. As part of the dinner atmosphere, ambient music from either a live acoustic instrumental performance or a reproduced music source is expected to be present. Sound levels from this music are expected to be low and well below ordinance noise limits.

Emergency Power Generator

It is expected that a new power generator will be part of the building addition and will be located near the loading dock. While this has the potential for excessive noise, with proper noise control provisions for an enclosure and exhaust muffling, and minimal actual operation time (weekly or bimonthly daytime maintenance cycles are anticipated), we expect that a generator can be made to comply with the ordinance and create minimal noise impact. Deliberate noise control designs for any power

generators are critical for successful compliance of ordinance requirements, as well to meet the expectations of residents for reasonable levels of noise.

Conclusion

Based on the information we have been provided, we anticipate that the proposed addition to The Community House will produce sound levels similar to what the existing facility produces and is expected to be within the Birmingham Noise Ordinance limits with due consideration for mechanical equipment noise control. Furthermore, the measured site sound levels are 57 DNL and are in the range of the “normally acceptable” noise level guidelines promulgated for residential land use by the U.S. Department of HUD. This also applies to outdoor recreation areas and schools, such as the preschool outdoor play area.

Mr. Seklar, should there be any questions or need for additional assistance on this matter, do not hesitate to contact us.

Sincerely,

KOLANO AND SAHA ENGINEERS, INC.



Darren Brown, P.E.
INCE Board Certified
Consultant

Section 3.4

Traffic Impact Study

Traffic Impact Study of

The Community House

380 South Bates Street
City of Birmingham, Oakland County, Michigan 48009

Prepared For:
The Community House
380 South Bates Street
Birmingham, MI 48009

Prepared: March 3, 2023
Revised: April 19, 2023

A handwritten signature in dark ink, appearing to read "Ch. D. Olivo".

Charles D. Olivo, PE, PTOE
Michigan P.E. License #6201058003

STONEFIELD

STONEFIELD

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STONEFIELD

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14. Site Plan

EXECUTIVE SUMMARY

The Applicant is proposing to renovate and expand the existing Community House building consisting of an 18,825-square-foot expansion of the existing community center, construction of a 200-person assembly hall, and construction of a 90-person conservatory located at 380 South Bates Street. The subject property is located along South Bates Street southbound, between West Merrill Street and Townsend Street, in the City of Birmingham, Oakland County, Michigan. The subject property's Parcel Identification Number (PIN) is 19-36-132-007. The existing site is occupied by the Community House with no access provided. Under the proposed development plan, the community center would be expanded by 18,825 square feet on the lower-floor and first-floor, a 200 person assembly hall would be constructed on the second-floor, and a 90 person conservatory would be constructed on the third-floor.

This Traffic Impact Assessment was prepared by Stonefield Engineering & Design, LLC, utilized the City of Birmingham's Traffic Study Questionnaire (Form A), the City's Transportation Impact Study Guidelines, as well as accepted traffic engineering practices for Traffic Impact Assessments.

The key findings and conclusions in this study are as follows:

1. Under the proposed development plan, the community center would be expanded by 18,825 square feet on the lower-floor and first-floor, a 200 person assembly hall would be constructed on the second-floor, and a 90-person conservatory would be constructed on the third-floor.
2. Direct vehicular access to the site is not proposed.
3. The proposed development is projected to generate 25 new entering vehicle trips and 13 new exiting vehicle trips during the weekday morning peak hour and 121 new entering trips and 92 new exiting vehicle trips during the weekday evening peak hour.
4. The proposed development is projected to generate one (1) new entering pedestrian trip and no new exiting pedestrian trips during the weekday morning peak hour and 66 new entering pedestrian trips and one (1) new exiting pedestrian trips during the weekday evening peak hour.
5. The majority of vehicles are expected to park within the Chester Street Garage with the remainder of vehicles travelling to and from the West Merrill Street site frontage and Parking Lot 7 across from the site.
6. Valet service would be offered for the assembly hall and conservatory spaces. Valet drop-off for these uses would occur along the West Merrill Street site frontage. The valet attendant would drive the vehicle to the Chester Street Garage and walk back to the site.
7. Existing valet operations along Bates Street for the Community House would continue to utilize Bates Street for this operation.
8. The intersections throughout the roadway network are calculated to operate at generally consistent Levels of Service throughout the Existing, No-Build, and Build Conditions with the addition of the proposed developments vehicular and pedestrian trips during the weekday morning and weekday evening peak hours.
9. Based on consultations with the Birmingham Police Department, the existing Chester Street parking garage operates at about 31% capacity daily. As such, the 880-space Chester Street garage has over 600 parking spaces available daily. Based on the vehicular trip generation of the site and the likelihood that the garage is less than 31% occupied during assembly hall and conservatory events, the parking supply between the Chester Street garage, Parking Lot 7, and on-street parking within the vicinity of the site would be sufficient to support the parking demand of the proposed development.
10. The additional traffic volume along the roadway network would not have a significant effect on the pedestrians within the vicinity of the site and surrounding area.
11. Based on the crash analysis conducted, the surrounding roadway network is not considered a "high crash" location. The additional traffic volume associated with the proposed development would not cause a detrimental impact to the safety of auto motorists, bicyclists, or pedestrians in the area.

INTRODUCTION

The applicant is proposing to renovate and expand the existing Community House building consisting of an 18,825-square-foot expansion of the existing community center, construction of a 200-person assembly hall, and construction of a 90-person conservatory located at 380 South Bates Street.

The subject property is located along South Bates Street southbound, between West Merrill Street and Townsend Street, in the City of Birmingham, Oakland County, Michigan. The site location is shown on **Figure 1**. The subject property's Parcel Identification Number (PIN) is 19-36-132-007. The site has approximately 206 feet of frontage along South Bates Street, approximately 120 feet of frontage along Townsend Street, approximately 240 feet of frontage along West Merrill Street, and approximately 104 feet of frontage along Chester Street. The existing site is occupied by the Community House with no access provided. Under the proposed development plan, the community center would be expanded by 18,825 square feet on the lower-floor and first-floor, a 200 person assembly hall would be constructed on the second-floor, and a 90-person conservatory would be constructed on the third-floor. No vehicular access would be provided directly to the development. Construction and full occupancy are expected by 2025.

This Traffic Impact Assessment was prepared by Stonefield Engineering & Design, LLC, utilized the City of Birmingham's Traffic Study Questionnaire (Form A), the City's Transportation Impact Study Guidelines, as well as accepted traffic engineering practices for Traffic Impact Assessments.

EXISTING CONDITIONS

Roadway Characteristics

West Maple Road is classified on the National Functional Classification Map as a Principal Arterial roadway. West Maple Road is located to the north of the property with a general east-west orientation and generally provides one (1) lane of travel in each direction, with additional lanes provided at key intersections to facilitate turning movements. West Maple Road has a posted speed limit of 25 mph to the east of Southfield Road and a posted speed limit of 35 mph to the west of Southfield Road. In the vicinity of the site, curb and sidewalk are provided, shoulders are not provided, and on-street metered parking is provided. Maple Road provides east-west mobility throughout the City of Birmingham and surrounding municipalities and provides access to M-1 to the east of the site and U.S. Route 24 to the west of the site for a mix of retail, commercial, residential, and municipal uses along its length.

Southfield Road is classified on the National Functional Classification Map as a Principal Arterial roadway. Southfield Road is located to the west of the property with a general north-south orientation and generally provides one (1) lane of travel in each direction, with additional lanes provided at key intersections to facilitate turning movements. Southfield Road does not have a posted speed limit. In the vicinity of the site, curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is not permitted. Southfield Road provides north-south mobility throughout the City of Birmingham and surrounding municipalities for a mix of commercial, retail, and residential uses along its length.

Chester Street is classified on the National Functional Classification Map as a Major Collector roadway. Chester Street is located along the westerly side of the property with a general north-south orientation and generally provides one (1) lane of travel in each direction, with additional lanes provided at key intersections to facilitate turning movements. Chester Street does not have a posted speed limit. Along site frontage, curb and sidewalk are provided, shoulders are not provided, and on-street metered parking is provided. Chester Street provides north-south mobility throughout the City of Birmingham for a mix of commercial, retail, recreational, and residential uses along its length.

Martin Street is classified on the National Functional Classification Map as a local roadway. Martin Street is located to the north of the site with a general east-west orientation and provides one (1) lane of travel in

each direction. Martin Street does not have a posted speed limit. In the vicinity of the site, curb and sidewalk are provided, shoulders are not provided, and on-street metered parking is provided. Martin Street provides east-west mobility, from Pierce Street at its easterly terminus to Southfield Road at its westerly terminus, for a mix of residential, retail, and municipal uses along its length.

West Merrill Street is classified on the National Functional Classification Map as a local roadway. West Merrill Street is located along the northerly side of the property with a general east-west orientation and provides one (1) lane of travel in each direction. West Merrill Street does not have a posted speed limit. Along site frontage, curb and sidewalk are provided, shoulders are not provided, and on-street metered parking is provided. West Merrill Street provides east-west mobility throughout the City of Birmingham for a mix of commercial, residential, recreational, and retail uses along its length.

Townsend Street is classified on the National Functional Classification Map as a local roadway. Townsend Street is located along the southerly side of the property with a general east-west orientation and provides one (1) lane of travel in each direction. Townsend Street does not have a posted speed limit. Along site frontage, curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is permitted along both sides of the roadway with two (2)-hour restrictions in effect from 8:00 a.m. to 6:00 p.m. except for Sundays and holidays along the northerly side of the roadway and permit parking in effect from 8:00 a.m. to 9:00 p.m. except for Sundays and holidays along the southerly side of the roadway. Townsend Street provides east-west mobility throughout the City of Birmingham for a mix of commercial, recreational, and residential uses along its length.

South Bates Street is classified on the National Functional Classification Map as a local roadway. South Bates Street is located along the easterly side of the property with a general north-south orientation and provides one (1) lane of travel in each direction. South Bates Street does not have a posted speed limit. Along site frontage, curb and sidewalk are provided, shoulders are not provided, and on-street metered parking is provided. South Bates Street provides north-south mobility throughout the City of Birmingham for a mix of commercial, residential, recreational, and retail uses along its length.

Henrietta Street is classified on the National Functional Classification Map as a local roadway. Henrietta Street is located to the east of the site with a general north-south orientation and provides one (1) lane of travel in each direction. Henrietta Street does not have a posted speed limit. In the vicinity of the site, curb and sidewalk are provided, shoulders are not provided, and on-street metered parking is provided. Henrietta Street provides north-south mobility throughout the City of Birmingham for a mix of commercial, recreational, and residential uses along its length.

Southfield Road and Martin Street intersect to form an unsignalized T-intersection with the westbound approaches of Martin Street operating under stop control. The westbound approach of Martin Road provides one (1) shared left-turn/right-turn lane. The northbound approach of Southfield Road provides one (1) exclusive through lane and one (1) exclusive right-turn lane and the southbound approach of Southfield Road provides one (1) shared left-turn/through lane. Crosswalks and pedestrian ramps are provided across the easterly and southerly legs of the intersection.

West Maple Road and Southfield Road intersect to form a T-intersection controlled by three (3)-phase traffic signal operating on a 90-second background cycle. The eastbound approach of West Maple Road provides one (1) exclusive through lane and one (1) exclusive right-turn lane and the westbound approach of West Maple Road provides one (1) exclusive left-turn lane and one (1) exclusive through lane. The northbound approach of Southfield Road provides one (1) exclusive left-turn lane and one (1) channelized right-turn lane. Crosswalks, pedestrian signals, and pedestrian ramps are provided across the easterly and southerly legs of the intersection.

Chester Street and West Maple Road intersect to form a four (4)-leg intersection controlled by a three (3)-phase traffic signal operating on a 90-second background cycle. The eastbound approach of West Maple Road provides one (1) exclusive left-turn lane, one (1) exclusive through lane, and one (1) exclusive right-turn lane and the westbound approach of West Maple Road provides one (1) exclusive left-turn lane and one (1) shared through/right-turn lane. The northbound approach of Chester Street provides one (1) exclusive left-turn lane and one (1) shared through/right-turn lane and the southbound approach of Chester Street provides one (1) exclusive left-turn lane, one (1) exclusive through lane, and one (1) exclusive right-turn lane. Crosswalks, pedestrian signals, and pedestrian ramps are provided across all legs of the intersection.

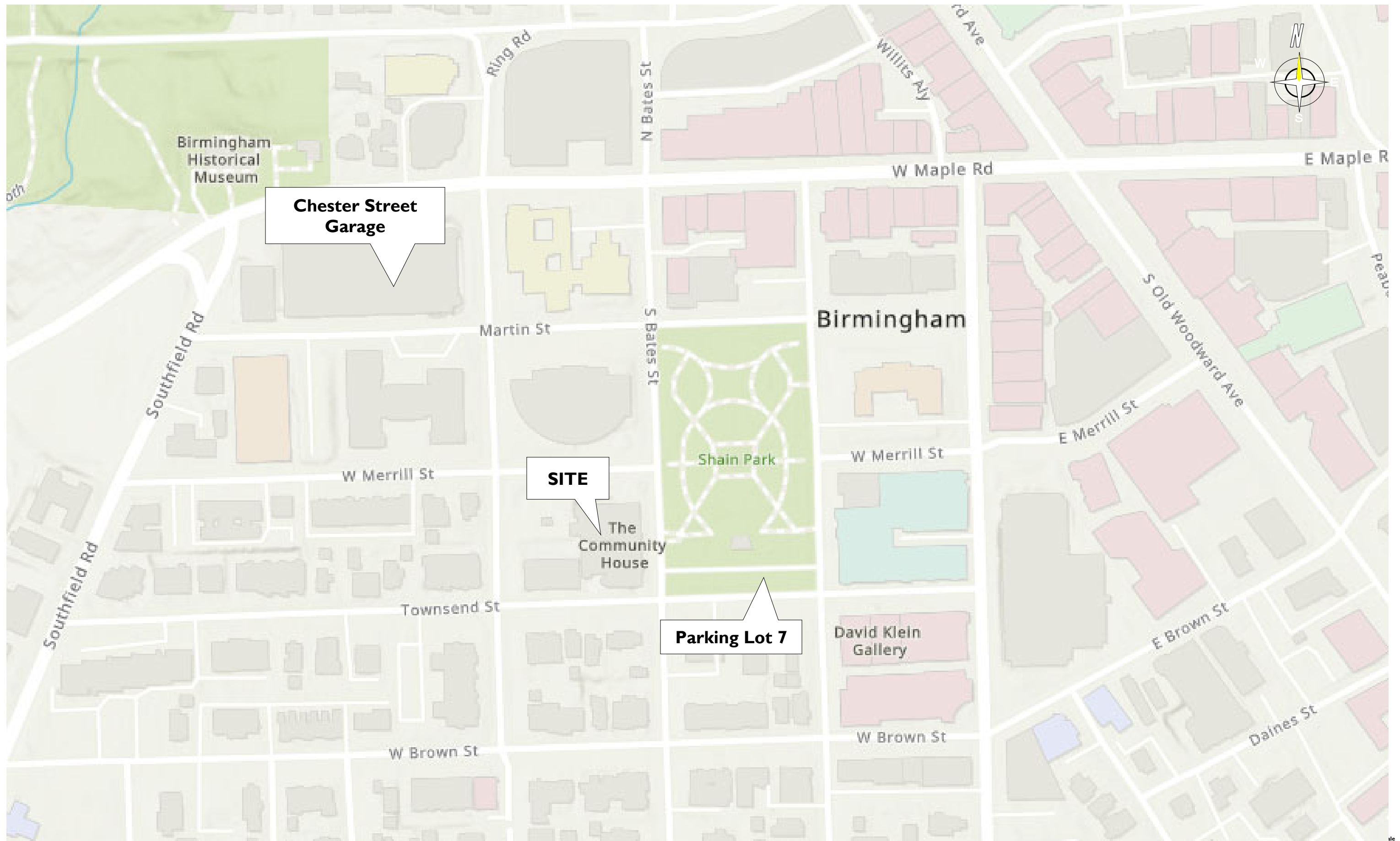
Chester Street and Martin Street intersect to form an unsignalized four (4)-leg all-way stop-controlled intersection. The eastbound and westbound approaches of Martin Street each provide one (1) full-movement lane. The northbound and southbound approaches of Chester Street each provide one (1) full-movement lane. Crosswalks and pedestrian ramps are provided across all legs of the intersection.

Chester Street and West Merrill Street intersect to form an unsignalized four (4)-leg intersection with the eastbound and westbound approaches of West Merrill Street operating under stop control. The eastbound and westbound approaches of West Merrill Street each provide one (1) full-movement lane. The northbound and southbound approaches of Chester Street each provide one (1) full-movement lane. Crosswalks and pedestrian ramps are provided across all legs of the intersection.

Chester Street and Townsend Street intersect to form an unsignalized four (4)-leg intersection with the eastbound and westbound approaches of Townsend Street operating under stop control. The eastbound and westbound approaches of Townsend Street each provide one (1) full-movement lane. The northbound and southbound approaches of Chester Street each provide one (1) full-movement lane. Crosswalks and pedestrian ramps are provided across all legs of the intersection.

Townsend Street and South Bates Street intersect to form an unsignalized four (4)-leg all-way stop-controlled intersection. The eastbound and westbound approaches of Townsend Street each provide one (1) full-movement lane. The northbound and southbound approaches of South Bates Street each provide one (1) full-movement lane. Crosswalks and pedestrian ramps are provided across all legs of the intersection.

Townsend Street and Henrietta Street intersect to form an unsignalized four (4)-leg all-way stop-controlled intersection. The eastbound and westbound approaches of Townsend Street each provide one (1) shared full-movement lane. The northbound and southbound approaches of Henrietta Street each provide one (1) full-movement lane. Crosswalks and pedestrian ramps are provided across all legs of the intersection.



STONEFIELD

The Community House
380 South Bates Street
City of Birmingham, Oakland County, Michigan
Traffic Impact Study

FIGURE I
Site Location Map

2023 Existing Traffic Volumes

Turning movement counts were collected during the typical weekday morning and weekday evening time periods to evaluate existing traffic conditions and identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the development of the site. Turning movement counts were collected at the following intersections:

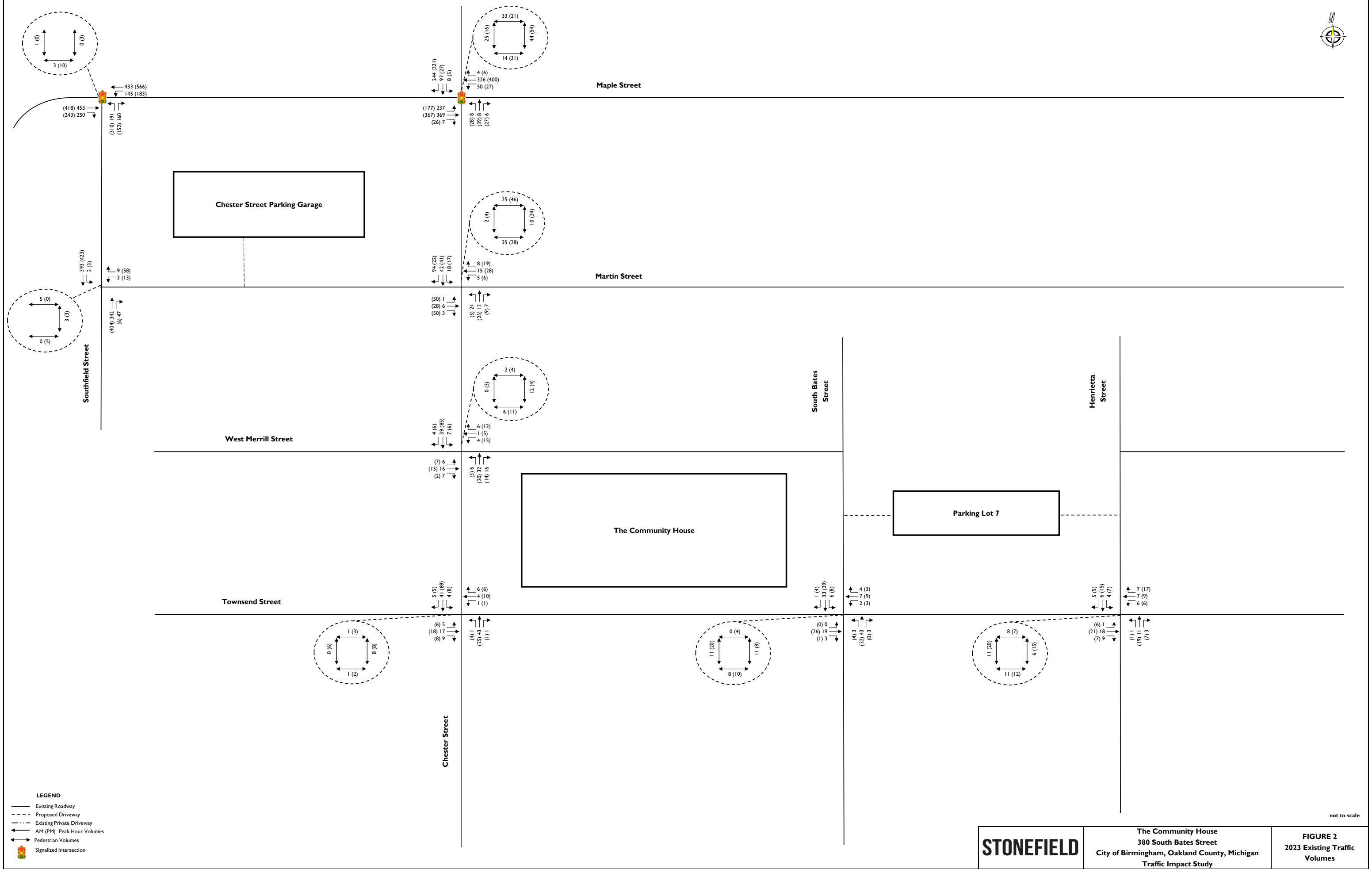
- ◆ Southfield Road & Martin Street
- ◆ West Maple Road & Southfield Road
- ◆ Chester Street & West Maple Road
- ◆ Chester Street & Martin Street
- ◆ Chester Street & West Merrill Street
- ◆ Chester Street & Townsend Street
- ◆ Townsend Street & South Bates Street
- ◆ Townsend Street & Henrietta Street

Specifically, turning movement counts were conducted on the following date and during the following times: Tuesday, January 24, 2023, from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.

The study time periods were chosen as they are representative of the peak periods of both the adjacent roadway network and the proposed development. The traffic volume data was collected and analyzed to identify the design peak hour in accordance with HCM and ITE guidelines. Based on the review of the count data the weekday morning peak hour occurred from 8:00 a.m. to 9:00 a.m. and the weekday evening peak hour occurred from 4:45 p.m. to 5:45 p.m. The 2023 Existing Condition weekday morning and weekday evening peak hour traffic volumes are summarized on **Figure 2**.

2023 Existing LOS/Capacity Analysis

A Level of Service and Volume/Capacity analysis was conducted for the 2023 Existing Condition during the weekday morning and weekday evening peak hours at the study intersections. Under the existing condition, the signalized intersection of West Maple Road and Southfield Road is calculated to operate at overall Level of Service B during the weekday morning and weekday evening peak hours. The signalized intersection of West Maple Road and Chester Street is calculated to operate at overall Level of Service B during the weekday morning and weekday evening peak hours. The turning movements at the other unsignalized intersections throughout the roadway network are calculated to operate at Level of Service B or better during the weekday morning and weekday evening peak hours.



2025 NO-BUILD CONDITION

Background Growth

The 2023 Existing Condition traffic volume data was grown to a future horizon year of 2025, which is a conservative estimate for when the proposed Community House is expected to be fully constructed. To calculate the annual background growth rate, census data from 2010 and 2020 published by the Southeast Michigan Council of Governments (SEMCOG) was analyzed. Based on the census data analyzed, SEMCOG forecasts a 0.85% annual population increase between 2010 and 2020. As such, the existing traffic volumes at the study intersections were increased by 0.85% annually for two (2) years to generate the 2025 Base Traffic Volumes. These volumes are summarized on **Figure 3**.

Other Planned Development Projects

To evaluate the future traffic conditions, it is important to consider the potential site-generated traffic of other projects that could influence the traffic volume at the study intersections. Other planned development projects include those that are either in the entitlement process or have recently been approved for building permits in proximity to the proposed development. The following development is anticipated to impact traffic volumes within the study area:

- ◆ Biddison Architecture – Mixed-use development consisting of six (6) residential dwelling units, 19,200 square feet of office space, 2,450 square feet of retail space, and a two (2)-story below ground automated parking garage located at 320 Martin Street, to the north of the study area.

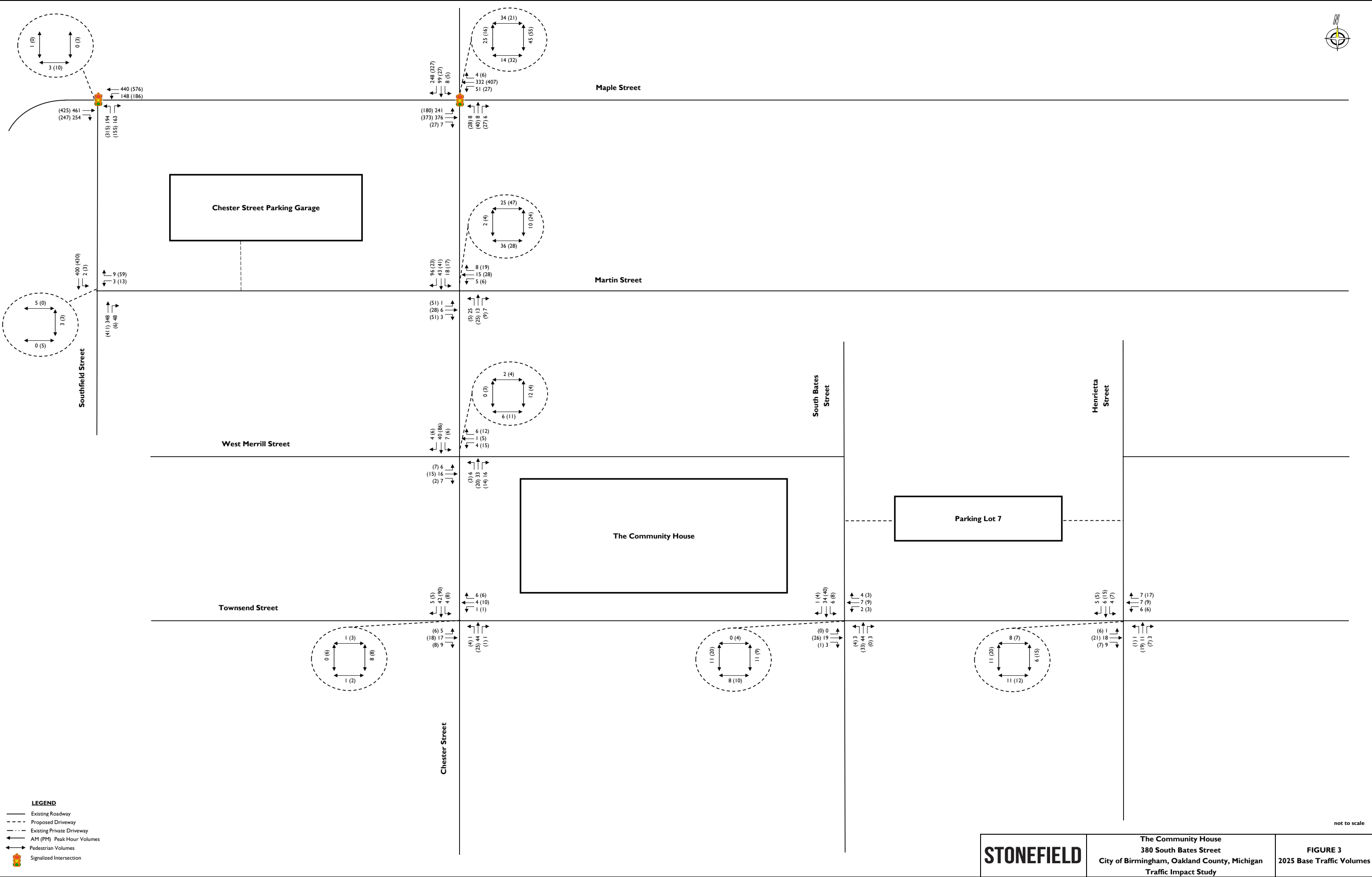
Figure 4 illustrates the site-generated traffic associated with the 320 Martin Street development project assigned to the study area network.

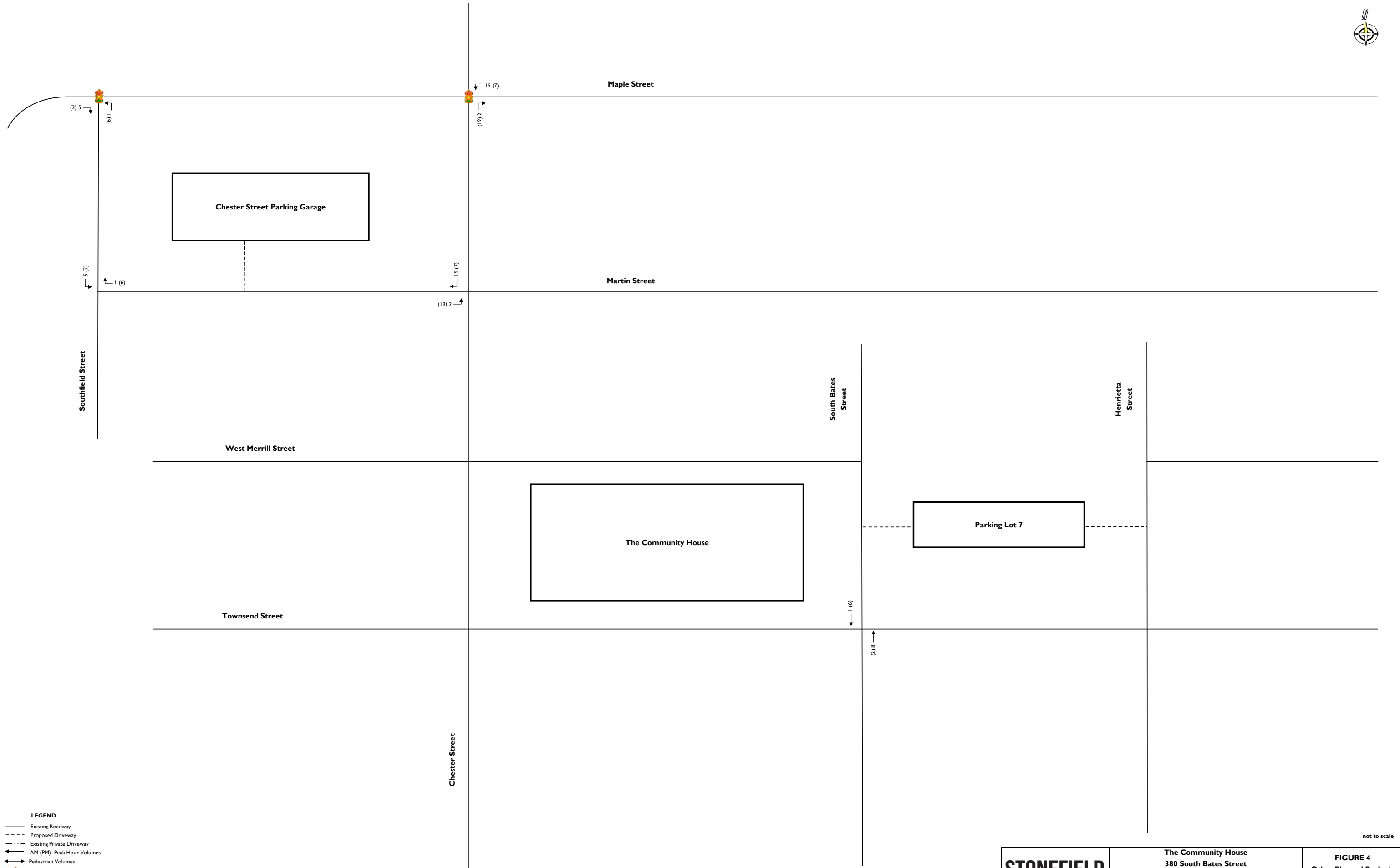
2025 No-Build Traffic Volumes

The site-generated trips associated with the 320 Martin Street development were added to the 2025 Base Traffic Volumes to calculate the 2025 No-Build Traffic Volumes for the weekday morning and weekday evening peak hours. These volumes are summarized on **Figure 5**.

2025 No-Build LOS/Capacity Analysis

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 No-Build Condition during the weekday morning and weekday evening peak hours at the study intersections. The signalized intersection of West Maple Road and Southfield Road is calculated to operate generally consistent with the findings of the Existing Condition during the weekday morning and weekday evening peak hours. The signalized intersection of West Maple Road and Chester Street is calculated to operate generally consistent with the findings of the Existing Condition during the weekday morning peak hour and operate at overall Level of Service C during the weekday evening peak hour. The turning movements at the other unsignalized intersections throughout the roadway network are calculated to operate generally consistent with the findings of the Existing Condition during the weekday morning and weekday evening peak hours.





FUTURE CONDITIONS

Proposed Trip Generation

Trip generation projections for the proposed Community House renovation and expansion were prepared utilizing the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition and data from similar assembly and conservatory sites within Birmingham. ITE trip generation rates for Land Use 495 "Recreational Community Center" were utilized for the proposed 18,825-square-foot expansion of the existing community center. Trip generation projections for the proposed assembly hall and conservatory were prepared utilizing the trip generation of similar uses within the City of Birmingham including The Maple and the Birmingham Boutique Hotel.

Land Use 495 "Recreational Community Center" is "a stand-alone public facility similar to and including YMCAs. These facilities often include classes and clubs for adults and children, a day care or nursery school, meeting rooms and other social facilities, swimming pools and whirlpools, saunas, tennis, racquetball, handball, pickle ball, basketball and volleyball courts; outdoor athletic fields/courts, exercise classes, weightlifting and gymnastics equipment, locker rooms, and a restaurant or snack bar. Public access is typically allowed and a membership fee may be charged." As such, this land use encompasses the expansion of the existing Community House development.

The trip generation of the proposed assembly hall and conservatory was calculated based on the maximum occupancy of the areas. It is noted that the assembly hall would consist of two (2) rooms each with a maximum occupancy of 100 persons. The conservatory would have a maximum occupancy of 90 persons. Consistent with methodology utilized within traffic studies for other event spaces in the City of Birmingham (The Maple and the Birmingham Boutique Hotel), a vehicle occupancy load of three (3) persons per vehicle was utilized. It is also anticipated that 33% of vehicle trips would be self-parked vehicles and 67% of vehicle trips would utilize the valet service provided. To provide a conservative analysis, the weekday evening analysis considers arrivals to both spaces occurring simultaneously within the peak hour. It was assumed that these spaces would not impact the weekday morning peak hour, and that departures from events in the evening would occur after the peak hour.

Table I provides the weekday morning and weekday evening peak hour trip generation volumes associated with the renovation and expansion of the existing Community House.

Table 1 – Vehicle Trip Generation Projections

Land Use	Arrival Method	Amount	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
18,825 SF Recreational Community Center <i>LU 495</i>	--	18,825 SF	24	12	36	22	25	47
Assembly Hall	Self-Park	5,668 SF (200 Persons)	0	0	0	22	0	22
	Valet (arrival drop-off to valet)		0	0	0	45	0	45
	Valet (valet departure to park)		0	0	0	0	45	45
Conservatory	Self-Park	1,350 SF (90 Persons)	0	0	0	10	0	10
	Valet (arrival drop-off to valet)		0	0	0	20	0	20
	Valet (valet departure to park)		0	0	0	0	20	20
ITE Trip Generation Total			24	12	36	119	90	209

As stated within Chapter 5 of ITE's Trip Generation Handbook, 3rd Edition, “to adjust for differences in vehicle occupancy and use of pedestrian, bicycle, and transit modes, a trip generation estimate needs to account for each person traveling to and from a site rather than just the number of vehicles entering and exiting the site.” Utilizing the methodology within Chapter 5 and the City of Birmingham census data, the baseline person trips were calculated to be 1.05 based on census data. The baseline person trips were utilized to calculate the person trips for the proposed community center expansion and the assembly hall and conservatory “self-park” trips. The assembly hall and conservatory valet trips are expected to drive to the site, drop the vehicle with the valet attendant who would drive the vehicle to the Chester Street garage, and walk back to the site. **Table 2** provides the weekday morning and weekday evening peak hour person trip generation summary.

Table 2 – Person Trip Generation Summary

Land Use	Arrival Method	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
21,390 SF Recreational Community Center LU 495	Drove Alone	24	12	36	22	25	47
	Carpool	1	1	2	1	2	3
	Public Transportation	0	0	0	0	0	0
	Walk	1	0	1	0	1	1
	Bike	0	0	0	0	0	0
Assembly Hall & Conservatory (Self-Arrival)	Drove Alone	0	0	0	32	0	32
	Carpool	0	0	0	1	0	1
	Public Transportation	0	0	0	0	0	0
	Walk	0	0	0	1	0	1
	Bike	0	0	0	0	0	0
Assembly Hall & Conservatory (Valet)	Vehicle (Visitor)	0	0	0	65	0	65
	Vehicle (Valet)	0	0	0	0	65	65
	Walk (Valet)	0	0	0	65	0	65
Total Person Trips		26	13	39	187	93	280

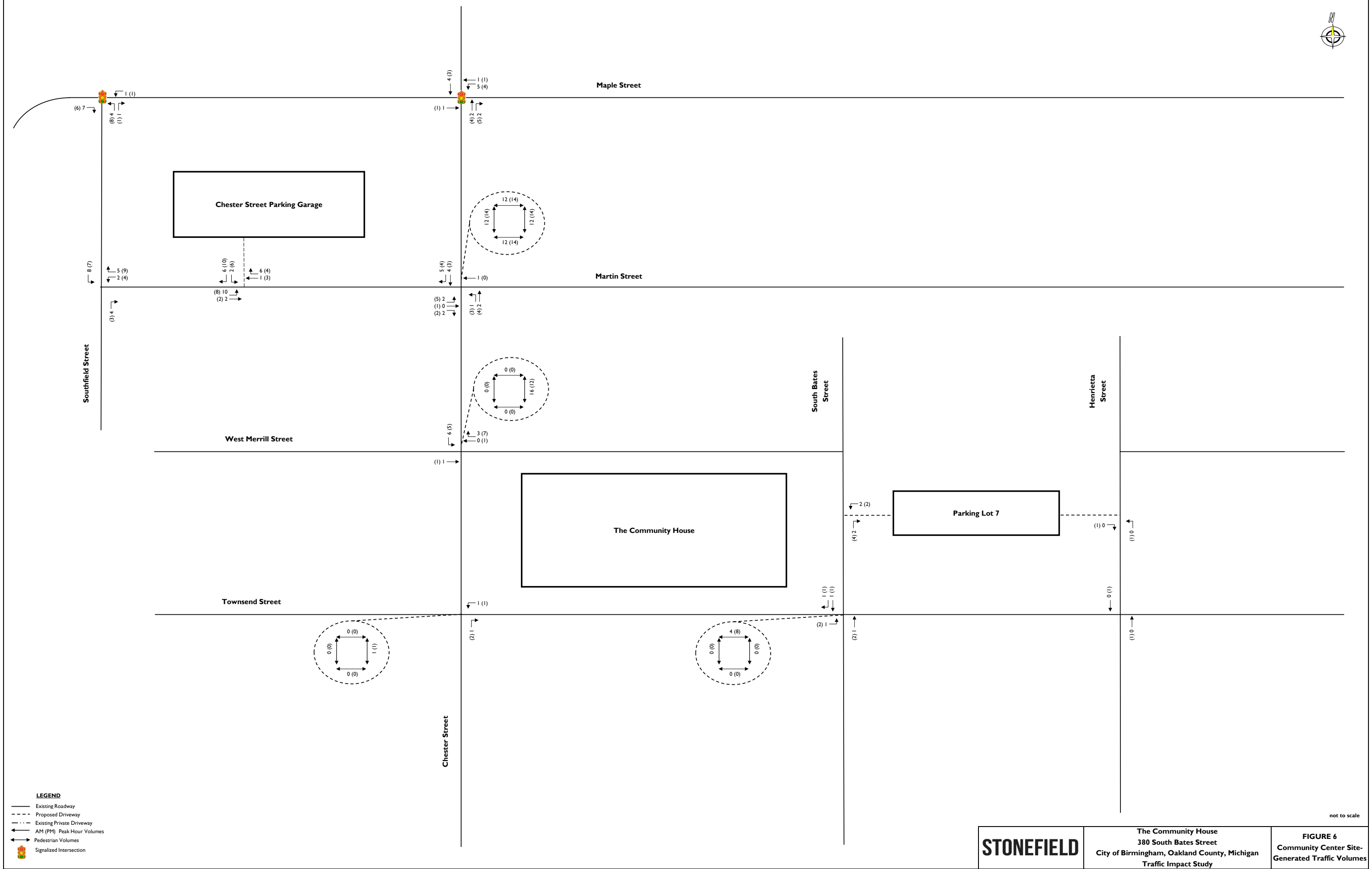
As shown in Table 2, the proposed development is expected to generate 39 new person trips during the weekday morning peak hour and 280 new person trips during the weekday evening peak hour.

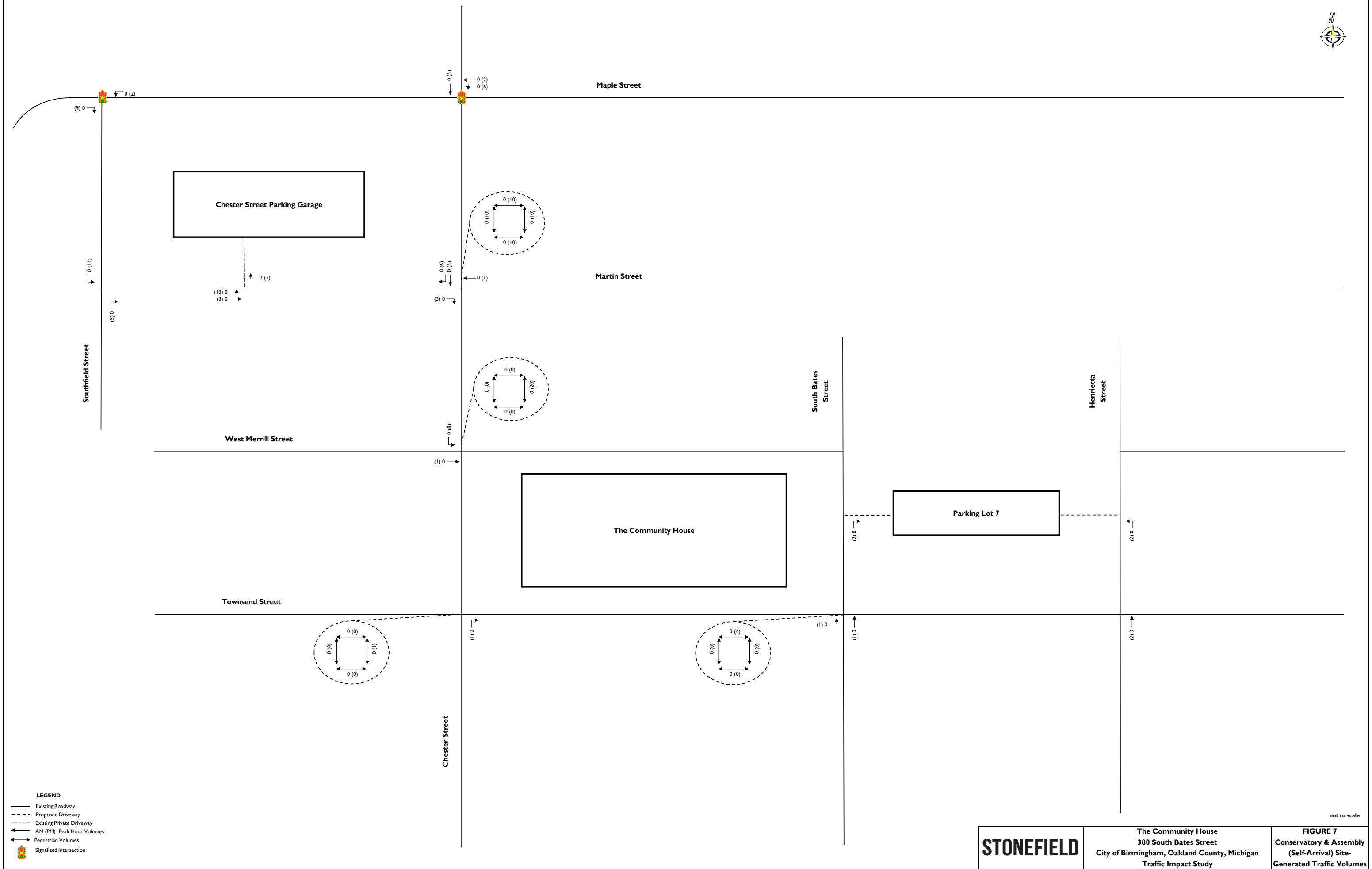
Trip Distribution

For the purpose of the distribution, the trips associated with the community center expansion and the assembly hall and conservatory self-arrival trips were routed according to existing travel patterns along the adjacent roadways, location of major arterial roadways, the location of nearby residences, and the location of parking in the vicinity of the city. It is noted that a majority of vehicles are expected to park within the Chester Street Garage with the remainder of vehicles travelling to and from the West Merrill Street site frontage and Parking Lot 7 across from the site. Assembly hall and conservatory trips that would valet their vehicle would travel to the West Merrill Street site frontage, at which point the valet attendant would drive the vehicle to the Chester Street Garage and walk back to the site. The Community Center Site-Generate Traffic Volumes, the Conservatory & Assembly (Self-Arrival) Site-Generated Traffic Volumes, and Conservatory & Assembly (Valet) Site-Generated Traffic Volumes are summarized on **Figures 6, 7, and 8**, respectively. The Total Site-Generated Traffic Volumes are summarized on **Figure 9**.

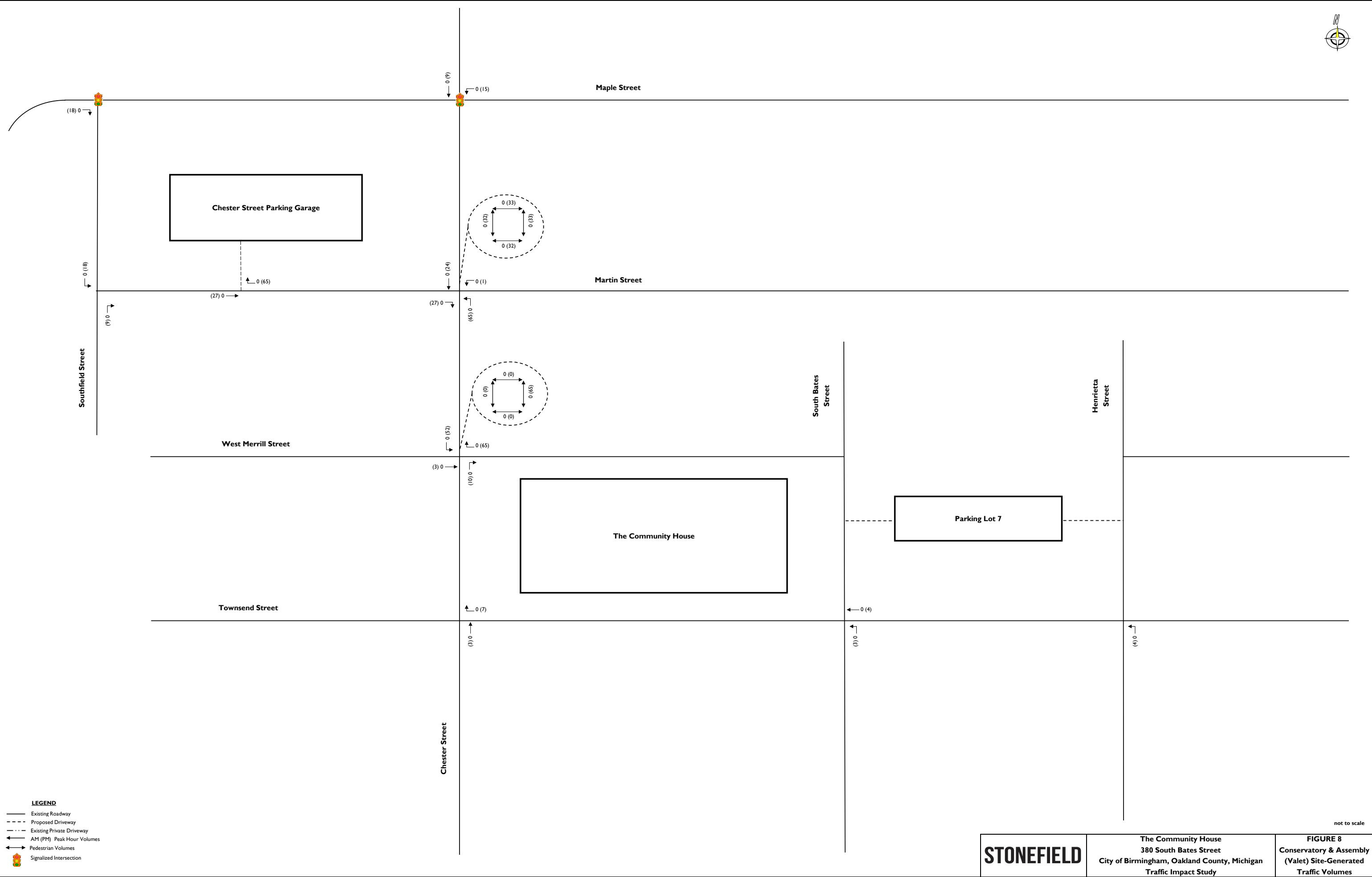
2025 Build Condition

The site-generated trips were added to the 2025 No-Build Traffic Volumes to calculate the 2025 Build Traffic Volumes and are shown on **Figure 10**.

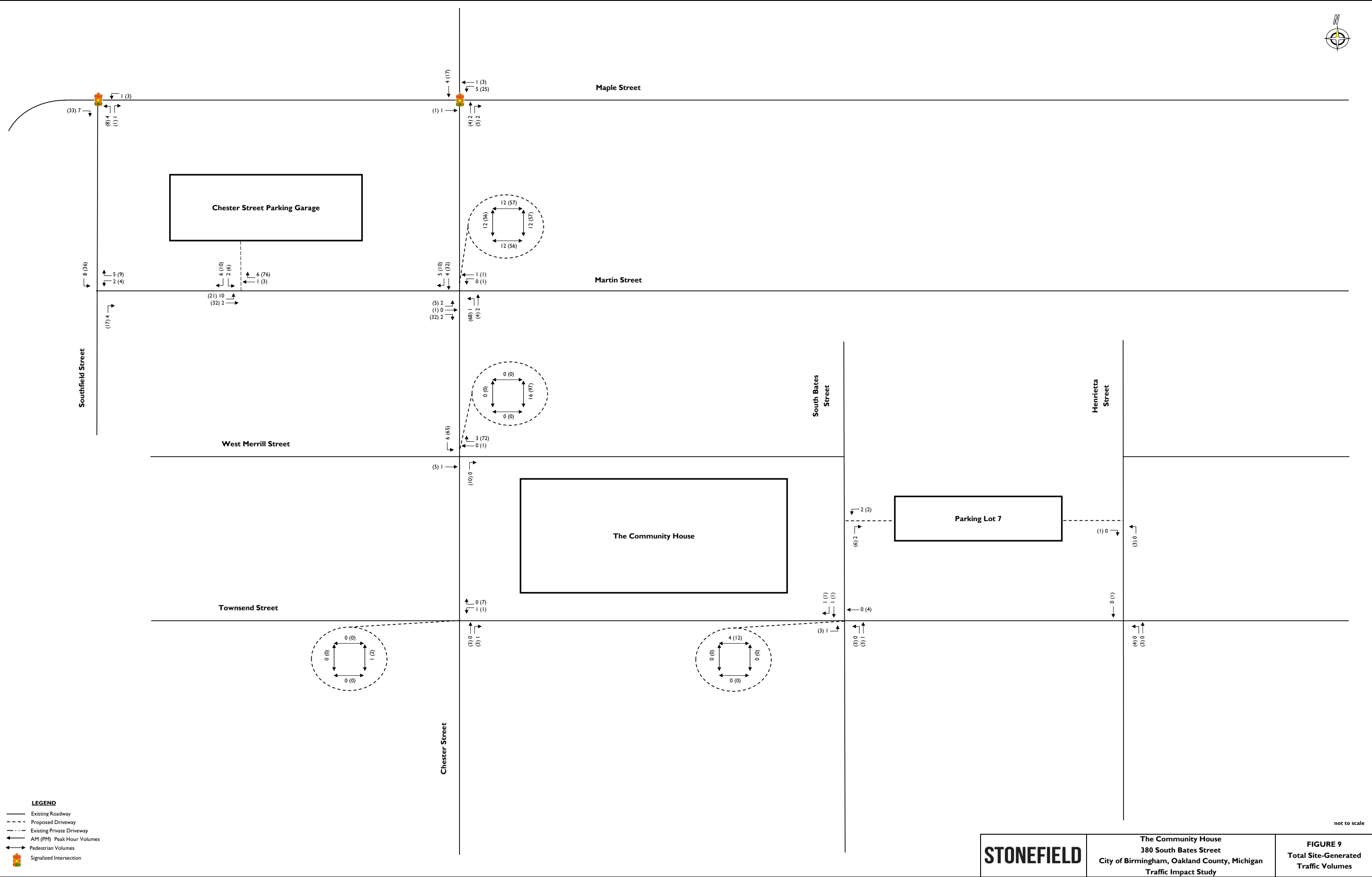




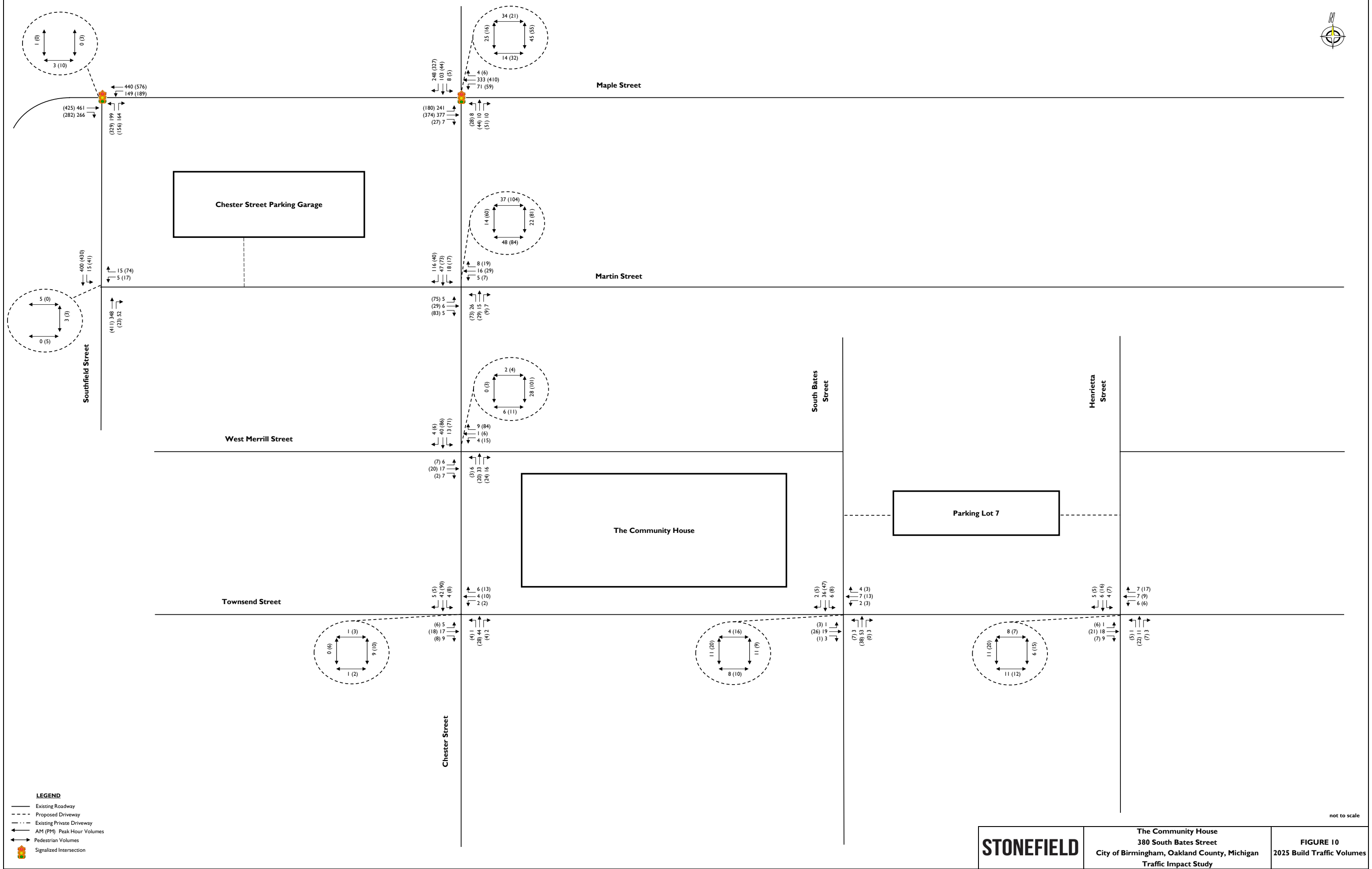
not to scale



not to scale



not to scale



2025 Build LOS/Capacity Analysis

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Build Condition during the weekday morning and weekday evening peak hours at the study intersections. Appended **Table A1** compares the Existing, No-Build, and Build Conditions Level of Service and delay values.

The signalized intersection of West Maple Road and Southfield Road is calculated to operate generally consistent with the findings of the No-Build Condition during the weekday morning and weekday evening peak hours. The signalized intersection of West Maple Road and Chester Street is calculated to operate generally consistent with the findings of the No-Build Condition during the weekday morning and weekday evening peak hours. The turning movements at the other unsignalized intersections throughout the roadway network are calculated to operate generally consistent with the findings of the No-Build Condition during the weekday morning and weekday evening peak hours.

SimTraffic Analysis

A SimTraffic network analysis was performed at the study intersections throughout the roadway network to assess the traffic conditions along the adjacent roadway network during the No-Build and Build Conditions. The MDOT Electronic Traffic Control Device Guidelines was utilized to conduct the SimTraffic analysis. Appended **Table A2** compares the No-Build and Build Condition total delay, total stops, total travel time, and average speed at the intersection. Based on the analysis conducted there would be no substantial degradation occurring between the No-Build and Build Conditions.

COLLISION ANALYSIS

In order to assess the safety of the intersection throughout the roadway network, five (5) years of motor vehicle collision data was obtained from the City of Birmingham Police Department. The crash reports can be found in the Technical Appendix. Utilizing the SEMCOG Crash Analysis Process outline in the SEMCOG Traffic Safety Manual, the intersections were analyzed to determine if they met the criteria for a “high-crash” location. **Table 3** provides a summary of the crashes at each of the study intersections.

TABLE 3 – MOTOR VEHICLE COLLISION SUMMARY (5 YEARS)

Intersection/Corridor	Collision Type	Number of Collisions	Collisions Resulting in Injury	Collision Grades	Collisions Resulting in Fatality
Southfield Road & Martin Street	Angle	11	0	--	0
	Rear End	8	1	C (1)	0
	Head-On	4	0	--	0
	Single Vehicle	2	0	--	0
	Sideswipe	1	0	--	0
	Backing	1	0	--	0
	Other	3	1	C (1)	0
	Total	30	2	--	0
Southfield Road & Maple Road	Rear End	44	4	C (4)	0
	Sideswipe	15	0	--	0
	Angle	8	2	C (2)	0
	Single Vehicle	8	4	B (1), C (3)	0
	Head On	3	1	B (1)	0
	Backing	1	0	--	0
	Other	11	0	--	0
	Total	90	11	--	0
Chester Street & Maple Road	Rear End	26	0	--	0
	Sideswipe	19	0	--	0
	Angle	6	1	C (1)	0
	Single Vehicle	3	0	--	0
	Head-On	1	0	--	0
	Backing	1	0	--	0
	Other	6	0	--	0
	Total	62	1	--	0
Chester Street & Martin Street	Sideswipe	2	0	--	0
	Single Vehicle	1	0	--	0
	Angle	1	0	--	0
	Total	4	0	--	0
Chester Street & West Merrill Street	Sideswipe	1	0	--	0
	Single Vehicle	1	0	--	0
	Angle	1	0	--	0
	Total	3	0	--	0
Chester Street & Townsend Street	Angle	7	0	--	0
	Total	7	0	--	0
Townsend Street & South Bates Street	Sideswipe	1	0	--	0
	Backing	1	0	--	0
	Unknown	1	0	--	0
	Total	3	0	--	0
Townsend Street & Henrietta Street	Backing	6	0	--	0
	Sideswipe	6	0	--	0
	Angle	2	0	--	0
	Single Vehicle	1	0	--	0
	Other	3	0	--	0
	Total	18	0	--	0

Based on the analysis conducted, utilizing the SEMCOG Crash Analysis Process, the intersections throughout the roadway network are not considered “high crash” locations. As such, no mitigations are proposed at any of the intersections throughout the roadway network.

SITE CIRCULATION/PARKING SUPPLY

A review was conducted of the proposed renovation and expansion of the existing Community House using the Architectural Plans prepared by Saroki Architecture. In completing this review, particular attention was focused on site access, circulation, and parking supply.

Under the proposed development program, the community center would be expanded by 18,825 square feet on the lower-floor and first-floor; a 200 person assembly hall would be constructed on the second-floor, and a 90-person conservatory would be constructed on the third-floor. Direct vehicular access to the development would not be provided. The expansion to the community center, assembly hall addition, and conservatory addition would all be located within the northerly portion of the building.

Direct vehicular access to the Community House would not be provided and no parking would be provided on site. A majority of vehicles are expected to park within the Chester Street Garage with the remainder of vehicles travelling to and from the West Merrill Street site frontage and Parking Lot 7 across from the site. It is noted, the Chester Street garage provides a total parking supply of approximately 880 spaces. Based on consultations with Scott Grewe, Commander of the Birmingham Police Department, the existing parking garage operates at about 31% capacity daily. As such, the Chester Street garage has over 600 parking spaces available daily. Based on the vehicular trip generation of the site and the likelihood that the garage is less than 31% occupied during assembly hall and conservatory events, the parking supply between the Chester Street garage, Parking Lot 7, and on-street parking within the vicinity of the site would be sufficient to support the parking demand of the proposed development.

MULTI-MODAL ANALYSIS

A review was conducted of the City of Birmingham’s Multi-Modal Transportation Plan to identify impacts of the proposed development with respect to non-automobile transportation alternatives. Based on this review, there are several attributes of the proposed development that contribute to positive multi-modal impacts.

Per Figure 3.1E within the Multi-Modal Transportation Plan, South Bates Street, West Maple Road, and Southfield Road is designated for share lane markings for bicycle traffic within the vicinity of the site. Additionally, West Maple Road is designated for a proposed bike lane to the west of Southfield Road. The proposed shared lane markings for bicycle traffic encourages non-automobile use via bicycle travel within the vicinity of the site. Crossing improvements are also proposed at the following intersections:

- ◆ West Maple Road & Chester Street
- ◆ West Merrill Street & Chester Street
- ◆ Townsend Street & Chester Street
- ◆ Townsend Street & South Bates Street
- ◆ Townsend Street & Henrietta Street

The subject site is located within 0.1 miles (3-minute walk) to bus stops that service SMART Bus Route 780. SMART Bus Route 780 provides service to the Oakland Mall, Knollwood Country Club, Bloomfield Hills Shopping Plaza, Downtown Birmingham, Downtown Troy, as well as many residential communities throughout Birmingham and surrounding municipalities.

Based on the walkability of the site and surrounding area, as well as the intersection improvements and bicycle lane improvements in the vicinity of the site, the proposed development is consistent with the City's Multi-Modal Transportation Plan.

KEY FINDINGS & CONCLUSIONS

The key findings and conclusions developed in this study are as follows:

1. Under the proposed development plan, the community center would be expanded by 18,825 square feet on the lower-floor and first-floor, a 200 person assembly hall would be constructed on the second-floor, and a 90-person conservatory would be constructed on the third-floor.
2. Direct vehicular access to the site is not proposed.
3. The proposed development is projected to generate 25 new entering vehicle trips and 13 new exiting vehicle trips during the weekday morning peak hour and 121 new entering trips and 92 new exiting vehicle trips during the weekday evening peak hour.
4. The proposed development is projected to generate one (1) new entering pedestrian trip and no new exiting pedestrian trips during the weekday morning peak hour and 66 new entering pedestrian trips and one (1) new exiting pedestrian trips during the weekday evening peak hour.
5. The majority of vehicles are expected to park within the Chester Street Garage with the remainder of vehicles travelling to and from the West Merrill Street site frontage and Parking Lot 7 across from the site.
6. Valet service would be offered for the assembly hall and conservatory spaces. Valet drop-off for these uses would occur along the West Merrill Street site frontage. The valet attendant would drive the vehicle to the Chester Street Garage and walk back to the site.
7. Existing valet operations along Bates Street for the Community House would continue to utilize Bates Street for this operation.
8. The intersections throughout the roadway network are calculated to operate at generally consistent Levels of Service throughout the Existing, No-Build, and Build Conditions with the addition of the proposed developments vehicular and pedestrian trips during the weekday morning and weekday evening peak hours.
9. Based on consultations with the Birmingham Police Department, the existing Chester Street parking garage operates at about 31% capacity daily. As such, the 880-space Chester Street garage has over 600 parking spaces available daily. Based on the vehicular trip generation of the site and the likelihood that the garage is less than 31% occupied during assembly hall and conservatory events, the parking supply between the Chester Street garage, Parking Lot 7, and on-street parking within the vicinity of the site would be sufficient to support the parking demand of the proposed development.
10. The additional traffic volume along the roadway network would not have a significant effect on the pedestrians within the vicinity of the site and surrounding area.
11. Based on the crash analysis conducted, the surrounding roadway network is not considered a "high crash" location. The additional traffic volume associated with the proposed development would not cause a detrimental impact to the safety of auto motorists, bicyclists, or pedestrians in the area.

Section 3.5

Phase I Environmental Site Assessment



Environmental & Engineering Services Nationwide



ENVIRONMENTAL SERVICES

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

The Community House

380 South Bates Street | Birmingham, Michigan

PM Project Number 01-14574-0-0001

EPA Grant No. BF-00E02882; Hazardous Fund

Prepared for:

Oakland County

2100 Pontiac Lake Road

Waterford, Michigan 48328-2735

Prepared by:

PM Environmental

4080 West Eleven Mile Road

Berkley, Michigan 48072

Know Your Risk.
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February 17, 2023

Oakland County Brownfield Consortium
Attn. Bret Rasegan
c/o Bradley Hansen
2100 Pontiac Lake Road
Pontiac, MI 48328-2735

**Re: Phase I Environmental Site Assessment of The Community House
Located at 380 South Bates Street, Birmingham, Michigan
PM Environmental Project No. 01-14574-0-0001
EPA Grant No. BF-00E02882; Hazardous Fund**

Dear Mr. Rasegan:

PM Environmental (PM) has completed the Phase I Environmental Site Assessment (ESA) of the above referenced property. This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) International in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E1527-21* (ASTM Standard Practice E1527-21).

The Phase I ESA for the above referenced property represents the product of PM's professional expertise and judgment in the environmental consulting industry, and it is reasonable for **OAKLAND COUNTY BROWNFIELD CONSORTIUM, OAKLAND COUNTY, AND THE COMMUNITY HOUSE** to rely on PM's Phase I ESA report.

If you have any questions related to this report, please do not hesitate to contact our office at 800.313.2966.

Sincerely,
PM ENVIRONMENTAL



David Balash
Senior Project Consultant



Steven E. Price, CHMM
Principal and Vice President

EXECUTIVE SUMMARY

PM Environmental (PM) was retained to conduct a Phase I Environmental Site Assessment (ESA) of The Community House located at 380 South Bates Street, Birmingham, Oakland County, Michigan (hereafter referred to as the “subject property”). This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) International in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E1527-21* (ASTM Standard Practice E1527-21).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF OAKLAND COUNTY BROWNFIELD CONSORTIUM, OAKLAND COUNTY, AND THE COMMUNITY HOUSE, EACH OF WHOM MAY RELY ON THE REPORT’S CONTENTS.

Item	Comments
Number of Parcels and Acreage	One parcel totaling 0.85 acres
Number of Building(s) and Square Footage	One partial two-story building containing 37,495 square feet
Current Property Use	The subject building is occupied by The Community House and current operations include early childhood care, community classes, a banquet hall, event hosting, food preparation, and typical office activities

Reasonably ascertainable records for the subject property extended back to approximately 1910. Data failure occurred prior to that date. However, PM did not identify any significant data gaps during the completion of this Phase I ESA.

Standard and other historical resources were able to document the subject property was developed prior to 1910 for residential purposes. The dwellings in the northeastern and southeastern portions were demolished in the 1920s and the original southeastern portion of the current building was constructed in 1927/1928. Three remaining dwellings in the northern and eastern portions were utilized for commercial purposes in at least the 1930s and 1940s, including a catering company, a cabinet maker, and professional offices. These dwellings were demolished between the 1930s and 1970s. The current building was expanded in 1989/1990 to form the current layout, and the current storage shed was constructed west of the building between 1997 and 2005. The building has been utilized for community center activities since initial instruction, including banquets, event hosting, and food preparation, as well as an early childhood care center since 1990.

The following table summarizes the conditions identified as part of this assessment. Affirmative answers are further discussed below the table:

Type of Condition	Identified During the Course of this Assessment
Recognized Environmental Condition (REC)	No
Controlled Recognized Environmental Condition (CREC)	No
Significant Data Gap	No
Historical Recognized Environmental Condition (HREC)	No

Type of Condition	Identified During the Course of this Assessment
De Minimis Condition	No
Business Environmental Risk (BER)	Yes

Business Environmental Risks (BERS)

The following BER was identified during completion of this Phase I ESA:

- Based on PM's limited visual observations during the site reconnaissance, suspect asbestos containing materials (ACMs) were identified.

Findings, Opinions, and Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard Practice E 1527-21 of The Community House located at 380 South Bates Street, Birmingham, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no recognized environmental conditions, controlled recognized environmental conditions, and/or significant data gaps in connection with the subject property. Therefore, no further investigation is recommended at this time.

It is understood that interior renovations and an addition are planned. Therefore, PM recommends the completion of a Pre-Renovation ACM survey to determine if asbestos is present in the building materials that will be disturbed. PM can provide a proposal to complete this scope of work at the request of the client.

The summary presented above is general in nature and should not be considered apart from the entire text of the report, which contains the qualifications, considerations and subject property details mentioned herein. Details of findings and conclusions are elaborated upon in this report.

This report has been reviewed for its completeness and accuracy. Please feel free to contact our office at 800.313.2966 to discuss this report.

REPORT PREPARED BY:

PM Environmental



David Balash
Senior Project Consultant

REPORT REVIEWED BY:

PM Environmental



Steven E. Price, CHMM
Principal and Vice President

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FIGURES

- Figure 1: Property Vicinity Map
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APPENDICES

- Appendix A: Property Photographs from Site Reconnaissance
- Appendix B: Correspondence and Supporting Documentation
- Appendix C: Previous Site Investigations
- Appendix D: Regulatory Database and File Review Correspondence
- Appendix E: Professional Resumes
- Appendix F: Acronyms and Terminology, Scope of Work, ASTM Reference Document, and User's Continuing Obligations under CERCLA

1.0 INTRODUCTION

This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) International in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-21* (ASTM Standard Practice E 1527-21).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF OAKLAND COUNTY BROWNFIELD CONSORTIUM, OAKLAND COUNTY, AND THE COMMUNITY HOUSE, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.

PM acknowledges that these parties may rely on the contents and conclusions presented in this report. Unless stated otherwise in writing, PM makes no other warranty, representation, or extension of reliance upon the findings of this report to any other entity or third party.

1.1: Property Overview

Subject Property Location/Address	380 South Bates Street, Birmingham, Oakland County, Michigan
Number of Parcels and Acreage	One parcel totaling 0.85 acres
Number of Building(s) and Square Footage	One partial two-story building containing 37,495 square feet
Current Property Use	The subject building is occupied by The Community House and current operations include early childhood care, community classes, a banquet hall, event hosting, food preparation, and typical office activities
Current Zoning	R7: Multiple-Family Residential

The subject property location is depicted on Figure 1, Property Vicinity Map. A diagram of the subject property and adjoining properties is included as Figure 2, Subject Property and Adjoining Properties. Photographs taken during the site reconnaissance are included in Appendix A.

1.2: Purpose and Scope of Services

The purpose of this Phase I ESA was to evaluate the current and historical conditions of the subject property in an effort to identify *recognized environmental conditions* (RECs), *controlled recognized environmental conditions* (CRECs), and *historical recognized environmental conditions* (HRECs) in connection with the subject property. This Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs, CRECs, and HRECs in connection with the subject property.

Acronyms and terms used in this report are described in Appendix F. Additionally, PM's scope of services is included in Appendix F.

1.3: Significant Assumptions

Pursuant to ASTM Standard Practice E1527-21, PM assumes that the information provided by all resources and parties, including the User, is accurate and complete, except where obvious inconsistencies or inaccuracies were identified.

1.4: Limitations, Deviations, and Special Terms and Conditions

There are no deviations from the ASTM Standard. Non-ASTM Scope considerations are included in Section 11.0. Any physical limitations identified during the completion of this report are referenced in Section 7.0.

To the best of PM's knowledge, no special terms or conditions apply to the preparation of this Phase I ESA that would deviate the scope of work from the ASTM Standard Practice E1527-21.

PM was not provided with a copy of the recorded land title records for subject property by the client and was not requested to complete a title search. Therefore, PM cannot comment on any potential relevant information that may have been obtained through review of these records.

1.5: Presumed Viability

A Phase I ESA meeting or exceeding the ASTM Standard Practice E1527-21 is presumed to be viable when it is conducted within 180 days prior to the date of acquisition of the subject property (or, for transactions not involving an acquisition such as a lease or refinance, the date of the intended transaction).

To qualify for one of the threshold criteria for satisfying the LLPs to CERCLA liability, the interviews; searches for recorded environmental cleanup liens; reviews of federal, tribal, state, and local government records; visual inspections of the subject property and of adjoining properties; and the declaration by the environmental professional responsible for the assessment or update must be conducted or updated within 180 days of and prior to the date of acquisition of the subject property, and all other components of all appropriate inquiries must be conducted within one year prior to the date of acquisition of the subject property. The date of the report generally does not represent the date the individual components of all appropriate inquiries were completed and should not be used when evaluating compliance with the 180-day or one-year all appropriate inquiries requirements.

The following table summarizes the dates relevant components were conducted as part of this Phase I ESA, per ASTM Standard Practice E1527-21.

Relevant Component	Date
Interviews with owners, operators, and occupants	February 14, 2023
Searches for environmental cleanup liens	Not conducted
Reviews of federal, tribal, state, and local government records	January 23, 2023
Visual inspections of the subject property and adjoining properties	January 31, 2023
The declaration of the environmental professional responsible for the assessment	February 17, 2023

Based upon this information, this Phase I ESA is viable for 180 days from January 23, 2023.

1.6: Reason for Performing this Phase I ESA

According to the User, this Phase I ESA was conducted to evaluate the current and historical conditions of the subject property in an effort to identify RECs, CRECs, and HRECs in connection with the subject property.

2.0 USER'S RESPONSIBILITIES

The ASTM Standard defines a User as "the party seeking to use Practice E1527 to complete an environmental site assessment of the subject property". A User may include, without limitation, a potential purchaser of the subject property, a potential tenant of the subject property, an owner of the subject property, a lender, or a property manager. A user seeking to qualify for an LLP to CERCLA liability has specific responsibilities for completing a successful application of this practice as outlined in Section 6 of the ASTM Standard Practice E1527-21.

2.1: User Provided Information

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") (if desired), the User must provide certain information (if available) identified in the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

PM was retained to complete this Phase I ESA on behalf of the current property owner. Therefore, innocent landowner defenses/protections under State and Federal law do not apply for the User.

2.2: Recorded Land Title Records

PM was not provided with land title records for the subject property by the User. PM reviewed reasonably ascertainable environmental liens and activity and use limitation documents, which are further discussed in Section 4.10. Based upon the information reviewed as part of this Phase I ESA, PM has not identified the lack of provided land title records as a data failure that represents a significant data gap.

3.0 PHYSICAL SETTING

PHYSICAL SETTING INFORMATION FOR THE SUBJECT PROPERTY AND SURROUNDING AREA		RESOURCE
Topography: Refer to Figure 1 for an excerpt of the Topographic Map		
<i>Site Elevation</i>	780 feet above mean sea level (msl)	United States Geological Survey Division (U.S.G.S.) 7.5-Minute Topographic Map of the Birmingham, Michigan Quadrangle, 1968 (photo revised in 1981)
<i>Topographic Gradient</i>	Northwest	
<i>Closest Surface Water</i>	Rouge River located approximately 1,050 feet northwest at an elevation of 730 feet above msl	

PHYSICAL SETTING INFORMATION FOR THE SUBJECT PROPERTY AND SURROUNDING AREA		RESOURCE
General Soil Characteristics: Refer to Appendix B for a copy of the custom soil survey		
Soil Type	Udorthents and Udipsamments, nearly level to hilly	United States Department of Agriculture, Custom Soil Resource Report for Oakland County, Michigan (survey area data: August 29, 2022)
Description	A typical Udipsamments soil profile consists of fine sandy loam to 4.0 inches below ground surface (bgs), loamy fine sand to 30.0 inches bgs, underlain by gravelly loamy fine sand to 80.0 inches bgs. This soil is well drained with a depth to the water table of more than 80.0 inches bgs. The risk of corrosion is low for uncoated steel and concrete. A typical Udorthents soil profile consists consist of silt loam to 8.0 inches bgs, underlain by clay loam to 80.0 inches bgs. This soil is well drained with a depth to the water table of more than 80.0 inches bgs. The risk of corrosion is moderate for uncoated steel and low for concrete.	
Area Specific Geology/Hydrogeology Characteristics		
Geology	Geology consists of fill material including silty sand with some clay and traces of gravel to 10.0 feet bgs, underlain by compact sand and gravel to 16.0 feet bgs, the maximum depth explored	Previous site investigations for the northwest adjoining property (May 1993)
Hydrogeology	Groundwater was not encountered to 16.0 feet bgs, the maximum depth explored	
Oil and Gas Wells		
Current Oil and Gas Wells on Subject Property	None identified	Michigan Department of Environment, Great Lakes, and Energy (EGLE) Geologic Survey Division (GSD) web site
Historical Oil and Gas Wells on Subject Property	None identified	

4.0 HISTORICAL RECORDS

PM reviewed reasonably ascertainable resources to identify obvious uses of the subject property from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. Reasonably ascertainable resources reviewed as part of this Phase I ESA documented the use of the property back to 1910. Data failure occurred prior to that date. In PM's professional opinion, this data failure does not represent a significant data gap.

4.1: Aerial Photographs, Sanborn Maps, and Historical Topographic Maps

PM reviewed reasonably ascertainable aerial photographs for the subject property area. The resources and years reviewed are identified in the table below. Relevant aerial photographs are included in Appendix B.

PM reviewed reasonably ascertainable Sanborn Fire Insurance Maps for the subject property area. The resources and years reviewed are identified in the table below. Relevant Sanborn Maps are included in Appendix B.

PM reviewed reasonably ascertainable historical topographical maps for the subject property area. However, no additional relevant information was obtained through review of historical topographic maps.

The following table summarizes the resources reviewed and the information obtained about the subject property from these resources. Information obtained about the adjoining properties from these resources is summarized in Section 8.0.

Aerial Photographs and Sanborn Maps Summary

Year and Resource	Summary of Information
1910 Sanborn Map (EDR)	Appears to be developed with residential dwellings and associated sheds and stables. Three dwellings are depicted in the northern portion, two stables are depicted in the central portion, one dwelling is depicted in the eastern portion, and one dwelling is depicted in the southeastern portion. West Merrill Street is depicted to the north, South Bates Street is depicted to the east, Townsend Street is depicted to the south, and Chester Street is depicted to the west.
1915 Sanborn Map (EDR)	Similar to the previous Sanborn year.
1921 Sanborn Map (EDR)	One dwelling in the central portion has been demolished. Otherwise, similar to the previous Sanborn year.
1926 Sanborn Map (EDR)	One dwelling in the northeastern portion and one dwelling in the southeastern portion have been demolished. A shed in the western portion is now identified as a residential garage. Otherwise, similar to the previous Sanborn year.
1931 Sanborn Map (EDR)	The three remaining dwellings have been converted to storefronts and the remaining stable in the central portion has been converted to a residential garage. The southeastern portion of the current building is depicted in the southeastern portion and is identified as the Birmingham Community House.
1937 Aerial (EDR)	Due to poor scale and resolution, definitive details could not be determined. However, appears generally similar to the previous Sanborn year.
1940 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
1949 Sanborn Map (EDR)	The eastern dwelling is no longer depicted and the two remaining dwellings are no longer identified as storefronts. Otherwise, similar to the previous aerial and Sanborn years.
1949 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
1952 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
1956 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
1960 Sanborn Map (EDR)	Similar to the previous aerial and Sanborn years.
1967 Aerial (EDR)	The northwestern dwelling and garage and the central garage have been demolished and the northwestern portion appears to be utilized for vehicle parking. Otherwise, similar to the previous aerial and Sanborn years.

Year and Resource	Summary of Information
1972 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
1976 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
1983 Aerial (EDR)	The remaining northern dwelling has been demolished and the parking lot in the northwestern portion has been expanded. Otherwise, similar to the previous aerial year.
1987 Aerial (EDR)	Similar to the previous aerial year.
1997 Aerial (EDR)	An addition has been constructed to the north side of the building. Otherwise, similar to the previous aerial year.
2005 Aerial (EDR)	The current storage shed is visible west of the building. Appears similar to the current layout.
2009 Aerial (EDR)	Similar to the previous aerial year.
2012 Aerial (EDR)	Similar to the previous aerial year.
2016 Aerial (EDR)	Similar to the previous aerial year.
2020 Aerial (EDR)	Similar to the previous aerial year.

A summary of this information along with other historical resources is included in Section 6.0.

4.2: Local Street Directories

Reasonably ascertainable local street directories were researched for the subject property area. Directories were available from 1937 to 2017. Directories were researched in at least five-year increments, when available. It should not be construed that the earliest date represented is the initial date of occupancy.

Subject Property: 380 South Bates Street

2017	Community House of Birmingham Early Childhood Center
2014	Birmingham Ballet & Jazz School Community House of Birmingham Early Childhood Center T CH Dance Academy The Community House of Birmingham
2011-2010	Ballet & Jazz School at The Community Early Childhood Center
2009	Community House Early Childhood Center The International Community Club
2006-2005	Ballet & Jazz School Birmingham Ballet & Jazz School Community House of Birmingham Generation Information Early Childhood Center
2003-2002	Birmingham Ballet & Jazz Birmingham Community House Early Childhood Center
2000-1999	Birmingham Ballet & Jazz Birmingham Community House Early Childhood Center Employment Referral

1997-1996	Bates Street Centering Birmingham Ballet & Jazz Birmingham Community House Early Childhood Center
1994-1987	Bates Street Catering Birmingham Ballet & Jazz Birmingham Community House
1985-1984	Birmingham Ballet Community House
1982-1960	Birmingham Community House Birmingham Community House Employment
1957-1956	Birmingham Community House Community House
1951-1937	Birmingham Community House Multi-Tenant Community House

Historical Subject Property: 359 West Merrill Street

2017-20196	Not Listed
1992-1975	No Phone
1972-1949	Residential
1944-1937	Metropolitan Life Insurance Company

Historical Subject Property: 391 West Merrill Street

2017-1965	Not Listed
1962-1961	Residential
1958-1954	Not Listed
1951-1940	McAninsh, Cabinet Maker
1937	Wilson, Caterer

A summary of this information along with other historical resources is included in Section 6.0.

PM also reviewed listings for adjoining commercial properties. Information from the listings reviewed is included in Section 8.0.

4.3: Assessing Department

Reasonably ascertainable online assessment information provided by the City of Birmingham Assessing Department was obtained and reviewed. Assessing records document that the subject property consists of one parcel containing 0.85 acres. Building details are not provided, as the property is tax-exempt. PM also submitted a Freedom of Information Act (FOIA) request to the Oakland County Equalization Department to review historical assessing records for the subject property. Historical field cards were included in the records reviewed, which document the original building was constructed in 1927 and that the northern portion was added in 1989/1990. PM reviewed a site plan provided by a representative of the current property owner, which indicates the building contains 37,495 square feet. Copies of available assessment records for the subject property and the current legal description are included in Appendix B.

4.4: Building Department

PM submitted a FOIA request to the City of Birmingham Clerk's Office to review Building Department records for the subject property. Available records included a permit to demolish a residential dwelling at 348 South Bates Street in 1934 and a permit to demolish a residential dwelling at 359 West Merrill Street in 1976. Permits for the current building included permits for interior alterations in 1954, 1961, and 1976 as well as permits and plans to construct the northern portion of the building in 1989/1990.

Additionally, historical permit records documented permits related to fuel oil usage, including a permit to install a 2,000-gallon fuel oil underground storage tank (UST) at the current building in 1951, a permit to install a 275-gallon fuel oil aboveground storage tank (AST) at a former dwelling at 310 South Bates Street in 1955, and a permit to install a 220-gallon fuel oil AST at a former dwelling at 359 West Merrill Street in 1959. Refer to Sections 4.7.3 and 4.8 for additional information.

4.5: Fire Department

PM submitted a FOIA request to the City of Birmingham Fire Department to review records for the subject property. PM reviewed available records which document the former 2,000-gallon fuel oil UST was historically installed east of the building (along South Bates Street) in 1951 and was closed in place with sand in 1975 and fully removed in 1989, during construction of the current northern addition. Notes document that remaining oil was pumped from the tank and the soil was excavated and sampled. Approximately three cubic yards of contaminated soil was excavated and disposed offsite. Refer to Section 4.8 for additional information.

4.6: Health Department

PM submitted a FOIA request to the Oakland County Health Division to review records for the subject property. PM received a written response with copies of lead and copper water testing completed at the building in October 2019, which did not identify any detectable concentrations of lead or copper in drinking water. No records related to current or former water wells or private septic systems were identified.

4.7: Utilities

4.7.1: Municipal Water/Water Wells

The subject property is currently connected to municipal water. Review of Sanborn maps indicates municipal water has been available to the subject property since at least 1910. Review of additional historical Sanborn maps for the surrounding area indicate municipal water has been available since at least 1893. Based upon this information, the current and former buildings were most likely tapped to municipal water during construction. No records of private water wells have been identified through review of reasonably ascertainable information.

4.7.2: Sanitary Sewer/Septic System

The subject property is currently connected to municipal sewer. . Review of Sanborn maps indicates municipal water has been available to the subject property since at least 1910. Review

of additional historical Sanborn maps for the surrounding area indicate municipal water has been available since at least 1893. Municipal sewer has likely been available since the same time. Based upon this information, the subject property was most likely tapped to municipal sewer during construction. No records of private septic systems have been identified through review of reasonably ascertainable information.

4.7.3: Heat Source

The building is connected to natural gas, which is supplied by Consumers Energy. Review of the Consumers Energy SIMS website indicates the original portion of the building was initially connected to natural gas in 1950, with a meter replacement completed in 2010.

Review of historical Building and Fire Department records documents the current building and several former dwellings were historically heated with fuel oil. Records document the presence of one 275-gallon fuel oil AST at a former dwelling at 310 South Bates Street in 1955 and one 220-gallon fuel oil AST at a former dwelling at 359 West Merrill Street in 1959. Based on the former aboveground storage, PM has not identified these former ASTs as a REC.

Available records also document the installation of a 2,000-gallon fuel oil UST at the current building in 1951, which was closed in place in 1975 and removed in 1989. Refer to Section 4.8 for additional information.

4.8: Underground Storage Tank (UST) Systems

Review of reasonably ascertainable standard and other historical resources, and site observations, have not identified the current presence of USTs on the subject property. Specifically, no records of active USTs were identified though review of reasonably ascertainable records and PM did not observe any evidence of USTs (i.e., fill ports, vent pipes, etc.) during the site reconnaissance. Additionally, a representative of the current property owner indicated she had no knowledge of current USTs associated with the subject property.

The subject property previously contained one 2,000-gallon fuel oil UST, which was historically located northeast of the original (southeastern) portion of the current building, along South Bates Street. Fire Department records document the UST was closed in place with sand in 1975 and removed in 1989 during construction of the current northern addition. Remaining oil was pumped from the UST and approximately three cubic yards of contaminated soil was removed from the excavation. Additionally, this area was further excavated to at least 10 feet below grade during construction of the basement for the northern portion of the building. Therefore, based on the removal of the source material and excavation of impacted soils, the potential for additional contamination to remain in this area in concentrations that would result in regulatory action is unlikely. Based on this information, PM has not identified the former fuel oil UST as a REC.

4.9: Previous Environmental Reports

No previous site investigations were identified by PM for the subject property. Previous reports may exist for the subject property, however, none were provided to PM by the client or owner of the property, and none were available with the appropriate state regulatory agencies.

4.10: Environmental Liens, Activity and Use Limitations, and Government Institutional and Engineering Controls

PM has not identified any record of environmental liens, activity and use limitations, or institutional controls or engineering controls associated with the subject property through review of reasonable ascertainable records.

5.0 INTERVIEWS

The objective of completing interviews with past and present owners, operators, and occupants is to obtain information indicating RECs in connection with the subject property. The table below summarizes information provided by interviewees.

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner, Key Site Manager, and Current Occupant	Yes, February 13, 2023	Ms. Pat Jerzy, Director, Project Management – The Community House	28 years	Ms. Jerzy indicated the building has historically been utilized for community center operations since initial construction and that the current northern portion was added in 1989/1990, which is when the Early Childhood Center was added. No information was provided that would be considered material for identifying RECs in connection with the subject property.
Former Property Owner	No	Not applicable	Not applicable	Contact information for the former owner was not reasonably ascertainable or provided by the User
Former Occupant(s)	No	Not applicable	Not applicable	Contact information for the former occupants was not reasonably ascertainable or provided by the User
Other(s)	No	Not applicable	Not applicable	No other relevant interviews were conducted as part of this Phase I ESA

6.0 SUMMARY OF HISTORICAL USE

Standard and other historical resources were able to document the subject property was developed prior to 1910 for residential purposes. The dwellings in the northeastern and southeastern portions were demolished in the 1920s and the original southeastern portion of the current building was constructed in 1927/1928. Three remaining dwellings in the northern and eastern portions were utilized for commercial purposes in at least the 1930s and 1940s, including a catering company, a cabinet maker, and professional offices. These dwellings were demolished between the 1930s and 1970s. The current building was expanded in 1989/1990 to form the current layout, and the current storage shed was constructed west of the building between 1997 and 2005. The building has been utilized for community center activities since initial instruction, including banquets, event hosting, and food preparation, as well as an early childhood care center since 1990.

7.0 SUBJECT PROPERTY RECONNAISSANCE

Reconnaissance Information	
PM Field Personnel:	Mr. David Balash
Site Reconnaissance Date:	January 31, 2023
Escort:	Mr. Les Hicks, Director, Facilities Management – The Community House
Limitations:	Exterior observations were limited by approximately two to four inches of snow cover. However, based on the information gathered as part of this Phase I ESA, PM has not identified this limitation as a significant data gap.

7.1: Subject Property Observations

The partial two-story building contains approximately 37,495 square feet, which is divided into lobby areas, offices, classrooms, studio spaces, banquet halls, kitchen areas, a stage, restrooms, storage areas, mechanical rooms, a full basement, and a subbasement area with a boiler room.

Interior finish materials consist of carpeting, 12-inch by 12-inch vinyl floor tiles, ceramic floor tiles, laminate flooring, drywall walls and ceilings, and suspended acoustical ceiling tiles. The subbasement is unfinished with poured concrete floors, walls, and ceiling.

A playground area is present west of the building, a storage shed is present west of the playground area, and the remainder of the property consists of groomed grass and landscaped areas.

The following table summarizes the site observations. Affirmative responses are discussed in more detail following the table.

Category	Feature	Observed
Interior Equipment	Elevators	Yes
	Air Compressors	No
	Incinerators	No
	Waste Treatment Systems	No
	Presses/Stamping Equipment	No
	Press Pits and/or In-ground Pits	No

Category	Feature	Observed
	Hydraulic Lifts or In-ground hoists	No
	Paint Booth	No
	Plating Tanks	No
	Parts Washers	No
	Lathes, Screw Machines, etc.	No
Aboveground Chemical or Other Waste Storage or Waste Streams	Aboveground Storage Tanks (ASTs)	No
	Drums, Barrels and/or Containers > 5 gallons	No
	Chip Hoppers	No
	Hazardous or Petroleum Waste Streams	No
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground Storage Tanks	No
	Fuel Dispensers	No
	Sumps or Cisterns	Yes
	Dry Wells	No
	Oil/Water Separators	No
	Floor Drains, Trench Drains, etc.	Yes
	Pipeline Markers	No
Exterior Observations	Stressed Vegetation	No
	Stained Soil or Pavement	No
	Monitoring Wells	No
	Pad or Pole Mounted Transformers and/or Capacitors	Yes
	Soil Piles of Unknown Origin	No
	Exterior Dumpsters with Staining	No
	Leachate or Other Waste Seeps	No
	Trash, Debris, and/or Other Waste Materials	No
	Uncontrolled Dumping or Disposal Areas	No
	Surface Water Discoloration, Sheen or Free Product	No
	Strong, Pungent or Noxious Odors	No
	Storm water retention or detention ponds	No
	Pits, Ponds, Lagoons	No

Elevators: PM observed one hydraulic elevator in the northern portion of the building, which would have been installed during construction of the northern addition in 1989/1990. PCB-containing hydraulic fluid has not been manufactured since 1977. Therefore, based on the date of installation, PCB-containing hydraulic fluid is not likely to be found in the elevator operating system. No visual indication of leakage was observed in the area of the elevator operating equipment. The hydraulic elevator should be inspected periodically for leakage as part of the on-going maintenance activities. If leakage is identified, the unit should be repaired, and any fluid or fluid-soaked waste should be disposed of in accordance with applicable federal, state, and local regulations.

Sumps or Cisterns: PM two sumps in the basement mechanical areas, which are designed to collect storm water and prevent flooding. The sumps are covered and no evidence of poor waste management practices was observed.

Floor Drains, Trench Drains, etc.: PM observed floor drains in the mechanical areas, kitchen areas, and restrooms throughout the building. No staining or evidence of poor waste management practices was observed associated with the drains, which likely discharge to the municipal sewer system.

Pad or Pole Mounted Transformers and/or Capacitors: The building is supplied with overhead secondary electrical service from one pole-mounted electrical transformer located west of the building. The transformer is likely the property of the local utility company and is labeled as "Non-PCB". No leakage of the transformer was observed at the time of the site reconnaissance.

7.1.1: Current Operations

The subject building is occupied by The Community House and current operations include early childhood care, community classes, a banquet hall, event hosting, food preparation, and typical office activities

8.0 ADJOINING PROPERTIES

The following paragraphs provide information about the adjoining properties obtained during the site reconnaissance and through review of aerial photographs; fire insurance maps; and local street directories.

North Adjoining Property, across West Merrill Street

The north adjoining property, identified as 300 West Merrill Street, is currently occupied by the Baldwin Public Library. Review of historical records documents the property was developed prior to 1910 for residential purposes, as well as a town hall building in the southeastern portion. The dwellings and town hall building were demolished when the central portion of the current library building were constructed in 1927. The eastern portion was added in 1959 and the southwestern portion was added in 1983. The building has been occupied by a library since initial construction.

East Adjoining Properties, across South Bates Street

The northeast adjoining property, identified as 270 West Merrill Street, is currently occupied by Shain Park. Review of historical records documents the property was developed prior to 1893 for residential purposes. Additional dwellings were constructed through the 1920s. The dwellings were all demolished by the 1930s and the property has been utilized as a public park since that time.

The east adjoining property, identified as 399 South Bates Street, is currently occupied by a park in the northern portion and a parking lot in the southern portion. Review of historical records documents the property was developed prior to 1910 for residential purposes. The dwellings were all demolished in the 1960s and the property was redeveloped into a parking lot. The north adjoining park was expanded into the northern portion between 2005 and 2009.

South Adjoining Properties, across Townsend Street

The southeast, south, and southwest adjoining properties are currently and have historically been developed with residential homes and/or residential apartments.

West Adjoining Properties, across Chester Street

The northwest adjoining property, identified as 200 Chester Street, is currently occupied by the Baldwin House, a senior living facility. Review of historical records documents the property was

developed prior to 1910 with a school building. An additional school building was constructed in the southern portion between 1915 and 1921 and several garages were constructed in the western portion in the 1920s. The garage was demolished and a larger maintenance garage was constructed on the west side of the school building between 1940 and 1949. The school building was demolished between 1967 and 1972 and the property was utilized as a parking lot until the current building was constructed in approximately 1993. The current building has been occupied by a senior living facility since construction. This property is identified in the regulatory database. Refer to Section 9.2 for additional information.

The remaining west and southwest adjoining properties are currently and have historically been developed with residential homes and/or residential apartments.

9.0 REGULATORY RECORDS REVIEW

PM retained EDR to provide current regulatory database information compiled by a variety of federal and state regulatory agencies. A copy of the complete database is included in Appendix D. The following information was obtained:

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	National Priority List (NPL) sites	1 mile	0
Federal	Delisted National Priority List (Delisted NPL) sites	½ mile	0
Federal	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites	½ mile	0
Federal	CERCLA No Further Remedial Action Planned (NFRAP) sites	½ mile	0
Federal	Resource Conservation and Recovery Act (RCRA) Facilities Undergoing Corrective Action	1 mile	0
Federal	RCRA Treatment, Storage or Disposal (TSD) facilities	½ mile	0
Federal	RCRA Large Quantity Generators (LQG)	subject property and adjoining properties	0
Federal	RCRA Small Quantity Generators (SQG)	subject property and adjoining properties	0
Federal	RCRA Very Small Quantity Generators (VSQG)	subject property and adjoining properties	1
Federal	RCRA Non-Generators (NonGen)	subject property and adjoining properties	0
Federal	Institutional Control / Engineering Control Registries	subject property only	0
Federal	Environmental Response and Notification System (ERNS) list	subject property only	0
State & Tribal	Hazardous Waste Facilities (CERCLA equivalent) sites	1 mile	0
State & Tribal	Solid Waste Facilities/Landfill (SWF/LF) sites	½ mile	0

State & Tribal	Leaking Underground Storage Tank (LUST) sites	½ mile	14
State & Tribal	Registered Underground Storage Tank (UST) sites	subject property and adjoining properties	1
State & Tribal	Institutional Control / Engineering Control Registries	subject property only	0
State & Tribal	Brownfield sites	½ mile	5
State & Tribal	Michigan Inventory of Facilities (Includes Part 201 Sites and Baseline Environmental Assessment {BEA} Sites)	½ mile	26
Either	Unmappable Database Listings (a.k.a. Orphan Sites)	database-dependent	0

9.1: Subject Property and Occupant Listings

The subject property or its known occupants are not identified in the referenced databases. However, the subject property is listed on the Waste Data System (WDS). Review of the WDS website indicates a construction company was registered as a liquid industrial waste generator with no additional information provided. Review of historical Fire Department records indicates approximately three cubic yards of impacted soil was excavated and disposed in 1989 during removal of a former 2,000-gallon fuel oil UST by this same construction company, which is likely what the registration is also associated with. Refer to Section 4.8 for additional information.

9.2: Adjoining and Nearby Sites

PM's review of the referenced databases also considered the potential or likelihood of contamination from adjoining and nearby sites. To evaluate which of the adjoining and nearby sites identified in the regulatory database report present an environmental risk to the subject property, PM considered the following criteria:

- The type of database on which the site is identified.
- The topographic position of the identified site relative to the subject property.
- The direction and distance of the identified site from the subject property.
- Local soil conditions in the subject property area.
- The known or inferred groundwater flow direction in the subject property area.
- The status of the respective regulatory agency-required investigation(s) of the identified site, if any.
- Surface and subsurface obstructions and diversions (e.g., buildings, roads, sewer systems, utility service lines, rivers, lakes, and ditches) located between the identified site and the subject property.

Only those sites that are judged to present a potential environmental risk to the subject property and/or warrant additional clarification are further evaluated. Using the referenced criteria, and based upon a review of readily available information contained within the regulatory database report, PM did not identify adjoining (i.e., bordering) or nearby sites (e.g., properties within a ¼-mile radius) listed in the regulatory database report that were judged to present a potential environmental risk to the subject property, with the exception of the following:

Baldwin House/Proposed Baldwin House Site – This site is identified as 200 Chester Street and is the northwest adjoining property. Review of the regulatory database indicates this is a closed LUST site with two releases reported in 1993 and a closed UST site. Additionally, the current occupant was registered as a RCRA-VSQQ of hazardous waste in 2011 with no reported violations. PM reviewed available EGLE file information which documents a release was reported during development of the site after an abandoned UST was discovered, which may have historically been utilized for fuel oil for a former school at the site. A small amount of free product was observed on the concrete cradle beneath the UST following removal and a confirmed release was reported in May 1993. Approximately 420 cubic yards of contaminated soil was removed from the excavation and disposed offsite. Low-level PNA impacts were identified on the bottom of the excavation exceeding the former Type B Criteria. None of the concentrations exceed the current most restrictive Part 213 Risk Based Screening Levels (RBSLs). The release was granted closure in 1995. Based on the closed LUST status, removal of the source material, lack of impacts identified over the current Part 213 RBSLs, and distance of the former UST from the subject property (i.e., approximately 230 feet across West Merrill Street), PM has not identified this site as a REC.

10.0 FINDINGS, OPINIONS AND CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard Practice E1527-21 of The Community House located at 380 South Bates Street, Birmingham, Oakland County, Michigan, the subject property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions, controlled recognized environmental conditions, or significant data gaps in connection with the subject property.

10.1: Recognized Environmental Conditions (RECs)

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property.

10.2: Controlled Recognized Environmental Conditions (CRECs)

This assessment has revealed no CRECs in connection with the subject property.

10.3: Significant Data Gaps

This assessment has revealed no significant data gaps in connection with the subject property.

10.4: Historical Recognized Environmental Conditions (HRECs)

This assessment has revealed no HRECs in connection with the subject property.

10.5: De Minimis Condition

No de minimis conditions were identified during completion of this Phase I ESA.

10.6: Recommendations

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-21 of The Community House located at 380 South Bates Street, Birmingham, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no recognized environmental conditions, controlled recognized environmental conditions, or significant data gaps in connection with the subject property. Therefore, no further investigation is recommended at this time.

Recommendations for non-ASTM scope considerations and Business Environmental Risks (BERs) are discussed in Section 11.0.

11.0 NON-ASTM SCOPE CONSIDERATIONS/BUSINESS ENVIRONMENTAL RISKS

PM has included a discussion of Non-ASTM Scope Considerations based upon industry standards and lender requirements. A Business Environmental Risk (BER) is defined as a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice.

Non-ASTM Item	Observations or Information
Potential Asbestos Containing Materials (ACMs)	Based on PM's limited visual observations during the site reconnaissance, suspect ACMs were identified. It is understood that interior renovations and an addition are planned. Therefore, PM recommends the completion of a Pre-Renovation ACM survey to determine if asbestos is present in the building materials that will be disturbed. PM can provide a proposal to complete this scope of work at the request of the client.
Lead Based Paint (LBP)	Based on the construction of the original portion of the building prior to 1978, when Federal regulations banned the use of LBP, there is the potential for existing paint to be lead based or contain lead. The painted surfaces were observed to be in good condition. The painted surfaces can be maintained through an Operations and Maintenance (O&M) plan under current regulations. PM can provide a proposal to complete this scope of work at the request of the client.
Visual Mold or Significant Moisture Damage	PM performed a limited visual assessment for the presence of mold, conditions conducive to mold, and evidence of moisture in readily accessible interior areas of the subject property. PM did not note obvious visual indications of the presence of mold, conditions conducive to mold, or evidence of moisture in readily accessible interior areas of the subject property.

12.0 SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquires in conformance with the standards and practices set forth in 40 CFR Part 312.



David Balash
Senior Project Consultant



Steven E. Price, CHMM
Principal and Vice President

13.0 REFERENCES

The following published resources were utilized during completion of this Phase I ESA:

- *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM International, ASTM Designation E1527-21, Published November 2021.
- United States Geological Survey (U.S.G.S.) 7.5 Minute Topographic Map Birmingham, Michigan Quadrangle, 1968 (photo-revised 1981).
- *Custom Soil Resource Report for Oakland County, Michigan*, U.S. Department of Agriculture, survey area data: August 29, 2022.
- Bresser's Cross-Index City Directories, Bresser's in Detroit, Michigan. City: Birmingham. Years: 1952-2013.
- R.L. Polk's Directories, obtained from the State of Michigan Library in Lansing, Michigan. City: Birmingham. Years: 1937-1951.
- Environmental Data Resources, Inc. (EDR) Digital Archive Directories, obtained from EDR, Milford, Connecticut. City: Birmingham. Year: 2017.

Section 3.6

Geotechnical Investigation

SOILS INVESTIGATION
BUILDING ADDITION
THE COMMUNITY HOUSE
380 S. BATES STREET
BIRMINGHAM, MICHIGAN

THE COMMUNITY HOUSE
380 S. BATES STREET
BIRMINGHAM, MICHIGAN 48009

APRIL 20, 2023
BY
McDOWELL & ASSOCIATES

McDowell & Associates

Geotechnical, Environmental & Hydrogeological Services • Materials Testing & Inspection

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April 20, 2023

The Community House
380 S. Bates Street
Birmingham, Michigan 48009

Job No. 22-487

Attention: Mr. William Seklar

Subject: Soils Investigation
Building Addition
The Community House
380 S. Bates Street
Birmingham, Michigan

Dear Mr. Seklar:

In accordance with your request, we have made a Soils Investigation at the subject project.

Five (5) Soil Test Borings, designated as 1 through 5, were performed at, or near, the locations you required. Borings 1, 2 and 4 were moved due to trees, utilities and brick pavers. Offset information is noted on the logs of these borings. The approximate locations of the borings are shown on the Soil Boring Location Plan which accompanies this report. The borings were advanced to depths of twenty feet six inches (20'6") and thirty-five feet six inches (35'6") below the existing ground surface at the boring locations. Borings 4 and 5 were drilled on January 19, 2023. Due to an existing fence and existing landscaping, the drilling of Borings 1, 2 and 3 was delayed until April 12, 2023 in order to allow personnel from The Community House to open the fence area. Our drilling crew used plywood sheets under the drill rig to help minimize disturbance to landscaping in the vicinity of Borings 1, 2 and 3.

Soil descriptions, groundwater observations, and the results of field and laboratory tests are to be found on the accompanying Logs of Soil Test Borings and summary sheet of Sieve Analysis results.

The borings encountered three feet six inches (3'6") and nine feet six inches (9'6") of fill and possible fill soils consisting of surficial topsoil, buried topsoil, asphalt pavement, brick pavers, gray crushed stone and slightly compact to compact brown and discolored brown fine sand to sand and gravel, five feet six inches (5'6") to fifteen feet (15') of compact to extremely compact brown fine sand to sand and gravel, followed by stiff to extremely stiff brown to blue silty clay and compact gray silty fine sand which were found throughout the remainder of the borings. Buried topsoil was found in Boring 2 between the depths of one foot ten inches (1'10") and two

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feet two inches (2'2") and in Boring 4 between the depths of one foot (1') and one foot six inches (1'6"). Three and one-half-inch (3½") and four-inch (4") thick asphalt pavement was found at Borings 4 and 5. Two and one-half-inch (2½") thick brick pavers were found at Borings 2 and 3. Eight and one-half-inch (8½") and nine-inch (9") thick gray crushed stone and a geofabric were found below the brick pavers at Borings 2 and 3. Finally, a cobble was encountered in Boring 3 between the depths of twenty-one feet ten inches (21'10") and twenty-three feet three inches (23'3").

Soil descriptions and depths shown on the boring logs are approximate indications of change from one soil type to another and are not intended to represent an area of exact geological change or stratification. Also, the site is located in an urban area and shows signs of modification which could indicate fill and soil conditions different from those encountered at the boring locations.

Water was encountered in the borings at depths ranging from twelve feet ten inches (12'10") to thirteen feet six inches (13'6") below the existing ground surface. Water was measured upon completion of the drilling operation in Boring 2 at a depth of twelve feet (12'). Borings 1, 3, 4 and 5 were found to cave in upon completion at depths ranging from four feet (4') to thirteen feet six inches (13'6"). It should be noted that short-term groundwater observations may not provide a reliable indication of the depth of the water table. In clay soils this is due to the slow rate of infiltration of water into the borehole as well as the potential for water to become trapped in overlying layers of granular soils during periods of heavy rainfall. Water levels in granular soils fluctuate with seasonal and climatic changes as well as the amount of rainfall in the area immediately prior to the measurements. It should be expected that groundwater level fluctuations may occur on a seasonal basis and that seams of water-bearing sands or silts could be found within the various clay strata at the site.

Standard Penetration Tests were made during sampling using an automatic hammer. These tests indicate that the fill and possible fill soils have rather poor densities while the underlying native soils have fair to very good strengths and densities. Tests taken in the fill and possible fill soils gave results ranging from 3 to 12 blows per foot. Tests taken in the native soils gave results ranging from 6 to 25 blows per foot.

It is understood that a six- to seven-story slab-on-grade building addition is planned to be constructed adjacent to the north and west sides of the existing two-story slab-on-grade building. It is assumed that the new addition structure will transmit moderate to heavy loads to the supporting soils.

Based on the project information provided and the results of field and laboratory tests, it is believed that the addition structure could be supported by conventional spread or strip footings. All exterior footings or footings in unheated areas should be constructed at or below a minimum frost penetration depth of three feet six inches (3'6") below finished grade. All interior and exterior load-bearing footings should extend through non-engineered fill soils, soils containing a significant amount of organic substances, or excessively weak soils. All strip footings should be continuously reinforced in order to minimize the noticeable effects of differential settlement.

Footings constructed at the boring locations could be proportioned for the design soil pressures listed below provided this results in the foundations bearing on native non-organic soils.

<u>Boring</u>	<u>Depth</u>			<u>Soil Pressure (psf)</u>
1	6'0"	to	7'0"	2,500
	7'6"	to	12'0"	5,000
2	9'6"	to	12'0"	5,000
3	9'0"	to	14'6"	4,000
	15'0"	to	18'0"	5,000
4	8'6"	to	12'0"	4,000
5	3'6"	to	9'0"	2,500
	9'6"	to	12'0"	5,000

Where new footings are to be constructed next to, or close to, the existing building or nearby structures, the new footings should be constructed at least as deep as the existing footings. Where new footings are to be constructed to greater depths than the existing footings, it may be necessary to underpin the existing footings to avoid undermining the existing structures. Special shoring or a retention wall system may be required adjacent to, or close to, existing structures or underground utilities during the excavation of the proposed building addition structure. If the excavation is to be performed with sloped banks, adequate and stable slopes must be provided. Pertinent OSHA requirements must be followed and adequate protection for workers must be provided.

It should be noted that the new addition structure may settle relative to the existing structure. For this reason, it is recommended that all connections between the new and existing structures should be designed to accommodate differential movement. If practical, joints should be constructed in the floor, walls and roof where the structures join.

Based on the soils encountered in the borings, it appears the site soils can be classified according to the International Building Code as Class D Seismic Classification with a ground acceleration of about 5%.

It should be noted that footing excavations may be near or below the level at which water was encountered in the borings. Depending upon the depth of the footings relative to the existing ground surface and the actual conditions at the time of construction, it may be necessary to depress the water table in these locations to allow for footings to be constructed. It is sometimes possible to construct strip footings a foot or so below the water table in coarse granular soils

using a rapid sequence of excavation and placement of concrete. If this is not possible, it may be necessary to use special dewatering techniques to depress the water table in the vicinity of the borings. Extreme care must be exercised during the dewatering operation if any nearby structures or utilities are sensitive to settlement. Care must be taken to minimize the removal of soil fines during the pumping operation.

If the possibility of more than normal differential movement can be tolerated, then new slab-on-grade or slab-supporting backfill could be placed at or near the present grade. If any existing asphalt or concrete pavement is found within the proposed addition area, it should be either removed or thoroughly broken. If any existing underground utilities are found within the planned building addition area, they should be removed and properly backfilled or grouted in place. Any surficial topsoil, highly organic, soft, loose or obviously objectionable material should be removed and the subgrade thoroughly proof-compacted with heavy, rubber-tired equipment. If any buried topsoil or organic fill soils are found within eighteen inches (18") below the planned floor elevation of the addition, they should be removed in their entirety from the planned addition area. It appears that the buried topsoil at Borings 2 and 4 should be removed. If during the proof-compaction operation areas are found where the soils yield excessively, the yielding materials should be scarified, dried and recompactd or removed and replaced with engineered fill. Where fill or backfill is required to raise the subgrade for concrete floors, it is suggested that clean, well-graded granular soils be used. If clay material is utilized, it should be placed within 2% of its optimum moisture content. The fill should be deposited in horizontal lifts not to exceed nine inches (9") in thickness with each lift being compacted uniformly to a minimum density of 95% of its maximum value as determined by the Modified Proctor Test (AASHTO T-180 or ASTM D-1557).

If the possibility of more than normal differential movement cannot be tolerated, then all existing fill soils and buried topsoil should be removed and replaced with engineered fill meeting the requirements outlined above or floor slabs should be structurally supported.

If any existing structures or below-grade structures are found, they should be entirely removed from the proposed addition area. Buried utilities should be removed or grouted in place. In lawn or parking areas, any existing structure foundations should be removed to a minimum depth of three feet (3') below finished grade. The resulting excavation should be backfilled with engineered fill meeting the requirements outlined above. If any existing basement floors are located outside of the proposed addition area, then they can remain but should be broken up.

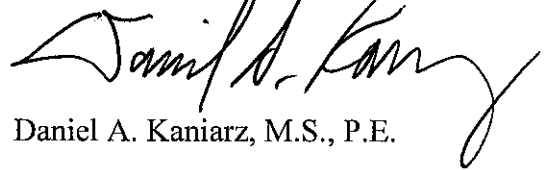
Experience indicates that the actual subsoil conditions at the site could vary from those found at the test borings made at specific locations. It is, therefore, essential that McDowell & Associates be notified of any variation of soil conditions to determine their effects on the recommendations presented in this report. The evaluations and recommendations presented in this report have been formulated on the basis of reported or assumed data relating to the proposed project. Any significant change in this data in the final design plans should be brought to our attention for review and evaluation with respect to the prevailing subsoil conditions.

It is recommended that the services of McDowell & Associates be engaged to observe the soils in the footing excavations prior to concreting in order to test the soils for the required bearing capacities. Testing should also be performed to check that suitable materials are being used for controlled fills and that they are properly placed and compacted.

If we can be of any further service, please feel free to call.

Very truly yours,

McDOWELL & ASSOCIATES

A handwritten signature in black ink, appearing to read "Daniel A. Kaniarz", written over the printed name.

Daniel A. Kaniarz, M.S., P.E.

DAK/nm

Section 3.7

Air Quality Information

MICHIGAN AIR QUALITY ANNUAL REPORT

2022



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan.gov/EGLE | 800-662-9278

Air Quality Annual Report

2022

EXECUTIVE SUMMARY

This report gives an overview of the air quality for 2022. 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 (NO₂)
4. Ozone (O₃)
5. Particulate matter smaller than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}, respectively)
6. Sulfur dioxide (SO₂)

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 1.2 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 redesignated 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, NO₂, and particulate matter. Although portions of the state are in nonattainment for SO₂ and O₃, 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 SO₂ and O₃.

Several changes to the monitoring network occurred during 2022.

- The TEOMs for PM₁₀ and PM_{2.5} at Dearborn were switched to an FEM T640X.
- The Thermo BAM at Ypsilanti and Tecumseh was switched to a T640.
- The Livonia-Near Road (Livonia-NR) monitor is in the process of moving since site access was lost in July 2019.
- The PAMS network was started in 2021 and ran for June, July and August at Grand Rapids and Detroit-E 7 Mile for a second year in 2022.
- The Detroit-W. Jefferson site was shut down in March 2021 due to loss of site access.

Attainment Status for the National Ambient Air Quality Standards

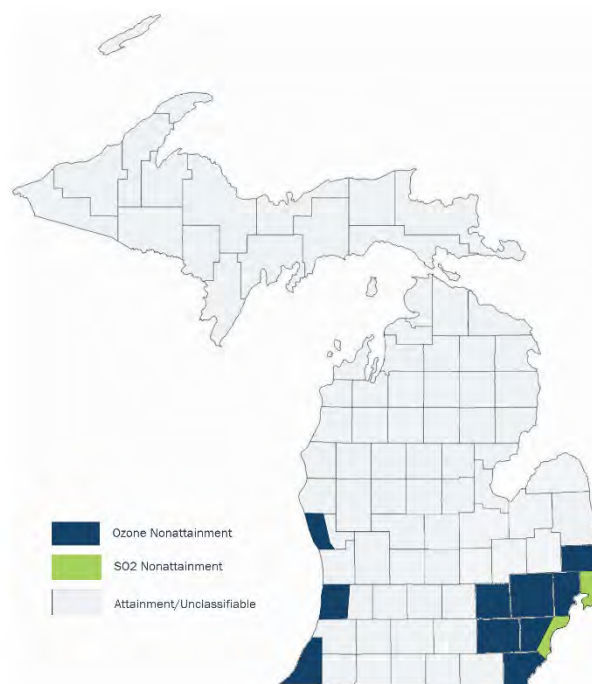


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INTRODUCTION

Air quality regulations in Michigan are based on National Ambient Air Quality Standards (NAAQS) established by the 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. The 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 (NO₂)
- Ozone (O₃)
- Particulate matter smaller than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}, respectively)
- Sulfur dioxide (SO₂).

Chapters 2 through 7 provide information on each of the six criteria pollutants and include:

- Michigan's monitoring requirements for 2022;
- Attainment/Nonattainment status;
- Monitoring site locations (tables and maps show all the monitors active in 2022); and
- Air quality trends from 2017-2022 broken down by location.¹

The 2022 data for each criteria pollutant is available in **Appendix A**.

The AQD also monitors air toxics. Air toxics are other hazardous air pollutants (HAPs) 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 2022 air quality data, air quality trends, overview of the monitoring network (available in much greater detail in the 2022 Network Review),³ air toxics monitoring program, and other AQD programs, such as Mlair and the Emissions Inventory.⁴

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 www.epa.gov/airtrends/.

² An overview of Michigan Air Toxic Rules is available on the AQD website at www.michigan.gov/air (select "Toxics.")

³ Available online at [Michigan's 2022 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) 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, NO₂, PM, O₃, and SO₂. **Table 1.1** lists the primary and secondary NAAQS, averaging time, and concentration level for each criteria pollutant in effect in 2022. The concentrations are listed as parts per million (ppm), micrograms per cubic meter (µg/m³), and/or milligrams per cubic meter (mg/m³).

Table 3.1: NAAQS in Effect during 2022 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	98 th 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	98 th percentile of 24-hour concentration, averaged over 3 years (2006)	Same as Primary	Same as Primary
Ozone	0.070 ppm	Annual 4 th highest 8-hour daily max averaged over 3 years (2015)	Same as Primary	Same as Primary
SO ₂	0.075 ppm	99 th 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 O₃ 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 new shelter at the Jenison site.

Figure 1.2 shows a map of the 2022 MASN monitoring sites.

The MASN consists of federal reference method (FRM) monitors that enable continuous monitoring for the gaseous pollutants CO, NO₂, O₃, and SO₂, providing real-time hourly data. PM and Pb monitors measure concentrations over a 24-hour period. In addition, continuous PM_{2.5} and PM₁₀ 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 2022 and the MASN locations are shown in **Tables 1.2a-c**.

Figure 1.1: Jenison Monitoring 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 1.2: MASN Monitoring Sites

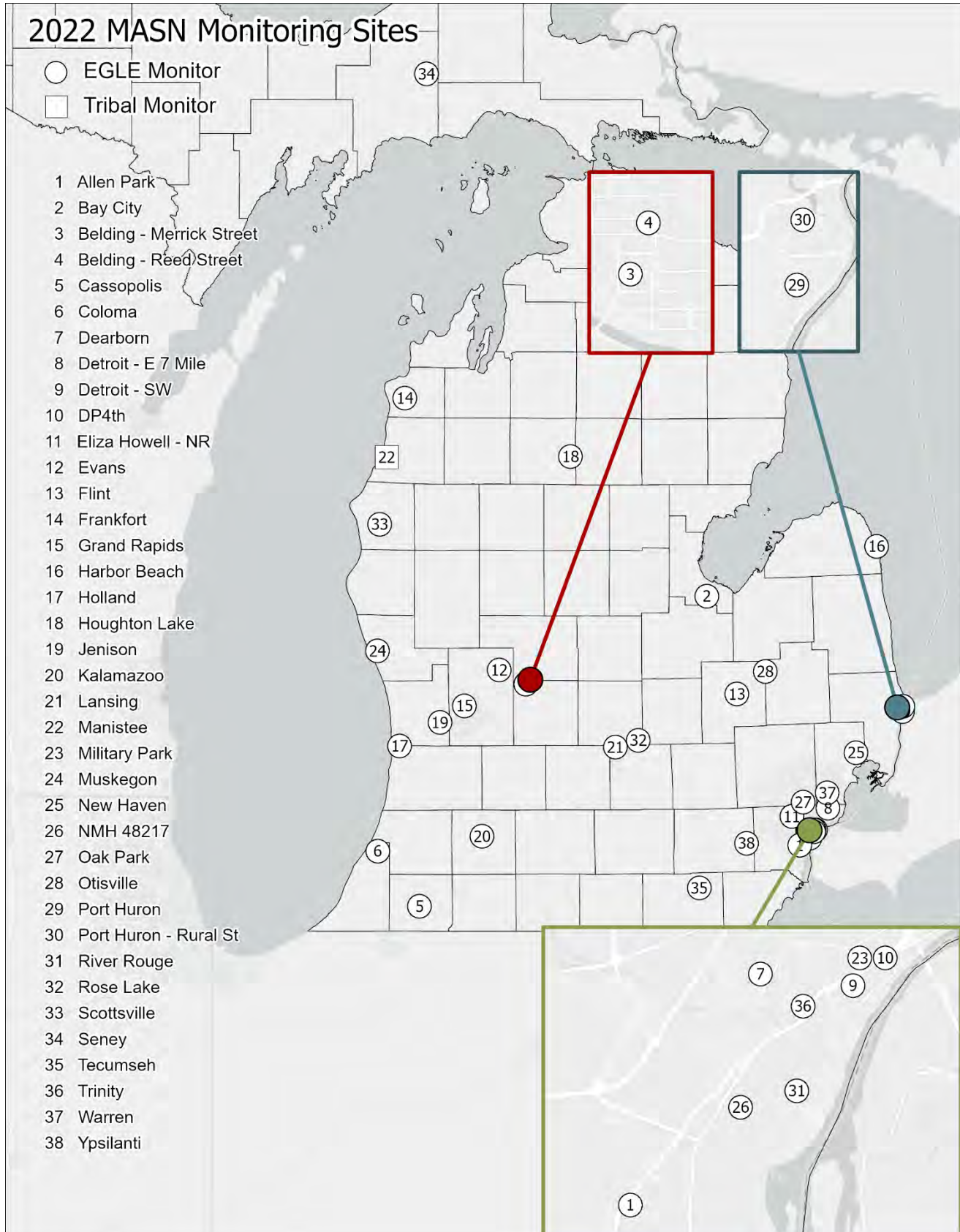


Table 3.2a: Types of Monitoring Conducted in 2022 and MASN Locations in Detroit Ann Arbor Area

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	PAHs	Carbonyls	Trace Metals (As, Cd, Mn, Ni, Pb)	Wind Speed & Direction, Temp.	Relative Humidity	Solar Radiation	Barometric Pressure
260910007	Tecumseh				√			√F							√			√
260990009	New Haven				√			√F					√		√	√	√	
260991003	Warren				√													
261250001	Oak Park				√		√								√			
261470005	Port Huron				√			√F		√					√			
261470031	Port Huron-Rural St.													√				
261610008	Ypsilanti				√		√	√F							√			√
261630001	Allen Park	√*		√	√	√^	√	√F	√+A	√*					√	√		√
261630005	River Rouge												√	√	√			
261630015	Detroit-SW ⁵		√			√	√	√F	√+A	√	√		√	√	√	√		√
261630019	Detroit-E 7 Mile		√	√	√		√				√		√		√	√		√
261630033	Dearborn					√^	√	√T	√+A		√	√	√	√#	√	√		√
261630093	Eliza Howell-NR	√	√					√F							√			
261630097	New Mount Hermon (NMH) 48217							√F		√				√				
261630098	Detroit Police 4 th 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} monitorT = TEOM (non-FEM) continuous PM_{2.5} monitor

* = Trace monitor

^ = Continuous PM₁₀ monitor

A = Aethalometer monitor

⁵ Detroit-SW is renamed from Detroit-W. Fort St., Southwestern High School (SWHS), N. Delray to reflect the site more accurately and maintain some continuity from its previous names.

Table 3.2b: Types of Monitoring Conducted in 2022 and MASN Locations in Other MI 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				√	√^		√F						√			
Grand Rapids	260810020	Grand Rapids	√*	√	√	√	√^	√	√F	√	√*	√	√		√			√
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

* = Trace monitor

^ = Continuous PM₁₀ monitor

Table 3.2c: Types of Monitoring Conducted in 2022 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
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				√			√F						√			
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} monitor⁶ Also called Benzonia.

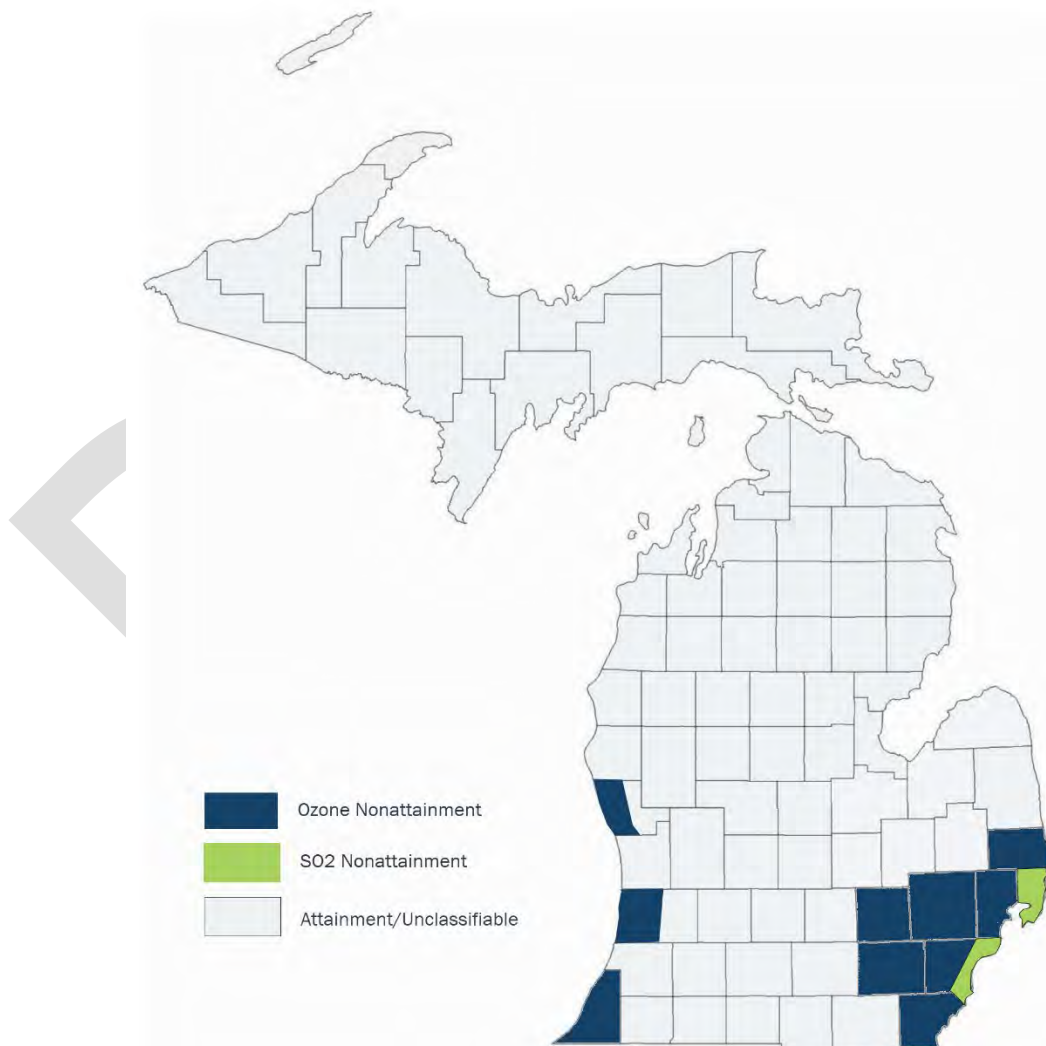
Current Attainment Status

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
- NO₂
- 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 SO₂ and O₃ (see Figure 1.3). The SO₂ nonattainment level 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 O₃ was effective on August 3, 2019.

Figure 1.3: 2022 Attainment Status for the National Ambient Air Quality Standards

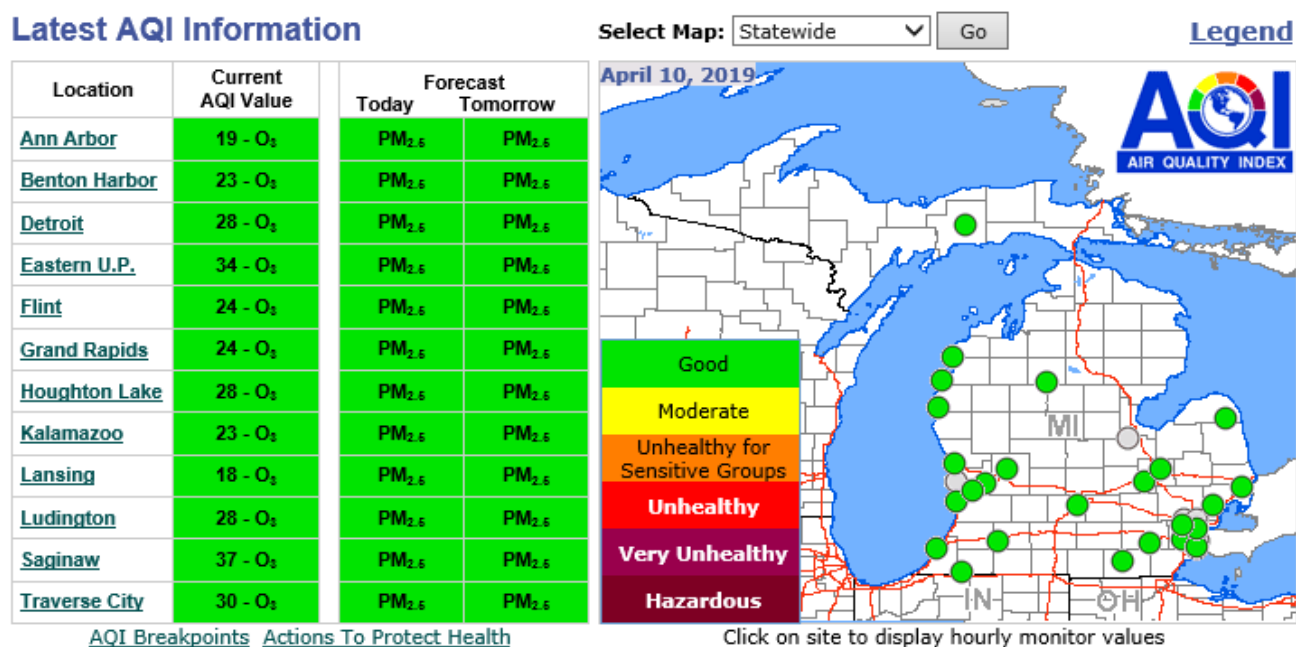


Mlair – Air Quality Information in Real-Time

Mlair is the internet tool that provides real-time air quality information via EGLE's web page. The degmair.org hotlink opens to the current Air Quality Index (AQI) map and displays air quality forecasts for "today" and "tomorrow." **Mlair** also hosts EnviroFlash, the automated air quality notification system.

Air Quality Index

The AQI is a 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 1.4**) and the Grand Rapids-Wyoming area (**Figure 1.5**), 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 there were two days in the Unhealthy Group due to PM_{2.5} and SO₂, 22 days were in the Unhealthy for Sensitive Groups (USG); six days were due to ozone, 12 days were due to PM_{2.5}, and four days were due to SO₂. In the Detroit area, PM_{2.5} leads the AQI with 259 days, meaning that pollutant has the highest AQI value of all the pollutants measured per day.

In the Grand Rapids area, two days were in the Unhealthy and two in the USG groups; all due to ozone. In the Grand Rapids area, ozone and PM_{2.5} were nearly equal with 177 PM_{2.5} AQI days and 182 ozone AQI days, meaning those pollutants have the highest AQI value of all the pollutants measured per day.

Figure 1.4: 2022 AQI Days per Pollutant for Detroit-Warren-Dearborn MSA, numbers next to categories are for the Overall AQI Value (1st bar on graph)

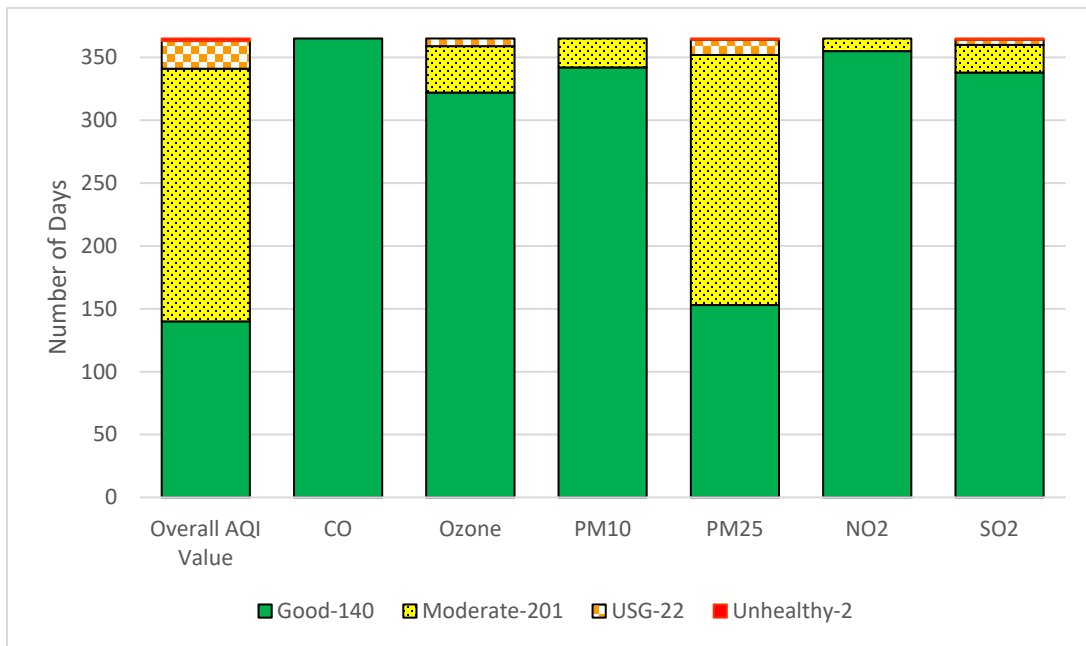
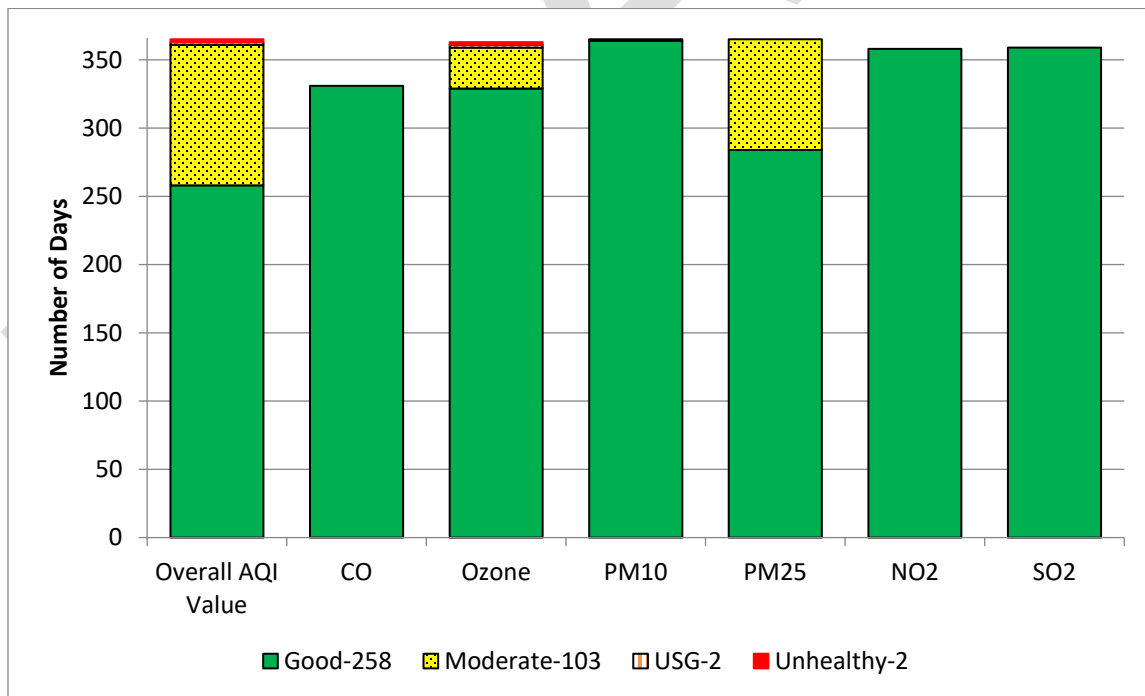


Figure 1.5: 2022 AQI Days per Pollutant for Grand Rapids-Wyoming MSA, numbers next to categories are for the Overall AQI Value (1st bar on graph)



Mlair includes an “[Air Quality Index Fact Sheet](#),” which contains activity recommendations based on the AQI levels (also **Table 1.3**).

Table 3.3: AQI Colors and Health Statements

AQI Color, Category and Value	<u>Particulate Matter</u> ($\mu\text{g}/\text{m}^3$) 24-hour	<u>Ozone</u> (ppm) 8-hour / 1-hour	<u>Carbon Monoxide</u> (ppm) 8-hour	<u>Sulfur Dioxide</u> (ppm) 24-hour	<u>Nitrogen Dioxide</u> (ppm) 1-hour
GREEN: Good 1- 50	None	None	None	None	None
YELLOW: Moderate 51- 100	Unusually sensitive people should consider shorter & less intense outdoor activities.	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	Sensitive groups such as people with heart or lung disease, children, teens, & older adults, minority population & outdoor workers should do shorter & less intense outdoor activities.	Sensitive groups such as people with lung disease (e.g., asthma), children, teens, & older adults, and people who are active outdoors should reduce prolonged or heavy exertion.	Sensitive groups such as people with heart disease (e.g., angina), should reduce heavy exertion & avoid sources of CO, such as heavy traffic.	People with asthma should consider reducing outdoor exertion.	Sensitive groups such as people with asthma, children, & older adults should limit prolonged outdoor exertion especially near busy roads.
RED: Unhealthy 151- 200	Sensitive groups should avoid long or intense outdoor activities. Everyone should reduce long or intense activities.	Sensitive groups should not do prolonged or heavy exertion. Everyone should reduce prolonged or heavy exertion.	Sensitive groups should reduce moderate exertion & avoid sources of CO, such as heavy traffic.	Children, people with asthma or lung disease should reduce outdoor exertion.	Sensitive groups should avoid prolonged exertion near roads. Everyone should limit prolonged exertion near roads.
PURPLE: Very Unhealthy 201- 300	Sensitive groups should avoid all physical activity outdoors. Everyone else should avoid long or intense activities.	Sensitive groups should avoid all physical activity outdoors. Everyone else should avoid long or intense outdoor exertion.	People with heart disease, such as angina, should avoid exertion & sources of CO, such as heavy traffic.	Children, people with asthma or lung disease should avoid outdoor exertion. Everyone should reduce outdoor exertion.	Sensitive groups should avoid all outdoor exertion. Everyone should avoid prolonged exertion especially near busy roads.
MAROON: Hazardous 301- 500	Sensitive groups should remain indoors & keep activity levels low. Everyone should avoid all physical activity outdoors.	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, people with asthma or lung disease should remain indoors. Everyone should avoid outdoor exertion.	Sensitive groups should remain indoors. Everyone should avoid all 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 Mlair.

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 O₃ or PM_{2.5} concentrations.

Table 1.4 shows that there were some *Action!* Days declared during the summer of 2022.

Table 1.4: *Action!* Days Declared During Summer 2022

Location	Year	Number	Dates
Ann Arbor	2022	5	6/15, 6/25, 7/11, 7/18, 7/19
Benton Harbor	2022	6	6/15, 6/20, 6/21, 6/30, 7/11, 7/19
Detroit	2022	5	6/15, 6/25, 7/11, 7/18, 7/19
Grand Rapids	2022	6	6/15, 6/20, 6/21, 6/30, 7/11, 7/19
Ludington	2022	4	6/15, 6/20, 6/21, 7/19

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 particulate 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, go to deqmi-air.org. 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 Mlair 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 the 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.

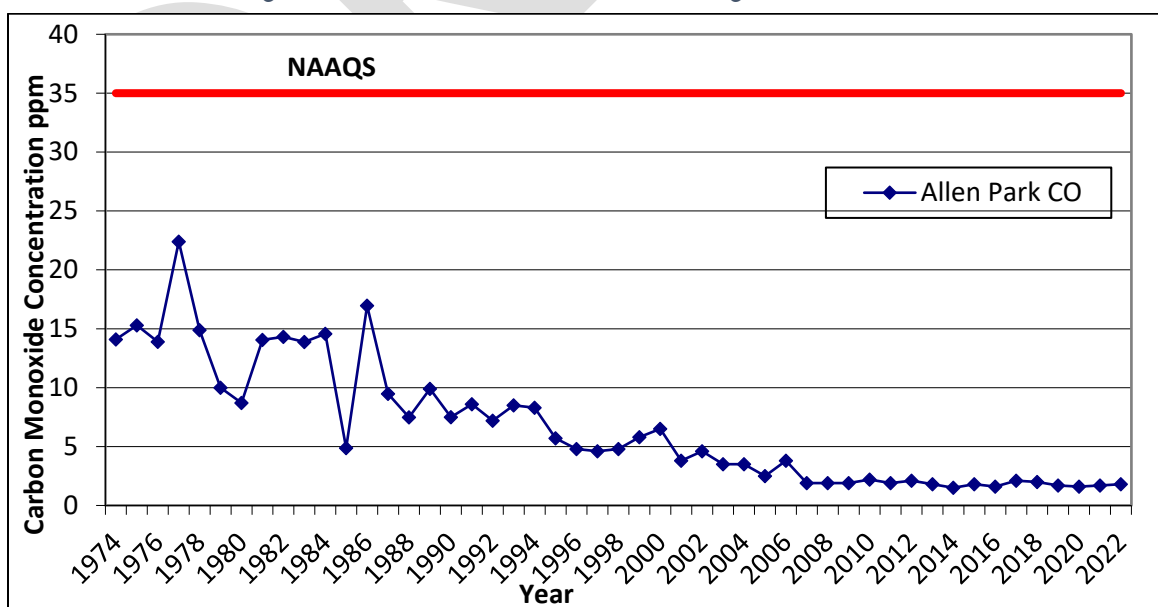
Sources: CO is given off whenever fuel or other carbon-based materials are burned. Outdoor exposure sources include automobile exhaust, industrial processes (metal processing and chemical production), and non-vehicle fuel combustion. Natural sources include volcanoes, forest fires, and photochemical 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 O₃, 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 nearly 50 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)

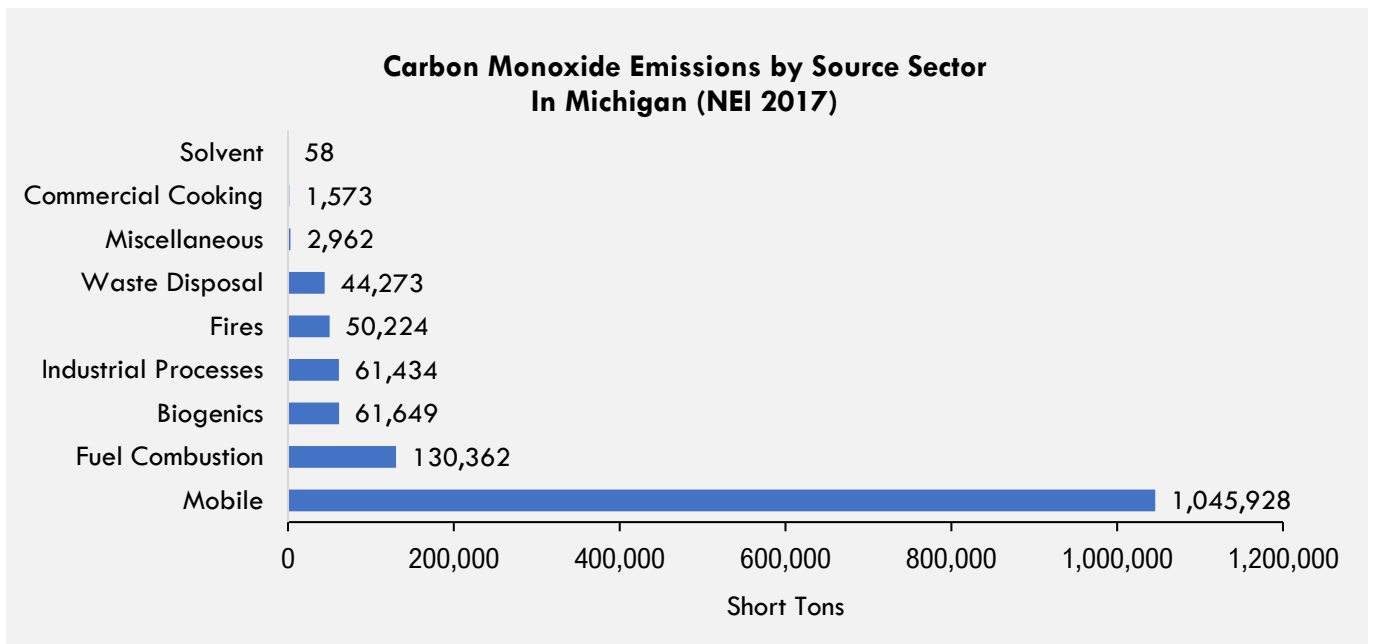


Figure 2.3: CO Emissions in 2017 (NEI)

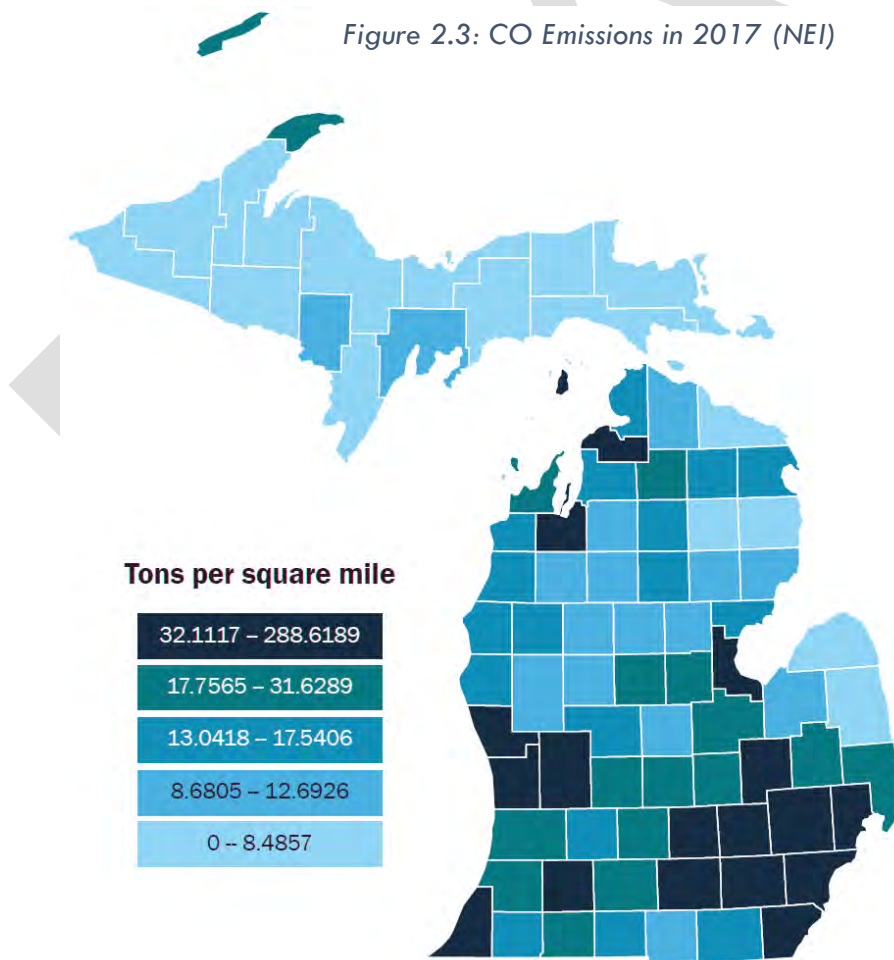


Figure 2.4 shows the location of each CO monitor that operated in 2022.

- 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 2022

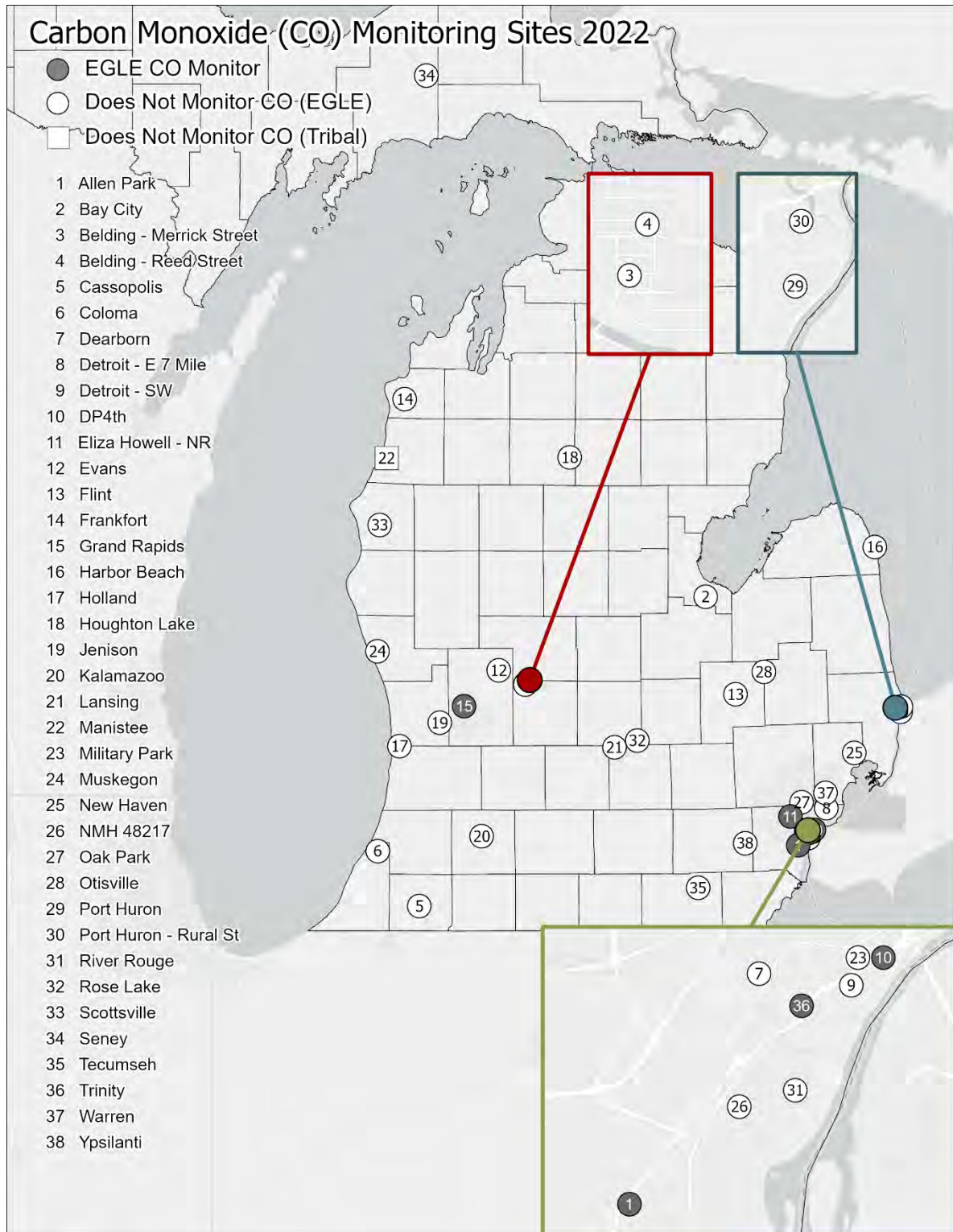


Figure 2.5 shows the second highest 1-hour CO concentrations for Michigan from 2017-2022, which demonstrates there have not been any exceedances of the 1-hour CO NAAQS.

Figure 2.5: CO Levels in Michigan from 2017-2022 (2nd Highest 1-hour Maximum Values)

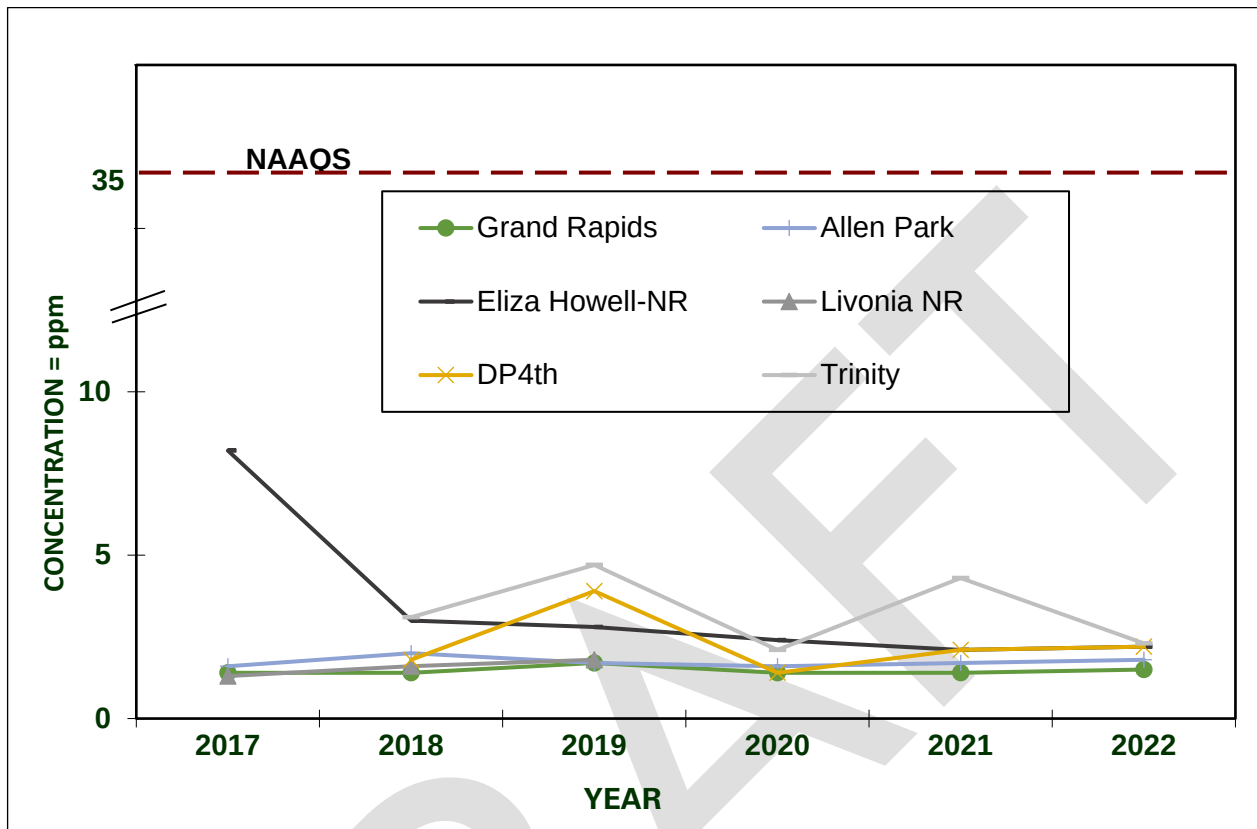
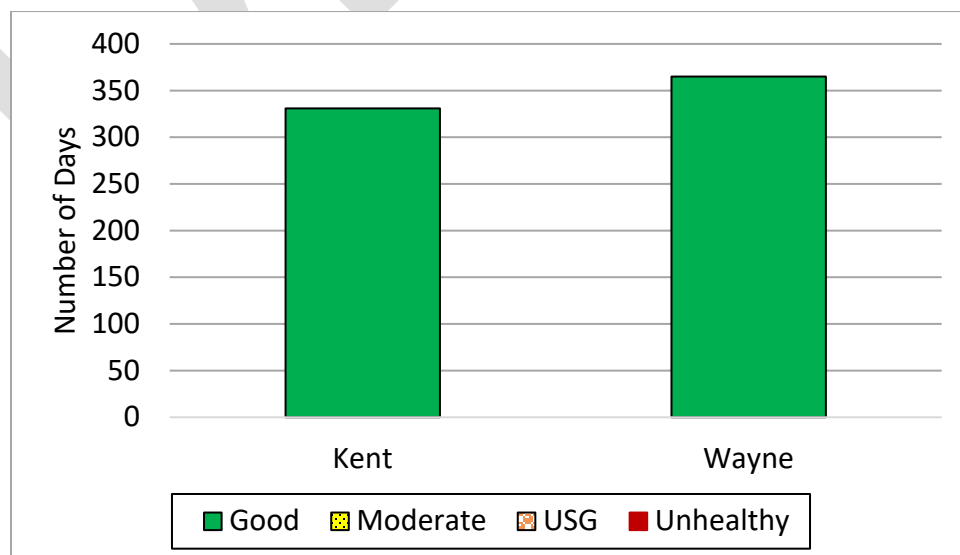


Figure 2.6 shows the AQI values per day in counties where CO is monitored. All days were in the good AQI range.

Figure 2.6: 2022 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 $1.5 \mu\text{g}/\text{m}^3$ to a 3-month rolling average of $0.15 \mu\text{g}/\text{m}^3$. Its sources and effects are presented below.

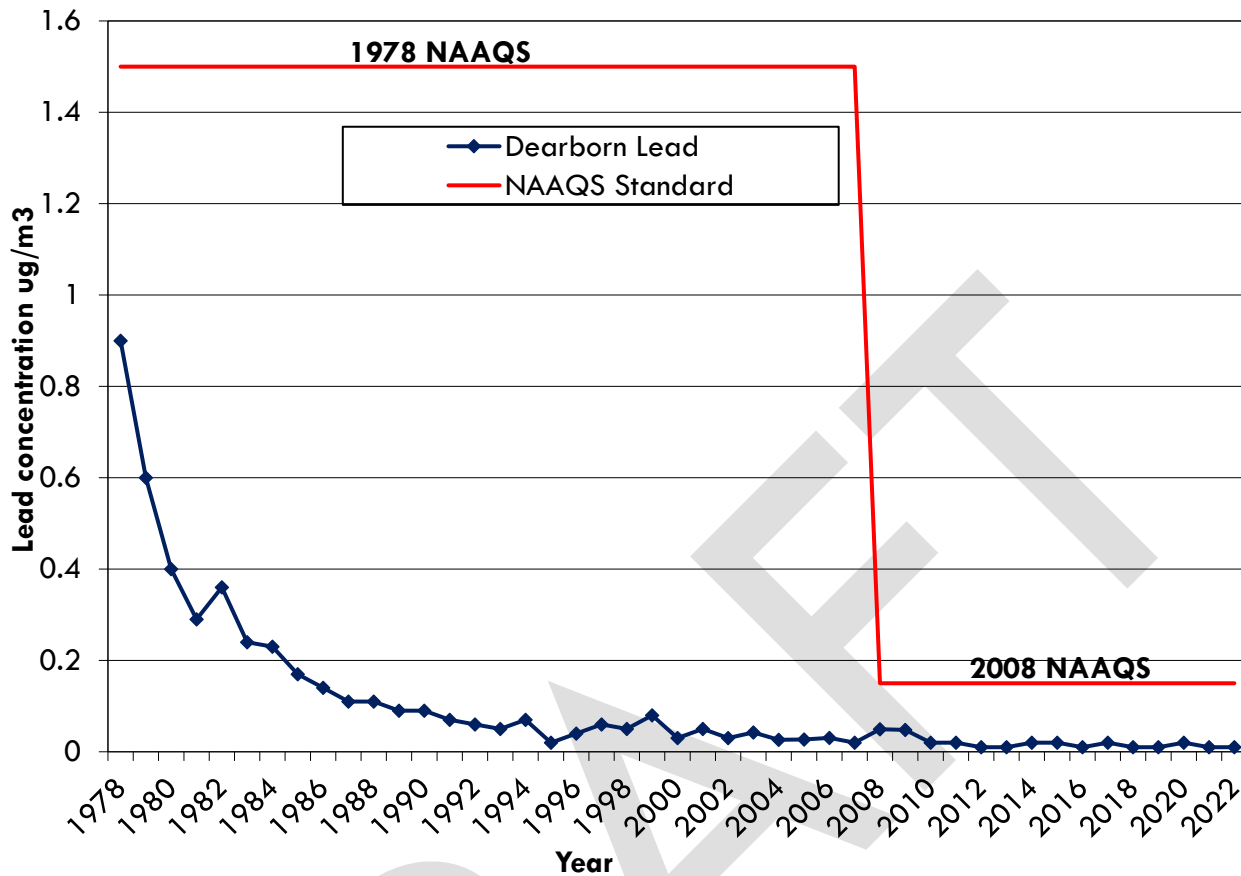
Sources: With the phase-out of leaded gas in the 1970s, the major sources of Pb emissions have been due to ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other industrial sources include Pb acid battery manufacturers, waste incinerators, and utilities. The highest 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 over 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

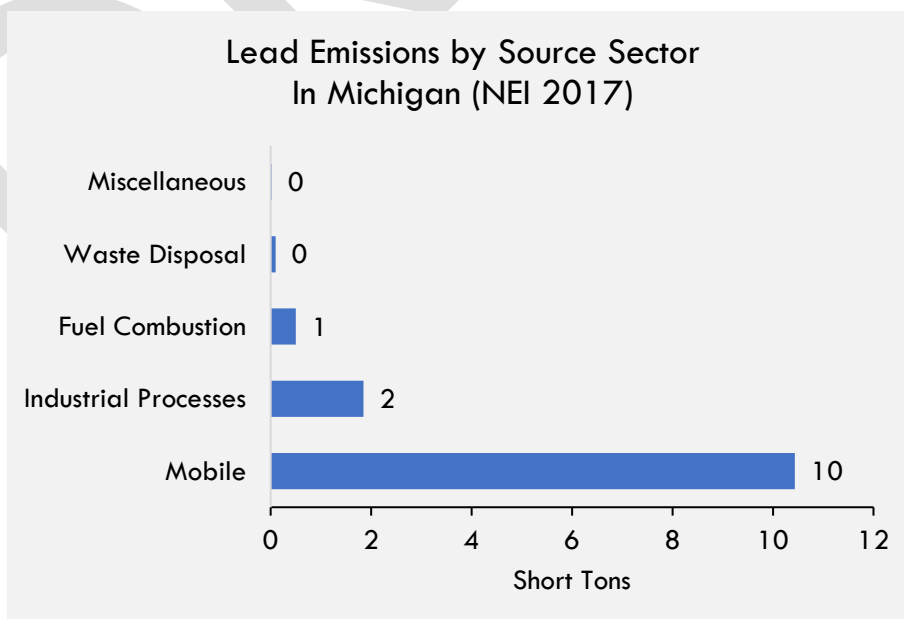


Figure 3.3: Pb Emissions in 2017 (NEI)

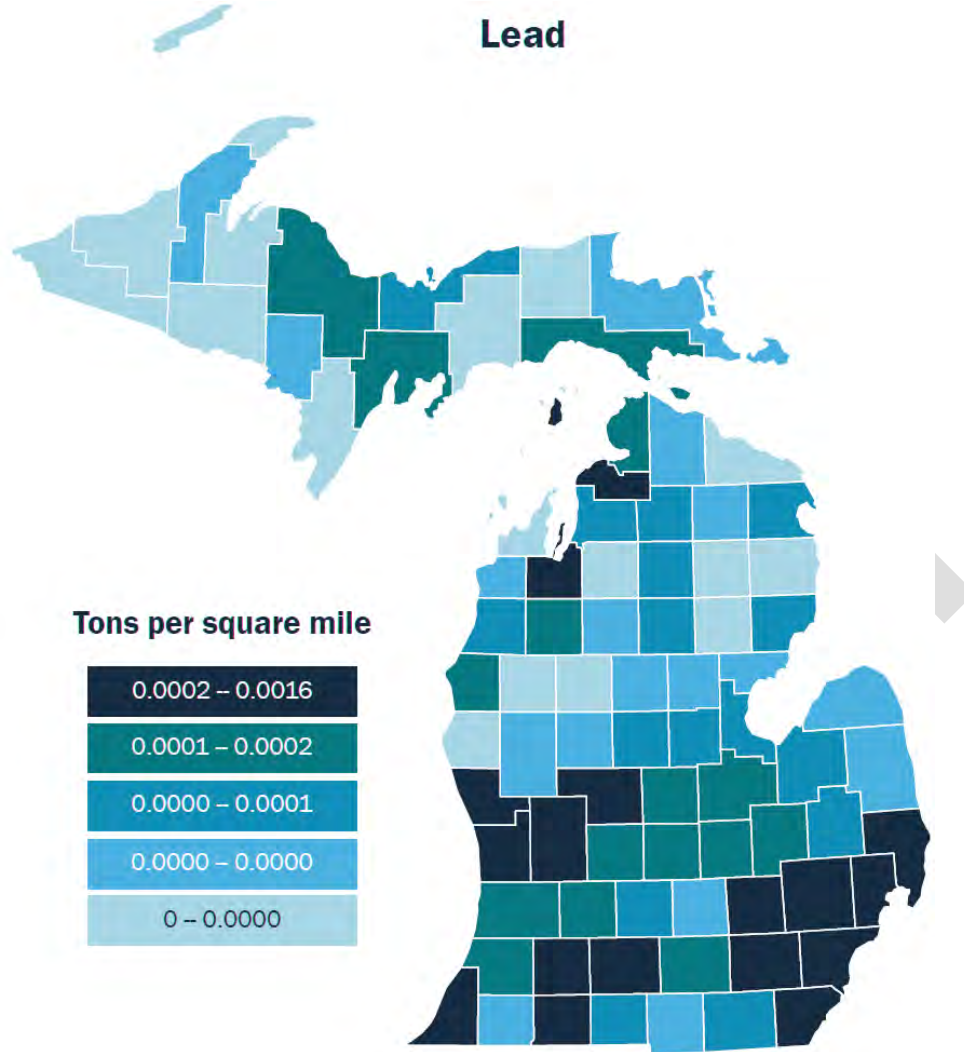


Figure 3.4 shows the location of the Pb monitors in the MASN in 2022. When the Pb NAAQS was lowered in 2008, the monitoring network was modified to consist of source-oriented monitors and population-oriented monitors. As part of the 2008 Pb NAAQS, EGLE must monitor near stationary sources emitting more than ½ ton of Pb per year.

- Source-oriented sites: Port Huron-Rural St. and Belding-Merrick St.
- 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.
- Network consistency: River Rouge, 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. Detroit-W. Jefferson was shut down in March 2022 due to loss of site access.
- Secondary monitor: Port Huron-Rural St. to comply with the USEPA's collocation regulations.
- GHIB project: DP4th, Trinity, and Military Park.

Figure 3.4: Lead (Pb) Monitors in 2022

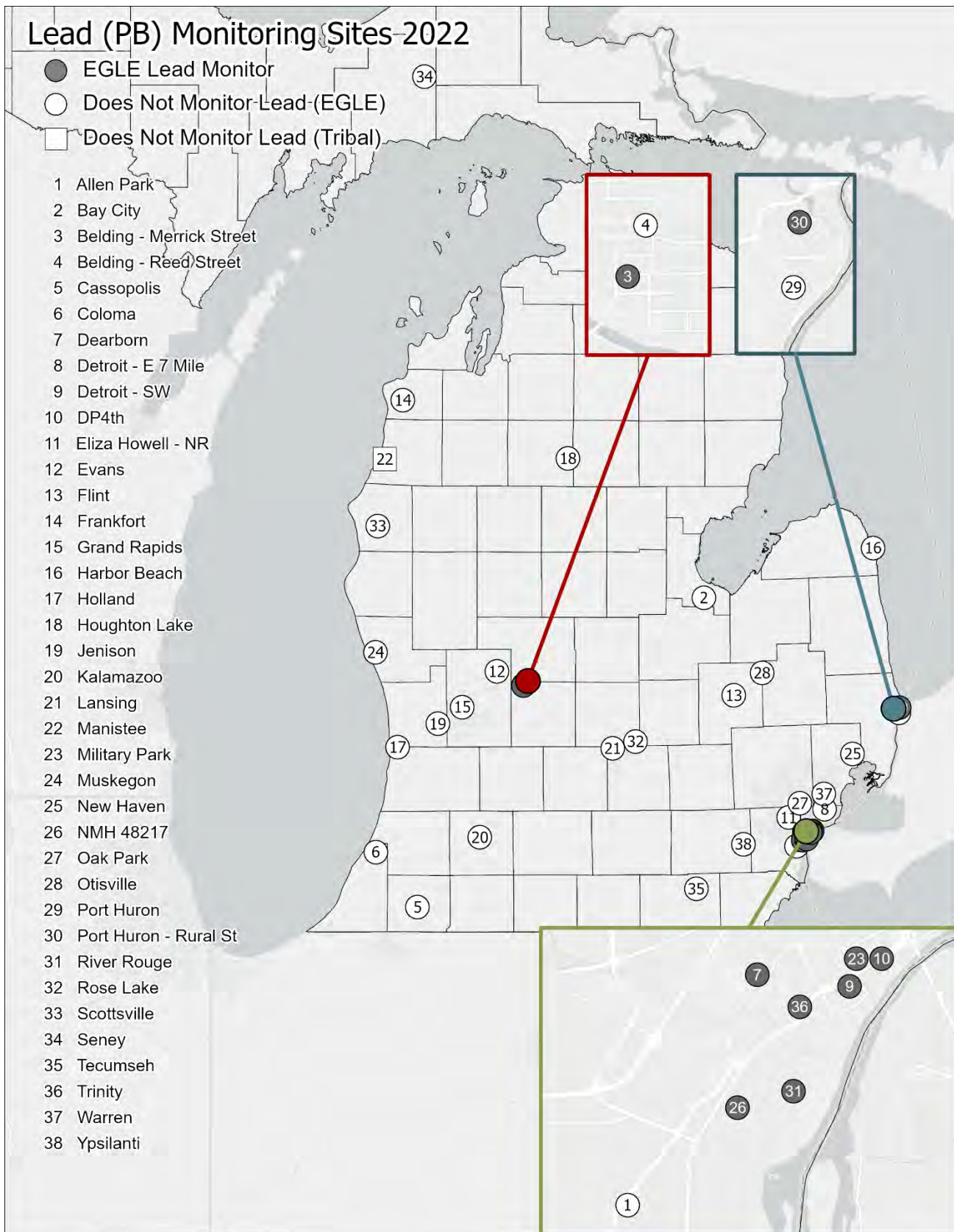
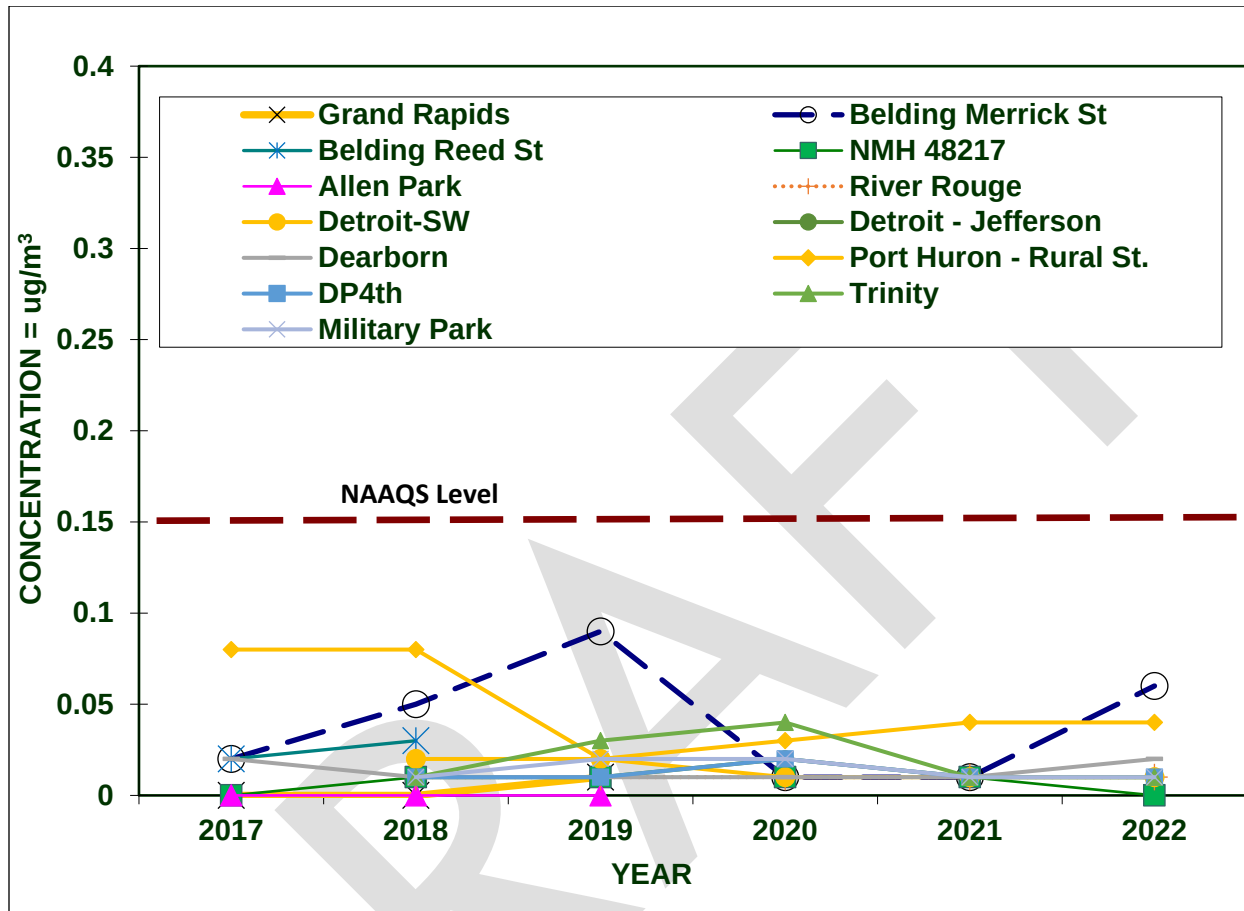


Figure 3.5 shows the maximum 3-month rolling average values for Pb from 2017 to 2022. All Pb monitor sites in Michigan are well below the standard.

Figure 3.5: Lead Levels in Michigan from 2017-2022 (Maximum 3-Month Average Values)



CHAPTER 4: NITROGEN DIOXIDE (NO₂)

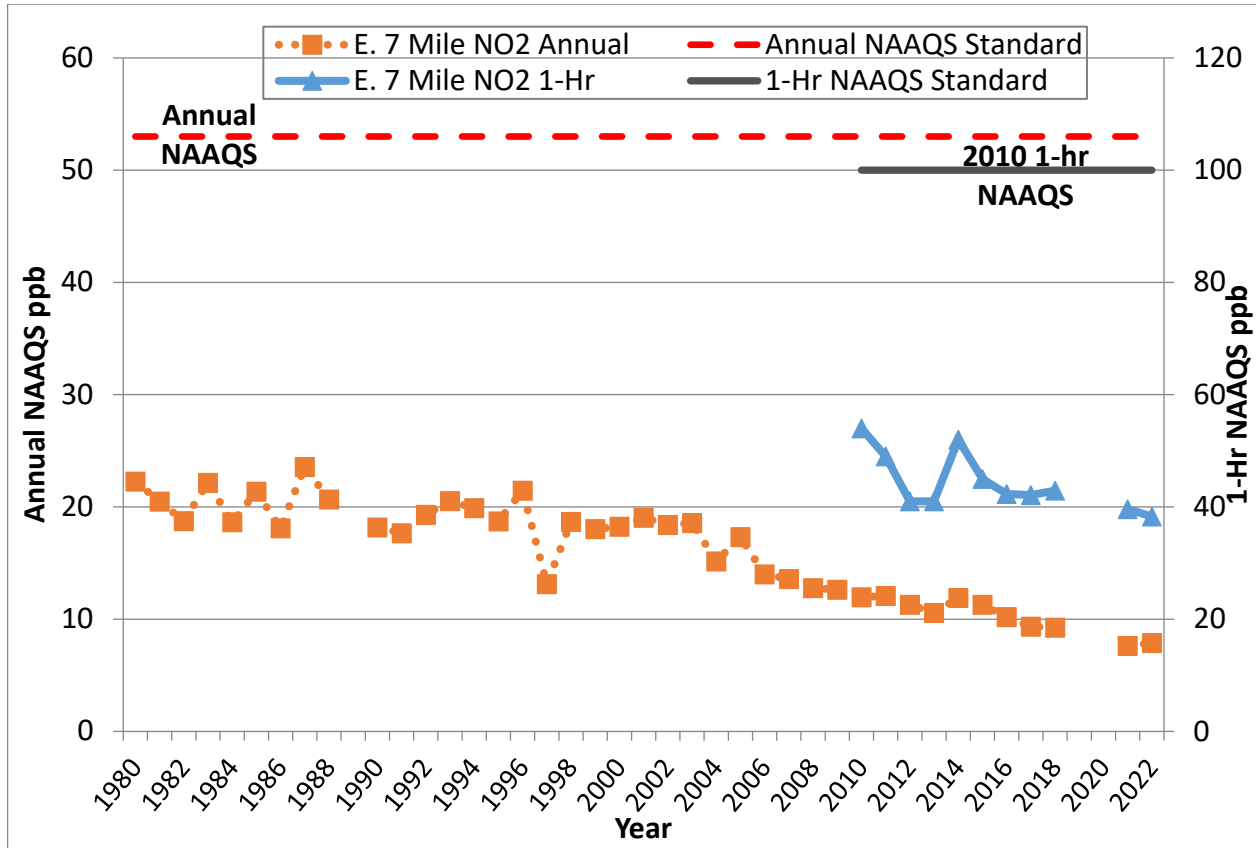
Nitrogen dioxide is a reddish-brown, highly reactive gas formed through oxidation of nitric oxide (NO). Upon dilution, it becomes yellow or invisible. High concentrations produce a pungent odor and lower levels have an odor like bleach. NO_x is the term used to describe the sum of NO, NO₂, and other nitrogen oxides. NO_x can lead to the formation of O₃ and NO₂, 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 NO₂ was an annual mean of 0.053 ppm. In January 2010, the USEPA added a 1-hour NO₂ standard of 100 ppb, taking the form of the 98th percentile averaged over three years. The sources and effects of NO₂ 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 in the 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. 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 NO₂ in indoor settings.

Effects: Exposure to NO₂ occurs through the respiratory system, irritating the lungs. Short-term NO₂ 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 NO₂ 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 NO₂. Nitrate particles and NO₂ 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 NO₂ than the general population. Short-term NO₂ exposure can increase respiratory illnesses in children.

Historical trends: Southeast Michigan has been monitoring for NO₂ for 50 years. **Figure 4.1** shows the trend for NO₂ 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 NO₂, 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 NO₂ at Detroit-E 7 Mile

Note: Detroit-E 7 Mile measured NO_y 2019-2020 until NO₂ monitor was installed with the PAMS network.

Figures 4.2 and 4.3 show NO₂ emission sources and NO₂ emissions by county (courtesy of the USEPA's State and County Summaries).

Figure 4.2: Nitrogen Oxide Emissions by Source Sector

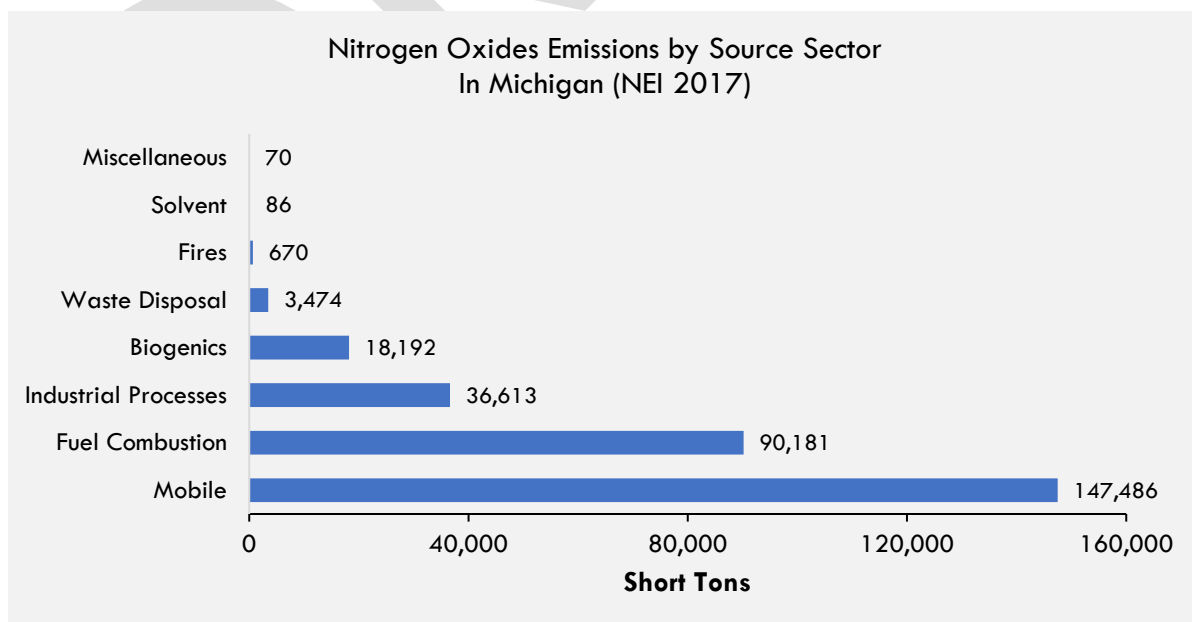


Figure 4.3: Nitrogen Oxide Emissions in 2017 (NEI)

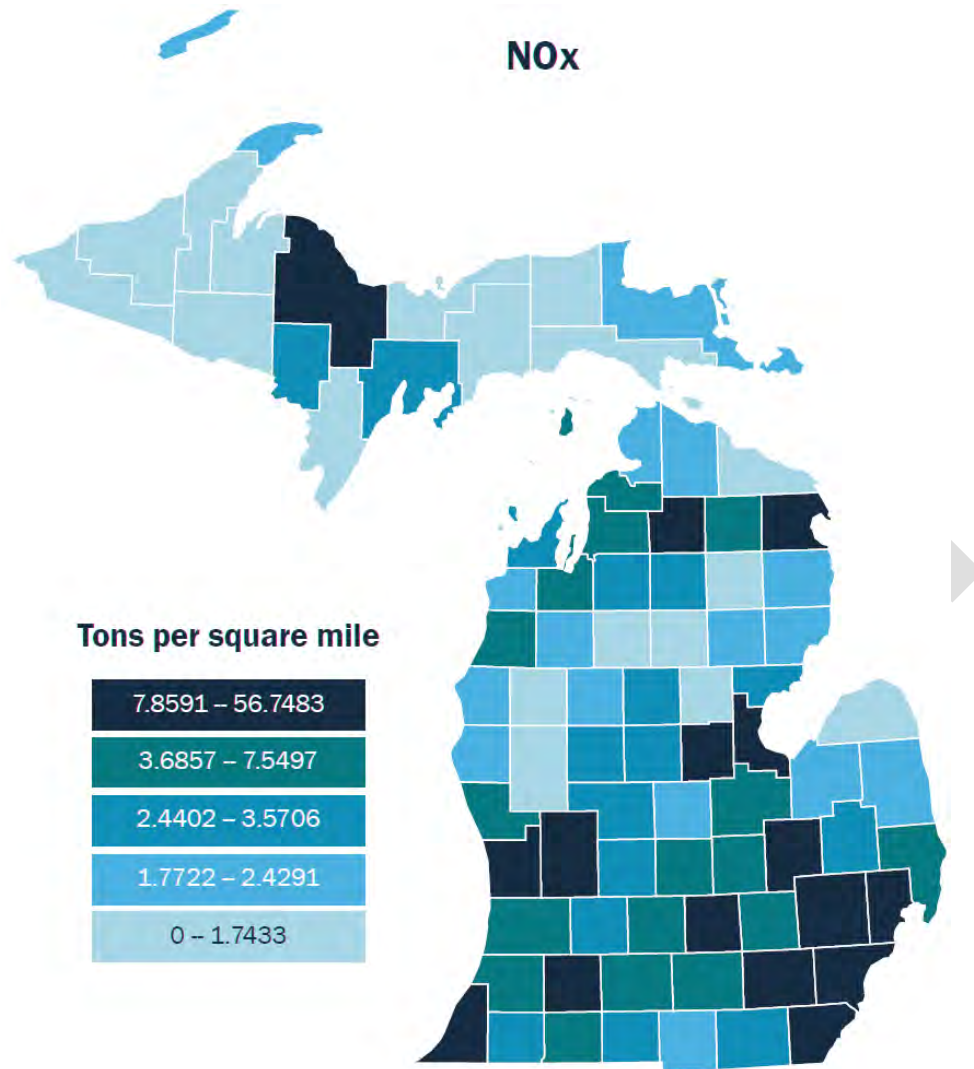
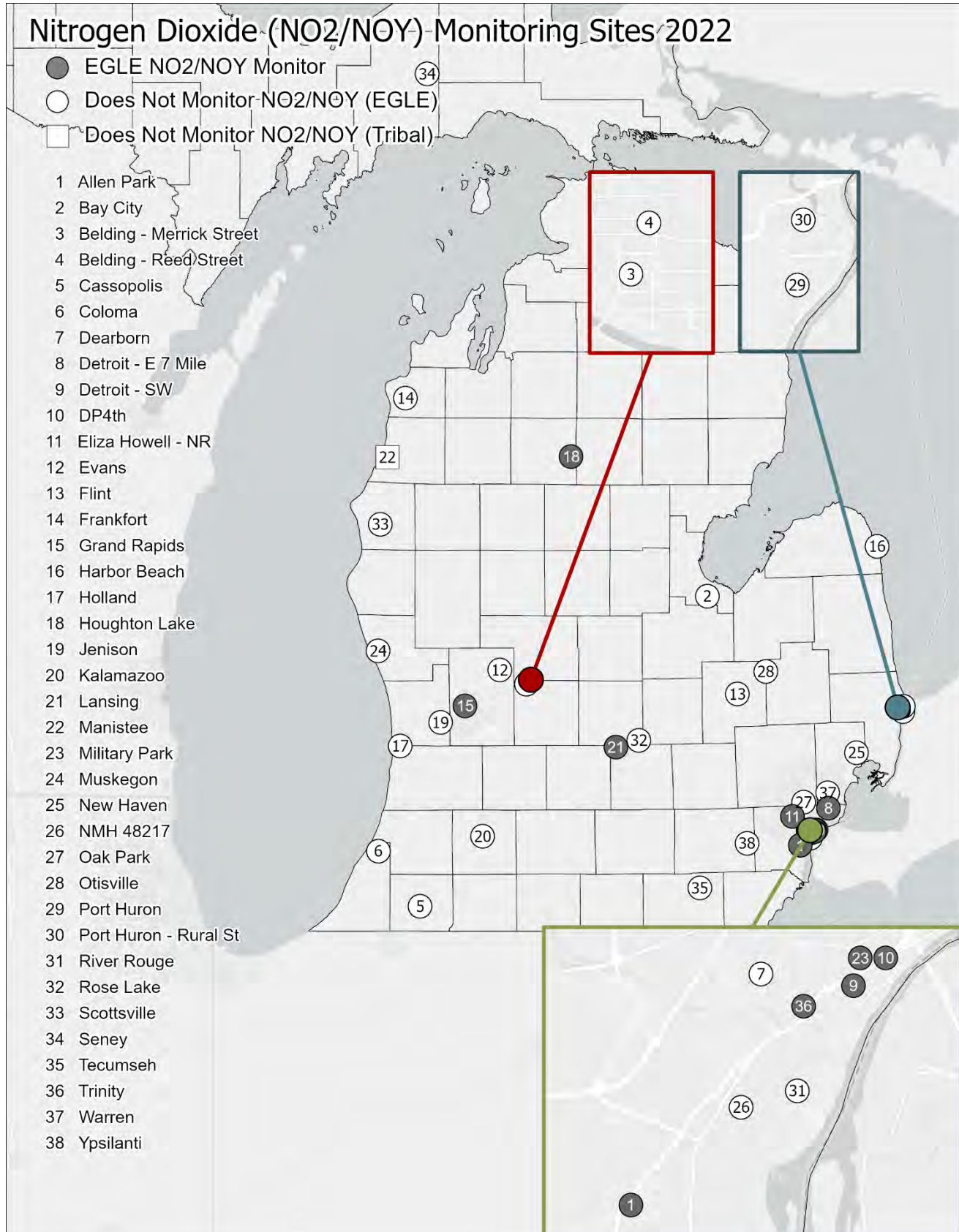


Figure 4.4 shows the location of all NO₂ monitors that operated in 2022.

- Downwind urban scale sites: Detroit-E 7 Mile in Detroit and Grand Rapids for the Grand Rapids area. The NO₂ monitor at Jenison was shut down when NO₂ was added for the PAMS network at Grand Rapids.
- 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 because EGLE lost site access. A suitable replacement is under construction.
- 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 NO_x monitor at Detroit-E 7 Mile was switched to an NO_y for PAMS. Direct NO₂ was added at Detroit-E 7 Mile for the PAMS network.
- Background monitors for modeling: Lansing and Houghton Lake.
- GHIB project: Detroit-SW, DP4th, Trinity, and Military Park.

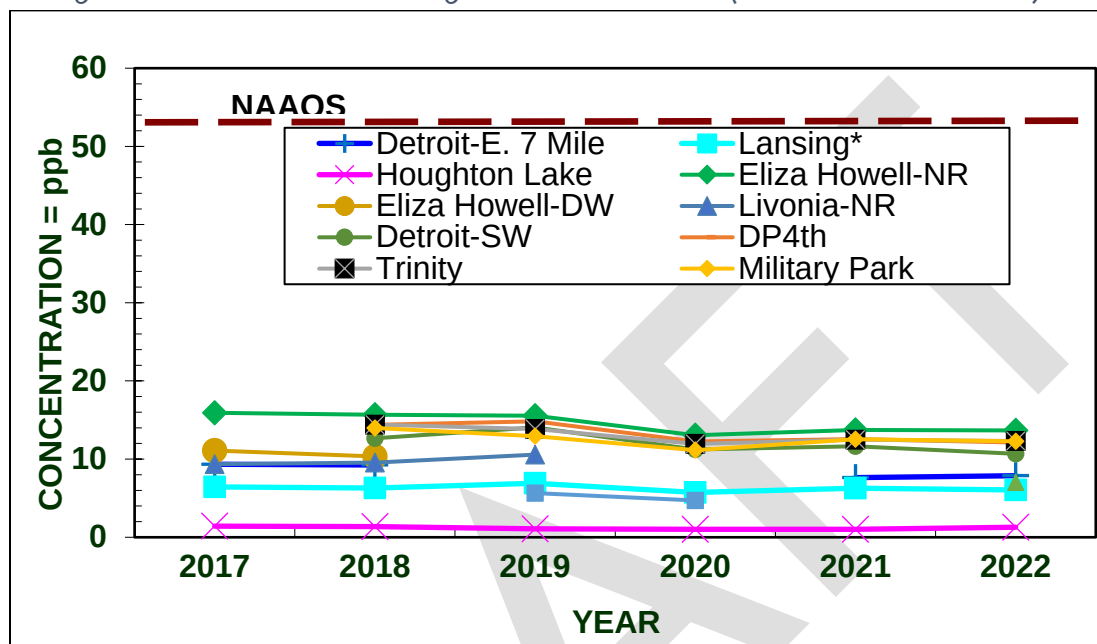
Figure 4.4: NO₂/NO_y Monitors in 2022



Michigan's ambient NO₂ levels have always been well below the NAAQS. Since March 3, 1978, all areas in Michigan have been in attainment for the annual NO₂ NAAQS. As shown in **Figure 4.5**, all monitoring sites have had an annual NO₂ concentration at less than half of the 0.053 ppm NAAQS.

Even though there are no nonattainment areas for NO₂ in Michigan and monitoring for attainment purposes is not required, monitors continue to operate to support photochemical model validation work.

Figure 4.5: NO₂ Levels in Michigan from 2017-2022 (Annual Arithmetic Mean)**

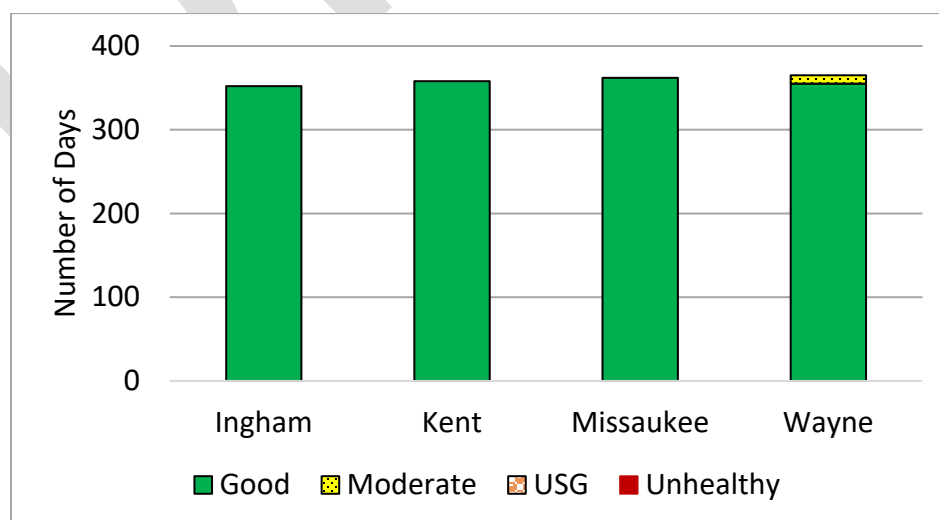


* Indicated site was moved in 2018 and concentrations were averaged together for both locations.

** Since Allen Park is monitoring NO_y, that site is not included in graph.

Figure 4.6 shows the AQI values per day in counties where NO₂ is monitored. All days were in the good AQI range, except for 10 days in Wayne County that were in the moderate AQI range.

Figure 4.6: 2022 AQI Days for NO₂ in Michigan Counties



CHAPTER 5: SULFUR DIOXIDE (SO₂)

Sulfur dioxide is a gas formed by the burning of sulfur-containing material. Odorless at typical ambient concentrations, SO₂ 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 SO₂, 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 SO₂ 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.

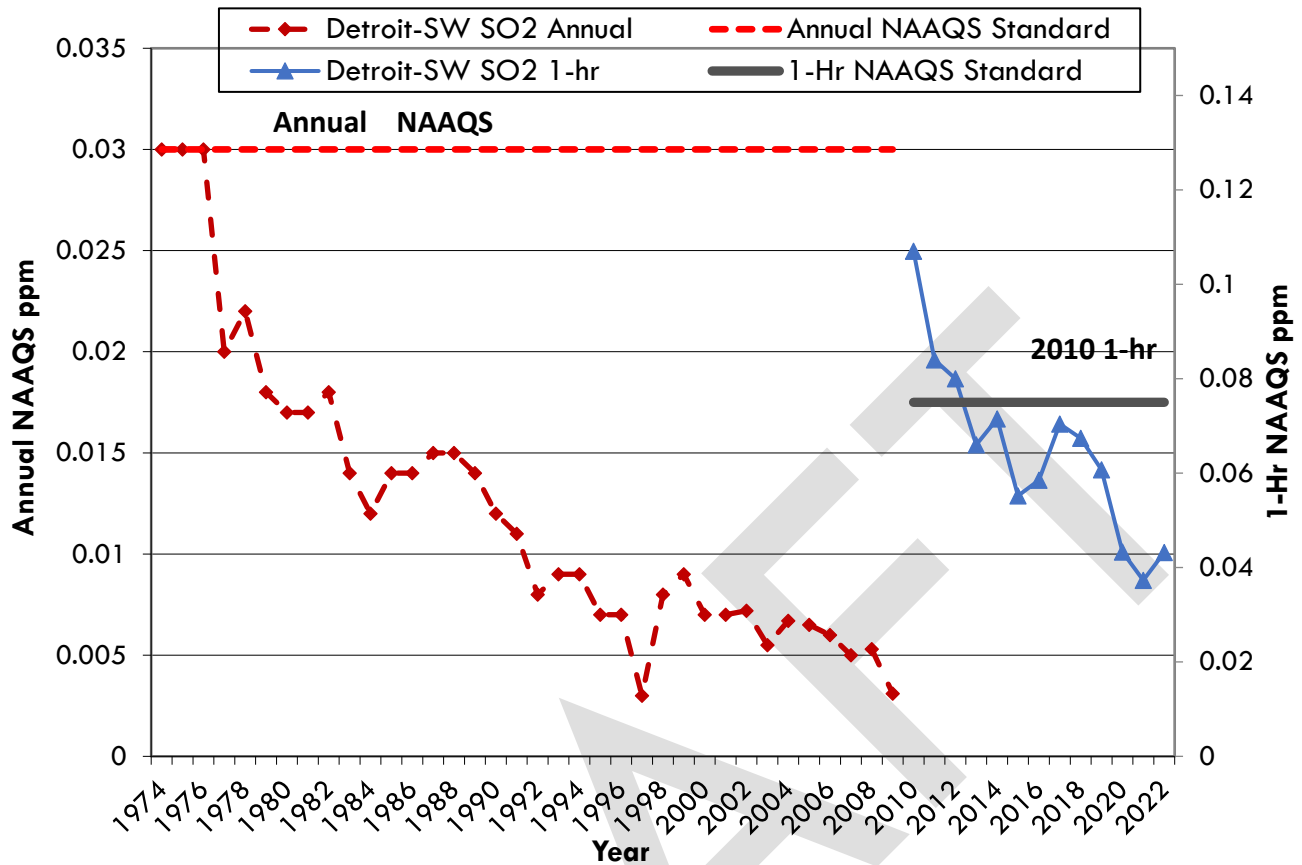
Sources: Coal-burning power plants are the largest source of SO₂ emissions. Other sources include industrial processes such as extracting metal from ore, and non-road transportation sources; and natural sources such as volcanoes. SO₂ and particulate matter are often emitted together.

Effects: Exposure to elevated levels can aggravate symptoms in asthmatics and cause respiratory problems in healthy groups. SO₂ and NO_x 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 SO₂ 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, SO₂ may also cause symptoms in people who do not have asthma.

Historical trends: Southeast Michigan has been monitoring for SO₂ for over 45 years. **Figure 5.1** shows the SO₂ trend for the old annual standard and the new 1-hour standard for Detroit-SW. Michigan had been in attainment for SO₂ since 1982 with levels consistently well below the annual SO₂ 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 SO₂ standard, SO₂ 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 SO₂ Averages at Detroit-SW



Figures 5.2 and 5.3 show SO₂ emission sources and SO₂ emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 5.2: SO₂ Emissions by Source Sector

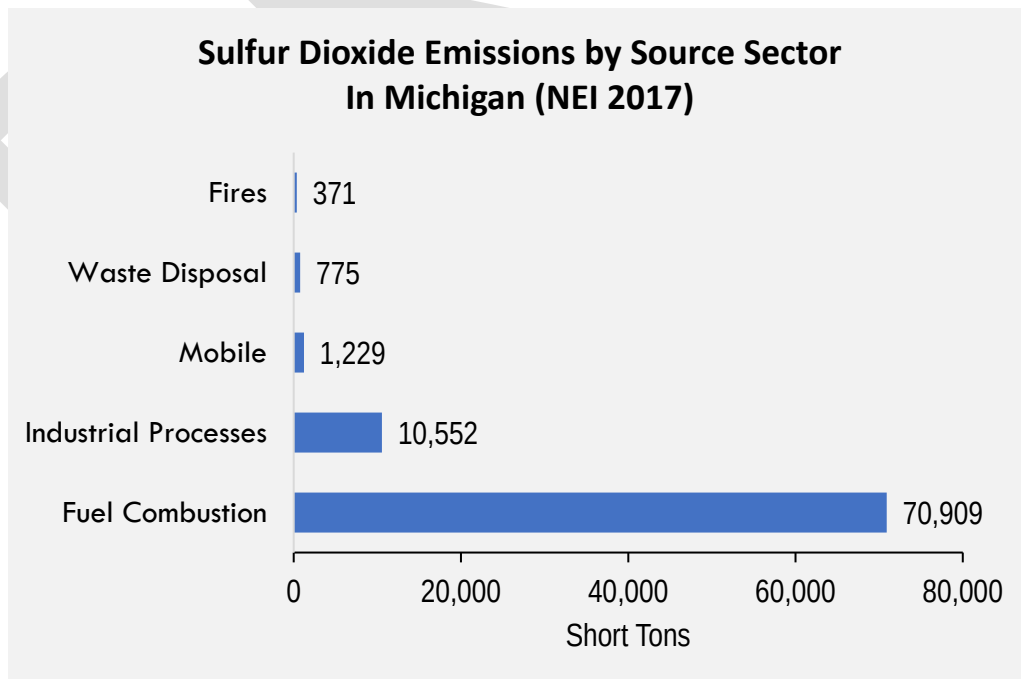


Figure 5.3: SO₂ Emissions in 2017 (NEI)

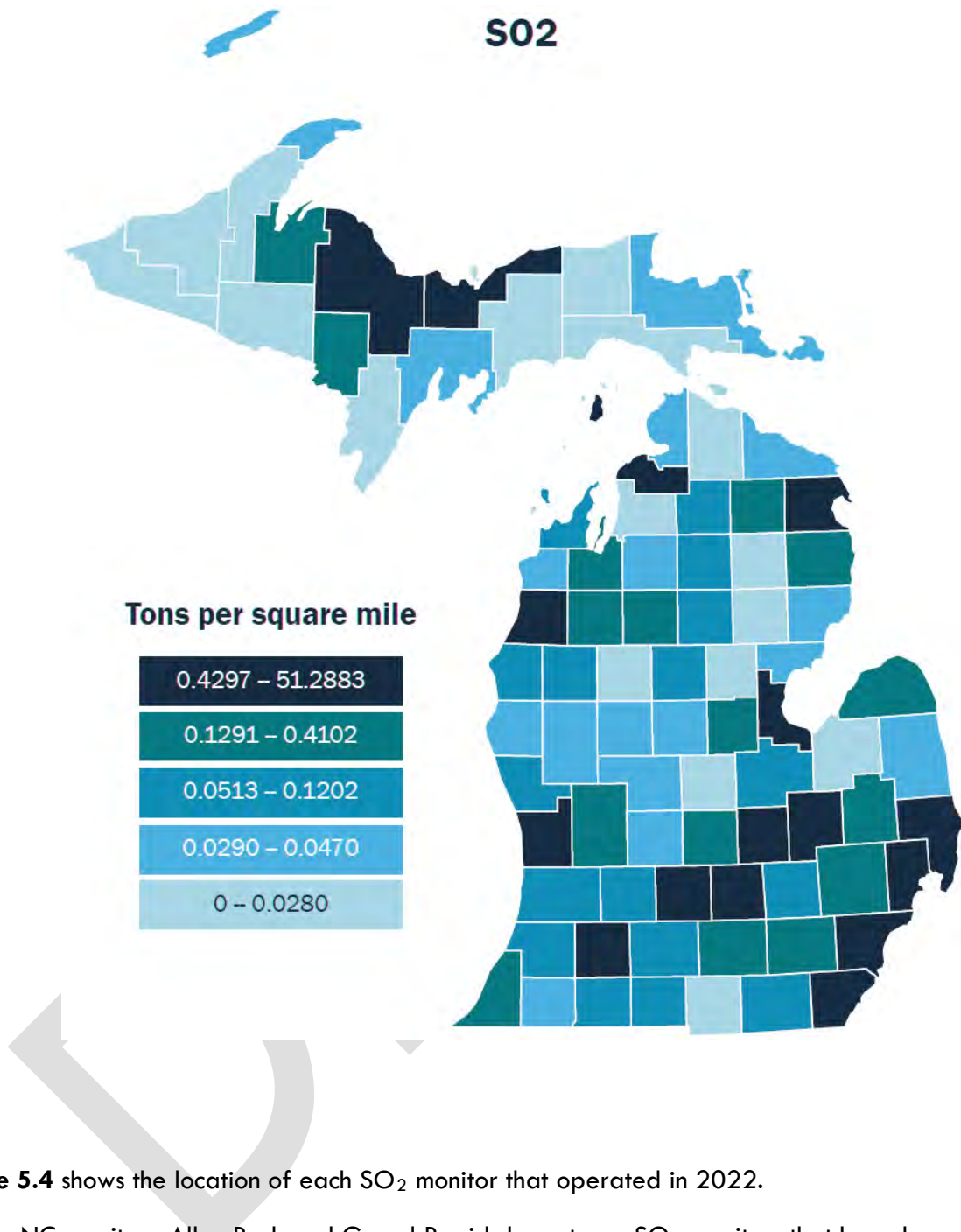


Figure 5.4 shows the location of each SO₂ monitor that operated in 2022.

- NCore sites: Allen Park and Grand Rapids have trace SO₂ monitors that have lower detection limits than traditional SO₂ monitors.
- Source-oriented sites: Lansing, Port Huron, and Detroit-SW. Two other source-oriented sites, Sterling State Park and West Olive, were shut down due to low SO₂ concentrations.
- Community monitoring project: NMH 48217.
- GHIB project: DP4th, Trinity, and Military Park.

Figure 5.4: SO₂ Monitors in 2022

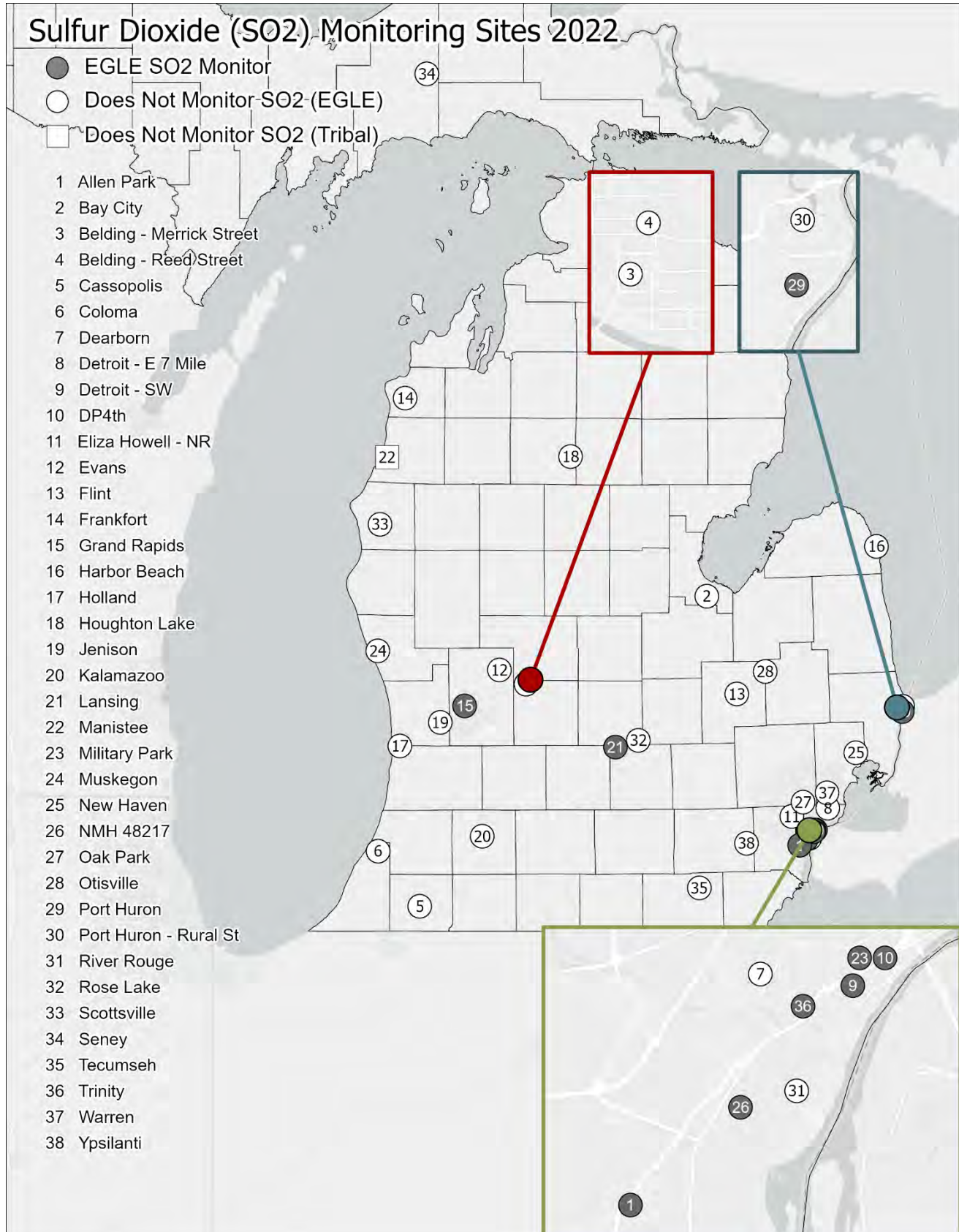


Figure 5.5 shows that all the SO₂ sites in Michigan are below the standard even though there is a nonattainment area for SO₂. The standard is a 3-year average, thus having one point above the NAAQS level line does not mean the monitor is over the standard. SO₂ pollution is extremely variable and would require a large monitoring network to designate areas as attainment. Therefore, SO₂ attainment depends on both emission modeling and monitoring data.

The NCore sites, Grand Rapids and Allen Park, monitor for trace SO₂. For trend purposes, all SO₂ data are graphed together in **Figure 5.5**.

Figure 5.5: SO₂ Levels in Michigan from 2017-2022 (1-hour 99th Percentile)

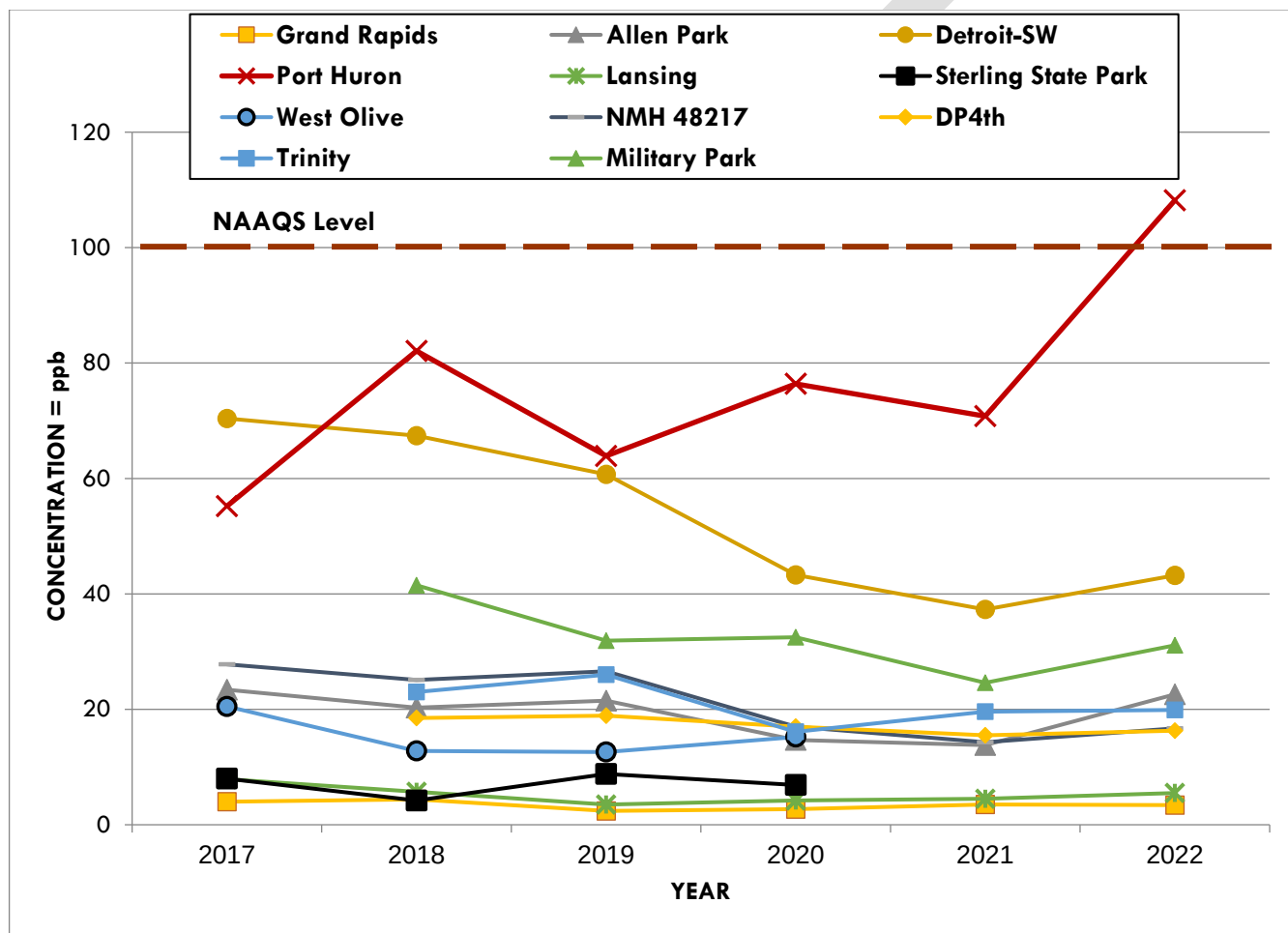
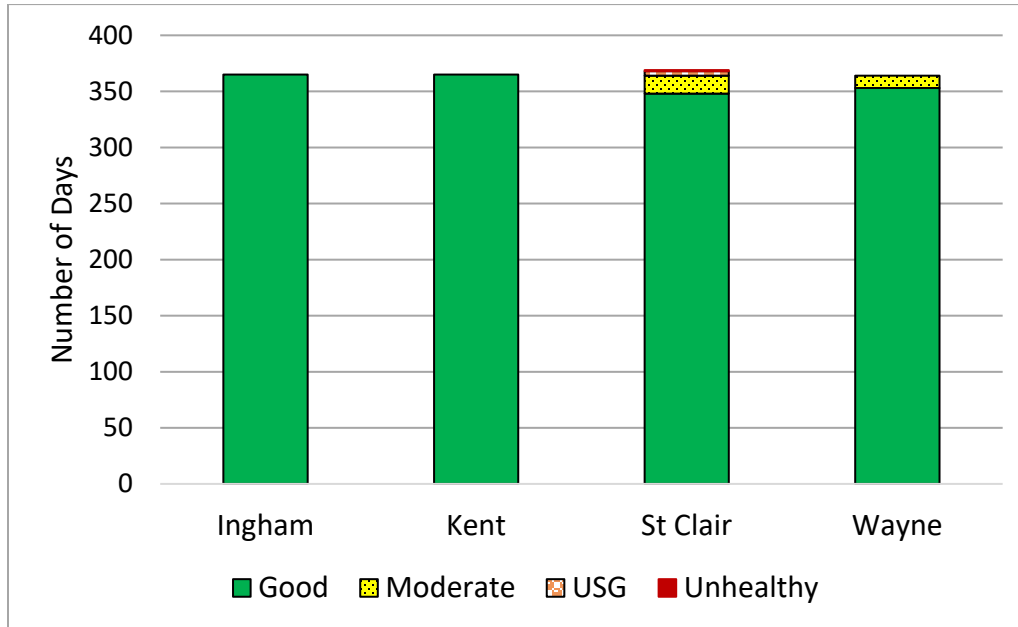


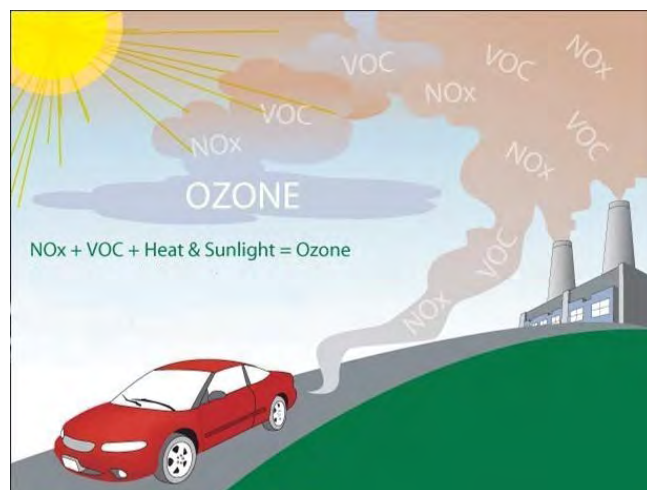
Figure 5.6 shows the AQI values per day in counties where SO₂ is monitored. All days were in the good AQI range, except for 27 days in the moderate AQI range in St. Clair and Wayne Counties, and four days in the Unsafe for Sensitive Groups and one day in the Unhealthy Group in St. Clair County.

Figure 5.6: 2022 AQI Days for SO₂ in Michigan Counties



CHAPTER 6: OZONE (O₃)

Ground-level O₃ 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), O₃ helps by absorbing much of the sun's ultraviolet radiation, but in the lower atmosphere (the troposphere), it is an air pollutant. Ozone 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 O₃ concentrations due to transport from upwind states. The O₃ 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 O₃ follow.



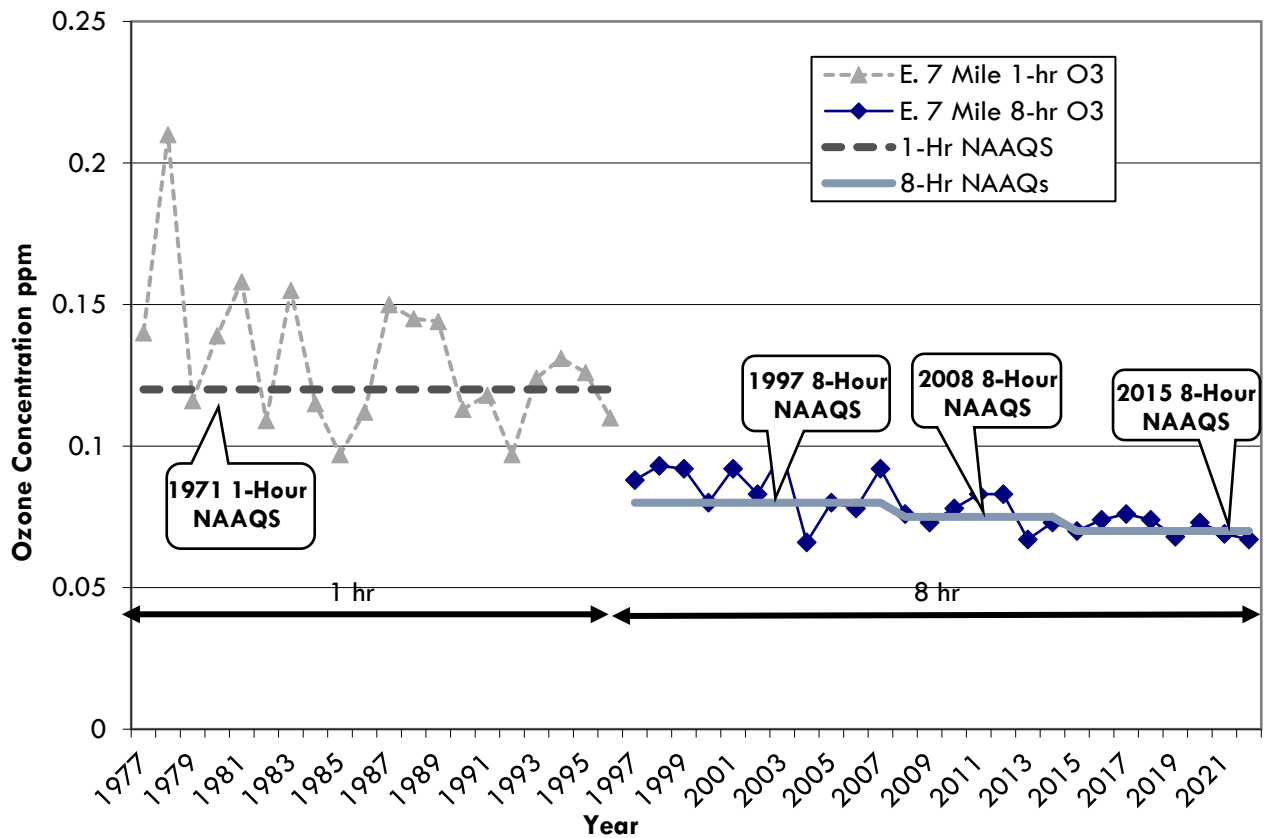
Sources: Major sources of NO_x and VOCs are engine exhaust, emissions from industrial facilities, combustion from power plants, gasoline vapors, chemical solvents, and biogenic emissions from natural sources. Ground-level O₃ can also be transported hundreds of miles under certain wind regimes. As a result, the long-range transport of air pollutants impacts the air quality of regions downwind from the actual area of formation.

Effects: Elevated O₃ 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. Ozone 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. Ozone 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 O₃ 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 O₃ for over 40 years. **Figure 6.1** shows the O₃ levels at the Detroit-E 7 Mile 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 0.070 ppm at the end of 2015. Ozone depends on weather conditions, so concentrations are more variable than other pollutants. Ozone is also monitored primarily in warmer months. In the 2015 NAAQS, the ozone season was extended by two months, from 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

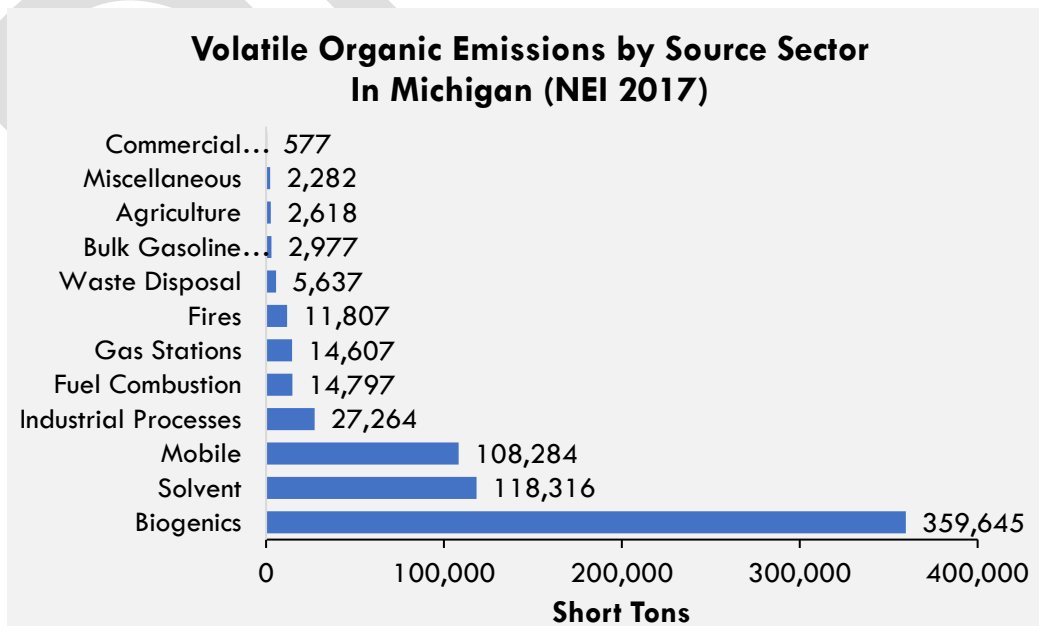


Figure 6.3: VOC Emissions in 2017

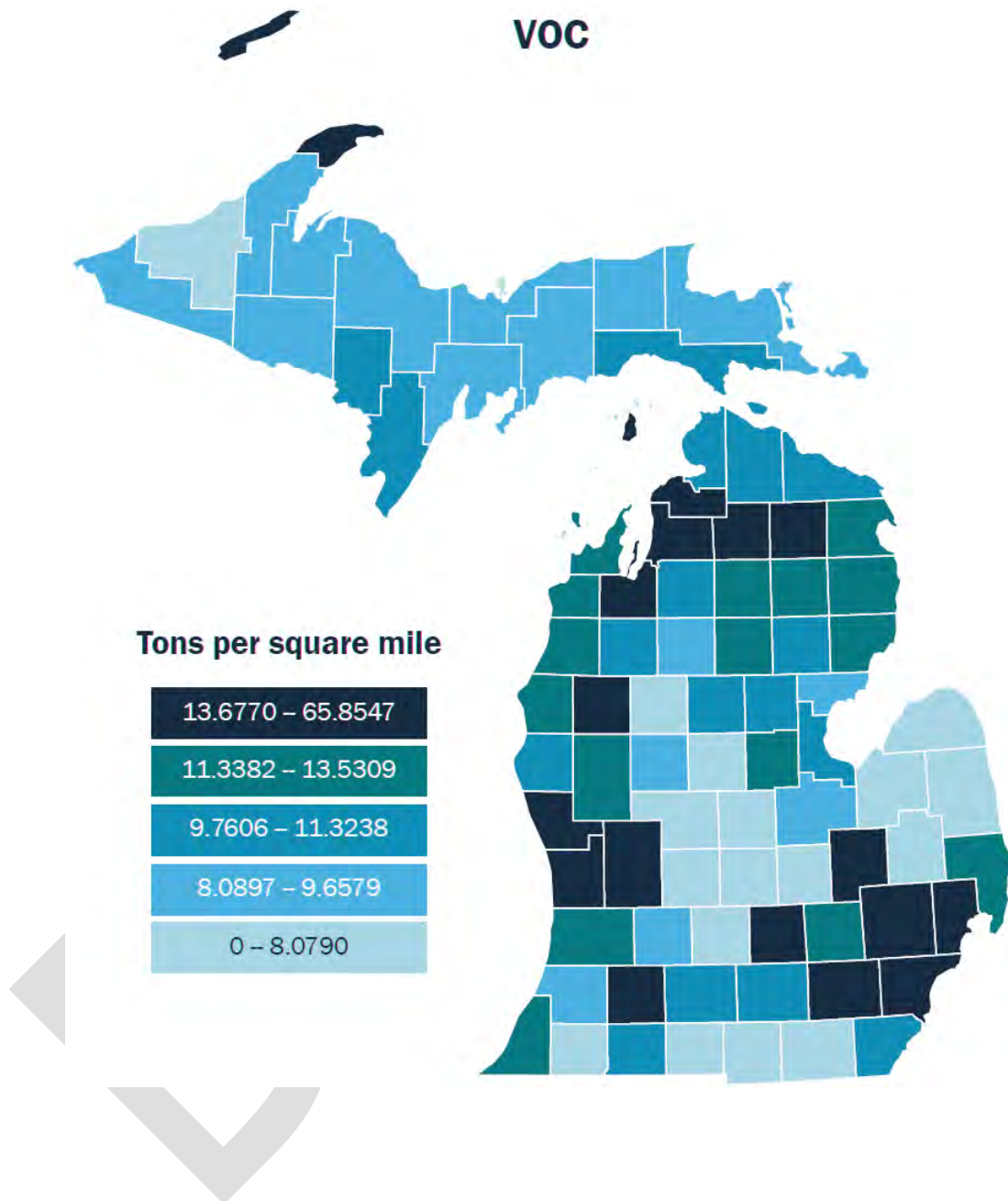


Figure 6.4 (following) shows all O₃ air quality monitors active in Michigan at the beginning of the 2022 ozone season.

- 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 2.4: Ozone Monitors in 2022

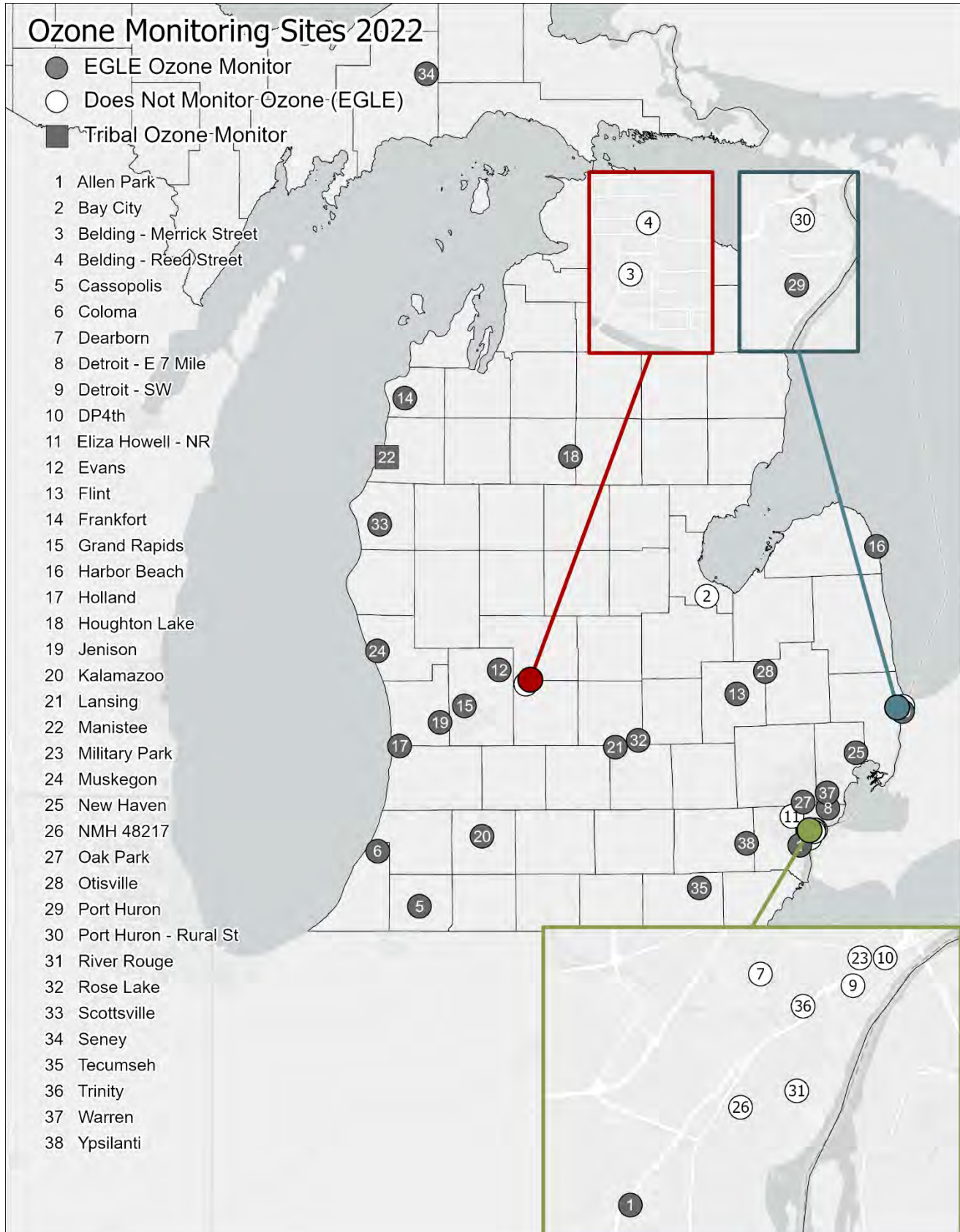


Table 6.1 shows the 3-year averages of O₃. The USEPA uses these values (called design values) to determine attainment/nonattainment areas. The USEPA made their final designations for the 2015 standard on April 30, 2018 (effective August 3, 2018) based on 2014-2016 data. Livingston, Macomb, Monroe, Oakland, 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 O₃ in 2020, and the USEPA has suspended action on the redesignation request. In 2021, Southeast Michigan was below the standard and a redesignation request was submitted to the USEPA in December 2021. The USEPA has not yet acted on the submitted redesignation request because of a subsequent high value at a monitor in 2022. EGLE has submitted data requesting that the high value be modified because of transported smoke impacts, and USEPA is to make a decision on the request soon.

The O₃ monitoring season in Michigan is from March 1 through October 31. During this time, O₃ monitoring data is available for the public via the AQD's website (discussed in Chapter 1). However, year-round O₃ monitoring is conducted at the following four sites: Allen Park, Grand Rapids, Houghton Lake, and Lansing. This data helps in attainment designations, urban area quality, and population exposure assessments.

Table 6.1: 3-Year Average of the 4th Highest 8-hour Ozone Values from 2018-2020, 2019-2021, and 2020-2022 (concentrations in ppm)

Areas	County	Monitor Sites	2018-2020	2019-2021	2020-2022
Detroit-Ann Arbor	Lenawee	Tecumseh	0.065	0.064	0.066
Detroit-Ann Arbor	Macomb	New Haven	0.071	0.068	0.069
Detroit-Ann Arbor	Macomb	Warren	0.068	0.066	0.068
Detroit-Ann Arbor	Oakland	Oak Park	0.072	0.069	0.069
Detroit-Ann Arbor	St. Clair	Port Huron	0.071	0.070	0.069
Detroit-Ann Arbor	Washtenaw	Ypsilanti	0.067	0.066	0.068
Detroit-Ann Arbor	Wayne	Allen Park	0.067	0.067	0.070
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	0.071	0.070	0.069
Flint	Genesee	Flint	0.065	0.064	0.067
Flint	Genesee	Otisville	0.065	0.065	0.067
Grand Rapids	Ottawa	Jenison	0.071	0.069	0.071
Grand Rapids	Kent	Grand Rapids	0.071	0.070	0.071
Grand Rapids	Kent	Evans	0.065	0.065	0.067
Muskegon Co	Muskegon	Muskegon	0.076	0.074	0.079
Allegan Co	Allegan	Holland	0.073	0.075	0.075
Huron	Huron	Harbor Beach	0.068	0.068	0.070
Kalamazoo-Battle	Kalamazoo	Kalamazoo	0.068	0.065	0.068
Lansing-East Lansing	Ingham	Lansing	0.062	0.060	0.062
Lansing-East Lansing	Clinton	Rose Lake	0.063	0.061	0.064
Benton Harbor	Berrien	Coloma	0.072	0.071	0.073
Benzie Co	Benzie	Frankfort	0.064	0.064	0.068
Cass Co	Cass	Cassopolis	0.071	0.068	0.070
Mason Co	Mason	Scottville	0.064	0.064	0.067
Missaukee Co	Missaukee	Houghton Lake	0.064	0.063	0.065
Manistee Co	Manistee	Manistee	0.059	0.061	0.062
Schoolcraft Co	Schoolcraft	Seney	0.063	0.064	0.066

Numbers in bold indicate 3-year averages over the 2015 ozone standard of 0.070 ppm.

Tables 6.2 and 6.3 highlight the number of days when two or more O₃ monitors exceeded 0.070 ppm. It also specifies in which month they occurred and the temperature range.

Table 6.2: 2022 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	1	1	0	0	0	0	0	0	0	0
90 ≤ 94	0	0	0	0	0	0	2	1	4	1	0	0	0	0	0	0
85 ≤ 89	0	0	0	0	7	0	7	4	7	0	7	0	1	0	0	0
80 ≤ 84	0	0	1	0	2	0	7	1	13	0	17	0	9	0	0	0
75 ≤ 79	0	0	0	0	4	0	6	0	7	0	5	0	6	0	4	0
70 ≤ 74	0	0	1	0	2	0	6	0	0	0	1	0	2	0	5	0
65 ≤ 69	2	0	2	0	7	0	1	0	0	0	0	0	4	0	6	0
60 ≤ 64	2	0	2	0	4	0	0	0	0	0	1	0	5	0	3	0
55 ≤ 59	4	0	5	0	2	0	0	0	0	0	0	0	2	0	2	0
50 ≤ 54	3	0	3	0	3	0	0	0	0	0	0	0	1	0	8	0
49 ≤	20	0	16	0	0	0	0	0	0	0	0	0	0	0	3	0
Totals	31	0	30	0	31	0	30	7	31	1	31	0	30	0	31	0

Days: Number of days during month when the daily high temperature falls within the specified temperature range.

O₃ Days: Number of days, during specified temperature range, when two or more area monitors exceeded 70 ppb.

West Michigan had seven O₃ exceedance days in June and one day in July when O₃ exceeded 0.070 ppm at two or more monitors. The temperature on those days ranged between 80°F and <95°F.

Table 6.3: 2022 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	2	0	1	0	2	0	0	0	0	0
90 ≤ 94	0	0	0	0	1	0	3	1	8	1	3	0	0	0	0	0
85 ≤ 89	0	0	1	0	6	0	7	2	11	0	11	0	8	0	0	0
80 ≤ 84	0	0	1	0	4	0	8	0	9	0	12	0	8	0	0	0
75 ≤ 79	0	0	0	0	5	0	7	0	2	0	3	0	2	0	6	0
70 ≤ 74	1	0	2	0	3	0	3	0	0	0	0	0	3	0	4	0
65 ≤ 69	1	0	3	0	5	0	0	0	0	0	0	0	5	0	7	0
60 ≤ 64	5	0	2	0	4	0	0	0	0	0	0	0	3	0	5	0
55 ≤ 59	2	0	2	0	2	0	0	0	0	0	0	0	1	0	4	0
50 ≤ 54	4	0	9	0	1	0	0	0	0	0	0	0	0	0	1	0
49 ≤	18	0	10	0	0	0	0	0	0	0	0	0	0	0	4	0
Totals	31	0	30	0	31	0	30	3	31	1	31	0	30	0	31	0

Days: Number of days during month when the daily high temperature falls within the specified temperature range.

O₃ Days: Number of days, during specified temperature range, when two or more area monitors exceeded 70 ppb.

Southeast Michigan had three O₃ exceedance days in June, and one day in July when O₃ exceeded 0.070 ppm at two or more ozone monitors. The temperature for those days ranged between 85°F and 94°F.

Table 6.4 gives a breakdown of the O₃ days and the specific monitors that went over the standard in western, central/upper, and eastern Michigan in 2022.

Table 6.4: 8-Hour Exceedance Days (>.070 ppm) and Monitor Locations with Exceedances of the Ozone Standard

Date	Western Michigan	Central/Upper Mich.	Eastern Michigan	Total
5/12/2022			Flint, Otisville	2
6/14/2022	Muskegon			1
6/15/2022	Muskegon			1
6/16/2022	Coloma, Holland			2
6/20/2022	Cassopolis, Coloma, Evans, Frankfort, Holland, Jenison, Kalamazoo, Manistee, Muskegon, Scottville	Seney		11
6/21/2022	Coloma, Evans, Frankfort, Holland, Jenison, Manistee, Muskegon, Scottville		Port Huron	9
6/24/2022	Evans, Grand Rapids, Jenison		Detroit-E 7 Mile, New Haven	5
6/25/2022			Allen Park, Detroit-E 7 Mile, Harbor Beach, Otisville, Ypsilanti	5
6/28/2022	Muskegon			1
6/29/2022	Cassopolis, Coloma		Allen Park	3
6/30/2022	Coloma, Frankfort, Grand Rapids, Holland, Jenison, Manistee, Muskegon	Houghton Lake	Allen Park, Detroit-E 7 Mile, Port Huron, Warren	12
7/3/2022	Coloma			1
7/4/2022			Allen Park, Detroit-E 7 Mile	2
7/19/2022	Holland, Muskegon			2
TOTAL				57

On June 30, 2022, there were 12 monitors that exceeded the level of the standard. The site with the most exceedances in the western region of Michigan was Muskegon with seven. The central/upper Michigan sites, Seney and Houghton Lake, both with one exceedance. Allen Park and Detroit-E 7 Mile had four exceedances in eastern Michigan.

Figure 6.5 shows the 4th highest 8-hour O₃ values for Southeast Michigan monitoring sites from 2017-2022. No sites violated the 3-year standard.

Figure 6.6 shows the 4th highest 8-hour O₃ values for the Grand Rapids-Muskegon-Holland CSA. Muskegon, Holland, Grand Rapids, and Jenison violated the 3-year standard.

Figure 6.7 shows the 4th highest 8-hour O₃ values for mid-Michigan. Coloma violated the 3-year standard.

Figure 6.8 shows the 4th highest 8-hour O₃ values for the northern Lower and Upper Peninsulas. No sites violated the 3-year standard.

Figure 6.5: O₃ Levels in Detroit-Warren-Flint CSA from 2017-2022 (4th highest 8-hour O₃ values)

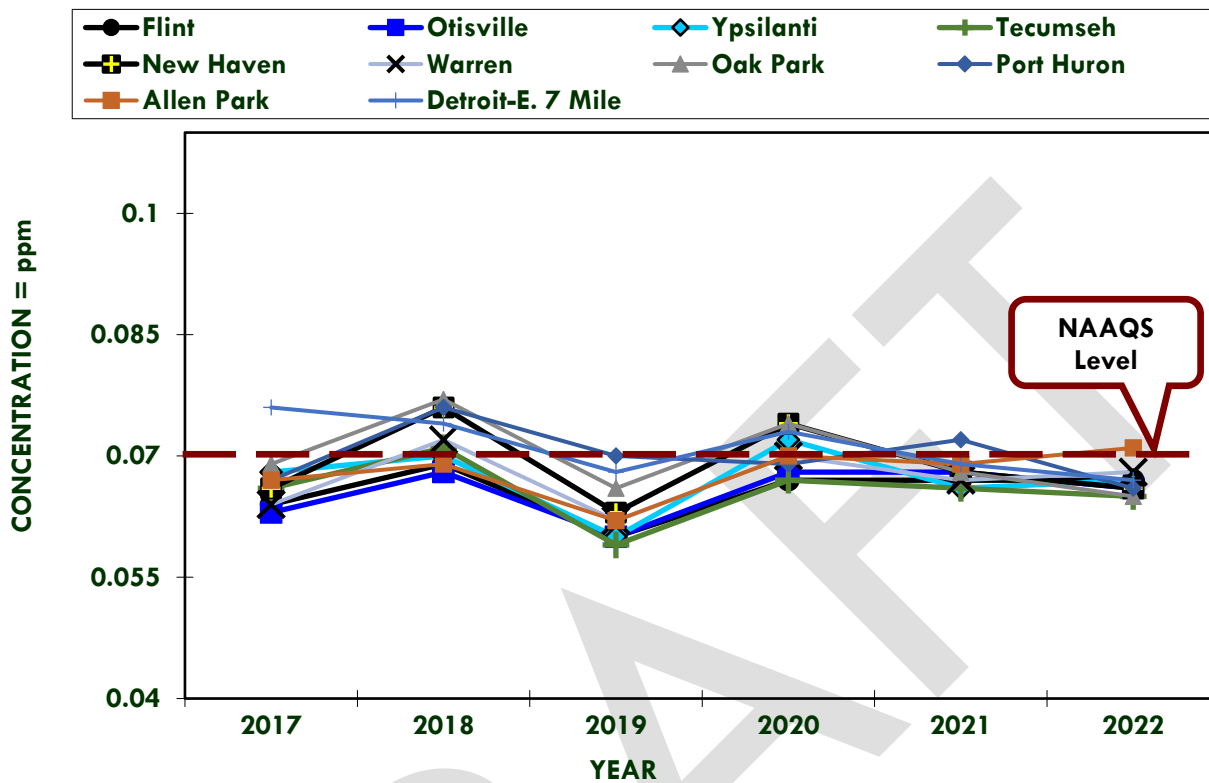


Figure 6.6: O₃ Levels in Grand Rapids-Muskegon-Holland CSA from 2017-2022 (4th highest 8-hour O₃ values)

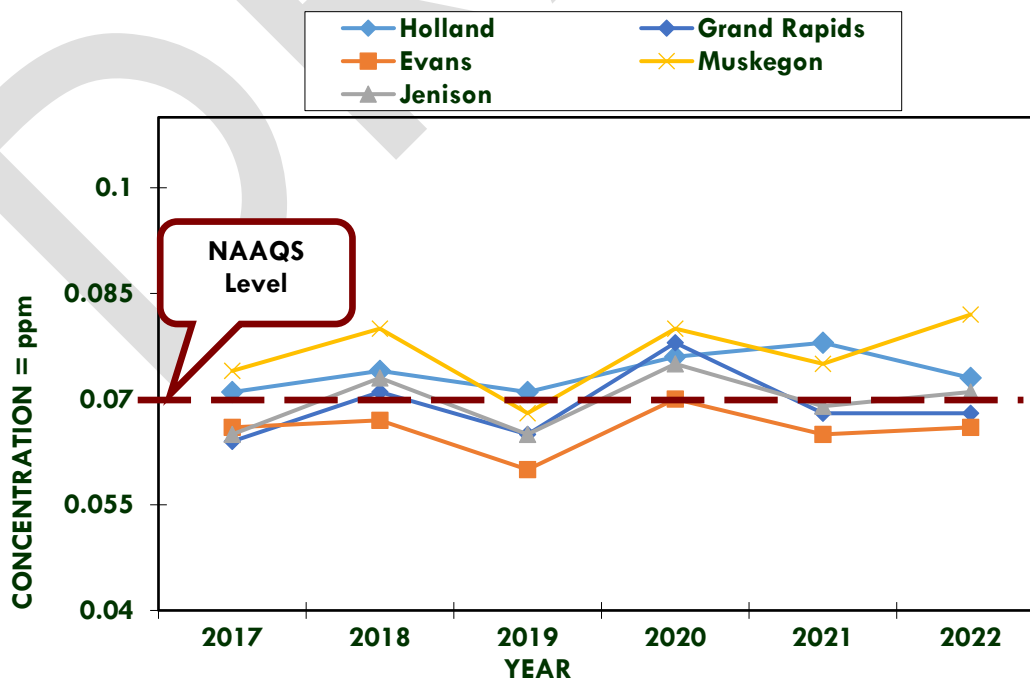


Figure 6.7: O₃ Levels in Kalamazoo-Portage MSA, Lansing-E. Lansing-Owosso CSA, Niles Benton Harbor MSA, and South Bend-Mishawaka (IN-MI) MSAs from 2017-2022 (4th highest 8-hour O₃ values)

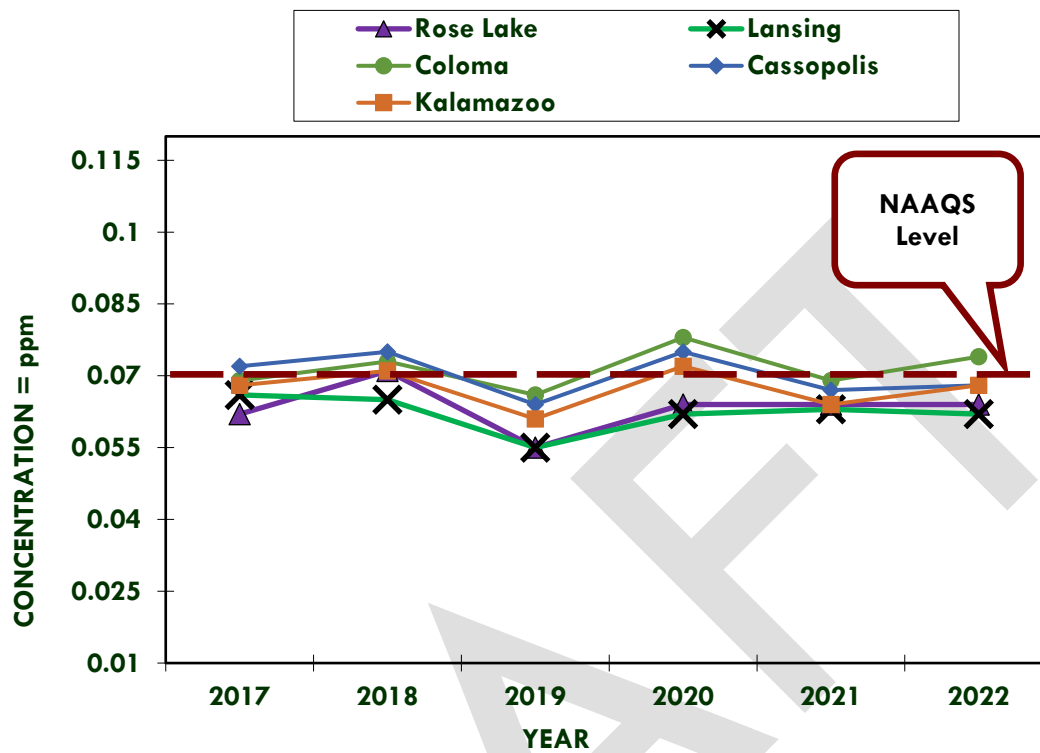


Figure 6.8: O₃ Levels in Michigan's Northern Lower and Upper Peninsula Areas from 2017-2022 (4th highest 8-hour O₃ values)

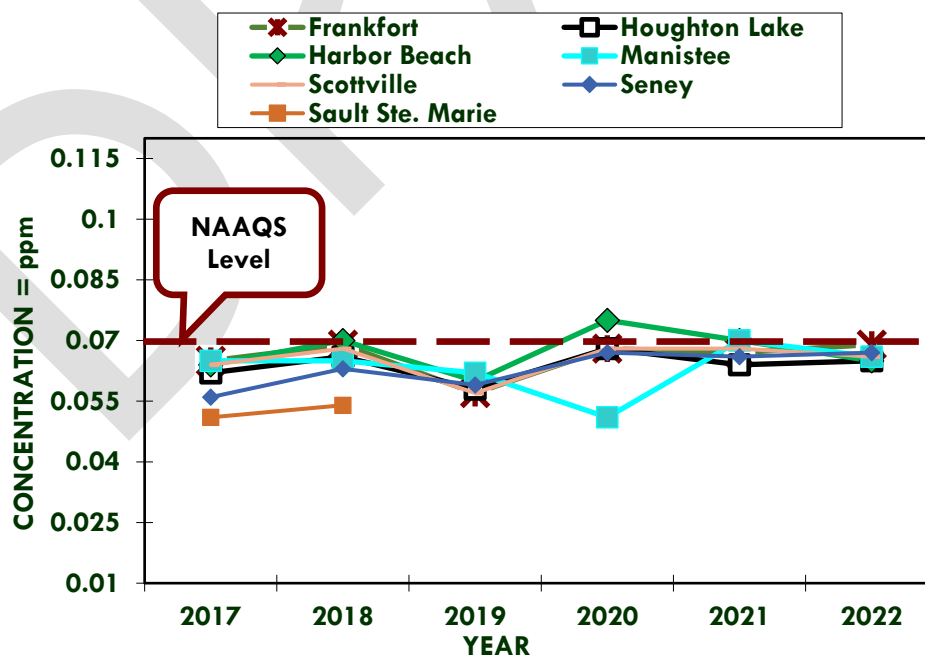
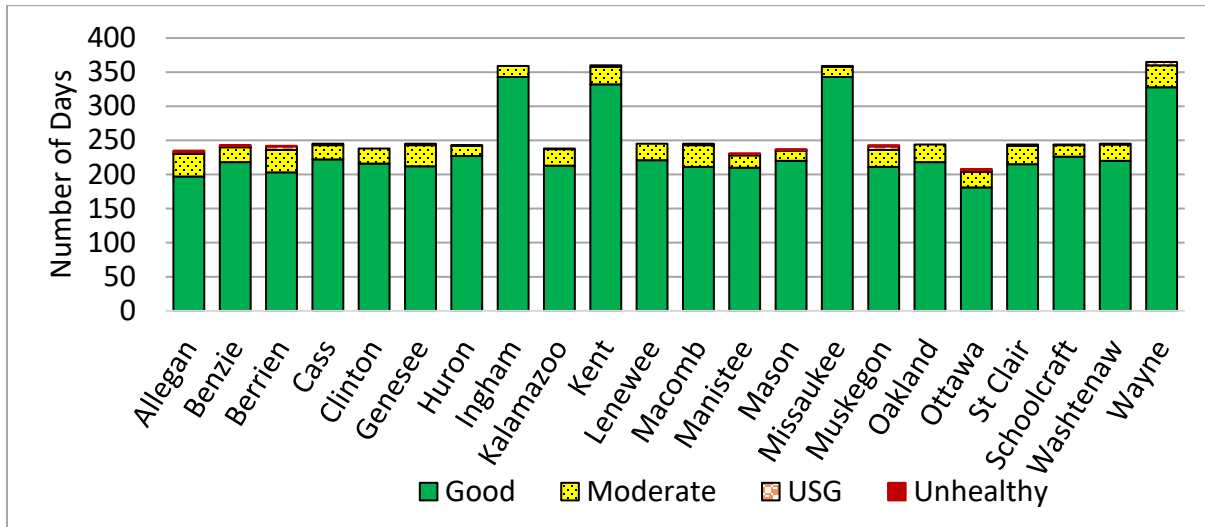


Figure 6.9 shows the AQI values per day in counties where ozone is monitored. Most days were in the good to moderate AQI range. Most counties had a few days in the USG range. Eight counties had one or two days in the unhealthy AQI range.

Figure 6.9: 2022 AQI Days for O₃ in Michigan Counties



CHAPTER 7: PARTICULATE MATTER (PM₁₀, PM_{10-2.5}, PM_{2.5}, CHEMICAL SPECIATION, AND TSP)

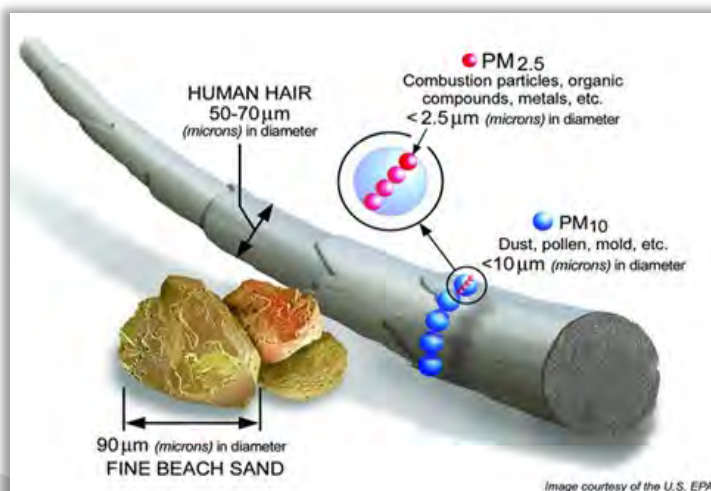
Particulate matter (PM) is a general term used for a mixture of solid particles and liquid droplets (aerosols) found in the air. These are further categorized according to size; larger particles with diameters of less than 50 micrometers (µm) are classified as total suspended particulates (TSP). PM₁₀ consists of “coarse particles” less than 10 (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. PM₁₀ has a 24-hour average standard of 150 µg/m³ not to be exceeded more than once per year over three years. PM_{2.5} has an annual average standard of 12 µg/m³ and a 98th percentile 24-hour concentration of 35 µg/m³ averaged over three years. The sources and effects of PM follow.

Sources: PM can be emitted directly (primary) or may form in the atmosphere (secondary). Most manmade particulate emissions are classified as TSP. PM₁₀ 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 from primary particle emissions or through secondary reactions that include VOCs, SO₂, 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 (PM₁₀ and 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.

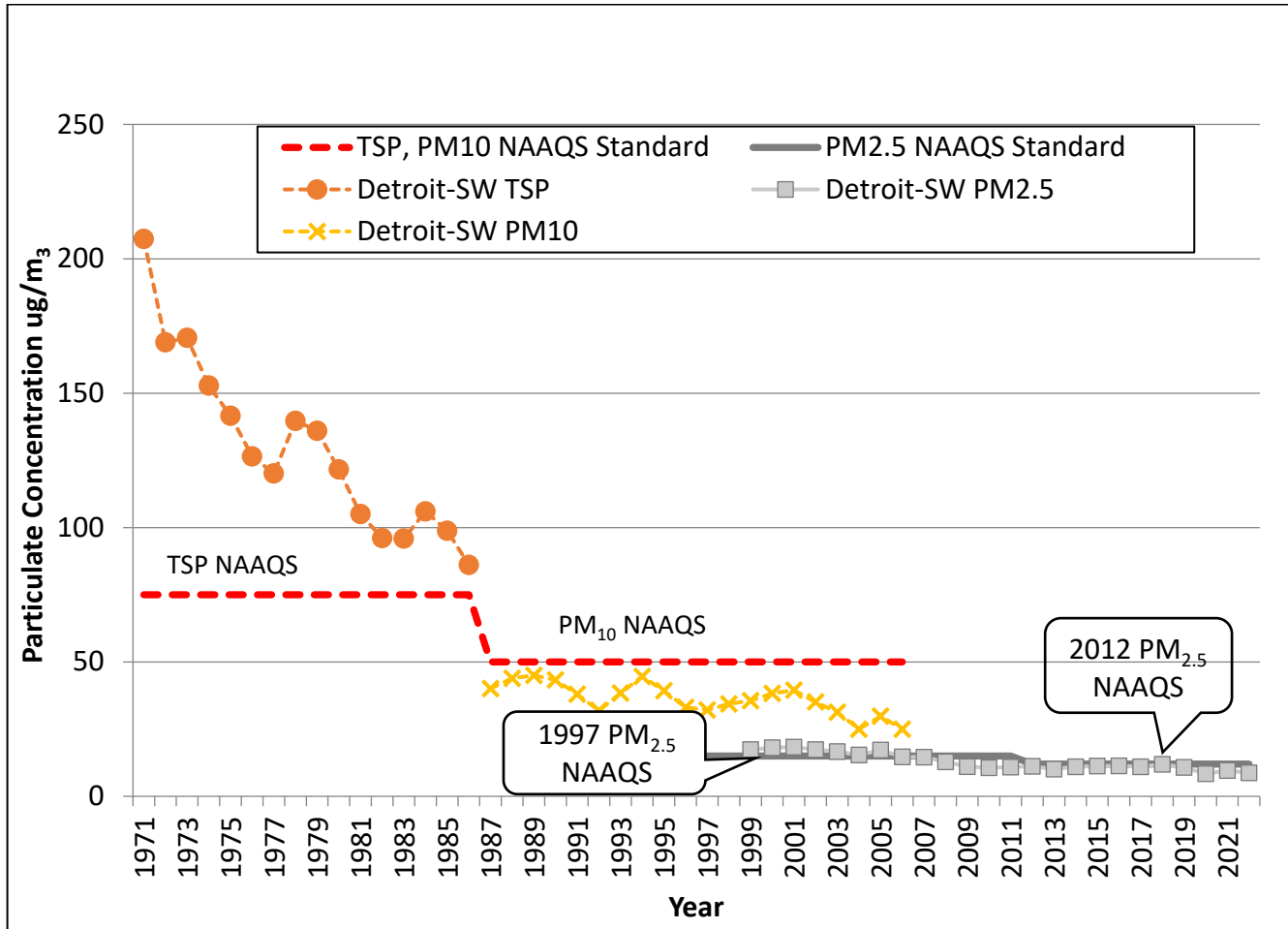
Population most at risk: People with heart or lung disease, the elderly, and children are at highest risk from exposure to PM.

Historical trends: Southeast Michigan has been monitoring for particulate for over 40 years. **Figure 7.1** shows the trends for PM. 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 PM₁₀. 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 PM₁₀ annual standard but kept the PM₁₀ 24-hour standard. The PM_{2.5} 24-hour standard was also reduced from 65 µg/m³ to 35 µg/m³. In 2012, the USEPA reduced the annual standard from 15 µg/m³ to 12 µg/m³.



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, PM₁₀ and PM_{2.5}.

Figure 7.1: Historical Annual PM at Detroit-SW



PM₁₀

Figures 7.2 and 7.3 show PM₁₀ emission sources and PM₁₀ emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 7.2: PM₁₀ Emissions by Source Sector

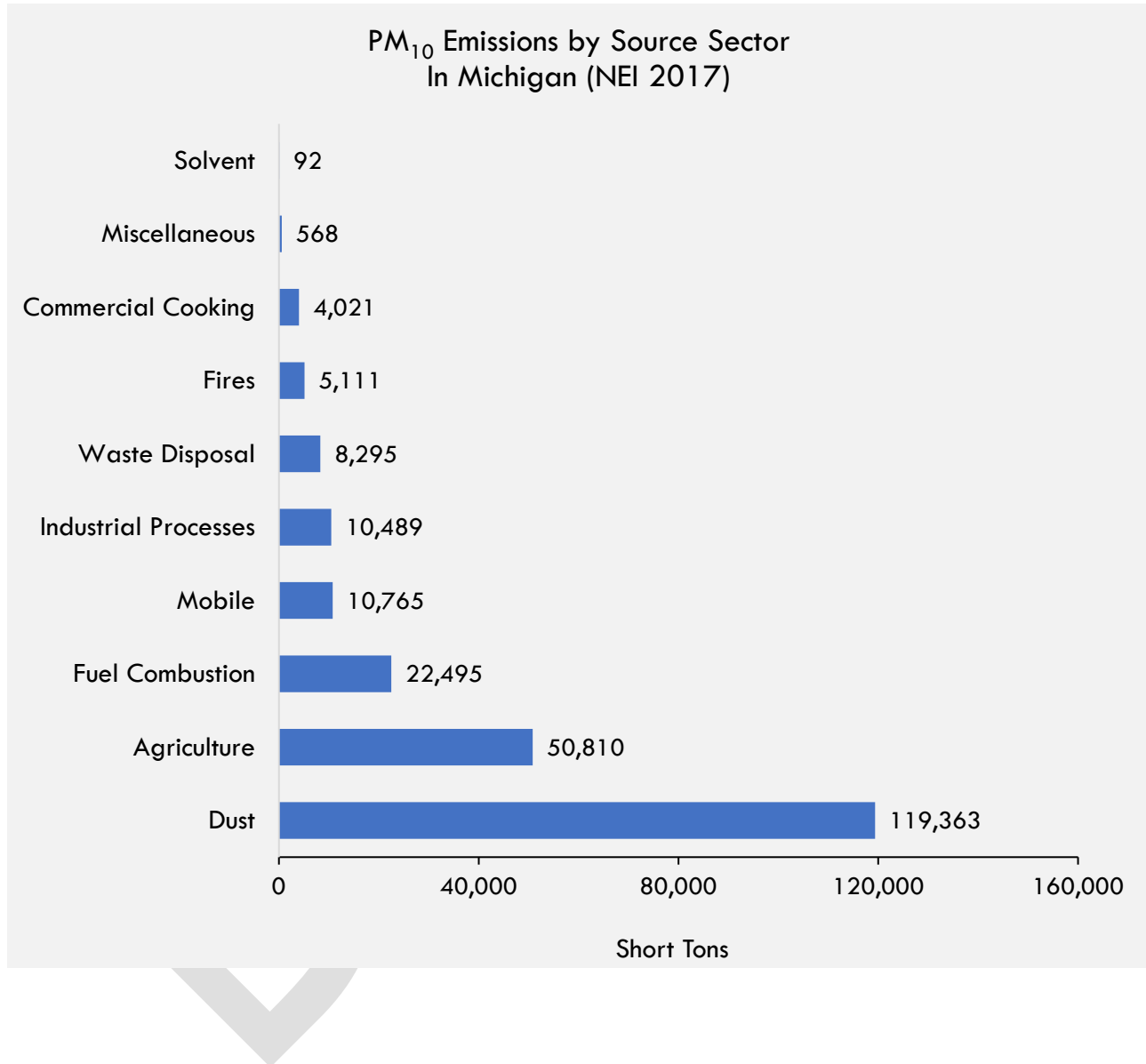
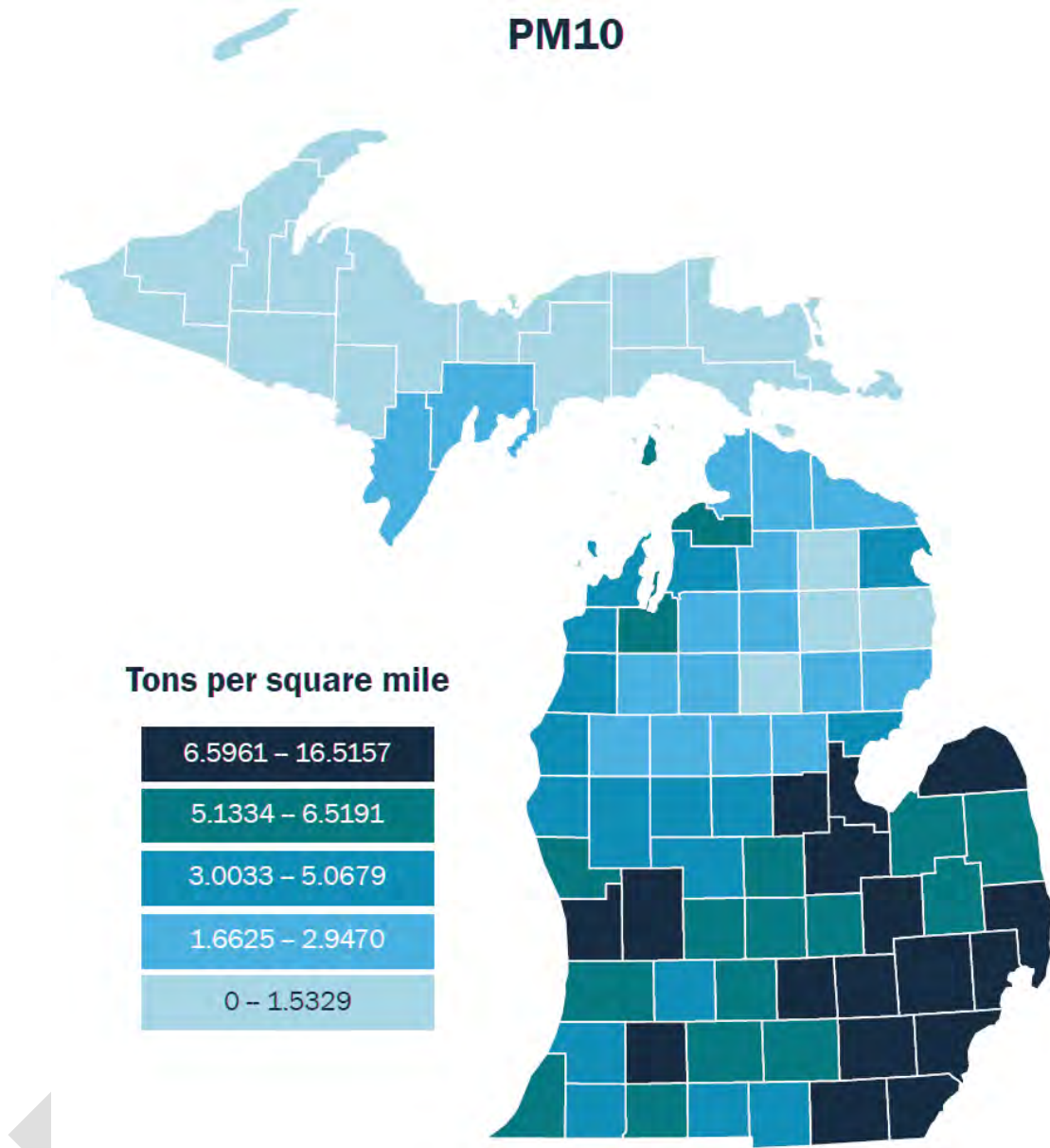


Figure 7.3: PM_{10} Emissions in 2017

Since October 1996, all areas in Michigan have been in attainment with the PM_{10} NAAQS. Due to the recent refocus 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 2022. These monitors are located mainly 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.

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: PM₁₀ Monitors in 2022

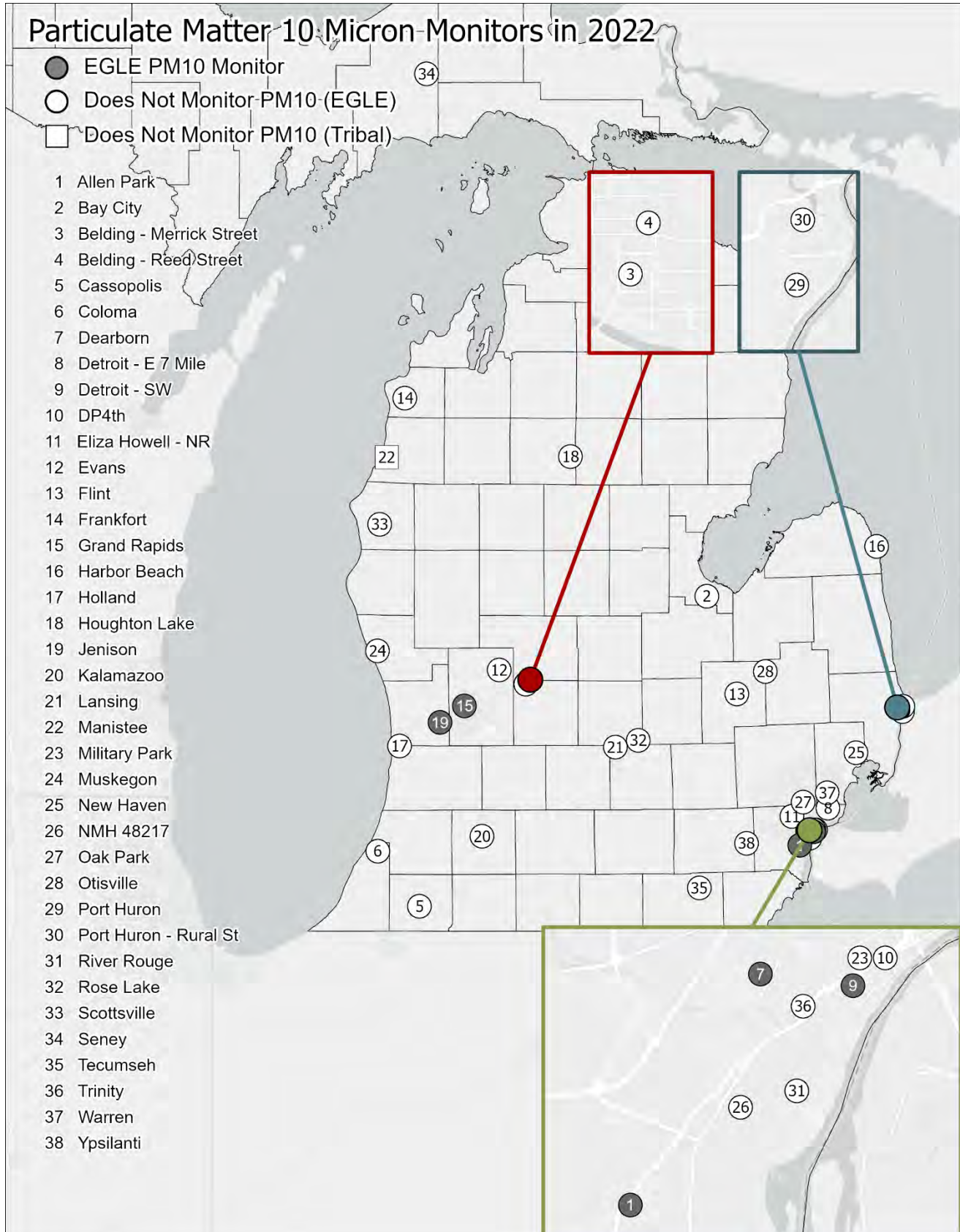


Figure 7.5 shows the PM_{10} levels in Michigan compared to the 24-hour average NAAQS of $150 \mu\text{g}/\text{m}^3$. This standard must not be exceeded on average more than once per year over a 3-year period. The design value is the 4th highest value over a 3-year period. The PM_{10} levels at all sites in Michigan are well below the national standard.

Figure 7.5: 24-Hour PM_{10} Design Value

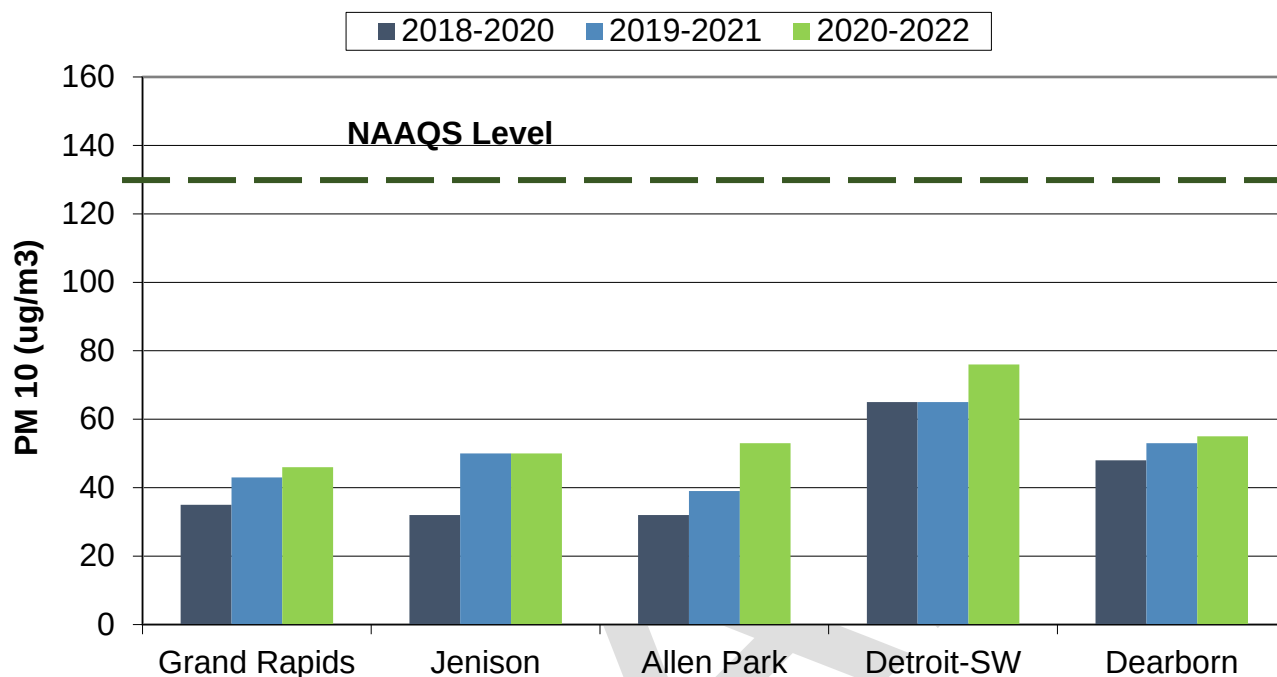
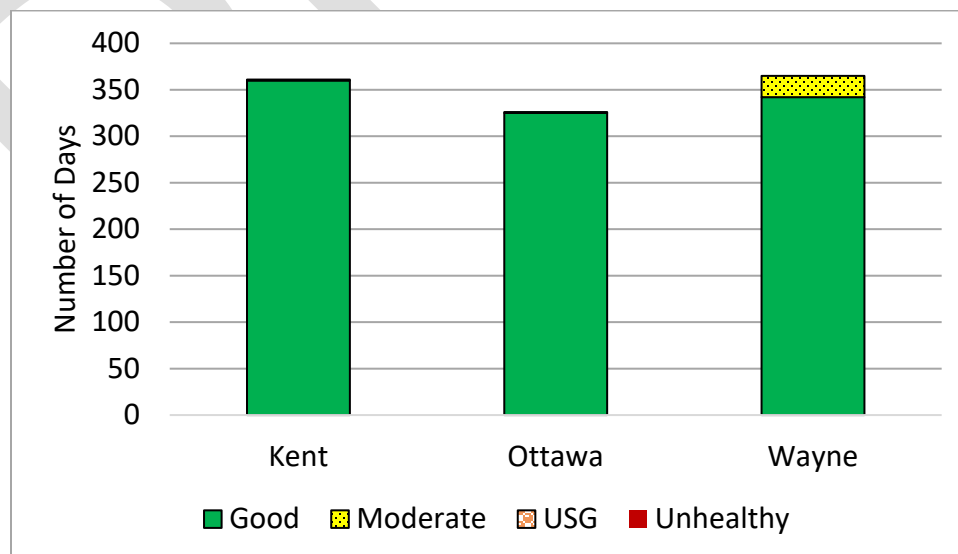


Figure 7.6 shows the AQI values per day in counties where PM_{10} is monitored. All days were in the good AQI range except for one day in the moderate AQI range in Kent and Ottawa County and 23 days in the moderate AQI range in Wayne County.

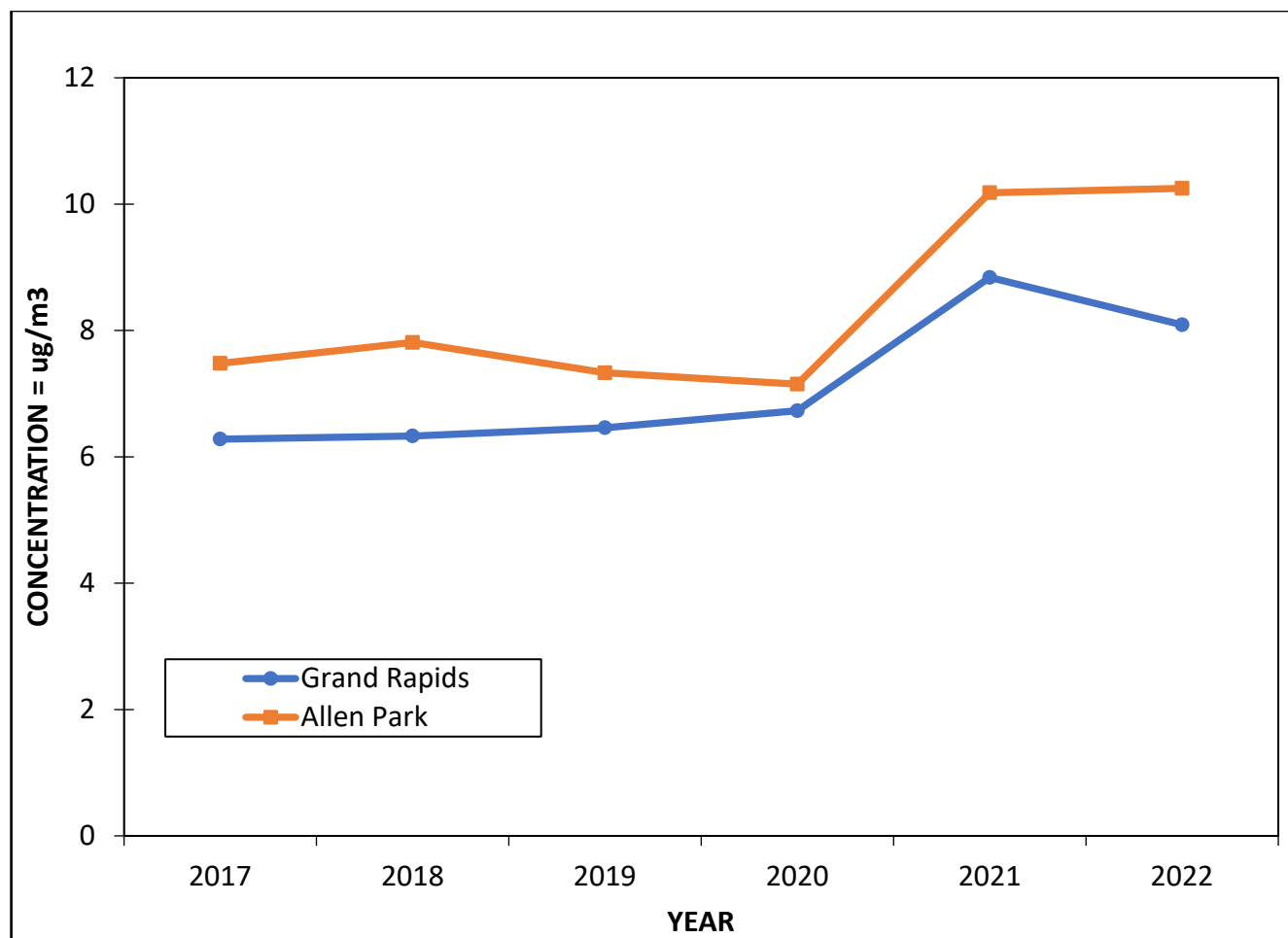
Figure 7.6: 2022 AQI Day for PM_{10} in Michigan Counties



PM_{10-2.5}

The 2006 amended air monitoring regulations specified that measurements of PM coarse (PM_{10-2.5}) needed to be added to the NCore sites.⁷ EGLE began PM coarse 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 2017-2022 (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 [NCore Guidance Documents](#) | [AMTIC](#) | [TTN](#) | [US EPA](#).

Figure 7.8: PM_{2.5} Emissions by Source Sector

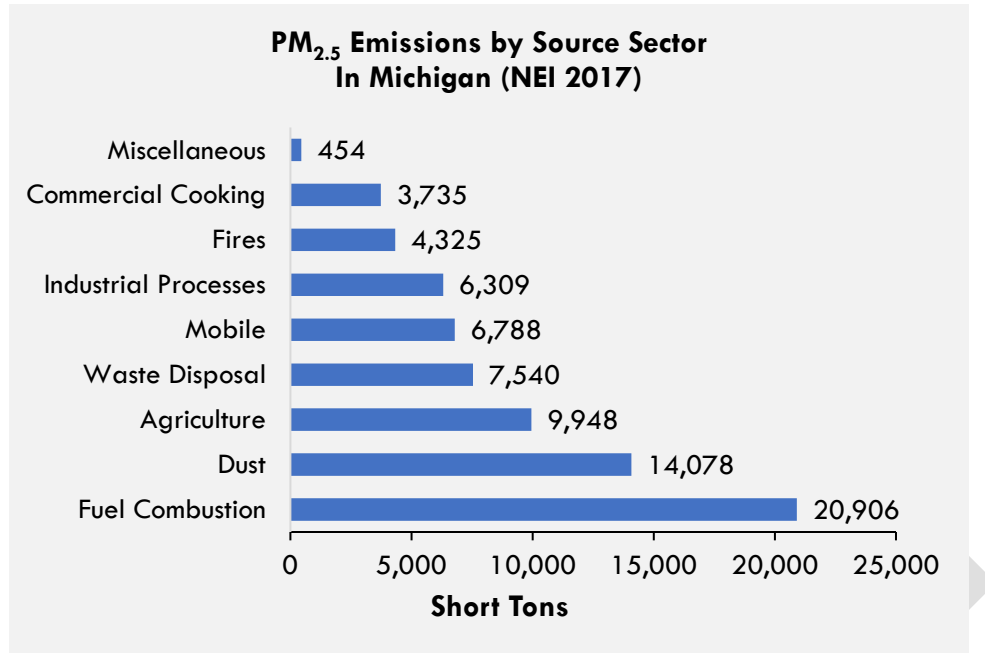
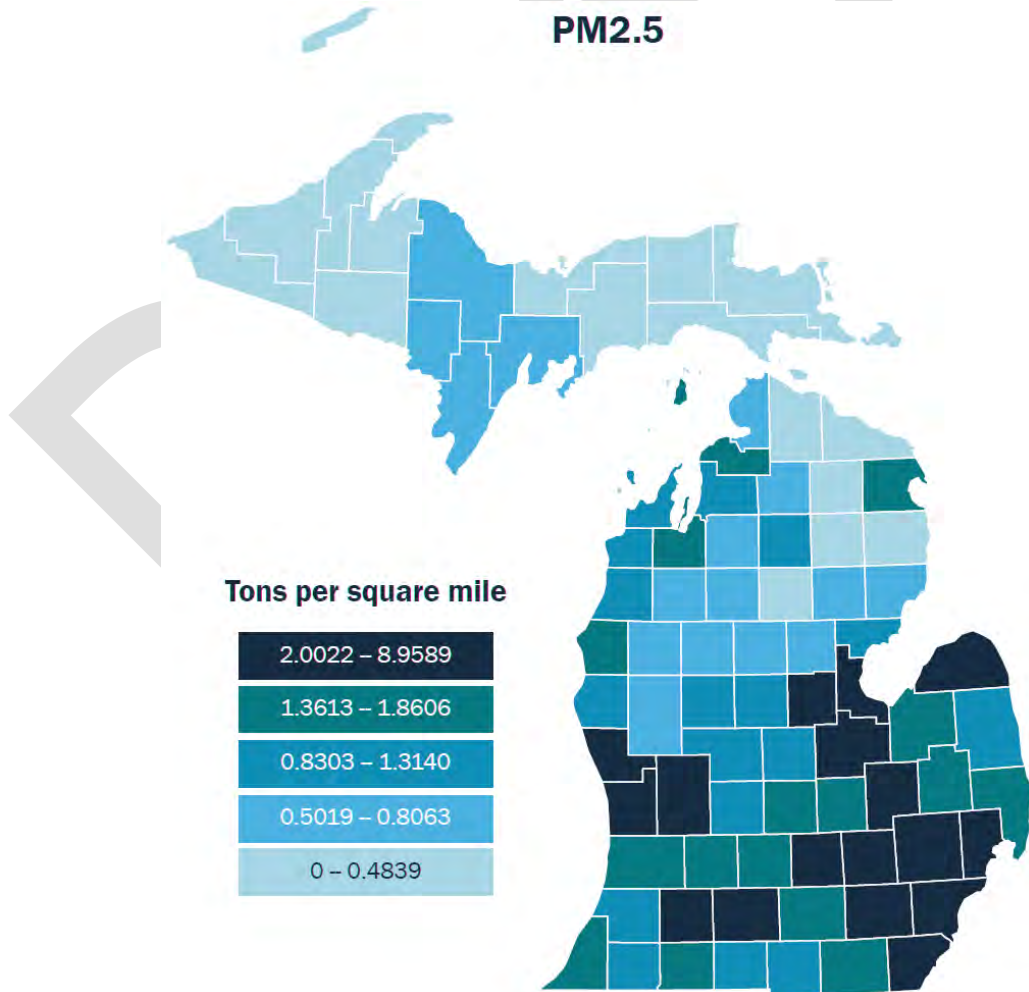


Figure 7.9: PM_{2.5} Emissions in 2017



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 2022. See **Table 7.1** for the recent changes in PM monitoring.

- Loss of site access shut down: Livonia Near-road is being relocated, a suitable replacement is under construction.
- Collocation sites: Four PM_{2.5} FRM monitoring sites are collocated with PM₁₀ monitors to allow for PM_{2.5} and PM₁₀ comparisons.⁸ Collocated PM₁₀ and PM_{2.5} sites include Dearborn, Allen Park, Grand Rapids and Detroit-SW. Allen Park, Grand Rapids, Jenison, and Dearborn (installed 12/2022) also have collocated PM₁₀ and PM_{2.5} but monitors were switched from FRMs and TEOMs to continuous FEM T640X, which measure PM₁₀, 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 PM₁₀, and then it subtracts the two to get PM coarse.
- Switched TEOMs to T640s: NMH 48217 switched to a T640 in July 2021 and Dearborn switched to a T640X in December 2022.
- Switched BAM to T640: Ypsilanti and Tecumseh switched Thermo BAMs to a T640 in September 2022. Ypsilanti is now running collocated T640s.

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 from PM [62 CFR 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].

Table 7.1: Recent Changes in PM Monitoring

Site	AQS ID	Date Installed†	Date Removed‡	FRM Removed	TEOM Removed	Thermo BAM Removed	TSP Removed	Hi-vol PM ₁₀ Removed	T640 Installed	T640X Installed	Met One BAM Installed	Thermo BAM Installed
Allen Park*	261630001	10/6/20	1/1/21		√		√	√		√		
Bay City	260170014	10/24/19	1/1/20	√	√						√	
DP4th	261630098	10/13/20				√			√			
Eliza Howell-NR	261630093	1/1/20									√	
Grand Rapids*†	260810020	10/22/20	1/1/21		√		√	√		√		
Holland	260050003	9/18/19	1/1/20	√							√	
Houghton Lake	261130001	11/28/18	1/1/19	√	√						√	
Jenison*	261390005	10/19/20	1/1/21	√				√		√		
Kalamazoo	260770008	10/20/20	1/1/21	√	√				√			
Lansing	260650018	9/20/20	1/1/21		√				√			
Military Park	261630100	9/25/20				√			√			
New Haven	260990009	11/4/20	1/1/21	√					√			
Port Huron	261470005	11/6/20	1/1/21	√	√				√			
Tecumseh	260910007	9/27/22				√			√			
Detroit-SW	261630015	9/29/20				√			√			
Trinity	261630099	10/5/20				√			√			
NMH 48217	261630097	7/22/21			√				√			
Dearborn	261630033	12/7/22	12/7/22		√					√		
Ypsilanti††	261610008	10/12/22	1/1/23	√		√			√			

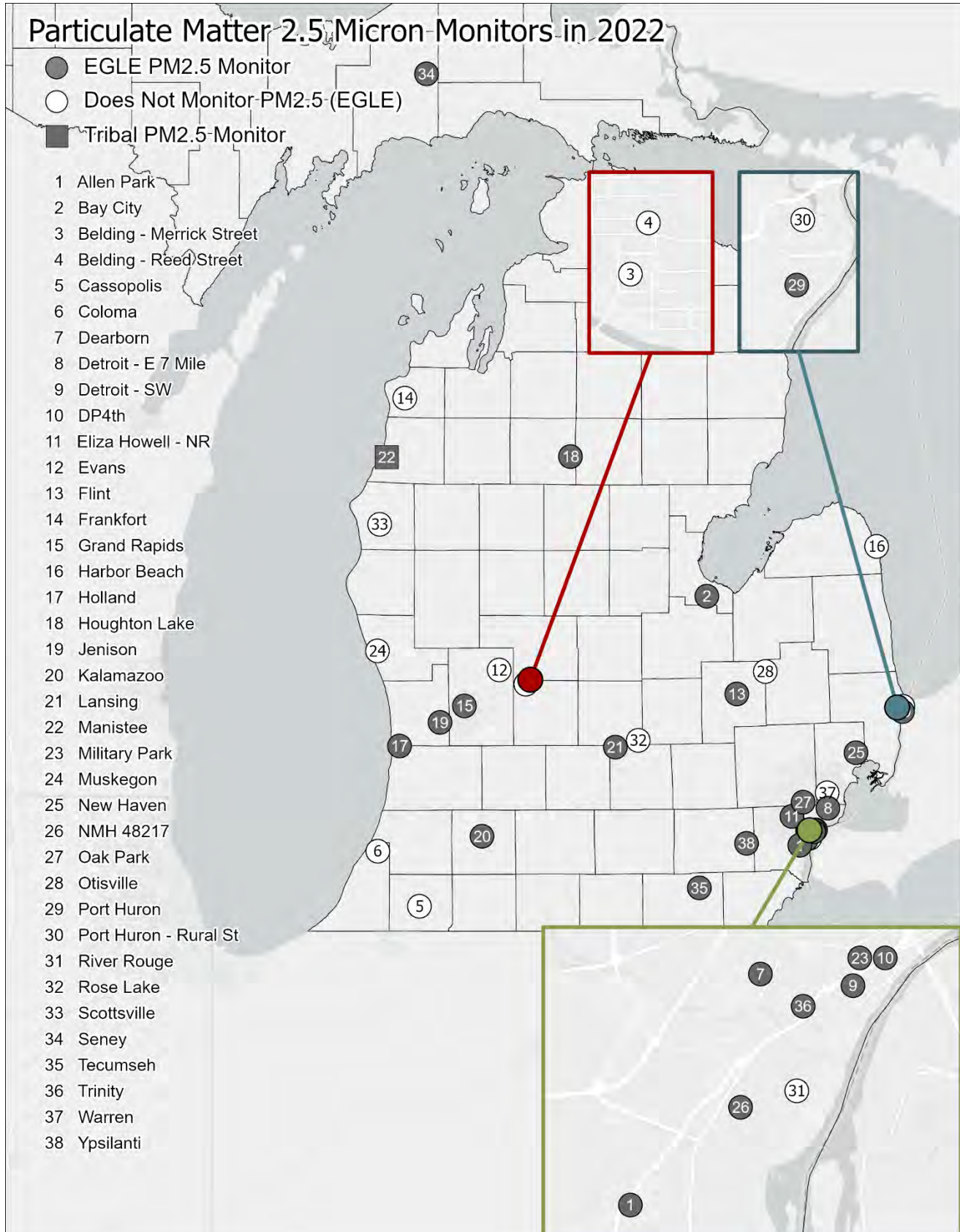
*Low volume FRM for coarse PM (PM_c) removed.

†Second FRM removed.

††Both collocated FRMs were removed, the Thermo BAM removed and now running collocated T640s.

‡If both a date installed and date removed are indicated, the instruments were run in testing mode for that time period between the installed and removed date.

Figure 7.10: PM_{2.5} Monitors in 2022



Continuous PM_{2.5} Network:

Short-term measurements of PM_{2.5} or PM₁₀ 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 10 FRM monitoring sites, seven of which also had TEOMs, T640s, or BAMs.

- T640X replaced TEOMs: The Dearborn PM_{2.5} TEOM and PM₁₀ TEOM was replaced by a T640X in December 2022.
- T640 replaced Thermo BAM: The Ypsilanti monitor had multiple changes. The Thermo BAM was switched to a T640 in September 2022, and a second collocated T640 was installed in October 2022. The collocated FRM was run until the end of 2022. Also the Thermo BAM at Tecumseh was replaced by a T640.

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 to 30 percent nitrate compounds, 30 percent sulfate compounds, 30 percent organic carbon, 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 using light absorption techniques. Black carbon is a combustion by-product typical of transportation sources. In addition to causing adverse health effects, and black carbon absorbs light, contributing to climate change.

Table 1.2 in Chapter 1 shows all of Michigan's PM_{2.5} FRM monitoring stations operating in 2022 and denotes which sites have FRM, 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].

Table 7.2 provides the design value, the 3-year average of the annual mean PM_{2.5} concentrations for 2020-2022. Michigan's levels are below the 12 µg/m³ primary standard.¹⁰

Table 7.2: 3-Year Average of the Annual Mean PM_{2.5} Concentrations For 2020-2022

Areas	County	Monitoring Sites	2020	2021	2022	2020-2022 Mean
Detroit-Ann Arbor	Lenawee	Tecumseh	8.2	8.5*	8.3	8.3
Detroit-Ann Arbor	Macomb	New Haven	6.0	9.7	8.8	8.2
Detroit-Ann Arbor	Oakland	Oak Park	7.4	8.2	6.8	7.5
Detroit-Ann Arbor	St. Clair	Port Huron	6.7	9.3	8.5	8.2
Detroit-Ann Arbor	Washtenaw	Ypsilanti	8.2	8.8	8.9	8.7
Detroit-Ann Arbor	Wayne	Allen Park	7.5	10.6	8.9	9.0
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	7.5	8.3	7.2	7.6
Detroit-Ann Arbor	Wayne	Detroit-SW	9.1	11.0	11.8	10.6
Detroit-Ann Arbor	Wayne	Dearborn	9.4	10.3	9.3	9.7
Detroit-Ann Arbor	Wayne	Eliza Howell-NR	10.6	11.5*	11.0	11.0
Detroit-Ann Arbor	Wayne	NMH 48217	--	9.8*	9.5	9.7
Detroit-Ann Arbor	Wayne	DP4	9.6	11.1	9.8	10.2
Detroit-Ann Arbor	Wayne	Trinity	10.7	12.4	12.0	11.7
Detroit-Ann Arbor	Wayne	Military Park	10.9*	11.2	10.9	11.0
Flint	Genesee	Flint	6.0	7.3	8.2	7.2
Grand Rapids	Ottawa	Jenison	7.4	10.1	8.9*	8.8
Grand Rapids	Kent	Grand Rapids	7.7	10.3*	9.4	9.2
Allegan County	Allegan	Holland	6.0	7.0	6.7	6.6
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	7.6	10.6	10.3	9.5
Lansing-East Lansing	Ingham	Lansing	7.1	9.6	8.7	8.5
Bay County	Bay	Bay City	4.7	6.1	6.4	5.8
Missaukee County	Missaukee	Houghton Lake	8.0*	9.0	8.9	8.6
Manistee County	Manistee	Manistee	5.1*	5.0*	4.2*	4.8
Schoolcraft County	Schoolcraft	Seney	4.6*	6.8	6.1	5.8

*Indicates site does not have a complete year of data.

¹⁰ For comparison to the standard, the average annual mean is rounded to the nearest 0.1 µg/m³.

Table 7.3 provides the 24-hour 98th percentile PM_{2.5} concentrations for 2020-2022 showing Michigan's levels are below the 35 µg/m³ standard (3-year average).¹¹

Table 7.3: 24-Hour 98th Percentile PM_{2.5} Concentrations for 2020-2022

Areas	County	Monitoring Sites	2020	2021	2022	2020-2022 Mean
Detroit-Ann Arbor	Lenawee	Tecumseh	18.7	18.9	23.0	20
Detroit-Ann Arbor	Macomb	New Haven	15.5	22.5	24.8	21
Detroit-Ann Arbor	Oakland	Oak Park	23.3	18.5	21.9	21
Detroit-Ann Arbor	St. Clair	Port Huron	16.6	22.6	21.3	20
Detroit-Ann Arbor	Washtenaw	Ypsilanti	19.8	17.8	25.5	21
Detroit-Ann Arbor	Wayne	Allen Park	26.3	22.7	25.7	25
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	17.7	20.0	19.8	19
Detroit-Ann Arbor	Wayne	Detroit-SW	24.1	26.9	30.8	27
Detroit-Ann Arbor	Wayne	Dearborn	21.0	22.3	25.3	23
Detroit-Ann Arbor	Wayne	Eliza Howell-NR	23.2	24.3*	28.5	25
Detroit-Ann Arbor	Wayne	NMH 48217	--	21.6*	25.6	24
Detroit-Ann Arbor	Wayne	DP4th	22.9	24.2	26.4	25
Detroit-Ann Arbor	Wayne	Trinity	26.6	28.3	32.5	29
Detroit-Ann Arbor	Wayne	Military Park	27.8*	27.2	30.7	2
Flint	Genesee	Flint	14.5	16.8	19.9	17
Grand Rapids	Ottawa	Jenison	17.9	25.8	24.2*	23
Grand Rapids	Kent	Grand Rapids	17.6	25.4	24.9	23
Allegan County	Allegan	Holland	13.1	18.3	17.7	16
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	18.0	26.5	29.4	25
Lansing-East Lansing	Ingham	Lansing	21.6	23.3	22.7	23
Bay County	Bay	Bay City	14.0	16.4	17.6	16
Missaukee County	Missaukee	Houghton Lake	15.2	18.7	17.0	17
Manistee County	Manistee	Manistee	13.3*	15.4*	18.2*	16
Schoolcraft County	Schoolcraft	Seney	10.6*	19.8	14.6	15

*Indicates site does not have a complete year of data.

¹¹ 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/m³.

Figures 7.11 through 7.14 illustrate the current annual mean $PM_{2.5}$ trend for each monitoring site in Michigan. For clarity, monitoring sites within the Detroit-Warren-Ann Arbor CSA have been separated into two graphs.

Figure 7.11 shows the 2022 levels in Wayne County remain below the $PM_{2.5}$ NAAQS standard based on a 3-year average. Historically, Dearborn has had the highest concentrations in the state, but Trinity now has the highest concentrations. The GHIB 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 2022 are below the $PM_{2.5}$ NAAQS.

Figure 7.13 combines the $PM_{2.5}$ monitoring sites located in West Michigan Grand Rapids-Kentwood-Muskegon 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-Ann Arbor CSA (Wayne County Only), Annual Arithmetic Means for $PM_{2.5}$ from 2017-2022

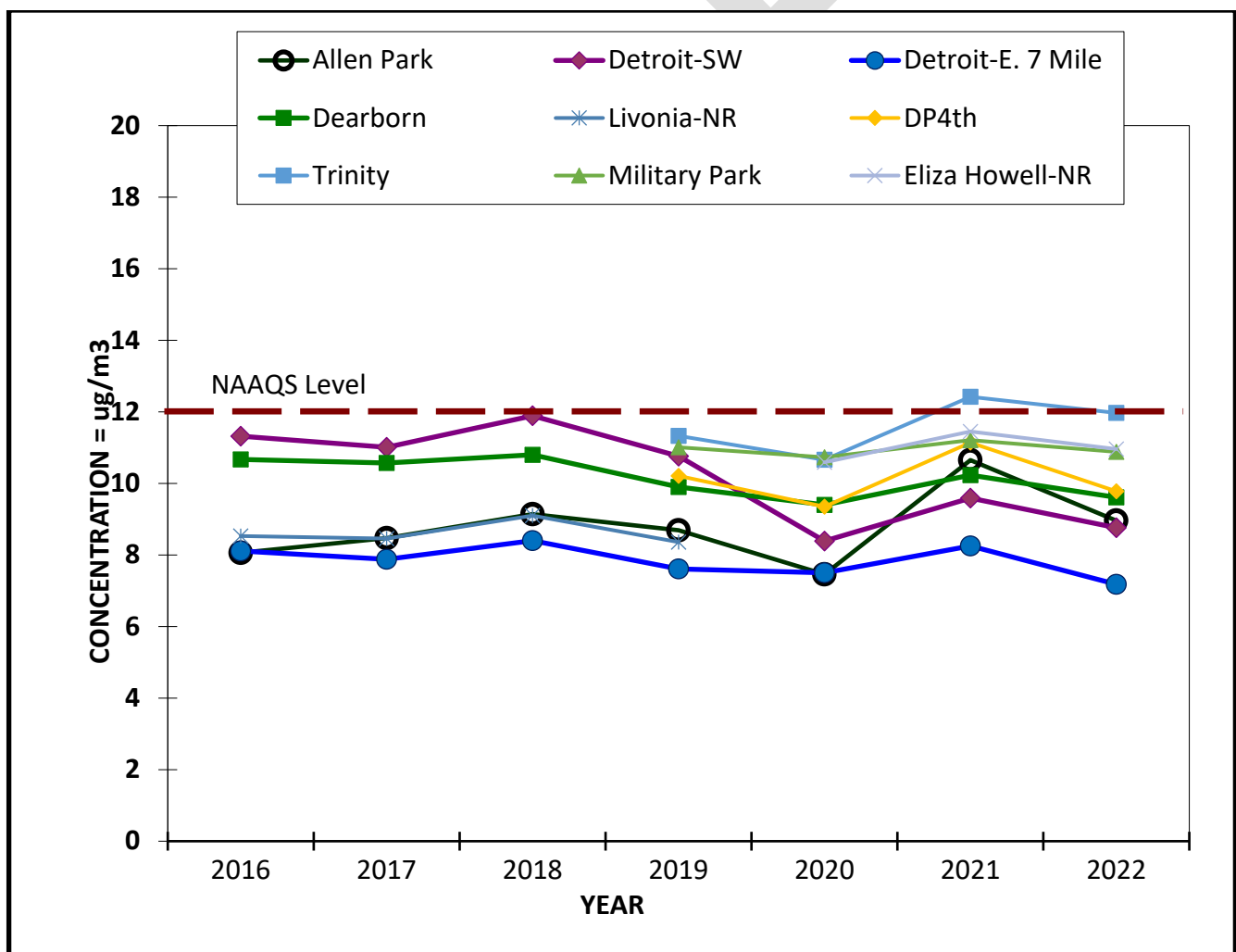


Figure 7.12: Detroit-Warren-Ann Arbor CSA (Without Wayne County), Annual Arithmetic Means for $PM_{2.5}$ from 2017-2022

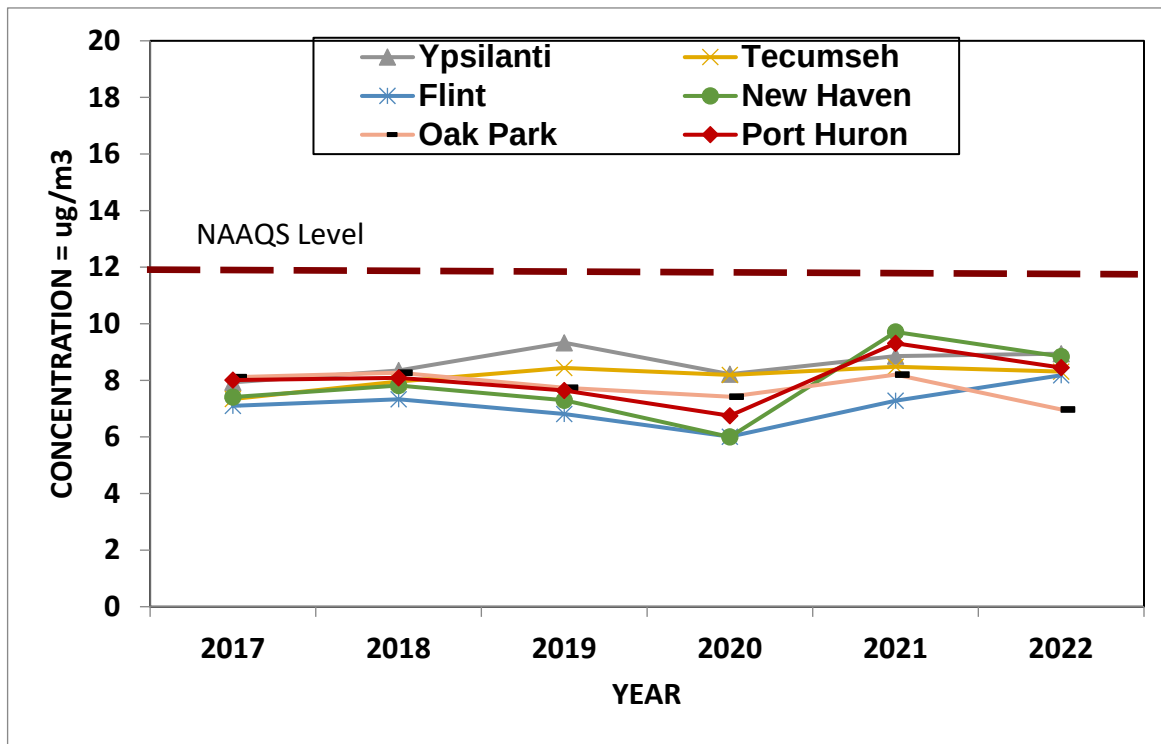


Figure 7.13: West Michigan Grand Rapids-Kentwood-Muskegon CSA, Kalamazoo, and Benton Harbor MSAs, Annual Arithmetic Means for $PM_{2.5}$ from 2017-2022

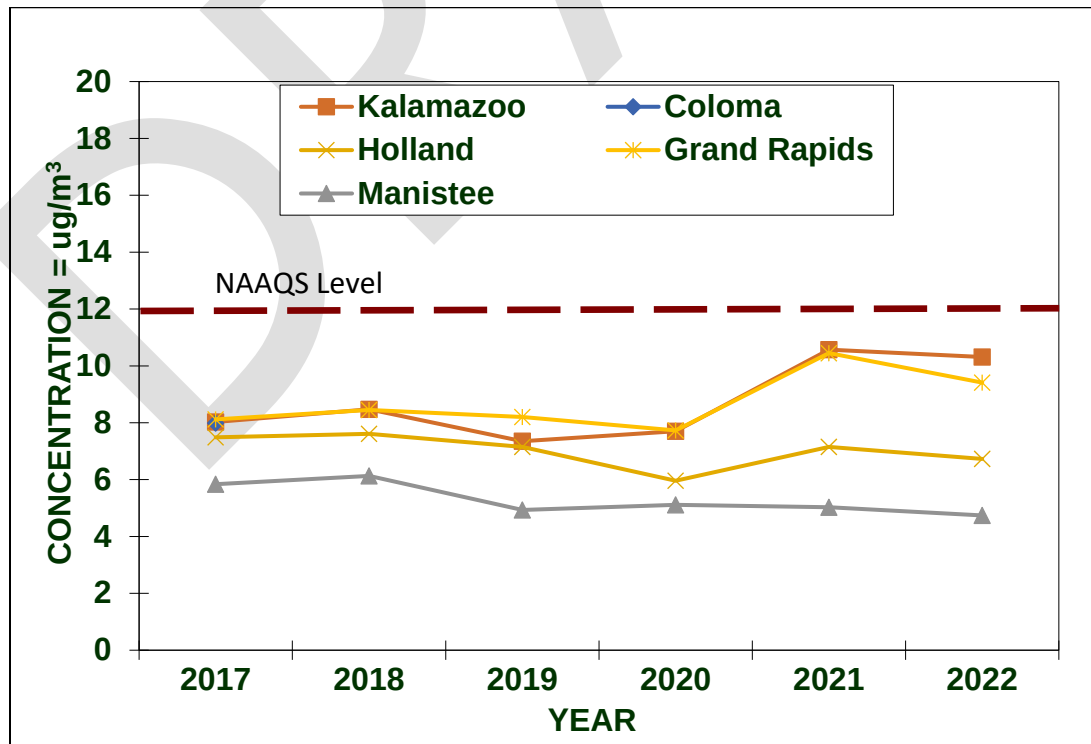


Figure 7.14: Lansing-East Lansing MSA, Bay City MSA, Cadillac MiSA and Upper Peninsula Annual Arithmetic Means for PM_{2.5} from 2017-2022

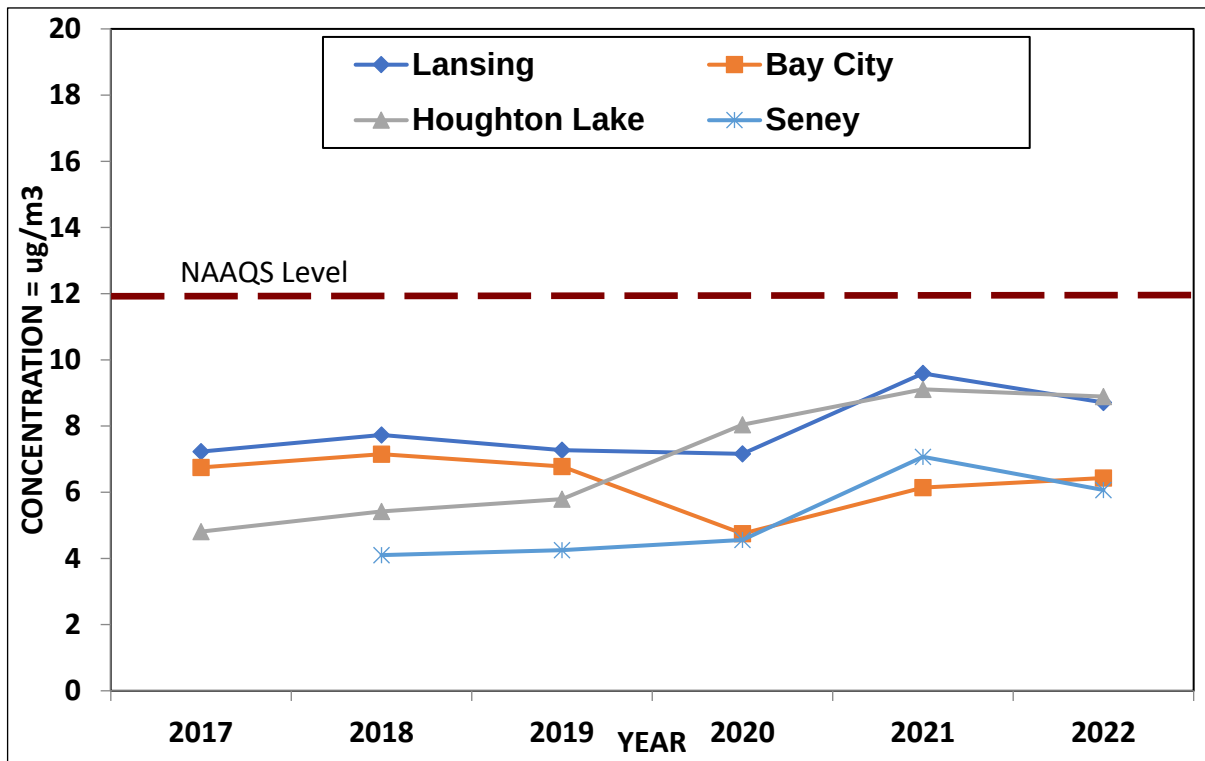
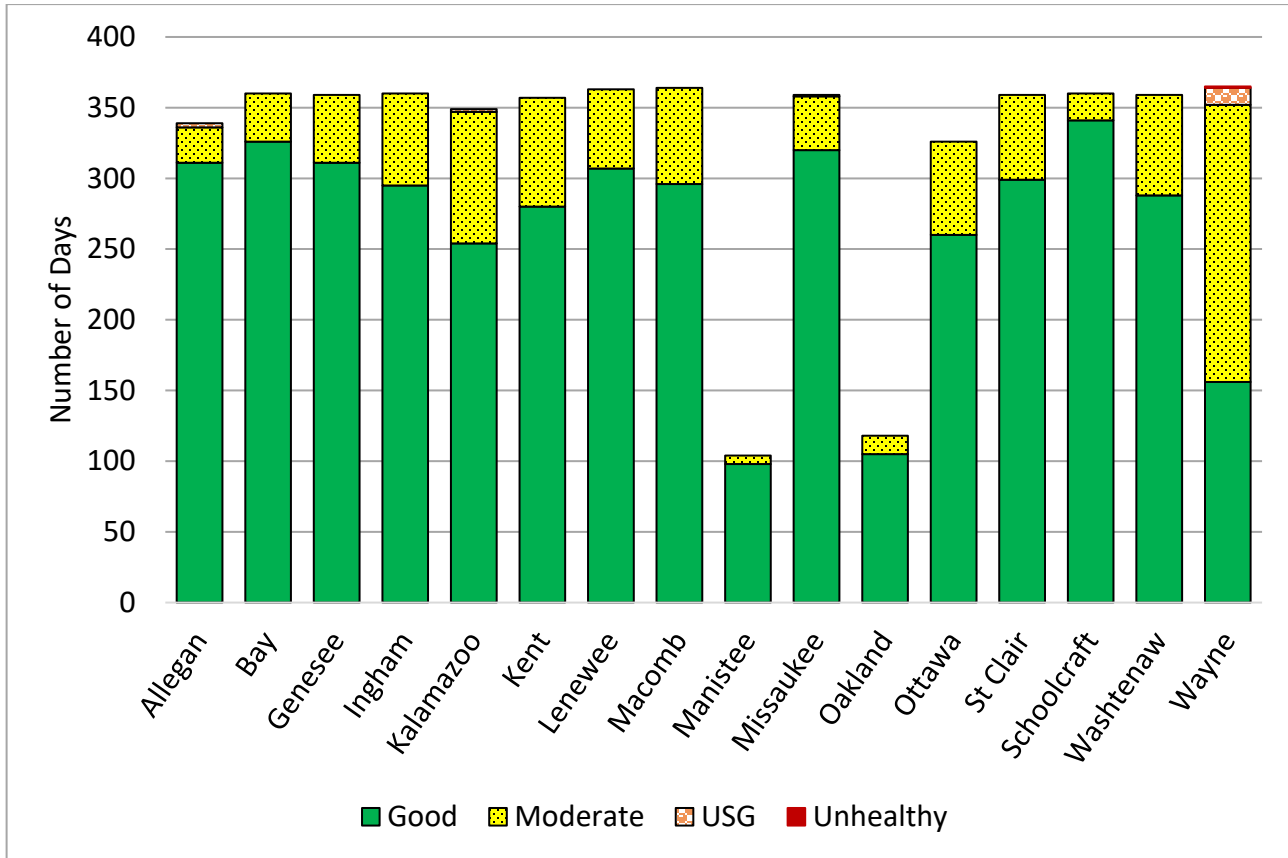


Figure 7.15 shows the AQI values per day in counties where PM_{2.5} is monitored. Most days were in the good to moderate AQI range. Four counties had days in the USG AQI range; Allegan, Kalamazoo, Missaukee, and Wayne. Wayne County also had one day in the Unhealthy Group.

Figure 7.15: 2022 AQI Days for PM_{2.5} in Michigan



CHAPTER 8: TOXIC AIR POLLUTANTS

NOTE: Toxics data in Appendix B has not been completed for this preliminary report. When the data is available, a final version of this report will be published.

The AQD monitors outdoor air for a wide variety of substances classified as toxic air pollutants. Toxic air pollutants, or air toxics, are different than the six criteria pollutants discussed in previous chapters. Under the Clean Air Act, the USEPA regulates a specific subset of air toxics called Hazardous Air Pollutants (HAPs), of which there are 188 (<https://www.epa.gov/haps>).

Sources: Air toxics can come from stationary sources which include factories and power plants. Mobile sources, such as cars and trucks, also emit air toxics. Natural sources of air toxics include forest fires and volcanic eruptions.

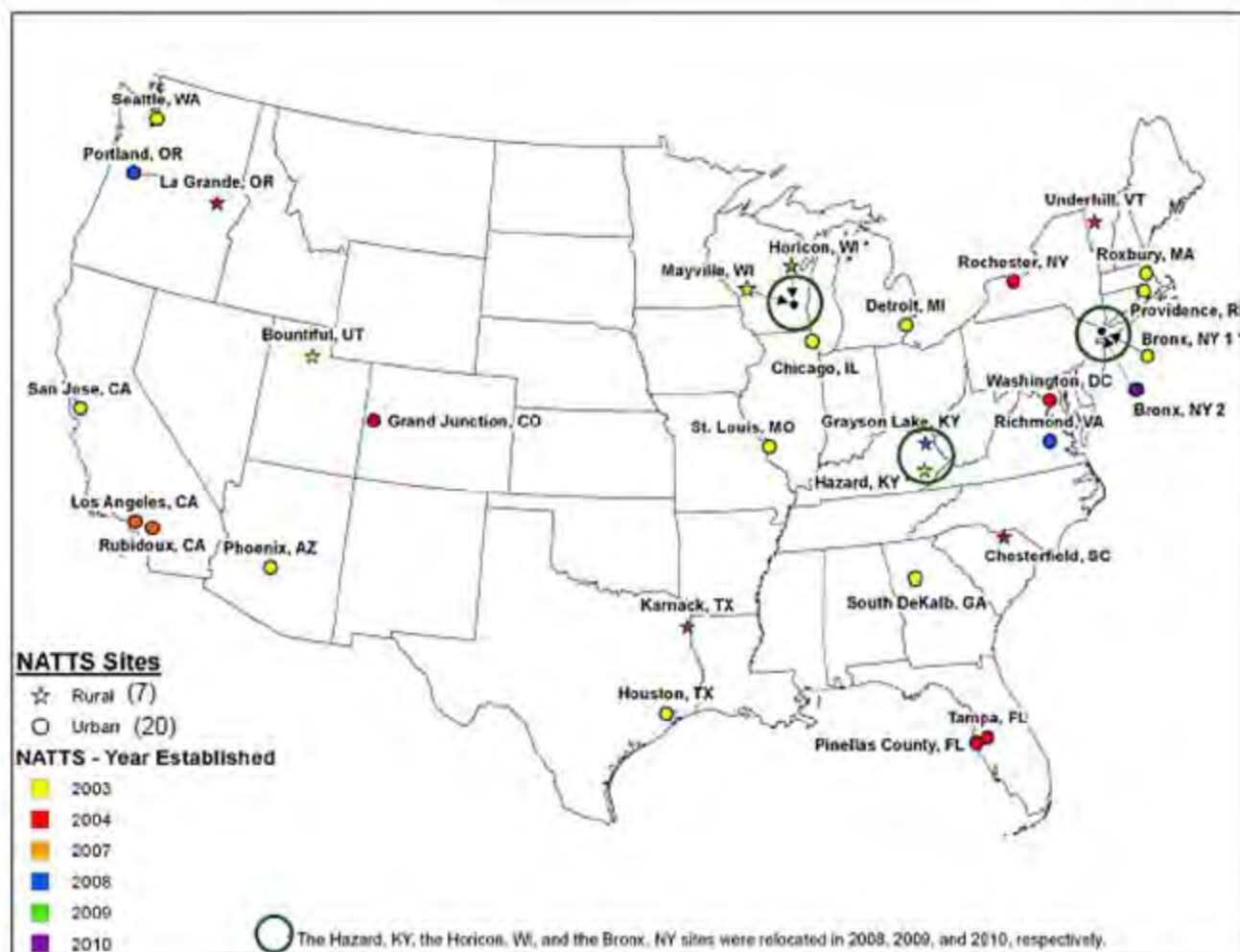
Effects: Once air toxics enter the body, there is a wide range of potential health effects. They include: the aggravation of asthma; irritation to the eyes, nose, and throat; carcinogenicity (causing cancer); developmental toxicity (birth defects); nervous system effects; and various other effects. Some effects appear after a short period of intense exposure, while others may appear after relatively lower 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. For example, both acidic and basic compounds may affect the nose. 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 human exposure after eating fish or produce that has accumulated the substance. Additionally, various people may have a broad range of susceptibility to air toxics.

Population most at risk: People with asthma, children, and older adults are at highest risk from exposure to air toxics.

National Monitoring Efforts and Data Analysis

Michigan participates in a national program that identifies air toxics levels, detects trends, and prioritizes air toxics research. The AQD operates a site in Dearborn that is part of the USEPA's National Air Toxics Trend Sites (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 seven 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, PM₁₀, and PM_{2.5}.

Figure 8.1: National Air Toxics Trends Sites



How Does EGLE AQD Evaluate Air Toxics in Michigan?

The AQD samples the air for toxics using a network of air monitors similar to the national network shown above. Michigan's air toxics monitors are typically located in urban areas. **Table 8.1** lists the air toxics monitoring stations and what category of air toxic was measured at each station in 2022.

Table 8.1: 2022 Toxics Sampling Sites

Site Name	VOC	Carbonyl	PAHs	Metals TSP	Metals PM ₁₀	Speciated PM _{2.5}
Allen Park						x
Dearborn	x	x	x	x	x	x
Detroit-SW	x	x		x		x
Grand Rapids						x
Belding-Merrick St.				x		
NMH 48217				x		
Port Huron-Rural St.				x		
River Rouge		x		x		
DP4th				x		
Military Park				x		
Trinity				x		
New Haven		x				

Categories of Air Toxics:

- **Metals:** Examples include aluminum, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, vanadium, and zinc.
- **Organic Substances:** Further divided into sub-categories that include:
 - o VOCs, including benzene (found in gasoline), perchloroethylene (emitted from some dry-cleaning facilities), and methylene chloride (a solvent and paint stripper used by industry);
 - o carbonyl compounds (e.g., formaldehyde, acetone, and acetaldehyde);
 - o polycyclic aromatic hydrocarbons (PAHs) (e.g., benzo(a)pyrene and naphthalene).
- **Other substances:** Asbestos, dioxin, and radionuclides such as radon.

Each category of air toxic must be collected using specific sampling devices. For example, VOCs are collected in metal canisters, carbonyls are collected in plastic cartridges, and metals are collected on quartz filter paper. Metals are also collected in various size fractions (e.g., PM_{2.5}, PM₁₀ and TSP). Air toxics are sampled for 24 hours (midnight to midnight), typically once every six or every 12 days. Once a sample has been collected it is either dropped off or mailed to a laboratory for analysis.

At the end of every year the air toxics monitoring data is tabulated into summary tables (see Appendix B); one table for every monitoring site. These air toxics summaries provide statistics about each pollutant measured at that location over the year. Examples of data in the tables include how many samples were taken over the year, how many samples were above the method detection limit, and what is the annual average air concentration for a specific air toxic at that location. This year's air toxics data also contains the regional annual averages for specific air pollutants for comparison. These concentrations were obtained from the USEPA data repository called Air Quality Subsystem (epa.gov/aqs). The three NATTS sites chosen for calculating a regional average were Chicago, Illinois (170314201), St. Louis, Missouri (295100085), and Pittsburgh, Pennsylvania (420030008). These monitors were located in urban sites in close proximity to Michigan.

Evaluation of Air Monitoring Data

The evaluation of air toxics measurements is difficult due to several factors. There are no federal air quality standards for air toxics, although Michigan has developed health-based screening levels. However, the screening levels are derived for Michigan's air pollution permitting program. Other challenges in evaluating air toxics include:

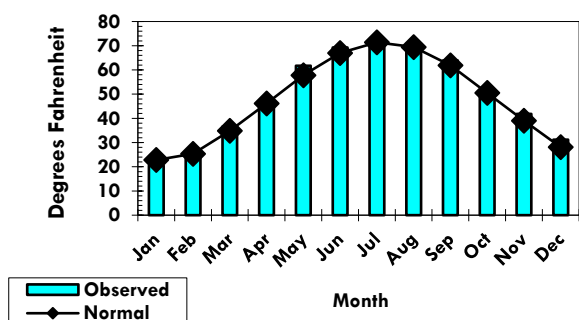
- There is no scientific consensus on how to account for the potential cumulative or interactive toxic effects from exposure to all substances in ambient air.
- For some air toxics, the analytical detection limits are not low enough to consistently measure the amount present.
- Air toxics also pose a challenge due to monitoring and analytical method that are either unavailable for some compounds (e.g., poly- and perfluoroalkyl substances or PFAS) or cost-prohibitive for others (e.g., dioxins).
- Timeliness: After an air sample is collected it takes several weeks or months (depending on the type of pollutant) to get the analytical results back from the laboratory.

NOTE: A summary of the toxics data will be made in the final report.

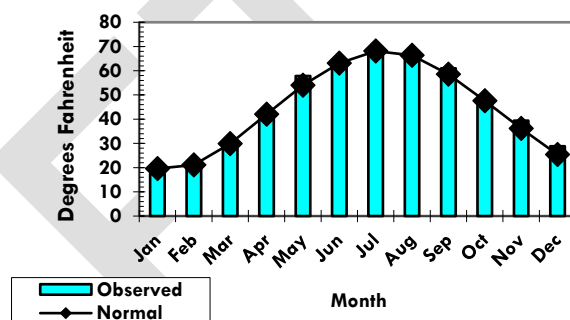
CHAPTER 9: METEOROLOGICAL INFORMATION

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 2022.

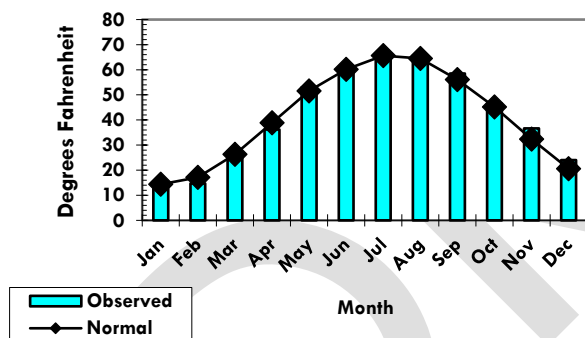
**Figure 9.1: Southern Lower Peninsula
Observed Average Monthly Temperatures vs.
Normal Average Monthly Temperatures**



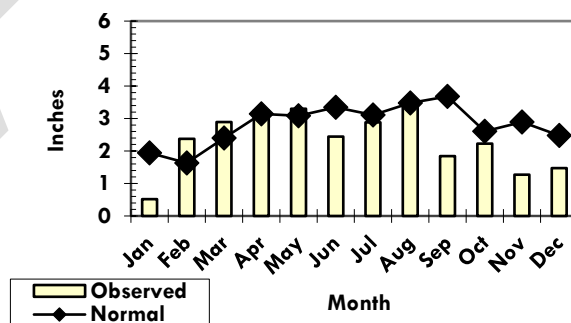
**Figure 9.2: Northern Lower Peninsula
Observed Average Monthly Temperatures vs.
Normal Average Monthly Temperatures**



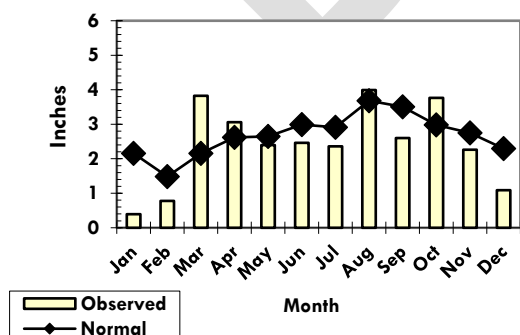
**Figure 9.3: Upper Peninsula
Observed Average Monthly Temperatures vs.
Normal Average Monthly Temperatures**



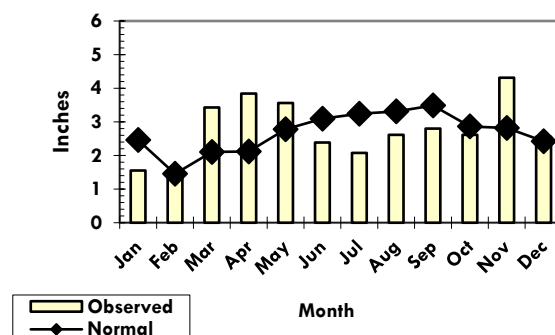
**Figure 9.4: Southern Lower Peninsula
Observed Monthly Precipitation vs.
Normal Monthly Precipitation**



**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

Gordie Howe International Bridge (GHIB)

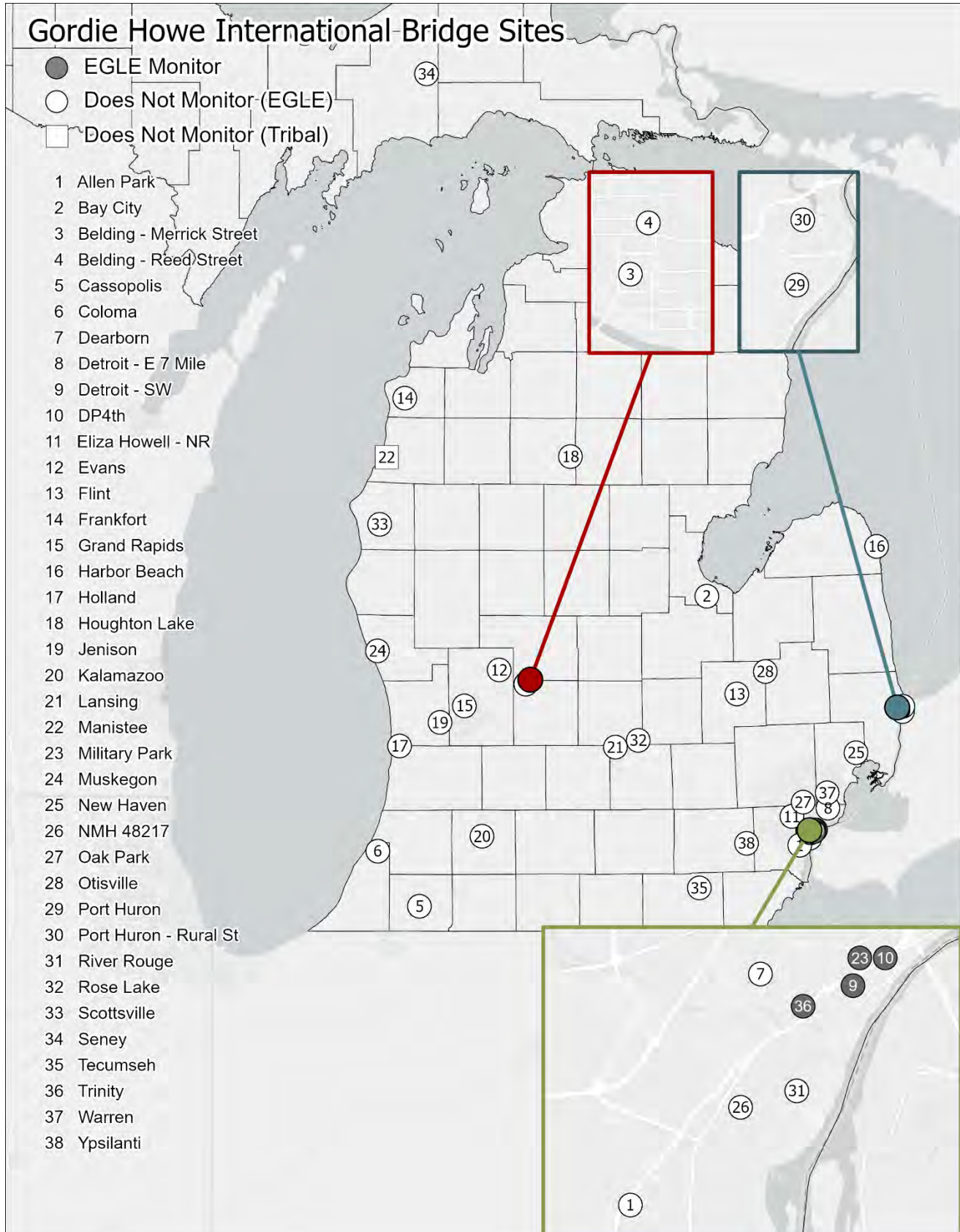
In a joint Canadian-American venture, the GHIB is being constructed to link Windsor, Ontario and Detroit, Michigan. Demolition and earthmoving work for the project was conducted in 2017-2019 and construction activities began in 2020 with some delays due to the COVID 19 pandemic. The bridge is anticipated to open sometime in the 2024-2025 timeframe. For additional information about the bridge construction, go to: [Gordie Howe International Bridge](#).

EGLE added three new air monitoring sites in 2017-2018 to conduct ambient air quality monitoring in the Delray community to ascertain air pollution levels in the community. The three new sites were added to monitor air pollutants before, during, and after construction of the bridge. In addition, NO_x, continuous PM_{2.5}, and black carbon were added to the existing Detroit-SW (261630015) monitoring site for this project.

- **Trinity (261630099):** Meteorological parameters, NO_x, SO₂, CO, continuous PM_{2.5}, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **DP4th (26160098):** NO_x, SO₂, CO, continuous PM_{2.5}, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **Military Park (261630100):** NO_x, SO₂, continuous PM_{2.5}, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **Detroit-SW (261630015):** Meteorological parameters, NO_x, SO₂, continuous PM_{2.5}, Speciated, PM₁₀, 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 3: (10.1) Gordie Howe International Bridge Sites



Stellantis

On October 4, 2022, outdoor air sampling was conducted on the FCA (Stellantis) US LLC Detroit Assembly Complex - Mack ("DACM") property, located at 4000 St. Jean, Detroit, Wayne County, Michigan. The purpose of the sampling was to determine whether community odor complaints were linked to specific air pollutants exiting the building at points other than the stacks, including doorways, vents, openings, or storage piles. These types of releases are called "fugitive emissions." All samples were taken on the DACM property and are **not** considered ambient air.

The objective of the outdoor sampling was to identify which possible chemical compounds could be the source of community concerns and odor complaints EGLE is receiving based on odor thresholds and chemical process fingerprints. The sampling was also conducted to identify possible chemicals for future evaluations.

The compounds of interest included VOCs, esters, naphthas, glycol ethers, alcohols, and aldehydes. Sampling was conducted at five locations surrounding the paint shop and a sixth site on the northeast corner of the property. The final report with the results can be found at: [Detroit Assembly Complex Stellantis On-Site Sampling Report, Mack Avenue, Detroit, Michigan](#)

City of Kalamazoo

In May 2022, the AQD conducted experimental drone flights over the City of Kalamazoo's Wastewater Treatment Plant (WWTP), located at 1415 Harrison Street, Kalamazoo, Michigan. These drone flights were part of an experimental sampling study using several pollutant sensors to evaluate fugitive emissions. The drone was equipped with sensors to measure VOCs, hydrogen sulfide, sulfur dioxide, nitrogen oxide, and formaldehyde. Elevated levels of formaldehyde were detected in several locations by the drone's electrochemical sensor. Due to the nature of that study, sensor data were used to indicate that further investigation was needed.

To evaluate whether formaldehyde was present in communities near the WWTP, a short-term sampling study was conducted. Sampling was conducted in four locations: a neighborhood west of the WWTP, on the western perimeter of the WWTP, at the Open Roads Bike Program to the east, and at the AQD's Kalamazoo air monitoring site. Sampling was conducted for five days at all four locations. The final report with the results can be found at: Kalamazoo Community Sampling Report 2022 (michigan.gov).

Section 3.8

Site Photographs



Aerial Site Photograph



Aerial Photograph - Merrill Street



Photograph - Bates Street



Photograph - Corner of Bates Street & Merrill Street



Photograph - Merrill Street



Photograph - Merrill Street



Photograph - Chester Street



Photograph - Chester Street



Photograph - Townsend Street



Photograph - Corner of Townsend Street & Bates Street

Section 3.9

Site Logistics

Proposed Haul Routes Map

The Community House





MEMORANDUM

Planning Division

DATE: September 27, 2023

TO: Planning Board Members

FROM: Nicholas Dupuis, Planning Director

SUBJECT: 34952 Woodward & 690 E. Maple – Informal Hearing for Proposed Design Change

The applicant for the proposed 9-story mixed-use development at the southeast corner of Woodward and Maple has requested an informal hearing with the Planning Board to review a major design change that will affect Final Site Plan review. The applicant received Preliminary Site Plan approval on May 10, 2023 ([Agenda](#) – [Minutes](#)). The Planning Division has provided a brief analysis of the main issues below:

Issue #1: Parking

Due to the challenges of excavating and engineering an underground parking level on this large site, the applicant has proposed a new design that will provide for three levels of above-ground parking within the first 2.5-3 stories of the building. At this time, it appears that all minimum parking requirements will still be met, and the general circulation would remain the same. The new second level of parking would not affect the retail space, but would extend to the Maple façade, which will eliminate the liner units that were originally proposed in that area.

Issue #2: Stories

With the addition of a new above-ground parking level, the applicant would exceed the maximum amount of permitted stories on the property by one story (10 proposed, a maximum of 9 permitted in MU7 and 7 proposed, a maximum of 6 permitted in MU5). The applicant will be required to obtain a variance for this change.

Issue #3: Overall Building Height

The applicant has advised the Planning Division that the building will be constructed of steel framing, and that steel framed buildings require a higher floor-to ceiling heights than

other types of construction. Due to this construction style, as well as the additional above ground parking level, the building will exceed the maximum permitted height by 5-7 feet. The applicant will be required to obtain a variance for this change. The Planning Division has encouraged the applicant to explore any and all options to reduce the overall building height, and to consider reducing other elements such as RTU penthouses and parapet walls.

Issue #4: Building Design

The transition from underground parking to above-ground parking will require the applicant to push above-ground parking levels to the facades of the building. There was already some portions of the building façade affected by this design on the Woodward side, but the Maple side will now be affected as well. The applicant has advised that this is something that they have done in other developments, and that special care will be taken to ensure that the facades of the building remain high quality and visually appealing.

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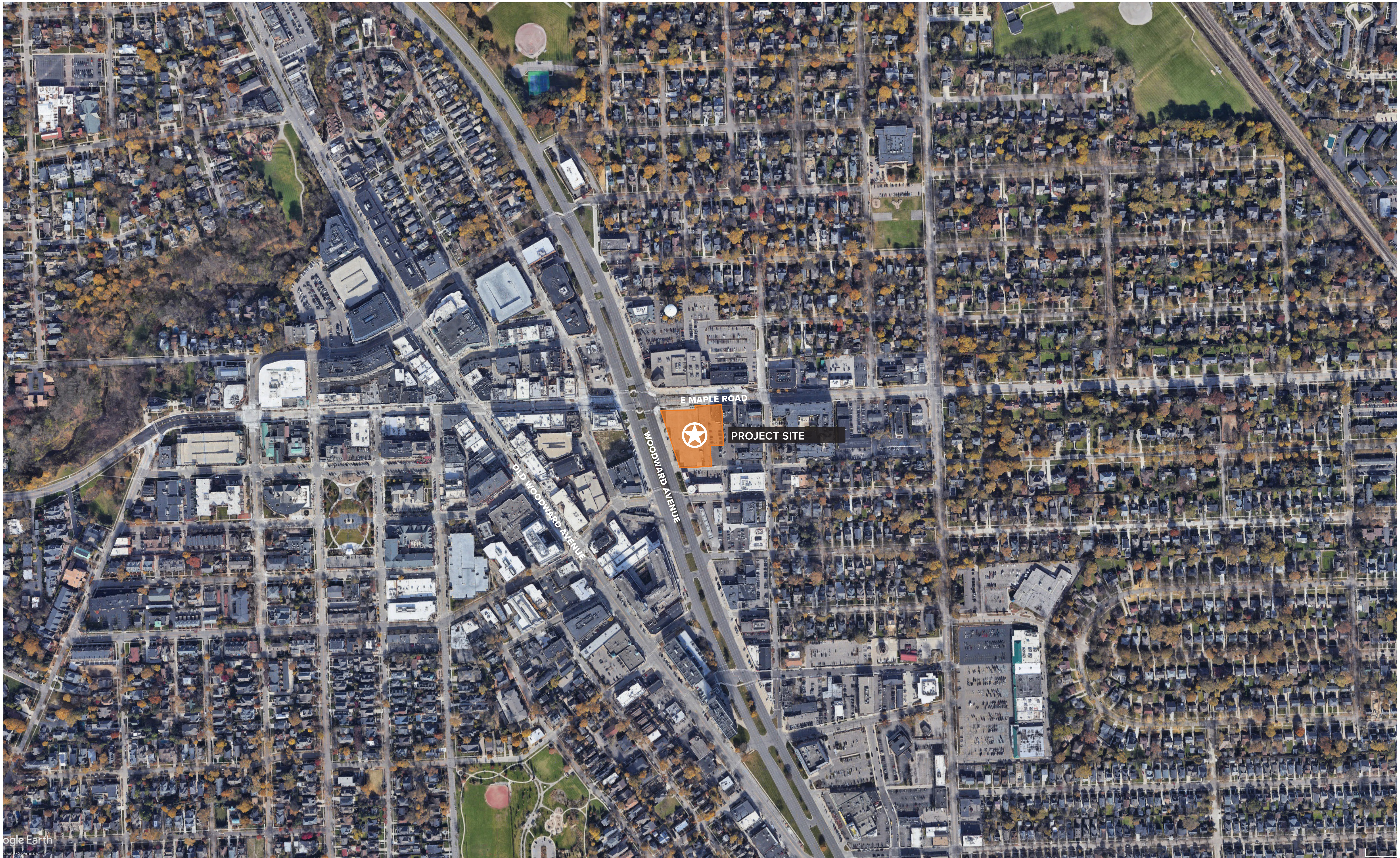


PLANNING BOARD MEETING

BIRMINGHAM MIXED-USE DEVELOPMENT

*WOODWARD AVENUE & MAPLE ROAD
BIRMINGHAM, MICHIGAN*

SEPTEMBER 27, 2023



Google Earth
Imagery © 2023



LEVEL 1 PLAN





MEZZANINE PLAN



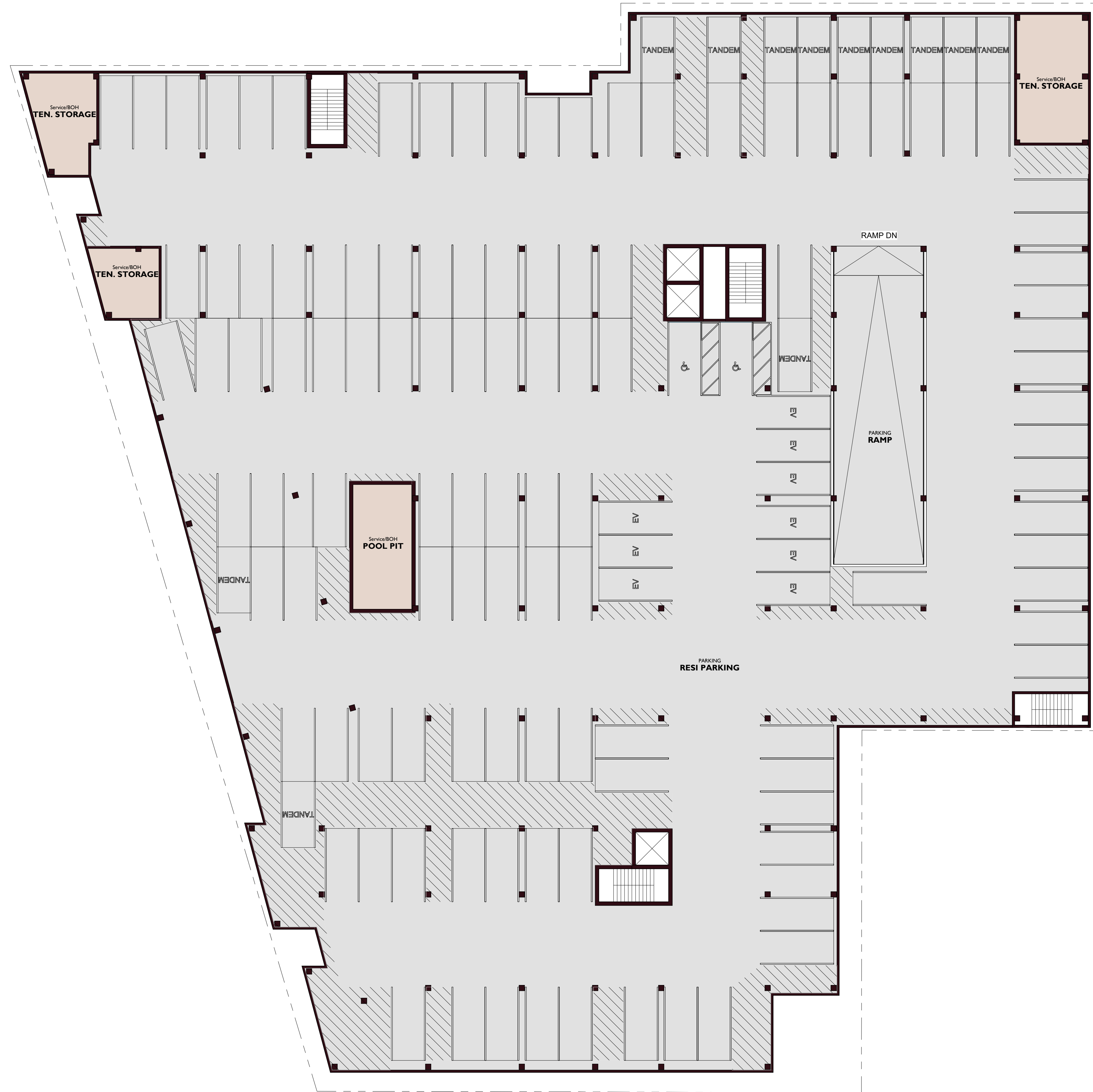
CONCEPT FLOOR PLANS

BIRMINGHAM MIXED-USE DEVELOPMENT • PLANNING BOARD MEETING • WOODWARD AVENUE & MAPLE ROAD

SEPTEMBER 27, 2023

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





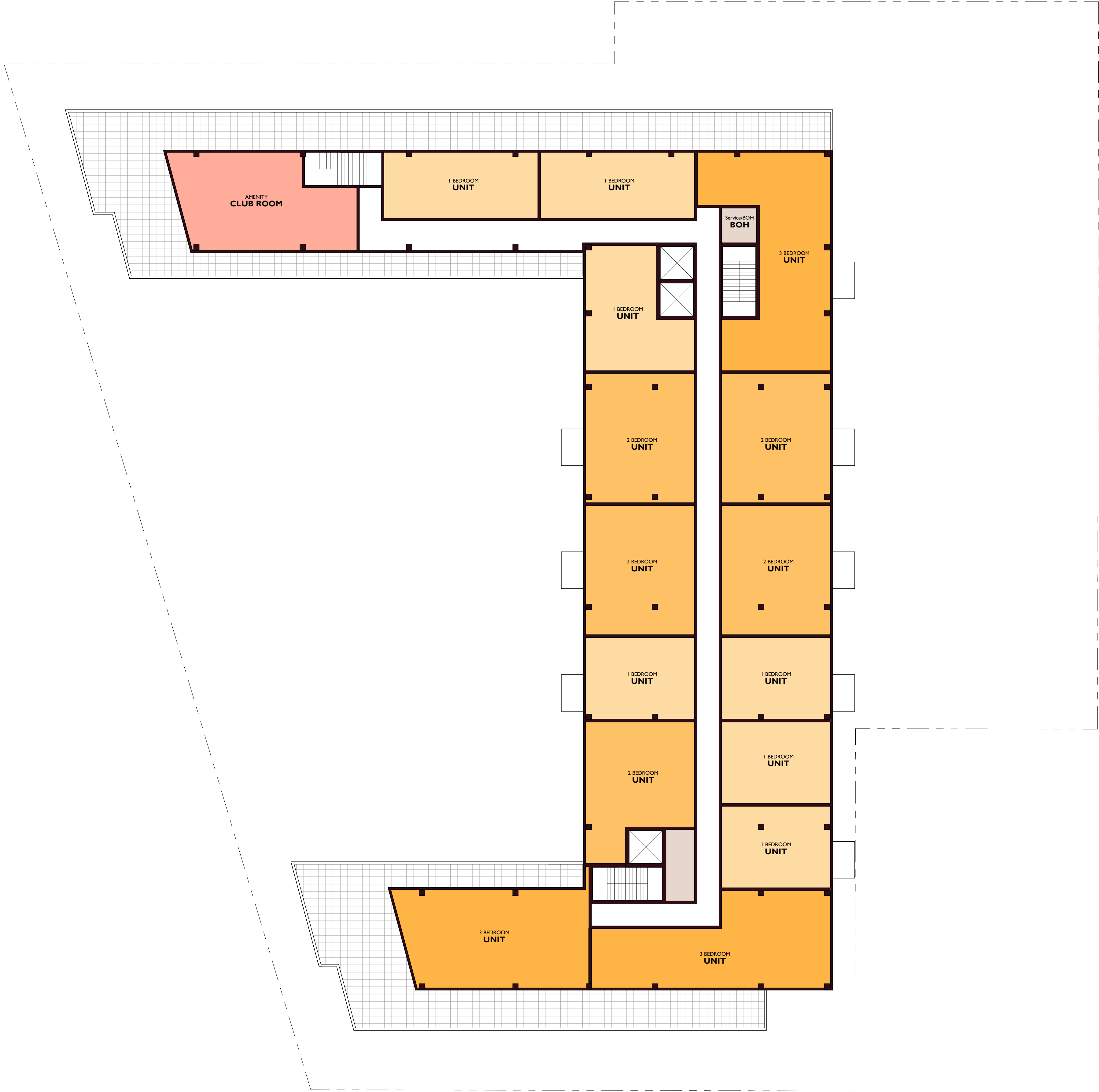
LEVEL 2 PLAN



CONCEPT FLOOR PLANS

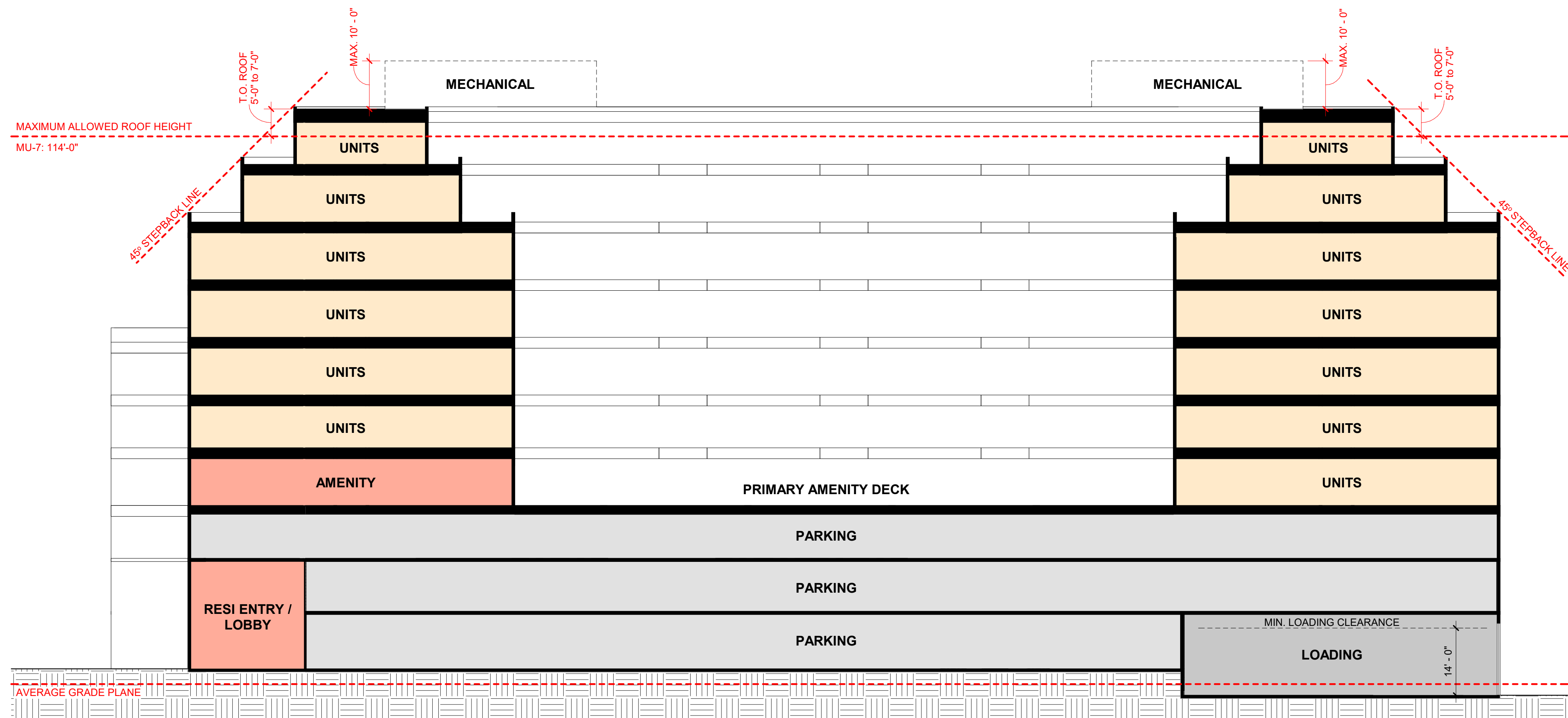
BIRMINGHAM MIXED-USE DEVELOPMENT • PLANNING BOARD MEETING • WOODWARD AVENUE & MAPLE ROAD
 SEPTEMBER 27, 2023



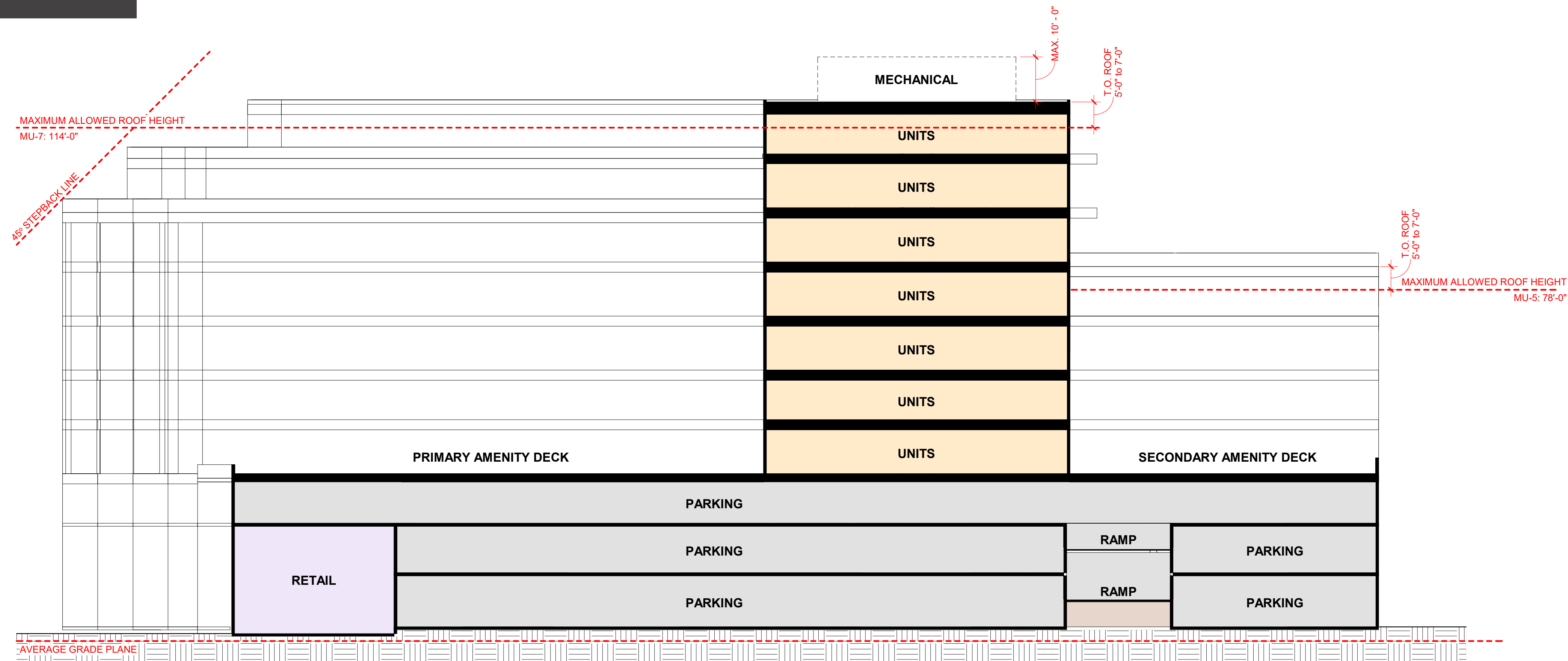
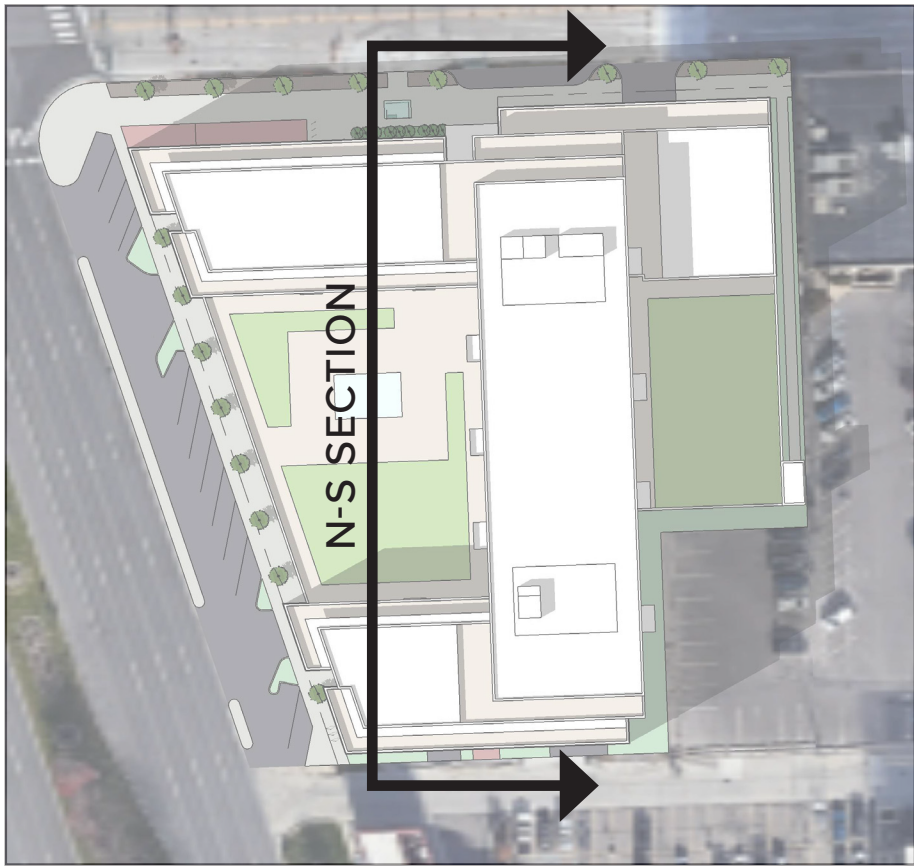


LEVEL 9 PLAN

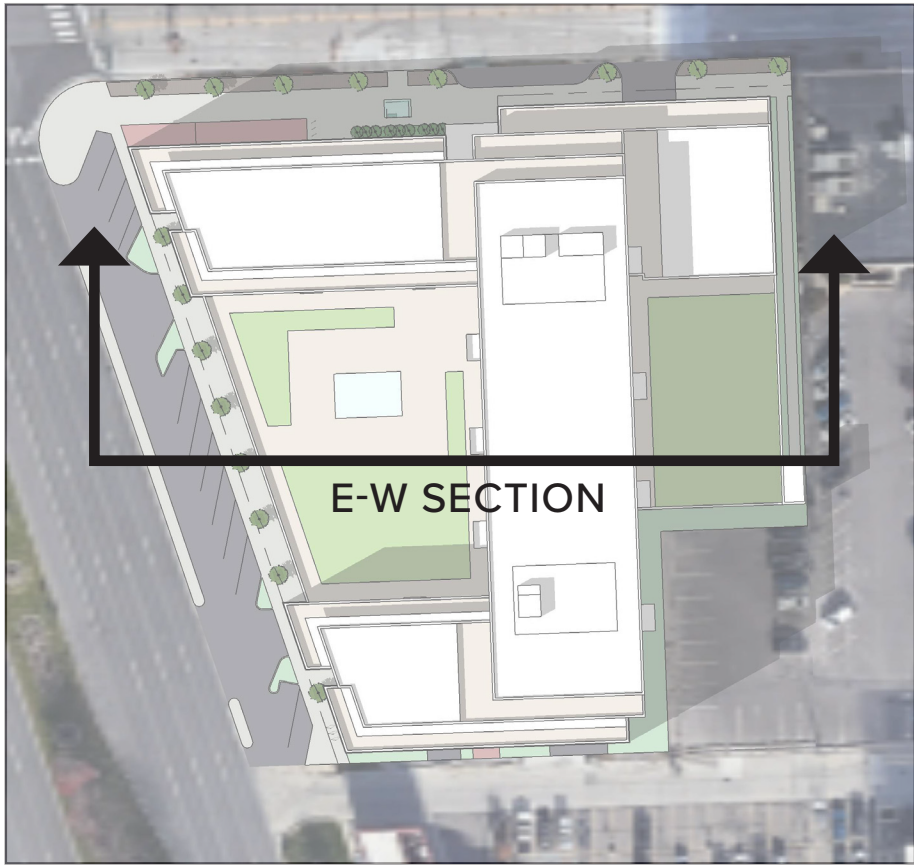




N / S BUILDING SECTION



E / W BUILDING SECTION



CONCEPT SECTIONS

BIRMINGHAM MIXED-USE DEVELOPMENT • PLANNING BOARD MEETING • WOODWARD AVENUE & MAPLE ROAD
SEPTEMBER 27, 2023

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







EXTERIOR PRECEDENT IMAGERY

BIRMINGHAM MIXED-USE DEVELOPMENT • PLANNING BOARD MEETING • WOODWARD AVENUE & MAPLE ROAD

SEPTEMBER 27, 2023

WE
BUILD
STORIES



PLANNING BOARD MEETING

BIRMINGHAM MIXED-USE DEVELOPMENT

*WOODWARD AVENUE & MAPLE ROAD
BIRMINGHAM, MICHIGAN*

SEPTEMBER 27, 2023



MEMORANDUM

Planning Division

DATE: September 27, 2023

TO: Planning Board Members

FROM: Nicholas Dupuis, Planning Director

SUBJECT: Project Updates & Information

The following report contains the most recent 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.

Site Plan & Design Reviews

- 2159 E. Lincoln – Lincoln Yard – Under construction
- 34965 Woodward – Peabody Redevelopment – Permitting, numerous extensions requested
- 35001 Woodward – Land lease executed by City Commission/Design development
- 707 S. Worth – Under construction
- 2225 E. 14 Mile – Our Shepherd – Under construction
- 36877 Woodward – Gasow Veterinary Hospital – Building demolished, permitting
- 243 Merrill – La Strada – Permitting/Construction
- 320 Martin – Birmingham Post Office – Design Development
- 185 N. Old Woodward – Bell Bistro – Permitting
- 460 N. Old Woodward – Wilders – Under 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. No new public hearing date set at this time
- 479 S. Old Woodward – Birmingham Tower – Design Development and demolition
- 245 S. Eton – Big Rock – Permitting and interior demolition
- 33866 Woodward – Polestar – Permitting/Design development

Ordinance Amendments/Master Planning

- -

Non-Planning Board Projects

- 135-139 S. Old Woodward – Stifel – Façade renovations on historic Briggs Building, under construction.
- 185 Oakland – Belfor – Façade renovations, design development.
- 33680 Woodward – Petrucci Studio – Façade renovations, permitting.
- 188 N. Old Woodward – Comerica Bank – Façade renovations, permitting.
- 163 W. Maple – Seven Daughters – Façade renovations, postponed indefinitely.
- 138 W. Maple – Blakeslee Building – Façade renovations.
- 172 N. Old Woodward – National Bank Building – Façade renovations.
- Citywide Wayfinding and Signage Design Program Update – Corbin Design Group presented concept artwork to the Wayfinding and Branding Committee on 8/14/23. The Committee directed Corbin to pursue a design with minor revisions requested.
- Historic Preservation Master Plan – In progress.

Sustainability & Climate Action Plan/Greenhouse Gas Emissions Inventory

- Next meeting – October 16, 2023
- Remaining planned Public Engagement
 - [Engage Birmingham Survey – Live Now](#)
- Greenhouse Gas Emissions inventory - In progress
- Sustainability and Climate Action Plan – In progress

ADMIN APPROVAL - PB

App Date	Case #	Scope of Work	Property Address	Status
09/12/2023	PAA23-0075		175 W MERRILL ST	IN PROGRESS
09/20/2023	PAA23-0082	Build-Out of the tenant space on the lower level and 1st floor of the building	458 N OLD WOODWARD AVE	IN PROGRESS

Total Processes For Type:

2



AGENDA
REGULAR MEETING OF THE BIRMINGHAM PLANNING BOARD
WEDNESDAY OCTOBER 11, 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 **September 27, 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. **Dumpster Screening Materials – Study Session**
 - 2. **Mixed-Use Requirements – Study Session**
- K.** Miscellaneous Business and Communications:
 - 1. Pre-Application Discussions
 - 2. Communications
 - i. **Project Updates**
 - ii. **City Commission Joint Meeting – October 23, 2023**
 - 3. Administrative Approval Correspondence
 - i. **September 22, 2023 – October 6, 2023**
 - 4. Draft Agenda – **October 25, 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 día 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).



AGENDA
REGULAR MEETING OF THE BIRMINGHAM PLANNING BOARD
WEDNESDAY OCTOBER 25, 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 **October 11, 2023**
- C.** Chairpersons' Comments
- D.** Review of the Agenda
- E.** Unfinished Business
- F.** Rezoning Applications
- G.** Community Impact Studies
 - 1. **720 S. Adams – Request for Community Impact Study Review for New 5-Story Mixed-Use Building in the Triangle District.**
- H.** Special Land Use Permits
- I.** Site Plan & Design Reviews
 - 1. **720 S. Adams – Request for Preliminary Site Plan Review for New 5-Story Mixed-Use Building in the Triangle District.**
- J.** Study Session
- K.** Miscellaneous Business and Communications:
 - 1. Pre-Application Discussions
 - 2. Communications
 - i. **Project Updates**
 - 3. Administrative Approval Correspondence
 - i. **October 6, 2023 – October 20, 2023**
 - 4. Draft Agenda – **November 8, 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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Telephone Meeting Access: 877-853-5247 US Toll-Free

Meeting ID Code: 111656967

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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.	☐	1 st (January-March)	☐	☒
Mixed Use Requirements	Consider changing the requirements for mixed use in the Triangle District.	☐	1 st (January-March)	☒	☐
Impervious Surface Definition	Clarify definition to promote the infiltration of storm water.	☐	2 nd (April-June)	☐	☐
Lighting Standards	Review lighting standards and study residential districts to reduce light pollution and nuisance.	☐	2 nd (April-June)	☐	☐
Health Club/Studio Use	Consider allowing health/fitness type activities in more areas of the City.	☐	3 rd (July-September)	☐	☒
Dumpster Enclosures	Expand the materials permitted/not permitted in dumpster enclosures.	☐	3 rd (July-September)	☒	☐
Definitions	Revisit key definitions to address any challenges presented and clean up verbiage to aid Planning Staff.	☐	4 th (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.	☐	-	☐	☐